

Canadian Railway and Marine World

August, 1915.

Single Track Automatic Signals, Toronto, Hamilton and Buffalo Railway.

During the summer of 1911 the T.H. & B.R. began its first automatic block signal installation on 9 miles of track, from Kinross to Vinemount, Ont. In 1913 the automatic signaling was extended from Vinemount eastward to Welland, 26 miles, and in 1914 signals were installed on the west end from Hamilton to Brantford 25 miles. There remains approximately 16 miles of single track between Hamilton and Brantford which is not equipped with automatic block signals.

As shown in the accompanying map, fig. 1, the T.H. & B.R. forms a connection between the Canadian Pacific on the north and the New York Central Lines on the south. The track and signal arrangement of the Hamilton terminals, also the profile and alignment, are shown in fig. 2. Traffic is heavy, the average being 32 trains a day,

and serve as a reminder that a meet is to be made at this point. In fig. 9 train 1 is about to meet trains 2 and 4 at siding B. Train 1 enters the siding and proceeds into the next block under authority of a clear indication at signal 11. Signal 10 goes to clear as soon as train 1 enters the siding and switch is restored to normal position, and train 2 proceeds toward siding C. Fig. 10 shows the trains proceeding in their respective directions. When train 2 passes signal 8, signal 10 goes to caution and train 4 can advance on this indication. Intermediate switches are, in most cases, equipped with push-button indicators of the semaphore type, and normally indicate block is not clear. Before opening the main line switch trainmen are required by rule to press the push button; if conditions are

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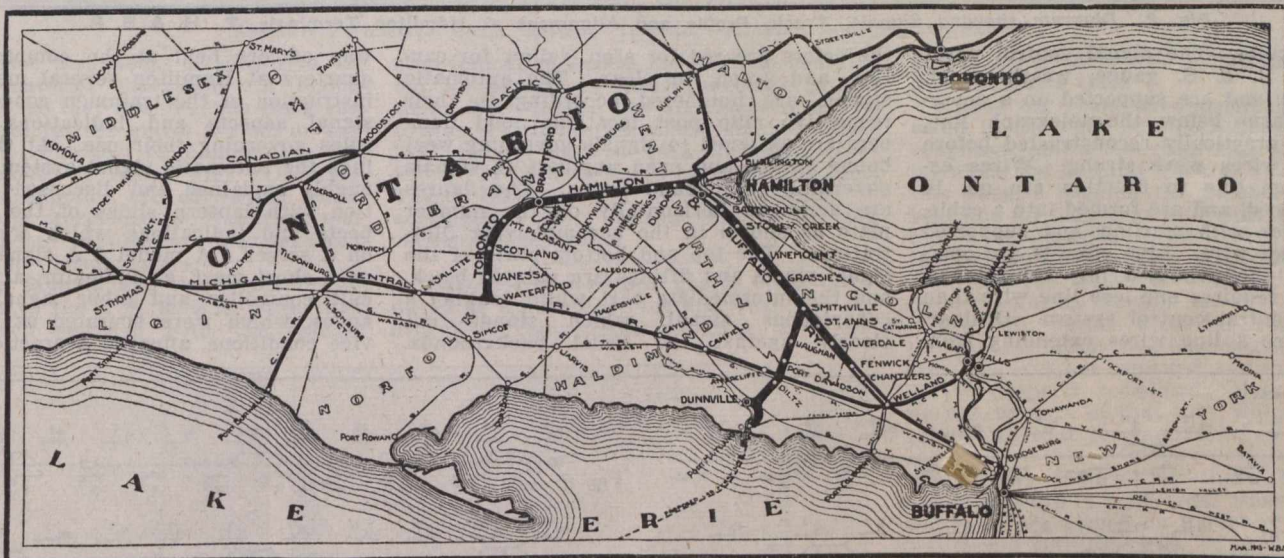


Fig. 1. Toronto, Hamilton and Buffalo Railway Lines.

and the maximum 52 trains a day, as follows:

Freight, westward ..	Aver. 6	Maximum 10
Passenger, westward	Aver. 10	Maximum 16
Freight, eastward ..	Aver. 6	Maximum 10
Passenger, eastward	Aver. 10	Maximum 16

Formerly trains were operated by the telegraph block or time interval system in connection with train order boards, and in some cases by standard semaphore train order signals. Trains following a passenger train were held at train order stations until passenger train was clear of the block, and a time interval of five minutes was maintained at train order stations between following freight trains. Train orders and instructions regarding train movements are transmitted by telephone, and there is a telephone at each passing siding so that trainmen can communicate direct with the dispatcher when occasion requires.

The system of signalling is the General Railway Signal Co.'s absolute permissive block system, in which the block for opposing trains is from siding to siding, and for following trains the block is from signal to signal as in double track signaling. Signals governing movements from passing

entered the block between sidings A and B, and is protected against opposing train 1 by absolute signal 5, which is in the stop position.

Fig. 5 shows the minimum spacing of following trains running under caution signals, and fig. 6 the minimum spacing of following trains running under clear signals. In both cases absolute signal 5 protects against opposing trains. There is also a caution indication for each stop indication.

Fig. 7 shows opposing trains 1 and 2 approaching meeting point at siding B, and illustrates one of the important features of the absolute permissive block system—the double distant or caution indication, signals 7 and 9, and signals 12 and 14, which affords maximum safety at meeting points, and insures proper signal indications. Owing to the arrangement of the control circuits it would be practically impossible for train 1 to pass signal 7 at clear and then find signal 9 at stop, or for train 2 to pass signal 14 at clear and then find signal 12 at stop. Absolute signals 10 and 11 protect against opposing trains.

Fig. 8 shows trains 1 and 2 at siding B. Permissive signals 9 and 12 are at stop

such that it would be safe to enter the main track, the indicator blade operates to the vertical position and indicates block is clear. If the block is not clear, the indicator blade remains in the normal position. This arrangement of de-energized switch indicators reduces to a minimum the chance of false clear indications. The push button operates two contacts, which make and break both sides of the energizing circuit. The resistance of indicators is 690 ohms.

Main line switches are equipped with model 5 switch circuit controllers through which, in some cases, the control circuits are broken, and in other cases the track circuits are shunted.

Track Circuits.—The length of track circuits varies considerably, according to the distance between successive signals; the average length is approximately 2,000 ft. and the maximum length about 4,000 ft. Ballast is rock and gravel, affording good drainage; ties are untreated oak and cedar; rail is A.S.C.E. 80 lb. and 100 lb.; all rail joints, including insulated joints, are of the continuous type; two 44 in. E.B.B. bond wires connect adjoining rails at each joint. The track battery consists of two cells of

Columbia 600 ampere-hour, high internal resistance type, housed in 8 ft. cast iron battery chutes. Track relays have a resistance of 4 ohms; front contacts are platinum to graphite, and back contacts platinum to platinum. These relays are housed in a cast iron relay box, which is mounted on the signal mast or on a cable post, depending upon the particular location. Wire used for track circuit connections is no. 9 B. & S. gauge, rubber covered. All connections may be identified by means of fiber tags on which appear the proper letters and figures.

by means of a derrick, which was also used in setting the concrete battery wells. R. L. Latham, Chief Engineer, T.H. & B.R., had general charge of the installation, which was performed under the immediate supervision of A. A. Hurst, Supervisor of Signals. A. C. Holden was engineer in charge for General Railway Signal Co.

The Signals conform to Railway Signal Association specifications; signal mechanisms are G.R.S. model 2 A top of mast type, operating in 3 positions in the upper right hand quadrant, and are equipped with 10 volt direct current motors. Absolute signals are distinguished by a square end red blade and by a red marker light below and in the same vertical plane as the active light. Permissive signals are distinguished by a pointed end red blade and by a red marker light below and to the left of the active light. Roundels are R.S.A. standard;

Instruction of Trainmen.—Rules governing use of the automatic signals were adopted by the railway officers, and were printed in the back part of the time table with the operating rules. About the time the signals were ready for service, the rail-

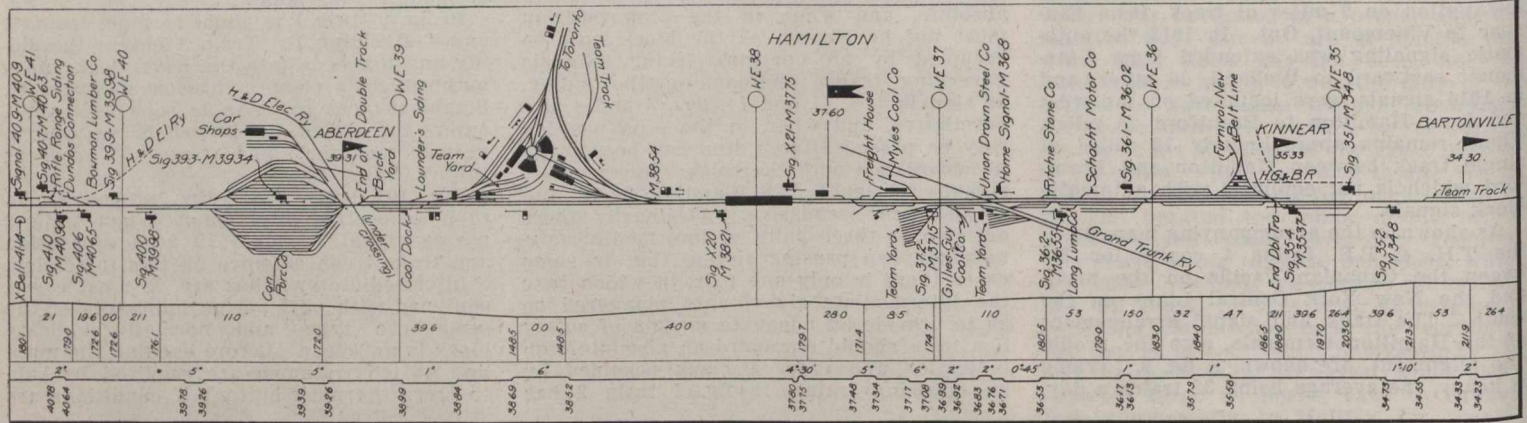


Fig. 2. Diagram showing Signals, Track, Profile and Alignment at Hamilton Terminals, T. H. & B. R.

Line Circuits.—The signal control wires are no. 9 B. & S. gauge, weatherproof, copper clad, and are supported on a separate cross arm below the telegraph line, which was practically reconstructed before the signal wires were strung. Wires extending from line to function are no. 14 rubber covered, and are formed into a cable, held together with marline, and supported by messenger wire. Line circuits are operated under the polarized line control system, which requires one less line wire than a similar neutral control system. Ordinarily there are 3 line wires extending from

the colors are red for stop, yellow for caution, and green for clear. The automatic signals are numbered according to their respective mile post locations; odd numbers are assigned to signals governing west bound trains, and even numbers to signals governing east bound trains. The figures are arranged horizontally on the number plate as shown in the accompanying illustrations. The top and bottom parts of the signal masts and fittings are painted black, and the intermediate part white, making a conspicuous signal, which stands out clearly against the usual backgrounds.

way officers held at the company's headquarters at Hamilton several meetings for instruction of the trainmen concerning the signal aspects and indications, and the rules governing their use. At these meetings the automatic signal system was thoroughly explained and discussed in connection with lantern slides of the signal aspects and indications which were thrown on a screen. A model 2 A signal mounted on a short mast, an indicator, a switch circuit controller and other signaling appliances, which were operated as under service conditions, afforded a practical demon-

