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## Steel Passenger and Freight Car Shop, Angus Shops, Canadian Pacific Railway, Montreal.

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The steel passenger and freight car shop which the C. P. R. built last year as an addition to its Angus Shops, Montreal, was placed in service late in the year, and since then, while not working to its full capacity owing to the lessened demand for new rolling stock, it has demonstrated the value of a carefully planned shop, in the facility with which the work passes through, and in the expeditious manner in which the work can be fabricated and the parts assembled by the use of the routing system and the shop facilities provided in the layout. A brief preliminary description of the shop appeared in Canadian Railway and Marine World for Aug., 1913.

While the shop is completed to the full size contemplated for present requirements, 10 passenger cars per month and 8 freight cars per day, the interior arrangement, including the location of the machinery and the process of manufacturing the cars is subject to rearrangement, and even in the short time in which the shop has been in operation, the routing of the work has been materially altered in several instances to reduce the amount of handling and for correlated reasons. The operation of the shop will develop improvements, and it was so planned that any improvement might be introduced as developed. The plans were prepared with a view to future enlargement to about double the present capacity as required.

Preparatory to the building of this shop, when the C. P. R. was making its step from all wood to steel underframe, steel frame, and all steel constructions, a complete study was made of the subject, with the idea of building a shop for handling this new work, that would embody only the latest practice. As building the new steel equipment was still in a more or less infant stage, even in the United States, where the building of this class of rolling stock has been going on for the last few years, especial care had to be exercised in the matter of shop planning. With this in view, L. C. Ord, Assistant Master Car Builder, Eastern Lines, then General Car Inspector, made a tour of the principal car shops in this country and the United States, with a view to determining the best practice of all the different makers. The good points in all these shops were observed, which, combined with the original ideas developed by C. P. R. officials, produced the excellent layout to be found in this new shop. At the time of its erection, it probably represented the best practice on this continent, and with the improvements that have been introduced from time to time since it has been in operation, as practice showed where such changes could be made to improve the process, it will no doubt continue to represent the best practice for some time to come.

In designing the shop, 2,750 sq. ft. of floor area per car per day was taken as the average for existing shops, but to prevent overcrowding common in most steel freight car shops, and to allow for the greater

amount of room necessitated by the design of the spacing punches, a larger amount of machine room was provided. The final floor area for the freight shop was made 41,785 sq. ft., the area of the machine shop being 22,069 sq. ft., less 7,265 sq. ft., which was set apart for the machinery and assembling of steel centre sills for repair work, giving a total area of 14,795 sq. ft. available for machines. The area of the assembling portion of the freight shop was 9,170 sq. ft., while the erecting area was 17,820 sq. ft.

The shop is located on the west side of the midway which runs through the shop grounds, and is the northernmost shop in the group. It adjoins the old wooden freight car shop and on that side there is no room for any future expansion, but to the north, there is ample room for extension, as contemplated in the layout of the shop as initially planned. This extension may be made without in any way affecting the present arrangement.

There are three main divisions to the shop. The front one may be called the fabricating shop, containing all machinery for working the steel members, and to the rear of this section, is the freight car erecting section on the south, and the passenger car erecting section on the north. The shop is a steel framed structure, with the steel columns carried on concrete piers, resting on bed rock, which at no point in the shop area is more than 4 ft. below the surface, in places coming to the surface. The lower part of the wall is of concrete, 24 ins. thick from the rock surface to the ground level, and 20 ins. thick to a height of 2 3/4 ft., above which the wall is of red brick, 16 ins. thick, with steel sash. The floor is a 4 in. bed of concrete, with a 5/8 in. mastic surfacing, of a slightly harder constituency than usual, as dictated by experience with other buildings in the plant. The roof is carried on steel trusses, with ample skylight areas. Over the higher sections, the roof consists of 2 by 3 in. planking on edge, separated from a layer of 3/8 in. tongued and grooved boarding by a tar paper, the whole being covered with tar paper, tarred and gravelled. The lower sections of the shop differ in the under layer of the roof, which consists of 2 in. tongued and grooved planking. The skylights are glazed with wired glass, while the side windows have plain glass. The window sills are of concrete. The area of light to the total wall space is apparently 30%.

The fabricating shop consists of two parallel 100 ft. bays, parallel to the midway, the one adjoining the midway being 209 1/2 ft. long, consisting of three 24 ft. sections and five 27 1/2 ft. sections, while the inner bay is one 27 1/2 ft. section shorter on the north end, giving a length of 182 ft. The 24 ft. sections are on the south end of the building, and combined give a 72 ft. width, corresponding to that of the freight car erection section of the shop. Each of the bays is spanned by a steel truss, giving a clear height at the sides of 36 ft. the lower chord of the truss having a rise at the centre of 1

ft. 11 ins. The details of the structural steel work are shown in the cross sectional view of these bays. The columns consist of 24 in. 100 lb. I beams, on each side of which, there is a 15 in. 45 lb. channel and 15 in. 45 lb. I beam for the crane runway support. The roof trusses have a side depth of 9 ft., and a central depth of 11 ft. 2 ins., and are built up of angle iron sections. The crane runway girders in each bay are identical, with a height to base of rail of 28 1/2 ft. These girders are built up of a 36 by 3/8 in. web and six 6 by 11-16 in. dangle angles with a crane rail on top. Each bay has a crane span of 96 1/4 ft., and in each bay there is a 10 ton electrically operated crane of the open lattice type. The parallel 100 ft. bays make an ideal arrangement, the front bay crane handling the material as it comes in, and the other bay, the finished material.

The freight car section consists of a 72 ft. wide extension along the south side of the shop from the far side of the two 100 ft. spans, and comprises two 202 1/2 ft. lengths, the first of which opens along the side into the passenger car shop, the west end being closed along that north side. The full shop length is divided into 18 sections of 22 1/2 ft. by 72 ft. steel spans. This section of the shop is not as high as in the front two bays, having a clear height under the bottom chord of the roof truss of 34 1/2 ft. The trusses have a central depth of 8 1/2 ft., and a side depth of 6 ft. The height to the base of the crane girder rail is 27 ft., the crane span being 67 ft. 7 ins. This bay has a 10 ton electric travelling crane, as in the front bays, only of smaller span.

The passenger car erection section is to the north of the freight car section, and to the west of the north end of the fabricating shop, and consists of four 27 1/2 ft. bays, corresponding to the four 27 1/2 ft. sections of the front bays, these four bays with that of the freight car shops completing the full width of the back of the fabrication bay. This section of the shop is much shallower than either of the other two sections mentioned, and on account of the narrowness of the four bays, a trussed roof is not required, the roof sloping from the central row of columns to each side with a slope of 1 in 12. The clear height under the centre of this section, in the central row of columns, is 30 1/2 ft., and 26 ft. at the sides. Each bay of this section has a separate 2 ton crane, with a 24 ft. 10 in. span, the height to the base of the crane rail being 21 ft. The columns in this section are 8 3/8 by 8 3/8 in. I beams, at 22 1/2 ft. centres. The crane girders extend into the front section of the shop for 11 ft., the front ends of the crane girders are carried on a column similar to that in the passenger section. These four cranes are controlled through ropes from the floor below.

To maintain the orderly handling of the material through the shop, painted lines are used to define the boundaries of the several piles, and mark the passage ways, which must be kept free of material. These boundary lines are repainted at the end of

each week, at which time an absolute clean up is made of any material which would otherwise tend to accumulate.

Along the front of the shop, between it and the midway, there is a 100 ft. storage space parallel with the midway and shop, spanned by a 10 ton crane having a 96¼ ft. span, and at the same elevation as the two cranes in the front two bays of the shop, being similar to the latter in every particular. The midway crane has a 76 ft. 5 in. span and is lower than the crane referred to, the reason being that it is the intention at some future date to extend the shop from the present east wall to the midway, and as the outside crane in this space is similar to that inside, it will make three parallel bays,

wall of the latter parts. The crane of the front bay serves this track.

Through the freight car erecting shop, entering from the rear end, there are two standard gauge tracks at 36 ft. centres, extending the full length of the bay, the both of which at their forward end connecting through turntables with the track along the south wall. These tracks do not lead into the fabricating shop. Through each bay of the passenger car erecting shop section, there is a standard gauge track, leading in from the rear, the track in each section being placed slightly to the north of the centre line, 18 ft. from the south rows of columns, and 9½ ft. from the north rows. These tracks do not extend into the front shop

wheel of the punch from the motor, without the intervention of gearing. The clutch is of the 6 point type. Two punches are fitted to each head, both being controlled by a single gag lever, which has three positions, one for each punch, and one neutral. These punches are not equipped with spacing tables, as the slow movement of the latter, reduced the advantages to be attained for the high speed. The method adopted was that of using a drilled or punched template, and butting the piece against a gauge inserted in each successive hole in the template. In certain classes of work, the operator can move the material fast enough to catch every hole with the punch running at its 60 strokes per minute. This is three

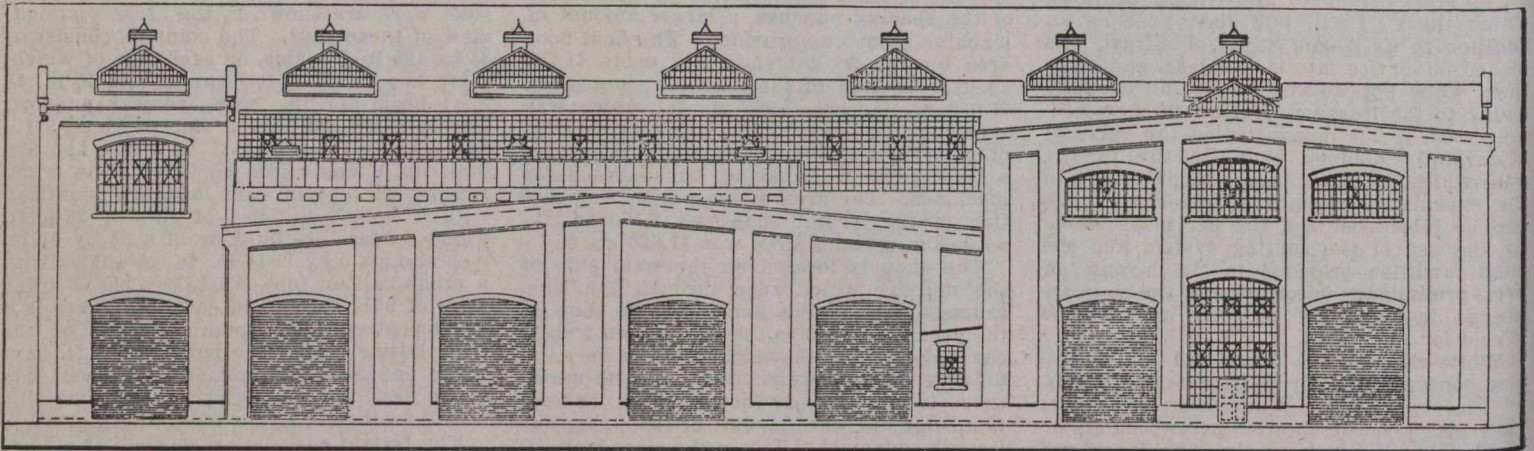


Fig. 1.—Rear Elevation of Steel Car Shop.

similar in all particulars. This outside crane extends a short distance south of the present limit of the shop, and a short distance beyond the north limit as it will be when the contemplated extension to the north is completed.

Along the outside of the south wall of the shop, there is a standard gauge track, extending the full length of the shop, and connecting with the track along the midway through turntables. It is served by the outside yard crane. Through the centre of the outside-crane-served yard at the front, there is a standard gauge track extending nearly the full length of the shop frontage, and con-

necting with a track through a turntable with a track running into the shop. A cross track from the track along the south wall, connects with this track inside the building. There are also a couple of entry tracks along the south side of the building in the freight car erecting shop section. The standard gauge track through the centre of the front storage yard has one of its rails serve as one rail of a narrow gauge service track, from which there are two tracks leading into the shop through turntables. Through the last section of the front bay, there is a standard gauge track leading in, which crosses the midway, leading through the front bay, paralleling the back bay and passenger car erecting shop along the north

section, but are entered from the rear, where there is a transfer table. Intermediate to each of the shop tracks, extending from the rear wall to the transfer table, there is a standard gauge track, of sufficient length to store a passenger car. The machinery equipment includes the latest in structural steel working machinery. The division line for the machine equipment for the passenger and freight car sections is the row of columns across the two 100 ft. bays, midway in the length of these bays, the northern section being for passenger car equipment, and the southern portion for the freight car equipment. The pas-

times as fast as on the spacing table, and while only one piece can be handled at a time, for light, short material, it is fully as cheap as when done on the spacer.

Special provision against the holding up of the plant due to a machine breakdown, has been made in a twofold manner. First, by the use of machines of relatively small capacity, but sufficient in number to obviate the expense and delay of changing dies and setting, and to prevent the big accumulation of material necessary to feed the shop without delay. The breakdown of such a large capacity machine would be a serious handicap. Secondly, the additional heavy punches

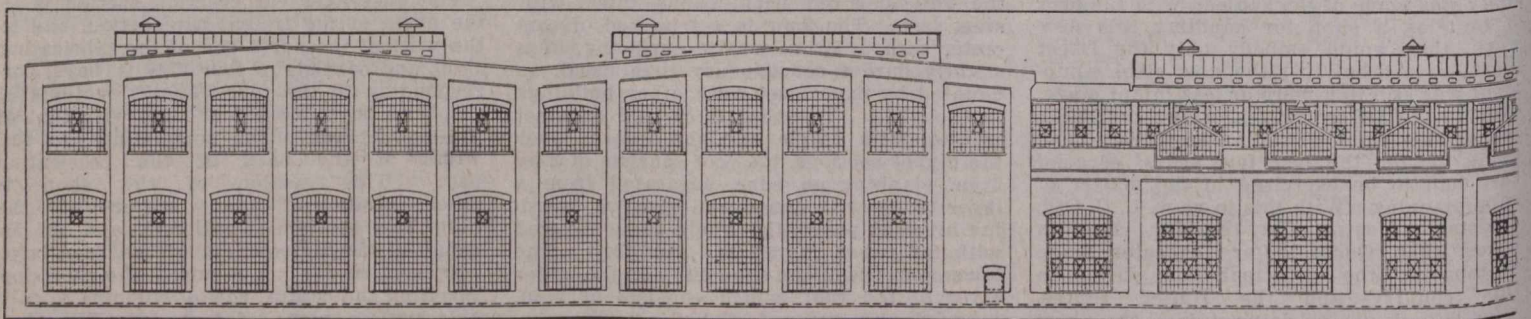


Fig. 2.—Side Elevation of Steel Car Shop (see opposite page).

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senger car shop equipment consists of the following machinery: Two coping punches, two high speed punches, four spacing punches, angle shears, metal cold saw, metal band saw, bending rolls, plate rolls, plate planer and plate shears. The freight car section contains the following machinery: Five spacing punches, two coping punches and two high speed punches. The individual machines can best be described in dealing with the process of manufacture, to be outlined further on.

The high speed punches are of special construction, designed for this shop by John Bertram and Sons Co., Dundas, Ont. They operate at the high speed of 60 strokes per min., and are belt driven direct to the fly-

for coping, slotting, etc., are duplicates of those used in the spacing tables, so that, should any of the punches in the spacing table become totally disabled, it would be possible to substitute another punch, either whole or in part, with but short delay, and thereby keep the shop running. The interchange of punches, gags and other jigs has been carefully planned.

The crane served yard in the front of the shop, is used for the storage of the larger parts required in the manufacture of the steel cars, both freight and passenger. The majority of the smaller parts, such as carlines, corner pieces, and similar parts, a large number of which are made in the bulldozer and hydraulic press, come from the

blacksmith shop, but the other parts, such as sills, stringers, side plates, etc., are all finished in the steel car shop. The material, as brought from the mill, is brought in car lots along the track adjoining the steel car shop, and handled by the yard crane to the several piles shown, where they are conveniently arranged for rehandling into the shop, as required. The heavier of these parts as needed are again handled by the crane, and carried in lots to the north end of the shop, where they are loaded on shop

the point from which fig. 6 was taken. Running under the trestles at each end of the sills, there is a 15 in. track, each track carrying a small air jack, the heads of which just clear the under side of the sills when in the lower position. As required, the sills are lifted three at a time, flanges down, and carried down on to the rollers of the traveller, and deposited thereon. The form of the traveller rollers is shown in the foreground of fig. 6. For the sill webs, the traveller rollers have narrower faces, and

travel of the head, and closes the circuit of punch control, the punch dies descending through the work. This template is laid out to give the requisite spacing of the holes throughout the length of the member to be punched, and is easily removable, when another pattern is to be punched. The templates are made of wooden strips 3 by 7/8 in., and the projecting pins are of 3 in. nails, cut off so that the end projects about 1/2 in. above the surface of the strip. The travel of the head being automatic, the pins arrest

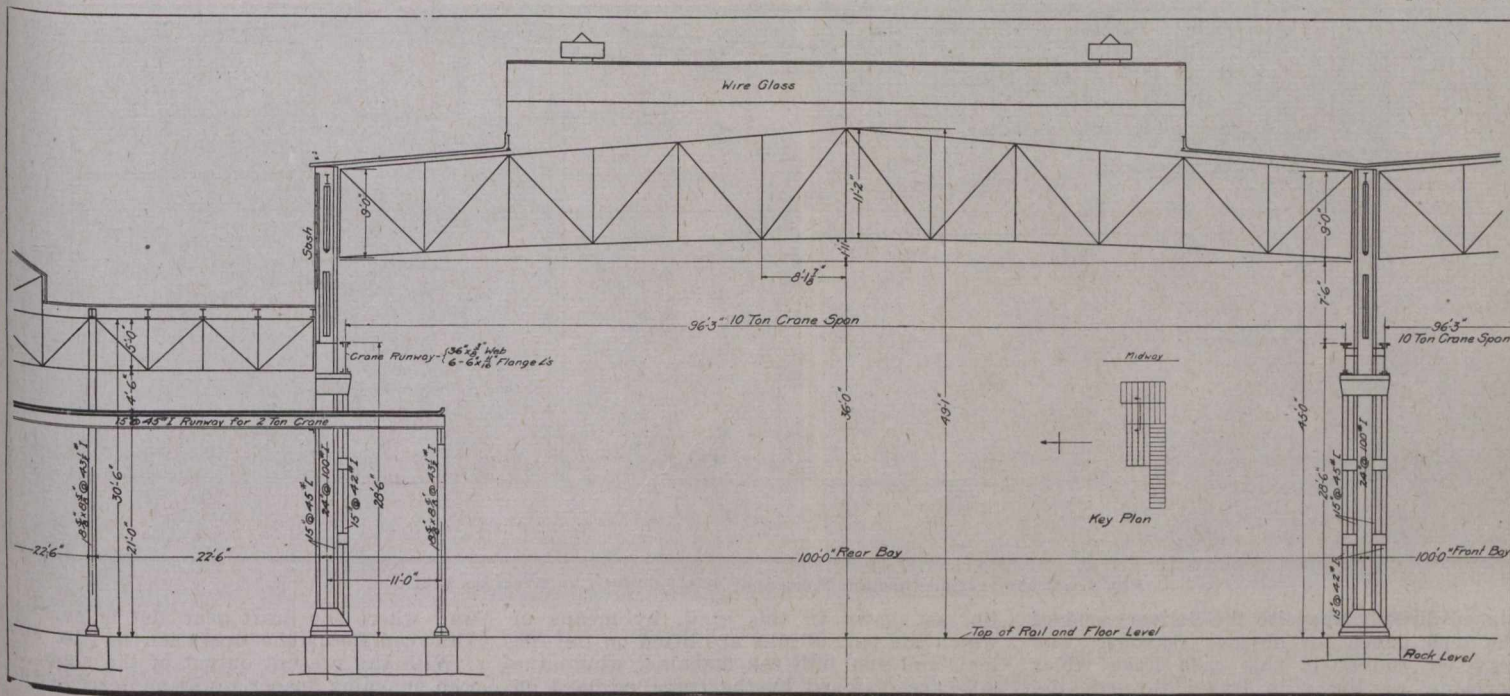


Fig. 3.—Cross section through Front Bays of Steel Car Shop.

lorries on the track that runs through the end of the east bay, and brought into the shop, where the crane in this bay handles the material to the several machines. The smaller and lighter parts which are stored in the front storage yard, are brought into the shop on the narrow gauge service tracks, to the several machines. The arrangements for expeditious and convenient handling, are excellent. The material can be skidded from the piles on to the shop lorries when requir-

are six in number, and are set so that there is a set of rollers near the side of each of the sills, on which the latter roll. These rollers are adjustable vertically as shown in fig. 6, by means of a long rod from the punch in the background, an arm on each roller stand controlling the location of each set of rollers, all the rollers acting in unison from the central control at the punch. This adjustment is arranged for so as to accommodate shapes of different

the travel at the required points, punching the holes at the points required. Permanent steel templates may be used. The punch is of a powerful type, and punches as many as three 3/4 in. holes in each of the three sills at one stroke. The punch has a gagging attachment, controlled by the operator. At each of the points at which the automatic head arrests the forward travel, the operator places out of operation the desired punches by this gagging arrangement. The pass

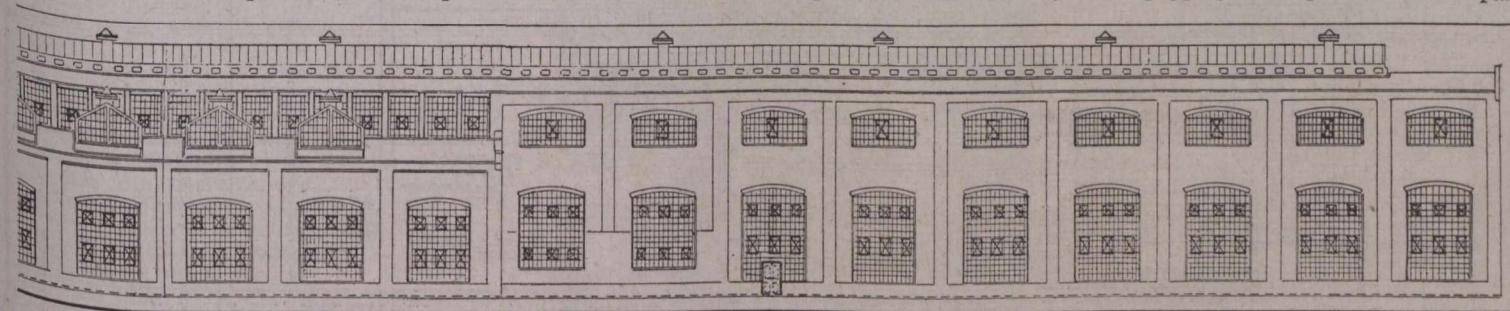


Fig. 2 (contd.).—Side Elevation of Steel Car Shop (see opposite page)

ed, as when the yard crane breaks down. The two main service tracks running into the shop in the third and fourth sections from the south, handle most of the material to and from the machines for the freight car work. The centre sills and side sills, which are channel sections, in one piece, are brought in on truck lorries on the northerly of the 2 ft. main service tracks, and just inside the door, opposite the traveller of the centre and side sill web punching machine, are lifted by the crane, and are carried across the traveller, and deposited on three trestles to the back of the traveller. The trestles are topped with rail, for convenience in shifting the channels sections across the top. This storage position is just back of

depths. On the far side of the punch, as shown on the left in fig. 6, there is a similar set of spacing rollers, differing only in that over top of the rollers there is an elevated runway carrying the traveller head, which is clearly shown on the left in fig. 6. This head works automatically in spacing the sills under the punch for the requisite punching. On the punch end of the head, there are projecting jaws, in which the member to be punched is gripped. Along the operating side of the traveller head track, there is a spacing template, laid out with projecting pins, which engage a trip lever suspended from that side of the head. This suspended lever, on striking a pin, closes an electric circuit, which arrests the

through the machine is very rapid, and the accuracy of the spacing mechanism is such that the punching error is very slight, and is not as great as if each hole was laid out independently, as punched in an ordinary punch. As the sills pass through three at a time, and have all the web holes punched, they are released from the jaws of the traveller head, when the latter is in the position shown on the left in fig. 6, and the three sills are lifted out by two jib cranes, one of which is shown on the left at the end of the traveller table, in fig. 6. The other is just back of the position from which the view was taken. These two jibs deposit the sills in the storage space made by the bent rails

in the lower left foreground.

The next operation is that of punching the flange holes in the sill members, in the punch shown to the right of the storage pile in fig. 4. The entry table of the latter is

right hand pair in the foreground. In the bottom of these U retainers, there are rollers, along which the sills are moved into line with the entry carriage. On the column back of these rollers, there is a stationary

again passed through for the punching of the holes in the flanges on the other side. The inner 100 ft. crane picks up the flanges on the completion of this operation, and carries them over to the punch along the south

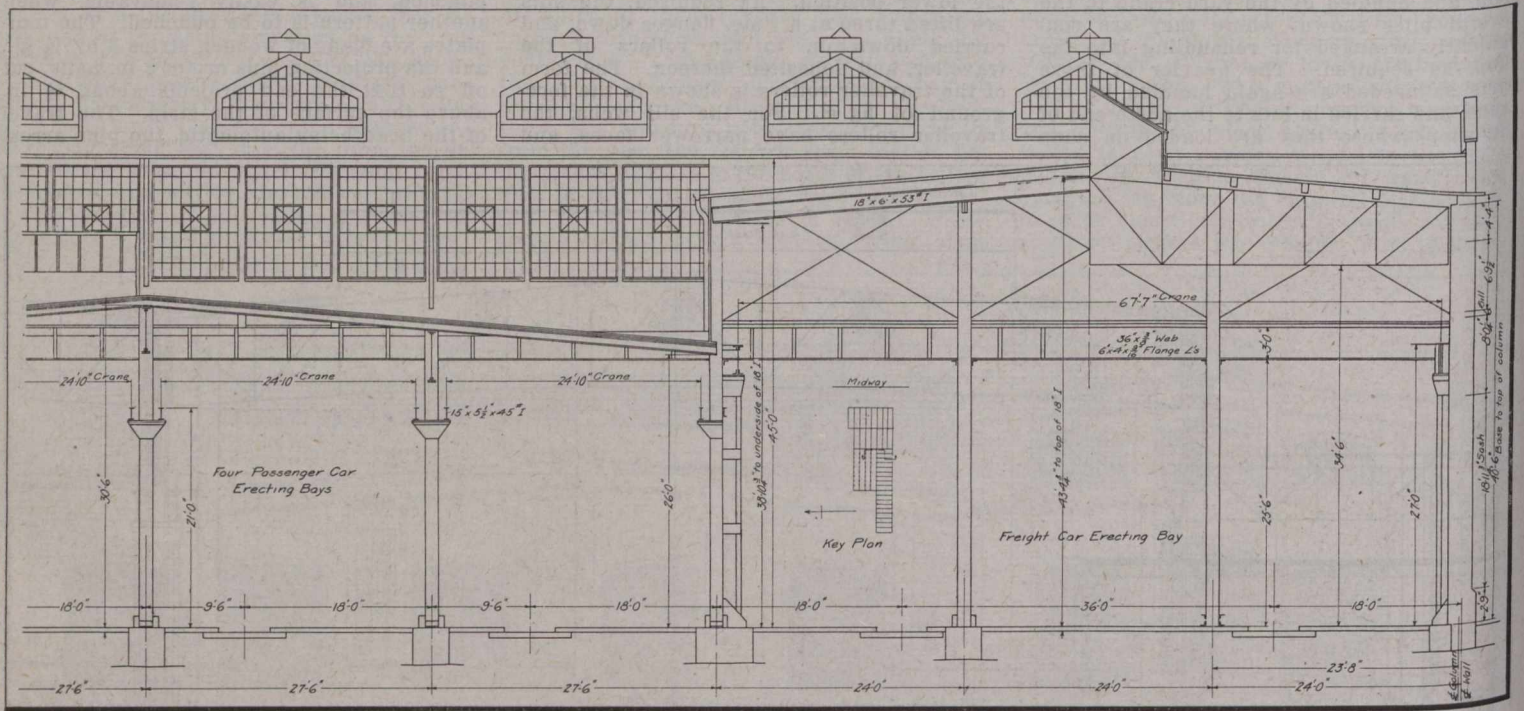


Fig. 4.—Cross section through Passenger and Freight Car Erection Sections.

placed directly opposite the delivery end of the web punch for obvious reasons. The traveller rollers in this case have wider surfaces, as the sills travel through the punch resting their flanges, two at a time, back to back. In the storage pile, a pair of

jib, as shown in this view, by means of which the pair of sills are lifted on the rollers, and run into the machine, where the sills are clamped by the traveller head on the far side. The sills pass through the punch, and have all the flange holes punch

wall where the draft gear slot is punched. This completes the operation on the sills. With the present output of the shop, the web punching spacer works as described for only one half the time, the balance of the time being used on cover plates and similar

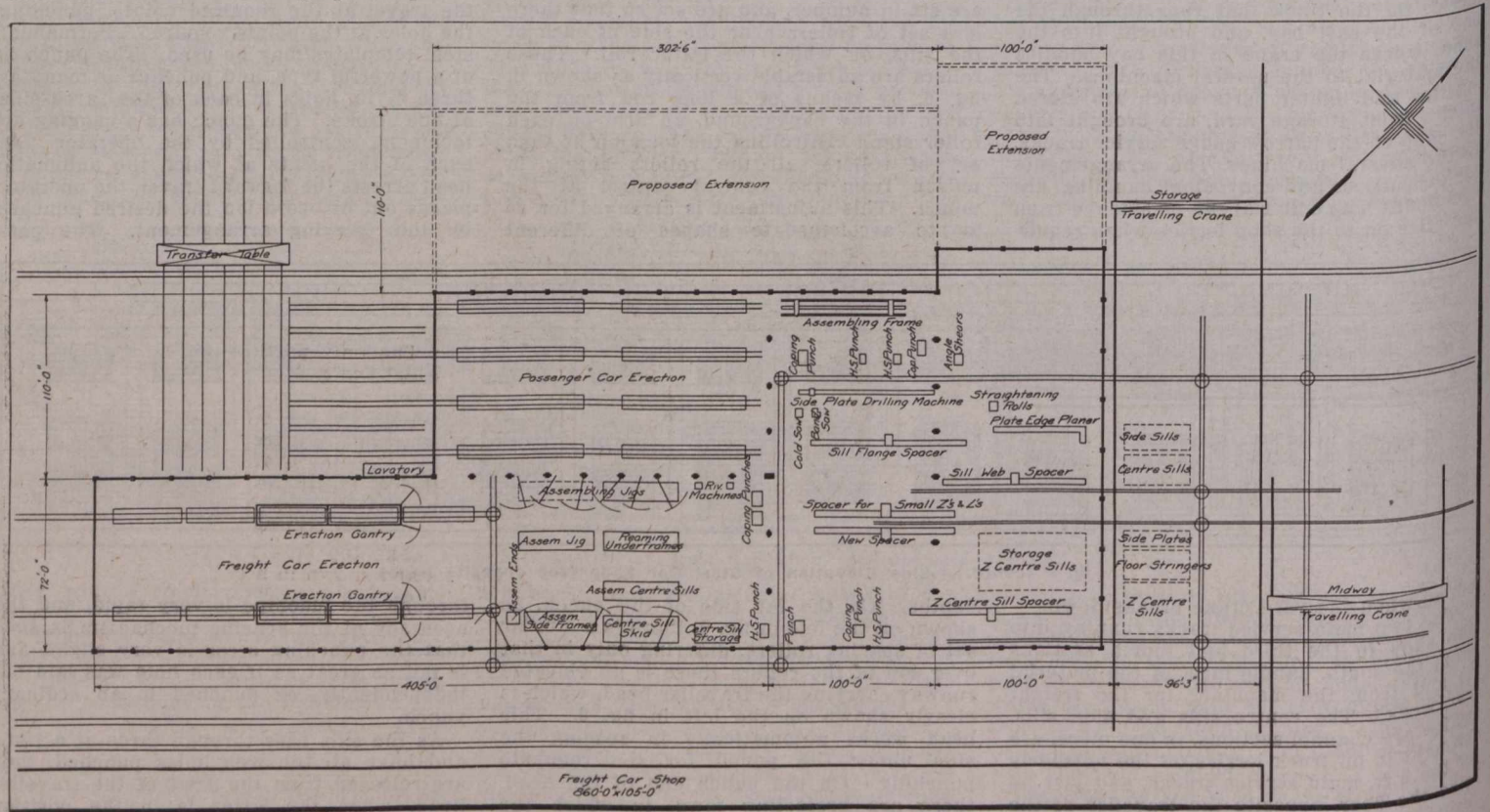


Fig. 5.—Plan of Steel Car Shop, showing Machinery Location.

the sills are bolted together, back to back, and lifted from the pile by the same jibs, and deposited by them in the U forms between the storage pile and the entry rollers of the second traveller, as shown by the

ed. When through to the far end, the sills are disengaged from the head clamps, and pushed back to the starting point, where they are again lifted by the stationary jib crane, and turned over in a chain loop, and

flat work. The new punch shown, has been installed for the flanges, and the spacing table so set up that without disarranging the handling of the material, it will be possible to double the output of these machines.

With this coping punch having a spacing table, with the addition of another, an extra coping punch, the machine capacity might be readily increased to 25 cars a day.

The Z bars for the top rails, and the cross bracing for the car frames, enter the shop on the southernmost of the two main service tracks, to the point shown in fig. 7, passing through the punch on the right in that view, two at a time. On the first pass the holes

had by the use of clamps instead of bolts. All the parts that enter into this assembling operation are stored conveniently under the assembling frames, as shown.

The rivetting stand is over against the row of columns, in the left background of fig. 9, and resembles in most particulars the passenger car assembling frame shown in fig. 16. The object of this frame is to hold the several members in perfect alignment,

peditionously. The bolsters and cross bearers have surfaces which are not parallel with the floor. By the use of this suspending arrangement, the bull can be tilted so as to be at right angles to the member being rivetted in all positions. All the main rivetting is completed here with the bulls, and some of the minor rivetting completed concurrently with small air hammers. The partially completed underframe is then

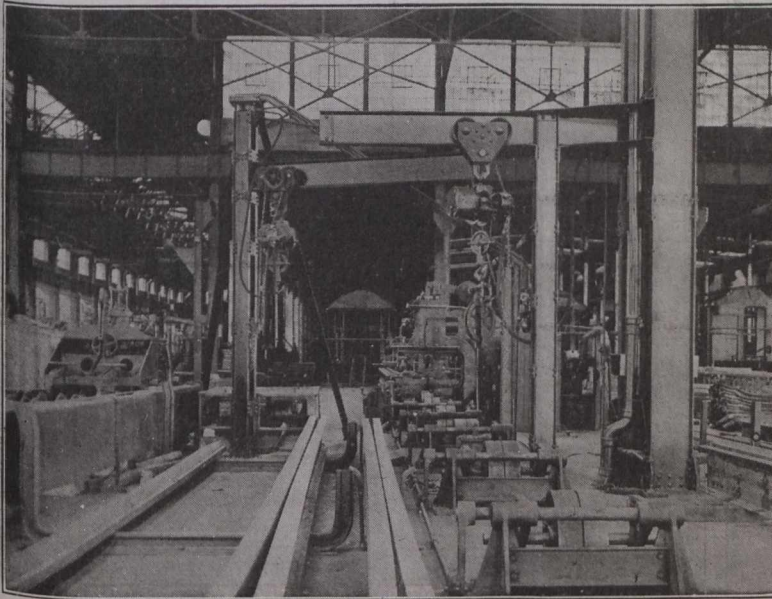


Fig. 6.—Freight Car Sills passing between Web and Flange Punches.

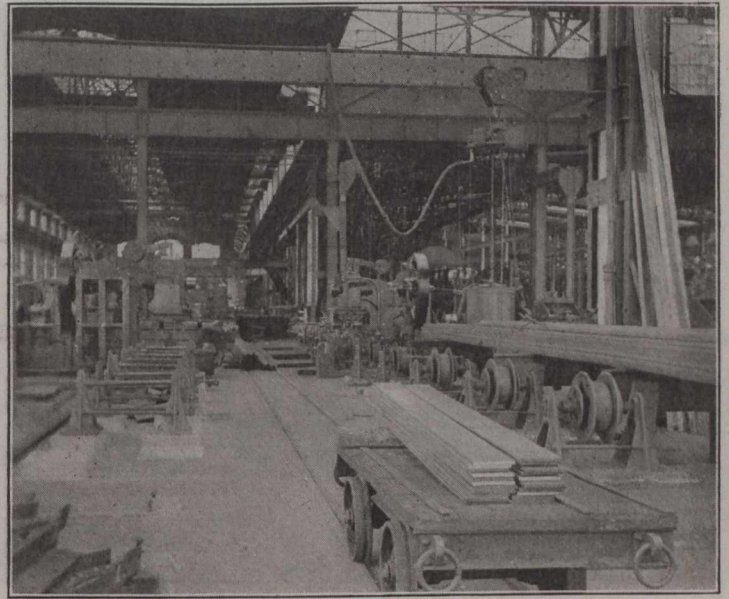


Fig. 7.—Punch for Handling Steel Car Z Bar Sections.

in the Z bar flanges are punched, and on a second pass, the holes in the web are punched, all in the same manner as in the passing through of the sills. The completed Z bar members are piled on the floor at the far end of the machine, as shown in the background in fig. 7. This completes the machining of the different members of the car.

The next step is the assembling of the centre sills, just inside the freight car erecting shop, at the point shown in fig. 8. The final steps in the punching of the centre sills are made in the punch shown in the immediate foreground of fig. 8, which is just inside the erecting shop. Through this punch, the centre sills are run on the trestles shown in the background. The first step in the assembling operation is to attach with bolts the draft gear castings. The individual sill members are then moved across to the right, where the separators and centre pin castings are applied, the two sills being fastened together by these members, the whole structure being temporarily bolted together. Along the row of columns adjoining, which separate the two erecting shops, there is a craneway, with traveller overhead, for handling the completed structure. This craneway is shown in the background on the columns in fig. 9.

The next operation is that of assembling the underframes in the foreground in fig. 9. Here, there are four wooden stands, on which are placed the bottom members of the body bolsters and cross bearers, as shown. There are two sets of stands for this operation, the one adjoining being used for the same purpose. The location of the four stands is exactly as in the completed car. On the located under members, the assembled centre sill is placed, being carried across from the assembling position. It is located directly in the centre, and around it are assembled the side members of the bolsters and cross bearers, and the top plates of these members placed on top. The whole structure is clamped together, ready for the rivetting, an important gain being

so that the rivetting may be accomplished. This rivetting frame consists of several cast iron pedestals, one under each centre pin, and one under each end of the bolsters and cross bearers, the end of the latter being recessed so as to hold the several ends in perfect alignment. The result of this arrangement is that the rivetting may be proceeded with without the necessity of

moved down the shop another length, and the balance of the rivetting completed. The underframe is then ready for final assembling into the car structure.

To rivet the underframe on the jig by the riveters without turning it over, it was necessary to have a special type of rivetter, designed with a thin nose, to permit the top row of rivets to be driven and to allow sufficient clearance for the bottom row, particularly on the bolsters, to be driven without moving the underframe. A heavy block of cast steel is used for the top die, with a small high speed steel insert. It is not possible to use a high speed steel snap for ordinary work, as it is extremely liable to break, but when it is inserted in the cast steel block, it is well supported and does not fracture. The amount of steel for renewals is so small that the cost is inconsiderable.

The only portion of the steel car output which is fixed is that of rivetting the underframe with the rivetter, which limits the capacity to 14 to 15 cars per day. It is the intention to increase this stage of the work by the installation of another rivetting frame, as all the other positions can easily handle 25 cars a day, by the addition of more help where required.

The top side rails are assembled in the stand shown in fig. 11, which is located along the south wall. The connecting members are all bolted to it, when it is ready for passing along to the side frame assembling operation, which is shown in fig. 12. The side and end frame assembling stands are similar in construction, and are both shown in this illustration. They consist of a bar iron frame, on the top of which, there are sheet iron forms into which the various members comprising the side frame and end frame are thrown, the jig automatically locating them in their proper relation to each other, in the manner shown in the illustration. Here the parts are first clamped together, and then rivetted by two bulls suspended from jib cranes on the side wall columns. The completed side and end frames are then picked up by the overhead crane and passed

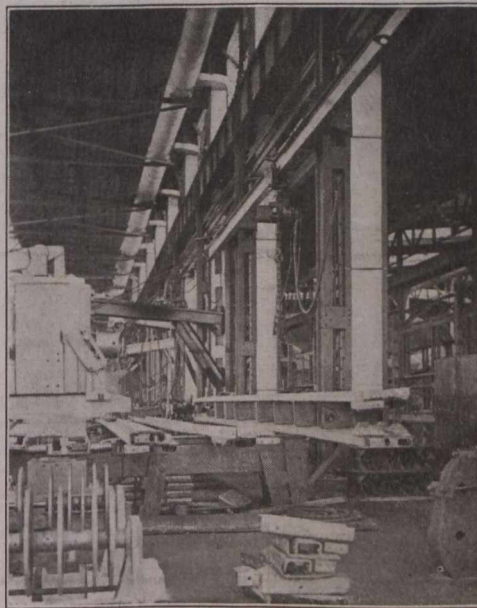


Fig. 8.—Assembling Centre Sills for Steel Box Cars.

constant checking up of the members for squareness. Along the row of columns as shown in fig. 9, there are three jib cranes, one to each of the columns at the end of the rivetting frame, and one midway. These handle the rivetting bulls, which are suspended in the manner shown in fig. 10. This arrangement is one of the special features by which the work can be handled ex-

along down the shop to the position shown on the left in fig. 13, which also shows the final assembling frames. At this point, the completed trucks from the truck shop are brought into the shop through the side door, and turned into the assembling track, just back of the point from which this view was taken. The completed underframe is brought down the shop from the underframe assembling stand, and placed on the await-

the frame, before entering the latter, has the end frame at that end applied by the end jib cranes, and bolted into place. When run into the assembling frame, the side frames of the car are lifted into place by the overhead traveller, and bolted into position. The assembling frame is the length of two cars, and on the bolting together of the car frame, the car is moved down into the second section of the assembling frame,

The C. P. R. some time ago adopted the policy of replacing all wooden centre sills on wooden box cars, when the sills required replacement, with a special type of Z bar centre sill, which could be applied to the wooden car without a very great change in the underframe design. With the exception of the draft gear fittings, this centre sill consists of two Z bars, the length of the car. Fig. 14 shows the arrangement in the south-

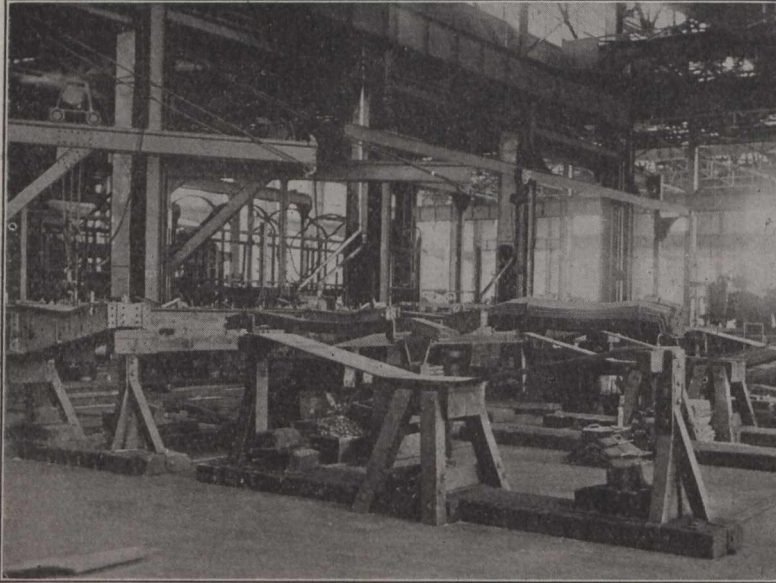


Fig. 9.—Assembling Underframe of Steel Freight Car.

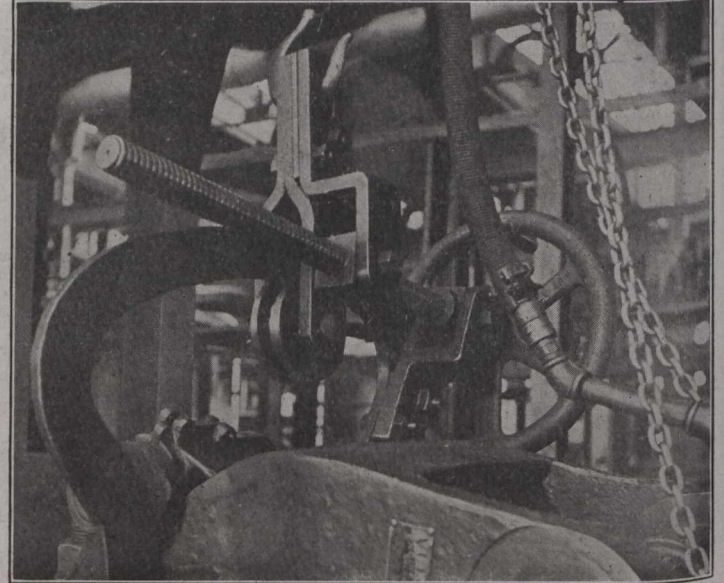


Fig. 10.—Suspending Mechanism for Bull Rivetters.

ing trucks, the understructure of the car then being ready to pass into the final assembling frame, shown in this illustration. There are two of these frames, so that from the truck and underframe assembling point, the final assembling may be carried on along both tracks.

This assembling frame consists of a steel gantry, straddling the erecting track, carry-

and the carlines applied and the rivetting of the assembled members proceeded with. Practically all the rivetting is completed as the car leaves the frame, the balance being completed at the end of the shop. After the assembling of the draft gear, brake rigging, etc., in this final position, the car is ready to be hauled out by a tractor at the end of the shop, this tractor also being used for

east corner of the shop for handling this particular piece of work, and while included in the steel car shop section must be considered purely as a repair job.

The Z bars for the centre sills are stored in the pile adjoining the 2 ft. service track, which enters the front of the building along the south side. These sills are loaded on shop lorries on this track by the overhead

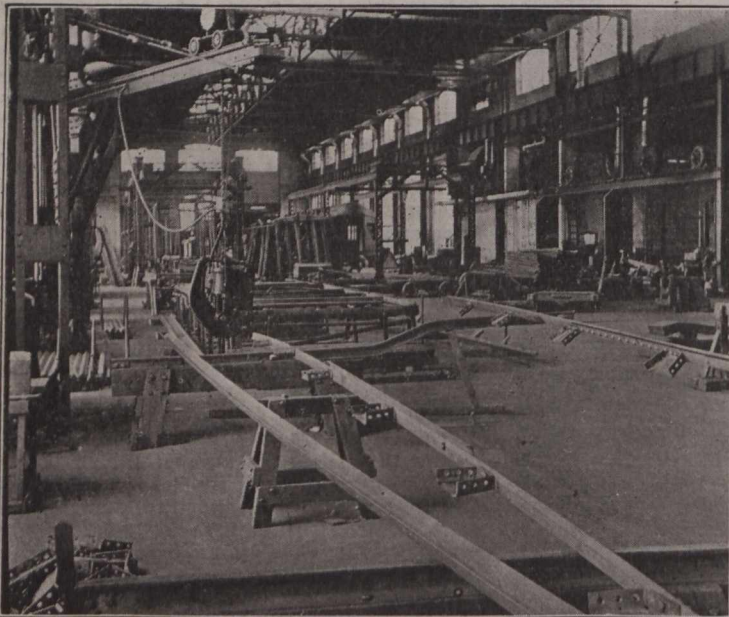


Fig. 11.—Assembling Parts for Steel Freight Car Side Rails.

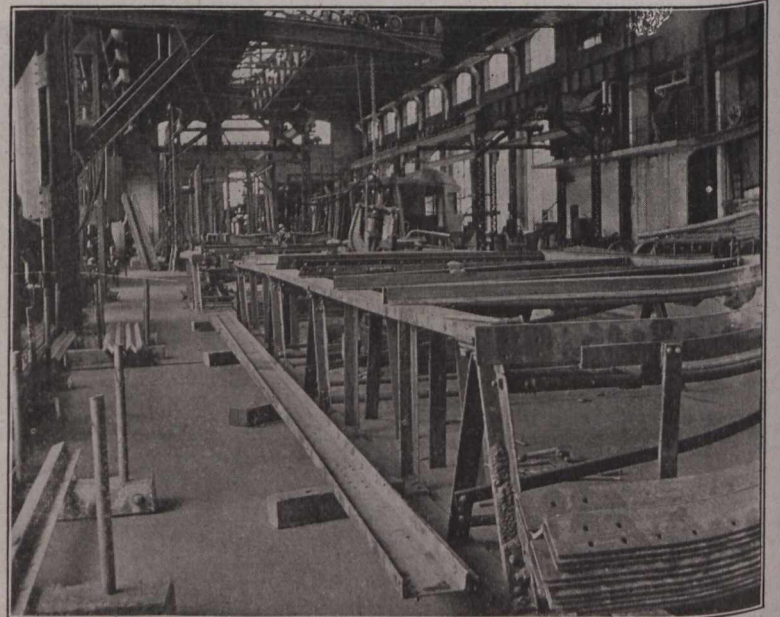


Fig. 12.—Assembling Steel Freight Car Side and End Frames.

ing on the frame columns at the near end, jib cranes. On the top of the frame, there is a travelling crane, of novel design, the upper part having drops, to the lower end of which there is a cross track attached, consisting of an I beam member, the ends of which project beyond the sides of the assembling frame, so that it can pick up the side frames and swing them into position on the car. The car as it stands at the end of

moving the string of cars in their several stages of completion, from point to point in their process of erection. The cars, on removal from the steel car shop, are taken to the wood freight car shop for sheathing in the conventional manner, which has previously been outlined in these columns.