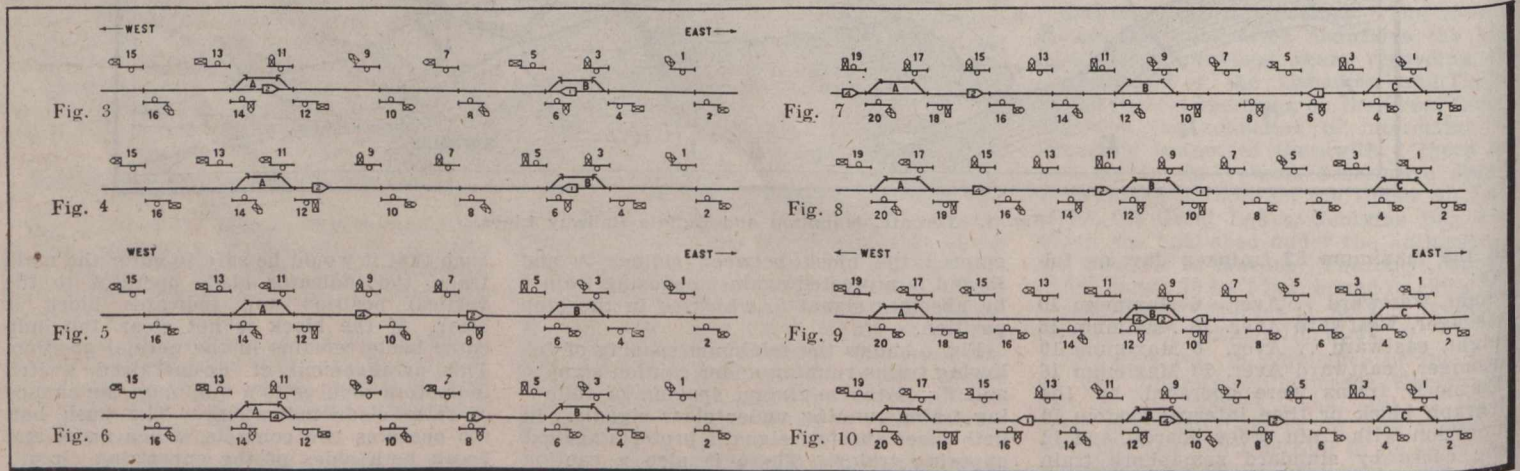


Fig. 3. Trains at Adjacent Sidings. Fig. 4. One Train in Block. Fig. 5. Minimum Spacing under Caution Signals. Fig. 6. Minimum Spacing under Clear Signals. Fig. 7. Trains Approaching Meeting Point. Fig. 8. Trains at Meeting Point following Eastward Train. Fig. 9. Trains Meeting. Fig. 10. Trains Proceeding from Meeting Point.

sidings and 5 line wires extending through sidings. Line and local relays have a resistance of 670 ohms; front contacts are platinum to graphite, and back contacts platinum to platinum. These relays are ordinarily housed in a cast iron relay box mounted on the signal mast. All relays and other mechanisms likely to be affected are protected by G.R.S. model 1 B lightning arresters, to which are attached suitable connections to ground. All connections in the relay boxes are conveniently arranged and attached to R.S.A. terminals, which are properly tagged and marked according to

Semaphore lamps are R.S.A. standard, and are equipped with long-time oil burners. Each signal is operated by 16 cells of Schoenmehl R.S.A. standard potash battery, which is housed in a Potter Winslow no. 36 concrete battery well. Installation.—The railway company furnished and installed in place all insulated joints, insulated switch rods and connections, also all line wire supports. The General Railway Signal Co. manufactured and installed in place all signals and signal appliances. Most of the material was delivered by work train. Signals were erected

stration of the signal system and fixed firmly in the minds of employes the essential features of the system. The practice of instructing trainmen concerning rules and other matters pertaining to their duties is a subject of the greatest importance, and not only increases the general efficiency of employes, but reduces to a minimum the chance of accident. Maintenance is in charge of a signal supervisor, whose force consists of 2 maintainers, 4 battery men and 2 lampmen, who make a daily inspection of the signals and appliances on their respective districts.

Each man is provided with a velocipede car on which he carries the maintenance supplies and a kit of tools. Any improper operations of the signal system are reported by the maintainer by joint wire to the Chief Engineer, Superintendent and Signal Supervisor. Copies of report are forwarded by train mail to Signal Supervisor and Chief Engineer, with full explanations of cause. The Signal Supervisor investigates each case personally and works up a record which shows the performance of the entire signal system for a given period. The Sig-

nal Supervisor also keeps a record of all labor and material chargeable to signal maintenance, so that maintenance costs can be determined for the entire system or any part thereof. The cost of maintenance per mile per month is about \$16. Ordinary maintenance supplies are carried in stock at the general storehouse at Hamilton, and a few emergency supplies are kept on hand at maintainers' headquarters.

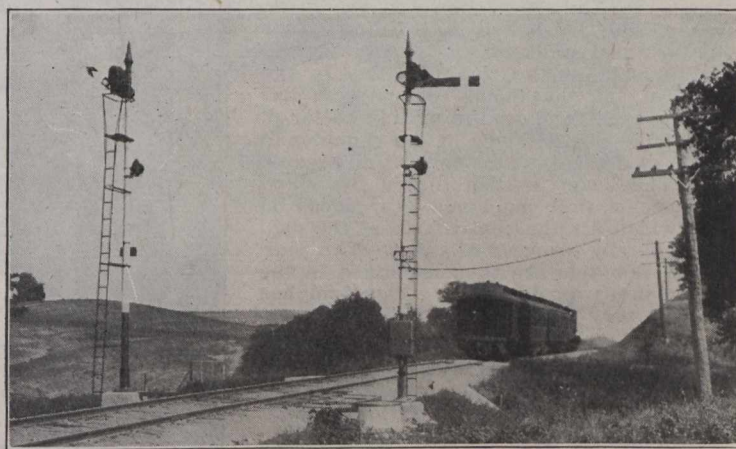
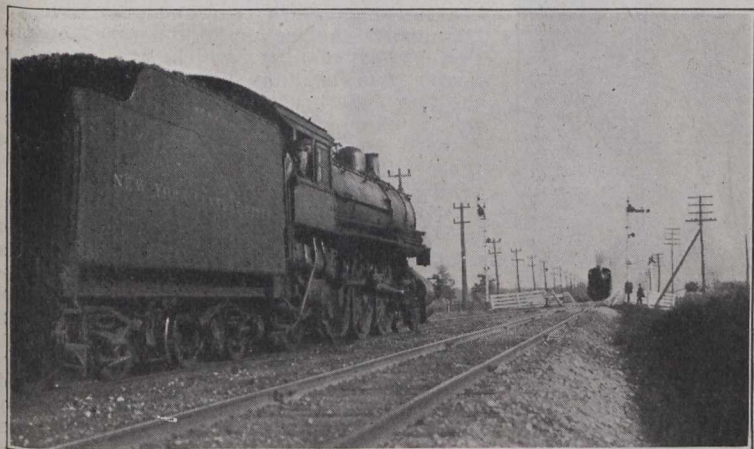
line, as one train can follow another as soon as the first train passes the first signal in advance, which is accomplished in considerably less time than the prescribed time interval of the telegraph block. 4. The signals afford maximum protection at meeting and passing points, serving as a check on dispatchers' orders, also as a reminder to trainmen at scheduled meeting and passing points. 5. The signals more than double the safety factor in connection with flagging, as an approaching train would, in most cases, meet a caution or

Reclamation of Hose Couplings.

By E. J. McVeigh, General Storekeeper, Grand Trunk Railway.

We are all interested as never before in the reclamation question, and while the ground has been pretty well covered lately, there is always room for something more, if it is to the point, and there is one small item that I would like to call attention to.

I presume every road on this continent has a hospital track on which stands locomotives waiting repairs. Some of these machines will never go through the shop,



Absolute-Permissive Block System, Toronto, Hamilton and Buffalo Railway.

stop indication before the flagman could go out far enough to insure adequate protection. 6. Owing to the high degree of protection which the automatic signals afford, "19" orders may be used in many cases where "31" orders would otherwise be used. These features and others combine to accomplish the desired end—safe and economical operation.

"Gasol," a semi-natural gas, is being introduced as a substitute for acetylene and hydrogen for autogenous welding. It is ob-

and many of them will not be taken in for a considerable time.

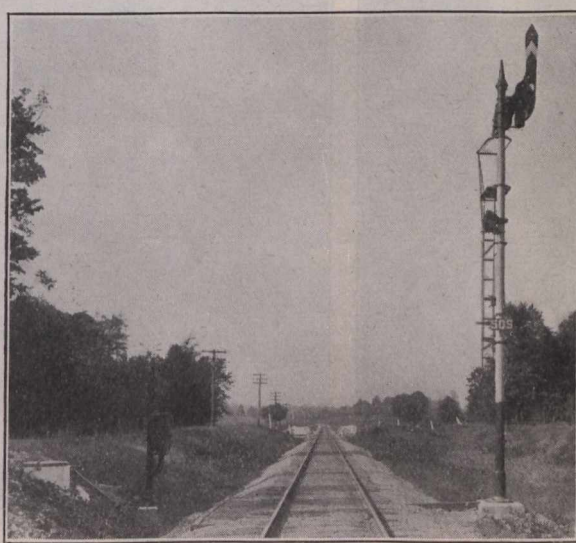
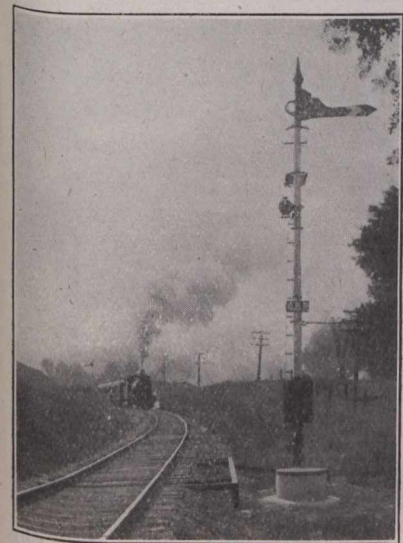
I have for years been particularly interested in the care of steam heat hose and couplings, and a few days ago, while walking along the hospital track at a certain railway shop, I counted the number of steam heat and air hose that were still attached to a line of disabled locomotives. Counting them all as good useable parts, there was in that line \$80 worth of material that was rapidly going to waste.

Now, no matter what the condition of these parts when the locomotives go into the shop, they are removed, and may or may not be properly reclaimed. But one thing we can be sure of that they will not be re-applied to that locomotive when it comes out.

Supposing that all of these hose and couplings were in good order when the locomotives were placed on a repair siding, as they would very likely be. If they had been removed at that time, and it would only take a few minutes to do this, they could have been at once put into service and the purchase of new ones saved. But granting that the rubber was of an age that would make it advisable to remove it, you still have the couplings and nipples to put into service, and if these are left on the locomotive, a fair proportion of them will be so damaged that they can never be put in use again.

What I have said here about locomotives applies also to a greater or less extent to cars, and while this may be comparatively a small thing, I consider it is worth while, and if there are any who have not given this attention, I would suggest that they take the first opportunity of examining their hospital tracks to see what they find. If we cannot save \$100 every day, that is no good reason why we should not make the effort to save \$10.—Railway Storekeeper.

The elimination of dense black smoke by locomotives requires the supplying of sufficient air to the fire, the thorough mixing of the air and combustible gases and the maintenance in the firebox of a temperature that will cause the combustible gases and oxygen of the air to unite.



Absolute-Permissive Block System, Toronto, Hamilton and Buffalo Railway.

obtained by the automatic signals, which may be briefly summarized as follows: 1. Under proper observance of the indications, the signals provide for opposing as well as following movements, a definite space interval which practically eliminates the liability of collisions. 2. Misplaced switches, broken rails, or any breaks in the continuity of the track cause the display of a stop indication at the signal governing entrance to the block, and thus greatly reduces the liability of derailments. 3. The signals increase the traffic capacity of the

tained from the waste gas from oil wells, and is said to cost only 0.1 ct. per cu. ft., a material reduction on the other gases.

What is said to be a record in loading rails was accomplished recently by the Lehigh Valley Rd., when 171,988 ft. of 90-lb. relaying rail was loaded from alongside the main line in a day by the use of a locomotive crane and ditching machine. This amount of work equals over 2,300 tons, or over 16 track miles.

Interlocked milling cutters are said to give better results than plain cutters.

Railway Mechanical Methods and Devices.

Tool in Intercolonial Railway Shops.

By F. Carroll, Foreman Blacksmith, Frog and Switch Shop.

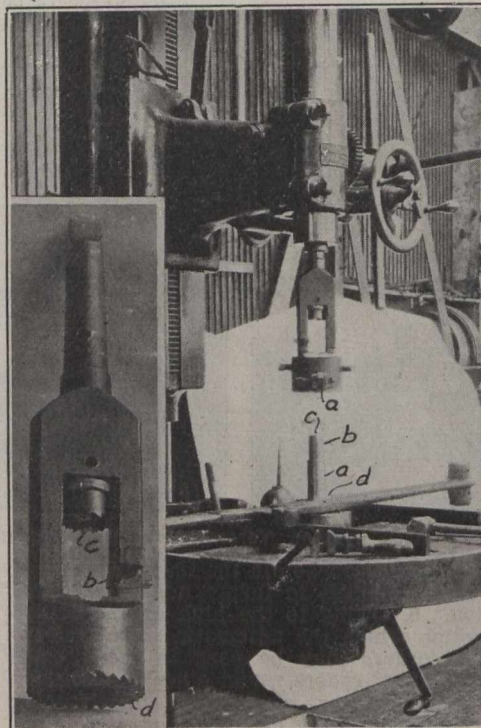
The accompanying illustration shows a tool used in a drill press, to turn and mill the cast steel journals of the walking beams of hand cars, in the Intercolonial Ry. frog and switch shop, Moncton, N.B. The cutter at a turns off the journal of the walking beam at a. Cutter b, shown in the inset, turns off the journal at b. Milling cutter c in the inset mills off the end of journal at c to make it the right length. In the inset the ring that holds the cutter a has been removed to show the milling cutter d, which faces off the beam at the shoulder of journal at d. This is all done at one operation. The beam is then turned over, and the journals first machined are placed in a jig, which fits the centre hole of the drill press, thereby properly aligning. The journals on this side are then machined in the same manner as described. This tool has proved a very efficient one.

Making High Speed Twist Drills in Michigan Central Railroad Shops.

The high speed twist drills used in the M. C. R.'s shops at St. Thomas, Ont., are made in the shop tool room there. The equipment for making the drills is shown in the accompanying illustration, which also shows a drill blank, twisted drill blank and a completed drill.

The base casting a, which is shown tilted back on a side, is bored out through the top to receive the shell b, which is bored out with a wall about $\frac{1}{4}$ in. thick. A number of sleeves of an inside diameter slightly greater than that of the finished drill are

the shell b grips the upper end of the blank. A wrench applied to the upper end is given $1\frac{1}{2}$ turns, causing the drill blank to twist the required amount, the inner sleeve c guiding the blank while twisting, so that it is perfectly concentric when removed after

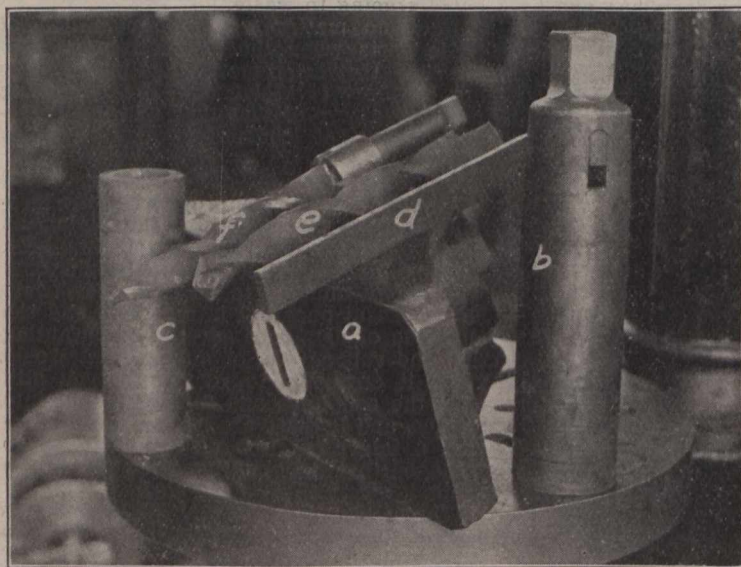


Tool for Finishing Hand Car Walking Beam Journals in the Drill.

Making Superheater Tube Nesting Clips in Stratford Shops, G. T. R.

The sets of four superheater tubes in each of the superheater flues of a locomotive are held together both front and rear by three piece nesting clips, assuming the form shown to the right in fig. 1. The lower member of the three pieces is of heavier sheet stock than the other two, as it supports the weight of the tubes on the two bottom flanges, which in the superheater flue bear at two points, centring the four superheater tubes in the flue. The G.T.R. shops at Stratford, Ont., have developed an interesting process of making these clip components, and drilling and assembling them on the tubes.

All three clips are made in an air operated bulldozer, the stationary and movable elements of which are shown in fig. 2. This view also shows the dies in the act of forming the top or straddling part of the clip, the part before and after forming being shown at a and b. To the stop rest c, there is secured a channel casting d, between the walls of which there are pivoted two bell crank arms, normally kept open by springs f. At the outer ends of the arms, there are sheet metal clips, which when the arms are wide open, are just of the correct width to take in the pressing blank a, centring it in line with the male element of the punch, g, which is attached to the ram of the machine. The short inner arms of the bell cranks e, when swung in as far as they go, just meet. The punch g, as it travels forward carries in the centre of the blank until the latter strikes the inner arms of the bell cranks e, when the outer arms of the latter commence to fold in, pressing the blank around the formed die g, the in-



Tools for Making High Speed Steel Twist Drills.

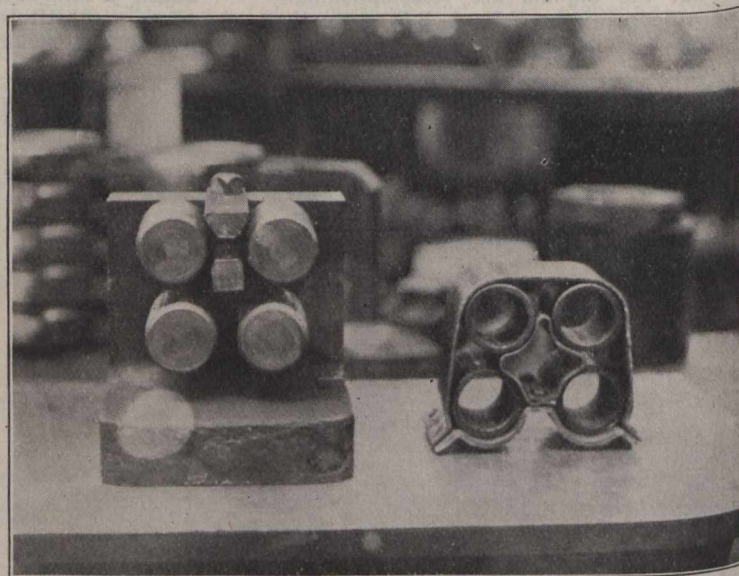


Fig. 1.—Jig for Drilling Superheater Tube Clips, With an Assembled Clip.

made to slip into the shell. One of these sleeves is shown at c. The upper end of the shell b is squared, to take a wrench.

The operation is shown by following blank d through the process of twisting. It is first of all heated to the correct working heat for high speed steel. Then it is slipped into the central hole of the base casting a, fitting into the slot in the base, which is shown whitened in the illustration. Over top of it is slipped the shell b, inside of which there is the sleeve c, the inner diameter of which is the same as the width of the drill blank. The cross slot in

the twisting. This leaves the blank as at e.

A special soft steel shank is used for the high speed steel drills made in this manner, and which is shown at f. The upper end of the drill is turned down slightly, fitting up into a hole in the body of the shank. A slot across the lower face of the shank fits over the upper end of the full size of the drill, and transmits the power from the shank to the drill body.

In factory boiler firing it has been shown conclusively that 25% of the coal bill depends on the skill of the fireman.

ner faces of the arms e corresponding in shape. The part comes out as at b. A row of the finished parts is shown in the right background.

The dies for making the base or lower part of the clip are shown to the left in fig. 3. The female part of the die a, is secured to the stationary head of the bulldozer, and the male part b, to the ram. The blank from which the part is made is the same width as the die part a, against which it is placed, the punch b on its stroke forcing the blank to the shape of the die contour.

The forming of the centre or separating

section of the clip is the most intricate part of the operation, requiring three strokes of the punch, forming the part around a central die of the inner shape of this part. The dies used for this operation are double, parts c and d, on a base e, being stationary on the punch. The movable parts f and g are secured to the ram head. The middle

they were drilled from marks. A slight error in laying out would result in either the holes not mating, or else a loose fit. A good tight fit in the completed set is most essential. The parts are secured together with small screws, the several parts being held together during the assembly by a special clamp.

throwing the lathe jig in which they were held to be turned 1-16 in. out of centre in a plane at right angles to the faces of the tools, first in one direction and then in the other. Made in this way, the life of the cutters was quite satisfactory. One of the side cutters is 5-32 in. wider than the other, and referring to the cross-sectional view of

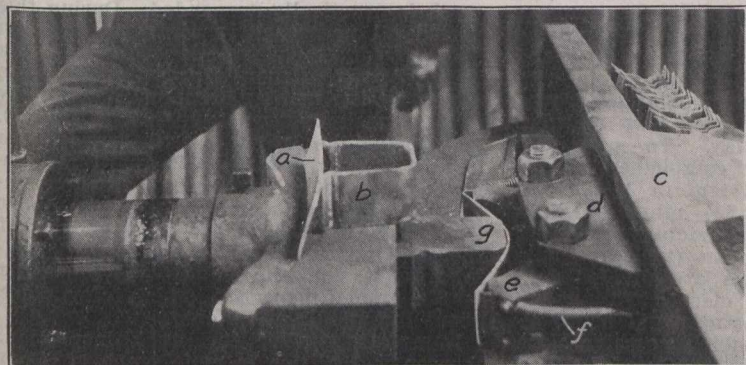


Fig. 2.—Forming Straddle Member of Superheater Tube Clips.

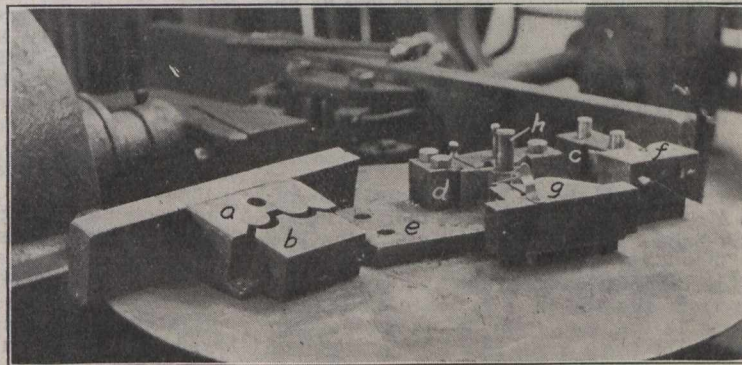


Fig. 3.—Dies for Forming Inner and Bottom Members of Superheater Tube Clips.

fold of the part is formed between dies c and f, which take the blank and form the centre fold and upper two quadrants, leaving the ends of the blank parallel and projecting along the side of die c. The part thus formed is placed around die h, which is of the inside size of the finished member. The faces of dies d and g correspond to that of the partially finished part, which is slipped in place around the centre die h as shown. The right half of die d is not secured to the base e, but is located on it by guide pins, which permit of its motion within short bounds in line with the path of the ram. Behind this part, there is a hinged block, about 1/2 in. thick. Similarly, at right angles to it in die g, there is another hinged block set into the die under the spring clip shown. This hinged block is swung up for the first operation, the near arm of the blank being folded down along the side of die h. Lowering the hinge in g and raising that in d for the second pass,

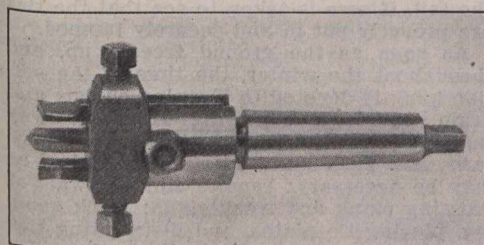


Fig. 1.—Special Boring Tool for Removing Staybolts.

causes the other arm of the blank to be folded down over the first one, completing the forming operation.

The several holes in the three parts are then drilled in the jig on the left in fig. 1, the four pins in which represent the four superheater tubes. The inner member of the clip is lipped in between the four pins, and the two holes drilled through the drill holes in the upper central pin, the lower central pin taking the drill thrust. The central holes of the lower part of the clip are drilled by placing the part on the upper round pins, with the centre under the central drill block. The end holes in both the bottom and straddling sections of the clip are drilled by slipping in between the upper and lower round pins on either side, with the end bearing on the lower squared pin, holding the part against one of the round pins to locate. This jig was first made to overcome the trouble experienced early with the drilling of these clips when

Staybolt Boring Tool.

The tool described in this article was designed by the writer to rapidly bore out old staybolts from locomotive boilers. The need for a tool of this kind was due to the fact that we were replacing the old-style bolts by the improved flexible type with which most locomotive shop men are familiar. The boring tool is driven by an air motor and the size of the holes bored

the boiler plates, fig. 2, it will be seen that the smaller cutter works 1-16 in. in advance of its fellow. The purpose of this is to overcome the tendency of the chips to crowd at the point of the tool and fracture it. This boring tool gave very satisfactory results, producing clean-cut holes of exactly the required size; and its cutting capacity may be judged from the fact that chips up to 38 ins. long were produced.—W. Hall, Fort William, Ont., in Machinery, N. Y.