The southeast corner of the steel car shop is reserved for the handling of Z bar centre sill work, of which there is a great deal.

yard crane. The track leads into the shop at the point shown in the foreground in fig. 14, the view being taken from the door at that corner of the building. The lorries are run along this track to the far side of the punch shown in the view for passage through the punch coming this way. Overhead of this position on the far side of the punch, there is an overhead I beam traveller, at right angle to the service track, and sus-

pended from the underside of the overhead heater platform. On top of the lorries, there are wooden blocks, with rail sections across the top. To the right of the track, there are three trestles, with rail tops, at the same level as those on the lorries. On the track end of each trestle, there is a small jib, the surface of which is level with that of the trestles and lorries, so that for unloading the latter, it is only necessary to swing the jibs under the Z bars on the lorries, and slide the Z bars across on to the

the bars on these jibs causes the bars to slide down into the pile in the foreground.

The stationary jib crane on the left in fig. 12 raises the bars, several at a time, to the lorry, which carries them along to the other end of the machine for the second pass through, for the web holes, in the same manner as before, the process from the lorry being similar. Back of the traveller table, to the right in fig. 14, there are three trestles, extending clear back to the southerly of the two main service tracks. On

freight cars has not been developed.

The arrangement of the machines is very similar to that in the freight car section, except that it is not possible to get enough work of the same class with the relatively small output to use spacing tables to advantage. A coping punch is, therefore, fitted up with rollers for the convenient handling of long material, and the work is punched to gauge much in the same way as on the smaller punches, although as yet, a great deal of the work is marked off.

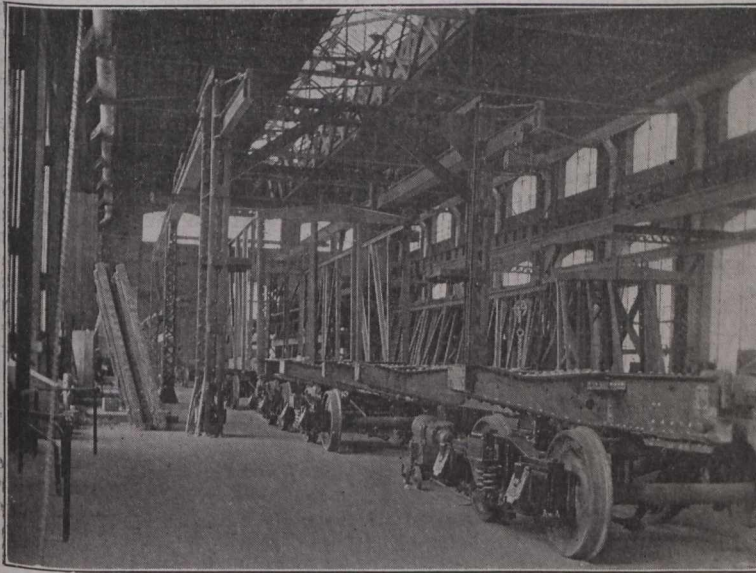


Fig. 13.—Erecting Side and End Frames on Steel Freight Cars.

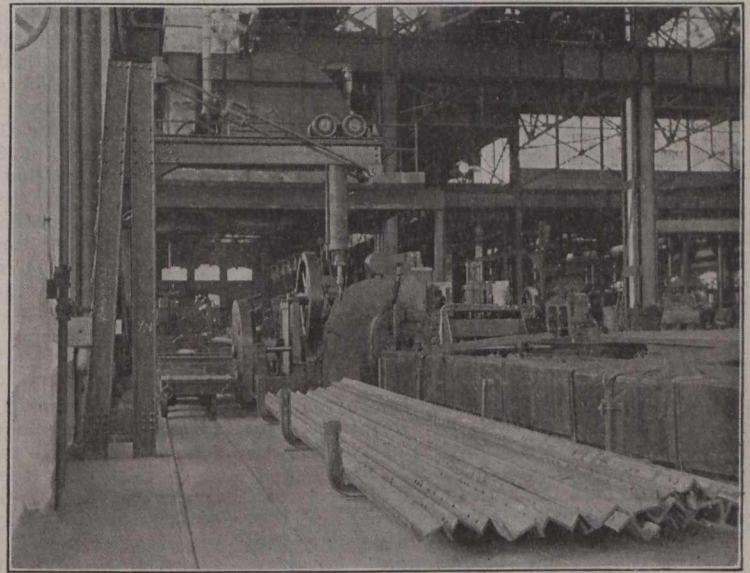


Fig. 14.—Punching Z Bars for Z Bar Centre Sills.

trestles. The usual practice, however, is to lift the load from the lorry by the overhead traveller, depositing the load on the trestle rails.

Two 15 in. tracks are laid on the floor, one just inside each of the outer trestles, and parallel with the trestle. Each track carries a small carriage on which is a small air jack, by means of which the Z bars are lifted in pairs, and carried across to the

near end of these trestles, there are small swinging jibs, the top of which are flush with the trestle top. On the raising of the Z bars on the traveller table by the vertical air cylinders, these jibs are swung underneath, and the bars pushed along on the trestle. On the other end of the trestle, the centre sills are completely assembled, when they are taken out of the shop either by the travelling crane to the

Instead of punching the side plates, they are drilled, for which purpose, a special type of machine has been designed and built in the company's shops. It is similar in construction to a locomotive frame slotting machine, the plates being laid out on a long table, to which they are bolted in piles, over top of which there is a travelling head with several electric drills, travelling on ways outside the machine table.

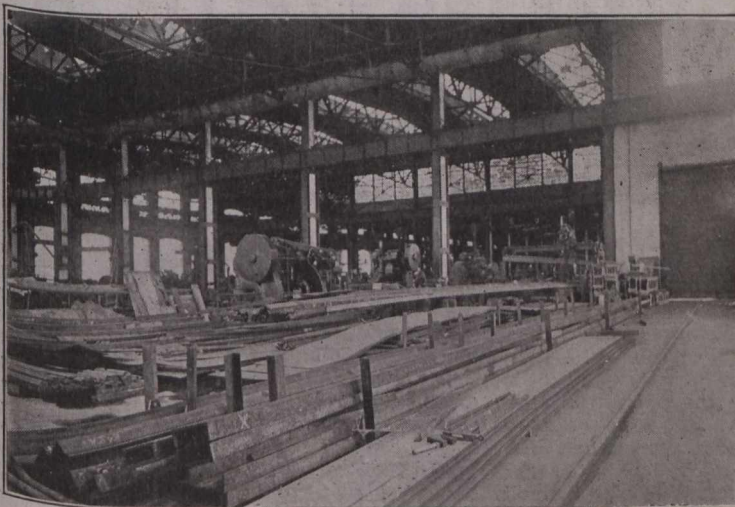


Fig. 15.—General View of Passenger Car Fabricating Section.

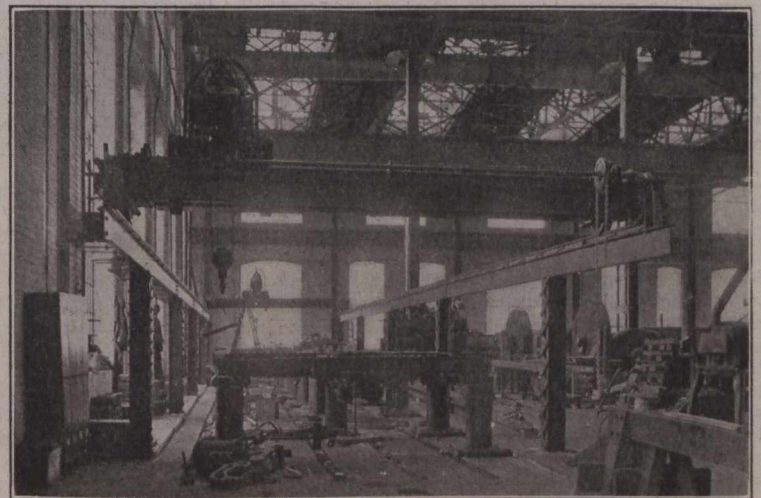


Fig. 16.—Assembling Steel Passenger Car Underframes.

supporting rollers of the punch traveller. The bars pass through in the manner already outlined earlier in the article, having the holes in both flanges punched in this pass, the traveller head being on this side of the punch as shown, and travelling in this direction. Under each end of the traveller table, there is an air cylinder, which raises the Z bars on completion of the first pass, so that the two sloping jibs shown fastened to the side of the traveller table, may be swung underneath. Lowering

far end of the shop, or else through the southerly of the main service tracks.

The passenger car fabricating section occupies the north end of the two 100 ft. bays, and is shown in fig. 15. As detailed a description of the process through which the parts pass in their course through the shop, cannot be given, as the manufacture of steel passenger cars is such a new departure for the C. P. R. that the process is constantly being improved upon, and as complete a system as that in use with the

Templates with hardened steel bushes are used for the drilling. Drilling the plates in piles makes the expense compare favorably with punching, while the holes are absolutely accurate, and the plates are not buckled. The long side members of the car are similarly drilled.

The several underframes as punched in the forward part of the shop, are brought to the assembling frame, shown in fig. 16, for final assembling. This assembling frame is similar in most particulars to the

freight car assembling frame described earlier. In the floor, there are six Z bar sections embedded, to which are bolted in the desired location, depending on the kind of car under construction, cast iron columns, a row under the centre sill and a row under each side, all of the pedestals being located at the ends of the body bolsters and the cross bearers. The top of the pedestals carry bolted on castings, of a form to fit the part of the underframe that will be directly above. The parts are all perfectly aligned in this manner. Outside the outer row of cast iron pedestals, there is on each side, a row of steel columns, each row carrying a crane girder. Spanning the space over the underframe erecting stands, there are two electrically operated travelling cranes, which are used for handling the members during assembling, and also for handling the rivetting bulls.

From this assembling stand, the underframe is carried down into the passenger car erecting section, on one of the four tracks. The four cranes in these four bays, project into the inner 100 ft. bay, and make

## The Canadian Pacific Railway's New Station at Vancouver.

The scheme for extensive improvements to the C. P. R. Vancouver terminals has been under way for upwards of two years, and will soon be nearing completion, as it is expected that the station will be ready for occupancy sometime this summer, and the steamship station facilities, adjoining the main station, somewhat earlier. Descriptions of the general scheme of the work appeared in Canadian Railway and Marine World for July and Aug., 1912, and April, 1913, the second article containing a plan of the whole terminal scheme as it will appear when completed.

The former passenger terminal, which was located at the foot of Granville St., near the shore line of Burrard Inlet, was built about 16 years ago, and, save for minor alterations, was unchanged from the original plan. By reason of its favorable location and good transportation facilities, Vancouver has grown to a city of about 125,000 in slightly under 30 years. The consequence was that the station facilities were considerably outgrown. In view also of the fact that the growth of the city's population would doubtless continue uninterrupted for many years, on account of it being based on advantages that will assure a steady advance, it was planned to build a station that will meet the reasonable requirements for some time to come.

The problem presented was materially different from that usually encountered, as while the traffic is quite heavy, there is a marked absence of suburban traffic. The aggregate number of trains is not large, and they are largely transcontinentals, and are long, frequently running in two and more sections, and carry a number of classes of traffic.

The general scheme embraces a passenger station and office building, situated on a stretch of available land to the east of the former station site. The former station level was 30 ft. above the tracks, and as it was desired to have the new station at the same level, the tracks have been raised 5 ft., making the new station level 25 ft. above them. There will be four passenger tracks in the present scheme, with provision for more when required, and they will be separated by wide platforms, between the station and the present freight yard. The four tracks will be covered by two sheds, 1,000-ft. long.

In order to avoid an inconvenient grade crossing and delays to traffic between the

city and steamship wharf, because of the 1,000 ft. platforms extending beyond Granville St., a bridge on the line of that street is to pass over the passenger and freight tracks to the steamship pier, and connect directly with the passenger accommodations on the pier. An incline will also lead from the west side of the bridge to the wharf, giving access to the lower deck of the pier

it convenient for the handling of the passenger car parts from the fabricating section to the erecting floor. Each of the four tracks will accommodate two passenger cars. The process of erection is very similar to that used in wooden passenger car work, the principal difference being that there is no fitting of the parts, all the members being machined to exact fit. Supported from the dividing columns, there are adjustable working platforms, from which the erecting work is conducted. On completion of the erection, the car is taken out through the back, and thence by way of the transfer table, to the old passenger car shop for final finishing.

We are indebted to R. W. Burnett, General Master Car Builder, for the permission to secure the data for this article, and to E. J. Harvey, Assistant Shop Engineer, for the detailed information obtained. We are also indebted to L. C. Ord, Assistant Master Car Builder, Eastern Lines, who recently read a paper describing the shop, before the Canadian Society of Civil Engineers, of which free use has been made.

an entrance hall, containing two elevators and stairway, will lead up to the company offices upstairs. This hall may also be entered directly from the front porchway by a side door, which will be convenient in relieving the waiting rooms from those who are not travelling. A 15 ft. wide corridor will lead from the back end of the west lobby, through to Granville St., and near the street entrance, there will be three swing doors leading into the lunch room, which will be 35 by 60 ft. This room will contain a central lunch counter, with tables ranged around the walls. The restaurant service room, 30 by 20 ft., will adjoin to the east, and from this room, two elevators and a stairway will connect with the restaurant stores in the basement.

On the east side of the general waiting room, there will also be a lobby of the same size as that on the west, with a similarly situated corridor, leading from it into the plaza at that end. At the south end of this lobby, there will be a partitioned off section containing telephone and telegraph accommodation and cab call stand. The women's quarters will occupy the southeast corner of the building, and consist of a waiting room, 46 by 35 ft., entered from the east lobby, this waiting room connecting in turn through a lobby with a women's lavatory and retiring room, which will occupy the balance of that corner of the building.

A north lobby will lead out from the centre of the main waiting room, through a door on the east side of which the smoking room, 33 by 47 ft., will be entered. There will also be an entrance to this room through a vestibule from the east end of the general

waiting room. The east side of the smoking room will connect through a vestibule with the men's lavatory. In one corner of the smoking room, will be the information booth and in another, the parcel room. The baggage receiving and delivering quarters will all be located in the northeast corner of the building, entered from the east corridor. In the baggage room will be two lifts for moving baggage in truck loads between the two levels, the main baggage room being below at the track level. An entrance hall from the east corridor, will contain two passenger elevators and stairway for communicating with the lower baggage room. Back of this entrance hall, in a corner of the baggage room, will be the express office, and in a back corner, the U. S. Customs office. The baggage will be brought into the building through the plaza at the east end and deposited on the baggage platform at that end.

On the west side of the north lobby will be the ticket booths, in a corner of the steamship accommodation. This latter will contain a lobby, and first, second and third class ticket booths. West of this, and con-



Cordova St. Facade of C.P.R.'s New Station at Vancouver.

and freight sheds, and water front. This Granville St. viaduct will lead directly through the site of the former station, and, in consequence, will not be completed until some little time after the new station, due to the delay in tearing down the old structure.

The main entrance to the passenger station will be from Cordova St., with the general waiting room central in the station, and at the street level. The station is a combination stone and brick structure, on a steel frame, divided into two principal levels, the main floor for waiting rooms and ticket offices, and the lower level floor for baggage, mail and express rooms. An upper floor will contain the company's divisional offices.

The building is of a triangular shape, with a frontage of 380 ft., a depth of 60 ft. at the Granville St. end, and about 130 ft. at the other end. The central frontage will consist of 10 columns, forming a porchway, in the centre of which, there will be three double swing doors, leading directly into the main waiting room, which will be 145 by 55 ft., with a lobby on either end, 45 by 30 ft. At the lower end of the west lobby,



necting with the west corridor, will be a barber shop, boot blacking stand, and the janitor's room.

Through the north lobby, connection will be made by way of a train vestibule, with a bridge leading across the tracks, with stairs on either side leading down to the train platforms. A bridge parallel with the back of the building, will connect with the Granville St. viaduct, for communication with the steamship station across on the other side of the viaduct.

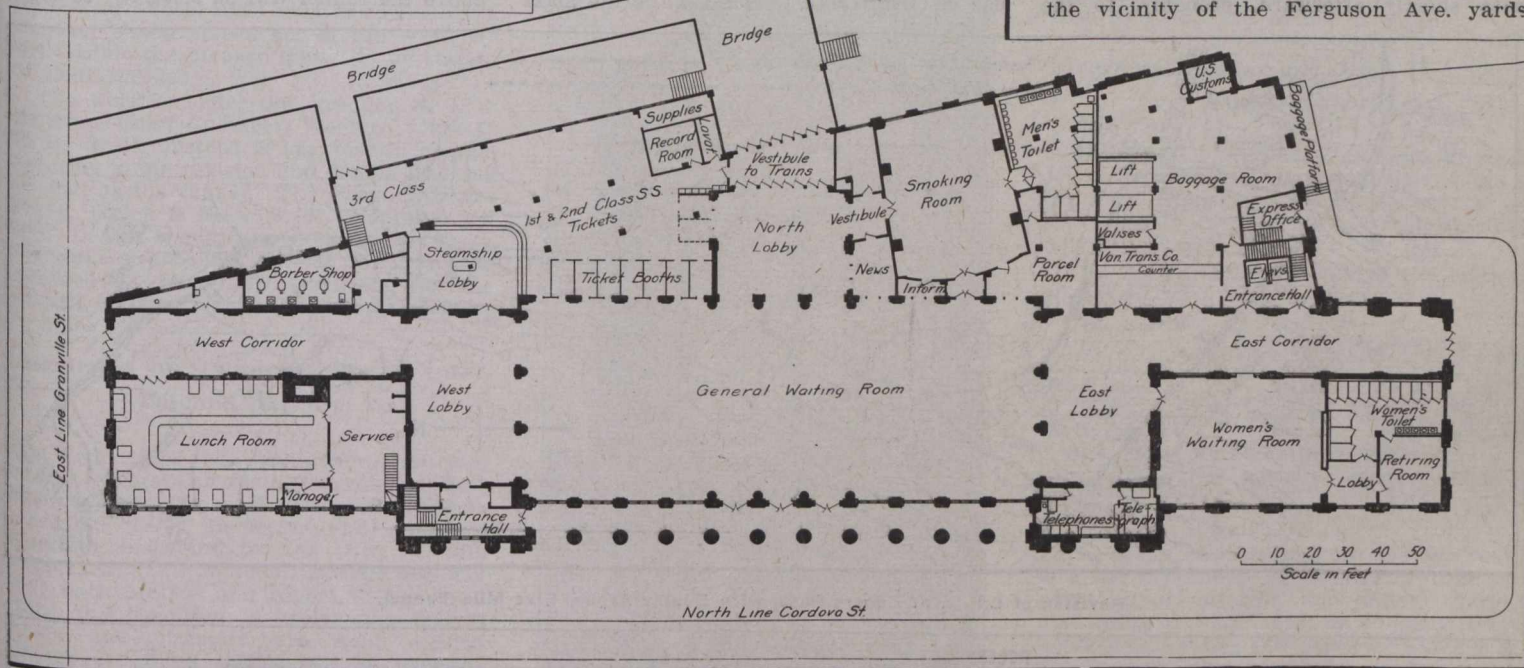
The upper floor containing the company's

**Grand Trunk Railway Betterments, Construction, Etc.**

**Pembroke Station.**—In pursuance of the company's policy of erecting new stations where such are necessary, a new station

liminary studies made some time ago no plans have been made and no preliminary work is in progress. Under the terms of the agreement with the town, the company is to expend not less than \$150,000 on the buildings and to remove its terminals from Brockville to Prescott. The agreement was signed June 29, 1912, and was confirmed by the Ontario Legislature May 6, 1913. It provided for the work being done within two years after final confirmation.

**Hamilton Improvements.**—The final steps for the taking over of certain properties in the vicinity of the Ferguson Ave. yards,



Street Level Floor Plan of Canadian Pacific Railway's New Station at Vancouver.

divisional offices, will be divided on the unit system, each unit having complete heating and lighting facilities, with partitions that may be readily installed or removed as changes in the arrangement of the offices become necessary.

building and freight shed are being completed at Pembroke, Ont., at a cost of about \$60,000. It is expected to be opened early in July.

**Terminals at Prescott, Ont.**—A recent press dispatch from Prescott, Ont., stated

Hamilton, are being taken by the company. The amount involved in the purchase is about \$110,000.

**Signalling at Paris Jct.**—This installation, which has been completed and put in operation, is purely a mechanical one, having annunciators in advance of the distant signals, for the purpose of annunciating the approach of trains, which is given by a train annunciator. All of the materials are according to R. S. A. standards.

**The Galt-Elmira Branch.**—The Mayor of Berlin, Ont., received a letter from Vice President Kelley, recently stating that after considering the estimates for the electrification of the Galt-Elmira branch, which amounted to \$4,000 a mile, the management were of opinion that the traffic on the branch did not warrant the expenditure.

**London Improvements.**—C. G. Bowker, General Superintendent, is stated to have informed officers of the London, Ont., City Council, recently, that there was absolutely nothing new with regard to the projected track elevation. The city missed its opportunity when the company was elevating its tracks west of the city. Since that time, while the matter had not been lost sight of, nothing had been done. The extensive works in Toronto, and those under consideration at Montreal, would be completed before the question of track elevation in London was again considered. (April, pg. 174.)



Canadian Pacific Ry. Station, Vancouver, Elevation on Track Side, showing Old Station on Right.

Barrott, Blackader and Webster, Montreal, are the architects for the work, and Westinghouse, Church, Kerr and Co., New York and Montreal, are the engineers for the complete design, construction and equipment of the terminal, working in conjunction with C. P. R. officials.

that preliminary operations had been started on the construction of the divisional terminals at that place; that sidings were being built to the site of the locomotive house and shops, so that building materials might be taken in ready for starting operations. We are officially advised that beyond the pre-

**Atlantic, Quebec and Western Ry.**—400,000 acres of land granted by the Quebec Legislature in aid of the building of the line from New Carlisle to Gaspé, 100 miles, is reported to have been sold to the Chicoutimi Pulp Co.

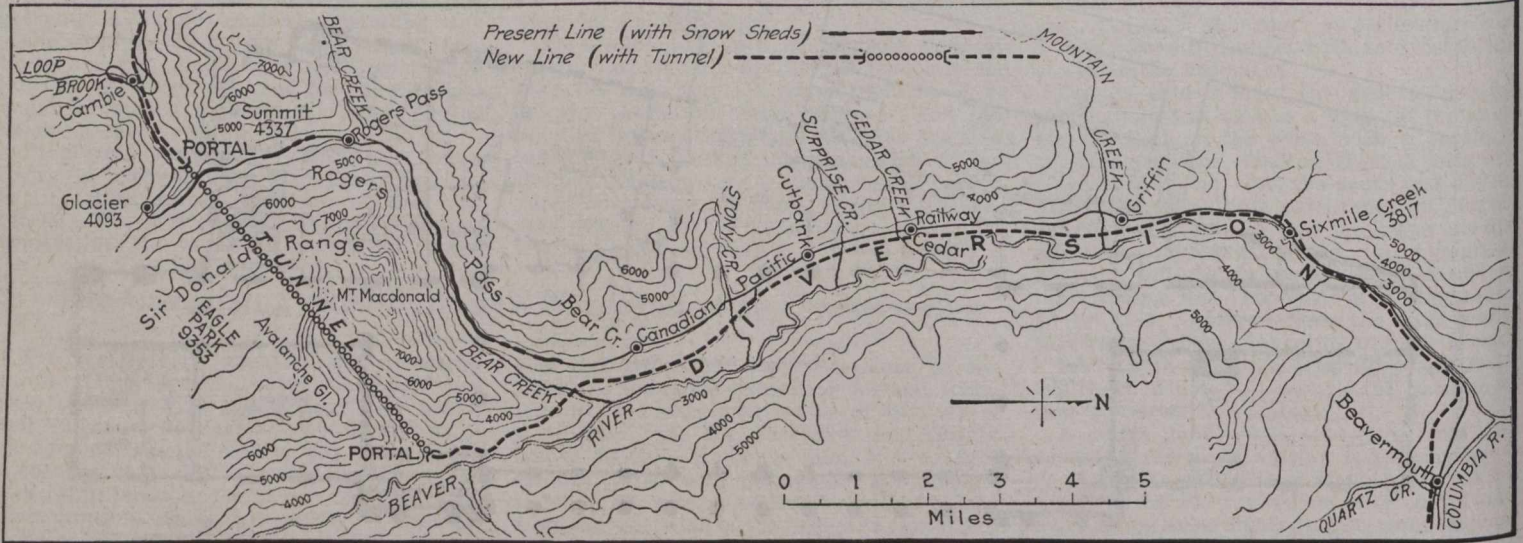
### The Rogers Pass Tunnel, Canadian Pacific Railway.

The C. P. R. has undertaken a very important task to improve its main line where it crosses the summit of the Selkirk range in the famous Rogers Pass in British Columbia. An entirely new line is being constructed for 18 miles and its most notable feature is a 5 mile tunnel, under the summit of the pass, which will be, when completed, the longest railway tunnel in North America. That distinction, however, will pass shortly afterward, probably, to the

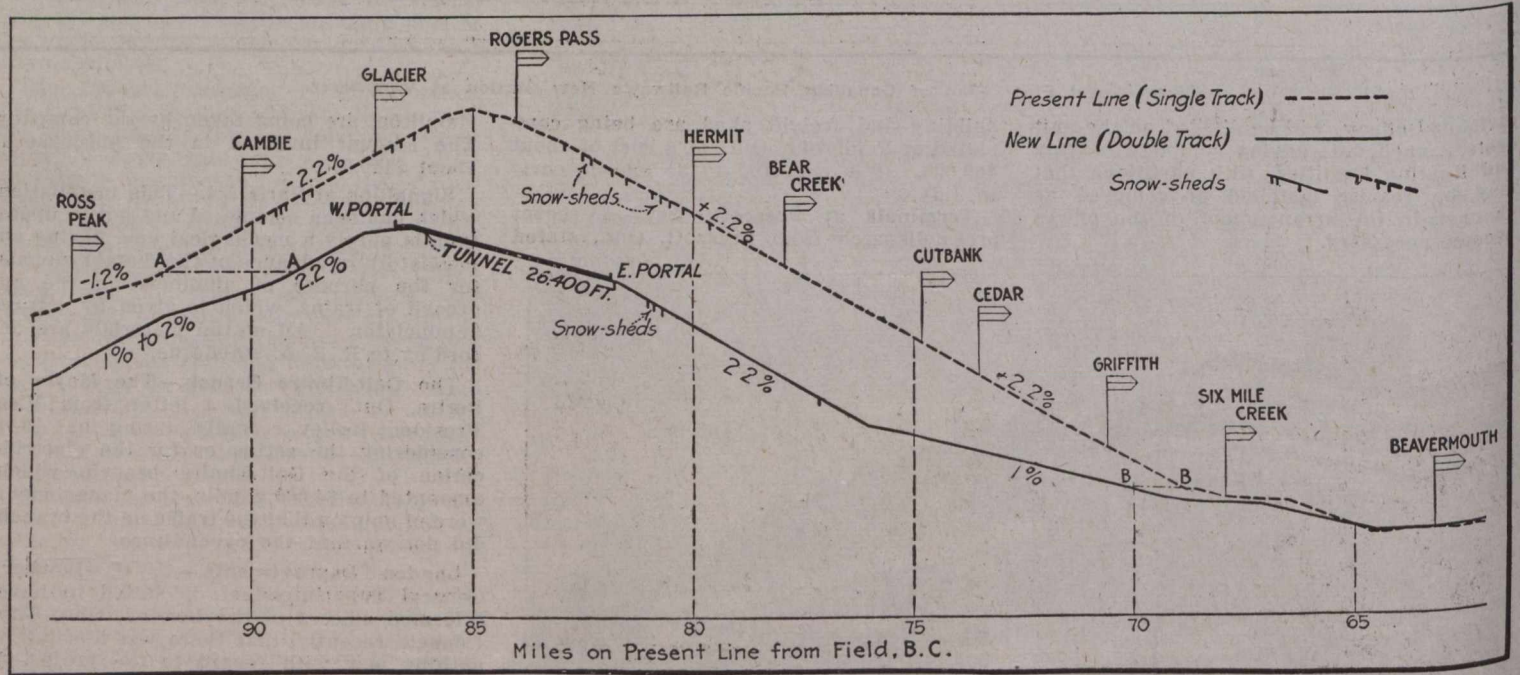
stretch of line subject to frequent troubles from snow and requiring long stretches of snowsheds. The present line has nearly five miles of snowsheds in 13 miles, while the new line will have only about 4,800 ft. The maximum grades on the new line are 2.2%, but their total length is less than one third of those on the old line. The total curvature is also reduced considerably and two loops are eliminated. It is proposed to use electric traction. Thus while the maxi-

Grade through tunnel (tangent) .....	0.98%
Summit elevation ...	4,330 ft. 3,791 ft.
Sharpest curves .....	10° 10°
Max. train load .....	870 tons 870 tons
Track .....	Single Double

The tunnel will be 26,400 ft. long (exactly five miles), and all on tangent. It will have no intermediate shafts. For about 1,100 ft. at each end the material encountered will be clay and boulders. The balance is expected to be in solid rock, mica schist and quartzite, so far as can be judged from the investigations made. The maximum depth of rock above the tunnel will be 5,690 ft. In cross-



Revision of C.P.R. at Rogers Pass, with Double Track, Five Mile Tunnel.



Profiles of Old and New C.P.R. Lines at Rogers Pass.

At A-A and B-B the double track line will be on the same location as the present single track; the differences in distances indicate the saving by the new line.

Moffat tunnel under the continental divide, 50 miles west of Denver, Col., which is to be built jointly by the Denver & Salt Lake Ry. and the City of Denver, and will be nearly six miles long if built according to present plans.

The accompanying map and profile show the old and the new C. P. R. lines at Rogers Pass. The old line has long grades of 2.2% and reaches a summit elevation of 4,330.67 ft. in the pass, while the summit on the new line is 540 ft. lower. The new line will effect a saving of five miles in distance, and has the special advantage of eliminating a

num train load will remain the same, the operating conditions will be very much more favorable in consequence of the lower elevation, the shortening of the heavy grades, and the reduction of the expense and delay due to snow. A comparison of the two lines is made in the following table:

	Old line open summit.	New line summit tunnel.
Length, between same points .....	23 miles	18 miles
Max. grades (compensated) .....	2.2%	2.2%
Length of max. grades .....	22.15 miles	6.61 miles

section, the tunnel will be 24 ft. high and 29 ft. wide, with concrete lining through the softer materials.

The method of construction is unusual. A pioneer heading or tunnel is being driven 45 ft. from the centre line of the main tunnel and with its grade 10 ft. above the subgrade of the latter. From this pioneer tunnel crosscuts will be made to the line of the main tunnel at such distances as may prove desirable, probably 750 to 1,000 ft. apart. Drifts from these crosscuts will be driven along the centre line of the main tunnel, from which drilling and shooting can be

carried on, while mucking will be done with air operated shovels in the enlarged section of the main tunnel. The muck will be handled by 16 yd. side dump cars and compressed air locomotives. The drills and ventilating fans will also be operated by compressed air.

By the middle of February the pioneer tunnel at the east end had been advanced 900 ft., and the right hand wall plate heading at the east portal had been started and carried 30 ft. The headings will be continued, timbering carried on and bench excavated by the air shovel until rock is encountered. Another steam shovel cut at the west end will enable the pioneer tunnel to be started at that end also.

The work is under the direction of J. G. Sullivan, Chief Engineer, Western Lines C. P. R. F. F. Busted is engineer in charge, covering grade revision and double tracking as well as the tunnel. The contractors are as follows: Welch & Stewart, of Winnipeg, and A. C. Dennis is engineer in charge for them. Westinghouse Church Kerr & Co. have been retained as consulting engineers for the electric traction plans.—Engineering News.

### Instruction of Station Agents on Inter-colonial Railway.

In connection with the general reorganization of the Canadian Government Railways system, James W. Barnett has been appointed Tariff Inspector and Assistant Weighing Inspector, for the I. R. C., with headquarters at Moncton, N. B. He will visit each station and report to the head office the condition in which the freight tariffs and circulars are kept. Tariff binders for filing tariffs will be supplied for all booking stations. All tariffs will be punched ready for filing in these binders before being distributed, and they are to be filed in them in the order shown in tariff index 9 and subsequent issues. He will carry with him a list of the tariffs issued to the different stations, and on his first visit will assist those agents who do not understand the system of filing, and after that, agents will be expected to file all tariffs in proper order when received, and if, on subsequent visits, this duty has been neglected, the Inspector will report the matter for such action as may be considered advisable. If additional copies of any tariffs are required by any of the agents for billing or checking purposes, application should be made to the Inspector for them, and they will be supplied, if in stock, but in any case, the book files must be kept complete and in order. The Inspector will be prepared to discuss with the agents any questions concerning the application of any tariffs in their possession about which they may be in doubt, thus affording them an opportunity of familiarizing themselves with the tariffs, and helping to minimize incorrect billing and the misrouting of traffic. Circulars are also to be filed in the tariff binders in the order shown in index of circulars 2. As Assistant Weighing Inspector, he will enquire particularly into the condition of the small scales at stations, and of the weighing of less than carload shipments.

**Journal Brass.**—Recent tests are said to have demonstrated that the M.C.B. journal brass is not the most satisfactory form for electric railway service, as the journal has a tendency to shift from under the brass under heavy brake application, and that great reductions in hot box troubles were effected by the use of a special brass of practically full semi circular cross section

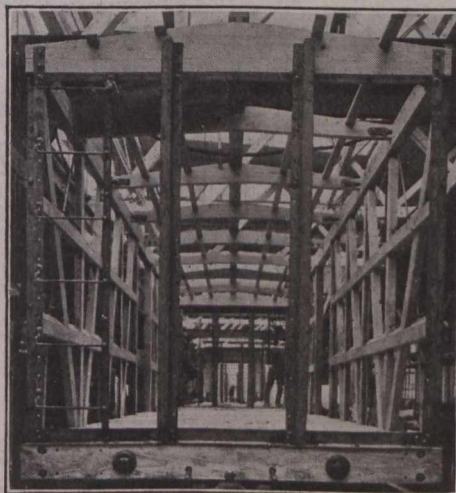
### Reinforced Ends for Wooden Box Cars on the Canadian Pacific Railway.

The weakest point in the superstructure of the wooden box car, with the possible exception of the wooden roof, is the car end, where the shifting of the lading frequently has an injurious effect in damaging the end. This is particularly true of the



Reinforced End Wooden Box Car, C.P.R.

former construction, in which the end framing was identically the same as that in the sides, although the stresses in service on the ends of the car are much in excess of those in the sides, from the before mentioned cause.



Details of End Framing on Wooden Box Cars, C.P.R.

The wooden car end construction recently evolved on the C.P.R. is shown herewith. The corner posts consist of Z bars, with two intermediate Z bars for end posts, these four being tied together with a Z bar on top and an angle on the bottom. The bottom angle is bolted to the end sill and rivetted to the steel centre sills. The top Z

bar is securely attached to the end plate. The end sheathing is horizontal, and consists of 1 3/4 in. tongued and grooved lumber. This is secured to the vertical end Z bars by bolts.

This construction very closely resembles the framing arrangement on the steel frame car, of which the C. P. R. has such a large number. It makes a very solid end arrangement, and one that is not easily damaged in the event of the lading shifting in transit.

We are indebted to R. W. Burnett, General Master Car Builder, C.P.R., for the data on which this article is based.

### Inverness Railway and Coal Company's Annual Report.

The report presented at the annual meeting in Toronto recently, over the signature of Sir Wm. Mackenzie, President, covers the two years to June 30, 1913. Following are extracts:—

The results of operations of the colliery were:—

	Year ended June 30, 1913	Year ended June 30, 1912	Year ended June 30, 1911
Output (tons).....	278,197	235,789	235,899
Gross earnings.....	\$545,702.87	\$536,312.35	\$543,711.76
Operating expenses.....	546,562.35	529,030.40	532,866.42
Net earnings.....	x859.48	7,281.95	10,845.34

And those of the railway were:—

Gross earnings.....	\$213,824.00	\$200,704.20	\$207,229.98
Operating expenses.....	120,439.31	111,291.72	114,040.71
Net earnings.....	93,384.69	89,412.48	93,189.27

x Deficit.

The result of operations for the two years is a net revenue of \$170,747.18 towards the payment of interest and other charges amounting to \$423,512.25, or a deficit in the operations for the two years of \$252,765.27. The underground workings of the mines have, as usual, been regularly inspected by the Government inspector and are in good condition. The physical condition of the railway is being fully maintained.

#### INCOME ACCOUNT.

Balance at June 30, 1911.....		\$725,659.27
INTEREST ON BONDS, &c.—		
First mortgage bonds.....	\$213,100.00	
Bank advances.....	141,877.15	
Sundry creditors.....	54,922.51	
Interest account to June 30, 1912, and June 30, 1913.....	\$38,722.90	
Less accrued at June 30, 1911, and June 30, 1912, paid during 1912 and 1913.....	38,722.90	
		\$409,899.66

Hire of equipment.....	13,612.59	423,512.
		\$1,149,171.52

NET EARNINGS—		
Colliery—Gross earnings.....	\$1,082,015.22	
Operating expenses.....	1,075,592.75	\$6,422.47
Railway—Gross earnings.....	\$414,528.20	
Operating expenses.....	231,731.03	182,797.17
Operation boats, &c.—		
S.S. Renwick.....	\$ 598.58x	
S.S. Kilkeel.....	8,971.96x	
Port Hastings pier.....	8,543.46x	
Inverness B—1.....	344.96x	
		18,458.96x
Miscellaneous earnings (debit balance).....	13.50	170,747.18
		\$978,424.34

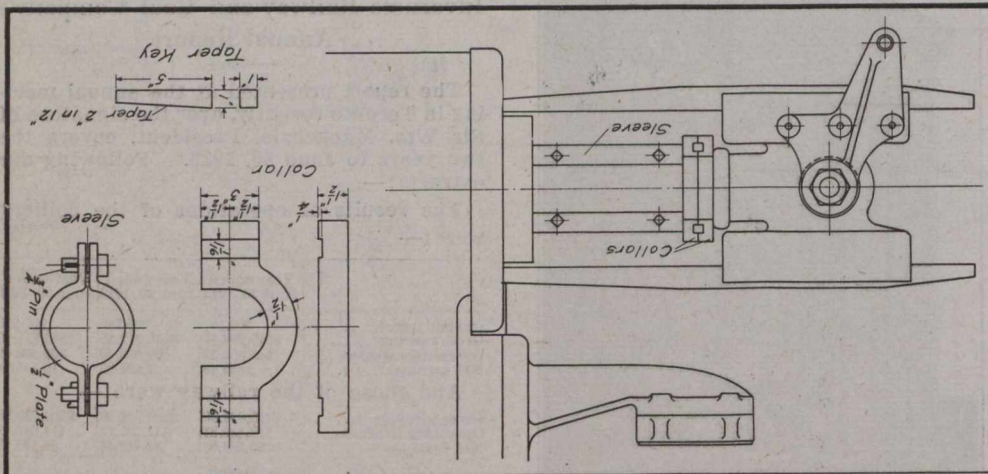
x Deficit.

**Canadian Northern Prairie Lands Co.**—The financial statement for the year ended Dec. 31, 1913, shows net income from investments, loans, sales of land, etc., of \$194,496, out of which two dividends of 6% each, making 12% for the year, have been paid, leaving a balance of \$14,496. The deficit on land sales for the year was \$2,660, so that the net balance carried forward was \$11,826. In 1912, the net income was \$232,094, and the balance carried forward was \$52,994.

# Railway Mechanical Methods and Devices.

## Piston Extractor on Canadian Northern Railway.

A piston rod extractor of unusual strength, and one that will draw pistons without damaging the crosshead in any way, is shown in the accompanying illustration. A sleeve, formed from  $\frac{1}{2}$  in. boiler plate, in two parts, each in the shape of a bearing



C. N. R. Piston Rod Extractor.

cap, fit around the piston rod, and is held together by four  $\frac{5}{8}$  in. pin bolts, although ordinary bolts would be equally satisfactory, though not as quick to apply. This two part sleeve is made long enough to extend from the packing gland to within 3 ins. of the back of the crosshead when the latter is in its rearward striking position.

In this 3 in. space, there are placed two collars of the form shown, each  $1\frac{1}{2}$  in. thick. In the mating surface, there is cut a half keyway in each. Taper keys are driven in the bays between the collars, the piston rod being thereby drawn from the piston without any damage to the locomotive working parts. This method of extracting piston rods has been adopted as standard on the C. N. R. system.

## Centre Plate Oiler.

It has been believed by a great many, that a large proportion of the derailments which cannot otherwise be satisfactorily explained, have been caused by excessive friction in the centre plates of box cars. The Denver and Rio Grande Rd. took up the practice of oiling its centre plates, and a noticeable improvement has been effected in keeping the freight car trucks on the rails, and it is the opinion that this may be attributed to the use of oil. A cheap grade of summer black oil, costing 11 cts. per gal., is used, and  $\frac{1}{4}$  oz. is sufficient for a narrow gauge centre plate.

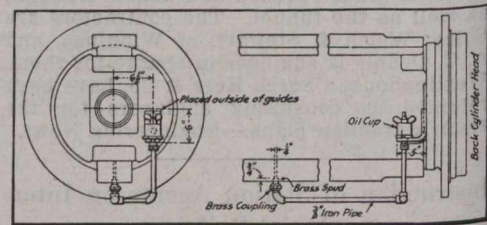
When this system of oiling was first introduced, a helper was detailed to go all over the yard, oiling all centre plates with a long spout oil can, which proved very wasteful of oil, and had, in addition, the more serious disadvantage of placing the oiler in a very precarious position, as he was compelled to go under the narrow gauge cars to get at the centre plate. An average of only 30 cars per gal. was the best possible result obtainable with this method. A different type of oiler was developed, by which the number of cars per gallon was increased to 60, or slightly more than  $\frac{1}{4}$  gill per centre sill. This arrangement consists

of an oil can with an unusually long spout, on the outer end of which is the discharge valve shown in the accompanying illustration. The plunger in the small cylinder is connected to a long rod that runs back alongside the spout to the can, and which can be operated at that point by the oiler. The forward movement of the plunger discharges oil on the centre plate. Drawing the plunger back causes the discharge valve to seat,

## Lubricating Bottom Guide Bars.

To overcome the usual difficulty in lubricating the bottom guide on locomotives of the two bar guide type, the Baltimore and Ohio Rd. makes use of the arrangement shown herewith. This overcomes any trouble, and places the oil on the guide where required, that is, at the centre.

The oil cup is supported on a small wrought iron bracket fastened to the back cylinder head, the feed pipe from the lubricator passing down alongside the guide to its underside, a connection being made along the latter to its centre, where the

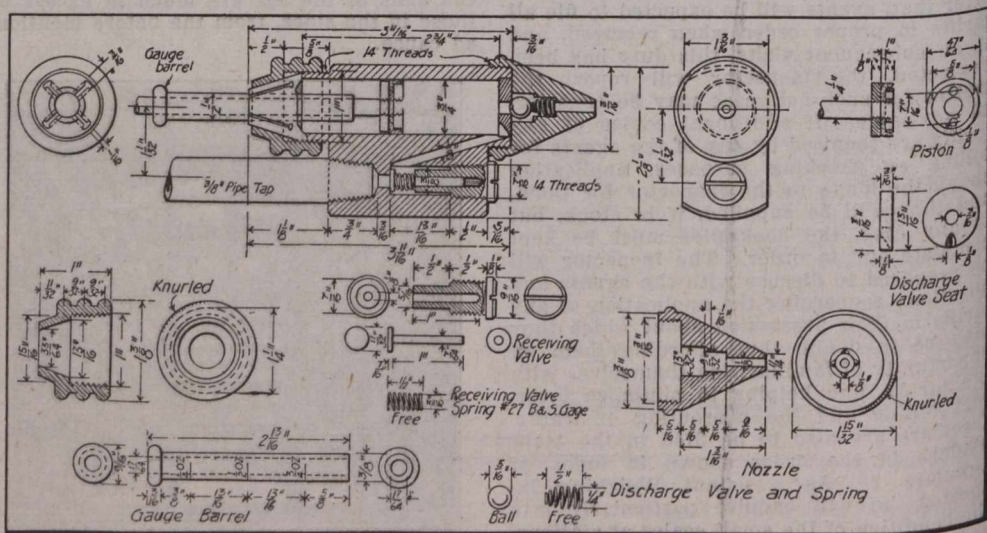


Oil Cup and Connections for Lubricating Bottom Guide Bar.

pipe taps into the guide. The lubricator is placed at a higher elevation than the guide, so that the surface is gravity fed. The lubricator cup should be of the regulated feed type. The foregoing information is abstracted from an article in the Railway Age Gazette, mechanical edition.

## Valve Setting Machine on the Canadian Northern Railway.

The parts for a valve setting machine, which varies to a degree from the type commonly found in railway shops, is shown in the accompanying illustration. It is used for revolving the main locomotive driving



Centre Plate Oiler Discharge Valve Details.

is from an article in the Railway Master Mechanic.

Pere Marquette Rd.—Application is being made to the U. S. courts at Detroit, Mich., by the receivers of the company, for authority to issue \$12,000,000 of receivers certificates. This application has nothing to do with the foreclosure suits against the company, filed by the Farmers' Loan and Trust Co., New York, Mar. 30.

wheel for adjusting the valve during setting, and this particular mechanism represents standard practice on the C. N. R. system. The four bed plates are of cast iron, carrying roller trunnions cast integral with the bed plate. The bottom face has a groove machined out  $\frac{3}{8}$  in. deep by  $2\frac{1}{2}$  ins. wide, to fit over the top of the rail. They are designed to accommodate a maximum width of tire of 6 ins. Each bed plate carries a roller  $7\frac{1}{4}$  ins. in diameter, three of which

are of cast iron, chilled on the surface, and with the corners rounded off to a 11-16 in. radius to fit snugly against the tread and flange of the driving wheel. The fourth, or driving roller, is of open hearth steel, with the face cut with 91 teeth, 3-16 in. deep, and 1/4 in. circular pitch, the roller being case hardened.

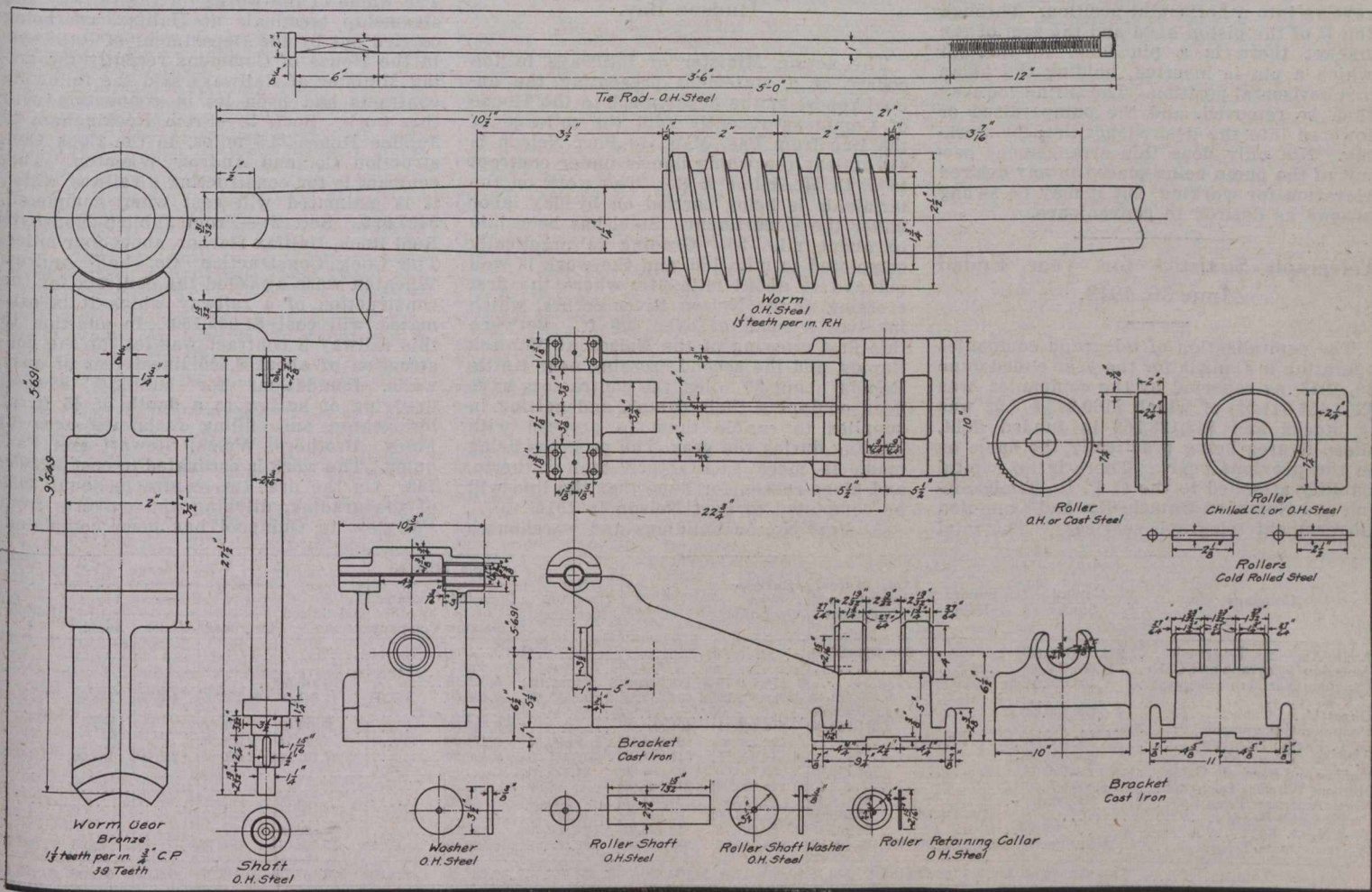
The smooth faced rollers work on case

only adjusting required is in the rods, which are fitted up to suit the diameter of the wheel.