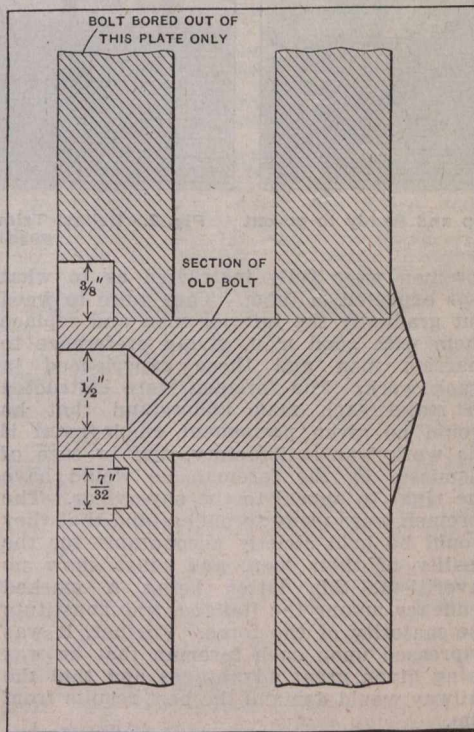


Fig. 2.—Section Through Boiler Plates, Showing Section Removed by Each Cutter.

is 1 5/8 in. diam. Men who have had experience boring out staybolts with a twist drill used in connection with a ratchet and "old man," will readily understand the value of a tool of the form illustrated. An attempt was made to bore the holes with an ordinary twist drill driven by an air motor, but the result was unsatisfactory.

The cutters were made of Novo steel, which was annealed to provide for turning them to the required size, after which they were alternately backed off on the inside and outside to afford the required clearance. This backing off was performed by

Machinery Protection in the Grand Trunk Railway Shops at London.

The safety first policy on the G. T. R. has been extended very rapidly throughout the system, all conditions that tend towards unsafe practices being investigated from time to time, and remedies applied as required to eliminate or reduce the risks. In no place has the campaign been more successful than in the shops, as the conditions that there exist are naturally more amenable to improvement than on the road, as the conditions to be contended with are more or less constant factors.

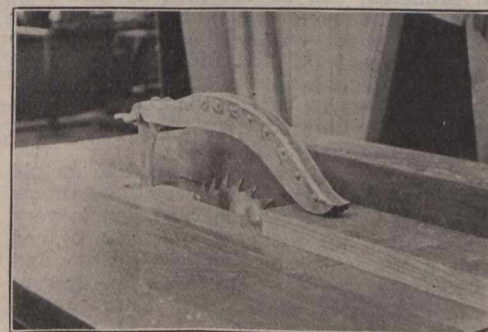


Fig. 2.—Saw Guard with Adjustable Hood.

A number of the machines in the G. T. R. car shops, at London, Ont., have been studied and safeguards for each separate condition recommended. These are ingenious for the most part for their simplicity, requiring no complications that are liable to reduce the effectiveness of the device by making it easier to perform the operation without the guard than with it. The saw guard shown herewith is of the simple type in use on most of the machines. It will be noticed at a glance that while the device should prove most effective, it offers no inconveniences to the operator that are at all commensurate with its value as a guard.

It will be observed that it consists of a hood, shaped to fit over the saw, and made of three pieces of sheet iron rivetted together. It is supported at the back on a hinged connection from the table, in line with the saw, the support being a thin member, lighter in thickness than the saw, and fits in the saw cut in the board, so that the board does not interfere. It can be adjusted by a thumb screw for any thickness of wood to be cut.

Ballast Trimmer for Intercolonial Railway.

The work of the ballast trimmer is to follow the ballast train, or in other words, as the ballast train is at work along the line it leaves the ballast in heaps and this has to be trimmed down to the standard, which is from the top of the tie to bottom of slope 18 ins., and from bottom of slope to centre of track 8 ft., making the standard for the main line 16 ft. overall. This is where the trimmer is of advantage and with one cut it will leave the slope with the exact contour of the standard road ballast template, which has a radius of 6 ft. 10¼ ins., and also bring the ballast up to within 1 in. of the top of the sleeper. The ballast trimmer can either be pushed or hauled by a locomotive, as it is fitted with two

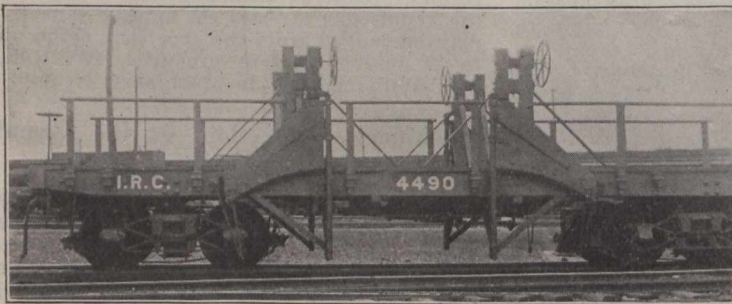


Fig 1. Ballast Trimmer with Knives Fastened up and Ready to go out on Line.

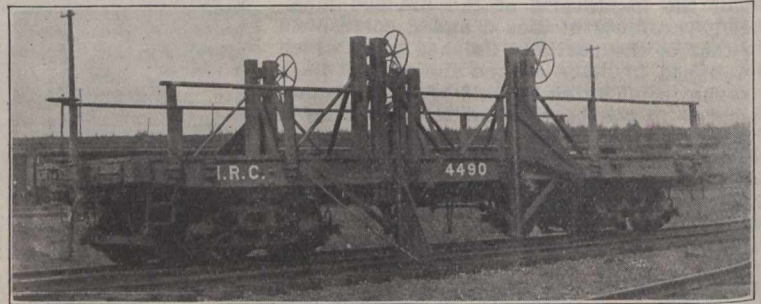


Fig 2. Ballast Trimmer with Knives Dropped down but not in working position as the trimmer was in the yard.

knives that will cut each way at the rate of 7 miles an hour.

The ballast trimmer illustrated herewith, which has been built at the I.R.C. shops at Moncton, can be operated by two men without any trouble, as the only time the knives have to be raised is when coming to railway crossings, etc., and the knives are hung so that when raised they will always swing in towards the car, and just as soon as they are lowered they cut right out to their proper place.

The ballast trimmer is applied to an old 20 ton flat car, which is obsolete as far as main line service is concerned, but is very easily fitted up with two uprights braced with a vertical shaft secured at top and bottom for the knife to work on and to raise and lower same. The knife can be raised and lowered by means of a chain from a pulley on uprights with shaft, pawl, pawl weight and brake wheel, which works on the same principle as applying the brake on a car.

After the first trial trip it was discovered that we would have to have additional weight on the knife when in operation, as it would not stay down in place when it struck a heavy cut of ballast. This was done by riveting two pieces of angle iron with a filler between and held in place with two brackets, one fastened on intermediate sill and other fastened on side sill, and a double coil spring placed on top of angle irons which takes a pressure of 1,000 lbs. to compress spring 1 in. This is worked by a lever on top of car deck and is applied when knife is in operation.

The employment of a permanent force for track maintenance work is an exceptional feature of the Long Island Railroad's maintenance of way department. In the early part of 1913, when there was a great demand for labor, contractors and others whose work was pressing in the summer were paying \$2 per 8-hr. day. The railway was paying only \$1.50 per 10-hr. day, and consequently got labor mainly of inferior quality. Many of the men obtained proved incompetent, and such good men as were obtained would not stay. To meet this condition, the railway established a permanent track force system in May, 1913. The sections average 5½ miles of main track and 4¼ miles of sidings, with an average force of five men (including subforemen). The sections are divided into five classes, the first class covering important terminals and yards and being allowed eight men. In each successive class the number is reduced by one man, the fifth class having only four men. Under this plan the force averages 15% less than under the old system. Rates were increased to 17½c. an hour for laborers and 18c. for subforemen (allowed on about 70% of the sections), while a material increase was made in the wages of the foremen.

Before putting the plan into effect, the

emergency cases, and in such cases it must be promptly oiled by the section gangs, which are provided with oil and hand sprinklers for this purpose.

Throughout the three summer months, while traffic is heavy, work on the main track is practically suspended. During this period all necessary repairs are made on side tracks (including tie renewals), the right of way is mowed for the first time (the state law making it compulsory to mow twice a year, between June 20 and July 10, and during the latter part of August), the necessary frog, switch and guard rail renewals are made, and switch timbers installed. The period from Sept. 1 to about Oct. 15 is devoted to the improvement of the line and surface of main track, cleaning ditches, trimming ballast and preparing for the annual inspection, which takes place about the middle of October.

Immediately after the track inspection, the renewal of ties in main track is taken up and prosecuted vigorously until stopped by unfavorable weather. The renewal of ties in the autumn is a necessity to avoid heavy work in the spring. Experience has proved that where there is a sufficient quantity of clean ballast and the subsoil is of a nature that does not readily retain moisture, this work can be done safely in

foremen were fully instructed as to what was expected of them. They were to weed out gradually the inferior men and replace them with good men, giving preference to married men and those experienced in track work. The foremen were instructed to make each man understand that he would be given permanent employment if his work was satisfactory, and in case of dismissal by the foreman he would have the right to appeal to the supervisor. The foremen were made to understand that they would be held strictly accountable for the quality of their men, and must show no favoritism, this latter being a marked tendency among the Italians, who constitute the majority of the force. Further, it was impressed upon each foreman that he was being given great advantages and that the railway would demand the best results from him.

The Long Island Rd. has an extremely heavy traffic during June, July and August, averaging about 150,000 passengers daily. The greater part of the line has cinder ballast, with some fine gravel and sand, and only a small amount of stone. For the comfort of the passengers in hot, dry weather, the ballast is coated annually with heavy oil.

As early as practicable in the spring, the force on each section completes the main track tie renewal work left over from the previous year, and then levels up any rough spots. This work must be completed by June 10, at which time the main track roadbed is oiled. After the oiling the roadbed must not be disturbed except in

the fall, if care is taken to see that the ties are properly put in and securely tamped.

As soon as the ground freezes up, and throughout the winter, the time of the section gang is devoted to cleaning culvert and drain openings, repairing right of way fences, renewal of frogs, switches and guard rails, and such minor parts of switches as may be necessary; repairs and renewals of crossing plank and track signs; track gauging, placing tie plates, and distributing ties for spring renewals, practically in the order named. In addition to this, there are the usual snow and ice troubles, together with many incidental jobs that can be taken care of during the winter. It is aimed to have the work advanced so far when the weather moderates that spring work will not be delayed beyond the allotted time, always keeping in mind the limited force. Bolts are tightened, out of face, at the same time the track is surfaced in the spring and fall. Practically all relaying and new track construction is done by extra gangs.

As a result of this system, with the assurance of permanent employment at fair wages, the force has now 95% of the men who were employed at the time of the reorganization. At the inspection last autumn the track was found to be in far better condition than ever before. The conclusion is that the retention of men in service for long periods results in the acquirement of such experience and skill as to promote efficiency, and that there is a consequent reduction in expense. Such men may be classed as skilled labor rather than common labor. At each track inspection the com-

pany gives first and second prizes to the division supervisors, and also to the section foremen on each division. This is well repaid by the quality and quantity of the work done, and the friendly rivalry throughout the entire force, from the laborers upward.

The men are mainly Italians, as noted above, some of whom cannot read or write, while others can read and write Italian only. As these men form the source from which future foremen must be drawn, the railway company has established a free correspondence course in English and simple arithmetic, furnishing pamphlets printed in both languages. After some proficiency

has been obtained, the lessons cover track work, the safety first subject, and suggestions as to good citizenship, naturalization, etc. For the most illiterate, it is proposed to organize a class that can be assembled for personal instruction one or two nights a week, until the men are competent to take up the regular course. This educational system has been taken up eagerly by the men, and induces them to stay with the railway rather than go where no such advantages are offered.

The foregoing is based on information from Coleman King, Supervisor, Long Island Rd.

Orders by Board of Railway Commissioners for Canada.

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

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

23678. May 12.—Authorizing Toronto Civic Ry. and G.T.R. to operate over crossing on Danforth Ave., Toronto, the former without first stopping cars, signals to be set normally clear for T.C.R. and at stop for G.T.R.; half interlocking plant to be operated by G.T.R. train crew when operating cars on siding, as required by order 21422, Feb. 26, 1914.

23679. May 14.—Relieving C.P.R. from providing further protection at crossing of Metcalfe Road (Bank St.), mileage 1.26 from Ottawa, at junction of Gloucester and Gore Tps., Ont., speed of trains limited to 10 miles an hour.

23680. May 15.—Amending order 5228, Aug. 27, 1908, re Saskatchewan Government highway crossing of C.P.R. near Qu'Appelle Station.

23681. May 14.—Dismissing Steel Co. of Canada's complaint against switching rates charged by Toronto, Hamilton & Buffalo Ry. at its Hamilton Terminals, under Tariff C.R.C. 858, as amended by Supplement 4, effective May 5, 1913.

23682. May 14.—Authorizing Canadian Northern Ry. to open for traffic its North Battleford northwesterly line from Edam to Turtleford, Sask., mileage 38 to 57, speed of trains limited to 15 miles an hour.

23683. May 12.—Approving C.P.R. plans X-5-71 and X-5-72 showing arrangement of navigation lights on swing bridge over Lachine Canal, Farnham Subdivision, Que.

23684. May 14.—Authorizing G.T. Pacific Branch Lines Co. pending further order, to remove regular agent at Griffin station, Sask., caretaker to be appointed.

23685. May 14.—Authorizing C.N. Alberta Ry. to build across Government road allowance between n.w. 1-4 Sec. 18-54-4, and n.e. 1-4 Sec. 13-54-5, w. 5 m., Darwall, Alta.

23686. May 15.—Rescinding order 23482, Apr. 6, upon coming into effect of Canadian Northern Ry. service between Hawkesbury and Ottawa.

23687. May 14.—Ordering G.T. Pacific Ry. to replace apparatus required for safe operation of interlocking plant at crossing of Canadian Northern Ry. by spur to Union Stock Yards, St. Boniface, Man., so that same shall conform with plan approved by Board's engineer under order 16930.

23688, 23689. May 4.—Ordering Great North Western Telegraph Co. to raise its wires at crossings of London & Port Stanley Ry. at Bridge St. and at Lot 3, Con. 7, of Yarmouth Tp., Ont.; work to be done at expense of L. & P.S.R.

23690. May 17.—Ordering C.P.R. to build transfer track to connect with Canadian Northern Ry. at Trenton, Ont.; to be installed within 30 days from date, cost of work and maintenance to be paid by C.P.R.

23691, 23692. May 14.—Approving Bell Telephone Co.'s agreements with Lennox Telephone Co., Apr. 26, and Mount Albert Telephone Co., Ltd., Apr. 29.

23693. May 14.—Authorizing C.N. Alberta Ry. to extend siding across road in s.e. 1-4 Sec. 32-54-1, w. 5 m.

23694. May 15.—Extending to Aug. 1 time within which G.T.R. shall complete highway in Tay Tp., Ont., as required by order 22344, Aug. 5, 1914.

23695. May 17.—Authorizing G.T.R. to take certain additional lands in Callander, Ont., to widen Main St., and rescinding order 22990, Dec. 16, 1914.

23696. May 17.—Relieving C.P.R. from speed limitation of 15 miles an hour over its line between Sheho, mileage 42.2, and Leslie, mileage 66.8, Sask.

23697. May 17.—Rescinding order 23227, Feb. 1, re stopping of G.T.R. train No. 1 at Kerwood, Ont.

23698. May 17.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur for Bird & Son, Hamilton Ont.

23699. May 17.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to build across certain highways between mileage 305 and 331.77, Alberta.

23700, 23701. May 12.—Relieving Midland Ry. of Manitoba (G.N.R.) and C.P.R. from maintaining night signalman at Elm Creek and Plum Coulee, Man.

23702. May 12.—Relieving Brandon, Saskatchewan & Hudson Bay Ry. (G.N.R.) and C.P.R. from maintaining night signalman near Carroll, Man.

23703. May 12.—Relieving Midland Ry. of Manitoba (G.N.R.) and C.P.R. from maintaining night signalman at Morden, Man.

23704. May 12.—Relieving Brandon, Saskatchewan and Hudson Bay Ry. (G.N.R.) and C.P.R. from maintaining night signalman at Boissevain, Man.

23705. May 18.—Authorizing Toronto, Hamilton & Buffalo Ry. and G.T.R. to build spur for Dominion Sheet Metal Co., Hamilton, Ont.

23706. May 17.—Authorizing London Railway Commission to move north deraul on London & Port Stanley Ry. main line at St. Thomas, 200 ft. from Michigan Central Rd. north track.

23707. May 18.—Authorizing G.T.R. to build siding and spurs for Hamilton Bridge Works Co., Hamilton, Ont.

23708.—May 20.—Suspending, until further order, the following tariffs: C.P.R., C.R.C. No. E-2999; G.T.R., C.R.C. No. E-3157; G.T.R., C.R. C. No. P-115; C.N.R., C.R.C. No. E-641; and O. & N.Y.R., C.R.C. No. 1103.

23709 to 23711. May 19.—Approving Glengarry & Stormont Ry. (C.P.R.) Standard Freight Tariff, C.R.C.; Standard Passenger Tariff, C.R. C. 1, applying rate of 3c a mile; and approving its bylaw re preparing and issuing tariffs of tolls.

23712. May 20.—Authorizing C.P.R. to build branch connecting its lines near Sharbot Lake station, Lot 11, Con. 1, Oso Tp.

23713. May 20.—Authorizing C.P.R. to build extension to siding for Christie, Henderson & Co., in Lot 4, Con. 5, and Lot 4, Con. 6, Nassa-gaweya Tp., Ont.

23714. May 19.—Ordering C.P.R. to fill in depression near Goodfellow Brothers' property at Tichborne, Ont.; work to be done by June 15.

23715. May 20.—Authorizing C.P.R. to take certain lands for diverting a highway in Bethany, Ont.

23716. May 19.—Authorizing Glengarry & Stormont Ry. (C.P.R.) to open for traffic portion of its line from St. Polycarpe Jct., to Cornwall, Ont., 27.5 miles.

23717. May 19.—Relieving Canadian Northern Ry. from providing further protection at crossing of first public highway west of Rideau Canal, at Smiths Falls, Ont.

23718. May 19.—Amending order 23625, Apr. 29, re operation of C.P.R. Arborg Subdivision, Man., mileage 46.5 to 47.7.

23719. May 19.—Amending order 23496, Apr. 9, re C.P.R. clearances at mileage 68.4, Port McNicoll Subdivision, Ont.

23720. May 19.—Approving G.T.R. clearances, for six months from date at Canada Forge Co.'s sidings, Welland, Ont.

23721. May 19.—Amending order 23569, Apr. 16, re C.P.R. clearance at mileage 100.10, Ottawa Subdivision, Ont.

23722. May 19.—Ordering Edmonton, Dunvegan & British Columbia Ry. to remove its locomotive No. 3 from service until it is put in a proper condition for safe operation, to satisfaction of an inspector of the Board.

23723. May 19.—Ordering Pere Marquette Rd. to raise the station and signal at Kingsville; put in new telegraph signal at West Lorne, placed higher than present one; raise present signals on buildings at Dutton, Rodney and Blenheim; put in new high signal on

opposite side of track from depot at Ridge-town; new high telegraph signal at Wallaceburg, Ont.; and paint highway crossing signs; work to be completed by July 31.

23724. May 20.—Authorizing Canadian Northern Ry. until further order to build and use level crossing over public road between Cons. B and 2, Westmeath Tp., Ont.

23725, 23726. May 20.—Rescinding orders 21913 and 21931, May 29, 1914, on condition that C.P.R. shall install, within 60 days from date, improved automatic bell at crossing of Hurontario St., Toronto Tp., Ont., 20 per cent. of cost to be paid out of the railway grade crossing fund.

23727. May 22.—Authorizing Lake Erie & Northern Ry. to operate for six months from date over crossing of Toronto, Hamilton & Buffalo Ry. in Brantford, Ont.; crossing to be protected by watchman appointed by T.H. & B.R. and paid by L.E. & N.R.

23728. May 20.—Relieving Campbellford, Lake Ontario and Western Ry. (C.P.R.) pending further order, from installing interlocking plant at crossing of G.T.R. on Pinnacle St., Belleville, Ont.; and authorizing it to continue present protection by semaphores.

23729. May 21.—Approving location of Peace River Tramway and Navigation Co.'s line at Peace River Chutes, for 5 miles along north bank of river, and from Smith Landing to Fort Smith, 15 miles, Alberta.

23730. May 20.—Authorizing Vancouver, Victoria and Eastern Ry. and Nav. Co. (G.N.R.) to join its tracks with Kettle Valley Ry. at Brookmere, B.C.; and to build highway crossing over its tracks for obtaining access to its depot, at Fourth Ave., Brookmere, B.C.

23731. May 21.—Rescinding order 13917, June 10, 1911, re crossing of Montreal Terminal Ry. and C.N. Quebec Ry. by St. Cyr Ave, Montreal East.

23732. May 22.—Rescinding order 22760, Oct. 26, 1914, and ordering that crossing of Kingston Road by C.N. Ontario Ry. and Campbellford, Lake Ontario and Western Ry. (C.P.R.) be protected by day and night watchmen; wages to be paid half by C.N.O.R. and half by C.L.O. & W. Ry.

23733. May 22.—Ordering C.P.R. to build emergency crossing for flood times at bridge 6.3, Teeswater Subdivision, Amaranth Tp., Ont., crossing to have grade of 1 in 20, work to be completed by Oct. 1.

23734. May 20.—Ordering C.P.R., within 60 days, to install bell at crossing of St. Lawrence St., Winchester, Ont.; 20% of cost to be paid out of railway grade crossing fund; cut-out and bonding to be in front of platform, on eastbound track.

23735. May 21.—Relieving C.P.R. from speed limit of 15 miles an hour between Weyburn and Stoughton, Sask.

23736. May 25.—Approving G.T.R. plan, Oct. 7, 1914, showing position of gates installed at Wellington St., London, Ont.

23737. May 25.—Approving revised location Kootenay Central Ry. (C.P.R.), from Lot 3947 to Lot 272, East Kootenay District, B.C., mileage 100.89 to 101.4.

23738. May 25.—Amending order 23657, May 4, re Ottawa and New York Ry. and C.P.R. service at Finch, Ont.

23739. May 25.—Authorizing J. W. Warner, Hinton, Alta., to build irrigation ditch under G.T. Pacific Ry. trestle at Hardisty Creek, Alta.

23740. May 26.—Authorizing C.P.R. to build crossing over its line to station at Okanagan Landing, B.C.

23741. May 21.—Approving plans and specifications of Malahide Tp., Ont., showing work to be done on Teeple Drain where it crosses G.T.R. between Lots 15 and 16.

23742. May 25.—Authorizing G.T.R. to use bridge 10, mileage 8.72, between Cons. 7 and 8, North Dumfries Tp., Ont.

23743. May 26.—Authorizing Vancouver, Victoria and Eastern Ry. and Nav. Co. (G.N.R.) to join its tracks with C.P.R. near Granby Smelter, B.C.

23744. May 26.—Amending order 23505, Apr. 8, re City of Toronto's subway under G.T.R. at Wilton Ave.

23745. May 28.—Authorizing G. M. Macdonnell, Kingston, Ont., to work his mica mine in north half, Lot 8, Con. 14, Storrington Tp., Ont.

23746. May 26.—Approving plans and specifications of Teeple drain, to be built under Michigan Central Rd. on Lot 8, Con. 9, Malahide Tp., Ont.

23747. May 26.—Approving plan and specifications of Malahide Tp., Ont., of Argyle drain, to be built under Michigan Central Rd.

23748. May 27.—Authorizing municipalities of South Crosby and Bastard Tps., Ont., to build highway crossings over C.N. Ontario Ry. and Brockville, Westport and Northwestern Ry., near Brockville Jct.

23749. May 26.—Authorizing G.T.R. to build extension of siding for Canadian Explosives, Ltd., on Lot 4, Con. 1, Chambly West Parish, Que.

23750. May 25.—Ordering Canadian Northern Ry. forthwith to file with Board, plan and profile of its line where it crosses highway between lots 15 and 16, Nerburg Tp., and within

30 days after approval, build highway as approved.

23751. May 25.—Dismissing Winnipeg Sandstone Brick Co.'s application for approval of spur across Pembina St., Winnipeg, from Canadian Northern Ry. siding to opposite side of Pembina St.

23752. May 28.—Authorizing London Railway Commission to build track on north side Bathurst St., between Wellington and Richmond Sts., London, Ont.; pending further action on part of city and landowners affected, no disposition is made of applications for authority to build tracks on Bathurst St., from Richmond St. west to Thames St., and near Burwell St. east to Adelaide St.