The Outlook recently published an authorized interview with Sir Thomas Shaughnessy on the question of railways and the people, in which he gave a summary of the case for and against Government ownership.

### Air Pump Repair Stand on Canadian Northern Railway.

The accompanying illustration shows an air pump repair stand used on the C.N.R., the device being so arranged as to facilitate work on the pump, bringing all parts of the latter within easy working range.

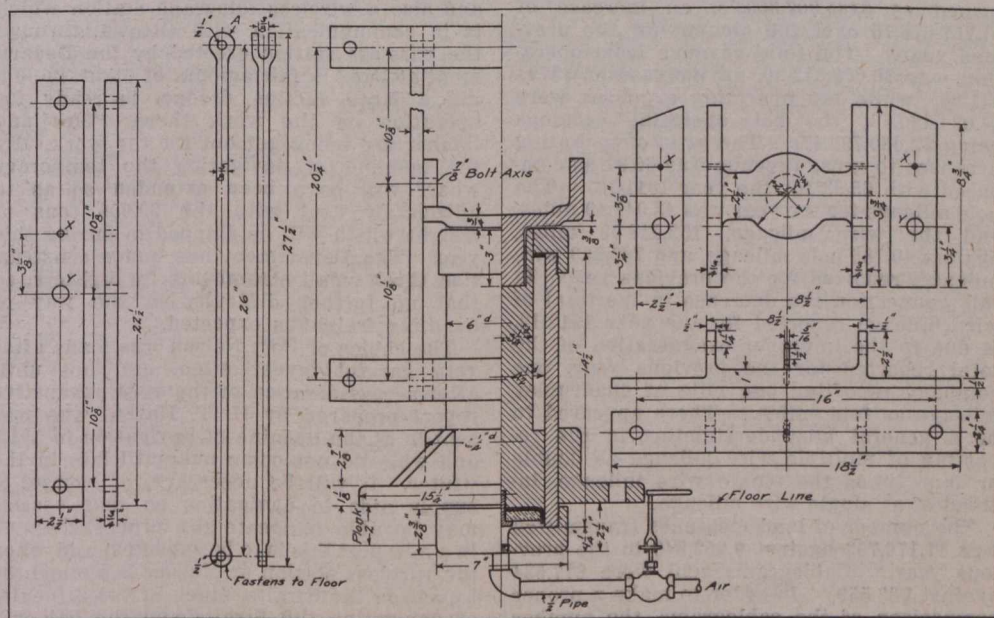


Valve Setting Mechanism with Component Parts.

hardened steel roller bearings, 3/8 in. diameter by 2 1/8 ins. long, held in place by double collars, of case hardened steel, 1-16 in. thick. The toothed roller is keyed to the main operating shaft, which operates in bearings in the main bed plate. The three smooth rollers work independently in their respective trunnions, and each carries a small case hardened steel axle, 2 3-16 ins. diam. by 7 15-32 ins. long, the ends of which are tapped for 1/2 in. machine screws, a washer 3 1/2 ins. diameter and 3/8 in. thick on each end, holding the shaft in place. The pairs of bed plates, that is the pairs on each side, are secured together by 1 in. tie rods, two on each side of the locomotive.

A bronze worm gear, 9.549 ins. diam., 1 1-3 teeth per in., 3/4 in. circular pitch, making a total of 39 teeth per gear, is keyed to the other end of the toothed wheel shaft, close against the bearing. This worm gear engages with a worm, 4 1/4 ins. long, 2 1/2 ins. outside diameter, with six teeth, 1 1-3 teeth per in., right hand, which is carried in bearings on the back of the main bed plate. The worm shaft has a taper shank, no. 4 Morse, which carries an air motor. A cast worm might be used if a machined one was not to hand.

The advantage claimed for this arrangement is that the operating mechanism is off to one side and in plain view of the operator. The arrangement is simply installed, as the



Air Pump Stand for Convenient Handling of Repairs.

A quick method of finding the approximate area of pipe is to square the diameter and take three-quarters of the result.

Pivoted on a 7/8 in. pin through the U head of a vertical air cylinder, there is an air pump bracket, with four holes by means

of which the pump is secured. The vertical air cylinder is let into the ground, with the air connection through the lower end, controlled by a small air globe valve. The 5/8 in. rod shown is attached at one end to the bracket, and at the other end to the floor.

Turning on the air causes the piston and bracket to rise, the restraining action of the rod to the floor causing the bracket to revolve into a horizontal position. Through the U of the piston head and the arm of the bracket there is a pin hole, X, through which a pin is inserted, holding the pump in a horizontal position. The tilting rod may then be removed, and the pump raised or lowered into the desired position for working. Not only does this arrangement permit of the pump being placed in any desired elevation for working, but it may be swung around as desired to convenience.

**Telegraph Statistics for Year Ended June 30, 1913.**

The capitalization of telegraph companies operating in Canada for the year ended June 30, 1913, as reported by the companies, was \$202,468,041.32, of which \$160,342,873.32 was in stocks and \$42,125,168 in funded debt, these figures being practically the same as in the previous year. There is no capital liability attached to the C. P. R., Timiskaming and Northern Ontario Ry. and Dominion Government telegraph services. The total

number, 2,885 were operators, 2,693 males and 192 females. The salaries and wages were \$2,962,159.13 against \$2,703,032.09; the total salaries and wages for 1912-13 being equal to 73.4% of the operating expenses, compared with 76.7% in the previous year.

**Dominion Government Railway to Hudson Bay.**

The acting Minister of Railways in the course of a statement presenting the annual report of the department to the House of Commons recently said the mileage of the line from Pas, Man., to Port Nelson is 418 miles; the whole line is under contract to J. D. McArthur & Co. The work on the terminals is being carried on by day labor under the Department. Steel has been laid to about mile 90. Grading is practically completed to mile 130, and the work is well manned to about mile 240, where the first crossing of the Nelson River occurs, which involves a span of over 400 ft. Between this first crossing of the Nelson at Manitou Rapids, and the second crossing near Kettle Rapids, about 90 miles, the contractors have been equipping their camps, and getting in supplies to enable them to proceed with grading during the year. The progress being made is more satisfactory than hitherto, and gives reason for hope that the line will be completed to Port Nelson in 1916.

At Port Nelson buildings and warehouses

**Ocean Railway Terminal Facilities at St. John and Halifax.**

The new ocean terminal facilities at St. John, N.B., are being laid out by the Department of Public Works, and the principal extension of the railway terminal facilities is being carried out by the C.P.R. The whole of the works for the railway and steamship terminals at Halifax are being carried out by the Department of Railways. In the House of Commons recently the acting Minister of Railways said the following contracts had been let in connection with this work. Sect. 1:—From Rockingham to Jubilee House, 3.5 miles, to the Cook Construction Co. and Andrew Wheaton. This contract is for constructing a railway which it is estimated will cost when completed, \$407,995. Sect. 2:—From Jubilee House to Reid Rock, Halifax Harbor, about four miles. The Cook Construction Co. and Andrew Wheaton were awarded the contract for the construction of a railway which it is estimated will cost \$1,035,160. In addition to this railway a contract was let for the construction of about 6,500 lineal feet of quay walls, foundations for building, sewers, dredging of harbor to a depth of 45 ft. at low water, and filling reclaimed area to Foley Brothers, Welch, Stewart and Fauquier. The work is estimated to cost \$5,208,743. On the first two contracts about 30% of the grading, ditching and culverts from Fairview to Quinpool has been completed.

Company	Capital Stock	Funded Debt	Cost of Real Property and Equipment	Revenue from Operation	Operating Expenses	Net Operating Revenue	Pole Mileage		Wire Mileage					
							Operated by Company	Operated by other Company	Galvanized	Copper		Multiple		
										Overhead	Under.		Subm.	
Anglo-American Telegraph	\$34,066,666.66		\$34,066,666.66											
American Telegraph and Cable	14,000,000.00													
Canadian Northern Telegraph	500,000.00	\$ 800,000.00		\$ 276,739.70	\$ 141,742.68	\$ 134,997.02	5,013.10		16,343.50					
C. P. R.			6,696,421.40	3,286,508.95	1,691,953.38	1,594,555.57		820.00	45,821.00	24,122.00	448.00	155.00	36,233.00	
Direct U.S. Cable	5,909,106.66		5,909,106.66											
Dominion Government			2,211,950.00	215,526.11	491,550.80		9,335.50		9,514.00	346.00			277.00	
G. T. Pacific Telegraph	100,000.00			72,126.80	62,236.13	9,890.67	2,474.00		5,874.75	2,908.50				
G. N. W. Telegraph	500,000.00			1,244,802.67	911,884.98	332,417.69	9,409.00		27,101.00	2,036.00	250.00	131.00	3,340.00	
Halifax and Bermuda Cable	250,000.00		757,740.00	69,710.00	25,695.00	44,015.00								
Marconi Wireless Telegraph	5,000,000.00			218,660.00	218,597.00	63.00								
North American Telegraph	200,000.00		51,666.47	22,023.49	21,084.55	939.94	44.00		783.50					
Pacific Cable Board		8,723,168.00	55,000.00	85,166.60	69,649.69	16,516.91								
T. & N. O. Ry.			33,034.49	36,297.73	12,495.34	23,802.39	297.00		862.00					
Western Union Telegraph	99,817,100.00	32,602,000.00	136,125,768.07	568,150.55	387,590.88	180,559.97	2,829.89		15,868.01	4.77		72.96	222.51	
<b>Totals</b>	<b>\$160,342,873.32</b>	<b>\$42,125,168.00</b>	<b>\$185,907,353.75</b>	<b>\$6,095,212.90</b>	<b>\$4,034,480.43</b>	<b>\$2,337,757.16</b>	<b>42,228.49</b>	<b>820.00</b>	<b>122,167.76</b>	<b>29,417.27</b>	<b>698.00</b>	<b>635.96</b>	<b>89,793.51</b>	

x Not included in wire mileage.

cost of real property and equipment was returned at \$185,907,353.75, an increase of \$1,757,676.75 over the amount for the previous year. The total revenue from operation was \$6,095,212.90, an increase of \$879,041.98; while the operating expenses were \$4,034,480.43; the net operating earnings being \$2,060,732.47. The ratio of operating expenses to gross revenue was 66.84 as compared with 65.83 for the year 1911-12. The pole mileage for the year was 43,048.49 miles, and the wire mileage, 152,918.99 miles, against 40,785 pole mileage, and 167,939 wire mileage, reported for the previous year. In this connection the decrease in the total of wire mileage reported for the year 1912-13, is due to the improper exaggeration of the total reported for the previous year, one company reporting one mile of quadruplex mileage as four miles. There appeared to be a general misunderstanding in the reporting of multiple wire mileage as double or four times the single wire mileage, instead of as single wire mileage.

The number of land messages transmitted was 11,176,753 against 9,252,540 in the previous year. Cablegrams sent were 877,534 against 768,559. In order to make a proper comparison of the cablegrams, the number of words should be given, and an effort is being made to have this done in future reports.

The number of employes reported was 6,006 against 4,828 in 1911-12. Of the first

for the working forces had been erected, and also a wireless telegraph station which is in communication with Ottawa, through the wireless station erected by the Department at Pas. A fair amount of plant, including a large suction dredge, is ready for operation on the work there. Ties and lumber are being got out for the work. By the opening of navigation the temporary wharf will have been extended so as to adequately deal with the 20,000 tons of freight which will be shipped in during this year. The Department has under construction three small steamboats for lighters, so that no further difficulty in the way of handling freight is expected.

The choice of Port Nelson was made after very careful investigation, and not until after a consideration of the very exhaustive report prepared by H. T. Hazen, who was sent in at the opening of navigation in 1912, and who did not come out until late in the winter. It will be necessary, of course, to supply aids to navigation so that vessels may be able to locate the proper channel. In a new port this is to be expected, and when the wireless station at Nelson is augmented by one in the Straits, much of the difficulty of navigating the Straits and the bay will be overcome.

The Dominion Parliament has voted \$750,000 on account of the construction of railway terminals and elevators. (April, pg. 175.)

On the third contract very little has been done. The contractors are busy getting plant ready, and the work will be pushed ahead as fast as possible. The Government believes that when these terminals are complete Halifax will have a harbor equal to any other port in the world, with a capacity sufficient to handle the traffic which is expected to go through the port. Work has also been in progress for some time at Halifax on pier 2. It is nearing completion and was partly used during the winter to relieve the congestion. It is estimated that the expenditure for the current year will be \$240,000. The total cost of the work is estimated at \$800,000.

Full descriptions of these works, with an illustration, were given in Canadian Railway and Marine World in 1913, Sept., pg. 421, Oct., pg. 462, and Nov., pg. 535.

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

	Acres.
Calgary and Edmonton Ry.	4,777.67
Canadian Northern Alberta Ry.	1.77
Canadian Northern Branch Lines Co.	2.80
Canadian Northern Ry.	480.00
Canadian Pacific Ry. grants	71.12
Canadian Pacific Ry. roadbed and station grounds	.82
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	2,943.10
<b>Total</b>	<b>8,277.28</b>



21627. Apr. 14.—Amending order 21559, March 27, re Campbellford, Lake Ontario and Western Ry. (C.P.R.) crossing of C. N. Ontario Ry.

21628, 21629. Apr. 11.—Establishing express collection and delivery limits in Lethbridge, Alta., and Regina, Sask., and rescinding orders 21088, Dec. 23, 1913, and 14906, Sept. 14, 1911.

21630. Apr. 9.—Authorizing Toronto, Hamilton and Buffalo Ry. to build spur across Lots 37 and 36, Con. 1, Ancaster Tp., Ont.

21631. Apr. 11.—Authorizing Great Northern Ry. to operate over C.P.R. crossing at mileage 1.4, Lot 1899, East Kootenay Dist., B.C., without first stopping trains.

21632. Apr. 11.—Approving location of C. N. Ontario Ry. station grounds at Lac a Travers, mileage 140.8 from Ottawa.

21633. Apr. 11.—Approving location of C.P.R. platform and shelter at mileage 36.0, Bobcaygeon Subdivision, Ont.

21634. Apr. 14.—Reporting to Governor in Council for sanction Dominion Atlantic bylaw 13, approving General Train and Interlocking Rules.

21635. Apr. 14.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to take certain lands in Oshawa for access to diversion of Albert St.

21636, 21637. Apr. 14.—Authorizing C.P.R. to use bridges 18.7, St. Gabriel Subdivision, and 11.3, Standbridge Subdivision, Que.

21638. Apr. 15.—Approving Pacific and Hudson Bay Ry. location from Bella Coola Harbor to Hagensborg, B.C., mileage 0 to 10.

21639. Apr. 14.—Authorizing Lake Erie and Northern Ry. to build bridge over Western Counties canal, at Brantford, Ont.

21640. Apr. 8.—Authorizing Toronto, Hamilton and Buffalo Ry. to take certain lands in Pelham Tp., Ont., for providing additional team tracks.

21641. Apr. 15.—Authorizing Canadian Northern Ry. to cross and divert public highways at mileage 76, Kipling Subdivision, Sask.

21642. Apr. 14.—Authorizing Canadian Northern Ry. to build a highway crossing over its line on Second St. North, Leask, Sask.

21643. Apr. 14.—Ordering G.T.R., within 60 days, to install stop blocks on sidings at east side of Cherry St., Toronto.

21644. Apr. 9.—Authorizing G.T.R. to build siding for American Road Machine Co. of Canada, Goderich, Ont.

21645. Apr. 14.—Authorizing G.T.R. to use bridge 257, mileage 25.25, Milton, Ont.

21646. Apr. 14.—Amending order 19646, May 16, 1913, re C.P.R. operation of interlocking plant at Baticscan River Bridge, Que.

21647. Apr. 16.—Approving revised location G.T. Pacific Branch Lines Co. Battleford Branch, through n.w. ¼ Sec. 4-43-16, w. 3 m., Sask.

21648. Apr. 15.—Approving revised location G. T. Pacific Branch Lines Co. station at Coal-spur, mileage 35.8, Alberta Coal Branch, Alta.

21649. Apr. 16.—Amending order 21537, March 23, re certain G.T.R. bridges in Ontario.

21650. Apr. 15.—Authorizing C. N. Ontario Ry. to build bridge over Raimbault Creek, St. Laurent Parish, Que., mileage 43 from Hawkesbury; and rescinding order 19657, June 21, 1913, in same connection.

21651. Apr. 15.—Approving location of Canadian Northern Ry. extension of its Swift Current line through Tps. 15-10 and 12, w. 3 m., Sask., mileage 124.96 to 142.53.

21652. Apr. 17.—Authorizing C.P.R. to build spur for F. A. Fish, Caledon Tp., Ont.

21653. Apr. 17.—Ordering G. T. Pacific Ry., within 30 days, to reappoint station agent at Zelma, Sask.

21654. Apr. 18.—Authorizing C.P.R. to build road diversion in Sec. 22-36-11, w. 4 m., Alta., and to build its Swift Current Northwesterly Branch across 11 highways at grade, mileage 0 to 13.

21655. Apr. 16.—Authorizing Esquimalt and Nanaimo Ry. to build siding for British Columbia Pottery Co., Esquimalt, B.C.

21656. Apr. 16.—Relieving G.T.R. from providing further protection at crossing of St. Patrick St., Port Dover, Ont.

21657. Apr. 17.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect 2,400 volt overhead distribution circuit over G.T.R. at Ferguson Ave., Hamilton, Ont.

21658. Apr. 15.—Approving clearances as shown on plan of overhead platform runway to serve Toronto, Hamilton and Buffalo Ry. on north side of Forest Ave., Hamilton, Ont.

21659. Apr. 18.—Authorizing C. N. Ontario Ry. to build across Castle Crescent Road, York Tp., carrying highway over railway.

21660. Apr. 17.—Authorizing Canadian Northern Ry. to cross and divert south road allowance between Secs. 7 and 8-26, and highway between Secs. 19-5-27 and 24-5-28, w. 2 m., on its Maryfield Branch, Sask.

21661. Apr. 16.—Authorizing Montreal and Atlantic Ry. to build siding for Bedford Manufacturing Co., Bedford, Que.

21662. Apr. 16.—Authorizing Western Canada Power Co. to build spur from main line through Langley Indian Reserve no. 2, crossing a highway and connecting with trestle in Stave River, B.C.

21663. Apr. 15.—Authorizing Montreal and

Atlantic Ry. to build spur for B. R. Stevens, Bedford, Que.

21664. Apr. 17.—Authorizing C.P.R. to build Y at grade at mileage 230, Weyburn-Stirling Branch, across road allowance between Secs. 8 and 17, Tp. 8, R. 18, w. 3 m., Sask.

21665. Apr. 17.—Authorizing C.P.R. to alter and extend tracks at Hardisty St., Fort William, Ont.

21666, 21667. Apr. 17.—Authorizing C.P.R. to build spurs for J. E. Wilder, Montreal, Que., and for Gould, Shapley & Muir Co., Regina, Sask.

21668. Apr. 17.—Authorizing C.P.R. to build at grade spur for City of Moose Jaw across River St., and to build at grade Y connection across Manitoba St. and Second Ave., Moose Jaw, Sask.

21669. Apr. 15.—Authorizing C.P.R. to build spur for City of Edmonton, Alta.

21670. Apr. 16.—Authorizing C.P.R. to rebuild bridge 37.5, Havelock Subdivision, Ont.

21671. Apr. 15.—Authorizing Esquimalt and Nanaimo Ry. to build siding for Empire Lumber Co. at mileage 2.5, Osborne Bay Branch, Vancouver Island, B.C.

21672. Apr. 18.—Approving location of Pointe aux Trembles Ry. through Montreal East, Que.

21673. Apr. 18.—Authorizing Cedar Rapids Mfg. and Power Co. of Montreal to take an additional width for right of way of transmission line, St. Joseph de Soulanges and St. Ignace du Coteau du Lac Parishes, Que.

21674. Apr. 17.—Ordering C.P.R. to build spur for Dustbane Manufacturing Co., Gloucester Tp., Ont.

21675. Apr. 18.—Authorizing C.P.R. to build and rearrange sidings for McGregor and McIntyre, North Toronto, Ont.

21676. Apr. 18.—Authorizing C.P.R. to build spur for S. A. Early & Co., Saskatoon, Sask.

21677, 21678. Apr. 18.—Authorizing C. N. Ontario Ry. to build across Scarlett Road and Jane St., York Tp., carrying highways over railway.

21679. Apr. 20.—Ordering C.P.R. to build spur for S. A. Hamilton Co., Moose Jaw, Sask.

21680. Apr. 18.—Authorizing Canadian Northern Ry. to build across 29 highways in Sask.

21681. Apr. 21.—Relieving G.T.R. from providing further protection at crossing of highway immediately east of Pike Creek flag station, Tecumseh, Ont.

21682. Apr. 22.—Authorizing G.T. Pacific Branch Lines Co. and C.P.R. to operate over crossing in Calgary, Alta., without stopping trains.

21683. Apr. 21.—Amending order 18032, Nov. 13, 1912, re G.T.R. subway at Cardinal, Ont.

21684. Apr. 21.—Relieving G.T.R. from providing further protection at crossing of Colborne St., London, Ont.

21685. Apr. 20.—Authorizing C.P.R. to build highway crossing at grade at McDougall St., Port Arthur, Ont.

21686. Apr. 20.—Suspending sine die, G.T.R. and Michigan Central Rd. schedules in so far as they increase rates now charged on caustic soda and bleaching powder; disallowing Pere Marquette Rd. schedule in so far as it increases rates charged on same commodities, and ordering that rates lawfully in force immediately prior to said schedules be continued until further order.

21687. Apr. 22.—Authorizing Saskatchewan Government to build highway crossing through Canadian Northern Ry. station grounds, at Brancepeth siding, Sask.

21688. Apr. 21.—Authorizing Canadian Northern Ry. to build across 17 highways in Alberta.

21689. Apr. 25.—Amending order 20423, Sept. 25, 1913, re City of Ottawa's sewer across C.P.R. lands.

21690. Apr. 27.—Amending order 21513, Mar. 16, re connection of London and Lake Erie Ry. and Transportation Co.'s line and Michigan Central Rd. at St. Thomas, Ont.

21691. Apr. 26.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to take certain lands in Bowmanville, Ont., for freight yard and approaches.

21692. Apr. 23.—Authorizing Cedar Rapids Mfg. and Power Co., Montreal, to take additional 25 ft. for right of way of transmission line across Lot 7, Con. 2, Cornwall Tp., Ont.

21693. Apr. 28.—Amending order 21476, March 11, authorizing G.T.R. to use bridge over viaduct near Port Hope Station, Ont., to make it read as an authorization to use viaduct near Port Hope Station, Ont.

21694. Apr. 21.—Relieving C.P.R. from speed limitation of 15 miles an hour between mileage 0 and 41, Golden to Spillimacheen, B.C.

21695. Apr. 28.—Authorizing C.P.R. to use bridges 15.6 and 91.1, Lethbridge Subdivision, Alta.

21696. Apr. 27.—Dismissing Milton Pressed Brick Co.'s complaint against C.P.R. in suspending work on double tracking between Toronto and Guelph Jct., Ont.

21697. Apr. 28.—Authorizing Kettle Valley Ry. to build across 3 highways near Penticton, B.C.

21698. Apr. 29.—Authorizing Canadian Northern Ry. to build spur for P. O. Dwyer Co., Edmonton, Alta.

21699. Apr. 29.—Authorizing G.T.R. to build extensions to siding and spur therefrom for

Maple Sand, Gravel and Brick Co., Vaughan Tp., Ont.

21700. Apr. 29.—Authorizing G.T.R. to build siding for Toronto Brick Co., Scarboro Tp., Ont., near York station.

21701. Apr. 29.—Authorizing Alberta Central Ry. to build its ballast pit spur at grade across two highways at mileage 34 west of Red Deer, Alta.

21702. Apr. 29.—Authorizing Canadian Northern Ry. to build across 23 highways in Saskatchewan.

21703. Apr. 29.—Authorizing C.P.R. to rebuild bridges 7.6, Emerson Subdivision, and 8.4, Winnipeg Beach Subdivision, Man.

21704. Apr. 29.—Authorizing C.P.R. to rebuild bridge 11.9, Brandon Subdivision, Man.

21705. Apr. 28.—Authorizing C.P.R. to build ballast pit across highway, at mileage 23.79 Swift Current Northwesterly Branch, Sask.

21706. Apr. 21.—Authorizing clearances as shown on C.P.R. plan under file 23749, pending rearrangement of switching lead to provide standard 13 ft. clearances between centres of all tracks at West Toronto, Ont.

21707. Apr. 25.—Authorizing Canadian Northern Ry. to build spur to gravel deposit in n.w. ¼ Sec. 8-15-1, w.p.m., for Lake Winnipeg Shipping Co.

21708. Apr. 29.—Authorizing C.P.R. to build spur for Canada Cement Co. in St. Charles Parish, Man.

21709. Apr. 29.—Authorizing C.P.R. to build spur for Calgary Paint and Glass Co., Calgary, Alta.

21710. Apr. 29.—Approving G.T. Pacific Ry. bylaw 15 appointing G. T. Bell, W. P. Hinton and W. E. Duperow to prepare and issue tariffs of tolls, and rescinding order 8288, Oct. 8, 1909, in similar connection.

21711. Apr. 28.—Ordering G.T.R. to install gates, operated by day and night watchmen, at crossing of Eighteenth Ave., Lachine, Que., apportioning cost of installing and operating, and rescinding order 9616, Feb. 7, 1910, directing installation of electric bell.

21712. Apr. 29.—Authorizing C.N. Ontario Ry. to cross Weston plank road, Toronto, by structure carrying highway over railway.

21713. Apr. 29.—Authorizing Pointe aux Trembles Terminal Ry. to build across Montreal Terminal Ry. in Pointe aux Trembles Parish, Que.

21714. Apr. 29.—Authorizing C.P.R. to build additional track (double track) across Champlain St., St. Johns, Que., mileage 19.9, temporarily, pending hearing in Montreal, May 15.

21715. Apr. 30.—Approving location of C.P.R. platform and shelter at mileage 9.20, Bobcaygeon Subdivision, Ont.

21716. Apr. 30.—Dismissing complaint of R. L. Rice, Vancouver, B.C., against charge by C.P.R. for two seats in sleeping car for daylight journey from Sicamous to Vancouver.

21717. Apr. 30.—Authorizing Canadian Northern Ry. to operate for construction purposes only, for 90 days from date, pending installation of interlocking plant, over crossing of C.P.R., Lot 101, St. Paul's Parish, Man.; trains to be flagged over by watchmen, appointed by C.P.R. at expense of C.N.R., and rescinding order 21617, April 9.

21718. Apr. 30.—Approving G.T.R. bylaw appointing certain officials to prepare and issue tariffs of tolls, and rescinding order 13449, Apr. 18, 1911.

21719. Apr. 28.—Relieving G.T.R. from providing further protection at crossing of Danforth Road, east of Scarboro Jct., Ont.

21720. Apr. 30.—Authorizing G.T.R. to build siding for W. R. Smith, Toronto.

21721. May 1.—Amending order 4353, Feb. 3, 1908, re C.P.R. spur for Northwest Jobbing and Commission Co., Lethbridge, Alta.

21722. Apr. 27.—Authorizing C.P.R. to take certain land for enlarging station yard at Laval Rapids, Que.

21723. May 1.—Approving C.P.R. plan, showing proposed rearrangement of interlocking plant at crossing of Quebec, Montreal and Southern Ry. at Iberville Jct., Que.

21724. Apr. 28.—Approving C.P.R. plan showing layout of crossing bell at First Ave., Oak Lake, Man.; and relieving it from speed limitation of 10 miles an hour in operation of trains over crossing.

21725. Apr. 29.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across unopened road allowance at mileage 88.62, Murray Tp., Ont.

21726. Apr. 22.—Authorizing G.T.R. to build siding for S. W. Marchmont near St. David's, Ont.

21727. Apr. 27.—Authorizing Cedar Rapids Mfg. and Power Co., Montreal, to take additional right of way for transmission line across Lot 122, St. Ignace du Coteau du Lac Parish, Que.

21728. Apr. 29.—Authorizing Marciel Trust Co. to relocate farm crossing on official Lot 61, Pointe Claire Parish, Que., about 75 ft. eastward, work to be done under supervision of G.T.R. engineer.

21729. Apr. 22.—Authorizing Canadian Northern Ry. to cross abandoned C.P.R. right of way in East Selkirk, Man., reserving questions of seniority and protection until C.P.R. desires to lay tracks there.



## Canadian Pacific Railway Construction, Betterments, Etc.

Sir Thomas Shaughnessy returned to Montreal, May 19, after having made a trip over the line as far as Vancouver, following his attendance at Sir William Whyte's funeral in Winnipeg. He did not make any general statement as to the work in progress, or as to future developments, but on May 6, at Winnipeg, he is reported to have said there is no intention on the part of the company to undertake any further work on the western lines this year, that the company will go ahead with the work started in 1913, and everything will be carried through to completion as rapidly as possible, and that the second track work will be proceeded with, although along the Thompson River, east of Spence's Bridge, it had been stopped pending the starting of the Kettle Valley Line service via the Nicola Valley. During his trip Sir Thomas formally opened the Bassano Dam, in the irrigation district of Alberta.

**Atlantic Division.**—It is reported that the betterments to be carried out during this year include the laying of 13 miles of 85 lb. steel; replacing 40 wooden and stone culverts with concrete structures; ballasting 25 miles of track; laying 61.5 miles of heavier steel on branch lines; erecting shelters, loading platforms, and other buildings at a large number of places in the division.

**Eastern Division.**—The Board of Railway Commissioners has authorized the erection of a bridge across Richelieu St., St. Johns, Que.

**Ontario Division.**—An official inspection of the Campbellford, Lake Ontario and Western Ry., the line from Glen Tay to Agincourt, Ont., 182 miles, was made, May 12. Ballasting is being completed, and the station and other buildings are fast being got into shape. A regular train service will be put in operation July 1.

The second track which is being built from Leaside Jct. to Agincourt, Ont., is expected to be completed by June 1. The bridge over the Don River, nine miles from the Toronto Union Station, has been widened. It is 1,000 ft. long, the rail level being 120 ft. above water level. The superstructure is carried on nine steel towers on concrete bases, and two concrete abutments. In two of the towers openings are provided for railways, one on each side of the river. The contract for the substructure was carried out by Dickenson and Burns; and the superstructure is being erected by the Canadian Bridge Co. The C.P.R. has now a double track line westerly from Montreal to Glen Tay; two lines from that point to Agincourt—the old line via Peterborough, and the new Campbellford, Lake Ontario and Western Ry.; and a double track from Agincourt through Toronto to Guelph Jct.

**Lake Superior Division.**—J. J. Scully, General Superintendent, is reported to have said that 150 miles of second track have been completed on this division between Romford and Port Arthur, Ont., and that about 45 miles more will be built this year. The work is not continuous but is in stretches of about 10 miles each. In carrying on this work, a number of diversions of track have been made in order to reduce gradients and to flatten out curvature.

The Board of Railway Commissioners has approved of revised location for the building of second track, mileage 51.49 to 54.37, Schreiber subdivision, and mileage 10 to 14, Nipigon subdivision.

A contract is reported to have been let to the Somervision Construction Co., for work at the sinkhole near Rossport, Ont., which gave the company considerable trouble last autumn.

**Manitoba Division.**—The Board of Railway Commissioners has authorized the opening for traffic of the Bergen northeasterly line, double track from mileage 0 to 9.92, Emerson subdivision; second track mileage 0 to 2.08 Lac du Bonnet subdivision from Whittier, mileage 65.1 to Murdock, mileage 62.2. The cutoff has a total length of 12 miles, and enables freight trains to be run through east and west without passing through the Winnipeg yards. The line was put in operation, May 4, on which date the new yards at North Transcona were opened for business.

A new station and freight shed is in course of erection at Emerson, Man.

The line from Weyburn across South Saskatchewan is at present in operation to Assiniboine, and a service is being started from there to Shaunavon, 118.3 miles. The line is to connect up with the Alberta Ry. and Irrigation Co.'s line at Stirling, Alta.

**Saskatchewan Division.**—The work on the building of a second track on the main line is being pushed ahead rapidly. The Board of Railway Commissioners has authorized the opening for traffic of the section to mileage 110.5, Swift Current subdivision, and other sections are expected to be ready for opening shortly.

The Board of Railway Commissioners has approved of revised location plans for the extension of the Swift Current northeasterly branch, from sec. 14, tp. 36, range 11, to sec. 6, tp. 38, range 11, west of the 4th meridian.

**Alberta Division.**—The line known as the Weyburn-Lethbridge branch has been opened for traffic from Stirling, on the Alberta Ry. and Irrigation Co.'s line, to Foremost, 49.1 miles. A contract is reported let to G. H. Webster, Calgary, for grading on the line for a further distance of 25 miles easterly. It is not expected to lay any steel on this grading this year. This mileage will have a gap of about 50 miles to be graded to meet the work being done from the western end of the branch.

A press report states that 25 miles of steel will be laid on the branch west of Retlaw, Alta., this season. About 20 miles of grading is reported to have been completed from Retlaw in the direction of Blackie, on the Alderside line, at which point the branch under construction from Suffield will effect a junction.

**British Columbia Division.**—It was reported, May 9, that the pioneer tunnel at the eastern end of the Rogers Pass tunnel had been driven 1,800 ft., and that passages were being broken from it to the points at which work on the main tunnel is to be started. The excavation at the western portal of the tunnel is being proceeded with, and it is expected that the driving of a pioneer tunnel will be started from that end at once.

Construction is being proceeded with on the Kootenay Central Ry., and it is expected that tracklaying will be completed by Dec. 31.

The work on the reconstruction and standardizing the gauge of the Kaslo and Slocan Ry. has been completed, and a train service is to be put in operation over it during June.

The erection of the double track bridge across the Pitt River has been started, and the Dominion Bridge Co. expects to have it completed by October. The spans of the single track bridge are being removed on pontoons to the site of the new traffic bridge which the British Columbia Government is building about 200 yards away. (May, pg. 228.)

## The Grand Trunk Railway Semi-Annual Meeting.

At the half yearly meeting in London, Eng., Apr. 29, A. W. Smithers, Chairman, in moving the adoption of the report for the six months ended Dec. 31, 1913, reviewed the operations for that period. The gross receipts were £4,768,916, an increase of £156,158 over those of the same period of the previous year. Of this increase, £27,903 was from freight and live stock, and £15,548 from other sources. The operating expenses including taxes were £3,560,157, an increase of £225,475, made up as follows,—maintenance of way and structures £69,102, traffic expenses £12,032, conducting transportation £139,547, general expenses £18,275, taxes £17,070, less a decrease in charges for maintenance of equipment £30,551. Twelve stations were built during the year out of revenue. The capital expenditure was £2,092,815, of which, £1,911,698 was for rolling stock, consisting of 75 mikado, 10 Pacific and 5 switching locomotives, 809 coal cars, 5,125 box cars and 825 refrigerator cars. The saving in the charges for hire of equipment during the half year was £108,000. There was an increased debit of £25,000 on account of the Canada Atlantic Ry., and an improvement of £30,000 in the Detroit, Grand Haven and Milwaukee Ry. The net result for the half year is that, notwithstanding the increased interest charges, wages and cost of materials, the same dividends will be paid as in 1912, and approximately £16,700 is carried forward to the current year.

The chairman also referred to the progress made by the G. T. Pacific Ry., and announced the linking up of the line with the National Transcontinental Ry. in September, and the establishment of a full passenger and freight service over the whole line early next year. He also dealt at some length, with the recent order of the Board of Railway Commissioners regarding freight rates in the west, full details of which were given in Canadian Railway and Marine World for May, and commented on the financial situation generally.

The Grand Trunk Act 1914, which gives power to issue further capital stock to the extent of £2,500,000 4% debenture stock, and also changes the issue of reports and the holding of meetings from half yearly to yearly, to bring the company into conformity with other companies, was approved, as was also the Grand Trunk and Canada Atlantic Amalgamation Act, which will enable the company, by the absorption of the Canada Atlantic Ry. Co., to raise capital for necessary rehabilitation of the line, on the best possible terms.

Dividends were declared for the half year, as follows,—4% guaranteed stock, 2%; first preference stock, 2½%; second preference stock, 2½%; third preference stock, 2½%.

The retiring directors, J. A. Clutton-Brock and W. Molson MacPherson, were re-elected for the current year, and A. F. Whinney and C. Percy were re-elected auditors in England and Canada respectively.

**Canadian Society of Civil Engineers.**—At a meeting at Edmonton, Alta., May 1, a branch of the society was formed with headquarters at the University of Alberta, and it was decided that meetings be held fortnightly. The officers for the current year are:—Chairman, W. M. Edwards, Professor of Civil Engineering, University of Alberta; Secretary-Treasurer, L. B. Elliott, Department of Public Works; Executive Committee, J. Chalmers, W. R. Smith, N. M. Thornton, D. J. Carter, J. D. Robertson and R. H. Parsons.

## The New Union Station at Toronto.

Plans for the new union station in Toronto have been drawn up, and it is expected that they will shortly be in condition for the calling of tenders, it being the stated intention to proceed with the work without further delay. The accompanying illustrations show the general scheme as it will appear on completion.

in this row. Along the opposite wall of the ticket lobby will be the baggage room and parcel room, each 60 by 40 ft., and each having a counter along the ticket lobby side. Midway between these two rooms will be a 40 ft. passageway to the trains.

The east end of the ticket lobby will connect with the lunch room and restaurant ac-

nected with the waiting room, through intermediary lobbies. The extreme west end of the building will be entered from the street through a separate doorway, and will contain the local offices. The east end will be used by the post office department and will have a similar entrance to that at the other end of the building.

As mentioned, there is to be a 40 ft. opening centrally in the south side of the ticket lobby, leading down a 5½% ramp to



Perspective View, Toronto Union Station.

The site selected is to the east of the present union station, on the portion of the area swept over by the big Toronto fire in 1904, bounded on the north by Front St., and on the east and west by Bay and York Sts., respectively, this site having been expropriated by the railways immediately after the fire. The only buildings on the site that had to be removed were two at the York St. end of the Front St. frontage.

The floor plan of the station will be in the form of an inverted T, the leg projecting under the tracks, with the cross part along Front St. The building is to be of the Roman type of architecture, built of a light colored stone, Indiana limestone and granite being the probable choices.

The street in front of the station will be widened by 25 ft., and the line of columns along the front entrance of the building will be back 77 ft. from the present street line, making the frontage of the building quite impressive and open. At each end, the building will also stand back 50 ft., which should result in giving it an imposing setting, and, from the fact that it will occupy the whole block, there will be no room for the unsightly small stores that seem to form a parasitic growth around many large railway terminals.

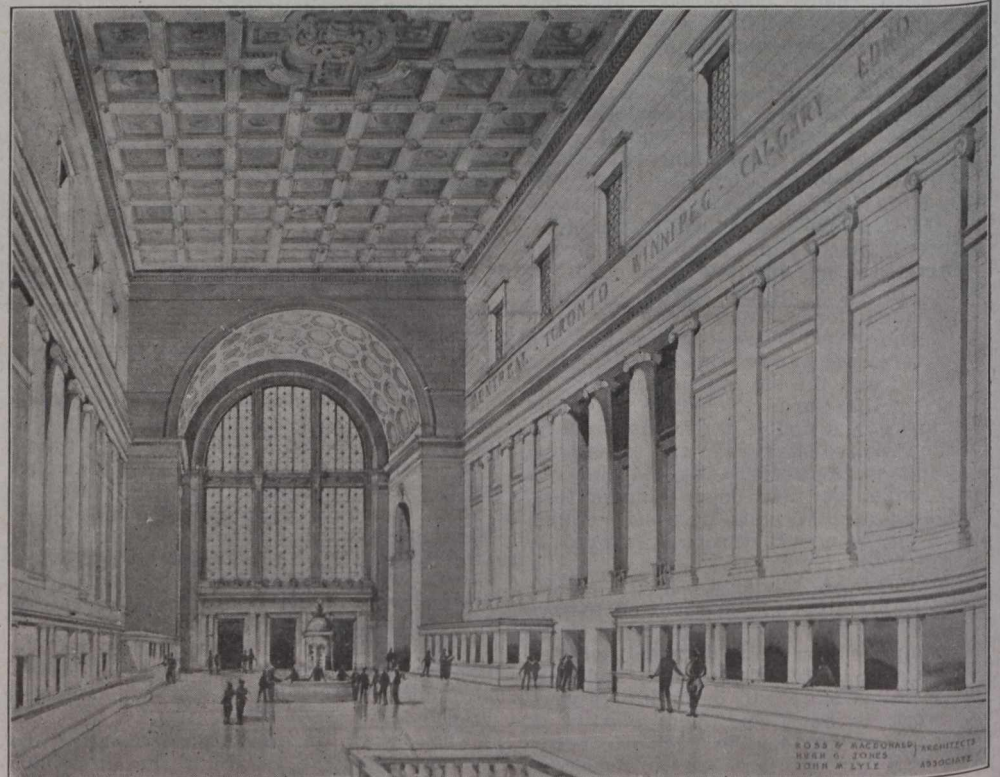
The main station level will be about 18 ins. above that of Front St., and will be entered through a 25 ft. entrance way at each end of the front row of columns, these entrances leading into the ends of a large ticket lobby 250 by 84 ft., the long way of which will be parallel to Front St. This ticket lobby is to be the central point of the whole station scheme, the whole project being built up around it in a very convenient manner.

With the idea of convenience uppermost in the minds of the designers, the information booth will be situated in the centre of the ticket lobby, equally convenient to both entrances, and equally convenient to all the station conveniences, and from this central point they can be pointed out by the information booth attendants, with a minimum amount of confusion on the part of the railway patron in locating the desired objective.

Along the north wall of the ticket lobby, occupying the full distance between the entrance ways, will be 20 ticket booths, with the ticket agent's office centrally situated

commodation, which, with the service room, will occupy the full width of the building at that end, or a space of 152 by 76 ft. The opposite end of the ticket lobby will contain all the passengers' more personal facilities, including the main waiting room, 88 by 64 ft., centrally situated in that end. Connecting from this on the north will be the women's rest room, adjoining which are

the train waiting room. Flanking this passageway, there will be on one side a news stand, on the other a telegraph and telephone room, in the respective ends of the baggage and parcel rooms. Owing to the level of Front St., which is practically that of the main station level, being about midway between that of the present rail level and the rail level when the track elevation



Perspective of Ticket Lobby, Toronto Union Station.

to be the toilet facilities, occupying a total space of 68 by 34 ft. The opposite side of the waiting room will consist of the men's accommodation, including lavatories, barber shop, baths and smoking room, a total space of 60 by 25 ft. The waiting room will be entered from the ticket lobby through two side passageways, from which entrance may be had to the accommodations con-

scheme is completed, it was possible to locate a train waiting room beneath the tracks, approachable by the 5½% ramp down from the ticket lobby. The difference in elevation between tracks and train waiting room will be 13.9 ft. This train waiting room, while not of great height, will have an area of 100 by 230 ft. in length from north to south, at right angles to the tracks.

Seating accommodation will be provided by 11 double cross seats down the centre of the room. On either side of the train waiting room, at the entry end, there will be additional lavatory accommodation, with entry lobbies at this level, communicating through stairways with large toilet rooms. Along either side of the train waiting room, through the balance of the length, as well as on the south end, there will be shop area for the convenience of passengers in making the light purchases peculiar to travelling.

Combination passenger and baggage platforms are to be used, and will be reached from the train waiting room by a 6 ft. stair on each side for each platform. Duplicate stairways will lead down from the platforms to the east and west of these stairways, into 25 ft. exit passageways that will flank the train waiting room on either side. Between the train waiting room and these passages there will be, on either side, two cross passages for communication purposes.

One of the underlying ideas in the station design was to develop a scheme whereby the traffic could be handled with a minimum

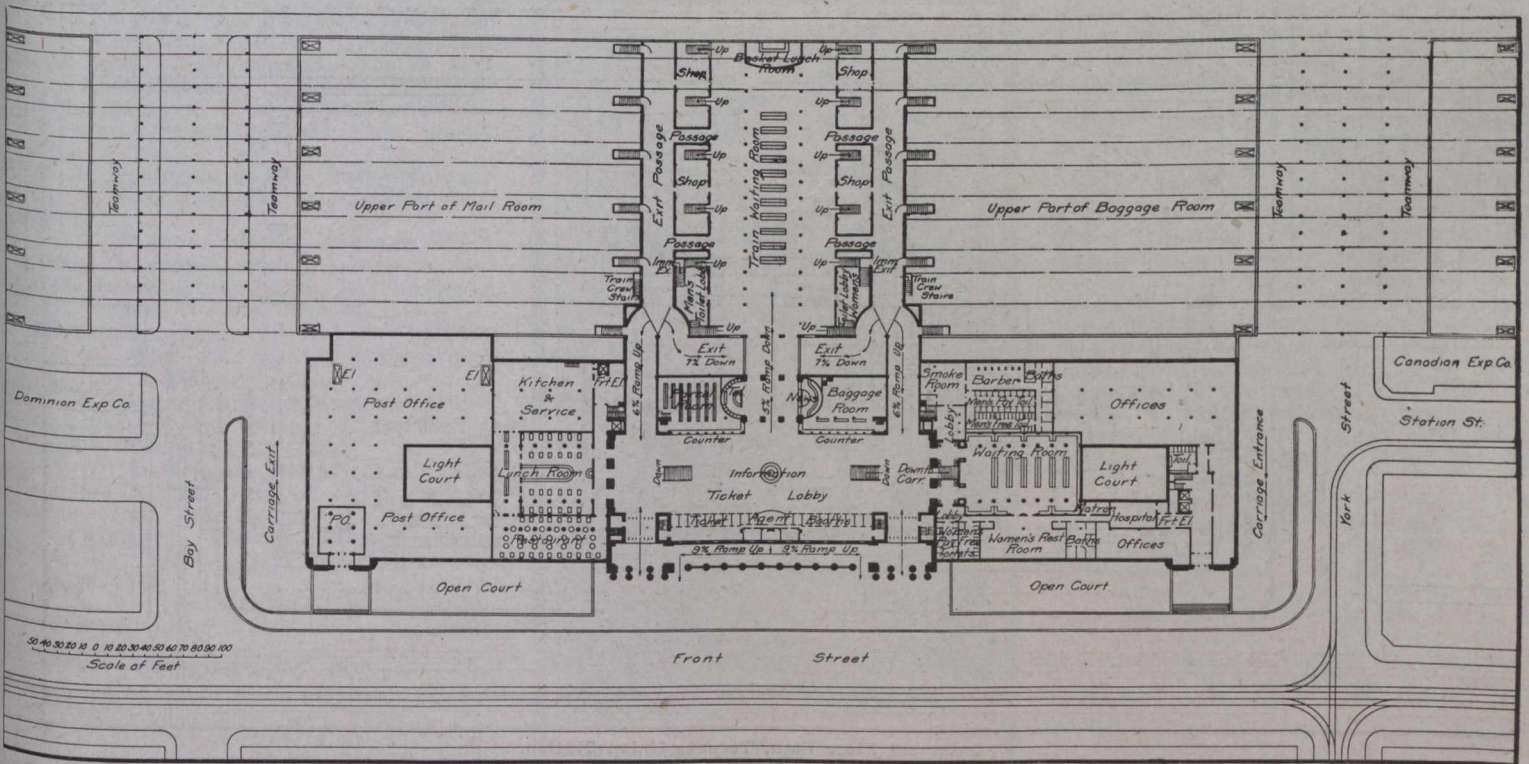
Exhibition, the exit passageway normally in service will be closed by the gate being swung across, the incoming passengers being diverted along similar passageways paralleling the ticket lobby, these passageways on either side descending a 7% ramp and meeting at the centre, leading from there into a basement-level station of identical layout to that above in most particulars. Passing across the exit concourse, the passengers will leave by a central doorway, branching right and left and ascending a 9% ramp to the main street doors. In this manner the incoming crowd will be kept at all times entirely separate from the outgoing passengers, and will be directed in such a manner along easily followed passages that there can be no confusion.

As stated, the lower level waiting accommodation will be almost identical with that above. The exit concourse will be similarly situated and of the same width, but slightly shorter than the ticket lobby above. With the latter it will communicate with a stairway at each end. In the centre will be a duplicate of the information booth, with ticket offices on the north side and parcel

from the lower level to each platform for transferring the baggage and mail between the train platforms and the lower level rooms. Near the back of the station building there will be a trucking space, slightly lower than the lower level floor, and passing under the streets at either end to cross tunnels, along which will be additional elevators to the platforms. In one corner of the baggage space will be the customs lobby, connecting through the carriage lobby with the exit concourse.

Special accommodation has been provided in the design for the accommodation of immigrants. In the upper level plan it will be observed that in each exit passage there is to be a descending stairway leading to a cross passage in the lower level. This passage will connect with a series of rooms to the immediate east of the exit concourse, these rooms consisting of immigrants' waiting room, lavatories, lunch and kitchen service rooms, Provincial and Dominion agents, and laundry, this section of the station being entirely segregated from the balance of the station.

There will be ten through tracks in the



Main Floor Plan, Toronto Union Station.

of confusion, for which purpose special provision must be made to so handle the incoming passengers that their movements will not in any way interfere with those of the passengers proceeding to the trains. This scheme has been developed in a two-fold manner, either of which can be used as the volume of traffic warrants. Near the front end of the train waiting room, the flanking exit passages will widen and divide, with a central division wall, attached to which will be a gate that may be swung across either one of the arms of the divided passage. Normally the inner passages will be barred, the outgoing passengers proceeding along the passageway into the ends of the ticket lobby, where the incoming passengers may meet their friends, the large area available, and the opportunity the incoming stream of passengers has to stretch out in proceeding along this long passageway, eliminating the crowding and confusion usually incidental to meeting in congested quarters.