23753. May 27.—Authorizing London Railway Commission to occupy certain G.T.R. land in London, Ont., and to build track and erect poles, etc., along Bathurst St. between present track at Burwell St., to connect with property to be taken at Wellington St.; and dismissing application for order requiring G.T.R. to rearrange its tracks on and adjacent to Bathurst St.; and authorizing the Commission to use Michigan Central Rd. track.

23754. May 28.—Authorizing Hydro Electric Power Commission of Ontario to erect wires across C.P.R. on Wellington St. East, Chatham, Ont.

23755. May 29.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) and C.N. Ontario Ry. to operate trains over crossings at mileage 1.05 and 0.55 of business spur in Trenton, Ont., without first stopping.

23756, 23757. May 29.—Authorizing C.P.R. to use bridges 18.9, Elora Subdivision, and 21.8, Orangeville Subdivision, Ont.

23758. May 28.—Approving agreement between Bell Telephone Co. and Innisfil Telephone Co., May 14.

23759. May 28.—Allowing corrections of omissions, misstatements and errors made in plan, profile and book of reference of Erie & Ontario Ry. (T.H. & B.R.) of its located line from station 726 to 771-58, Dunnville, Ont.

23760. May 29.—Ordering C.P.R. to fence right of way through Tp. 12, r. 9, e. 1 m., Lac du Bonnet Branch, Man., with all dispatch.

23761. May 28.—Authorizing C.P.R. to build spur for Simington Co., Calgary, Alta.

23762. May 28.—Approving plans and specifications of Dunwich Tp., Ont., of drain to be built under Canada Southern Ry. (M.C.R.)

23763. May 29.—Authorizing C.P.R. to use bridge 18.1, Orangeville Subdivision, Ont.

23764. May 27.—Ordering Canadian Northern Ry. to erect fences on each side of its right of way through n.e. ¼ Sec. 15-53-7, w. 3 m. on Shellbrook-Big River Branch; to be completed within 60 days.

23765. May 27.—Ordering Canadian Northern Ry. to appoint agent at Sibbald, Alta., by Sept. 1.

23766. May 28.—Authorizing G.T.R. to build siding for Wood Milling Co., Hamilton, Ont., compensation to be made for any damages. J. P. McLeod, Assessment Commissioner, appointed as sole arbitrator.

23767. May 28.—Authorizing G. T. Pacific Ry. to build Shand Ave., across its line, in Edmonton, Alta.

23768. May 28.—Dismissing City of Edmonton's application for order to carry Stephen (106th) Ave. over Canadian Northern Ry. and Edmonton, Yukon and Pacific Ry. at or near the intersection of 124th St., formerly Edward St.

23769. May 27.—Ordering Canadian Northern Ry. to erect fences on each side of right of way between Canwood and Polworth, Sask., to be completed within 60 days.

23770. May 31.—Authorizing Vancouver, Victoria and Eastern Ry. and Navigation Co. (G.N.R.) to open for traffic its line from Coalmont to Brookmere, B.C., mileage 214 to 240.5, to a junction with Kettle Valley Ry.

23771. May 29.—Authorizing Kettle Valley Ry. to open for traffic its line from Coldwater Jct. to Coquihalla Summit, B.C., 14.2 miles; from Otter Creek Summit (Brookmere) to Merritt, to a junction with C.P.R., 29.2 miles; from Midway to Pentiction, 135.2 miles; and from Pentiction to Princeton, mileage 0 to mileage 70.3, to a junction with V. V. and E. Ry. and Nav. Co.'s line; speed of trains from Midway to Pentiction and from Pentiction to Princeton, mileage 84 to 89, and 60 to 70.3, limited to 15 miles an hour.

23772. May 26.—Ordering C.P.R. to build grade farm crossing for W. G. Budd, Rapid City, Man., by July 1.

23773. June 1.—Ordering New York Central Rd. and C.P.R. to stop certain trains at Adirondack Jct. and Highlands, Que.; and rescinding orders 22875 and 22876, Nov. 19, 1914, in that connection.

23774. May 29.—Authorizing C.P.R. to use bridge 3.7, Wingham subdivision, Ont.

23775 to 23777. May 29.—Authorizing C.P.R. to use bridges 13.9, Owen Sound Subdivision; 53.0, over Maitland River, Teeswater Branch; and 37.6, over Saugeen River, Walkerton Subdivision, Ont.

23778. June 1.—Authorizing C.P.R. to build spur and extensions to two spurs for Canadian Explosives, Ltd., St. Jeanne de l'Île Perrot Parish, Que.

23779. May 29.—Authorizing Canadian North-

ern Ry. to build spur for Edmonton Stock Yards, Ltd., in Block A, Edmonton, Alta.

23780. May 26.—Ordering C.P.R. to build farm crossing for O. Guilbert, Pointe du Lac Parish, Que.; applicant to pay \$25 towards cost.

23781. May 28.—Authorizing Windsor, Essex, and Lake Shore Rapid Ry. to refund to C. M. Sinclair, Bridgeburg, Ont., difference of 98c. on shipment of household effects from Kingsville to Bridgeburg.

23782, 23783. May 28, 27.—Ordering Canadian Northern Ry. to erect fences on both sides of its right of way from mileage 47 to 65, west of Tolberton, Alta.; also in n. e. ¼ Sec. 21-55-7, w. 3 m., Sask.; to be completed within 60 days.

23784. May 28.—Ordering G. T. Pacific Ry. to fence both sides of right of way between mileage 967 and 985, west of Winnipeg.

23785. May 31.—Authorizing G.T.R. to build siding for West, Taylor, Bickle & Co., Ltd., Norwich, Ont.

23786. May 26.—Authorizing G.T.R. to build extension of branch for Hamilton Powder Co., Beloeil Parish, Que.

23787. May 31.—Authorizing C.P.R. to build spur for H. de Chires, St. Felix de Valois Parish, Que.

23788. June 1.—Approving Toronto, Hamilton and Buffalo Ry. clearances at Dominion Sheet Metal Co.'s premises, Hamilton, Ont.

23789. June 2.—Approving C.P.R. clearances at Imperial Tobacco Co.'s spur, Calgary, Alta.

23790, 23791. June 2.—Authorizing Canadian Northern Ontario Ry. to remove regular agents at Brooklin and Solina, Ont., caretakers to be appointed.

23792. June 2.—Authorizing Toronto Suburban Ry. and G.T.R. to operate over crossing at Acton, Ont., without first stopping.

23793. June 4.—Authorizing Canadian Northern Ry. to open for traffic its line from mileage 30 to Gravelburg, Sask., until Oct. 30; speed of trains limited to 15 miles an hour.

23794. June 5.—Approving revised location, Edmonton, Dunvegan and British Columbia Ry. through Secs. 1 and 12-62-27, w. 4 m.

23795. June 5.—Ordering C.P.R., within 60 days, to install improved type of automatic bell at crossing of highway at Ketepec station, N.B.; 20 per cent. of cost to be paid out of the railway grade crossing fund.

23796. June 7.—Extending, to July 1, time within which C.P.R. shall install bell at crossing at Martinon Station, N.B.

23797. June 7.—Relieving C.P.R. from providing further protection at crossing of highway, mileage 114, Algoma Subdivision, Ont.

23798. June 7.—Rescinding order 22432, Aug. 24, 1914, re C.P.R. spur for E. M. Zentie, Dryden, Ont.

23799. June 7.—Extending, to July 1, time within which C.P.R. shall install bell at main highway between Ketepec and Acamac, N.B.

23800. June 4.—Relieving Erie and Ontario Ry. (T.H. & B.R.) and M.C.R. from maintaining night signalman at crossing near Attercliffe, Ont.

23801. June 7.—Ordering Canadian Northern Ry. to erect, within 30 days a one-pen stock yard at Mitchelton, Sask.

23802 to 23804. June 4, 5.—Authorizing C.N. Ontario Ry. to remove regular agents at Actionite, Camden East, and Ormsby Jct., Ont., caretakers to be appointed.

23805. June 8.—Amending order 23766, May 28, re G.T.R. siding for Wood Milling Co., Hamilton, Ont.

23806. June 8.—Authorizing C.P.R. to build two main line tracks, at grade, across road allowances between mileage 2.01 and 12.28, and one additional track across road allowances between mileages 12.32 and 15.38, Moose Jaw Subdivision, Sask., and rescinding order 19804, July 17, 1913.

23807. June 8.—Authorizing G.T.R. to rebuild bridge on Lot 21, Con. 2, Bosanquet Tp., mileage 136.25, District 15, Stratford Division, Ont.

23808. June 7.—Authorizing C.P.R. to build across Government trail at mileage 59.31 (Red Deer to Rocky Mountain House), in Sec. 14-39-7, w. 5 m., Alta.

23809. June 7.—Authorizing Canadian Northern Ry. to carry traffic over its line between Grand Marais and Birds Hill, Man., 50 miles, until Oct. 30.

23810. June 9.—Dispensing with publication notice of Kettle Valley Ry. application for approval of agreement with Vancouver, Victoria and Eastern Ry. and Nav. Co., and recommending same to Governor in Council for sanction.

23811. June 2.—Dismissing application of City of Vancouver, B.C., for approval of plans of crossing over C.P.R. at Rupert St.

23812. June 1.—Dismissing application of J. W. and Hannah Milsted, Abbotsford, B.C., for order directing Great Northern Ry. to remove obstructions closing road across easterly boundary of Lot 8, subdivision of s.e. ¼ Sec. 22-16, New Westminster District, B.C.

23813. June 2.—Dismissing complaint of Grain Growers' Lumber Co., Vancouver, B.C., that under Note 2 of Sup. no. 45 to C.R.C. no. 1806, C.P.R. exacts higher weight basis on mixed loads of lumber and shingles to points in western Canada than to points in eastern Canada, under C.R.C. no. W. 1615, and Trans-

continental Tariff C.R.C. 1790.

23814. June 1.—Dismissing application of New Westminster, Burnaby and Coquitlam municipalities for order relieving them from further payment of wages of watchman at North Road crossing between New Westminster, Port Moody and Barnett, referred to in order 117 1/2, Sept. 6, 1910.

23815. June 9.—Authorizing Toronto, Hamilton and Buffalo Ry. and G.T.R. to build extension from spur west of Sherman Ave., Hamilton, Ont., to be completed within three months.

23816. June 9.—Authorizing Lake Erie and Northern Ry. to build, at grade, its ballast pit spur across Given Road, Townsend Tp., Ont.

23817. June 9.—Authorizing C.P.R. to rebuild bridge 3.4 on Drummondville Subdivision, Eastern Division, over Chapman Brook.

23818. June 9.—Relieving C.P.R. and C.N. Ontario Ry. from maintaining night signalman at crossing at Central Ontario Jct., Ont.

23819. June 9.—Approving agreement between Bell Telephone Co. and Tuckersmith Tp., Ont., May 31.

23820. June 9.—Authorizing C.P.R. to use bridge over St. Maurice River, District 3, Eastern Division.

23821. June 9.—Ordering G.T.R., within 60 days to install automatic bell at crossing of Parkdale Ave., Ottawa, Ont., 20% of cost to be paid out of railway grade crossing fund.

23822. June 9.—Authorizing C.N. Ontario Ry. to remove agent at Perth Road station, caretaker to be appointed.

23823. June 15.—Ordering that crossing of Ontario St., Cobourg, Ont., be protected by watchman between 7 a.m. and 8 p.m.; wages to be paid, 1-3 by Campbellford, Lake Ontario and Western Ry. (C.P.R.), and balance by G.T.R.

23824. June 10.—Authorizing G.T.R. to build siding for M. & M. A. Deans, east of Sprucedale station, McMurrich Tp., Ont.

23825, 23826. June 12.—Authorizing C.N. Alberta Ry. to build bridges across Miette River, mileage 237.2, and across Snaring River, mileage 223.

23827. June 11.—Authorizing Bell Telephone Co. to erect telephone line on north side of Elizabeth St., between Queen and Manly Sts., Midland, Ont.

23828. June 12.—Authorizing Lachine, Jacques Cartier and Mainsonneuve Ry. (G.T.R.) to build across Faber and Everget Sts., Champlain and Papineau Aves., Hughes St., Shaw and Rossland Aves., and Belanger St., Montreal.

23829. June 12.—Relieving C.P.R. and Michigan Central Rd. from maintaining a night signalman at crossing at Appin, Ont.

23830 to 23834. June 14.—Authorizing C.P.R. to use bridges 22.3, near Peterborough station; 21.8, near Botulf station; 3.2, near Elmsley station; 29.0, between Maberley and Ungava station, and 13.4, near Perth station, Ont.

23835. June 14.—Authorizing C.P.R. to rebuild bridge 81.5, Schreiber Subdivision, Ont.

23836. June 14.—Extending, for three months from July, time within which Canadian Northern Ry. shall complete alterations and additions to its station building at Alsask, Sask.

23837. June 14.—Authorizing C.P.R. to use bridge over highway between Lots 5 and 6, Con. 5, Toronto Tp., Ont.

23838. June 14.—Authorizing Town of Swan River, Man., to build highway crossing over Canadian Northern Ry. at Main St.

23839 to 23842. June 14.—Authorizing C. P. R. to use bridges 33.5, near Cavan station; 4.9, near Norwood station; 0.7, near Havelock station, and 7.1, near Norwood station, Ont.

23843. June 15.—Approving revised location Montreal and Southern Counties Ry. from boundary between St. Cesaire and St. Paul d'Abbotsford Parishes, Que., easterly through ranges of Papineau, St. Joseph and Dwyer, to Lot 177, Range of Dwyer, and authorizing building along Jackman Road, near crossing of C.P.R.

23844. June 15.—Authorizing G.T.R. to operate over extension of siding recently built by Brantford Cordage Co., Brantford, Ont., and approving clearances.

23845. May 1.—Extending, for six months from date, time within which G.T.R. shall complete sidings authorized by order 22818, Oct. 30, 1914, for Ford Motor Co. of Canada, Sandwich East Tp., Ont.

23846, 23847. June 15.—Authorizing C.P.R. to use bridges 19.2, Red Deer Subdivision, and 117.6, Laggan Subdivision, Alta.

23848. June 15.—Authorizing G.T.R. to rebuild bridge carrying Saltford Road, Goderich, Ont., over its line at mileage 162.13.

23849. June 15.—Authorizing Kettle Valley Ry. to build across and divert highway at mileage 69.17, and to cross highway at mileage 70.09, west of Pentiction, B.C.

23850. June 15.—Authorizing C.P.R. to use bridge 18.1, Shuswap Subdivision, B.C.

23851. June 14.—Authorizing Canadian Northern Ry. to build spur for Rosedale Coal and Clay Products Co. in Secs. 29 and 28-28-19, w. 4 m., and to cross north and south road allowance there.

23852. June 14.—Relieving G.T.R. from providing further protection at Toll Gate crossing near Brantford, Ont.

23853. June 15.—Authorizing C.P.R. to use bridge 27.3, McLeod Subdivision, Alta.
23854. June 14.—Approving agreement between Bell Telephone Co. and Otonabee Tp., Ont., June 1.
23855. June 15.—Authorizing C.P.R. to build spur for Kennedy Construction Co., St. Francois de Sales Parish, Que.
23856. June 14.—Authorizing Lachine, Jacques Cartier and Maisonneuve Ry. (G.T.P.) to divert certain lanes in Montreal.
23857. June 14.—Authorizing Quebec Government to build highway crossing over C.N. Quebec Ry. on Lot 17, St. Joseph de Deschambault Parish.
23858. May 27.—Ordering Canadian Northern Ry. to change time card of Elrose Subdivision, Sask., so that train which now leaves Macrorie Jct. for Elrose on Thursday shall leave on Friday, and that train which now leaves Elrose for Macrorie Jct. on Friday shall leave on Saturday.
23859. June 16.—Dismissing application of J. P. Shultz, Dalmeny, Sask., for order directing Canadian Northern Ry. to build siding between Dalmeny and Mannon, Sask.
23860. June 16.—Approving C.P.R. form of special contract, or release of responsibility, in connection with transportation of perishable freight in cold or stormy weather.
23861. June 15.—Approving Moncton and Buctouche Ry. Standard Freight Mileage Tariff, C.R.C. 21.
23862. June 15.—Approving agreement between Bell Telephone Co. and Farrelton Rural Telephone Co., May 28.
23863. June 15.—Relieving Central Vermont Ry. from providing further protection at crossing of highway near St. Armand Station, Que., speed of trains limited to 10 miles an hour.
23864. June 15.—Amending order 23800, dated June 4, re watchman at Erie and Ontario Ry. (T. H. & B. R.) and M.C.R. crossing at Attercliffe, Ont.
23865. June 2.—Ordering Great Northern Ry. within three months, to install improved type of illuminated electric bell at crossing of highway east of White Rock Station, British Columbia Public Works Department to pay cost of installing and maintaining.
23866. June 17.—Approving agreement between Bell Telephone Co. and Moore Tp, June 4.
23867. June 18.—Authorizing Alberta Public Works Department to build and divert highway crossing over Alberta Central Ry. in s.w. ¼ Sec. 15-39-3, w. 5 m.
23868. June 18.—Approving for three months from date, clearances between G.T.R. and telegraph poles carrying wires of G.N.W. Telephone Co. and railway wires between Guy St. and St. Henri Station, Montreal.
23869. June 18.—Authorizing C.P.R. to use interlocking plant installed at swing bridge over Lachine Canal, at mileage 43.1, its Farnham Subdivision, Que.
23870. June 19.—Authorizing C.N. Quebec Ry. to build trestle bridge over Shawinigan River, on revised location at mileage 86.69 from Quebec.
23871. June 18.—Approving specifications and detail plans of C.P.R. standard steel spans, and rescinding order 5658, Nov. 21, 1908.
23872. June 18.—Authorizing C.P.R. to build Heink St., Enchant, Alta., across its Suffield Subdivision, and to build road diversion in s. e. ¼ Sec. 17-14-18, w. 4 m.
23873. June 18.—Authorizing C.P.R. to build siding extension, at grade, across Front St., Grand Falls, N.B.
23874. June 18.—Authorizing C.P.R. to rebuild bridge 2.5 over Jackson River, Drummondville Subdivision, Que.
23875. June 18.—Approving agreement between Bell Telephone Co. and McKillop Tp., Ont., June 8.
23876. June 19.—Authorizing G.T.R. to build siding for Laurin & Leitch, St. Johns, Que., in to Department of Railways and Canals premises.
23877. June 19.—Dismissing application of W. H. Brown, Quebec, Que., for order directing Quebec and Lake St. John Ry. to sell 10 trip tickets from Quebec to St. Catharines station, at 40c each.
23878. June 18.—Authorizing Canadian Northern Ry. to build highway over its track north of Sec. 27-46-23, w. 2 m., Sask.
23879. June 21.—Approving plans and specifications of Dunwich Tp., Ont., showing work in connection with drain to be built under Michigan Central Rd., Pere Marquette Rd.
23880. June 21.—Authorizing G.T.R. to build sidings for Toronto-Hamilton Highway Commission near Oakville, Ont.
23881. June 22.—Ordering Vancouver, Victoria and Eastern Ry. and Navigation Co. (G.N.R.), within 6 months, to submit for Board's approval, detail plans of new location, of station and facilities to be built in Vancouver, B.C., work to be completed by June 1, 1917.
23882. June 21.—Authorizing C.P.R. to use bridge 37.5, Havelock Subdivision, Ont., and rescinding order 23839, June 14.
23883. June 21.—Authorizing C.P.R. to terminate agreement under which siding was built for P. J. Manion and Jas. Murphy, Fort William, Ont.
23884. June 22.—Authorizing C.P.R. to use bridge 28.33 over Little Bow River, mileage 28.57, Lethbridge-Aldersyde Branch, Alta.
23885. June 21.—Ordering that Vancouver, Victoria and Eastern Ry. and Nav. Co.'s line between Ocean Park and White Rock, B.C., be protected, one watchman to patrol track between mileposts 123 and 127, from 7 a.m. to 7 p.m.; one, between mileposts 123 and 125, from 7 p.m. to 7 a.m.; and one between mileposts 125 and 127, from 7 p.m. to 7 a.m., and rescinding order 17959, Nov. 5, 1912.
23886. June 22.—Authorizing City of Vancouver, B.C., to make new grade from north side Keefer St. to south side Cordova St., without prejudice to rights of applicant under order 17840, Oct. 14, 1912.
23887. June 21.—Authorizing British Columbia Public Works Department to build foot bridge over G.T. Pacific Ry. at McBride St., Prince Rupert.
23888. June 22.—Authorizing Dominion Board of Grain Commissioners to lay track to serve Government elevator and docks in Vancouver, B.C.; and rescinding order 22324, Aug. 1, 1914, authorizing city to build highway over C.P.R. at Commercial Drive.
23889. June 21.—Approving location of Lake Erie and Northern Ry. yard and station at Simcoe Tp., Ont., provided end of freight siding be built north of Victoria St., L.E. & N.R. to be at liberty to apply at any time for extension of siding across Victoria St. when business necessities require it.
23890. June 22.—Ordering City of Edmonton, Alta., to raise sidewalk approaching Canadian Northern Ry. on both sides Ottawa Ave., and both sides of tracks, to rail level, and erect railing on each side of sidewalks on north side of tracks; approach of street on north side to be raised to give easy slope towards track; work to be done at City's expense, within one month; within 3 months C.N.R. and G.T. Pacific Ry. to install improved types of automatic bells at crossings of respective railways, 20% of cost to be paid out of railway grade crossing fund.
23891. June 22.—Ordering C.P.R. to erect gates at farm crossing on property of J. F. Huneault, Monte Bello, Que., within 15 days.
23892. June 22.—Approving revised location of C.P.R. Bassano Easterly Branch from Sec. 20-23-29, to Sec. 22-23-28, w. 3 m., mileage 119.43 to 128.95.
23893. June 22.—Authorizing Saskatchewan Board Highway Commissioners to build highway over C.P.R. at Dunelm.
23894. June 22.—Changing conditions respecting shipment of fax seed in bulk, effective Oct. 12, 1914, Supplement 3 to C.P.R. Special Tariff, C.R.C. no. W-1962; Supplement 1 to C.N.R. Tariff C.R.C. no. W-803; and Supplement 1 to G.T. Pacific Ry. Tariff, C.R.C. 30. This order is given in full under Traffic Orders by Board of Railway Commissioners.
23895. June 23.—Extending, for 30 days from date, time within which Canadian Northern Ry. shall install half interlocking plant at crossing of Suburban Rapid Transit Co. on Portage Ave., Winnipeg.
23896. June 24.—Authorizing G.T. Pacific Ry. to remove regular agent at Elie, Man., until further order.
23897. June 22.—Authorizing C.P.R. to build two additional lines overhead on existing bridge across Greene Ave., Que.
23898. June 25.—Ordering G.T.R. to give World Newspaper Co. of Toronto a newspaper service on Flying Post train from Toronto to Hamilton, at \$22 a round trip.
23899. June 24.—Ordering Campbellford, Lake Ontario and Western Ry. (C.P.R.) and G.T.R. forthwith to commence erection of gates at crossings of Cobourg and Grafton Road, to be operated by day and night watchmen; gates to be installed by Aug. 1st, and pending installation day and night watchmen to be appointed at each crossing by July 1, 20% of cost of installing gates at crossing of G.T.R. to be paid out of railway grade crossing fund, cost of installing gates at crossing of C.L.O. and W. R. to be paid by C.L.O. and W. R.; maintenance of gates to be divided equally between the two companies.
23900. June 26.—Approving London and Port Stanley Ry. Standard Passenger Tariff, C.R.C. 1, on basis of 2½c a mile, and its Standard Freight Tariff, C.R.C. 1.
23901. June 23.—Approving agreement between Bell Telephone Co. and Hogg & Lytle, Ltd., June 15.
23902. June 25.—Authorizing C.N. Ontario Ry. to build branch for Marshay Lumber Co., mileage 321.78, Algoma District, Ont.
23903. June 25.—Authorizing G.T.R. to build extension to siding for Provincial Hospital for Insane, Whitby, Ont.
23904. June 25.—Authorizing C.P.R. to build spur for D. E. Adams Coal Co., Winnipeg.
23905. June 25.—Authorizing Kettle Valley Ry. to build bridge over Boston Bar Creek, mileage 16.82, B.C.
23906. June 25.—Amending order 23823, June 15, re crossing of Ontario St., Cobourg, Ont., by Campbellford, Lake Ontario and Western Ry. (C.P.R.) and G.T.R.
23907. June 25.—Ordering St. Thomas Street Ry. to raise its wires at crossing of London and Port Stanley Ry. at Elm St., St. Thomas, Ont., and authorizing L. & P.S.R. to erect its wires there.
- 23908 to 23911. June 28.—Ordering Michigan Central Rd., St. Thomas Street Ry. and London St. Ry., respectively, to raise their wires at crossings of London and Port Stanley Ry. at Central Ave., Wellington St., and Talbot St., St. Thomas, and Horton St., London, Ont., and authorizing L. & P.S.R. to erect its wires there.
23912. June 25.—Authorizing London & Port Stanley Ry. to erect its wires, temporarily, over G.T.R. at St. Thomas, Ont.
23913. June 25.—Ordering London St. Ry. to raise its wires at crossing of London and Port Stanley Ry. at South St., and authorizing L. & P.S.R. to erect its wires there.
23914. June 28.—Extending to Dec. 1, time for approval of Great North Western Telegraph Co.'s tolls.
23915. June 29.—Authorizing London Railway Commission to open for traffic the London and Port Stanley Ry., 24 miles.
23916. June 28.—Extending to Dec. 1, time for approval of C.P.R. telegraph tolls.
23917. June 26.—Authorizing C.P.R. to use bridge 91.7 over Snake River, Ont.
- 23918 and 23919. June 28.—Extending to Dec. 1, time for approval of G.T. Pacific Ry. and White Pass and Yukon Route telegraph tolls.
- 23920 and 23921. June 28.—Approving Bell Telephone Co. agreements with La Compagnie de Telephone de Beauce and The People's Mutual Telephone Co.
23922. June 29.—Ordering G.T.R. to remove northerly diamond crossing of track leading to carpenter shops and storage sheds, from east leg of Y which joins Wabash yard, near Manitoba Street, St. Thomas, Ont.
- 23923, 23924. June 28.—Ordering C.P.R. to build farm crossings for M. Lacelle and A. Brosseau, Balfour Tp., Ont.
23925. June 30.—Authorizing Lake Erie and Northern Ry. to operate crossing of G.T.R. at station 7+23, Brantford, Ont., for construction purposes only, until Sept. 30.
23926. June 30.—Authorizing London Railway Commission to remove siding on west side to east side of London and Port Stanley Ry. at Talbot St., St. Thomas, and to throw off transfer track with M.C.R. from it. St. Thomas Street Ry. to be properly protected.
23927. July 2.—Suspending certain tariffs for cleaning and disinfecting stock or box cars. This order is given in full under Traffic Orders by the Board of Railway Commissioners.
23928. June 30.—Authorizing G.T.R. to operate siding for W. H. Banfield & Sons, Toronto.
23929. June 29.—Authorizing Ontario Hydro Electric Power Commission to erect wires across Michigan Central Rd. on Edgeware Road, Southwold Tp., Ont.
23930. July 2.—Approving revision at mileage 40.4, C.P.R. Boundary Subdivision, B.C.
23931. July 2.—Authorizing G.T.R. to build siding for A. Dore, Montreal.
23932. July 2.—Approving revised location of G.T. Pacific Branch Lines Co.'s Biggar-Calgary Branch at Loverna, Sask.
23933. July 2.—Authorizing Edmonton, Dunvegan and British Columbia Ry. to build across 25 highways in Alberta.
23934. July 2.—Approving agreement between Bell Telephone Co. and Chinguacousy Tp., Ont., June 21.
23935. June 29.—Ordering C.P.R. to submit plan for approval showing clearances of country grain elevators of not less than 4 ft. 7¼ ins. from gauge side of rail, with grain spout outlet not closer than 3 ft. 7¼ ins. from gauge side of rail, at an elevation of 13 ft. above rail, and grain loading platforms up to 4 ft. 10 ins. high and 3 ft. 7¼ ins. from gauge side of nearest rail.
23936. July 2.—Extending to Aug. 1, 1916, time within which Campbellford, Lake Ontario and Western Ry. (C.P.R.) may use crossing by its ballast pit spur under Canadian Northern Ry. in e. ½ Lot 12, Con. 4, Scarborough Tp., Ont.
23937. July 3.—Approving Edmonton, Dunvegan and British Columbia Ry. location through Tp. 78, R. 21 to 23, w. 5 m., mileage 269.85 to 286.65, Alta.
23938. July 3.—Authorizing City of Fort William, Ont., to build Walsh St. across Canadian Northern Ry.; and dismissing application to open up Isabella St.
23939. July 3.—Authorizing Edmonton, Dunvegan and British Columbia Ry. to build across highway between n.w. ¼ Sec. 30-78-6, and Tp. 78, R. 7, w. 6 m., Alta.
23940. July 2.—Authorizing Canadian Northern Ry. to carry traffic over its line south of Melfort, from Melfort to St. Brieux, Sask., 22 miles; speed of trains limited to 18 miles an hour.
23941. July 2.—Ordering C.P.R., within 30 days, to complete transfer track at Frobisher, Sask., as required by order 22244; G.T. Pacific Ry. to furnish switches; work on G.T.P.R. to be done under supervision of its engineer, and reserving apportionment of cost.