When the traffic is heavy, as at holiday times and during the Canadian National

and grip rooms along the south side, making it to all intents and purposes a reserve station of similar capacity to the one above.

Between the new street curb and the face of the building there will be an open court the full length of the building, bridged at the centre for the entrance porch and either end for the office and post office entrances. Baggage will enter by way of the open court passageway from the York St. end, leaving it in the baggage quarters at the York St. end of the lower level. Carriages will proceed along the front of the building in the lower court, drawing up in front of a carriage arcade which will communicate with the carriage lobby, this latter being directly off the west end of the exit concourse. The exit will be by way of Bay St.

The baggage room will occupy the whole of the west end of the lower level, extending out under the track area as well. Most of the opposite end will be for post office accommodation. At the extreme ends of these spaces, 32 ft. back from the street and 342 ft. apart, there are to be elevators

station, in pairs, with a combination platform between each pair. The combination platforms will be 20 ft. wide, and they have been so planned that while passengers and baggage will use the same platforms, they will not come in contact. At each end of each platform, as previously stated, there are to be two elevators connecting with the lower level. The baggage will thus be handled at the outer ends of the platforms, and then through the lower subway for any lengthwise shifting, while the passengers will all move towards the centre of the platforms, where the stairways will be located. The train shed will be of the improved Bush type.

The upper three floors of the building will contain the railway divisional offices.

In the preparation of the plans, a great deal of comparative data was collected, from which to develop a scheme that would best meet the local requirements. This has involved the compilation of passenger statistics both in Toronto and many of the other larger cities on this continent, covering a period of several years. Some interest-

ing facts are developed from the report of the investigators. It shows that the passenger traffic is about equal to that of Washington, D.C., and about half that of Kansas City or St. Louis. The baggage handled is shown to be equal to that of the New York Pennsylvania Rd. station and nearly as great as that at the St. Louis station, Boston South station, and the New York Grand Central station. The parcel traffic handled is about the same as the baggage in relation to these cities, including in the last number Kansas City and St. Louis. It is of interest to note that the average number of pieces of baggage per passenger is greater in Toronto than in any other large centre on this continent.

The estimated cost of the station will be in the neighborhood of \$3,000,000, and it will form a part of the \$15,000,000 grade separation project ordered by the Board of Railway Commissioners, and which was described in detail in Canadian Railway

the larger advantages of the general scheme outweighed any advantages to be derived from a direct exit passage. If the light traffic exits were found to be unsatisfactory, an order could be issued compelling the use of the lower level exit at all times.

The Union Station is being built by The Toronto Terminals Railway Co., an organization of G.T.R. and C.P.R. interests formed to handle this project. The Chief Engineer of the company is J. R. W. Ambrose, who has been engineer in charge of the Toronto Grade Separation for the G.T.R. H. R. Safford, Chief Engineer, G.T.R., and J. M. R. Fairbairn, Assistant Chief Engineer, C.P.R., are acting as consulting engineers to the company. The architectural plans have been developed by Ross and Macdonald and Hugh G. Jones, Montreal, who are the architects, and with whom is associated John M. Lyle, Toronto. We are indebted to Mr. Lyle for the information on which this article has been prepared.

Birthdays of Transportation Men in June.

Many happy returns of the day to:—

Jas. Anderson, Manager, Sandwich, Windsor and Amherstburg Ry., Windsor, Ont., born at Ayr, Ont., June 20, 1851.

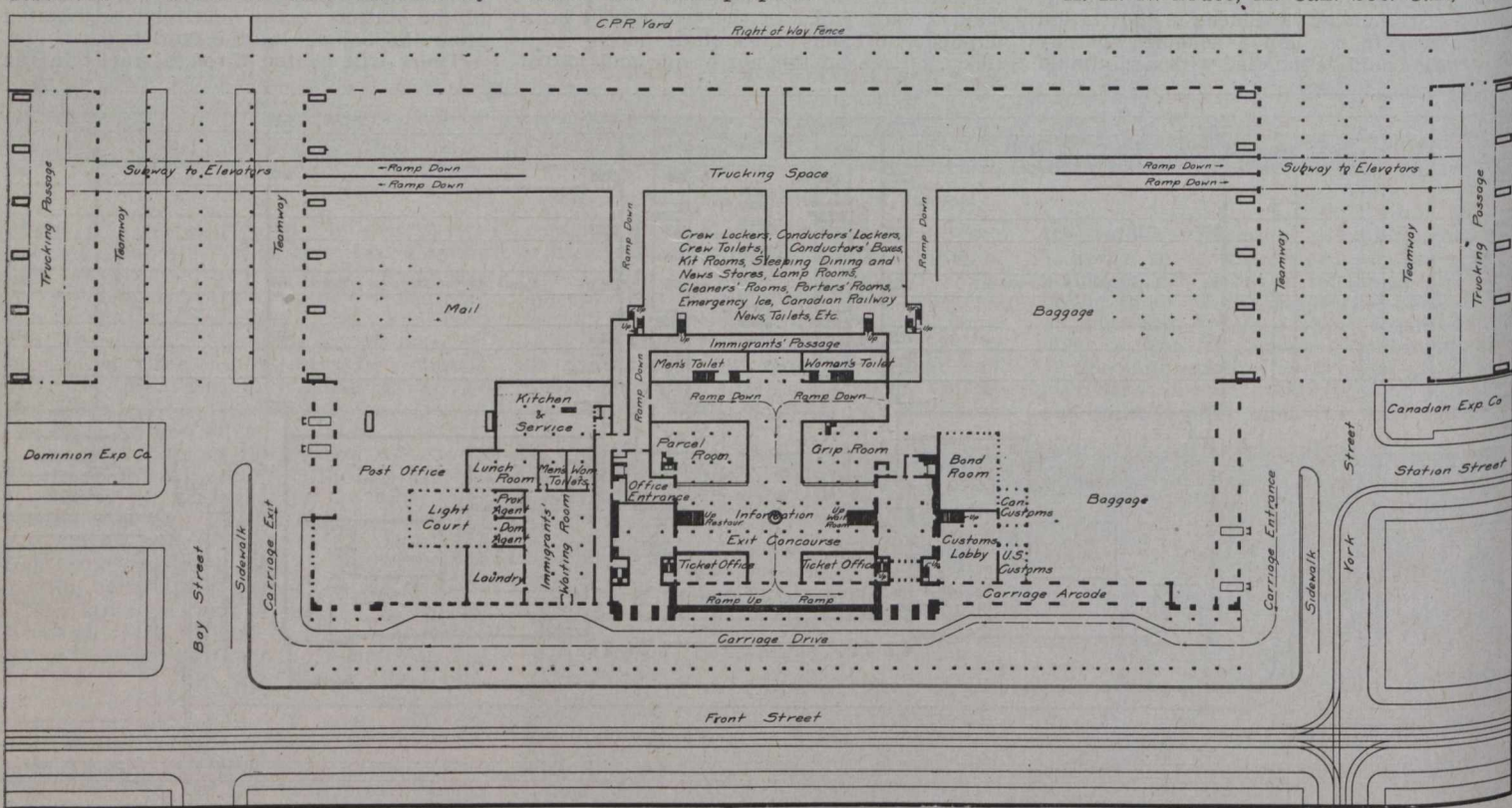
W. C. Bowles, General Freight Agent, Western Lines, C. P. R., Winnipeg, born at Montreal, June 3, 1875.

J. H. Boyle, Superintendent, District 3, Lake Superior Division, C. P. R., Schreiber, Ont., born at Waterloo, Que., June 26, 1869.

F. P. Brady, General Superintendent, Canadian 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



Basement Floor Plan, Toronto Union Station.

and Marine World, Dec., 1913. All the objections raised by the city against the design of the station were overruled by the Board in its sitting of May 5 last. The city wanted greater head room in the train waiting room, but the Chief Commissioner ordered that the 10 ft. provided was ample, as an increase would involve the objectionable feature of more stairs, which, in the present design, are eliminated entirely in all places where there will be a large crowd. He also ruled against separate passenger and baggage platforms, stating that the experience of other large centres proved that the combination platform was quite as satisfactory. This ruling was qualified by an order forbidding the trucking of baggage passed to the passenger stairways, which, as already explained, the design makes quite unnecessary. The request that the platforms be ordered higher could not be complied with, as the Chief Commissioner considered that the advantages to be obtained would not be sufficient to warrant the Board in ordering the railways to change their rolling stock for this purpose. While the possible inconvenience of people meeting incoming friends was recognized,

Dominion Government Railway to Hudson Bay.

Some general information in regard to construction of this line appears on page 253 of this issue.

Work on the terminals at Pas, Man., is reported to have been started, and it is expected to have it completed by the end of the summer.

Tenders are under consideration for the supply of the hardware necessary for the construction of the terminals at Port Nelson.

Replying to questions in the House of Commons, April 30, the acting Minister of Railways said the party of 130 men with 50 horses which left Pas, in January, in charge of J. F. Pratt, arrived at Port Nelson, April 9. The horses which were taken to haul supplies and outfit for road making, were not taken through. The men who formed the original party did not all go through, some left and joined the construction gangs en route, and men left the construction gangs to join the party. The total number arriving at Port Nelson was 148, all of whom were afterwards employed by the Department at that place.

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 3, Saskatchewan Division, C. P. R., Saskatoon, born at Toledo, Ohio, June 5, 1885.

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.

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

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

J. A. Heaman, Assistant Chief Engineer, G. T. Pacific Ry., Winnipeg, born at Memphis, Tenn., June 3, 1874.

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

L. R. Johnson, General Superintendent, Angus Shops District, C. P. R., Montreal,

## The Death of William Wainwright.

born at Abingdon, Berks., Eng., June 22, 1855.

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

L. K. Jones, I. S. O., Assistant Deputy Minister 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.

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

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

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

R. F. McNaughton, Travelling Passenger Agent, Canadian Northern Ry., Saskatoon, Sask., born at Petrolea, Ont., June 23, 1839.

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, British Columbia 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.

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

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

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

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

J. E. Pinault, General Superintendent, Canada and Gulf Terminal Ry., Matane, Que., born at Rimouski, Que., June 24, 1884.

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

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

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

L. G. Rogers, Assistant Superintendent, Division I, Ontario Division, C. P. R., Havelock, born at Richford, Vt., June 18, 1874.

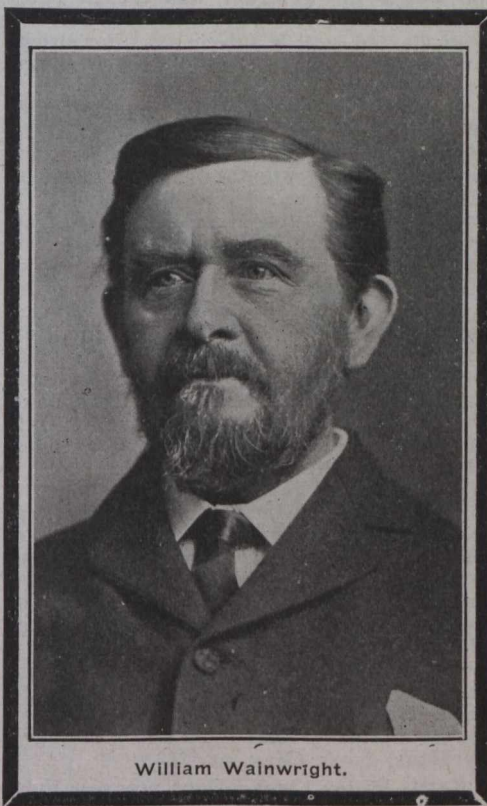
H. H. Smith, Car Service Agent, Canadian Northern Quebec Ry., Montreal, born at Quebec, June 14, 1872.

V. G. R. Vickers, Manager, Foreign Department, and Superintendent, Atlantic Division, Dominion Express Co., Montreal, born at Toronto, June 1, 1866.

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

**Dominion Railway Subsidy Contracts.**—The Dominion Government has entered into a contract with the St. Francis Valley Ry., under the act granting aid in the construction of railways, in respect of a line from Melbourne to Drummondville, Que., 28 miles.

William Wainwright, Vice President, G.T. R., and G.T. Pacific Ry., died at Atlantic City, N. J., May 14. Although he had been in poor health during the past year, his death was, to a great extent, unexpected. He never fully recovered from a severe attack of pneumonia about two years ago, and during April he was absent from his office, and towards the end of the month decided to go to Mount Clemens, Mich., to take a course of baths. It was thought that he was considerably benefitted, and he decided to visit Atlantic City, but suffered a relapse there, and died on the day he was to have left for Montreal. By his death, is removed one of the best known railway men on the continent, his railway career extending over 56 years, 52 of which have been spent in Canada, in G.T.R. service. During that time he assisted in the complete reorganization of the G.T.R., as well as in the building of the system as at present constituted.



William Wainwright.

He was born at Manchester, Eng., Apr. 30, 1840, and entered railway service there, in Jan. 1858, with the Manchester, Sheffield and Lincolnshire Ry., now the Great Central Ry., serving, successively, as junior, and senior clerk, Chief Accountant's office, secretary to Assistant General Manager, and later to the General Manager. He joined the G.T.R. staff at Montreal, in 1862, on the recommendation of Sir Edward Watkin, then Chairman of the Board, M.S. & L.R., and Superintending Commissioner, G.T.R., and was, during that year, senior clerk, Chief Accountant's office; 1863 to 1867, secretary to Managing Director; 1866 to 1872, senior clerk to Managing Director and in charge of car mileage department; 1872 to May 1881, General Passenger Agent; May 1881 to May 1890, Assistant Manager; May 1890 to May 1896, Assistant General Manager; 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, G.T.R.

and G.T. Pacific Ry., and on the abolition of the numerical designations of the Vice Presidents, he was appointed Vice President, with seniority over other Vice Presidents. On the death of the President, C. M. Hays, Mr. Wainwright was placed in charge of all the company's affairs, pending the appointment of a President, to which office he was the natural successor, had not his age prevented his conscientious discharge of the duties. He had for many years acted in the capacity of confidential adviser to the London board, and also had charge of all the company's parliamentary business, which, during the past few years has been heavy. In addition to his position on the G.T.R., he was officially connected with the G.T.R. subsidiary companies, and also with the Canadian Express Co., Montreal Telegraph Co., Montreal Warehousing Co., G. T. Pacific Terminal Elevator Co., St. Lambert Terminal Development Co., Mount Royal Hotel Co., Intercolonial Express Co., Richelieu and Ontario Navigation Co., and the Grand Trunk Insurance and Provident Fund. He was a justice of the peace, and was included in a list got up by a Montreal daily paper some time ago, quoting the 23 men who were the basis of Canadian finance. He was a captain in the First Brigade Garrison Artillery, G.T.R. Brigade, and saw service in the Fenian raids.

E. J. Chamberlin, President G.T.R. and G.T.P.R., said,—“He had been with the Grand Trunk for 52 years and during that long period he had always been a faithful worker, and he was not merely respected, but beloved by every one of his associates. It would be impossible to say all that he had done for the advancement of railway interests in Canada, and for the G. T. R. Personally, I feel, that I have lost, not merely a valued colleague, but a dear personal friend. The railway interests in Canada, and the country itself are the poorer for his death.”

The body was brought from Atlantic City in the Vice President's private car, Canada, and the funeral took place at Mount Royal cemetery, Montreal, May 18. The G.T.R. head offices were closed during the afternoon, and instructions were issued, that at 2.30 p.m., all trains and locomotives on the G.T.R. and G.T.P.R. were to remain stationary for one minute, and all work was to cease in all shops and yards for the same period. The attendance at the funeral was very large, including representatives of all the various transportation interests, in addition to a large number of officials of the G.T.R. system, the C.P.R. being represented by a great number of its officials. Chief among those present were,—A. W. Smithers, Chairman of the Board, G.T.R., who had just arrived from England; E. J. Chamberlin, President, G.T.R. and G.T.P.R.; Sir Thomas Shaughnessy, President, C.P.R., R. B. Angus, director, C.P.R., Jas. Carruthers, President, Canada Steamship Lines, and Jas. Mills, one of the Board of Railway Commissioners. There were also present, H. A. White, chief clerk to Superintendent of Car Department, G.T.R., and W. S. Rollo, Joint Agent, G.T.R. and Central Vermont Ry., St. Johns, Que., two of the oldest G.T.R. employes still in active service, they having entered the service in 1865 and 1866, respectively; and also a number of retired employes, some of whom were in the service before Mr. Wainwright joined the staff.

The International Railway Fuel Association's annual convention was held at Chicago, Ill., May 18 to 21, when a number of papers, dealing with railway fuel matters, were read and discussed.

## Railway Development.

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

**Alberta and Great Waterways Ry.**—Edmonton, Alta., press reports state that active work was started on this line at the point of junction with the Edmonton, Dunvegan and British Columbia Ry., April 27. Location plans for the first 180 miles of the line have been filed with the Alberta Department of Railways. It is expected that track will be laid to Lac la Biche by Dec. 31. W. R. Smith, who is Chief Engineer of the Edmonton, Dunvegan and British Columbia Ry., and of the Central Canada Ry., is Chief Engineer of the A. and G. W. Ry. also, all three lines being built by the J. D. McArthur interests. The E., D. and B. C. Ry., is to connect at the Alberta-British Columbia boundary with the Pacific Great Eastern Ry. (May, pg. 213.)

**The Burrard Inlet Tunnel and Bridge Co.'s** officials stated, May 4, that the British consulting engineers who prepared plans for the proposed bridge across the Second Narrows of Burrard Inlet, for which tenders were recently received, had agreed to withdraw from the contract owing to the fact that the tenders on their plans were not such as could be accepted. The directors are now considering the alternative plans submitted, and it is expected that one of them will be accepted. (May, pg. 213.)

**Calgary and Fernie Ry.**—We are officially advised that F. Crandell, Calgary, Alta., is General Manager of this projected railway. (May, pg. 213.)

**Dominion Atlantic Ry.**—Rapid progress is being made with the bridge renewal and strengthening work. The principal bridges on which work is being done are at Windsor, and across Bear River, near Annapolis, N. S. It is expected that the work will be completed by August. T. Cozzolino is the contractor. (May, pg. 213.)

**Esquimalt and Nanaimo Ry.**—A new steel viaduct on concrete pedestals and columns has been completed over the Arbutos Canyon, Vancouver Island, replacing a timber trestle. It was built by the Canadian Bridge Co. This is about the last of the timber bridges and trestles on the original E. and N. R., to be replaced.

The bridge across the Tsable River on the Courtenay extension is expected to be completed early in June, when track laying will be continued to the Trent River, where another bridge is under construction. When this is completed track can be laid into Courtenay. The ballasting gang is following close after the track laying. The terminal and other buildings at Courtenay are well advanced and are all expected to be completed by the time the track reaches the place in the fall. Shields and Newburn, Victoria, B. C., are the contractors for the buildings. (May, pg. 213.)

**Ha Ha Bay Ry.**—Although the Quebec Legislature has authorized the amalgamation of this company with the projected Roberval and Saguenay Ry., we understand that the amalgamation has not yet taken place, although the lines built by the H. H. B. Ry. are being operated under the title of the Roberval and Saguenay Ry.

The H. H. B. Ry. has 36.18 miles of line in operation, consisting of a line from Ha Ha Bay Jct., on the Quebec and Lake St. John Ry. to the Dominion wharf at Bagotville, about 20 miles; a branch to Chicoutimi, 3.5 miles; a branch to Lake Kenogami, 12 miles; and a branch to St. Alexis, one mile. The branch to Chicoutimi is operated by electricity. We are advised that no new railway work is being gone on with. A survey has been made for an ex-

tension of the line from Ha Ha Bay across the Saguenay, up around the north side of Lake St. John to the Mistassini River, about 70 miles. Nothing, however, has been done towards financing this construction. (Jan., pg. 21.)

**Intercolonial Ry.**—A large amount of work is reported to have been done on the new ocean terminals under construction at Halifax, N.S. The principal work consists of filling in and reclaiming from the water an area of about 200 ft. by 220 yards, necessitating the dumping of over 100,000 cubic yards of material. The cut for the branch line has been extended as far as Tower Road. The work in progress from Fairview towards the terminals has now reached a point between Mumford Road and Bayer's Road. The pier construction work, for which the contract was let to Foley Brothers, Welch, Stewart and Fauquier, has been started, and a sub-contract for dredging has been let to the Poupore Dredging Co., Montreal.

The acting Minister of Railways informed the House of Commons, May 6, that the contract for the construction of the branch line from Dartmouth to Dean's Settlement, N. S., 73 miles, was let to M. P. and J. T. Davis, Feb. 16, 1914, at schedule rates, aggregating \$1,740,277.98. The original contract had not been sublet.

Engineers have been making a survey for a diversion of line to overcome the present heavy gradient between Amherst and Nappan, N.S. The diversion will probably start, local reports state, a little west of Amherst, and rejoin the main line near Blair's Lake.

A spur line is under construction into Pugwash, N.S., and is expected to be opened for freight traffic, early in July.

A contract is reported to have been let to Rhodes, Curry Co., Amherst, N.S., for the erection of nine steel bridges in Quebec and Nova Scotia. Tenders were received to May 27 for the substructures for 14 steel bridges in Nova Scotia, New Brunswick and Quebec. Tenders were also received to May 27, for a 40,000 gal. water tank at Jacquet River, N.B.; extensions to the freight sheds at Bathurst and Millerton, N.B., and Mata-pedia, Que.; and for the erection of a passenger station, freight room and dwelling at Perpetue, Que. (May, pg. 213.)

**Kettle Valley Lines.**—Good progress is being made with construction on the section of the line from Osprey Lake to Princeton, B.C., the completion of which for the track-layers is called for by Oct. 1. At Princeton the line will join the Vancouver, Victoria and Eastern Ry., and trains will run over that company's tracks, under a joint agreement, to the Coquihalla Summit, near Otter Creek. The K. V. Lines' route thence to Hope is under construction to be jointly operated with the V. V. and E. Ry. Over 50% of the grading on this section is completed, and there is only a three mile length on which work is not in progress. The contract calls for the completion of this section Dec. 1. Three of the piers of the bridge over the Fraser River at Hope, which is to give connection with the C.P.R., were reported completed May 6. The contract for the erection of the superstructure has been let to the Canadian Bridge Co., but it is not expected that the erection of this will be started until the track has been laid to the western approach. (May, pg. 214.)

**Labrador, Quebec and Southern Ry. Co.**—The House of Commons Railway Committee has changed the name of the proposed company, whose promoters asked for incorpora-

tion as the All Red Line Ry. Co., to the above; defined the line to be built as from Cape St. Charles, via Lake St. John, to Quebec, instead of from the Labrador coast to the Pacific Ocean; and reduced the capital from \$100,000,000 to \$10,000,000. Questions were asked in the House of Commons as to the standing of the promoters, and the acting Minister of Railways stated that F. A. Knapp, father-in-law of E. J. Holland, one of the incorporators mentioned in the bill, has formed him that "Mr. Gould, of New York, and several other capitalists were interested in the project, and that there was sufficient backing to build the line from the Labrador coast to Quebec." Some discussion took place as to the differences between Canada and Newfoundland in regard to the Labrador coast, and it was decided to let the bill stand in order that this might be looked into. (See All Red Line Ry., April, pg. 165.)

**Lake Erie and Northern Ry.**—A special train ran over the completed line from Brantford to Galt, Ont., May 4, about 20 miles. The completed line starts at Jubilee Terrace in Brantford, and runs into Galt as far as the C.P.R.

The further construction of the line in Brantford is being held up pending a decision on the question of the raising of the Lorne Bridge. The plans for this were submitted to the city, May 8, when certain objections were made, and will be laid before the Board of Railway Commissioners. Construction is being proceeded with rapidly on the section south from Brantford to Port Dover.

It is expected that the Brantford-Galt line will be put in operation early in August. (May, pg. 214.)

**Miramichi Bay Shore Ry.**—The New Brunswick Legislature has incorporated a company with this title, to build a railway along the shores of Miramichi Bay to serve Newcastle, Chatham and other points. (May, pg. 24.)

**North Ry.**—Press reports state that a contract will be let on an early date for the building of the first section of this projected railway from Montreal to a junction with the National Transcontinental Ry. at the Bell River crossing, Que. Surveys are being made for the second section of the line from the Bell River to Hudson Bay. F. H. Clergue, Montreal, is President, and C. J. Smith, Vice President and General Manager. (Feb., pg. 70.)

**North Shore Ry. and Navigation Co.**—The New Brunswick Legislature has granted an extension of time for the building of the uncompleted portions of this railway, in the vicinity of Beersville, N. B. (Jan., 1913, pg. 21.)

**North Western Ry. Co. of Canada.**—The bill asking for the incorporation of the North Western Ry. Co. of Canada was withdrawn from further consideration in the Dominion Parliament, May 13.

**Pacific and Hudson Bay Ry.**—W. R. Jenkins, described as General Purchasing and Right of Way Agent, visited Edmonton, Alta., recently, and is reported to have stated that he was on his way to Grouard, and other northern points, with a view of looking over the territory through which the company's projected line would pass, that the Pacific terminal will be at Bella Coola, that the line will run easterly through a comparatively rich country to the Pine Pass, and will then turn northerly to Lesser Slave Lake, that the original preliminary surveys showed a line passing along this lake by the N. W. ¼ sec. of sec. 15, tp. 75, range 14 west of the 5th meridian, about half a mile east of Grouard, and that something in the way of construction will probably be arranged for within the next few months. (May, pg. 214.)

**Pacific Great Eastern Ry.**—Tracklaying is reported to have been started at Dundarave, B.C., to which point the line is at present in operation from North Vancouver, 4.5 miles, in the direction of Horseshoe Bay. The bridge gangs are working well in advance of the steel, the rails being rafted down to them. It is expected to have track laid to Horseshoe Bay early in July. Track has been laid from Squamish for 20 miles, and grading is practically completed thence to Lillooet, mileage 120 from Squamish. Between that point and Kelly Lake grading is well advanced, and the following sub-contracts are reported to have been let on the line between Fort George and Kelly Lake, in addition to those mentioned in our May issue:—Heckman and Moore, 10 miles near Clinton; Welch and Kennedy, four miles; Rankin and Kellett, 20 miles; Maddox Bros., six miles. The quantities on the sub-contract let to A. E. Griffin & Co., Fort George, referred to in our May issue, are:—Earth excavation, 1,000,000 cubic yards; rock excavation, 500,000 cubic yards; embankment, 1,500,000 cubic yards. (May, pg. 214.)

**Pacific, Peace River and Athabasca Ry.**—C. F. Law, who represents the British interests behind this company in Vancouver, B.C., is reported to have stated, May 4, that an engineering party was leaving that city shortly for Athabasca Landing, Alta., for the purpose of exploring the country west to the Pacific coast. The first section of the railway to be built will probably extend from the Naas River to the coal fields in the Ground Hog River valley. It is said surveys for this line are to be undertaken at once, and it is expected that the location plans will be ready in the autumn. It is also said that it is expected to start surveys from Prince Albert, Sask., and from the Peace River crossing, Alta., this year. (May, pg. 214.)

**Peace River Ry.**—Application is being made to the Alberta Legislature for the incorporation of a company with this title to build a railway from Grand Prairie to Fort Vermillion, Alta. Griesbach, O'Connor & Co., Edmonton, Alta., solicitors for applicants.

**Peace River Tramway and Navigation Co.**—C. F. Law, Vancouver, B.C., who is also interested in the Pacific, Peace River and Athabasca Ry., is reported to have said in Vancouver, May 11, that the company's plans call for the completion next year of the two sections of railway authorized to be built. It was proposed to put three shallow draught steamers on the lake and river navigation which the lines will open up. (April, pg. 166.)

**Pointe aux Trembles Terminal Ry.**—The Board of Railway Commissioners has authorized the company to build its tracks across the Montreal Terminal Ry. in Pointe aux Trembles, Que. We are officially advised that this railway will be built entirely on the Canada Cement Co.'s property, except where it crosses the Montreal Terminal Ry., and the Canadian Northern Quebec Ry. tracks, and Notre Dame St. East. The greater part of the line has been built, and is merely ordinary construction, presenting no features of engineering interest. It is to be used entirely for the Canada Cement Co.'s purposes. A. C. Bedford Jones, Montreal, is secretary. (July, 1913, pg. 332.)

**Prince Edward and Hastings County Ry.**—In the passing through the House of Commons of the bill granting the company an extension of time for construction of the line from Trenton to Belleville, Ont., with branch lines, and authority to build from Brighton to Picton, Ont., it was stated that the principal line to be built will extend from Brighton to Belleville, and will run through

Kingston. The distance from Brighton to Kingston, via Picton, is 72 miles, and it is proposed to build a bridge at Glenora.

Local press reports state that the company, although consisting of Prince Edward County men, is being organized in C. P. R. interests. The starting point, Brighton, is on the Campbellford, Lake Ontario and Western Ry., which is being financed by the C. P. R., and will be operated by it. The new line would run through a district which the C. P. R. only touches by its Kingston and Pembroke branch. (Mar., pg. 122.)

**Prince Edward Island Ry.**—The contractors for the building of the car ferry terminals at Carleton Point, P.E.I., are reported to be making rapid progress with the work. At the quarry in New Brunswick, from which stone will be taken, tracks have been laid to the I.R.C. Pointe du Chene Branch, at the terminal of which, the small cars are put on scows and towed across to Carleton Point. A dry dock 125 by 47 ft. has been located at Pointe du Chene, N.B., where the cribs for the piers are being built. The houses and other buildings for the men to be employed at Carleton Point are nearly completed, and everything is about ready for an actual start to be made on the piers, etc., for the terminals. It is expected that about 1,250 tons of stone will be shipped daily from the quarries. Roger Miller & Co., the contractors, have the following plant on hand: Two locomotives, 26 flat cars, steam shovel, derricks, a 600 ft. cableway hoist, and miscellaneous machinery at the quarries; one 500 h.p. ocean going tug; one small tug; two scows of 1,000 tons capacity each; two derrick scows of 500 tons capacity each, at Pointe du Chene, and the usual construction plant at Carleton Point. The following are in charge of the work:—Roy Miller, representing the firm; E. A. Gibson, Chief Engineer; John Bradley, at the quarry; T. Barrett, at Carleton Point; W. King, in charge of the concrete work; H. Laframboise, marine foreman, while F. B. Fripp is engineer in charge for the Dominion Government. A track has been laid to the terminal site at Carleton Point from the P.E.I. Ry., and a permanent line will be completed later. Roger Miller paid a visit recently to the work, and is reported to have said that construction would be rushed as fast as possible and he expected to see trains running to the terminal in about a year. The above is a summary of a lengthy special article appearing in a recent issue of the Moncton Times. (May, pg. 215.)

**St. John and Quebec Ry.**—The New Brunswick Legislature has provided for a further issue of guaranteed bonds for \$10,000 a mile in aid of the construction of this line from Grand Falls to St. John. In the course of the session charges were made that the railway was not being built in accordance with the original plans and specifications; that payments had been made to members of the Government by contractors to secure contracts, and that the line was not costing the amount claimed by the company. The name of the Premier was mentioned in connection with the matter. In consequence of this and other allegations, the Premier obtained leave of absence from office, and an act was passed authorizing the Lieutenant Governor to appoint a Royal Commission to hold an enquiry into the whole matter. The members of the Commission, appointed on May 5, are Judge McKeown, ex-Judge Wells and W. D. Fisher.

F. B. Carvell brought the matter before the House of Commons, April 28. He stated that while the cost of the line was sufficient to justify the payment of the Dominion subsidy of \$6,400 a mile, it was being built with gradients exceeding the 0.4% and 0.6% and

with curves of seven degrees, and otherwise not in accordance with the specifications prepared at the time the agreement was made under which the Railways Department undertook to operate the line on completion for 60% of the gross receipts. He also stated that the special legislation granting an additional \$10,000 a mile of guaranteed bonds had been put through the Legislature largely on the strength of a statement that the Dominion Government had promised to increase the amount voted for building certain bridges, from \$1,000,000 to \$3,000,000. He suggested that if this was the case the Department should itself build the bridges instead of paying the money over to the company. The acting Minister of Railways stated that the Department, before taking over the line for operation must see that it is built in accordance with the special agreement. The Department could only protect itself in so far as the payment of subsidies is concerned, and there was no doubt from Mr. Carvell's statement that the line was costing a sufficient amount to justify the payment of the \$6,400 a mile. The matter of the bridges was under consideration, and all he need say was that the Department would protect itself in a satisfactory manner. (May, pg. 215.)

The acting Minister of Railways introduced a resolution in the House of Commons, May 16, providing for the ownership by the Government of the three bridges to be erected on this railway. When completed the line is to be operated under lease by the Intercolonial Ry.

**Saskatchewan Central Ry.**—F. S. Cahill, Saskatoon, Sask., one of the provisional directors of this company, the application of which for an extension of time for construction has been the subject of considerable controversy in the Dominion Parliament, is reported to have stated that \$75,000 of the capital had been subscribed for preliminary expenses, including the obtaining of the charter, and that nothing further had been done. He did not think it likely that any steps would be taken this year in the way of financing construction. (Jan., pg. 22.)

**Seymour Narrows, B. C.**—The City of Victoria, B. C., proposes to send a deputation to Ottawa to urge upon the Government the necessity of making an appropriation for the purpose of having adequate surveys made for the construction of the projected bridge across Seymour Narrows, with the necessary connection of railways on Vancouver Island and the mainland.

**Toronto, Hamilton and Buffalo Ry.**—We have been officially advised that the company is not contemplating increasing its yard accommodation at Brantford, Ont., at present, as stated in recent press reports.

A meeting of the ratepayers of Dunnville, Ont., was held May 13, when a resolution was passed asking the Town Council to pass a bylaw to raise sufficient money to provide the right of way for the building of a branch of the T. H. and B. Ry. into the town from Smithville. The estimated cost of the right of way is about \$40,000, and it was reported that arrangements had been made with practically all the owners. The Mayor stated that the company was ready to start the building of the branch at once, and to complete it by the end of the year; that the station and yards would be at the corner of Bridge and Canal streets; that \$30,000 would be spent on the passenger station, and \$10,000 on a brick freight shed. A committee was appointed to interview the company and to enter into an agreement for the building of the branch. (May, pg. 215.)

We are officially advised that it has been decided to instal the A. P. B. automatic block system between Hamilton and Brantford, the work to be done by the General

Railway Signal Co. It will be similar to the installation between Vinemouth and Welland.

**St. Francis Valley Ry.**—A contract has been entered into under the act granting aid to certain railways, between the company and the Dominion Government for the building of a line from Melbourne to Drummondville, Que., 28 miles. (May, pg. 215.)

**Vancouver Ry. and Ocean Terminal Co.**—The Vancouver City Council was advised, April 30, that the company had withdrawn its application to the Dominion Parliament for a charter of incorporation. (April, pg. 167.)

**Western Dominion Ry.**—In the House of

Commons Committee of the Whole, May 8, when the bill respecting the W. D. Ry., and the Alberta Pacific Ry. came up, the acting Minister of Railways stated that he had been informed that the contract for the line had been signed, and that arrangements had been made for financing construction in England. He had no information, however, as to when construction would be started. The subsidy agreement with the company called for the building of 100 miles towards the International Boundary. The bill as passed by the House grants an extension of a year within which construction is to be started. (April, pg. 167.)

## 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:—

### Caustic Soda and Bleaching Powder Rates.

21686. April 22. Re complaint of Canadian Manufacturers' Association against commodity rates on caustic soda and bleaching powder, in car loads, shown in supplement 14 to G.T.R. Tariff C.R.C. no. E 2855, effective from Sandwich, Ont., April 23; Supplement 5 to Michigan Central Rd. Tariff C.R.C. no. 2049, effective from Windsor, Ont., April 23; and Pere Marquette Rd. Company's Tariff C.R.C. no. 1757, effective from Sandwich, April 18, it is ordered that the said schedules of the G.T.R. and Michigan Central Rd., in so far as they increase the rates now being charged on caustic soda and bleaching powder, be suspended sine die. And it is further ordered that the said schedule of Pere Marquette Rd., in so far as it increases the rates heretofore charged on caustic soda and bleaching powder, be disallowed. And it is also ordered that the rates lawfully in force on the said commodities immediately prior to the effective dates of the said schedules be continued in effect until further order.

### Seat Fares in British Columbia.

21716. April 30. Re complaint of R. L. Rice, of Vancouver, against charge made by C.P.R. for two seats in a sleeping car for a daylight journey from Sicamous, B.C., to Vancouver. It is ordered that the complaint be dismissed.

### Maple Butter Classification.

21745. May 2. Re application of Maples, Limited, of Montreal, for a rating on maple butter in Canadian Freight Classification of third-class, in less than carloads, and fifth-class in carload lots, or in mixed cars with syrup. It is ordered that the classification of maple butter be made the same as the classification of peanut butter, the change to be included in Supplement 3 to Canadian Freight Classification 16.

### Clay Rates in Carload Lots.

21746. May 4. Re application of the Dominion Sewer Pipe Co. and the Ontario Sewer Pipe Co. for an order cancelling Supplement 146 to G.T.R. Special Tariff, C.R.C. no. E-2552, increasing the rate on clay, in carload lots, from Waterdown to Swansea and Mimico, Ont., 1½c per 100 lbs. to 2c per 100 lbs. It is ordered that the said supplement be disallowed, and the rate of 1½c per 100 lbs. be restored.

### Sugar Rates in Carloads.

21781. May 7. Re application of Dominion Sugar Co., of Wallaceburg, Ont., for a readjustment of rates on sugar, in carloads, from Wallaceburg to Toronto and Hamilton, over the Pere Marquette, Chatham, Wallaceburg and Lake Erie, Grand Trunk and Canadian Pacific Rai-

way lines, and order 20136, Aug. 11, 1913. It is ordered that the joint commodity rates of the Chatham, Wallaceburg and Lake Erie Ry. and the Pere Marquette Rd., in connection with the Grand Trunk and Canadian Pacific Railways, for carriage of sugar, in carloads, from Wallaceburg, to Hamilton and Toronto, be reduced to 10½c per 100 lbs., and 11½c per 100 lbs. respectively, on a minimum weight of 40,000 lbs. per carload, the said reduced rates to be made effective not later than May 25.

### Essex Terminal Railway.

21786. May 8. Re order 21541, March 25, suspending tariffs and supplements applicable to international traffic, filed by the G.T.R., Michigan Central Rd., the Wabash Rd., the C.P.R., and the Pere Marquette Rd., also tariffs and supplements filed by other companies in which the aforesaid railway companies, or any of them, are or is shown as participating carriers, or carrier, removing the Essex Terminal Ry. from the joint tariffs, at present in effect, as a party thereto, under concurrences filed by the said Essex Terminal Ry. It is ordered that the said tariffs and supplements be disallowed.

### Lumber Rates to Montreal.

21789. May 12. Re the following tariffs, Supplement 51 to C.R.C. no. E-2318 of G.T.R.; C.R.C. no. E-2779 of C.P.R., and C.R.C. no. 419 of Canadian Northern Ry., increasing rates on lumber to Montreal for export; also G.T.R. Supplement 49 to C.R.C. no. E-2318, and C.P.R. Tariff, C.R.C. no. E-2777, showing the said companies' summer rates on lumber to Montreal for local delivery. Upon the complaint of the Canadian Lumbermen's Association and the Montreal Board of Trade against the proposed increased rates, it is ordered that with respect to the lines of the Grand Trunk, Canadian Pacific, and Canadian Northern Railways, or either of them, between Montreal and Ottawa, and between Montreal and Hull, including the Point Fortune, Hawkesbury and Rockland branches, also between Hull and Waltham, Hull and Maniwaki, and Ottawa and Pembroke, all termini inclusive, order 21621, April 19, be invalidated by the publishing and filing of tariffs by the said companies, under the provisions of sub-section 2 of section 328 of the Railway Act, to take effect not later than one week from the issuance of this order, to apply on lumber to Montreal, for export, reinstating the rates charged during the season of 1913 from those stations whence the "export" rate has been made the same as the "domestic" in the tariffs suspended by order 21621, which tariffs shall thereby be superseded in so far as they conflict with this order. And it is also ordered that the complaint against the increased rates to Montreal for local delivery be dismissed.

## The Board of Railway Commissioners' Interswitching Rules.

Chief Commissioner Drayton gave the following decision recently:—

The C.P.R. and G.T.R. Companies were required by the Board to show cause, at the sittings held on April 7, why the terms of the General Interswitching Order should not be extended to the use of team tracks. This action was taken by the Board as the result of the issuance of C.P.R. circular O.D.N.O 954, addressed to agents and shippers, as follows:—"It has been the practice in the past in Toronto, and then only in some instances, to switch cars from connecting lines for team track delivery. Effective April 1, this practice will be discontinued. This does not affect the switching of cars to private sidings under the terms of our tariff N.O.E. 262."

The whole question of interswitching and local switching has been at loose ends for a long time. The Board's General Interswitching Order was made on July 8, 1908, the order being made by the Board as composed of the late Chief Commissioner Mabee, Mr. Bernier, and Commissioner Mills. Prior to the issuance of this order, railway companies at certain points were interswitching as a matter of agreement and perhaps mutual accommodation, and as a matter of Board direction at London, Lindsay, New Westminster and Rossland.

It is claimed by shippers that at first the railway companies construed the order as covering movements not only to private sidings, but also to team tracks, and probably for this reason the C.P.R. made its application to the Board to reopen the London interswitching case. This application was heard at Toronto, in Jan., 1909, and was for an order rescinding the London order, fixing the rate to be charged for the interchange of traffic and the interswitching of cars over the G.T.R. branch line, and connecting the G.T.R. and C.P.R. lines at London.

Mr. Mabee, in his judgment delivered Nov. 27, 1911, states:—"The ground upon which the application is based is that, on July 8, 1908, effective Sept. 1, 1908, the Board, by its general interswitching order, established certain tolls for interswitching generally within certain limits. The tolls that would be payable by the C.P.R. to the G.T.R. for interswitching at London would be less under the general order than those payable under the special order of July 25, 1905. It may as well be said at the outset that, when the investigation was being held that led up to the making of the general order, the London situation was not present to my mind, and it was not intended that the order covering interswitching there should be interfered with by the general order. The companies have so regarded the matter. Hence this application for rescission of the London order, which would leave the general order applicable."

The application was refused on the ground that the C.P.R., under the London order, enjoyed rights greater than those given by the general order, and the London order placed at the disposal of the C.P.R. every G.T.R. track in London except shed tracks. The distinction of facilities covered as between one order and the other consists of team tracks. In the opinion, therefore, of the late Chief Commissioner, the general order did not include team tracks. This judgment was concurred in by Commissioner Mills, who was also a party, to the making of the original order.

A further ruling was made on Feb. 3, 1912, to the effect that the interswitching order deals only with the tolls payable, and was



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never intended to compel one railway to turn over its entire terminals to another or others. Notwithstanding the rulings of the past, the railway companies, as evidenced by the circular issued by the C.P.R., and already referred to, have at least in part carried on interswitching so as to include team track deliveries. There is no doubt that team tracks do constitute, as has in the past been found by the Board, terminals of the respective companies, and it well may be that the Commission should not enable one company to carry on its business by the use of the terminals of another, and that, if such a principle was adhered to, general business would suffer largely, as no company would be able to get the slightest advantage in putting in expensive modern terminals, giving [the shippers an advanced or accelerated service, if their facilities could be made use of by any other company.

The question is too large a question, in view of the considered judgments of the Board, to deal with at the present time. The companies have been directed to furnish the Board with such information as to cost of movement and the effect of an order which would include team tracks as well as private sidings. Notwithstanding this position, I am of the view that the circular issued by the C.P.R. is not effective. The C.P.R. has issued its tariff no. E-2646, applying to lines Fort William, Ont., and east thereof. It is a special freight tariff covering local switching, interswitching and absorption of switching charges on car-load traffic, and applying to and from stations therein mentioned, including, among many others, Toronto. The tariff states that traffic forwarded under switching rates as published therein will not be handled through company's warehouses or freight sheds, but must be taken delivery of direct from cars on private sidings or public team tracks. This notation is on the face of the tariff, and as interswitching traffic is carried at switching rates just as truly as local switching is, covers the movement in both cases. Sec. 1 deals with the scale of local switching charges, and sec. 2 with interswitching charges at junction points. In neither case are team tracks excluded.

In my view, therefore, a switching movement is provided for by tariff properly issued and filed. The companies cannot, under the terms of the act, decline traffic properly offered to them under these tariffs and within the terms of the tariffs, as I hold team tracks to be, until proper notice of cancellation has been given. As the cancellation of these tariffs will mean that the traffic will move at higher tolls, the result is that the cancellation cannot be effective until 30 days after its publication.

### Canadian Railway Club.

The annual meeting was held at Montreal, May 12. The report of the Secretary, Jas. Powell, showed that 112 new members joined during the year, and 88 had resigned or been struck off the roll, and 4 had died, leaving a total membership of 820. There was a slight decrease in the surplus, owing to the increased cost in entertainment and also to the expenditure of \$250 for the incorporation of the club. This was effected under the Quebec law in order to protect its name being appropriated by any other association. The Treasurer, W. H. Stewart, reported receipts of \$7,832, with disbursements of \$4,705, leaving a balance to be carried forward of \$3,126.

The retiring President, R. W. Burnett, Master Car Builder, C. P. R., was presented with a past president's medal. Following

are the officers for the current year:—President, W. McNab, Principal Assistant Engineer, G. T. R.; First Vice President, L. C. Ord, Assistant Master Car Builder, C. P. R.; Second Vice President, R. M. Hannaford, Assistant Chief Engineer, Montreal Tramways Co.; Secretary, Jas. Powell, Chief Draughtsman, G. T. R.; Treasurer, W. H. Stewart, C. P. R. Executive Committee, Prof. H. O. Keay, McGill University; E. E. Lloyd, Auditor of Stores, C. P. R.; J. Hendry, Master Car Builder, G.T.R.; C. Manning Secretary to Superintendent of Motive Power, G.T.R.; E. B. Tilt, Engineer of Tests, C.P.R.; Geo. Smart, Master Car Builder, I.R.C., Moncton, N.B.

### Great Northern Railway Lines in Canada.

**Midland Ry.—Midland Great Northern Ry.**—The Winnipeg Board of Control decided May 12 to apply to the Board of Railway Commissioners for an order directing the lines used by these companies on Portage Ave. to be elevated. This decision was arrived at upon a report of the City Engineer as to the cost of a subway.

**Vancouver, Victoria and Eastern Ry. and Navigation Co.**—J. H. Kennedy, Chief Engineer, returned to Vancouver, recently, from a trip of inspection over the section under construction. The section from Coal-mountain to the junction with the Kettle Valley Line, near Otter Creek Summit is well advanced. This section, together with the section from Princeton to Coalmount, is to be utilized jointly with the K. V. Lines, under the agreement ratified last session of the British Columbia Legislature. The section of the K. V. Lines in construction of the above, to Hope, under consideration by that company is to be used jointly with the V. V. and E. Ry.

**Vancouver Terminals.**—L. W. Hill, President, G. N. R., is reported to have stated recently that the company's appropriations for this year include over \$1,000,000 for the laying out of the terminals at False Creek, Vancouver, and for the building of the station there. If the city insisted on the immediate construction of the four east end viaducts, which would mean an expenditure by the company of \$450,000, it would cut heavily into the appropriation. He did not think that the viaducts were necessary, however desirable they might have been at the time the new docks were being built and the tracks were crowded with construction traffic. Apart from that traffic, which had ceased, the regular traffic was not so great as it was. Mr. Hill subsequently had a conference with the Mayor and the city officials on the matter. It is said that an understanding had been arrived at and that the Union Construction Co., to which the city had let the contract, will go on with the work at once.

A recent press report stated that the estimated cost of the projected tunnel from Burrard Inlet to False Creek, which would have a length of 3,790 ft., would be \$628,970. We were officially advised, May 12, that the company has no intention to build any tunnel at that point. (April, pg. 174.)

### Telephone Train Dispatching in Canada.

A table, which has been prepared regarding telephone train dispatching in North America, and corrected to May 1, gives the following details of Canadian railways:—C.P.R., total mileage, 14,184; mileage operated by telegraph, 7,710; mileage operated by telephone, 6,121; telephone mileage increase during previous 12 months, 1,311; G.T.R., total mileage, 4,765; mileage operated by telegraph, 2,711; mileage operated by telephone, 2,076; G.T. Pacific Ry., total mileage, 3,170; mileage operated by telegraph, 305; mileage operated by telephone, 2,543.

## Mainly About Transportation People.

R. B. ANGUS, director, C. P. R., returned to Canada, early in May, after completing a trip round the world.

Hon. F. D. MONK, a former Minister of Public Works, died at Montreal, May 15, after a prolonged illness.

G. M. BOSWORTH, Vice President, C.P.R., sailed from Montreal, May 14, for a short stay in England.

MRS. GEO. D. PERRY, wife of the General Manager, Great Northwest Telegraph Co., died in Toronto, May 15.

W. H. C. MUSSEN, with Mrs., and Miss Mussen, have left Montreal, for Dorval, their summer residence.

CY WARMAN, of the G.T.R. General Advertising Department, Montreal, who died recently, left an estate of only \$489.05.

A. C. MORRIS, Secretary Treasurer, Ontario Wind Engine and Pump Co., died recently in Toronto, in his 50th year.

A. R. CREELMAN, K. C., director, C. P. R., and Miss Creelman, returned to Montreal, during May, from a six weeks trip to California.

E. N. BENDER, General Purchasing Agent, C. P. R., and Mrs. Bender, left Montreal at the end of May, for their summer home at Dorval, Que.

O. L. DICKESON, President, White Pass and Yukon Route, left Chicago, Ill., during May, for Vancouver, B. C., his summer headquarters.

R. W. REFORD, of the Robert W. Reford Co., and Miss Reford, who have been in Europe for the past six months, returned to Montreal early in May.

SIR EDMUND OSLER, director, C. P. R., who had congestion of the lungs, at Hot Springs, Va., recovered and returned to Toronto during May.

T. H. SUMNER, Superintendent of Water Service, Michigan Central Rd., St. Thomas, Ont., died there, May 5, aged 52. He had been in M. C. R. service for 25 years.

HON. F. COCHRANE, Minister of Railways and Canals, returned to Ottawa, May 18, after a trip to Europe, much benefitted in health.

WM. APPS, at one time Master Car Builder, C.P.R., Montreal, who died in Toronto recently, left an estate valued at \$60,387.

JAMES THOM, Manager, White Star-Dominion Line, Montreal, who has been ill for some time, was reported recently to be improving in health.

R. M. J. MCGILL, Chief Accountant, National Transcontinental Ry. Commission, Ottawa, died there suddenly, Apr. 28, aged 52. He was born at St. John, N.B.

OWEN CAMERON, Freight Claim Agent, Canadian Government Railways, Moncton, N. B., attended the convention of the Freight Claim Association, at Galveston, Tex., May 13.

GEORGE HAM, of the C.P.R. headquarters staff, Montreal, has been appointed an honorary lieutenant-colonel, attached to the Intelligence Branch of the Militia Department.

W. Henry, who died at Montreal, May 18, aged 81, was father of THOMAS HENRY, Operating Superintendent Passenger Steamers, Canada Steamship Lines, Ltd., Montreal.

F. P. GUTELIUS, General Manager, Canadian Government Railways, received painful injuries to his face, in attempting to board a street car while it was in motion, at Montreal, May 14.

P. WELCH, of Foley, Welch and Stewart, railway contractors on the Pacific Great Eastern Ry., etc., has recovered from his recent serious illness, and intends to resume business shortly.

It is proposed to establish a professorship of railroading at Harvard University, to be known as the J. J. Hill Foundation, as a compliment to J. J. HILL, formerly President, Great Northern Ry.

W. J. CAMP, Assistant Manager of Telegraphs, C. P. R., and Mrs. Camp, left Montreal, May 8, for New Orleans, La., where they attended the annual convention of the Association of Railway Telegraph Superintendents.

The Winnipeg School Board has decided that the name of the new school is to be built at Powers St. and William Ave. shall be Sir William Whyte, in memory of the late Director and formerly Vice President, C.P.R.

J. W. BARNETT, whose appointment as Travelling Tariff and Weighing Inspector, Intercolonial Ry., Moncton, N. B., was mentioned in our last issue, was, prior to that appointment, secretary to the General Traffic Manager.

SIR THOMAS TAIT, President, Fredericton and Grand Lake Coal and Ry. Co., is interested in the British Canadian Film Co., which has been incorporated to supply cinematograph photographs of Canadian scenes for moving picture theatres.

J. C. GARDEN, Master Mechanic, G. T. R., Battle Creek, Mich., has been presented by the Central Railway and Engineering Club of Canada, Toronto, with an honorary past president's jewel, in view of the services he rendered the club in its earlier stages.

D. A. STORY, General Freight Agent, Canadian Government Railways, Moncton, N. B., was in Washington, D. C., during May, where he represented the Intercolonial Ry., in the hearing of some cases before the Interstate Commerce Commission.

J. R. W. AMBROSE, Chief Engineer, Toronto Terminals Ry. Co., and until recently Engineer in Charge, Grade Separation, G.T.R., addressed the Toronto branch, Canadian Society of Civil Engineers, at luncheon recently on the grade separation project and union station for Toronto.

J. S. DENNIS, Assistant to the President, and in charge of the Department of Natural Resources, C. P. R., Calgary, Alta., has been appointed one of a committee of three, to draft a tentative programme for the International Irrigation Congress at Calgary, Oct. 5 to 9.

J. F. DOLAN, District Passenger Agent, Canada Steamship Lines, Ltd., Boston, Mass., who was in Montreal May 2, with the object of moving his family to Boston, was presented with a walrus travelling bag, and a gold fitted chatelaine for Mrs. Dolan, by the company's Montreal staff.

J. G. STEACY, who died at Brockville, Ont., May 8, aged 77, was, in his early life, associated with his father in the erection of passenger stations, engine shops, etc., for the G. T. R., and was the senior partner of the J. G. Steacy Co., which built the first 50 miles of the European and North American Ry. running out of St. John, N. B.

DUNCAN McMARTIN, who died at Toronto, May 2, was several years ago, with his brother, engaged in railway contracting in the U. S., and later, carried out contracts on the Crownest Pass section of the C. P. R., the Algoma Central and Hudson Bay Ry., and the Timiskaming and Northern Ontario Ry.

A press report states that among the bequests of a public nature made by the late SIR WILLIAM WHYTE, are substantial donations to Manitoba College, General Hospital and Knox Church, Winnipeg, in addition to a personal bequest to Rev. Dr. DuVal, the minister of that church, recently retired.

E. T. STOTESBURY, of J. P. Morgan & Co., New York, has been elected President of the Reading Company, the holding corporation for the Philadelphia & Reading Ry. and Philadelphia & Reading Coal & Iron Co. Theodore Voorhees, Vice President of the railway company, has been elected President, succeeding G. F. Baer, deceased.

W. J. P. MCGREGOR, Division Freight Agent, G. T. Pacific Ry., Edmonton, Alta., was presented with a signet ring and silk umbrella, by the local G. T. R. staff and city club, Moncton, N. B., recently, on his leaving for the west, after having occupied the position of Commercial Agent, G. T. R. for some time.

S. R. JOYCE, whose appointment as Travelling Passenger Agent, G. T. R., Toronto, was announced in our last issue, was born at Napanee, Ont., Dec. 15, 1887, and entered G. T. R. service, Mar. 7, 1905, since when he has been, to Oct. 31, 1912, ticket clerk, Kingston, Ont.; Nov. 1, 1912 to Mar. 1, 1914, ticket clerk, city ticket office, Toronto.

J. A. RICHARDSON, District Passenger Agent, Wabash Rd., Toronto, while doing some work on the verandah of his home, May 14, fell from a ladder, his collar bone being broken and his head seriously injured necessitating an operation at the Toronto General Hospital. On May 28 he was reported to be progressing satisfactorily, and was expected to resume his duties shortly.

J. R. WILSON, who died in London, Eng., May 11, after a short illness, was connected with numerous interests, more or less intimately associated with transportation interests; among them being, Dominion Coal Co., as Vice President; Canadian Steel Foundries, Ltd., as director; Dominion Steel Corporation, as director, and Montreal Locomotive Works, Ltd., as director.

NORMAN B. JONES, who has been appointed Car Foreman, C.P.R., Kenora, Ont., was born at St. John, N.B., Nov. 9, 1869, and entered C.P.R. service Aug. 17, 1901, since when he has been, to Oct. 1, 1909, car carpenter, Kenora; Oct. 1, 1909, to Nov. 1, 1910, wrecking foreman, Kenora; Nov. 1, 1910, to Apr. 24, 1914, Assistant Car Foreman, Kenora.

C. E. MASON, who was recently appointed Travelling Passenger Agent, White Star-Dominion Line, Montreal, was presented with a travelling bag and signet ring, by the local staff of the G. T. R. and allied concerns at Montreal, May 2, on his leaving G. T. R. service, where he had been for 18 years, latterly as chief clerk to the District Passenger Agent.

ROBERT STANLEY EDWARDS, whose appointment as Soliciting Freight Agent, Northern Pacific Ry., Montreal, was announced in our last issue, was born at Montreal, June 2, 1890, and prior to Mar. 15, the date of his appointment, had been, for a number of years, shipper for several of the manufacturing and wholesale trades of Montreal.

STEPHEN T. STACKPOLE, who was recently appointed Canadian Freight Agent, Pennsylvania Rd., Toronto, was born at Hamilton, N. Y., Oct. 14, 1885, and entered P. Rd. service, Dec. 1907, since when he has been, to Sept. 1910, clerk at Baltimore, Md., and Philadelphia, Pa.; Sept. 1910, to Mar. 1914, Soliciting Freight Agent, at York, Pa.

Baltimore, Md., New Haven, Conn., Easton, Pa., and Uniontown, Pa., consecutively.

D. H. MAPES, who has been appointed Superintendent of Building Construction, Eastern Lines, Canadian Pacific Ry., Montreal, has been connected with engineering and building construction for the past 22 years, chiefly in the U. S., where he was for several years, Vice President of J. V. Schafer and Co., New York. He entered C. P. R. service as assistant to the Superintendent of Building Construction, in July, 1912.

J. W. BARNETT, whose appointment as Tariff Inspector and Assistant Weighing Inspector, Intercolonial Ry., Moncton, N. B., was announced in our last issue, was born at Hillsboro, N.B., Jan. 5, 1885, and entered I. R. C. service, Dec. 27, 1901, since when he has been, to Oct. 1, 1903, clerk, Freight Claim Agent's office; Oct. 1, 1903, to Aug. 1, 1908, clerk and stenographer, General Freight Agent's office; Aug. 1, 1908 to Feb. 1, 1914, secretary to General Traffic Manager.

CHARLES STIFF, who died at Hamilton, Ont., recently, aged 73, was, at one time, accountant on the Great Western Ry., Hamilton, and on the absorption of that line by the G.T.R. in 1882, was appointed Superintendent there. He resigned in 1887, when he was offered the position of General Passenger Agent, as it would have necessitated his removal from Hamilton, and went into private practice as auditor and accountant.

H. E. WHITTENBERGER, General Superintendent, Ontario Lines, G.T.R., Toronto, was recently presented with a jewelled monogram scarf pin, by the Governor General, as an acknowledgment of attentions during his recent trip through Western Ontario. Towards the end of May he was taken to Wellesley Hospital, Toronto, where he underwent an operation for gall stones. The operation was successful, and on May 26 he was reported to be progressing satisfactorily.

Hon. WILLIAM GIBSON, who died at Beamsville, Ont., May 4, was born at Peterhead, Scotland, Aug. 7, 1849, and came to Canada in 1870. During his business career as a contractor, he carried out a number of large railway contracts, including the masonry work on both sides of the river, for the St. Clair tunnel at Sarnia, Ont., the masonry work for the enlargement of the Victoria Jubilee bridge at Montreal, etc. He was elected an associate of the Canadian Society of Civil Engineers in 1891.

F. RIDDINGTON, who died at St. Andrews East, Que., May 12, entered railway service with the Great Western Ry., at Brantford, Ont., in 1874, and shortly afterwards was moved to Toronto, where he was foreman, and later freight claims clerk. He was then transferred to Montreal as chief clerk in the freight claims department, where he remained until his retirement under the pension rules a few years ago. His son, Alfred, is in the G.T.R. Vice President's office at Montreal, and another son, Frederick, is in G.T. Pacific Ry. service at Fort William, Ont.

GEORGE W. LEE, whose appointment as Commissioner, Timiskaming and Northern Ontario Ry., North Bay, Ont., was announced in our last issue, was born at Renfrew, Ont., Apr. 15, 1871, and entered railway service, Nov. 1, 1898, since when he has been, to June 1, 1900, freight clerk, C.P.R., Renfrew, Ont.; June 1, 1900, to Jan. 1, 1901, in tie and timber business, C.P.R., North Bay, Ont.; Jan. 1, 1901, to Sept. 1, 1905, in charge of freight sheds, C.P.R., North Bay, Ont.; Sept. 1, 1905, to Apr. 16, 1914, General Agent, Timiskaming and Northern Ontario Ry., North Bay, Ont.

Prof. A. K. KIRKPATRICK, M. Can. Soc. C.E., Professor of Civil Engineering at the

School of Mining, Queen's University, Kingston, Ont., died in New Brunswick, May 19, following an operation for appendicitis. He was born at Kingston, Ont., and graduated from the Royal Military College in 1880, being one of the first class of graduates. He was engaged for some years on railway work in Egypt, and was subsequently City Engineer at Kingston. In 1906 he was appointed Professor of Civil Engineering at Queen's University. He has, at different times been engaged in marine and terminal work for the Dominion Government, latterly in connection with the tests of general conditions of ice, tides, currents, etc., between the main land and Prince Edward Island, in preparation for the car ferry service there.

A. M. NANTON, who has been elected a director of the C.P.R. to fill the vacancy caused by the death of Sir William Whyte, was born at Toronto, May 7, 1860. After being for some years in Osler and Hammond's office in Toronto, he entered the firm of Osler, Hammond and Nanton, brokers, etc., Winnipeg, on its establishment in 1884, and has since been closely identified with the development of the prairie provinces, and is a recognized leader in commercial life in the west. He was President, Winnipeg Board of Trade, in 1898, and is President, Winnipeg Stock Exchange, and Manitoba Cartage Co., a director of Winnipeg Electric Ry., Dominion Bank, Great West Life Assurance Co., and Toronto General Trusts Co. He was Managing Director of the Alberta Ry. and Irrigation Co., which is now controlled by the C.P.R., and was from 1894 to 1898, Receiver, Manitoba and North Western Ry., representing the English bond holders. He is also prominently identified with several financial and industrial concerns.

NORMAN W. VAN WYCK, who has been appointed Freight Claims Agent, Canada Steamship Lines, Ltd., Montreal, was born at Hamilton, Ont., June 29, 1883, and entered transportation service, Apr. 1, 1899, since when he has been, to Dec. 1899, shed foreman's clerk, C. P. R. and Toronto, Hamilton and Buffalo Ry., Hamilton, Ont.; Jan. 1 to Mar. 1900, record clerk, same companies, Hamilton, Ont.; Apr. to July 1900, assistant biller, same companies, Hamilton; Aug. 1900 to Sept. 1902, inward clerk, C. P. R., Hamilton; Oct. 1902 to Nov. 1903, inward clerk, T. H. & B. R., Hamilton; Dec. 1903 to Feb. 1906, claims clerk, C. P. R. and T. H. & B. R., Hamilton; Mar. to Sept. 1906, assistant accountant, same companies, Hamilton; Oct. 1906 to Aug. 1908, cashier, C. P. R., Hamilton; Sept. 1908, to Feb. 1910, cashier, T. H. & B. R., Hamilton; Feb. to Apr. 14, 1910, general accountant, C. P. R. and T. H. & B. R., Hamilton; Apr. 15, 1910 to June 1913, chief clerk, Freight Traffic Manager, Inland Lines, Ltd., Hamilton; Feb. 1913 to Apr. 30, 1914, chief clerk, Freight Traffic Manager, Richelieu and Ontario Navigation Co., Toronto.

CHARLES W. STACKHOUSE, who was recently appointed Locomotive Foreman, C. P. R., Sortin Yard, Montreal, was born at St. John, N. B., May 11, 1881, and entered railway service in March 1900, since when he has been, to May 1904, machinist apprentice, Intercolonial Ry., Moncton, N. B.; May 1904 to Feb. 1905, machinist, Angus Shops, C. P. R., Montreal; Feb. to Sept. 1905, machinist, Intercolonial Ry., Moncton, N. B.; Sept. 1905 to May 1906, student in mechanical engineering, McGill University; May to Sept. 1906, machinist, Intercolonial Ry., Moncton, N. B.; Sept. 1906 to May 1907, student, McGill University; May 1907 to Sept. 1908, draughtsman, Montreal Locomotive Works; Sept. 1908 to May 1909, student, McGill University; May to Oct 1909, laying out boilers,

Montreal Locomotive Works; Oct. 1909 to May 1910, student, McGill University; May 1910 to Feb. 1911, Locomotive Inspector, Eastern Lines, C. P. R., Montreal; Feb. to June 1911, Assistant Foreman, C. P. R., Outremont, Que.; June to Oct. 1911, relieving Foreman, Eastern Division, C. P. R.; Oct. 1911 to June 1912, Locomotive Foreman, C. P. R., Three Rivers, Que.; June 1912 to June 1913, Locomotive Foreman, C. P. R., Sherbrooke, Que.

J. C. BECKWITH, whose appointment as Engineer of Construction, Canadian Government Railways, Moncton, N. B., was announced in our last issue, was born at Fredericton, N. B., Aug. 1, 1875, and entered railway service, June 1898, since when he has been, to 1900, rodman and draughtsman, Columbia and Western Ry., Boundary District, B. C.; 1900, draughtsman, C. P. R. in British Columbia and Ontario; 1901, draughtsman, Algoma Central and Hudson Bay Ry. in western Ontario; 1901 to 1902, draughtsman, C. P. R., Winnipeg; 1902 to 1903, leveller and transit man, C. P. R., Winnipeg; 1903, Resident Engineer, C. P. R., Winnipeg; 1903 to 1904, transit man and Resident Engineer, C. P. R., Winnipeg; 1905 to 1907, Assistant Engineer, Construction Department, Eastern Lines, C. P. R., Montreal; 1907 to 1908, Engineer in Charge, New Brunswick Southern Ry., St. John, N. B.; 1909, Division Engineer, New Canadian Co., Port Davis, Que.; 1909 to 1912, Assistant Engineer, Construction Department, Western Lines, C. P. R., Winnipeg; 1912 to 1913, Assistant Engineer, Construction Department, Eastern Lines, C. P. R., Montreal; 1913 to Apr. 1, 1914, Assistant Engineer, Canadian Government Railways, Moncton, N. B.

**Consolidation of the Railway Act.**—The bill for the consolidation and amendment of the Railway Act was introduced into the Senate recently, and was referred to a committee to sit concurrently with a similar committee to be appointed by the House of Commons. This latter committee was appointed April 29. Senator Young is chairman of the Senate section of the committee, and J. E. Armstrong, M. P., chairman of the House of Commons section. The committee has been sitting Tuesdays and Thursdays to hear evidence from any persons who may wish to present their views for or against any part of the bill; and at other times as may be expedient. It was stated May 12, that it was expected that the work of the committee would be completed to enable the bill to be discussed at the current session of Parliament.

**Block Signal System on the Intercolonial Ry.**—The acting Minister of Railways informed the House of Commons, May 6, that a block signal is being installed on the Intercolonial Ry. between Halifax and Windsor Jct., N. S., by the Union Switch and Signal Co., which also has a contract for installing the block signal system between St. John and Hampton, N.B., and Moncton and Painsec Jct., N.B. The total amount involved in the contract is \$85,000.

**Pacific Great Eastern Ry.**—In connection with the recent issue of £1,500,000, Brown, Shipley and Co., London, Eng., announce that they are prepared to accept fully paid scrip for registration. The coupon of £2 5s., due July 15, must be left attached. Warrants for the half year's interest, due July 15, will be mailed to stock holders by June 26.

J. W. Barnett, Traffic Inspector and Assistant Inspector, Canadian Government Railways, Moncton, N. B., writes, "I always read Canadian Railway and Marine World and find the contents most interesting."

## Canadian Northern Railway Construction, Betterments, Etc.

**Nova Scotia.**—A press dispatch from Sydney, N.S., May 14, stated that H. J. McKenzie, with a staff of Canadian Northern Ry. engineers, was making surveys in Cape Breton, with a view of connecting the Inverness Ry. and Coal Co.'s line in Inverness county, with Sydney and Louisburg, and through the Bras d'Or country with the Cape Breton Ry. at St. Peters.

**Canadian Northern Quebec Ry.**—We are officially advised that nothing has been definitely decided as to building a cooling plant at Quebec.

A press report states that a portion of the terminal property south of the Hay Market, Montreal, is to be immediately developed, by the erection of a substation for freight to and from the west end, that the building will be 100 ft. square, and that the distribution will be by motor trucks.

### Mount Royal Tunnel and Terminal Co.

Excavation for the C.N.R. station in Montreal is reported to be in progress, and work is also reported to be under way at the site for the Mount Royal Heights station and at the site for the electrical substation in the Model City. The work on the tunnel itself is progressing rapidly, and the tunnel is now well advanced to its full dimensions, 30 ft. wide by 22 ft. high. The lining will be of concrete, but near the Dorchester St. end a steel roof is to be provided. The lining is expected to be completed in the autumn, and the entire tunnel, with its equipment, to be ready for operation in about a year.

**Montreal-Ottawa-Port Arthur Line.**—The bridge construction on the line from Montreal to Hawkesbury is reported completed, with the exception of those across the River des Prairies and the Mille Isle River. The substructures for both high bridges are ready for the steel work, and the erection of this is expected to be finished by July 31. The line is in operation from Hawkesbury to Ottawa, and from Ottawa to Pembroke the grading and bridge work is well advanced. Three spans of the 1,800 ft. bridge across the Ottawa River at Portage du Fort have been erected, and preparations are going on for the erection of the 1,600 ft. bridge across the same river at Fitzroy harbor. It is expected to have this stretch of 170 miles completed this year. The Pembroke-Capreol section is also expected to be completed this year. The line is in operation from Capreol to Ruel, and a service is also being given from Ruel to Port Arthur. The finishing up operations on this latter section are in progress, ballasting and other gangs having been at work since early in April. The whole line is expected to be put in operation in the autumn.

**Canadian Northern Ontario Ry.**—The first through train from Quebec, run entirely over the C.N.R. lines, arrived in Toronto, May 1, and was sent on to the west, over the company's Toronto-Sudbury line. By this route the company is enabled to give connections from Quebec through to west of Edmonton, Alta.

In connection with the opening for through traffic of the Toronto-Ottawa line, a passenger service, mainly for tourist purposes, is to be operated by a gasoline electric car, from Ottawa to Chaffey's Locks, 79 miles.

With regard to the lines to be built under some one or other of the charters controlled by the C.N.R. interests, press reports state that arrangements will be completed for starting operations if Parliament decides to give the aid by way of guarantees asked by the company. The following

statement is said to have been made:—

"Work will be started at Toronto and at both the east and west sides of Hamilton, also in the centre of the city at St. Catharines, Niagara Falls and Buffalo simultaneously. The ground has been thoroughly surveyed, and is said to offer no serious obstacles to a line between the Falls and Toronto. The city of St. Catharines is going to give material financial aid for the new high level bridge that will cross the canal valley. West of Hamilton the line will divide near the Junction cut. The west line will run between the present city limits and the McKittrick survey, and will parallel the T. H. & B. line to Brantford. Beyond that there is some uncertainty about it. It is said that negotiations are now being carried on for the purchase of the old Pere Marquette local line from London to Windsor, but that this line will only be purchased in the event of the company being unable to buy links of various local lines giving a more direct route to the border."

**Canadian Northern Ry.**—Plans are reported to have been prepared for the erection of a station, 143 by 24 ft., at Port Arthur, Ont., and for the building of a modern coal plant at Fort Frances, Ont.

It is reported from Winnipeg that work is to be started at once under the charter of the Winnipeg River Ry., on a line from Lac du Bonnet, and Little Bonnet Falls.

A press report states it is expected that the new bridge across the Assiniboine River, at the junction with the Red River at Winnipeg, will be opened for traffic early in June. The bridge is to be used for freight traffic only.

The agreement for the use by the G.T. Pacific Ry. of the terminals at Fort Garry is being confirmed by the Dominion Parliament. A summary of the agreement is given on another page, under the heading of Grand Trunk Pacific Ry. Construction.

The Attorney-General of Manitoba is reported to have said at Neepawa recently that the Government is ready to guarantee the company's bonds for the building of a line northerly from McCreary or Laurier northerly to connect with the Gypsumville extension.

We are officially advised in respect to the extension of the line to Grand Marias and Victoria Beach that grading has been completed from the present track end of the Birds Hill line for 50 miles to Grand Marias, and that tracklaying on the same is now in progress. It is intended to extend this line for a further distance of 14 miles to Victoria Beach. This will provide convenient access for the people of Winnipeg to the various summer resorts along the eastern shore of Lake Winnipeg.

A press report states that grading is to be started this year on the first 25 miles of the line from Melfort, Sask., to Pas, Man. John Mackenzie, of the company's engineering staff at Winnipeg, was at Melfort recently, and representatives of several contracting firms have since been over the route.

The operating department has taken over the extension of the line from Avonlea to Gravelburg, 78.5 miles, and put on a train service. It is expected that this branch will ultimately be extended to Swift Current, Sask.

A press report states that surveys have been completed for a branch line from east of Radville, on the Maryfield branch, into Weyburn, Sask., and that some grading may be done this year.

The Board of Railway Commissioners has

approved location plans for the extension of the Swift Current line from mileage 124.96 to 142.53.

Press reports from Edmonton, Alta., state it is expected that about \$10,000,000 will be expended by the C.N. Ry. upon construction in Alberta during this year. This includes the \$6,500,000 realized on the recent sale in England of the bonds, guaranteed by the Province, of the Canadian Northern Western Ry. The following statement has been issued by the Provincial Department of Railways, showing the lines aided by the Province and the mileage constructed:—

Edmonton by way of Strathcona, Camrose and Calgary to Lethbridge—Guaranteed for 335 miles at \$15,000 a mile, 258 miles completed. Camrose to Vegreville—Guaranteed for 45 miles at \$15,000 a mile, completed. From crossing of Edmonton-Lethbridge line and Little Bow River, south to Macleod—Guaranteed for 110 miles at \$15,000 a mile, will in all probability be built this year. From near Macleod to western boundary—Guaranteed for 65 miles at \$15,000 a mile, 30 miles of grade completed. Morinville to Athabasca—Guaranteed for 72.3 miles at \$15,000 a mile, completed. From Mile 175 of the Goose Lake line to Munson—Guaranteed for 127.5 miles at \$15,000 a mile, completed. From Little Bow, south of Calgary to Macleod—Guaranteed at \$15,000 a mile, the Government insists on this being built this year.

The lines authorized to be built under guarantee by the Canadian Northern Western Ry., with the work done to date, are:—

Onoway northwest to Pine River Pass—Guaranteed for 100 miles at \$20,000 a mile. This is generally supposed to be the main line of the C.N.R. to the Peace River country. Pine River Pass is northwest of Grand Prairie City. Grading has been completed to Whitecourt, 32 miles of steel have been laid, and the rest will be laid this year.

Oliver northeast to St. Paul de Metis—Guaranteed for 100 miles at \$13,000 a mile. The whole of the right of way has been cut and 14.5 miles of grade completed. No steel has been laid.

Bruderheim, by way of Vermilion, Wainwright and Medicine Hat, to the international boundary, with branch northwest of Vermilion to eastern boundary. Guaranteed for 30 miles at \$13,000 a mile. The building of this road has hitherto been held up on account of the failure to locate a feasible route. The right of way has been partly cleared, and a few miles of grade completed.

Calgary northeast to Brazeau Line—Guaranteed for 100 miles at \$13,000 a mile. This road leaves the Edmonton-Calgary line near Calgary and runs due north to the Brazeau line. Some construction has been done north of Red Deer. The company is stated to be anxious to build this line.

Camrose to Alsask—Guaranteed for 80 miles at \$13,000 a mile. This road runs from Camrose to meet the Saskatoon-Calgary line at Alsask, 30 miles of grade completed. Some litigation over the Battle River crossing has delayed operations, but suitable arrangements, it is stated, have now been made, and the work will likely go ahead.

Edmonton, by way of Cochrane, to Pincher Creek—Guaranteed for 200 miles at \$15,000 a mile. Some grading done.

Blackfalds to Goose Lake—Guaranteed for 118.5 miles at \$13,000 a mile. This runs to Warden, which is south of Stettler, on the Strathcona-Calgary line, and then south-east to Hanna, a divisional point on the Saskatoon-Calgary line, 61 miles completed to Warden. Plans have been filed from Warden to Hanna, but no work has been done on this stretch.

It is reported that the line from Edmonton to Tollerton, 137 miles, is to be re-ballasted this year, and a train service placed in operation.

Plans for the route of the Peace River line, the grading of which has reached White Court, near the confluence of the Macleod and Athabasca Rivers, have been filed, and show a route following the Athabasca River valley for about 50 miles, then crossing to the Macleod River valley, and on to the Smoky River valley, crossing the latter river about three miles from the mouth of the Wapiti River.

We are officially advised that some clearing and grading has been done on the branch line from Oliver towards St. Paul de Metis, Alta. What additional work may be done this year has not been decided.

**Canadian Northern Pacific Ry.**—S. H. Sykes recently completed a trip of inspection over the line, and is reported to have stated that 60% of the grading had been completed on the 20 mile section west of Albreda Summit, the last piece of grading to be undertaken. Track laying is reported to have been started May 1 from the end of steel 110 miles west of Yellowhead Pass. The bridge construction along the line was well forward. Track is laid to mileage 122 north of Kamloops, and it is expected that the track laying gangs would meet some time in August.

The Premier of British Columbia, and a party of officials made a trip of inspection over the line recently from Port Mann to Cisco bridge, at mileage 140.

M. H. MacLeod, Chief Engineer and General Manager, is reported to have stated that construction on the branch from Kamloops to Okanagan will be started during the summer.

The reclamation work at the False Creek flats, Vancouver, is being rapidly proceeded with. The material raised from the area being dredged by the Dominion Government is being deposited on the portion of the flats being developed by the C.N.P.R. The dredging company has agreed to supply 3,750,000 cubic yards of material, and this is being carried by a pipeline about 4,000 feet long.

**Vancouver Island.**—It is expected that the branch line from Victoria along the Saanich Peninsula will be ready for track laying early in July. The British Columbia Government has issued the following statement as to work on the Island lines to April 30:—**GRADING.**—Location, Patricia Bay, total mileage, 15½; 11 miles completed; date of completion, Aug. 1, 1914. Location, Victoria to mile 50, total mileage 50; 45 miles completed; date of completion, Aug. 1, 1914. Location, mile 50 to 100, total mileage, 50, 45 miles completed; date of completion, July 1, 1914. Location, mile 100 to 142, total mileage, 42, 25 miles completed; date of completion, Jan. 31, 1915. **BRIDGING.**—Patricia Bay branch, 35% completed, date of completion, Aug. 1, 1914. Victoria to mile 50, 97% completed, date of completion, Aug. 1, 1914. Mile 50 to 100, 60% completed, date of completion, July 15, 1914. Mile 100 to 142, nothing done; date of completion, Jan. 31, 1915. There are several steel structures which cannot be erected until the track reaches the bridge site, one of which, the crossing of the Koksilah River, will be a large structure. (April, pg. 170.)

The Canadian Locomotive Co., has delivered 4 mogul locomotives to J. D. McArthur and Co., Winnipeg; 1 six wheeled locomotive to Robt. McNair Shingle Co., Vancouver, B. C.; 3 consolidation locomotives to Intercolonial Ry., and one six-wheeled locomotive to Baldry, Yerburch and Hutchison, St. Catharines, Ont.

## Railway Rolling Stock Notes.

The Intercolonial Ry. has ordered 6 consolidation and 4 switching locomotives from Canadian Allis-Chalmers, Ltd.

The Canadian Northern Ry. has received three consolidation locomotives from Canadian Allis-Chalmers, Ltd.

F. H. Hopkins and Co. have ordered 2 Lidgerwood rapid unloaders, 50,000 lbs. capacity, from Canadian Car and Foundry Co.

J. D. McArthur Co., railway contractors, have ordered 50 all wood flat cars, 50 tons capacity, from Canadian Car and Foundry Co.

The private car Ceres, owned by the Massey-Harris Co., Toronto, has been rebuilt recently by the Preston Car and Coach Co.

The Mond Nickel Co. has ordered 12 all steel Otis ore cars, 50 tons capacity, from Hart-Otis Car Co. These will be built by Canadian Car and Foundry Co.

The Intercolonial Ry. has received 2 consolidation locomotives from Canadian Locomotive Co.; and 96 steel frame box cars and 8 cabooses from Nova Scotia Car Works.

The C. P. R., between Apr. 15 and May 15, ordered the following rolling stock, from its Angus Shops,—69 steel frame box cars, 4 flat cars, 4 stock cars, 10 freight refrigerator cars and 4 vans.

We are advised that there is no official knowledge of the Montreal Harbor Commissioners having placed a large order for railway equipment, as recently mentioned in the daily press, or of their being about to place one.

The C. P. R., between Apr. 15 and May 15, received the following additions to rolling stock,—185 steel frame box cars, 3 steel colonist cars and 1 class G2 locomotive, from its Angus Shops, and 70 steel frame box cars from Canadian Car and Foundry Co.

The G.T.R. has received 150 stock cars from the National Steel Car Co.; 3 steel mail cars from the American Car and Foundry Co.; 5 express cars and 7 baggage cars from the Osgood Bradley Car Co., and 349 flat cars from the Western Steel Car and Foundry Co.

The Canadian Car and Foundry Co., during April, delivered the following rolling stock,—1 seventy-five ton truck to Dominion Bridge Co.; 42 steel frame box cars, 40 tons capacity, and 52 wood ballast cars, 40 tons capacity, to C.P.R.; 20 steel frame box cars, 30 tons capacity, to Intercolonial Ry., and 20 steel underframe street cars, to Montreal Tramways Co.

The Intercolonial Ry. has ordered 180 steel underframe box cars, 40 tons capacity, from Eastern Car Co. Following are the chief dimensions,—  
Length over running board ..... 38 ft. 5½ ins.  
Length over buffer blocks ..... 38 ft. 1¼ ins.  
Length inside end sills ..... 36 ft. 11½ ins.  
Length inside car ..... 36 ft.  
Width inside car ..... 8 ft. 6½ ins.  
Width over side sills ..... 8 ft. 9½ ins.  
Width over side posts ..... 9 ft. 3½ ins.  
Centre to centre of trucks ..... 26 ft. 10 ins.  
Height from rail to top of running board ..... 13 ft. 4¾ ins.  
Width of door opening ..... 5 ft.  
Height of door opening ..... 7 ft. 8 7-16 ins.

The Pacific Great Eastern Ry. has ordered two consolidation locomotives from Canadian Locomotive Co., making four now on order. Following are the chief details,—  
Weight on drivers ..... 156,000 lbs.  
Weight in working order ..... 176,000 lbs.  
Wheel base, rigid ..... 16 ft.  
Wheel base, total ..... 24 ft.  
Wheel base, engine and tender ..... 60 ft.  
Heating surface, firebox ..... 188 sq. ft.

Heating surface, tubes ..... 2,500 sq. ft.  
Heating surface, total ..... 2,688 sq. ft.  
Driving wheels, diar. .... 57 ins.  
Driving wheel centres ..... Cast steel  
Driving journals, diar. and length. . 9 by 12 ins.  
Cylinders, diar. and stroke ..... 21 by 28 ins.  
Boiler, type. . . . . Extended wagon top, radial stay  
Boiler pressure ..... 180 lbs.  
Tubes, no. and diar. .... 158—2 ins.; 22-5-¾ ins.  
Tubes, length ..... 14 ft.  
Injectors ..... Ohio  
Safety valves ..... Star  
Brakes ..... Westinghouse American  
Superheater ..... Locomotive Superheater Co., Schmidt A  
Weight of tender, loaded ..... 144,000 lbs.  
Truck ..... Equalizer type  
Truck wheel diar. .... 33 ins.  
Truck wheel type ..... Steel tired  
Journals, diar. and length ..... 5½ by 10 ins.  
Brake beams ..... M.C.B. 2  
Tank capacity ..... 6,000 imp. galls.

## Railway Finance, Meetings, Etc.

**Central Vermont Ry.**—An act was passed, May 6, by the Rhode Island Legislature authorizing the leasing of the Southern New England Ry to the C. V. R. Co. The S. N. E. Ry. has charters for the building of lines from points on the C. V. R. to Providence, R. I., and to Boston, Mass., and its construction is being financed by the G. T. R., which controls the C. V. R. The act passed recently authorizes the leasing of the undertaking in Rhode Island to the C. V. R.

**Kettle Valley Ry.**—A meeting of shareholders was held in Toronto, May 25, to pass a resolution cancelling the mortgage dated June 2, 1913, in favor of the Royal Trust Co.; to authorize the issue of bonds to provide funds for the building of the line in lieu of the bonds already authorized, and to enter into a new mortgage to secure the new issue of bonds. G. B. Gordon is Secretary.

**Ontario and Quebec Ry.**—The half yearly interest on the several stocks will be paid to the holders of stock as of May 1, on and after June 2 as follows: debenture stock, 5%; common stock, 6%.

**Pacific Great Eastern Ry.**—The Minister of Railways for British Columbia has given consent to the sale of an issue of £1,500,000 of the company's stock at 95.

**Temiscouata Ry.**—Net earnings for January, \$4,026, against \$4,851.80 for Jan., 1913. Aggregate net earnings for seven months ended Jan. 31, \$24,615, against \$34,562 for same period 1912-13.

**Reading Lines.**—The various duties of the late G. F. BAER, President of the companies embraced in the Reading System, have been divided. E. T. STOTESBURY has been elected President of the Reading Co., and Chairman of the Board, Philadelphia and Reading Ry. W. G. BESLER, heretofore Vice President and General Manager, Central Rd. of New Jersey, has been appointed President, C. R. of N. J.; and THEODORE VOORHEES, heretofore Vice President, Philadelphia and Reading Ry., has been appointed President, P. & R. Ry.

**Canadian Pacific Railroad Trust Co.**—A press dispatch from London, Eng., May 7, stated that the C.P.R. has no connection with the Canadian Pacific Railroad Trust Co., which has issued a prospectus inviting subscriptions for £1,200,000 shares. It is also stated that G. McL. Brown, European Manager, C.P.R., contemplates taking legal action against the promoters of the organization.

**Fires near Right of Way.**—The Board of Railway Commissioners has notified railway companies to submit monthly, in duplicate, reports according to a form prescribed, on fires originating within 300 ft. of the track and burning over an area of 100 sq. ft. or more outside the right of way. The submission of such reports is limited to lines or portions of lines to be broadly classified as running through forest sections.

### National Transcontinental Railway Construction.

The acting Minister of Railways in presenting the annual report of the department to the House of Commons recently said, the total expenditure from the inception of construction between Moncton, N. B., and Winnipeg, up to Dec. 31, 1913, was \$140,562,147. Of that amount \$10,314,904.05 was expended during the first nine months of the current financial year. It is estimated it will cost \$20,745,653 to complete the line, so that the total cost will be \$161,307,800. A statement was prepared showing the capital cost of the line by the time the Grand Trunk Pacific Ry. is obliged to commence to pay interest. This shows a capital cost to Jan. 1, 1923, and includes interest during construction to Jan. 1, 1915, and the interest for seven years thereafter capitalized, and makes up a total of \$223,514,092.28. The rental at 3% on this would be \$6,705,422.79. If the line did not earn 3% in excess of working expenses then the interest would be added to capital for a further period of three years. No allowance was made in the statement for betterments, but should any have been made their cost would have to be added to the total cost for rental purposes. The line is costing the country interest at the rate of 3½%, but under the agreement, only 3% can be capitalized, and only 3% can be claimed as rental. This means that on the expenditure to Dec. 31, 1914, there has been a clear cost to the country of \$3,893,230.33, and it is estimated that during the 50 years of the lease the loss will amount to \$908,687 a year, or a total of \$45,433,900.

As to the condition of the railway. The rails have all been laid and about 460.4 miles has been taken over from the contractors. The remaining 1,344 miles are nearing completion. It requires some ballasting, the placing in position of a number of steel bridges, the building of some station houses and other works, but it is expected that all these will be completed and the line ready for operation in its entirety during this year.

The amount expended on the Quebec Bridge, which was not originally part of the N. T. Ry., to Jan. 1, was \$4,889,000 and it is estimated that the total cost of the bridge when completed will be about \$17,000,000. There is also \$6,456,546.44 which was expended on the bridge which collapsed, and which is a total loss. The contract for the substructure was awarded to M. P. and J. T. Davis, Jan. 10, 1910. The contractors practically completed the work last autumn. Some little work, such as painting, cleaning the stones, and clearing up the site, remains to be done, and will be completed during this year. The contract for the superstructure of the bridge was awarded to the St. Lawrence Bridge Co., April 4, 1911. Shops for the manufacture of the bridge were completed, and a start was made in Jan., 1913, on fabrication. During 1913 the shops made good progress on the preparation of final plans and have fabricated and shipped to the site some 9,000 tons of bridge material. They have erected a large part of their plant at the bridge site, and have also erected approach spans on the north shore of the river, thus making a start on the erection of the bridge proper. It is expected that during this year the company will fabricate and erect the major portion of the north anchor arm. The weight of this portion is estimated at 15,930 tons, and it is estimated that its cost when erected will be \$2,870,000. The information the department has from the supervising board is to the effect that the bridge will be completed by the end of 1917.

Until the completion of the Quebec Bridge the connection between the two sections of

the line will be maintained by a car ferry. The piers for the operation of the ferry are under construction, and will be completed during this year. The ferry steamer is expected to be delivered at Quebec about the middle of the summer.

Tenders are being received to June 2, for the erection of a station with covered platform on the Champlain market site, Quebec. The question of the erection of a Union station at the Palais, Quebec, is reported to have been practically settled, and it is said that tenders for its erection will shortly be invited. The plans for the station have been deposited in the Quebec registry office. They are practically the same as those drafted and accepted in 1913, one exception being the changes decided in regard to the right of way along Prince Edward St.

In connection with the erection of mechanical coaling plants at Monk, Bridge, Fitzpatrick, Doucet, and O'Brien, the acting Minister of Railways informed the House of Commons, recently, that the contract was let to Roberts and Schaefer Co., Chicago, Ill., for \$107,931. The contract calls for a plant of an elevating capacity of 2½ tons. The price for piles delivered and driven is \$2.50 a lineal foot. One of the plants is in course of erection at O'Brien, the first divisional point east of Cochrane, Ont., on which the following subcontracts have been let:—Structural steel work to Dominion Bridge Co.; electrical work to Canadian General Electric Co.

The Dominion Parliament has voted \$1,333,333.34 on account of the construction of the line, and \$500,000 on account of the construction of the Quebec Bridge. (April, pg. 172.)

### Grand Trunk Pacific Railway Construction.

A press report states that a contract has been let to the Great Lakes Dredging Co., for driving piles for the foundation of a coal dock on G.T.P. Ry. property at Fort William, Ont., at the mouth of Mission River. It is stated that the dock and plant will have a capacity of over 200,000 tons.

The Dominion Parliament has under consideration a bill confirming an agreement between the G.T.P. Ry. and the Canadian Northern Ry., dated April 10, 1913, for the use by the former of the latter's terminals in Winnipeg, the Crown being a party to the agreement as a guarantor of G.T.P. Ry. bonds. Section 2 of the bill confirms the use of the property mentioned in the agreement to the G.T.P. Ry. notwithstanding any default made by the C.N. Ry. in meeting any mortgages or charges at present existing or hereafter to be made. The agreement which is attached as a schedule, describes the property to be utilized for joint terminal purposes, and defines the rights of each thereto, and as to the use of any other tracks hereafter to be laid by either of them. The joint section is to be maintained and operated under the terms and provisions of the agreement dated Nov. 1, 1907, so far as applicable. The value of the property included in the joint section under the agreement is placed at \$1,200,000, and the G.T.P. Ry. is to pay a rental of 5% a year upon one-half of that amount, and 5% a year on any future capital expenditures, and on certain other specified expenditures. The business of the Great Northern Ry., the Northern Pacific Ry., and their allied company the Midland Ry., is to be handled as C.N. Ry. business for two years, pending the completion of their own freight terminals. The agreement came in force July 1, 1913, and is to continue for 999 years.

Morley Donaldson, Vice President and General Manager, is reported to have stated after his return to Winnipeg, from an inspection trip over the line, that a regular train service would be put in operation from Edmonton to Fort George on July 1, to replace the present partial and temporary service, and that it was hoped to be able to run traffic through to Prince Rupert by September. There are about 300 miles of track on which ballasting has to be completed, and a lot of finishing up work to be done. The telegraph line has been completed, and the bridge work is expected to be completed by June 30. Locomotive sheds are being built at Fort George and Endaco, B.C., and the other buildings west of Fort George are being erected.

Work is reported to have been stopped on the branch from Harte to Brandon, Man. Grading is said to have been completed to within a mile of Brandon, and the substructure for the bridge across the Assiniboine River erected. Two matters are delaying the completion of the branch, viz:—the high prices asked for the right of way, and the insistence of the Brandon City Council that a Union station be built with the Canadian Northern Ry.

Press reports state that work will be started on an early date on the 15 mile branch line from Talmage, on the Regina-Boundary branch, into Weyburn, Sask.

A train service will be put in operation on the line from Regina to Mawer, Sask., June 1.

The Board of Railway Commissioners has approved revised location plans for the Moose Jaw Northwest branch, mileage 73.34 to 77.99, authorized the opening for traffic of the Young-Prince Albert branch from mileage 67 to 87; approved of the revised location plans for the Battleford branch, through northwest ¼ sec. 4-43-16 west of the third meridian.

The Northwest Mounted Police finally vacated the barracks in Calgary, May 5, and the G.T.P. Ry. entered into possession. The clearing of the site for station and other terminal purposes has been started. The first building to be erected will be a freight shed 500 by 40 ft. at the corner of Ninth Ave. and Sixth St. E. It is expected that work will be started on the passenger station in the autumn.

A regular train service will be put in operation on the Tofield-Calgary branch, June 4, replacing the present temporary services. (May, pg. 220.)

**Train Cost on Intercolonial Ry.**—Answering a question in the Senate recently Senator Loughheed said:—The cost of running a train of 400 tons from St. John to Halifax, not including any charges for repairs, wear and tear or other overhead expenses, but charges for enginemen and trainmen, wages, fuel, water, lubricants, other locomotive and train supplies, is \$170.36, based on January expenses for freight trains.

**A Better Farming Special Train** is to be run by the C.P.R. in co-operation with the Saskatchewan Agricultural College, and will probably start about June 15, going over the Weyburn-Lethbridge line, also on the main line west of Moose Jaw, and over the Expanse, Express and Vanguard branches, it being the intention to hold about 90 meetings.

**The Railway Storekeepers' Association's** annual convention was held at Washington, D. C., May 18 to 20, when the reports of the various committees and a number of papers were read and discussed. The social features of the convention, which included a reception by the President of the United States, were well looked after.

## 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.

**Canada Steamship Lines, Ltd.,** N. W. VAN WYCK has been appointed Freight Claims Agent. All claims correspondence heretofore addressed to W. E. Burke, Merchants Mutual Line, A. V. Collins, Canadian Lake Line, and L. A. W. Doherty, Inland Lines, are now forwarded to him. Office, Montreal.

A press report states that E. COX has been appointed press representative of the company.

In connection with the appointment of C. D. SECORD as Assistant Superintendent, as announced in our last issue, we are officially advised that he has been appointed Assistant Superintendent of Freight and Passenger Steamers. It is understood that his duties are concerned with the hulls. Office, Toronto.

**Canadian Northern Ry.—**A. W. SYMES, heretofore clerk in Freight Traffic Department, Montreal, has been appointed Travelling Freight Agent, Toronto.

R. F. McNAUGHTON, Travelling Passenger Agent, Saskatoon, Sask., is reported to have been appointed Travelling Passenger Agent, Edmonton, Alta.

**Canadian Pacific Ry.—**D. H. MAPES, heretofore Assistant to the Superintendent of Building Construction, has been appointed Superintendent of Building Construction, Eastern Lines, vice F. L. Ellingwood resigned. Office, Montreal.

S. P. ROBINS, Chief Draughtsman, is reported to have been appointed General Inspector Car Shops, Montreal.

E. MARSHALL, heretofore General Foreman, McAdam Jct., N.B., has been appointed Locomotive Foreman, Bay Shore, N.B.

F. L. WILLIS, heretofore assistant Locomotive Foreman, has been appointed Locomotive Foreman, McAdam Jct., N.B.

W. WELLS has been appointed General Foreman, McAdam Jct., N.B., vice E. Marshall, transferred.

P. L. JOHNSON, Assistant Trainmaster, Farnham, Que., is reported to have been appointed Trainmaster at Toronto.

A. J. PENTLAND, heretofore Night Locomotive Foreman, Swift Current, Sask., has been appointed Locomotive Foreman, Ignace, Ont., vice H. J. Reed transferred.

N. B. JONES has been appointed Car Foreman, Kenora, Ont., vice H. K. York transferred.

H. K. YORK, heretofore Car Foreman, Kenora, Ont., has been appointed Car Foreman, North Transcona, Man.

O. GLEASON, heretofore Assistant Agent, Winnipeg, has been appointed General Agent, Fort William, Ont., vice C. E. Legg, appointed Trainmaster, Winnipeg Terminals.

D. D. COSSAR, heretofore Night Locomotive Foreman, Moose Jaw, Sask., has been appointed Locomotive Foreman, Transcona, Man.

F. JOHNSON has been appointed Night Locomotive Foreman, Transcona, Man.

J. McLEAN, day yardmaster, Winnipeg, is reported to have been appointed day yardmaster, Transcona, Man.

D. BELL, heretofore storekeeper, Broadview, Sask., has been appointed storekeeper, North Transcona, Man.

Dr. A. W. MOODY is reported to have been appointed Chief Surgeon, Western Lines, vice Dr. R. J. Blanchard resigned.

P. S. LINDSAY, District Master Mechanic, District 2, Manitoba Division, Winnipeg, having returned from leave of absence, F. W. NICKS, who was acting during that period, has resumed his duties as locomotive driver out of Winnipeg.

A. PEERS, heretofore Locomotive Foreman, Winnipeg, has been appointed District Master Mechanic, Winnipeg Terminals.

G. PRATT, heretofore Locomotive Foreman, Souris, Man., has been appointed Locomotive Foreman, Winnipeg, roundhouse, vice A. Peers transferred.

R. SPROULE, Shop Foreman, Fort William, Ont., is reported to have been appointed Shop Foreman, Winnipeg roundhouse, vice F. Johnson, transferred.

C. E. LEGG, heretofore General Agent, Fort William, Ont., has been appointed Trainmaster, Winnipeg Terminals.

J. DUNCAN has been appointed Assistant Roadmaster, Winnipeg Terminals.

H. J. REED, heretofore Locomotive Foreman, Ignace, Ont., has been appointed Locomotive Foreman, Souris, Man., vice G. Pratt transferred.

G. A. DELACHEROIS, heretofore transitman, has been appointed Resident Engineer, Saskatoon, Sask., vice K. A. Dunphy transferred.

P. J. MURPHY, heretofore storekeeper, Regina, Sask., has been appointed storekeeper, Broadview, Sask., vice D. Bell transferred.

T. H. HORTON, heretofore storekeeper, Crownsnest, B. C., has been appointed storekeeper, Regina, Sask., vice P. J. Murphy transferred.

H. C. McMULLEN, General Livestock Agent, Calgary, Alta., has resigned. It was reported that he was to be transferred to the Assistant Freight Traffic Manager's office at Winnipeg, but press reports state that he has decided to remain in Calgary.

C. MALCOLM has been appointed chief clerk, Stores and Mechanical Accounts Department, Alberta Division, vice W. Mitchell resigned. Office, Calgary.

E. COTTY has been appointed Manager, Hotel Palliser, Calgary, Alta., vice G. H. Rawlins, deceased, whose appointment was only reported in our last issue.

A. STURROCK, heretofore Erecting Shop Foreman, Vancouver, B.C., has been appointed General Foreman, Ogden Shops, Calgary, Alta.

F. S. QUICK has been appointed Manager, Banff Springs Hotel, Banff, Alta., vice G. H. Rawlins, appointed to the Hotel Palliser, Calgary, Alta., and since deceased.

B. WILSON, heretofore temporary storekeeper, Crownsnest, B.C., has been appointed storekeeper, Strathcona, Alta.

E. J. BURKE, heretofore billing clerk, Ogden, Alta., has been appointed storekeeper, Crownsnest, B.C., vice T. H. Horton transferred.

K. A. DUNPHY, heretofore Resident Engineer, Saskatoon, Sask., has been appointed Resident Engineer, Vancouver Terminals, B.C., vice P. M. Smith resigned.

W. WORTMAN, heretofore gang foreman, Winnipeg, has been appointed Erecting Shop Foreman, Vancouver, B.C., vice A. Sturrock, promoted.

C. L. REEVE has been appointed chief clerk, Stores and Mechanical Accounts Department, British Columbia Division, vice R. Capstick deceased. Office, Vancouver.

**Chicago, Milwaukee & St. Paul Ry.—**A. J. Taylor, Canadian Freight and Passenger Agent, Toronto, having been granted a year's leave of absence, on account of ill health, his duties are being performed by

W. H. D. Snasel, Travelling Freight and Passenger Agent.

**Grand Trunk Pacific Ry.—**F. G. ADAMS, Commercial Agent, G.T.R., Winnipeg, has also been appointed Division Freight Agent, G.T.P.R., there, vice W. J. Hunter deceased.

W. J. P. McGREGGOR, heretofore Commercial Agent, G.T.R., Moncton, N.B., has been appointed Division Freight Agent, G.T.P.R., Edmonton, Alta., vice F. G. Adams, transferred.

The following station agents have been appointed,—Justice, Man., R. W. Gibson; Pope, Man., C. L. Bennett; Uno, Man., E. A. Theriault; Lazare, Man., A. G. Redford; Pocahontas, Alta., R. J. Elder; Three Hills, Alta., J. N. McKeegan; Coalspur, Alta., E. B. Elgood; Lovett, Alta., D. McCuish; Mount Park, Alta., D. S. McCready.

**Grand Trunk Ry.—**H. A. LAIRD, heretofore chief clerk, General Freight Agent's office, Montreal, has been appointed City Freight Agent, there, vice V. G. Snell, promoted.

The following station agents have been appointed,—St. Liboire, Que., P. J. Hamel; Lindsay, Ont., F. Sandy; Peterboro, Ont., A. McNabb; Ekfrid, Ont., M. A. Smith; Brunner, Ont., Pass., J. Reiss, Jr.; Dalkeith, Ont., J. O'Connor; Golden Lake, Ont., J. L. Foster; Wilno, Ont., J. H. Boyd.

**Great Northern Ry.—**R. BUDD, heretofore Chief Engineer, has been appointed Assistant to the President. Office, St. Paul, Minn.

A. H. HOGELAND, heretofore Consulting Engineer, and formerly Chief Engineer, has been appointed Chief Engineer, vice R. Budd, promoted. Office, St. Paul, Minn.

**Intercolonial Ry.—**H. JARDINE, heretofore Resident Engineer, Truro, N.S., has been appointed Assistant Engineer, Moncton, N.B.

G. MANNING is reported to have been appointed night foreman, St. John, N.B., vice J. Golding, retired under the pension rules.

**National Transcontinental Ry.—**We are officially advised that no one has been appointed Resident Engineer at Graham, Ont., succeeding the late F. D. FRIEND, as the work is practically finished there.

**North Shore Railway.—**It is announced that the New Brunswick Government has appointed M. F. KEITH, M. D., of Moncton, as Manager of the North Shore Railway Co., Ltd., without salary, under the provisions of the New Brunswick statutes 4 George V., chap. 57.

**White Star-Dominion Line.—**CHARLES MASON, heretofore in the District Passenger Agent's office, G.T.R., Montreal, has been appointed Travelling Passenger Agent, White Star-Dominion Line. Headquarters, Montreal.

**Canadian Railway Institute, Ltd.,** has been incorporated under the Dominion Companies Act, with \$50,000 capital, and office at Montreal, to print and publish books, pamphlets, charts, etc., pertaining to the common arts and sciences, and especially those relating to locomotive and general engineering, railway and canal construction, etc., and to take over the Canadian School of Locomotive and Train Operation, Montreal, and for other purposes. The incorporators are:—F. J. Jones, mechanical and air brake instructor; W. J. Hatch, air brake inspector; C. A. Martin, J. J. C. Wight and J. P. Wynn, locomotive drivers, Montreal.

**Earth Sticking to Dump Cars** can be prevented by covering the bottom of the cars with sheet zinc. A large contractor in New York is said to have found this out, after trying, without success, galvanized iron and sheet iron.

# Electric Railway Department

## Electrical Equipment for Mount Royal Tunnel, Canadian Northern Railway.

Canadian Railway and Marine World, for Dec., 1913, contained a general description of the electric locomotives for Mount Royal tunnel and the Montreal terminal. Following is a more detailed account of some of the apparatus on the locomotives, and also a description of the 8 multiple unit car equipments and substation apparatus:

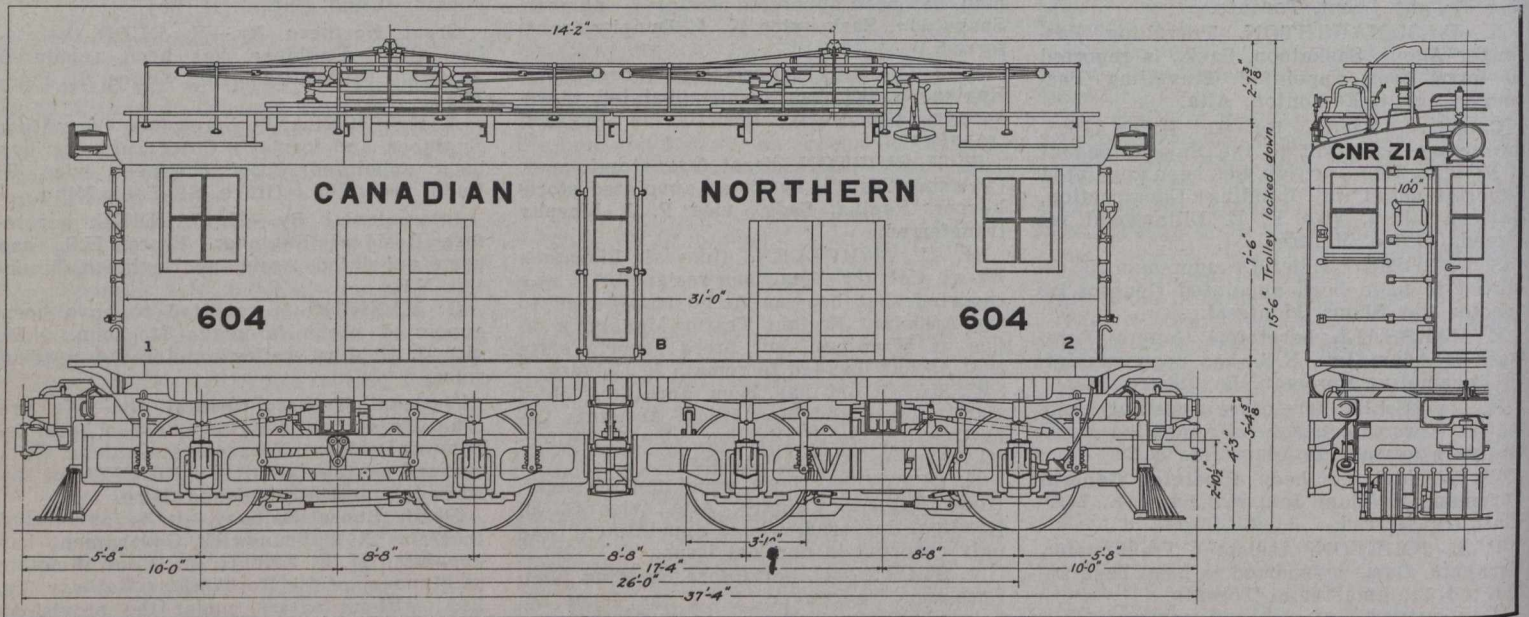
**LOCOMOTIVES.**—The motors on each locomotive will consist of 4 CGE-228 commutating pole type motors. These have a standard rating of 315 h.p. each, or a total of 1260 h.p. per locomotive. The magnetic frame will be practically octagonal in shape, and of the box type construction. The frame is provided with bored openings at each end through which the armature, pole pieces, and field coils can be inserted or removed. The frame heads carrying the armature shaft bearings will be supported in the recess ends of the magnet frame, and will be held in

of bearing metal with a thin layer of babbit sweated to the bearing shell. The armature bearings will be lubricated by means of oil and waste, and the waste will be held against the shaft on the low pressure side of the bearing. Waste oil from the armature bearing will be prevented from entering the interior of the motor by a series of oil deflectors which will throw it into grooves in the heads from which it is conducted away. Axle caps will be tongued and bolted to machined surfaces on the frame, which will be inclined at an angle of 60 degrees to the horizontal. The bearings will be lubricated by means of oil and waste, and the caps will be provided with auxiliary oil wells. The motor will provide a 7 in. diameter of axle in the motor bearings.

The field coils will be all wound with strip copper, the whole being mummified and insulated with varnished cambric and heavy

Each brush holder will rest on a support which will consist of two mica insulated studs pressed into a drop forging. The support will be secured to the frame against accurately machined seats by tap bolts accessible from the outside of the motor frame. The brush holder bodies will be secured to the brush holder supports on accurately machined seats. The brushes will slide in finished ways and will be pressed against the commutator by fingers which will give a practically uniform pressure throughout the working range of the brushes. The arrangement of springs actuating the fingers is such that there will be but slight pressure on the pins on which the fingers pivot. This will prevent any tendency of the fingers to stick on the pins and will reduce wear to a minimum.

The magnet frame will carry an opening for a flexible connection to a low pressure



Side and End Elevations, Electric Locomotives, Mount Royal Tunnel.

place by tap bolts, which will be securely locked against turning. In each head will be two tap holes diametrically opposite, and when bolts are screwed into these holes the frame head will be forced off.

The armature bearing housings containing the bearing sleeves will have liberal sized pockets for holding oily waste, which will be held against the shaft on the low pressure side of the bearing. The heads will be provided with auxiliary oil wells for gauging the depth of the oil and inserting new oil. The 4 exciting field coils will be located at the sides, top and bottom of the frame, and the 4 commutating coils will be located in the corners of the frame at an angle of approximately 45 degrees to the horizontal. The motor frames will have large hand holes for inspection at each end, which will be closed by covers with gaskets. The opening through the frame over the commutator will be large and inclined at an angle, allowing easy access to the commutator and brush holders. The cover over the commutator will be held in place by a spring locking device, no part of which will project above the top of the motor.

The armature bearing linings will be made

tape. The armature core will be built up of soft iron laminations and mounted on a steel spider. The laminations will be keyed to the spider, and the spider in turn keyed to the armature shaft. The armature will be so constructed that the shaft may be removed without disturbing the commutator or windings, as the commutator and armature heads will all be located on the spider. The armature is especially designed to give thorough ventilation, so that the forced draught will circulate through longitudinal holes in the armature and over the surfaces of the armature and field coils. The armature shaft will be of special high grade steel, and the keys of treated steel, the thrust collars being made from steel drop forgings shrunk on the shaft.

The commutator shell and cap will have the surfaces accurately machined and insulated with the best grade of mica. The commutator bars will be of hard, drawn copper, machined accurately to gauge, and will be insulated from each other by the best grade of mica. The commutator will be mounted directly on the spider and may be removed without disturbing the windings or punchings.

blower. Air will be forced in at the opposite end from the commutator, through the field coils and over the armature, then under the commutator through the armature heads and punchings. Gears will be of rolled steel forgings and the pinions of special treated high grade steel. Each motor will have two pinions, one mounted on each end of the armature shaft. Each set of gears and pinions will have 4 in. faces and the teeth will be cut to a diametral pitch of  $2\frac{1}{2}$  ins.

The contactors which will handle the main current will have the operating coils energized from 125 v. supply from a motor generator set, and will be removed by special insulation some distance from the contact tips which will carry the 2,400 v. energy. An insulating wooden rod will connect the contact lever to the solenoid plunger, the principle of operation of these contactors being similar to 600 v. type.

The arc chute will have a very powerful magnetic blow out and arching horns of considerable length extending from the contact tips, consequently, the ends of the arc will move rapidly over comparatively cold metal, causing a minimum burning of arc chute sides are a positive rupturing of the arc.



The main motor and auxiliary fuse boxes will all be provided with a very effective magnetic blow out, which will be energized by the current passing through the fuse, and have hinged covers to facilitate fuse renewals. Fuses will be of the copper ribbon type, having a hole in the centre to localize the heating. These fuse boxes will be all

tribution of hot air secured. The heating equipment will consist of a heating unit, blower and regulating mechanism, the controlling switch and thermostat of the regulating mechanism being arranged for operation from the 600 v. supply. Air will be forced over the heating unit and distributed to the car through air ducts along the sides

direct connected to 11,000 v. synchronous motor. The generators will be provided with pole face windings, and will be capable of carrying extremely heavy overloads, the overload capacity of each set being 200% load for one half hour and 300% load for 5 minutes. Three bearing 125 v. motor generator exciter sets will be supplied, each 125 v. 50 k.w. compound wound commutating pole generator being driven by a 550 v. 3 phase induction motor. The switchboard will consist of 32 panels of natural black slate and be 58 ft. long over all. The switchboard will make provision for considerable future extension.

All the apparatus above mentioned is being furnished by the Canadian General Electric Co.

**Electric Railway Finance, Meetings, Etc.**

**Brantford St. Ry.—Grand Valley Ry.**—The matters connected with the settlement of the litigation arising out of the affairs of the company in which the City of Brantford, Ont., is interested, were mentioned in the Second Appellate Division of the Ontario High Court, May 4. It was reported that the settlement negotiations were proceeding satisfactorily, and the cases were further enlarged.

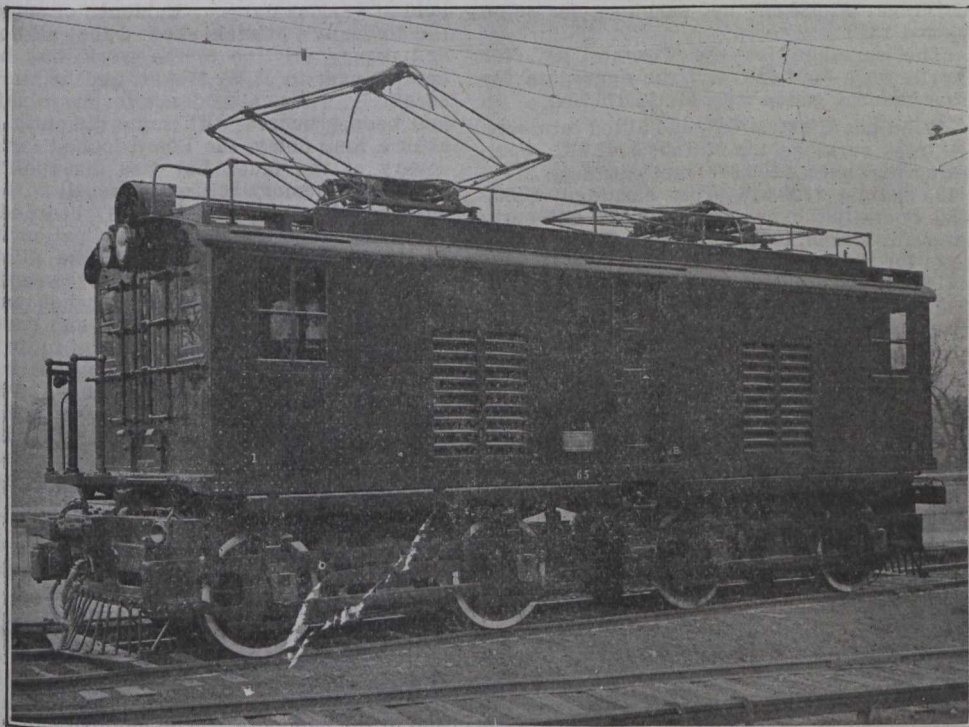
The Brantford City Council, on May 4, finally passed the bylaw to raise \$270,000 by debentures for the purchase of these lines.

**British Columbia Electric Ry.,** and allied companies.—Gross earnings for March, \$717,251; operating expenses, maintenance, etc., \$516,007; net earnings, \$201,244, against \$720,493 gross earnings; \$520,667 operating expenses, maintenance, etc.; \$199,826 net earnings, for March, 1913. Aggregate gross earnings for nine months ended Mar. 31, \$6,752,082; net earnings, \$1,828,859, against \$6,402,921 aggregate gross earnings; \$1,826,664 net earnings for same period 1912-13.

**Calgary Municipal Ry.**—The following table, prepared by Commissioner Graves, shows the revenues to April 30, and the expenses to Mar. 31:—

	Revenue.	Op'r. Exp.	Revenue per car mile.	Op'r. Exp. per car mile.
1912—				
Jan. ...	\$37,575.90	\$23,370.98	27.752	17.261
Feb. ...	35,178.05	28,819.89	26.636	21.882
March ..	40,051.30	24,525.71	27.828	17.041
April ...	43,887.50			
	\$156,692.75	\$76,716.58	82.216	56.184
1913—				
Jan. ...	\$56,738.00	\$44,893.07	24.139	19.099
Feb. ...	51,631.00	40,005.65	23.694	18.359
March ..	58,294.85	42,659.92	24.023	18.359
April ...	60,646.45			
	\$227,310.30	\$127,558.64	71.856	55.041
1914—				
Jan. ...	\$57,640.20	\$53,238.92	20.484	18.920
Feb. ...	52,063.95	44,398.53	20.747	17.693
March ..	56,606.70	47,480.43	21.019	17.630
April ...	57,025.70			
	\$223,336.55	\$145,117.88	62.250	54.243

**Cape Breton Electric Co.**—Gross earnings for March, \$26,550.60; operating expenses and taxes \$16,357.81; net earnings \$10,192.79; interest charges \$5,249.39; balance \$4,943.40; bond sinking improvement funds \$1,190; balance for reserves, depreciation, etc., \$3,753.40, against \$28,099.37 gross earnings; \$15,965.83 operating expenses, taxes, etc.; \$12,133.54 net earnings; \$4,891.66 interest charges; \$7,241.88 balance; \$1,190 bond sinking and improvement funds; \$6,051.88 balance for reserves, depreciation, etc., for Mar., 1913. Aggregate gross earnings for three months ended Mar. 31, \$81,633.87; net earnings, \$31,015.16; interest charges, bond sinking and improvement



Electric Locomotive of Similar Type to those ordered for Mount Royal Tunnel.

arranged to blow into a common chamber arranged to take care of the arc.

The motor generator set will consist of a 125 v. generator of suitable size to take care of lights, head light and control circuits, direct connected to and driven by a 2,400 v. motor having two 1,200 v. commutators. A fan for providing air to blow through the main motors will be direct connected to one end of the motor shaft.

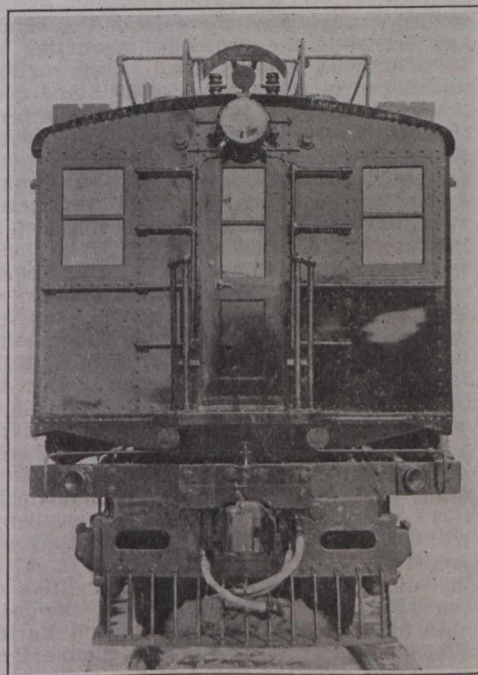
**MULTIPLE UNIT CAR EQUIPMENT.**—Each of the 8 multiple unit cars will be supplied with 4 CGE-239 motors, of the commutating pole type, fully ventilated, wound for 1,200 v. and insulated for 2,400 v. Two of these motors will be permanently connected in series for 2,400 v. operation. Their standard rating will be 125 h.p. each, or a total of 500 h.p. per car. In the construction of these fully ventilated motors, the pinion end frame will be provided with a ring which will divert the air discharge from the armature fan through the openings in the head, while the incoming air will be drawn through a screened intake. This construction will insure a definite longitudinal circulation of air through the whole interior of the motor.

The Sprague GE type M multiple unit control will be provided, the design arrangement and construction being such that it will be equally well adapted for either single car or train operation. The control equipment will include a motor generator set for supplying 600 v. current for the control circuits, air compressor and lights. This set will consist of 2 1,200 v. motors, operating in series at 2,400 v., direct connected to a 600 v. generator.

The construction of the motors and control apparatus will be essentially of the same general type as for the corresponding items used on the electric locomotive equipments. The method of heating the cars will be very satisfactory on account of the excellent dis-

of the car.

**SUBSTATION EQUIPMENT.**—Power will be purchased at 62½ cycles 11,000 v., and the present equipment of the substation, which will be located near the west portal of the tunnel, will consist of 2 1,500



End View, Electric Locomotive.

k. w. C.G.E. motor generator sets. Each of these sets will be four bearing, and consist of 2,750 k.w. compound wound commutating pole generators, wound for 1,200 v. and insulated for 2,400 v.,

funds, \$19,278.12; net balance, \$11,737.05, against \$86,076.24 aggregate gross earnings; \$35,344.42 net earnings; \$17,976.11 interest charges, bond sinking and improvement funds; \$17,368.31 net balance, for same period 1913.

The shareholders have decided to increase the preference stock issue from \$250,000 to \$500,000, to provide for extensions. There is an outstanding common stock issue of \$1,625,000.

**Saskatoon Municipal Ry.**—Receipts for March, \$12,330.38, against \$9,978.11 for Mar., 1913. Passengers carried, 274,186, against 293,255 for Mar., 1913. Total mileage, 53,807, against 51,048 in Mar., 1913. Operating expenses, \$8,149.78; interest on debentures and sinking fund, \$3,392.00; total, \$11,541.78. The decrease in earnings is due to the fact that a full car service was not operated in the earlier part of the month owing to the breakdown of the generators in the power house in February.

The gross earnings of the line to Sutherland for March were \$1,271.10, and the operating expenses, including interest and sinking fund, were \$832.

**Saskatoon Municipal Ry.**—The city auditor reported to the Saskatoon, Sask., City Council, May 12, that the deficit in the operation of the city's electric railway for the first quarter of this year was \$14,480.

**Toronto Ry., Toronto and York Radial Ry.,**

and allied companies.—Gross earnings for March, \$836,328; operating expenses, maintenance, etc., \$435,685; net earnings, \$400,643, against \$772,491 gross earnings; \$405,788 operating expenses, maintenance, etc.; \$366,703 net earnings, for March, 1913. Aggregate gross earnings for three months ended Mar. 31, \$2,461,956; net earnings, \$1,185,577, against \$2,267,732 aggregate gross earnings; \$1,083,306 net earnings, for same period 1913.

The earnings for the Toronto Ry., for April, were \$501,435, and the aggregate for four months ended Apr. 30, \$1,975,304.

**Winnipeg Electric Ry., and allied interests.**—Gross earnings for March, \$347,812; operating expenses, \$206,393; net earnings, \$141,419, against \$329,016 gross earnings; \$189,950 operating expenses; \$139,066 net earnings, for March, 1913. Aggregate gross earnings for three months ended Mar. 31, \$1,081,461; net earnings, \$435,786, against \$1,000,945 aggregate gross earnings; \$433,570 net earnings, for same period 1913.

**Woodstock, Thames Valley and Ingersoll Electric Ry.**—The Ontario High Court made an order, April 23, transferring the control of this line from E. B. Stockdale, Receiver of the Grand Valley Ry., to J. G. Wallace, Woodstock, Ont., representing the bondholders of the W., T. V. and I. E. R.. Mr. Wallace has been Superintendent in charge of operation for some years.

## The Ontario West Shore Railway Muddle.

The enquiry into the condition of the partially completed Ontario West Shore Ry., undertaken by the Ontario Railway and Municipal Board, at the instance of the towns of Goderich and Kincardine, and Ashfield and Huron townships, was concluded at Toronto, May 1. As announced in Canadian Railway and Marine World for May, the Chairman, D. M. McIntyre, stated at the previous sitting, Apr. 21, that it would perhaps be unfair to close the enquiry without giving J. W. Moyes, the President of the company, an opportunity to make a statement, but if he did not attend on May 1, the enquiry would be closed. Although a promise was made on his behalf that he would be present, he did not attend at the last sitting of the Board, and instead, it was announced that, acting on his doctor's advice, he had gone to Algonquin Park for the benefit of his health. Subsequent to the issue of the Board's report on the case, a warrant was issued for his arrest, and enquiries showed that he was not staying at any place in Algonquin Park, and apparently that he had not been there. Various rumors as to his whereabouts have been circulated, but none of those concerned with the matter profess any actual knowledge.

Following is a summary of the Board's report: The company was originally incorporated in 1902 as the Huron, Bruce and Grey Electric Ry., to build an electric railway from Goderich southerly, northerly and easterly, and in 1903 the name was changed to the Ontario West Shore Electric Ry., and additional powers were granted, and in 1906, the time for the commencement and completion of the lines was extended, and the Ontario Railway Act made applicable to the company. In 1909 the name of the company was changed to the Ontario West Shore Ry. The share capital was fixed at \$500,000, and the company was authorized to issue bonds for \$15,000 a mile, which, upon the mileage of the section to be built first, it was assumed, would authorize the issue of \$600,000 bonds. During 1908, the four municipalities mentioned guaranteed the company's bonds for \$400,000, as follows: Goderich, \$150,000; Kincardine, \$50,000; Ashfield Tp.,

\$125,000, and Huron Tp., \$75,000, and in consideration of these guarantees, the company bound itself to complete the railway between Goderich and Kincardine. The Toronto General Trusts Corporation was appointed trustee under the bond guarantees, and was authorized, upon receiving from time to time progress certificates by the company's Chief Engineer, certifying to 90% of the value of the service and materials done or supplied to the date of such certificates, to pay out of the proceeds of the guaranteed bonds, two-thirds of the 90% as set out in the progress certificates. J. W. Moyes, President of the company, negotiated the sale of the bonds and deposited the proceeds, amounting to \$384,000, with the trustee. Construction was begun in the autumn of 1908 and continued throughout 1909, 1910 and part of 1911. Progress certificates for various sums, signed by the Chief Engineer, were presented to the trustee and the regular proportions paid over. In all, 57 certificates were presented from July 27, 1908, to Oct. 3, 1911, for a total of \$639,949.79. Upon these certificates, the trustee paid to J. W. Moyes, representing the company, two-thirds of 90%, totalling \$383,969.94. This exhausted the proceeds of the guaranteed bonds, with the exception of \$30.06, and on Sept. 7, 1911, J. W. Moyes ordered that construction be stopped. The line was far from complete, and the work was not resumed. The company defaulted on the interest, and the bondholders called upon the municipalities to fulfill their guarantees. The municipalities took up the matter with the company, without effect, and in Oct., 1912, they engaged H. W. Middlemist, A. M. I. C. E., to investigate and report on the condition of the railway. The detailed report was dealt with fully in Canadian Railway and Marine World for Apr. 1913. Briefly summarized, it showed that the value of the work done and materials furnished, including 5% for engineering expenses, and 15% profit, was \$305,200.75. Assuming these figures to be correct, there should have been paid out on progress certificates, \$183,120.46, figured at two thirds of 90%, whereas there was overpayment of \$200,849.48.

The first date upon which it was settled to commence the enquiry, was May 30, 1913, but the Board, learning that J. W. Moyes, who, as President, had been most active in the company's affairs, was absent from Canada, and without his testimony little progress could be made, the appointment was adjourned sine die. The actual hearing commenced Sept. 19, 1913, and sittings were held at various dates. Evidence of some of the company's officials showed that all books and papers relative to the work, had been handed over to J. W. Moyes, and to him accordingly, whose attendance for examination had been procured with some difficulty and after a long delay, the Board looked for discovery of the facts, but was disappointed. While his memory refused to recall with accuracy individual transactions recorded in the bank ledgers, even the application of a cheque for so large an amount as \$15,000, the totally unexpected and disconcerting turn which his testimony took when asked to produce the company's books and papers, promised to land the investigation in an impasse. The evidence shows the unsatisfactory character of his testimony, which throughout was characterized by shifty evasion, and, as subsequently developed, by bold reiterated falsehood. His story, under oath, was that he resigned the presidency of the company about a year prior to the time at which he was speaking, and that he had himself sent all the books and papers connected with the company's affairs, to S. C. Smoke, Vice President, since deceased. A search among the late Mr. Smoke's papers, by his business partners, failed to disclose any such papers, with the exception of certain minutes of meetings for a few months in 1908, concerned only with the legal organization of the company. The enquiry had been piloted into a cul de sac by J. W. Moyes, and there, no doubt, he intended it should end, and yet, as afterwards appeared, this story, so solemnly affirmed and reaffirmed by him, was an infamous fabrication. Dead men tell no tales, and appreciating this, with shameless cynicism and calculating cunning, he sought to unload on the deceased Vice President, the vanished books and papers, with all the odium attaching to their disappearance.

In January last, it was learned that a trunk and parcel of papers, probably relevant to this enquiry, had come into the hands of the city police, in virtue of the execution of a search warrant issued at the instance of J. W. Moyes against W. M. Baxter, in whose possession they were found. An inspection proved that these were the long sought books and papers, and they were handed over by the Board to a chartered accountant for examination and report. The accountant's testimony disclosed that no systematic record of the company's business had been kept. The only books he could find were a cash book and a ledger, in each of which only a few entries were made, and those referring to transactions in 1908. During the three years when the major portion of the work was done, not a single entry was made in the books. The examination also showed that eight different bank accounts had been kept, at Toronto and Goderich, five of them being in the name of J. W. Moyes, to each of which, some part of the company's money could be traced. The task of making any complete record of transactions was complicated by multiple entries, transfers, missing cheques, vouchers, etc., but after this was done, so far as was humanly possible, evidence is still wanting of the destination and legitimate disbursement of many thousands of dollars.

Evidence was given during the enquiry, by V. M. Roberts, Chief Engineer of the company, upon whose progress certificates the amounts were paid over by the trustee, and

it was shown from documents among the company's papers that he had failed in his duty as certifying engineer. He was unable to produce any memoranda showing the various computations on which he based the progress certificates, and his explanation of the method shows that it was not in accord with the terms of the trust deed, he stating that he made his calculations on a percentage basis of the whole contract, and that he had instructions from J. W. Moyes to prepare his estimate on the contract price. A large number of progress certificates in blank, signed by the Chief Engineer, were also found among the papers, showing that he had abdicated his functions and placed himself completely in the hands of J. W. Moyes, facilitating the latter's fraudulent purposes. As an instance of how the certificates were expanded,—in 1909 a quantity of steel rails were purchased for \$16,937.50, and a progress certificate was prepared and presented for \$28,229.17, which amount when reduced by 10% and by one third of the remainder, makes the precise amount of the account for rails. During 1909-10-11, it became necessary to meet the interest coupons, and J. W. Moyes drew \$58,900 on false progress certificates, when not a dollar of the amounts went into construction. The former Secretary of the company, in his evidence, stated that all the payments at Goderich and Toronto of which he has knowledge, on account of construction, were \$228,272.06, made up as follows:

Pay rolls and accounts paid at		
Goderich .....	\$153,905.55	
Ties (1909) .....	9,598.07	
Rails .....	\$74,275.40	
Less 30% paid in un-		
guaranteed bonds at par ..	22,282.62	51,992.78
Right of way .....	6,777.66	
Timber .....	1,000.00	
Additional construction, about ..	5,000.00	
		\$228,272.06

In addition to the foregoing, it is probable that payments were made from Toronto, for a locomotive, \$2,000, and for legal expenses. The guaranteed bonds, with principal and interest, produced \$402,837.37, and it is reasonably certain that \$228,272.06 has been properly expended on the construction of the railway. This leaves to be accounted for, \$174,565.31, and the Board places the burden of accounting for this where it properly belongs, on J. W. Moyes. How much of this balance was legitimately applied for purposes of the railway, it is unable to say from the material at command, but documentary evidence makes it clear that of this balance which was all paid out to J. W. Moyes, large sums were deliberately misappropriated, as cheques and vouchers show approximately \$122,000 applied to other purposes, apparently personal.

The Board arrived at the following conclusions:—That J. W. Moyes, by false and fraudulent representation that \$12,500 had been paid on account of the capital stock, procured the company to be permanently organized; that no permanent capital was contributed beyond the proceeds of the sale of bonds guaranteed by the municipalities, although \$15,000 of unguaranteed bonds appear to have been taken in part payment of steel rails; that J. W. Moyes, in breach of the Ontario Railway Act, procured a colorable agreement for the construction of the railway, between the railway company, and the Huron Construction Co., which latter was in fact, himself; that by procuring to be issued false and fraudulent progress certificates, he withdrew from the Toronto General Trusts Corporation, the proceeds of the sale of the guaranteed bonds, and the Chief Engineer, by his gross negligence and breach of duty, aided and abetted J. W. Moyes in his fraudulent design; that owing to the fact that no books of account of the company's business

were kept, and that many vouchers for payments are missing, the Board cannot report with exactness how much of the amount so fraudulently withdrawn by J. W. Moyes, has been properly expended, but it is clear that while several thousands of dollars were applied to purposes foreign to the railway, \$228,272.06 was properly expended in railway construction and materials; that the assets of the company consist of right of way, which has been acquired for the entire distance, except about 12 parcels, and construction work and materials, according to the corrected valuation of H. W. Middlemist, C. E., is worth \$276,021.21; that all the company's liabilities known to the Board are the bonds guaranteed by the municipalities, of a par value of \$400,000, and a parcel of unguaranteed bonds of the par value of \$15,000, both of which are secured by a mortgage on the undertaking, and besides, there are outstanding unsecured accounts of approximately \$2,000.

**Prosecution for Sale of Intoxicating Liquor to Electric Car Crew While on Duty.**

What is reported to be the first case under the recently amended section of the Ontario Railway Act, which makes it a serious offence to supply intoxicating liquor to a train crew while on duty, was heard at Windsor, Ont., May 5, when A. Reaume of the Brighton Beach Hotel, was, on pleading guilty, fined \$10 and costs, amounting to \$16.50, for selling liquor to the conductor and motorman of a Sandwich, Windsor and Amherstburg Ry. car running between Ojibway and Sandwich Springs. The case was laid on the information of James Anderson, Manager, S., W. and A. R., and the magistrate in imposing the penalty, stated that he did not want to make it too heavy, this being a first offence, but any future offenders would be dealt with as severely as the law allowed. He also emphasized the fact that it was an extremely dangerous practice to sell liquor to men driving street cars.

Sec. 244 of the Ontario Railway Act, covering the point, reads as follows,—

Every person who sells, gives or barter any spirituous or intoxicating liquor to or with any servant or employe of any company while actually employed in the course of his duty on a train or car or while in uniform or in connection with the operation of a train or car, is liable on summary conviction to a penalty not exceeding \$25, or to imprisonment with or without hard labor for a period not exceeding one month, or to both.

**Pitt River Bridge, Coquitlam, B. C.**—The British Columbia Government received tenders to May 26 for the construction of the substructure and the erection of the steel work for the bridge across the Pitt River at Coquitlam. It is expected that the work will be started July 1, and completed within two years. The estimated cost is \$700,000. It would, however, have been considerably more, but the Government purchased from the C.P.R. the superstructure of its single track bridge across the Pitt River, about 200 yards south of the proposed traffic bridge, which has been replaced by a double track bridge. The bridge, it is proposed, shall carry tracks for an electric railway, for which the Western Canada Power Co. holds a charter. The projected line will run from Vancouver to Mission City.

The Regina (Sask.) Municipal Railway has indefinitely postponed the proposed purchase of 4 double truck cars for which tenders were invited recently.

**Operating Results of Calgary Municipal Railway.**

Following is the statement for the calendar year 1913, of this line, of which T. H. McCauley is Superintendent:—

REVENUE.	
Car earnings:	
Passengers .....	\$733,218.89
Chartered cars .....	1,994.05
Freight .....	735.37
Street sprinkling .....	6,000.00
	\$741,948.31
Miscellaneous earnings:	
Advertising .....	\$10,643.59
Post card sales .....	111.50
Commissions .....	9.15
	10,764.24
General revenue:	
Bank interest .....	\$15,013.74
	15,013.74
Total revenue .....	\$767,726.29

OPERATING EXPENSES.	
Maintenance of way and structures:	
Track and roadway .....	\$16,299.17
Electric lines .....	5,712.00
Buildings and fixtures .....	1,397.21
	\$23,408.38

Maintenance of equipment:	
Cars (bodies and trucks) .....	\$53,840.94
Electric equipment of cars .....	15,490.41
Miscellaneous equipment .....	50.85
Shop expenses .....	3,367.61
Elec. vehicles, operation .....	508.15
	73,257.96

Transportation:	
Hired power .....	\$151,320.32
Superintendence .....	6,745.20
Wages of conductors .....	119,017.09
Wages of motormen .....	119,016.94
Misc. car service employes .....	1,059.23
Car service supplies .....	16,043.34
Misc. car service expenses .....	2,003.79
Cleaning and sanding track .....	8,608.20
Removal of snow and ice .....	1,868.30
Operation of sprinklers .....	2,217.94
	427,900.35

General Expenses:	
Salaries of general officers .....	\$5,880.00
Salaries of clerks .....	7,116.22
Printing and stationery .....	949.86
Misc. office expenses .....	1,793.27
Advertising and attractions .....	443.19
Misc. general expenses .....	5,118.86
Damages .....	18,041.72
Rent of land and buildings .....	1,293.75
Insurance .....	3,511.26
Store expenses .....	625.49
Elec. vehicles, operation .....	116.72
Contingencies .....	6,234.62
	51,124.96

Less credit per stock account; increase in stock on hand between Dec. 31, 1912 and 1913 ..	537.92
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Total operating expenses .....	\$575,153.73
Debtore interest .....	71,671.98
Debtore sinking fund .....	34,007.95
Taxes .....	2,452.27
Rental charged by City of Calgary on land and conduits .....	931.68
Profit and loss .....	298.64
Surplus .....	83,160.04

Disposition of surplus:	
Carried to depreciation replacement account .....	\$70,266.64
Carried to net revenue account ..	12,893.40
	\$83,160.04

MISCELLANEOUS STATISTICS.	
Car miles .....	3,040,214
Car hours .....	348,218
Fare passengers .....	18,355,274
Transfer passengers .....	6,478,332
Total passengers .....	24,833,606
Average fare, revenue passengers .....	3.994c
Average fare, all passengers .....	2.952c
Car earnings per car mile .....	24.404c
Misc. earnings per car mile .....	.354c
Gross earnings per car mile .....	24.758c
Car earnings per car hour .....	\$2.13070
Misc. earnings per car hour .....	.03091
Gross earnings per car hour .....	\$2.16161
Operating expenses per car mile ..	18.918c
Operating expenses per car hour .....	\$1.65170
Employes (Dec., 1913) .....	350

As a city railway system tends to centralize business and spread out the residence area, its action is both centripetal and centrifugal. It is serving the best interests of the community in opposite directions.

## Canadian Electric Railway Association's Annual Meeting.

The annual meeting held at the Chateau Laurier, Ottawa, May 13, was well attended by officials of member companies throughout the Dominion, and was very successful in every way.

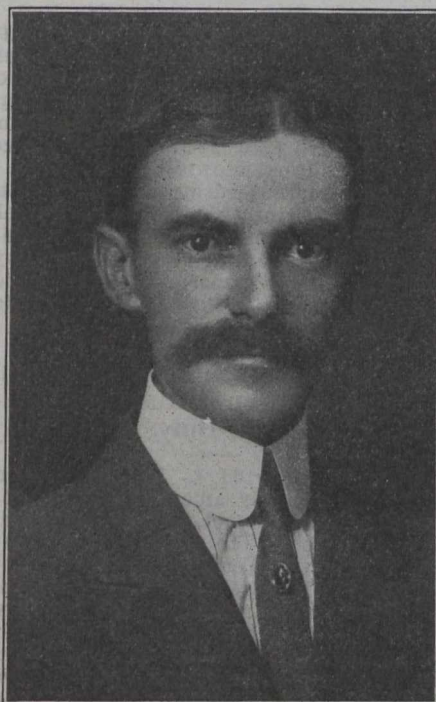
The chair was occupied by the President, Patrick Dubee, Secretary-Treasurer, Montreal Tramways Co., who opened the meeting with an address dealing with the Association's work.

The Cornwall St. Ry. Light and Power Co., Ltd., Cornwall, Ont., and the London and Lake Erie Ry. and Transportation Co., London, Ont., were admitted to membership by unanimous vote.

The Secretary-Treasurer, Acton Burrows, Managing Director, Canadian Railway and Marine World, presented a very comprehensive report dealing with the Association's work during the past year and covering a wide range of other subjects, including the following: Change of Association's name; membership of Association; representation of Association at Atlantic City conventions; compensation for carrying postmen on electric railways; compensation for carrying postal mail; taxation of electric railways in Ontario; Dominion subsidies for municipal hydro electric railways in Ontario; enquiries for information; power brakes for electric railway cars; the brake question in Detroit; point in development of street railway properties in which the maximum return on the investment is being received; track laying; staggering joints or placing ends of rails opposite each other; use of T rails in cities; bonding through or around special work; street sprinkling for municipalities; payment towards cost of oiling macadamized roads; trolley suspension wires attached to municipal combination lamp poles; mileage of rolled steel and steel tired wheels; materials used in armature bearings, etc.; cost of power per kilowatt hour; information for cost recorder departments; speed for cars in cities; keeping brooms in car vestibules; statistics of employes' wages; statistics of hours of labor on Sundays; conductors and motormen reporting late for duty; motormen and conductors exchanging positions; smoking on street cars; conditions for crossing steam railway tracks; fares on interurban and suburban lines; Sunday fares; workmen's tickets; employes' transportation; portable fare boxes for city lines; difficulties with portable fare boxes; collection of fares on interurban lines; freight, express and switching tariffs; transfers on interurban lines; transportation of newspapers; payment by advertising companies for placing cards in cars; the working of public utility commissions; duty on continuous rail joints; miscellaneous statistics as to funded debt, bonds, mileage, etc.; miscellaneous statistics as to population served, track mileage, revenue, passengers, etc.; preparation of papers for annual meeting; financial statement.

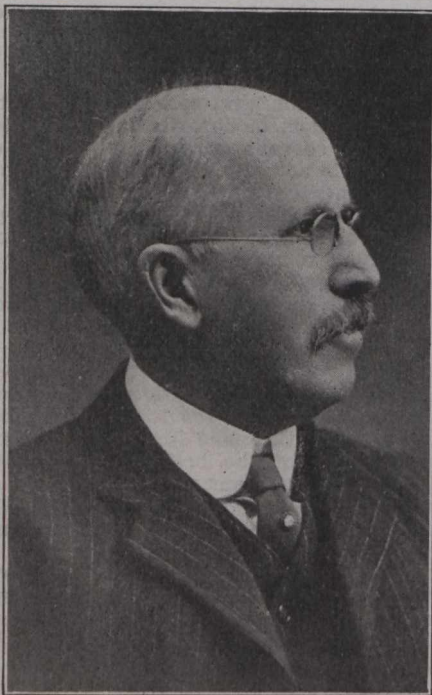
The following papers were read and discussed: "Prevention of Accidents," by A. E. Beck, Claims Solicitor, British Columbia Electric Ry.; "A Few Disconnected Ideas on Street Railway Operation," by F. D. Burpee, Superintendent, Ottawa Electric Ry.; "The Diesel Crude Oil Engine as Applied to Electric Railway Operation," by A. H. Dion, General Superintendent, Moose Jaw Electric Ry.; "Floral Work at Railway Stations," by E. T. Cook, F.R.H.S.; "Recent Developments in Electric Car Equipment," by W. G. Gordon, Transportation Engineer, Canadian General Electric Co.; "Construction Accounting," by E. P. Coleman, General Manager, Dominion Power & Trans-

mission Co., Ltd.; "Use of Steel in the Construction of Electric Railway Cars," by J. A. Wilson, Superintendent of Car Department, Ottawa Car Manufacturing Co.; "Loyalty



C. B. King,  
Manager London St. Ry., and President Canadian Electric Railway Association.

in Electric Railway Work," by A. M. Smith, Master Mechanic, Toronto and York Radial Ry.; "Safety First," by A. Gaboury, Superintendent, Montreal Tramways Co. The



James D. Fraser,  
Director and Secretary-Treasurer Ottawa Electric Ry. Co., and Vice President Canadian Electric Railway Association.

above mentioned papers are copyrighted by the Association and will be printed in its annual proceedings and distributed to officials of member companies.

The officers, etc., were unanimously elected as follows: President, C. B. King, Manager, London St. Ry., London, Ont.; Vice President, J. D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Ry., Ottawa, Ont.; Secretary-Treasurer, Acton Burrows, Managing Director, Canadian Railway and Marine World, Toronto, re-elected for the eighth successive year; Executive Committee: E. P. Coleman, General Manager, Dominion Power & Transmission Co., Ltd., Hamilton Ont.; A. Eastman, Vice President and General Manager, Windsor, Essex and Lake Shore Rapid Ry., Kingsville, Ont.; H. M. Hopper, General Manager, St. John Ry., St. John, N.B.; Wilson Phillips, Superintendent, Winnipeg Electric Ry., Winnipeg, Man.; C. L. Wilson, Assistant General Manager, Toronto and York Radial Ry., Toronto; Assistant Secretary, Aubrey Acton Burrows, Business Manager, Canadian Railway and Marine World, Toronto.

On the first day of the meeting the representatives were entertained to dinner at the Ottawa Golf Club by the Ottawa Electric Ry. Co., the chair being taken by its President, T. Ahern. The toasts were responded to by Hon. W. H. Thorne, Director, St. John Ry. Co.; H. H. McLean, K.C., M. P., President, St. John Ry. Co.; Patrick Dubee, President, C.E.R.A.; C. B. King, Vice President, C.E.R.A.; and Acton Burrows, Secretary-Treasurer, C.E.R.A. W. Y. Soper, Vice President, Ottawa Electric Ry., who is probably the best amateur sleight of hand performer in Canada, gave a very interesting exhibition which was greatly appreciated. The party were conveyed to and from the Ottawa Golf Club on a special multiple unit train on the Hull Electric Ry. On the second day of the meeting the Hull Electric Co. gave a luncheon at the Chateau Laurier at which its General Superintendent, G. Gordon Gale, M. Can. Soc. C. E., presided. The officials of the Ottawa Electric Ry., especially J. D. Fraser, Director and Secretary-Treasurer, and F. D. Burpee, Superintendent, and also G. Gordon Gale, General Superintendent, Hull Electric Co., were most assiduous in their attention to the visitors, and rendered much assistance in making the meeting one of the most successful and enjoyable in the Association's history.

The Ottawa Electric Railway Co. has started a safety first campaign in Ottawa. Permission has already been obtained from the school boards to hang safety first calendars, such as are used in Brooklyn, N. Y., in each class room, and arrangements have been made with moving picture houses to run safety first films. The Montreal Tramways Co.'s campaign will be followed in a modified form, by educating and instructing the company's employes, obtaining the assistance of the newspapers and attempting to educate the public generally along safety first lines.

The District Motor Bus Co. is operating a service between the Campbell Block, Victoria, and Metchosin, B. C., giving three trips a day on week days with an extra trip from Victoria at 11 p.m. on Saturday. Two trips are made on Sundays, with an extra leaving Metchosin at 6 p.m. The time occupied on the trip is 70 minutes; the single fare is \$1 and the return fare \$1.50. Parcels weighing up to 100 lbs. are carried, the minimum charge being 25c.

The travelling public of a city is like the soil of a farm—neglect it and poor results follow; give it attention and it yields large returns.

The rapidity and scope of development of city railway car design during the last five years has no parallel in industrial history.

**Interurban Cars for the Nipissing Central Railway.**

The Nipissing Central Ry. placed an order recently for two interurban cars, a floor plan of which is shown herewith, which will have a total seating capacity of 52 in the three compartments. Following are some of the principal dimensions: Length over buffer, 51 ft.; over vestibules, 50 ft.; over body, 40 ft.; centre to centre of trucks, 28 ft.; width over sheathing, 8 ft. 9½ ins.; aisle width, 1 ft. 10 ins.; height from rail to underside of side sills, 3 ft. 1 in.; height from rail over roof, 12 ft. 4 ins.; height from floor to top of window sill, 2 ft. 5 ins.; and height from vestibule platform to floor of car, 10 ins.

The underframing will be of steel throughout, comprising essentially two centre sills of 7 in. 17½ lb. I beams spaced 12½ in. centres, extending from end sill to end sill, with a ¼ in. cover plate top and bottom, extending from bolster to bolster, and two side sills of 6 by 3½ by 7-16 in. angles extending from end sill to end sill, with a 3-16 in. truss plate, 30 ins. deep, extending from end sill to the baggage door post, with the side sills under the baggage door reinforced by a 6 by 5/8 in. plate, 9 ft. long. Pine side sills resting on the short flange of the steel side sill, will be bolted to the latter. The end sills will be built up of a 9 by 3/8 in. steel plate, having a 6

There will be a 24 in. swinging door between the general and smoking compartments, and a single sliding door in each bulkhead. The vestibule doors will be folding, in two parts, hinged against the bulkhead, and fitted with automatic folding apparatus. The car steps will be 36 ins. wide, double at each door, the lower one with a 10 in. tread, and the upper one with a 9 in. tread, with 10 in. risers. There will be 14 reversible seats, 36 ins. long, on a single pedestal and spring upholstered in rattan. There will also be 8 stationary cross seats of similar construction, and two folding seats, one along each side of the baggage compartment.

The heating will be provided for by a forced draught heater in the baggage compartment, and there will be 10 ventilators, five on each side of the roof. The equipment will also include destination signs, signal bells, hand straps, fare register, arc headlight, signal whistles, etc. The car lighting will be by two rows of pendant lights along the ceiling with a 3 lamp cluster in each vestibule.

The air brake equipment will be the Westinghouse A.M.M. type, supplied by a D.I.E. G. compressor with a 600 volt motor. It will have a type J governor, M 15 D brake valves, B 6 feed valves, M 1 triple valve, a type R, 10 by 12 in. brake cylinder, B 3 conductor's valves and 3½ in. air gauges illuminated by a 6 volt lamp. There will also be a geared hand brake equipment at

**Electric Railway Notes.**

The Ottawa Electric Ry. has added a rail bonding car to its equipment.

The Toronto and York Radial Ry. has received two double end, double truck cars from Preston Car and Coach Co.

The Montreal Tramways Co. has recently received 20 steel underframe street cars from Canadian Car and Foundry Co.

The Nipissing Central Ry. has arranged to inaugurate a 15 minute service on the line between Cobalt and Haileybury, Ont., June 1.

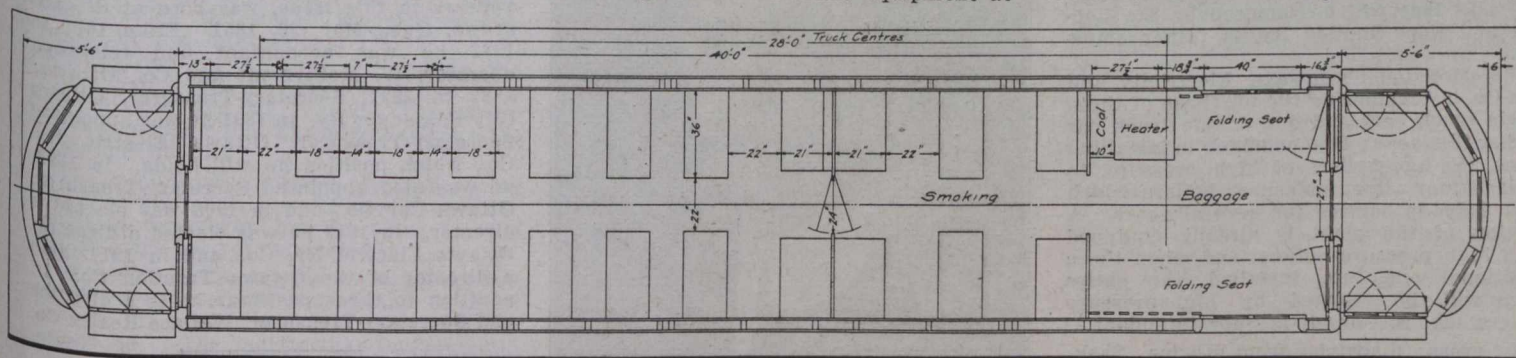
The British Columbia Electric Ry. has let a contract for the erection of an ornamental arched entrance to the Central Park, New Westminster, B. C., at a cost of \$4,000.

A bureau of fare research has been established by the American Electric Railway Association and placed in charge of F. W. Doolittle, as director.

The Edmonton Radial Ry. has received two single end, double truck, p.a.y.e. city cars, similar to those already in service, from Preston Car and Coach Co.

The Montreal Tramways Co. has issued a circular to its employees dealing with the safety first movement, and enclosing a folder of advice on the subject.

The Regina, Sask., City Council has refused to accede to the request of representatives of the working men in the city,



Floor Plan of Interurban Car, Nipissing Central Railway.

by 3½ by 7-16 in. angle along the bottom outer face. The wooden end sills will be of oak. The side and centre sills will be tied with 4 in. 6¼ lb. channels at each side of each bolster, and braced diagonally each side of the bolster with 4 in. channels. There will be 5 intermediate cross bearers of 4 in. 6¼ lb. channels, evenly spaced, and two crossbearers of 4 in. 7½ lb. I beams, located 4 ft. each side of the car centre line, extending beneath the sill.

The vestibule platform is dropped 10 ins. below the car level, the side sill knees being 3-16 in. plate 12 ins. deep at the end sill plate, reinforced top and bottom with 2 by 2 by ¼ in. angles, and secured to the underside of the sills. The centre sill knees will be two 6 by 3½ by 7-16 in. angles, extending from the bumpers to 4 ft. back from the body bolster. The bumpers will be 6 in. 8 lb. channels, bent to the contour of the vestibule end, and with the top bevelled back at 45 degrees and covered with sheet iron.

The flooring will be of 1 by 2½ in. yellow pine, laid longitudinally with a special mat surface. The platform flooring will be hard maple, 7/8 by 2½ in. The floor will have trap doors. The body posts will be of the single arch type, supported on 14 steel carlines, 1¼ by ½ in., with intermediate ash carlines at 10 in. centres. The roof boards will be ½ in. thick, covered with no. 8

each end of the car.

The trucks will be M. C. B. 2 type, with a 6½ ft. wheel base. The wheels will be 33¼ ins. diam., steel tired with retaining rings, and with cast steel centres. The tires will be 5 ins. wide by 3 ins. thick, and the axles, with 4¼ by 8 in. journals. The motor equipment on these cars will be the Westinghouse 306 type, with four motors, two on each truck, with a controller in each end of the car. The car will also be equipped with an integrating wattmeter, rated at 600 volts, 400 amperes.

The order for the two cars has been given to the Preston Car and Coach Co.

The Quebec Public Utilities Commission on May 1, granted the application of the Montreal Tramways Co. for a further adjournment of the hearing in regard to fares, etc., until after the appeal to the Imperial Privy Council is decided. The particular point at issue is the order made by the Commission that the company produce all its books for an investigation by an accountant. The company disputed the jurisdiction of the Commission to make this order, and took the matter to the Superior Court, which upheld the order. This finding was endorsed by the Court of Appeal, and a further appeal to the Imperial Privy Council is being made.

The Windsor, Essex and Lake Shore Rapid Ry. has two 55 ft. passenger cars on order with the Tillsonburg Electric Car Co.

for a reduced fare, viz.—eight tickets for 25c., during the noon hour, on the municipal railway.

The London and Lake Erie Ry. and Transportation Co. put its summer rates between London and Port Stanley, Ont., into operation April 26, effective to Oct. 31.

The Board of Railway Commissioners has dismissed the Essex Terminal Ry. application objecting to an order removing the company from participation as a carrier, in tariffs and supplements applicable to international traffic.

The American Electric Railway Association's annual convention will be held at Atlantic City, N. J., Oct. 12 to 16. Boston and Washington were both considered, but neither of them could furnish the accommodation required at the time required.

The Port Arthur Electric Ry. has received three single truck, double end, p.a.y.e. city car bodies, mounted on Brill 21 E trucks, 8 ft. wheel base, from Preston Car and Coach Co. The cars are being equipped at the railway shops at Port Arthur.

The Edmonton, Alta., City Council has directed the putting into operation of a straight 5c. fare on the Edmonton Radial Ry. The increased rate went into operation May 17. Limited tickets are still sold at 8 for 25c., and children's tickets 10 for 25c.

The Imperial Privy Council, May 7, granted special leave to the Montreal Tramways Co. to appeal against the decision of the Que-

bec Courts regarding the jurisdiction of the Quebec Public Utilities Commission to order the company to produce documents, etc. The Dominion Attorney General will be allowed to intervene in the appeal if necessary.

The Saskatoon, Sask., City Council has under consideration a report of the Commissioners to the effect that the fares now charged on the municipal railway be raised so that the deficit, which has been growing larger month by month may be cut down. The suggestion is to charge a straight 5 cent fare, and to retain the present school children's and workmen's limited tickets.

The Ottawa Electric Ry. is arranging to have a series of lessons given in the Ottawa public schools on safety first. Illustrations are being prepared showing how accidents of various kinds occur in connection with the operation of the electric cars, and moving picture scenes will be shown, all of which will be explained by the teachers. The general public will be reached through the newspapers, and by the distribution of illustrated leaflets.

The London, Ont., Advertiser says:—"A. N. Warfield, ex-expert, ex-promoter, ex-hydro canvasser and ex-general factotum in the late electrification campaign, is at the present time busily engaged in the organization of a company for the manufacture of the cars that will be used on the line to Port Stanley." The idea of organizing a company to build the comparatively few cars that will be required by the London and Port Stanley Ry. is rather amusing.

The Moncton Tramways, Electricity and Gas Co. is considering the purchase of three single truck cars and one double truck car during this year. The company is installing three 200 h.p. boilers of high pressure, to replace four low pressure boilers which have been in service for several years. A portion of the plant is already equipped with high pressure boilers, and when these additional ones are installed, the entire plant will be worked by high pressure boilers. A. B. Coryell is Superintendent.

A press dispatch from Regina, Sask., May 12, says: "Those who are responsible for the operation of the municipal electric railway, are said to have come to the opinion that the present rate of excess of operating expenses over revenue promises to be of such proportions that steps must be at once taken to cut down the loss." The methods suggested are:—cutting down the service on certain lines, straight 5c. fare, with a 3c. fare for school children, and during certain limited hours, and the stopping of Sunday service.

**International Suburban Ry.**—Application is being made to the Dominion Parliament for the incorporation of a company with this title to build a railway in Essex and Kent Counties, Ont., and to connect the same by ferry or tunnel across the Detroit River, with Detroit, Mich., and to use gasolene, steam or other motive power for operation. The lines specified in the application would extend from Ojibway through Sandwich, Windsor, Walkerville and Ford City to Belle River, and thence easterly to Chatham; and from Ojibway southwesterly to Amherstburg, Ont. Rodd, Wigle and McHugh, Windsor, Ont., solicitors for applicants.

As a result of a further conference between the civic authorities of Winnipeg and the Public Utilities Commissioner of Manitoba, the routes on certain streets have been rearranged, the cars will stop on the near side of the streets in the central parts of the city; the number of cars in service during rush hours will be increased and all new cars provided will be of the p.a.y.e. type.

### Personal Paragraphs.

**P. J. SLATTERTY**, who died at Sault Ste. Marie, Ont., May 3, was at one time Manager of the old street railway in Sherbrooke, Que.

**DAVID ROSS**, B.A.Sc., formerly in the Engineering Department, Toronto Ry., was married at Toronto, May 16, to Miss J. N. Huffman.

**D. W. HOUSTON**, heretofore acting Superintendent, Regina Municipal Ry., Regina, Sask., has been appointed Superintendent, vice H. Doughty, resigned.

The Winnipeg Board of Control has approved of the appointment of **K. G. DUFF** as inspector of traffic, and of **J. MOONEY**, as temporary assistant of traffic, on the recommendation of H. P. Lewis, Traffic Superintendent.

**GEORGE KIDD**, heretofore Comptroller, British Columbia Electric Ry., Vancouver, has been appointed General Manager



W. G. Murrin,  
General Superintendent, British Columbia Electric Railway.

there, vice R. H. Sperling, promoted. Prior to going to British Columbia, he was Secretary of the company in London, Eng. During Mr. Sperling's recent absence in London, he was appointed acting General Manager.

**R. H. SPERLING**, heretofore General Manager, British Columbia Electric Ry., Vancouver, of whom some biographical particulars and whose portrait were published in our last issue, has been appointed Assistant to the Chairman of the Board, and a director of the company, with office in London, Eng. He has been in British Columbia for 16 years, first in Victoria, and latterly in Vancouver, and he leaves in July for England, where he assumes his new duties, Aug. 1. His position is a new one, and has been created on account of the rapid development of the company's work and the advisability of having an executive at the London office who is completely in touch with the operations in the actual field.

**WILLIAM GEORGE MURRIN**, whose appointment as General Superintendent, British Columbia Electric Ry., Vancouver, was an-

nounced in our last issue, was born at Greenwich, Eng., Aug. 27, 1875, and prior to entering electric railway service in Jan., 1899, was, from 1891 to 1893, a student at the Finsbury Technical College, London, Eng., and from 1893, in the City of London Lighting Co.'s shops and stations. From Jan., 1899, to 1901, he was shift engineer, Middlesbrough and Stockton Tramway Co., Stockton, Eng.; 1901 to 1904, Superintendent of Power, London United Tramways Co., London, Eng.; 1904 to Mar., 1913, Works Manager and Electrical Engineer, same company; Mar., 1913, to Mar. 30, 1914, Mechanical Superintendent, British Columbia Electric Ry., Vancouver, B. C.

**CLAUDE BERNARD KING**, who has been elected President, Canadian Electric Railway Association, and whose portrait appears in this issue, was born at Galena, Ind., Sept. 12, 1871, and entered transportation service in June, 1891, since when he has been, to Apr., 1895, in shops, and Storekeeper, Louisville Ry., Louisville, Ky.; Apr., 1895, to Jan., 1900, chief clerk to General Manager, Detroit Citizens St. Ry., Detroit, Mich.; Jan., 1900, to Nov., 1905, Assistant Division Superintendent and Assistant to the President, Detroit United Ry., Detroit, Mich.; Nov., 1905, he was appointed Manager, London St. Ry., London, Ont., which position he still holds.

**JAMES DEWAR FRASER**, who has been elected Vice President, Canadian Electric Railway Association, and whose portrait appears in this issue, was born at St. Andrews, Que., Mar. 26, 1851. From 1871 to 1882 he was accountant and telegraph operator, W. McClymont and Co., Ottawa; 1882 to 1891, Secretary-Treasurer, Ottawa City Passenger Ry. In 1891 he was appointed Secretary-Treasurer, Ottawa Electric Ry. Co., which position he still holds. In 1893, he was also appointed Secretary-Treasurer, Ottawa Car Co., and in 1906 was elected a director. In 1913 he was elected a director, Ottawa Electric Ry. Co., and in 1914, also a director of the Ottawa Traction Co. In addition to these positions he is a director and Secretary-Treasurer, Wallace Realty Co.

**Edmonton Interurban Ry.**—We are officially advised that the company is not at present entertaining any proposition for the building of a branch line to Fort Saskatchewan, Alta., as stated in recent press reports. (May, pg. 231.)

**Forest Hill Electric Ry.**—Members of York Township Council made a trip of inspection over the route of this projected railway, May 12, and as a result decided, May 13, to request the company to lay tracks, under its franchise, on the south side of Eglinton Ave., and on the west side of Dufferin and Bathurst Streets. (May, pg. 431.)

**Grand Falls Electric Ry.**—The New Brunswick Legislature has incorporated a company with this title to build an electric railway in Grand Falls, N.B. (See Grand Falls to Limestone, N.B., May, pg. 231.)

**Hamilton, Ont.**—Press reports state that a local syndicate is preparing to submit a proposition to the Barton Township Council for the construction of an electric railway along the mountain top near Hamilton, Ont. W. A. Crockett, Hamilton, is reported to be interested.

**Nelson Street Ry.**—We are officially advised that the lines, franchises and property of the N.S.R. Co. have been taken over by the city and the line is now being operated by the City Council. A. S. Horswell is Chairman of the Street Railway Committee, and F. C. Ingram has been retained as Superintendent. Nothing has been decided as to what alterations or extensions, if any, will be made this year. (Jan., pg. 38.)

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

**Brantford St. Ry.—Grand Valley Ry.—**The Ontario Legislature has authorized the Brantford City Council to take over and operate the G. V. Ry., which includes the old Brantford St. Ry., and the line from Brantford to Paris and Galt. The act provides for the appointment of a commission to manage the line. It is said that it is not intended to appoint such a commission until the municipal elections in Jan., 1915. In the meantime a manager will be appointed by the Council, and it was decided May 5 to advertise for one.

The city council at the same meeting authorized the Mayor to sign the agreement to purchase, which has now been approved by the courts, the ratepayers and the Legislature.

A survey of the line is being made by the City Engineer and J. Fair to check over the deeds for the right of way, and to ascertain that all is in order for the deed of transfer of the entire property to be made out.

It is said that nothing will be done in the way of betterment until the entire property of the company has been finally transferred to the city. (Feb., 1913, pg. 90.)

**British Columbia Electric Ry.—**Press reports state that an arrangement has been completed, to take effect early in June, under which the B.C.E. Ry. will receive traffic at the International Boundary at Sumas from the Chicago, Milwaukee and Puget Sound Ry., and handle it into New Westminster and Vancouver. The necessary connecting line has been built by the C.M. and P.S. Ry.

We are officially advised that excavation has been started at the site for the new car barns at Vancouver, but the plans for the building are not yet completed.

In regard to the reports as to connection with the Chicago, Milwaukee and St. Paul Ry., we are advised that they are much exaggerated. The fact is that the proposed arrangement, if carried out, will provide for an exchange of freight business only, and an interchange track will be laid at Sumas, at the International boundary, connecting the lines of the two companies, and there will be an interchange of freight traffic, under similar conditions to those obtaining where interchange arrangements have been made at other points with the C. P. R., the C. N. R., and the Great Northern Ry. The arrangements for the proposed new interchange have not yet been settled.

In connection with the project for the building of a steel bridge over the Brunette River, it is proposed to obtain plans for one of sufficient capacity to carry tracks for the electric railway, so that the company may take advantage of the franchise from the Burnaby Township Council for laying tracks along the North Road. (May, pg. 231.)

**Calgary Municipal Ry.—**The ratepayers of Calgary, Alta., defeated a bylaw, May 1, to provide \$90,000 for a concrete sub-base under street railway tracks, and another one for the expenditure of \$300,000 for additional equipment and extensions to the electric lighting and power plant. Neither of these bylaws obtained the necessary two-thirds majority. (Jan., pg. 38.)

**Cape Breton Electric Co.—**The Cape Breton, N. S., county council has authorized its officials to sign a supplementary agreement with the company respecting the building of an extension to New Waterford. (May, pg. 231.)

**Dunnville, Wellandport and Beamsville**

**Electric Ry.—**The Dunnville, Ont., Township Council, has granted an extension of six months for the completion of the line under construction in the municipality. (May, pg. 231.)

**Edmonton Radial Ry.—**The Edmonton, Alta., City Council has decided to provide amusements of various kinds at the east end park, with a view of attracting traffic to the Highland St. car route, on which at present there is a considerable loss. (April, pg. 184.)

**Guelph Radial Ry.—**We are officially advised that the alterations to be made at the power house in Guelph, Ont., consist of dispensing with engine and boilers, and putting in car pits and stock rooms at a total cost of \$3,500. A. H. Foster is Manager. (May, pg. 231.)

**Hamilton St. Ry.—**A bylaw has been passed by the Wentworth County Council authorizing the company to build a line on Main St., between Ottawa St. and Kenilworth Ave., Hamilton, Ont., about half a mile. The company is asked to pay \$200 a mile a year for the piece of line.

The Hamilton City Council has been informed by the company that the work in progress on Kenilworth Ave. will be completed as soon as possible, and that the tracks on certain streets will be renewed. (May, pg. 231.)

**Kingston, Portsmouth and Catarqui Electric Ry.—**The company has expressed its dissatisfaction with the specifications for track bed work on Princess St., Kingston, Ont., prepared by the City Engineer and T. H. Mather, Syracuse, N.Y., and has suggested that the Chief Engineer of Construction of the Montreal Tramways Co. be called in to settle the matters about which differences have arisen. The City Council has approved of the suggestion. The city has let the contract for the paving of the street, and the company has its rails, ties, etc., on hand, ready to proceed with the work as soon as the track bed is prepared. (May, pg. 231.)

**London and Lake Erie Ry. and Transportation Co.—**Press reports state that the company's steam power plant at London, Ont., has been overhauled and put into condition for use as an auxiliary plant during the summer. Steam is to be kept up, so that in case of a breakdown of the hydro-electric power plant at any time the car service will not be interrupted for more than 20 minutes. (April, pg. 184.)

**Montreal and Southern Counties Ry.—**The extension from Marieville to St. Cesaire, Que., 9 miles, was opened for traffic, May 2. St. Cesaire is 31 miles from Montreal, and a service of four trains a day is given.

We are officially advised that the contract for the construction of the line between St. Cesaire and Granby has been awarded to Grant, Campbell & Co.

The bridge across the Yamaska River at St. Cesaire, which is being built by John Ross, was expected to be completed May 31. Work on the 15 mile extension from St. Cesaire to Granby is expected to be started at once, and the contract calls for completion in October. (May, pg. 231.)

**Nipissing Central Ry.—**The route of a projected extension of the line from Liskeard to North Timiskaming, Ont., will go round the edge of the lake, strike within a short distance of the Casey-Cobalt mines, and continue through a good farming district to North Timiskaming. A good route with easy gradients has been obtained. It is not definitely decided when construction will be arranged for, but local reports, May

1, stated that the people were desirous of having the work gone on with at once.

Press reports state that work was started, May 4, on the electrification of the Kerr Lake branch of the Timiskaming and Northern Ontario Ry. We are officially advised that when the work is completed the branch will be operated as part of the N.C. Ry. (Feb., pg. 88.)

**Nova Scotia Tramways and Power Co.—**After being under discussion in the Nova Scotia Legislature for several weeks the bill to incorporate a company was passed through the committee of the whole of the Legislative Assembly, May 13. The company was given the power it applied for to acquire the Pictou County Electric Co., with its electric railway, and the Halifax Electric Tramway Co., to which sections the opposition had been warmly directed. (May, pg. 232.)

**Ontario West Shore Ry.—**F. H. McGuigan, Toronto, accompanied by V. Roberts, formerly Chief Engineer on the construction of the line, went over this uncompleted line between Goderich and Kincardine, Ont., recently. Mr. McGuigan is reported to have said that he was acting entirely for himself in making the inspection, while Mr. Roberts is reported to have said he believed some plan for the completion of the line was being arranged. (May, pg. 232.)

**Ottawa Electric Ry.—**Press reports state that the equipment of a new steam auxiliary power plant on Middle St., Ottawa, is being installed, consisting of three Babcock and Wilcox water tube, marine type boilers, with chain feed stokers, and a 4,000 h.p. steam turbine. (Jan., pg. 39.)

**Regina Municipal Ry.—**Contracts have been awarded for the supply of the following street railway material:—65 tons steel T rail, Lorain section 80-335 and 1,200 bonds 4/0 B. & S. 10 1-8 ins., pressed terminals, to United States Steel Products; 1,000 track bolts and nuts, 3/4 by 1/2 ins., to Peart Bros. Hardware Co., Regina; 9,000 barrels Canada Portland cement, to Canada Cement Co.; 2 miles 2/0 hard drawn round trolley wire, to Northern Electric Co.; 70 trolley frogs, 12 adjustable trolley crossovers, 600 straight line 15 ins. tinned line ears, 150 s.c. pull-overs and 180 car barn hangers, to Ohio Brass Co.

**St. John Ry.—**The car barn addition, to be erected on Wentworth St., St. John, will be of steel and brick construction, 58 by 115 ft. The work is to be started at once. H. C. Mott, St. John, N.B., is the architect.

The contract for the projected new car barn on Wentworth St., is reported to have been let to A. R. C. Clarke and Son, St. John, N.B. (May, pg. 232.)

**St. Thomas Street Ry.—**The committee of the St. Thomas, Ont., City Council in charge of the street railway was informed, May 1, that the employes were engaged in rebonding the entire line. (Feb., pg. 88.)

**Sandwich, Windsor and Amherstburg Electric Ry.—**Work on the Ferry St. loop, Windsor, was ordered to be stopped by the City Council, April 30, on the ground that the bylaw granting permission to build had not been approved by the ratepayers and a permit for the extension had not been obtained from the Ontario Railway and Municipal Board. Legal proceedings had previously been taken in the matter, and an order obtained, April 23, from the Ontario High Court, permitting the company to proceed with the work at its own peril and without prejudice to the rights of the ratepayers who objected to the loop. The hearing of the main action was fixed for May 25. (May, pg. 232.)

**Saskatoon Municipal Ry.—**The ratepayers

of Saskatoon, Sask., voted, May 1, in favor of a bylaw to raise \$25,000 for extensions to the municipal railway, and to raise \$55,000 to reconstruct a portion of the Long Hill. This latter work is being undertaken in view of the early construction of an extension of the municipal railway.

The City Council decided, May 5, to resubmit the defeated bylaws to the ratepayers at an early date.

A contract is reported to have been let to Gunn & Sons, Winnipeg, Man., for grading work on what is known as the Long Hill. It is said that this work will be done preparatory to the construction of an extension of the electric railway. (May, pg. 232.)

**Toronto Eastern Ry.**—A press report states that track is being laid on the section of this projected railway into Whitby, Ont. (May, pg. 184.)

**Toronto Suburban Ry.**—Grading was reported to have been completed on this line from Lambton to Guelph, Ont., May 18. There is a portion at the Lambton end upon which nothing has been done, and it is said that all matters in connection with the right of way easterly from Lambton have not yet been settled. Ties have been distributed along the route, and a considerable mileage of track has been laid from Cooksville and Acton, Ont.

In the discussions which took place in the House of Commons, on the Toronto, Niagara and Western Ry., it was stated on behalf of

Ave., Windsor, Ont., during this year. The towns of Essex and Leamington, Ont., also expect to do some paving on the streets on which the cars run, but the matter has not yet been fully decided. A. Eastman is Vice President and General Manager, Kingsville, Ont. (Jan., pg. 39.)

**The Western Central Ry. Co.'s** application to the Dominion Parliament for an extension of time for construction and for increased powers was withdrawn from further consideration before the Railway Committee of the House of Commons, April 30. The company has power to build lines from London to Windsor, from London to Toronto, and branches to Woodstock, Stratford and other points in Ontario. (July, 1911, pg. 685.)

**Winnipeg Electric Ry.**—The Winnipeg, Man., City Council has authorized the construction of a loop line round Portage, Clifton, Spruce and Classic Streets to enable the street cars to turn before entering the St. James subway. This is a temporary line, pending the construction of a modern subway.

The company has been notified by the City Engineer to place the trolleys on span wires between the ornamental poles now in use.

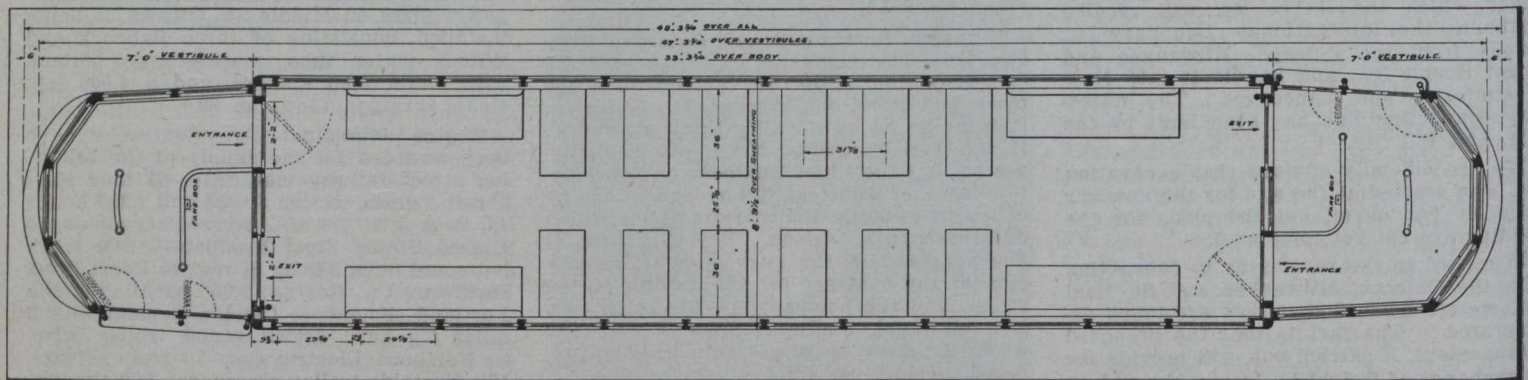
Stonewall and Rockwood municipalities agreed, April 29, to grant the company until Nov. 15 to complete the line to Stonewall, Man. It was to have been completed Dec.

successfully, will result in the electrification of a portion of the Dundee branch, with which connection would be made by the extension of the present W. E. R. line running through St. Boniface to the Dawson Road. Such a line would not only serve Transcona, but also a wider area of St. Boniface than is at present served, as well as the new stockyards. To carry out this project, about three miles of the C.N.R. branch would be electrified. An alternative proposal is for the building of a special track for an electric railway on the C.N.R. right of way for three miles. [See also Transcona, Man.] (May, pg. 232.)

**Woodstock, Thames Valley and Ingersoll Electric Ry.**—Following the liquidation of the Grand Valley Ry., the W., T. V. and I. E. Ry resumes its independence, under the control of J. G. Wallace, its Superintendent, as Receiver for the bondholders. Press reports state that certain betterments will be undertaken at once, and that application will be made to the Woodstock, Ont., City Council for permission to extend the line along Dundas St. to the new fair grounds. Negotiations are said to be in progress for the use of hydro-electric power.

**Interurban Cars for Toronto and York Radial Railway.**

Two cars for service on the Toronto and York Radial Ry. have recently been deliv-



Floor Plan, Toronto and York Radial Ry. Cars.

that company, that it owns or controls the charter of the T. S. Ry., and that the latter line is being built as part of its lines. (Feb., pg. 88.)

**Transcona, Man.**—At a recent special meeting of the Transcona, Man., Town Council, an agreement was approved under which J. H. Kern, Moose Jaw, Sask., is given a franchise for the operation of an electric railway in the town. The agreement calls for the completion of the following line by October:—From Nairn Road to King St., thence north to Regent Avenue, or to Transcona, and then back along to Leola St. and Oxford St., thence north to Stafford Ave., about six miles. The company's property is to be exempt from general taxation, and the city is to receive from 2%, rising to 10%, of the gross receipts. The cost of construction is estimated at \$12,000 a mile for single track, but the builder may lay a double track line if he wishes. The agreement was signed April 25, and a bond of \$10,000 has been filed with the Public Utilities Commission.

The Town Council had been in negotiation with the Winnipeg Electric Ry. relative to the building of such a line, but withdrew from the negotiations upon the question of the cost of subways. [See also Winnipeg Electric Ry.] (May, pg. 232.)

**Windsor, Essex and Lake Shore Rapid Ry.**—We are officially advised that it is expected to pave about 4,500 ft. on Howard

1, 1913, but track was laid only as far as Stony Mountain. A power house is to be built for the line at Stony Mountain, and press reports state that plans for this building are completed and that a contract for its erection will be let at an early date.

Press reports state that the company has let grading contracts for the line from Stony Mountain to Stonewall to local contractors, and that the work is to be completed ready for tracklaying by June 30.

A car service was put in operation on Selkirk Ave. as far as McPhillips St., Winnipeg, May 9. Wilford Phillips, Manager, wrote the Winnipeg Board of Control, May 11, that the company does not intend to extend its tracks on Mountain Ave. west of Arlington St.

We are officially advised that the substation to be erected by the Winnipeg, Selkirk and Lake Winnipeg Ry. at Stony Mountain, Man., will have two small generator sets installed, and two transformers to supply light to the residents of the vicinity. The location and lay out of the building has not been fully decided on.

Plans for the extension of the line in Fort Garry from the present terminus to the end of Pembina Highway, near St. Norbert, were approved by the City Council, May 12.

In connection with the proposed electric railway in Transcona, press reports state that negotiations are in progress with the Canadian Northern Ry., which, if completed

ered. A floor plan of the cars is shown herewith. These cars were built to replace the two that were burned when the company's Mimico division car barn was burned down last year.

These cars are of the double truck, double end prepayment type. The underframes are of steel, and the sides, up to the belt rail, are also of steel. The vestibules are 7 ft. long, and the roof is of the turtleback type, equipped with automatic ventilators. The cars are mounted on Standard 0/50 trucks, and are equipped with Westinghouse S.M-1 air brakes.

The interior of the cars is in cherry, with a natural finish. The seats are spring upholstered, covered with rattan. These cars were built by the Preston Car and Coach Co., Preston, Ont.

**Fort William Electric Ry.**—The Street Railway Committee of the Fort William, Ont., City Council, decided, April 25, to start work immediately on the building of the new belt line. The first thing to be done was the putting in of the special work at the corner of Victoria and Syndicate avenues. The line is being built by day labor and work was started May 1. The extension to the Island across the bascule lift bridge is reported to be practically completed, and it was expected to be opened for traffic May 31. (May, pg. 231.)



# Marine Department

## New Icebreaking Steamship for the St. Lawrence River.

As stated in the last issue of Canadian Railway and Marine World an order has been placed by the Marine Department for the construction of a powerful icebreaking steamship for service on the St. Lawrence River between Quebec and Montreal.

The vessel is designed as an icebreaker only, the intention being that she will lay up during the summer season. The principal dimensions are as follows:—Length over all, 292 ft.; length, b.p., 275 ft.; breadth, 57½ ft.; depth, mld., 32 ft.; draught, mean, 19 ft.; i.h.p., 8,000.

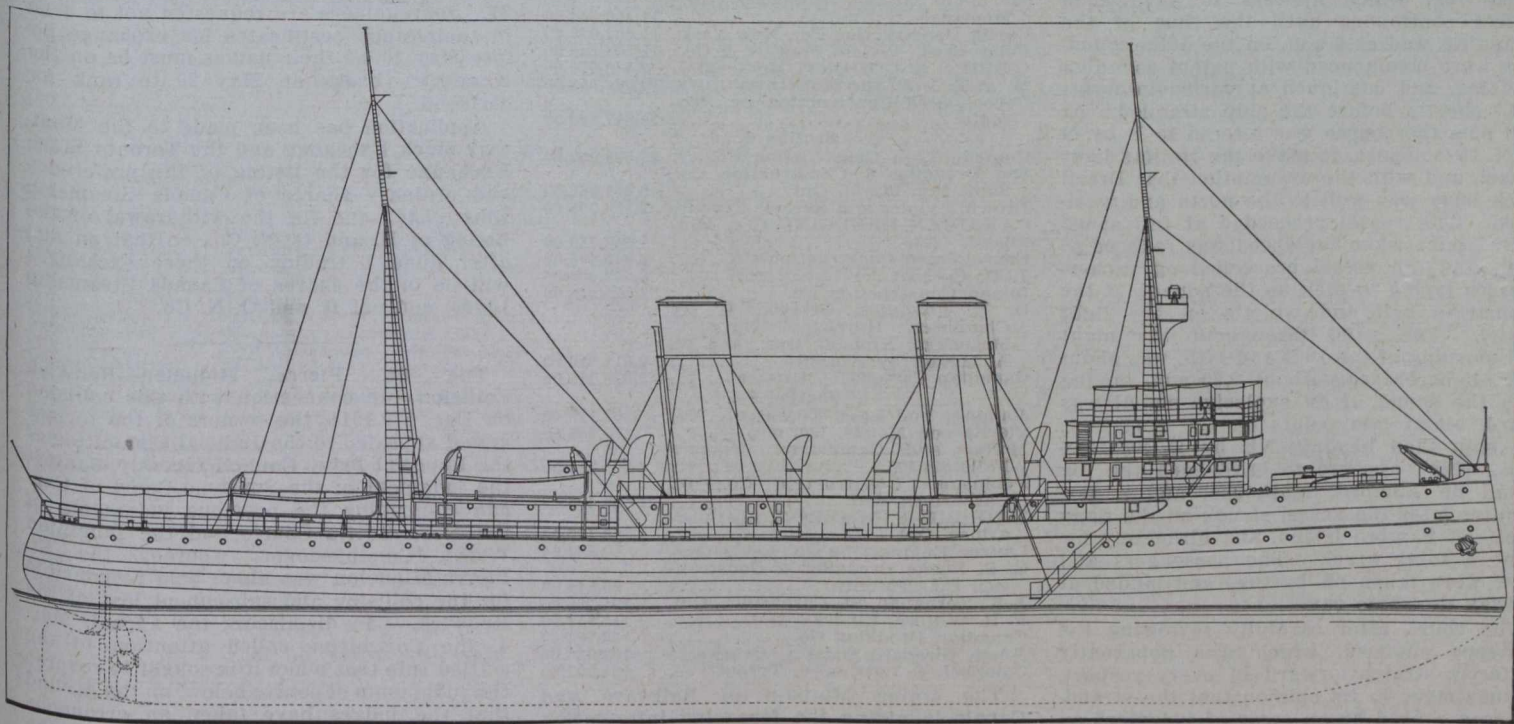
She will be of massive construction and will be classed 100 A1 at Lloyds. The general design is shown by the accompanying plan, the first correct one published, other plans published elsewhere having been preliminary sketches only. The stem, a massive steel casting, will be raked aft, and the stern, which will be of the

The spacing being increased midships and aft, intermediate frames will be introduced in way of the ice belt for a certain distance about midships. These ordinary frames will be strengthened by heavy web frames and side stringers, placed so as to resist as efficiently as possible the heavy stress due to the pressure of the ice. The plating forward will be 1¼ in. thick, and an ice belt over 1 in. thick and 15 ft. deep will run right round the vessel. All this ice plating will be worked flush on the outside.

Accommodation on the main deck will be provided for the engineers and stewards, etc., while forward on the same deck will be quarters for the crew and petty officers. On the upper deck at the forward end of the casing will be the officers' quarters and mess room. The two galleys will be located on this deck in the casing, and

Canadian Steamboat Inspection Act, and will include four lifeboats and one cutter. The deck machinery will consist of a powerful steam steering gear aft, controlled from the bridge by telemotor, and fitted with hand gear at the engine, a windlass, two capstans, and boat and coal hoists. Special attention will be given to the mooring and coaling arrangements.

The main propelling machinery will be of the twin screw, triple expansion surface, condensing type, capable of developing 8,000 i.h.p. in ordinary working. All shafting and moving parts generally will be greatly in excess of the usual scantlings, and a complete outfit of spare parts will be provided for both main and auxiliary engines. Independent air feed and bilge pumps of extra large capacity will be provided, and the engine room auxiliary equipment otherwise will be very complete. The



New Icebreaking Steamship for the St. Lawrence River.

cruiser type, will allow of easy propulsion and steering when going astern among ice.

The watertight subdivision will be very complete. There will be seven main transverse watertight bulkheads extending to the upper deck; the side bunker walls will also be watertight to the upper deck, and an inner skin will be provided between the forepeak and forward bunker; the bulkheads thus forming in conjunction with the double bottom, which will extend the full length of the ship, a double skin extending from the engine and boiler room bulkhead right forward. Access from below to these watertight compartments will be provided for by watertight doors. Large trimming tanks will be placed forward and aft, which will be connected with special pumping arrangements, so that the vessel may be quickly trimmed.

The framing will be composed of heavy channel, spaced 15 in. apart at the bow.

will communicate with all messing quarters by dumbwaiters. In the forecabin will be two houses for cold storage, with cook's day stores alongside. On the forecabin deck will be the official accommodation, consisting of two official cabins, pantry, bath and w.c., and combined dining saloon and chartroom. The wireless cabin and operators' room will be on the boat deck aft. The captain's cabin and wheel house will be on the navigating bridge.

Complete hot and cold fresh water, sanitary and steam heating systems will be fitted throughout in the most up-to-date manner. The vessel will be electrically lighted throughout, and will be fitted with a searchlight of 25,000 candle power, situated on the fore side of the foremast. The current will be supplied by two direct current compound dynamos direct driven by high speed enclosed compound engines.

The lifesaving appliances will be in accordance with the latest rules of the

six boilers will be of the marine return tube type, two double ended and four single ended. They will be constructed for a working pressure of 180 lbs. per sq. in. and will be arranged to work under Howden's system of forced draught. All the boilers will supply steam to the main engines, and connections for the auxiliary steam main will also be led from three of the single ended boilers. Ash ejectors and steam ash hoists will be provided in the various stokeholds. The piping, valves, mountings, etc., will be of the very highest class in both materials and workmanship, and no effort will be spared to make the installation as perfect as possible.

The construction of this vessel will be started immediately, as great progress has been made recently at the Vickers' works in Montreal, and delivery is guaranteed by Nov. 30, 1915, so that the vessel will be secured by the Government for the winter of 1915-16.

## The Stranding of the City of Sydney.

Commander H. St. G. Lindsay, R. D., R. N. R., Dominion Wreck Commissioner, assisted by Captains Neil Hall and R. MacDonald, as assessors, have given the following judgment in reference to the stranding of the s.s. City of Sydney, official no. 115,274, of Montreal, owned by the New York, Newfoundland and Halifax Steamship Co., Ltd., of Liverpool, N. S., and employed in the Newfoundland and New York trade, which occurred on Shag Rock, off Sambro Island, N. S., on Mar. 17.

The City of Sydney, which appears to have been well found and equipped in every respect, and with a crew of 46 all told, 13 passengers and a general cargo on board, sailed from New York on Mar. 14, at 1.30 p.m., for St. John's, Nfld., via Halifax. The draught leaving New York was 15¼ ft. forward and 19¼ aft. A departure was taken at 11.10 a.m. on Mar. 15 from abeam of Great Round Shoal buoy, Nantucket Sound, and a course E by N set by compass, with the intention of passing from 3 to 5 miles south of the Brazil Rock buoy, off Cape Sable, and the patent log was streamed and set. At 11 p.m., the vessel ran into dense fog, which appears to have been almost continuous until the time of the stranding, and at 6 a.m. on the 16th, soundings were commenced with patent sounding machine, and continued at varied intervals until shortly before the ship stranded. At 8.30 p.m. the course was altered to E by N ½ N, by compass, to make the Halifax light vessel, and with the assumption that Brazil Rock buoy was well to the north and westward. The vessel proceeded at full speed until 7 p.m., when the speed was reduced to slow, and the vessel proceeded on various courses trying to pick up the sounds of the submarine bell and whistle on the light vessel. The wind throughout the night and morning of the 16th and 17th, was about ESE, light breeze. About 3.20 a.m. on the 17th the sound of an explosive signal was heard, about two points on the port bow, the ship then heading NE by E, by compass, which appears to have been the fog signal on Sambro lighthouse, and a few minutes later the vessel struck on the Shag Rock, off Sambro Island, and ultimately became a total wreck. The passengers and crew were taken off by tugs and landed at Halifax the same day.

The court, after carefully reviewing the evidence adduced, which was apparently perfectly straightforward in every respect, is unanimous in its opinion that the stranding was caused by an error of judgment on the part of the master, inasmuch as he did not make sufficient allowance for a westerly set along the southern coast of Nova Scotia, the existence of which appears to be well known, thereby allowing his assumed position to be to the eastward and ahead of the actual one, a difference which the court is of opinion must have been at least 20 miles, judging by subsequent events. The court also is of opinion that the master was not justified in proceeding on his course after hearing the fog signal bomb on Sambro at about 3.20 a.m., for had he then stopped his engines, or hauled his ship to the southward, the casualty would probably have been avoided. The court therefore censures Daniel Michael MacDonald, the master, and cautions him as regards overconfidence as to his ship's position in the future. The court severely criticises what appears to be the common practice on the coast, of vessels proceeding at full speed in fog, which is in direct contravention of article 16 of the International Rules of the Road.

## Welland Ship Canal Construction Tenders.

Canadian Railway and Marine World for May contained details of the contracts which have been awarded on the various sections of the Welland Ship Canal. Following is a list of the tenders sent in, the names of the successful tenderers being shown in capitals,—

Section 1.	
M. P. & J. T. Davis .....	\$5,394,780.00
Sir John Jackson (Canada), Ltd. . . . .	5,207,277.60
Quinlan and Robertson, Montreal. . . . .	4,023,140.00
Soo Dredging & Construction Co. . . . .	5,970,505.00
Canadian Dredging Co. . . . .	3,870,075.00
DOMINION DREDGING CO. . . . .	3,487,725.00
Brown and Aylmer . . . . .	5,213,850.00
Booth and Flinn . . . . .	4,483,156.25
Anglo-Canadian Contractors, Ltd. . . . .	4,954,245.00
Baldry, Yerburgh and Hutchinson. . . . .	4,081,537.60
Section 2.	
J. H. Corbett, Fredericton, N.B. . . . .	\$5,418,075.00
Canadian Carter Co., Ottawa . . . . .	6,557,125.00
Consolidated Construction Co. . . . .	6,595,542.50
Inland Construction Co., Toronto . . . . .	5,687,487.50
A. C. Stewart & Co., Fort William. . . . .	9,680,010.00
BALDRY, YERBURGH & HUTCHINSON . . . . .	5,377,185.75
Foley Bros., Welch, Stewart & Co. . . . .	6,163,260.00
Section 3.	
Anglo-Canadian Contractors, Ltd., Toronto . . . . .	\$10,620,325.00
Booth and Flinn, New York . . . . .	12,331,057.50
J. H. Corbett, Moncton, N.B. . . . .	10,220,665.00
Sir John Jackson (Canada), Ltd., Montreal . . . . .	11,490,244.00
Carter Construction Co., New York. . . . .	11,402,075.00
Foley Bros., Welch, Stewart & Co. . . . .	11,103,290.00
O'BRIEN & DOHENY, Montreal . . . . .	9,540,050.00
M. P. & J. T. Davis, Ottawa . . . . .	10,066,955.00
Consolidated Construction Co., Toronto . . . . .	10,647,590.00
Section 5.	
Confederation Construction Co. . . . .	\$2,506,462.00
Soo Dredging & Construction Co., Sault Ste. Marie, Ont. . . . .	2,304,362.00
Brown, Aylmer and Russell, Toronto . . . . .	2,380,398.00
CANADIAN DREDGING CO., Midland, Ont. . . . .	1,945,788.00
Consolidated Construction Co. . . . .	2,475,745.00
J. H. Corbett . . . . .	2,549,004.00
Inland Construction Co. . . . .	3,172,348.00
G. E. Fauquier, Ottawa; W. C. Chambers, Harriston, Ont.; C. McQuigg, Nipigon, Ont., and W. A. McCaffrey, Toronto . . . . .	2,618,610.00
Canadian Carter Co., Ottawa . . . . .	3,010,285.00
Section 4a.	
Jennings and Ross, Toronto . . . . .	\$ 97,138.00
Clarke and Monds, Toronto . . . . .	175,386.50
McRae and Campaigne, Niagara Falls . . . . .	302,744.00
Peninsular Construction Co., St. Catharines, Ont. . . . .	89,495.50
MAGUIRE & CAMERON, St. Catharines, Ont. . . . .	80,477.50
Lauzon Engineering Co., Levis, Que. . . . .	97,852.00
C. S. Boone Dredging & Construction Co., Toronto . . . . .	99,648.00
J. K. Kernahan, St. Catharines, Ont. . . . .	108,258.00
F. R. Wilford, Lindsay, Ont. . . . .	116,917.00
Canadian Dredging Co. . . . .	98,764.00
Jones, Girouard and Co., Ottawa . . . . .	102,386.00
Campbell & Lattimore, Toronto . . . . .	146,295.40

The acting Minister of Railways and Canals in giving the foregoing information in the House of Commons recently, also stated that sections 4, 6, 7, 8 and 9 are still to be let. He continued, that he understood from the engineers that contracts for these sections, with the exception of section 8, will not take more than half the time of the others, and so there is no great urgency so far as they are concerned. Tenders for section 8 will be invited shortly, in order that the work may be finished about the same time as the other four contracts already awarded. The lock sills and gates for the canal are all being built to 30 ft. so that if in future it becomes necessary to make the canal that depth, all that will be necessary to do, will be the dredging.

**Increased Subsidies for Dry Dock Construction.**—The Minister of Public Works gave notice recently of a resolution to the effect that it is expedient to provide that the subsidy payable in respect of first class dry docks be increased from 3½ to 4% per annum of the cost of the work, for a period not exceeding 35 years.

## The Transfer of Richelieu & Ontario Navigation Company's Property.

Following are extracts from a circular issued to shareholders.

As reported at the last annual meeting, the company has received from Canada Steamship Lines the consideration mentioned in the agreement for the purchase of the assets of R. and O. N. Co., as a going concern, the consideration being preference and ordinary shares of Canada Steamship Lines, Ltd., in the proportion of 6 preference and 2 ordinary shares of Canada Steamship Lines for 5 shares of R. and O. N. Co., and the exchange will be made as of June 1. Shareholders, therefore, are requested as far as possible to so arrange their holdings, either by purchase or sale, in such a way, that the number of shares of R. and O. N. Co., held by them shall be divisible by five, as the company cannot deal with fractional shares when the exchange is made.

In order that shareholders may fully understand what their position is with regard to dividend, the directors of R. and O. N. Co., have declared the regular quarterly dividend of 2% on the capital stock payable June 1 to shareholders of record May 20, at 3 p.m., for the quarter ending May 31. Shareholders are requested not to send in their stock certificates for exchange before May 20, as their names must be on the company's books on May 20 to rank for dividend.

Application has been made to the Montreal Stock Exchange and the Toronto Stock Exchange for the listing of the preference and ordinary shares of Canada Steamship Lines, Ltd., and for the withdrawal of the listing of R. and O. N. Co., so that on and after June 1 trading on these exchanges will be in the shares of Canada Steamship Lines, and not R. and O. N. Co.

**The St. Pierre Miquelon—Renwick Collision.**—In connection with this collision on Dec. 27, 1911, the owners of the former vessel appealed to the Judicial Committee of the Imperial Privy Council recently, against the judgment of the Supreme Court of Canada confirming the previous judgments of the Nova Scotia Courts and the Dominion Wreck Commissioner, whereby the St. Pierre Miquelon was alone held responsible for the collision and subsequent loss of the Renwick. In dismissing the appeal, Mar. 4, the Committee called attention to the settled rule that when it is sought to reverse the judgments of courts below, on the ground that the judges have taken an erroneous view of the facts, it is incumbent on the appellants to adduce the clearest proof that there is an error in the judgment appealed from, and so to speak, place a finger on the mistake. In the present case, the Committee was clearly of the opinion that the finding of the lower courts on the St. Pierre Miquelon's counterclaim cannot be disturbed.

**Changes in Marine Positions.**—Commander H. St. G. Lindsay, R.D., R.N.R., Dominion Wreck Commissioner, has been appointed chief of the pilots of Montreal and Quebec, with jurisdiction over the pilotage from Montreal to Father Point, and with office at Quebec. At the Wreck Commissioner's court at Montreal, May 5, members of the bar present tendered their congratulations on the appointment, and in reply, Commander Lindsay said that as no official announcement had been made regarding the positions of Wreck Commissioner and Chief of Pilotage Service, the time was not opportune for him to say anything on the matter.



## Canadian Vessels Statistics for 1913.

The total number of vessels on the Dominion register at Dec. 31, 1913, was 8,545, measuring 896,965 tons, an increase of 155 vessels and 60,687 tons, over 1912. Of this number, 3,847 were steam vessels, with a gross tonnage of 711,512, which, at an assumed average value of \$30 a ton, brings the value of the net registered tonnage to \$26,908,950. The number of new vessels built and registered in the Dominion during 1913, was 344, of 40,164 tons register, which at an estimated value of \$45 a ton, gives a total value of \$1,807,380. During the year 291 vessels were removed from the register for various causes. It is estimated that 43,968 persons were employed on vessels registered in the Dominion, during the year.

The number and tonnage of vessels according to provinces, are as follows:—

	Sailing ships and steamships.	Steamships.	Gross tonnage of steamships.	Net tonnage of sailing ships and steamships.
Ontario.....	2,012	1,451	308,543	279,641
Quebec.....	1,628	557	165,161	247,225
British Columbia.....	1,506	1,090	135,795	153,060
Nova Scotia.....	2,106	383	45,130	138,107
New Brunswick.....	1,031	241	41,424	60,020
Prince Edward Is.....	149	24	4,602	10,071
Manitoba.....	95	84	7,094	5,545
Yukon.....	15	13	3,377	2,940
Saskatchewan.....	5	4	386	355
Totals.....	8,545	3,847	711,512	896,965

Ports of registry are distributed as follows, according to provinces,—Ontario 38, Nova Scotia 21, New Brunswick 7, Quebec 6, British Columbia 4, and Manitoba, Saskatchewan and Yukon, 1 each.

The new vessels built and added to the register during the year, according to provinces, were as follows:—

	Vessels.	Net Tonnage.
Ontario.....	38	15,572
British Columbia.....	128	9,090
Quebec.....	62	8,667
Nova Scotia.....	67	4,899
New Brunswick.....	45	1,114
Prince Edward Island.....	3	804
Manitoba.....	1	18
Totals.....	344	40,164

Of the 291 vessels removed from the register during the year, 132 were broken up, reported out of existence, condemned, dismantled and abandoned; 37 were wrecked; 15 were burnt; 20 were sold to foreigners; 15 were transferred to Newfoundland; 12 were lost; 12 were transferred to Barbadoes; 11 were stranded; 5 were removed as the registry was no longer required; 3 were reported missing; 2 were abandoned at sea, and 1 each were lost in collision, and transferred to British West Indies.

In a list showing the tonnage of the various maritime countries of the world, Great Britain, including its dominions and colonies (with Canada) stands first, with 11,886,300 total net tonnage, more than the combined tonnage of the next six countries. Canada takes ninth place in the list.

**The Sault Ste. Marie and the Suez Canals Compared.**—The United States Secretary of Commerce drew attention recently to the fact that the number of ships passing through the river and canal connecting Lake Huron and Lake Superior amounted last year to nearly three times the number that passed through the Suez Canal. To be exact, 14,916 vessels of 30,974,123 tons passed through the Sault Ste. Marie Canal, while 5,300 vessels of 20,275,133 tons passed through the Suez.

## The Development of North Fraser Harbor, B.C.

The North Fraser Harbor Commissioners were incorporated in 1913, by the Dominion Parliament, to control the North Fraser harbor, the limits of which are as follows,—From a line drawn across the north arm of the Fraser River in continuation southerly of the western boundary of New Westminster, thence down stream to the north arm on both sides to the average high water mark, to lines drawn across the outlets of the north arm into the Gulf of Georgia, but not extending farther southerly than a point equidistant between the most northerly and the most southerly points of the western shore of Lulu Island, nor extending farther northerly than Point Grey; including the adjacent waters of the Gulf of Georgia on Sturgeon Bank as far seaward as may be determined from time to time. The north arm leaves the main channel of the Fraser River at New Westminster, and forms the southern boundary of the peninsula bounding the south of Burrard Inlet, passing Burnaby, South Vancouver and Point Grey districts, on the north. The Richmond district is well adapted for the location of the larger class of industries, with a present population of about 7,000. The approximate population of the other districts is, Burnaby 15,000; South Vancouver 35,000 and Point Grey 15,000. The latter municipalities are in reality a part of Greater Vancouver, having all city facilities, but are preserving their municipal individuality, for development purposes.

The Harbor Commissioners have adopted a scheme for the development of a deep sea harbor in the north arm, and consider that the location is ideal, as it is claimed that a perfectly safe entrance can be made at any time of the day or night, unaffected by the state of the tide or fog conditions. The river has an average width of 1,000 ft., and the adjacent lands are very suitable for basin and dock development at comparatively low cost. The absence of silting is also in its favor, in fact it is stated that although the water has not been interfered with since the removal of snags about 30 years ago, there has not been an inch of silting in that time.

As a preliminary for the larger work, the Dominion Government awarded a contract, Apr. 19, for dredging the north arm and for the construction of a jetty, from the westerly end of Iona Island, at the outlet of the north branch of the north arm, towards deep water, for four miles, to protect the channel from sand, and at the same time to allow of dredging being carried out. The work immediately outlined will cost over \$1,000,000, the contract recently awarded approximating \$800,000.

The whole work is in charge of R. F. Leslie, M. I. C. E., M. Can. Soc. C. E., who has had considerable experience as a railway and harbor engineer, and W. M. Davis, M. Can. Soc. C. E., who has had a large experience as a consulting engineer in eastern Canada. The commissioners, two of whom are appointed by the Governor-in-council, and one elected by the four municipalities concerned, are R. Abernethy, Port Moody, and F. Trites and R. C. Hodgson, Vancouver.

The Donaldson Line s.s. *Saturnia*, which touched bottom in the St. Lawrence River, in the Lower Traverse, Apr. 28, cleared from the dry dock at Maisonneuve, May 5, after the comparatively slight repairs were carried out. She at once took on cargo and sailed for Glasgow, May 6.

## Government Chartered Steamships for Hudson Bay Service.

The Minister of Railways gave the following information recently, as to steamships chartered by the Dominion Government for service in connection with the building of the Hudson Bay railway terminals at Port Nelson:

*Cearense*, 1,790 tons net register; owner, J. F. O'Meara, New York; cost, \$20 per m. ft. b.m. for lumber, and \$10 a gross ton for coal;

*Alcazar*, 2,020 tons net register; owner, Inter-American Steamship Co., Toronto; cost, \$25 per m.ft. b.m. for lumber, and \$15 a gross ton for coal;

*Bonaventure*, 467 tons net register; owner, Bonaventure Steamship Co., St. John's, Nfld.; cost, \$5,500 a month;

*Bellaventure*, 467 tons net register; owner, Bellaventure Steamship Co., St. John's, Nfld.; cost, \$5,500 a month;

*Sindbad*, 539 tons net register; owner, F. E. Hall, Montreal; cost, \$4,500 a month;

*Alette*, 1,937 tons net register; owner, Timber Transport Ltd., O. W. Mordin, Managing Director; cost \$25 per m.ft. b.m. for lumber.

The *Cearense* carried a cargo chiefly of coal from North Sydney, and lumber from Halifax; the *Alcazar*, lumber from Port Arthur, Texas; the *Bonaventure* and *Bellaventure*, general cargo and men; the *Sindbad*, general cargo; the *Alette*, lumber from Port Arthur, Texas, and lumber and two steel sectional scows from Halifax. The *Bonaventure* and *Bellaventure* each made a second trip, the first named with general cargo and men, and the second, with coal from North Sydney, and for towing the dredge *Port Nelson*. The s.s. *Beothic* was chartered by the Naval Department for a general cargo and men.

The motor schooner *Neophyte* was purchased from the Navigation Syndicate, of Nordin, N.B., for £4,000. She is of steel construction throughout, built to German Lloyd requirements in 1910. She is 96.72 net registered tons, and has a capacity of 188 tons on a 7 ft. draught. From her arrival at Port Nelson, Aug. 14, 1913, until the departure of the last steamer out, Oct. 13, she made 43 round trips with cargo, from the ship's anchorage to temporary wharf at Root Creek.

With regard to the steam dredge *Port Nelson*, a full description of which has appeared in *Canadian Railway and Marine World*, the Minister stated that it was built by Polson Iron Works, Toronto, and cost \$272,184.02, which included spare parts and some special towing equipment. The vessels which towed the dredge to Port Nelson also carried coal, of which 206 tons were unloaded at Port Nelson, also some supplies utilized in towing, such as timber in bulkheads, cables, etc., were purchased with a view to their subsequent use in connection with the terminal work, and left at Port Nelson. The hull of a stern wheel tug and some plant were loaded on the dredge, thus saving the freight charges otherwise necessitated by their transportation. It is estimated that the cost of towing the dredge from Montreal to Port Nelson and placing her in winter quarters was \$29,457.79.

The Bermuda Atlantic Steamship Co., Toronto, has sold its s.s. *Oceana* to United States interests. She was built at Dunbarton, Scotland, in 1891, and was formerly called *Scot*. She is screw driven, with engines of 1,254 n.h.p. Her dimensions are: length 531 ft., breadth 54.8 ft., depth 17.9 ft., tonnage 7,815 gross, 4,278 register.

## The Board of Railway Commissioners and Lake Freight Rates.

Among the amendments to the Railway Act which are being considered by the Railway Committee of the House of Commons, is one which places the control of freight rates on all inland vessels under the jurisdiction of the Board of Railway Commissioners. A deputation of vessel owners waited on the Committee, May 19, to oppose the amendment to the clause which at present applies only to railway owned vessels operating on inland waters. The deputation included L. L. Henderson, General Manager, Montreal Transportation Co., and President, Dominion Marine Association; A. A. Wright, General Manager, St. Lawrence and Chicago Steam Navigation Co.; H. W. Richardson, Great Lakes Transportation Co.; C. B. Harris, Canada Steamship Lines; and D. Murphy, Ottawa Transportation Co.

The deputation pointed out that flexibility of rates is absolutely essential, and it would be a great mistake to restrict them in any way. It is not the vessel owners who make the rates, but the shippers. Vessels are now carrying grain at 4½c. a bushel, whereas they were getting 7c. last autumn, and the rates generally fluctuate according to the law of supply and demand. It was suggested that the amended clause would work to the advantage of rail and lake lines, which were assured of a steady traffic, but would act as a detriment to the general steamboat interests. It would also result in putting out of business the small owners and concentrating the business in a few hands, and would mean a general raising of rates. It was also declared that the restriction would tend to the diversion of a great deal of Canadian borne traffic to the U.S. routes. On the question of the diversion of Canadian traffic to Buffalo, Mr. Henderson stated that Canadian vessels are at present getting all the traffic which Montreal can handle, and Buffalo is only getting the surplus.

H. W. Richardson spoke of the great need of constantly improving the terminal facilities at Canadian ports. U.S. vessels have the advantage in the summer months of ore cargoes down and coal cargoes up, while Canadian vessels often have to go light. He contended that the opening of the Erie Canal in 1916 would tend to make a low rate between Buffalo and New York, but possibly the new Welland canal might offset this.

At the time of going to press, May 29, it is reported that the C. P. R. s.s. Empress of Ireland, outbound to Liverpool, Eng., had collided with the Norddeutscher Lloyd s.s. Hanover, about 30 miles east of Father Point and had sunk immediately.

### Atlantic and Pacific Ocean Marine.

The St. Lawrence navigation season opened Apr. 29, 10 days later than in 1913, and 6 days later than in 1912.

The C.P.R. s.s. Ruthenia is being dry-docked at Liverpool, Eng., for a general overhaul.

Capt. R. G. Kendall, of the C.P.R. s.s. Ruthenia, is reported to have been appointed to the company's s.s. Empress of Britain.

The C.P.R. s.s. Empress of Asia, which arrived at Vancouver, May 3, made a record of 9 days and 3 hours, beating by 2 hours the previous record, which was held by her sister vessel, the Empress of Russia.

The Russian Government presented, at Yokohama, Japan, recently, a large oil re-

production of a portrait of the Empress Catherine of Russia to the C.P.R. s.s. Empress of Russia. It has been hung in the ladies' saloon.

The Allan Line s.s. Corsican was the first ocean vessel to arrive in Montreal harbor for the current navigation season. Capt. Hall was presented with a gold-headed cane by the harbor master, on behalf of the Harbor Commissioners.

The Shipping Federation is making representations to the Dominion Government regarding the building of a block pier at the Lower Traverse, in the St. Lawrence River, to replace the lightship stationed there. It is stated that the lightship is frequently off her station.

The Donaldson Line s.s. Saturnia, while proceeding up the St. Lawrence to Montreal, Apr. 28, touched bottom in the Lower Traverse. The damage was comparatively slight. It is stated that the cause of the accident was the absence of two buoys and a light ship, which should have marked the angle of the Lower Traverse below Quebec.

A press report from Vienna, Austria, May 6, states that the U.S. Ambassador there has protested against the continued delay in the trial of Samuel Altman, ex-General Agent, C.P.R., on charges of breaches of the emigration laws. The case has been pending since Oct. 1, 1913. Granted that the dispatch is correct, one is inclined to ask, what is the U.S. Ambassador's locus standi?

On account of the addition of the steamships Alsatian and Calgarian to the Allan Line service, a number of changes of captains has taken place. Following are the captains of the various Allan vessels on the St. Lawrence route this season:—Alsatian, E. Outram; Calgarian, J. T. Gambell; Corinthian, R. G. Gamber; Corsican, J. Hall; Grampian, J. Williams; Hesperian, W. S. Main; Ionian, B. T. Eastaway; Scandinavian, J. M. Reith; Scotian, B. Henry; Sicilian, J. Peters; Tunisian, G. Hamilton; Victorian, E. Cook; Virginian, E. Rennie.

The Reid-Donald Steamship Co., of Montreal, which recently purchased the s.s. Bellona, has had her thoroughly overhauled and repaired and placed on the Canadian register. She was formerly owned by the Thomson Line, and on Oct. 31, 1912, while en route from Montreal to Aberdeen, Scotland, with a cargo of general produce, grounded in the upper traverse of the St. Lawrence River. She was built at Dundee, Scotland, in 1881, her dimensions being: length 340 ft., breadth 40.2 ft., depth 26.8 ft., tonnage 2,932 gross, 1,864 register, and she is equipped with engine of 320 n.h.p. driving a screw.

Principello Steamships, Ltd., has been incorporated under the Dominion Companies Act, with \$150,000 capital and office at Toronto, to own and operate steam and other vessels of all kinds, and to carry on business throughout the Dominion, and elsewhere. The incorporators are:—Gerard Ruel, S. C. Snively, A. J. Reid, K.C., W. B. Fleming and G. N. Limpricht, Toronto, all of whom are connected with or employed by Mackenzie, Mann and Co., Ltd.

### Maritime Provinces and Newfoundland.

The Nova Scotia Registrar of Joint Stock Companies has revoked the certificate of registration of the Minas Basin Steamship Co., Ltd., on account of nonpayment of the annual fees.

Supplementary letters patent have been issued under the Dominion Companies Act, changing the name of the Campbellton and Gaspé Steamship Co., Ltd., to the Gaspé and Baie des Chaleurs Steamship Co., Ltd.

The Royal Mail Steam Packet Co.'s s. s. Chaudiere arrived at St. John, N. B., May 9, from Southampton, Eng. She has been placed in service between Canada and the West Indies, in place of the wrecked s. s. Cobequid.

It is reported that the New York, Newfoundland and Halifax Steamship Co. is negotiating for the purchase of a steamship, in England, to replace the s.s. City of Sydney, which was wrecked near Halifax, recently.

The Royal Mail Steam Packet Co. has presented, through the Mayor of Yarmouth, N. S., a piece of silver plate, suitably engraved, to each of the captains of Hugh Cann and Sons' steamships John L. Cann and Westport III, A. L. McKinnon and J. E. McKinnon, brothers, for their services in rescuing passengers from the wrecked s. s. Cobequid, last January.

The Newfoundland sealing season, which recently closed, is regarded as a great financial success, the net result being \$498,086.02. In other respects it has perhaps been the most disastrous in the history of the industry, owing to the loss of the steamers Newfoundland and Southern Cross, with 252 lives, almost at the close of the season.

In consequence of the construction of the works in connection with the car ferry terminals at Cape Tormentine, N.E., the period during which it was announced by order in council, Sept. 24, 1913, that the public wharf or pier there would be closed to public navigation, viz.—the remainder of the 1913 season, and for two months from the opening of the current season, has been extended to cover the entire navigation season of 1914.

### Province of Quebec Marine.

The Dominion Government s. s. Lady Grey has been drydocked at Maisonneuve, Montreal, for a general overhaul and repairs.

Canada Steamship Lines' s. s. Murray Bay has completed her repairs at the dry dock, at Maisonneuve, Montreal, and has returned to service.

The Department of Marine recently received tenders for the supply of a crane, service boat and other equipment for use in Quebec harbor.

A new lighthouse has just been completed on St. Laurent wharf, and it was expected to be in operation June 1. This light replaces the fixed white light heretofore shown from a lantern on the freight shed.

Canada Steamship Lines, Ltd., has appointed the following captains of its vessels, in addition to those published in previous issues,—Rapids King, S. Putnam; St. Irene, Z. La France; Saronic, W. S. Kennedy.

The Montreal Harbor Commissioners are completing the construction of small and light draught steam tug for harbor work.

Capt. J. E. Murray, of the C. P. R. s. s. Empress of Ireland, is reported to have been appointed harbor master at Quebec, at a salary of \$4,000 a year.

The Montreal Board of Control has engaged the services of an expert to advise them as to what would be required in the way of new vessels, wharf and dock accommodation, should it be considered advisable to take over the ferry service to St. Helens Island, after 1915.

The steam tugs Musquash and Gopher, owned by the C. P. R., through the Mersey Towing Co., and utilized in attending to the C. P. R. vessels at Liverpool, Eng., are being transferred to Quebec for use there. They are screw tugs, built of steel in 1910, classed

100 A1 at Lloyd's, and are of the following dimensions, length 100 ft. 2 ins., breadth 23 ft. 1 in., depth 12ft.

Capt. L. A. Demers, harbor master, Montreal, is reported to have resigned, May 20, and to have stated that at his own request he will be appointed Wreck Commissioner, succeeding Commander H. St. G. Lindsay, the resignation of the position of harbor master being conditional on the other appointment. Press reports state that Capt. Bourassa will be appointed harbor master, vice Capt. Demers.

Montreal Vessel Agency, Ltd., has been incorporated under the Quebec Companies Act, with \$5,000 capital and office at Montreal, to contract for the loading and unloading of vessels and carry on a general stevedoring business, and to act as brokers for the buying, selling and chartering of vessels, insurance on vessels and cargoes, etc. The incorporators are, C. M. Cotton, F. T. Enright, A. G. F. Ross, H. Woodcock and E. W. Westover, Montreal.

### Ontario and the Great Lakes.

The Farrar Transportation Co. has removed its head office from Collingwood, Ont., to 107 Mail Bldg., Toronto.

The Marine Department has placed a gas buoy near the wrecked steamboat City of London, northward of the lighthouse in Pelee Passage, Lake Erie.

The Lake Coast Trading Co., Fort William, is reported to be securing estimates for the building of a dock at Silver Islet, a summer resort in the neighborhood.

H. C. Chappell, an inspector on the Northern Navigation Co.'s s.s. Huronic, died on board the vessel at Fort William, May 3, from a wound believed to be self inflicted.

A wrecking party left Sarnia recently to undertake the salvage of the s.s. Turret Chief, which ran on the rocks in Copper Harbor, Lake Superior, during last November's storm.

Dredging operations were recommenced in the Kaministikwia, McKellar and Mission Rivers, at Fort William, five dredges being engaged, and it is expected that three additional ones will be placed on the work early in June.

We are officially advised that there is no truth whatever in the press reports that Canadian Vickers, Ltd., are about to take over the Kingston Shipbuilding Co., and to establish a branch shipbuilding yard at Fort William.

The Lake Superior Dry Dock and Shipbuilding Co. has been granted an extension of time, to June 30, for the commencement of construction of the projected dry dock, etc., at Sault Ste. Marie. The time fixed by the agreement was May 15, and a deposit was made in a local bank as a guarantee of good faith.

The Northern Navigation Co.'s s. s. Noronic is announced to sail from Sarnia, June 3, on her maiden trip to Fort William. She was built at Port Arthur, last year, and came down to Sarnia before the close of navigation, for furnishing and finishing touches. Montreal papers state that she was built at Collingwood, which is incorrect.

The Reid Wrecking Co., Sarnia, which bought, and salvaged the wrecked s. s. I. W. Nicholas, formerly owned by the Nicholas Transportation Co., Cleveland, Ohio, has completely overhauled her, and reduced her to Welland Canal size. She was one of the vessels which ran ashore during the Great Lakes storm of last November.

A bylaw is being prepared at Owen Sound, for submission to the ratepayers,

June 6, to grant \$10,000 a year for 20 years for the construction of a dry dock and shipbuilding plant, to cost about \$1,500,000, and which will give employment to not less than 200 men for at least 11 months of each year.

The s. s. Sindbad, owned by F. E. Hall and Co., Montreal, which has been maintained on the British register for some time, has been transferred to the Canadian register. She was built at Scotswood, Eng., in 1883, and is screw driven by engine of 99 n. h. p. Her dimensions are length, 216.2 ft., breadth 31.2 ft., depth 13.5 ft.; tonnage, 897 gross, 539 register.

The Port Colborne Tug Co., Ltd., has been incorporated under the Ontario Companies Act, with \$40,000 capital and offices at Port Colborne, to own and operate steam tugs, barges and other vessels, and to carry on a general towing and wrecking business. The incorporators are, T., and A. Lannan, Port Colborne; J. D., J. H. and T. E. McGrath, Port Dalhousie.

Polson Dry Dock and Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with \$2,000,000 capital and office at Toronto, to carry on the business of engineers, dredgers, contractors for the construction of public and private works, ship owners, etc., and to build, own and operate all classes of vessels, dry docks, harbors, wharves, etc.

For the protection of small local tugs, etc., a basin has been dredged to 10 ft. below standard low water, or to smooth limestone rock in the dock, between the Government wharf at Hilton, and the lumber wharf immediately east of it, for an area of about 180 sq. ft. A channel has also been dredged in to the mouth of the Walker River, in the St. Joseph channel, about 40 ft. wide and 6 ft. below standard low water.

The Northern Navigation Co., and the G.T.R., united in inviting a number of transportation men and press representatives, for a short trip on the s.s. Noronic, on her maiden voyage, at the end of May. The main members of the party left Montreal, May 29, and embarked at Sarnia, May 30, going by water toetroit, Cleveland and Windsor, where they took the train for Montreal, arriving there, June 1.

Great Manitou Park Co., Ltd., has been incorporated under the Ontario Companies Act, to acquire Grand Manitou Island in Lake

Nipissing, and carry on a general hotel business there, and in connection therewith, to own and operate steam and other vessels. G. Gordon, H. W. Angus, J. T. Lindsay, J. McClusky and F. A. York, North Bay, are the provisional directors.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above tidewater, for April, as follows: Superior 601.83; Michigan and Huron 580.06; Erie 572.10; Ontario 246.75. As compared with the average April levels for the past ten years, Superior was 0.16 ft. above; Michigan and Huron 0.39 ft. below; Erie 0.42 ft. below, and Ontario 0.25 ft. above. It was anticipated that during May, Superior, Michigan and Huron, and Erie would rise about 0.3 ft., and Ontario 0.5 ft.

Buoys have been established by the Marine Department in Whitby harbor and at its entrance, marking the channel which was dredged by the Public Works Department, during 1913. The dredged portion lies between the east and west piers, where there is a depth of 16 ft., for a width of 120 ft., running northward for 600 ft. from the outward end of the angle of the west pier, and also southward for 600 ft. from the outer end of the west pier, 140 ft. wide and 16 ft. deep.

The Great Lakes Transportation Co., the incorporation of which was mentioned with detail in our last issue, has transferred three of the vessels it recently acquired in the United States, to the Canadian register. The steamships Minnetonka and Minnekahta, which were purchased from the Chicago and Duluth Transportation Co., have been transferred as Glenfinnan and Minnekahta, respectively, and the Wawatam, purchased from the Pittsburgh Steamship Co., has had her name changed to Glenlivet. Since the transfer, the name of the Minnekahta has been changed to Glenlyon. The port of registry in each case is Midland.

At the International Conference on City Planning, at Toronto, May 25 to 27, R. S. Gourelay, the city's Board of Trade representative on the Toronto Harbor Commission, gave an address on water front development. Special emphasis was laid on the various works now in progress along the water front, involving the filling in of Ashbridge's Bay and the establishment of a model industrial district there, first class railway and lake transport facilities, the

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during April.

ARTICLES	CANADIAN CANAL	U. S. CANAL	TOTAL
Copper.....Eastbound.....Short tons		874	874
Grain.....".....Bushels	2,971,913	2,285,161	5,257,074
Building stone.....".....Short tons			
Flour.....".....Barrels	40,180	174,170	214,350
Iron ore.....".....Short tons	21,063	8,960	30,023
Pig iron....."....."			
Lumber.....".....M. ft. b. m.	1,340	522	1,862
Silver ore.....".....Short tons			
Wheat.....".....Bushels	7,532,526	684,500	8,147,026
General merchandise.....".....Short tons	3,050	1,174	4,224
Passengers.....".....Number	10	2	12
Coal, hard.....Westbound.....Short tons	15,314	23,930	39,244
Coal, soft....."....."	92,307	196,269	288,575
Flour.....".....Barrels			
Grain.....".....Bushels			
Manufactured iron.....".....Short tons	2,800	11,754	14,554
Iron ore....."....."			
Salt.....".....Barrels	4,025	32,199	36,224
General merchandise.....".....Short tons	7,318	13,420	20,738
Passengers.....".....Number	41	18	59
Summary.			
Vessel passages.....Number	175	188	363
Registered tonnage.....Net	323,968	267,570	591,538
Freight—Eastbound.....Short tons	318,868	87,136	406,003
"—Westbound....."	118,314	250,203	368,517
Total freight....."	437,182	337,338	774,520

deepening of the inner harbor, new docks, a 12 ft. driveway along the front, etc. The complete works, estimated to cost about \$19,000,000, will be spread over the next six years.

Canada Steamship Lines s. s. W. Grant Morden, which was launched at Port Arthur, recently, underwent steam trials, May 7, when a speed of 14 miles an hour was attained, without the limits of her machinery being reached. She left the head of the lakes, May 11, with her first cargo of grain, for Port Colborne. In mentioning the matter, the Toronto Globe stated that the vessel was built for the Norcross interests to replace the James Carruthers, lost in the storm on the lakes last November. The s. s. W. Grant Morden was built for Canada Steamship Lines, Ltd., of which company, J. W. Norcross is Managing Director. The s. s. James Carruthers was owned by the St. Lawrence and Chicago Steam Navigation Co., with which Mr. Norcross has no connection whatever.

The first lock gate accident of the season occurred in the Welland Canal, Apr. 30, when F. E. Hall and Co.'s s.s. Compton, bound for Ashtabula, Ohio, entered lock 4 at what was considered too great a speed, and forced open the head gates. These returned unevenly, and the pressure of water from the higher level tore them from their fastenings, and swept them with the vessel and one of the lower gates, out to the lower level. Apart from the damage to the gates, the loss was light. The s.s. John Duncan, owned by Canada Cement Transport, Ltd., while passing through the canal, May 4, rammed the gates of lock 5 and also of lock 10, but as each of these gates are equipped with a safety device, which was described and illustrated in Canadian Railway and Marine World for August, 1912, any damage was averted. This device has been installed on the gates in several of the locks, and it is said that in the near future, all the lock gates will be so equipped.

### Manitoba, Saskatchewan and Alberta.

The Ross Navigation Co.'s steamboat Minasin struck a sandbar in the Pas River, May 5, and partially capsized.

The assembling of the parts of the Dominion Government dredge at Pas, Man., to which some reference has already been made, was completed early in May, and she was placed in operation.

The Ross Navigation Co.'s steamboat Notin, which has been placed in local service at Pas, Man., was built at Winnipeg in 1913. She is screw driven by engine of 4 n.h.p. Her dimensions are: length 48 ft., breadth 10 ft., depth 9.2 ft.; tonnage, 18 gross, 13 register.

The s.s. City of Edmonton, owned in Strathcona, Alta., has been thoroughly overhauled and repaired, and was ready for service at the end of May. She is a paddle wheel vessel with engine of 9 n.h.p. Her dimensions are: length 132 ft., breadth 28.8 ft., depth 4 ft., draught about 20 ins.

The Peace River Transportation Co. is building a passenger vessel for service between Sawridge and Grouard, on Lesser Slave Lake, connecting with the Edmonton, Dunvegan and British Columbia Ry. trains running between Edmonton and Sawridge, and also with a motor bus line to be run from Grouard to Peace River Landing. The whole trip from Edmonton to Peace River Landing will be accomplished in about 1½ days. The vessel will be about 60 ft. long, 11 ft. beam, and under normal conditions will draw about 2 ft. of water. It will be equipped with two 50 h.p. gasoline en-

gines, and the hull will be divided into five water tight compartments. It will be lighted throughout by electricity, and will have a powerful searchlight. There will be accommodation for about 100 passengers and 17 tons of freight.

The Saskatchewan Steamship and Coal Co., which has arranged to operate steamboats on the Saskatchewan River, between Prince Albert, North Battleford and Edmonton, as reported in our last issue, has a capital of \$1,500,000, and office at Minneapolis, Minn. The capital is said to be all provided for, and it is intended to establish branch offices at Pas, Man., Prince Albert and North Battleford, Sask., and Edmonton, Alta. Two light draught steamboats are being built at Prince Albert, the machinery being supplied from Chicago. The approximate dimensions of the vessels are,—passenger vessel, length 210 ft., beam 45 ft.; tow boat, length 150 ft., beam 35 ft. The officers are: President, E. J. Newell; First Vice President, J. A. Burrichter; Second Vice President, J. Segerstrom; Traffic Manager, R. F. Tompkins; Secretary-Treasurer, C. A. O'Leary.

### British Columbia and Pacific Coast Marine.

The C.P.R. steam tug Naramata, built for towing barges on Lake Okanagan, was launched at Okanagan Landing recently.

West Vancouver's ferry steamboat, No. 5, which underwent trial trips at the end of April, was placed in service, on a half hour schedule, May 1.

A number of the U.S. coast steamship companies trading to Alaskan waters have petitioned the U.S. Congress for a resurvey of the inland passage to southeastern Alaska.

The Border Line Transportation Co., which runs a steamboat line between Tacoma, Seattle, Victoria and Vancouver, has added Nanaimo as a port of call. The steamboats Dispatch and Fulton are engaged in the service.

Greer, Coyle & Co. are reported to have purchased the steam tug Czar from the C.P.R. She was built at Victoria in 1897, and is screw driven by engine of 56 n.h.p. Her dimensions are: length 101 ft., breadth 21.5 ft., depth 11 ft.; tonnage, 152 gross 93 register.

The West Vancouver Ferry Co. has appointed the following officers for its vessels for the current year:—Doncella, D. Smith, captain; R. Pyne, chief engineer. Sea Foam, E. Sloane, captain. Sonrisa, P. H. Johnson, captain; R. Rhodes, chief engineer. West Vancouver No. 5, A. A. Findlay, captain; H. L. Thompson, chief engineer.

The Grand Trunk Pacific Coast Steamship Co. has arranged to make calls at Surf Inlet, on the west coast of Princess Royal Island, the s.s. Prince John, from Vancouver on Fridays, calling there when northbound, and the s.s. Prince Albert calling when southbound, every other trip, i.e., monthly, from Prince Rupert to Vancouver.

The Canadian Fish and Cold Storage Co., Prince Rupert, has appointed the following captains and chief engineers, respectively, for its steam vessels for the current season:—Andrew Kelly, Capt. Stinson and R. Blance; Chief Zibassa, Capt. Parsons and R. Hesketh; G. E. Foster, Capt. Gilmour and J. Dick; James Carruthers, Capt. Knightall and H. Troland.

The name of the steamboat William Joliffe, recently acquired from the Department of Marine by the C.P.R., has been changed to Nitinat. She has the official number 91,255, and is registered at Victoria.

The C.P.R. s.s. Princess Victoria, which has been undergoing a thorough overhauling at Esquimalt, returned to service, May 7, replacing the s.s. Princess Charlotte, which was docked for a short overhaul.

The Terminal Navigation Co., Vancouver, is reported to have purchased the s.s. Joan from the C.P.R., and it is said that after extensive alterations she will be renamed and placed in service to Howe Sound and Bowen Island. She was built at Victoria in 1892, and is screw driven by engine of 85 n. h. p. Her dimensions are, length 176.8 ft., breadth 30 ft., depth 11 ft.; tonnage, 821 gross, 544 register.

The construction of the breakwater at Ogden Point, Victoria, is progressing satisfactorily. It will extend into deep water for 2,530 ft., the greatest depth of water being 75 ft. For about 1,400 ft. the bed of the breakwater has been laid from the shore end. This comes to within about 20 ft. of the surface, and it will be capped by large blocks of granite laid by divers. It is anticipated that the work will be completed by the end of 1915. Sir John Jackson, Canada, Ltd., are the contractors.

The extensive alterations to the C. P. R. s. s. Princess Mary, of which some mention has been previously made, cover the lengthening of the vessel by 38 ft. 4 ins. The new portion will contain oil tanks with fuel capacity for 2,000 miles steaming, and will double the second class accommodation, give 24 additional first class staterooms, increase the main deck space for package freight by over 10,000 cubic feet and give accommodation for something over an additional 250 tons of freight, and there will also be much increased space in the hold. It is expected that with the additional length, and the use of oil as fuel, the average speed will be considerably increased. The new dimensions are, length 238.33 ft., breadth 40.15 ft., depth 14.05 ft.

### Canadian Notices to Mariners.

The Department of Marine has issued the following:—

133. Apr. 20. Quebec, River St. Lawrence, Orleans Island, St. Laurent, new lighthouse under construction, intended change in character of light.

134. Apr. 25. Ontario, Lake Ontario, Whitby harbor, dredging, buoys established.

135. Apr. 25. Ontario, Detroit River, Ballard Reef channel, lights exhibited temporarily from Fort Malden range towers.

136. Apr. 25. Ontario, Georgian Bay, Byng Inlet, buoyage, corrections.

137. Apr. 28. Nova Scotia, south coast, off Little Hope Islet, change in color of gas and whistling buoy.

138. Apr. 28. Nova Scotia, south coast, Beaver harbor, Hardwood Island, light to be established.

139. Apr. 28. Nova Scotia, south coast, Isaac harbor, change in color of gas and whistling buoy.

140. Apr. 28. Nova Scotia, south coast, Cape Breaker, change in color of bell buoy.

141. Apr. 30. Ontario-Quebec, Ottawa River, Green shoal, dredging, buoys established, East Templeton, buoys established.

142. Apr. 30. United States of America, Lake Superior, Isle Royale light station, change in character of light.

143. May 2. Nova Scotia, Bay of Fundy, westward of Lurcher Shoal, depth of water, caution.

144. May 2. Prince Edward Island, north coast, Cascumpeque harbor, Alberton, change in position of range lights.

145. May 2. New Brunswick, east coast, Miramichi Bay, Preston Beach, range lights improved.

146. May 2. Quebec, Gulf of St. Lawrence, Perce, position of buoy.

147. May 2. Quebec, River St. Lawrence, Cap de la Madeleine, dredging, extension to wharf.

148. May 6. British Columbia, Vancouver Island, west coast, Obstruction Island, Rocky Pass, day beacon erected.

149. May 6. British Columbia, Vancouver Island, Alberni Canal, First Narrows, day beacon erected.

150. May 6. British Columbia, Vancouver Island, Alberni Canal, Second Narrows, day beacon erected.

151. May 6. British Columbia, Vancouver Island, Juan de Fuca Strait, Sooke Inlet, beacons not in position.

152. May 6. British Columbia, Boundary Bay, Mud Bay, change in position of beacons.

153. May 6. British Columbia, Malaspina Strait, Pender harbor, Williams Island, day beacon erected.

154. May 6. British Columbia, Smith Sound, Takush harbor, Fly basin, uncharted shoal.

155. May 7. British Columbia, Vancouver Island, Saanich Inlet, Tozier Rock, spindle erected.

156. May 7. British Columbia, Strait of Georgia, Active Pass, submarine bell buoy moored near Gossip shoals bell buoy.

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Independent Pneumatic Tool Co.**, Chicago, has issued circular E 1, descriptive of the new Thor electric drill.

**Northern Electric Co., Ltd.**, Montreal, has issued a bulletin of 24 pgs, 7½ by 10¾ ins., describing and illustrating its low voltage lighting outfits.

**The General Railway Signal Co. of Canada**, Montreal, has issued catalogue B, part 7, covering its R. S. A. mechanical dwarf signal.

**Canadian Westinghouse Co., Ltd.**, Hamilton, Ont., has issued circular 1137, 24 pages, 7 by 10 in., on watt hour meters for alternating current and direct current.

**Canadian Detroit Lubricator Co.**, Walkerville, Ont., for which Taylor & Arnold, Ltd., Montreal, are Canadian Sales Agents, has issued a booklet of 12 pgs., 4½ by 7½ ins., describing and illustrating Detroit automatic plunger lubricators.

**The Brown Hoisting Machinery Co.**, Cleveland, Ohio, has issued catalogue D. 1914, 64 pages, 6 by 9 ins. "Brown Hoist Tramways Systems, Trolleys, Electric Hoists," dealing with the overhead or tramway system of handling all kinds of material by railways and industrial plants.

**James T. Gardner, Inc.**—The railway equipment business which was carried on by James T. Gardner, at 615 Railway Exchange, Chicago, until his recent sudden death, will in future be carried on by James T. Gardner, Inc., with the following officers: President, M. Gardner; Vice President, R. H. Gardner; Secretary, A. V. Talbot; Treasurer, A. M. Talbot.

**The United States Light and Heating Co.** has removed its general offices from 30 Church St., New York, N. Y., to its plant at Niagara Falls, N. Y., thus bringing together

the administrative, sales, engineering, and production departments. The New York sales office and service station has been transferred to the Locomobile Building at 16 West 61st St., New York, N. Y.

**Butterfield & Co., Inc.**, of Rock Island, Que., manufacturers of taps, dies, screw plates, reamers, etc., are preparing plans for a new brick and re-inforced concrete factory building there. About a year ago, their plant was purchased by the Union Twist Drill Co. of Athol, Mass., manufacturers of twist drills and milling cutters. The new building is to be 185 by 60 ft. wide, and 3 stories high, and when completed, a portion of the building will be used for the manufacture of drills and milling cutters for the Canadian trade. The plant will continue to be operated under the name of Butterfield & Co., Inc., with no change in the management.

**The Detroit Lubricator Co.**, advises that it will exhibit the new Detroit flange lubricator for the first time at the M. C. B. and A. R. M. M. conventions at Atlantic City in June, in space 637, the same it has occupied in several years past. The exhibit will consist of two wooden models of 45 degree sections of locomotive drivers, with the lubricator installed in the same manner as in actual service. The whole apparatus will be rocked back and forth by an ingenious electrical contrivance to approximate working conditions on the road. The lubricator will feed oil on the flanges every time the lateral motion becomes pronounced and easy observation of its construction and operation will be made possible by removing sections to display the internal mechanism. In addition to this a No. 22 bullseye locomotive lubricator, air cylinder lubricator and transfer filler will be shown in operation. A complete line of locomotive lubricators with from one to eight feeds, automatic steam chest plugs, air cylinder lubricators, transfer fillers, with sectional models and cross sections of parts will be displayed.

### Among the Express Companies.

F. S. Love, Local Manager, Dominion Ex. Co., Saskatoon, Sask., has been transferred to Fort William, Ont., vice E. P. Burnell, transferred to Saskatoon, Sask.

E. P. Burnell, Local Manager, Dominion Ex. Co., Fort William, Ont., has been transferred to Saskatoon, Sask., vice F. S. Love, transferred to Fort William.

The Canadian Northern Ex. Co. has reopened its offices at Berton, Man., and Brooking, Sask., has opened offices at Gravelbourg and Mitchellton, Sask., and has closed its offices at Delmas, Sask., and Minburn, Alta.

The Western Ex. Co., which operates over the Minneapolis, St. Paul and Sault Ste. Marie Ry., Duluth, South Shore and Atlantic Ry., Spokane International Ry., and the C.P.R., has arranged to open offices in Chicago, Ill., and Milwaukee, Wis., by July 1.

### Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened offices at Cardinal Canal and Charing Cross, Ont., and has reopened its summer office at Rosseau, Ont.

The Canadian Northern Telegraph Co. has reopened its offices at Berton, Man., and Brooking, Sask.; opened offices at Hughton, Sask., and Minburn, Alta., and has closed its office at Delmas, Sask.

The C.P.R. has completed the erection of a telegraph line along its recently built Weyburn-Lethbridge extension, connecting

direct with Moose Jaw, Sask., and wire is also being erected westward from Shaunavon, Alta., keeping pace with railway construction. D. Coons is Superintendent of Telegraphs, Saskatchewan Division.

The G. T. Pacific Telegraph Co.'s system, which has chiefly been erected in conjunction with the laying of the railway track, has been completed between Port Arthur, Ont., and Prince Rupert, B.C., but the commercial service is only in operation as far west as Prince George, B.C. It will, however, be completed through to the coast very shortly. The installation of a telephone train dispatching system is also proceeding. A. B. Smith is Manager of Telegraphs, G.T.P.R.

### Transportation Conventions in 1914.

June 10-12.—Master Car Builders' Association, Atlantic City, N.J.

June 15-17.—American Railway Master Mechanics' Association, Atlantic City, N.J.

June 16.—Train Despatchers' Association of America, Jacksonville, Fla.

June 16-19.—American Society of Mechanical Engineers, St. Paul and Minneapolis, Minn.

June 18,19.—Association of Transportation and Car Accounting Officers, Atlantic City, N.J.

June 24.—Association of American Railway Accounting Officers, Minneapolis, Minn.

June 30-July 4.—American Society for Testing Materials, Atlantic City, N.J.

July 14-17.—International Railway General Foremen's Association, Chicago, Ill.

July 20-22.—American Railway Tool Foremen's Association, Chicago, Ill.

Aug. 18.—International Railroad Blacksmiths' Association, Lima, Ohio.

Sept. 1-4.—American Boiler Manufacturers' Association, New York.

Sept. 8-10.—Roadmasters and Maintenance of Way Association, Chicago, Ill.

Sept. 8-11.—Master Car and Locomotive Painters' Association of the United States and Canada, Nashville, Tenn.

Sept. 22-24.—Railway Signal Association, Bluff Point, N.Y.

Oct. 12-16.—American Electric Railway Association, Atlantic City, N. J.

Oct. 19-23.—Association of Railway Electrical Engineers, Chicago, Ill.

Oct. 20-22.—American Railway Bridge and Building Association, Los Angeles, Cal.

Nov. 17-19.—Maintenance of Way and Master Painters' Association of the United States and Canada, Detroit, Mich.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries.

Canadian Car Service Bureau, J. Reilly, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association, Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern Lines), G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western Lines), W. E. Campbell, 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, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association, E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto 3rd Tuesday each month, except June, July and August.

Dominion Marine Association, Counsel, F. King, Kingston, Ont.

Eastern Canadian Passenger Association, G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal, R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto, R. B. Wolsey, 94 King St. West, Toronto.

Great Lakes and St. Lawrence River Rate Committee, Jas. Morrison, Montreal.

International Water Lines Passenger Association, M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee, Jas. Morrison, Montreal.

Nova Scotia Society of Engineers, A. R. McCleave, Halifax, N.S.

Quebec Transportation Club, J. S. Blanchet, Quebec.

Ship Masters' Association of Canada, Capt. E. Wells, 45 St. John St., Halifax, N.S.

Western Canada Railway Club, W. H. Rosevear, 25½ Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.



**Proposed Government Control of Rates on Steamboats.**

been introduced into the House of Commons, as an amendment to the Railway Act, providing that the clauses relating to accommodation for traffic tolls, classification of freight and tariffs, shall so far as applicable apply to all steamboat companies, owners, and steamboats engaged on a regular route carrying passengers or freight or both, from one port to another in Canada, or from a port in Canada to a port outside of Canada, and all traffic agreements between steamboat owners and railway companies and other persons, and all questions of the places along the route where steamboats shall call for traffic, the time of call, and duration of stay, shall be subject to the approval and control of the Board of Railway Commissioners. For the purposes of the bill, a steamboat is described as any vessel propelled wholly or in part by steam or any other machinery or power other than sails or oars.

The Department of Customs has issued a memorandum to officers at the various out-ports, covering instructions for collectors of customs in connection with the Radiotelegraph Act, chap. 43 of the statutes of 1913. These quote the clauses of the act, which Canadian Railway and Marine World has already fully dealt with, making compulsory the equipping of vessels of a certain class with wireless telegraphy, and describing the type of apparatus and qualifications of the operators, etc.

**THE TORONTO, HAMILTON AND BUFFALO RAILWAY COMPANY.**

Hamilton, Ont., May 2nd, 1914.

Notice is hereby given that the Annual General Meeting of the Shareholders of this Company, for the election of a Board of Directors, and for the transaction of such other business as may be brought before the meeting, will be held at the office of the Company, in the City of Hamilton, Province of Ontario, Tuesday, June 2nd, 1914, at 11 o'clock in the forenoon.

DWIGHT W. PARDEE,  
Secretary.

**THE VICTORIA ROLLING STOCK AND REALTY CO. OF ONTARIO, LIMITED.**

NOTICE is hereby given that a dividend of three per cent. on the paid-up capital stock of the Company for the half-year ended May 30th, 1914, has been declared payable June 1st, 1914, to the shareholders of record as of the 30th of May, 1914.

By order of the Board,  
G. T. CHISHOLM, Secretary.  
Toronto, May 20th, 1914.

**THE CANADA SOUTHERN RAILWAY**


The Annual General Meeting of the Shareholders of The Canada Southern Railway Company, for the election of Directors, and for other general purposes, will be held at the Company's Head Office in the City of St. Thomas, Ontario, on Wednesday, the 3rd June, 1914, at 11 o'clock in the forenoon.

DWIGHT W. PARDEE,  
Secretary.

St. Thomas, Ont., May 1, 1914.



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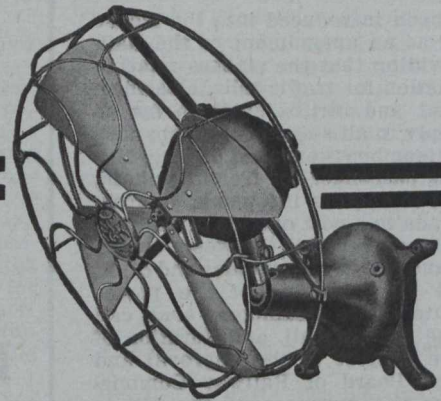
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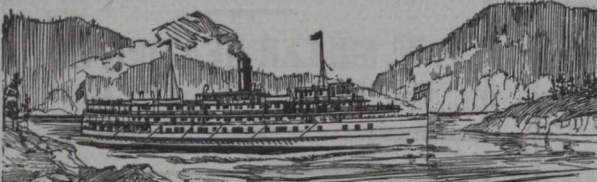
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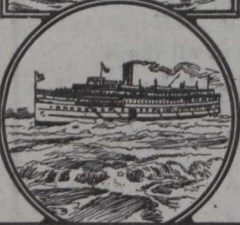
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