North Toronto Station, Canadian Pacific Railway.

A short preliminary description of the station which the C.P.R. is building in the north end of Toronto for joint use with the Canadian Northern Ry., appeared in Canadian Railway and Marine World for July. For some time work has been progressing on track elevation across the north end of the city, the new station forming a part of the whole general scheme, which involves the raising of the tracks for about 3 miles, with the elimination of all grade crossings. This line has been used by the C.P.R. principally as a freight cut off between Leaside Jct. and West Toronto, from which points the main line runs down to the union station in the lower part of the city. Origin-

work has been started, the excavations and foundations being nearly completed. This station has been designed on a larger scale than would be required for C.P.R. traffic alone, as the Canadian Northern in planning a permanent entrance into Toronto decided on the northerly entrance, arrangements being made with the C.P.R. to build the station, the C.N.R. to use it jointly as tenants. It is the Canadian Northern's intention to use this station for most, if not all, of its Toronto passenger service, but the C.P.R. will retain its connection with the present union station near the waterfront, only using the North Toronto station for certain trains.

by two lower sections containing the station facilities. On the Yonge St. side there will be a 140 ft. clock tower, the 30 ft. spire of which will be of terra cotta. The station building will be 114 x 76 ft., the broader side facing south, with the tracks on the north side passing it at an angle of about 15 degrees. The central or high section of the station will be the main waiting room, 70 x 51 ft., with a centrally located entrance from the driveway on the south side. Flanking this waiting room on the west will be the ticket offices and telegraph offices. Flanking the east side of the waiting room will be the women's room, smoking room, lavatory facilities, and telephone booths. Adjoining the waiting room in the north-east corner will be the news stand and staff lavatory. Directly opposite the main

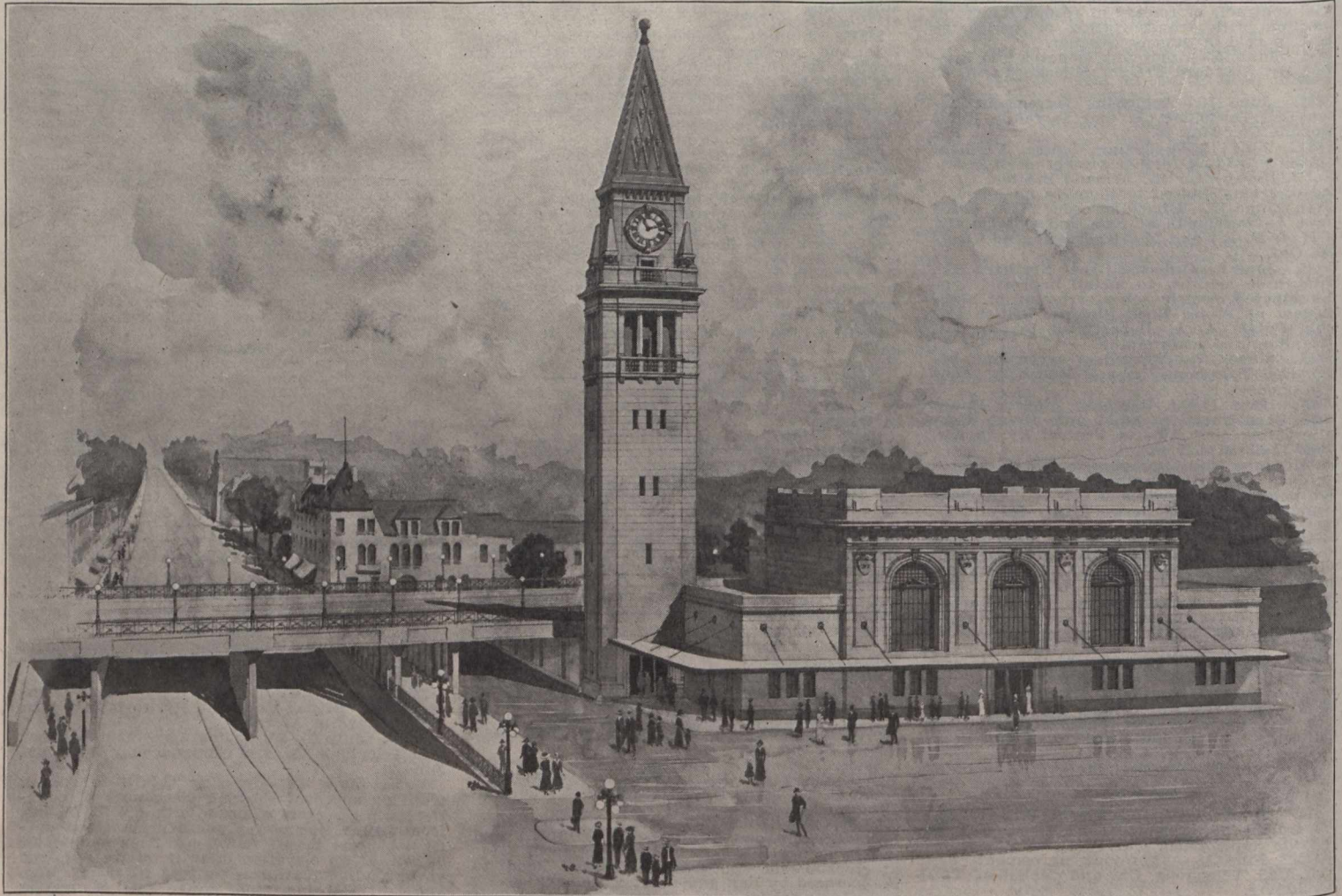


Fig. 1.—New North Toronto Station for Joint Use of Canadian Pacific and Canadian Northern Railways.

ally the Leaside-West Toronto line was the only entrance into Toronto of the Ontario and Quebec Ry., which was absorbed by the C.P.R. in its early days, and subsequently a connection was built from Leaside Jct. to connect with the union station, and all passenger trains from the east were run over it. For several years a connecting stub line service was operated both ways between Leaside Jct. and West Toronto, and about three years ago the C.P.R. decided to make use of the line from North Toronto to Leaside Jct. for passenger traffic, starting therefrom one of its Toronto-Montreal night trains, and running one of the Montreal-Toronto night trains into it. This proved such a success that a further development of the northern entrance was decided on. The smallness of the existing station made necessary further accommodation, the result of which is the new station on which

A perspective of the new station is shown in fig. 1; a ground floor plan in fig. 2; and the trackage arrangement in the station vicinity, with its relation to the city transportation conveniences, in fig. 3. The station is being built on the east side of Yonge St., at the present end of the Toronto Ry.'s Yonge St. line, which passes down through the centre of the city. With this convenient and through street car line, the new station will be very easily reached from the business centre of the city. The rapid growth of the city northward makes the North Toronto location particularly available for that section of the city, the new location being more centrally located with regard to the centre of population than the present downtown union station.

The new station will be a single storey brick and stone structure, the central section of which will have a high roof, flanked

entrance will be the entrance to the midway under the tracks. The vestibule under the tower will lead into the concourse along the north side of the west end of the waiting room, connecting at its east end with the midway. The south and west sides of the station will have a sidewalk, so that passengers may either alight at the main entrance centrally on the south side, or at the tower vestibule, the expectation being that the latter entrance will be used by the majority of passengers who have already secured their tickets, and only require to pass directly to the trains, relieving the main waiting room of much of the congestion that might otherwise occur. Along the west side of the station there will be a 28 ft. driveway, so that vehicles may drive up to either station entrance, and pass through under the tracks through this driveway and out on Yonge St. to the north of the station.

The midway will be a passage 20 ft. wide passing from the rear of the station to the far side of the tracks, under the latter. The elevation of the tracks makes a difference in grade between the track platforms and the station level of 15½ ft., giving a headway in the midway of about 14 ft. Passing over the midway will be 6 through tracks, the two southerly for eastbound passenger

provided with umbrella roofs, and provision has been made for their future extension to 1,100 ft. These platforms will be reached from the midway by two 6 ft. stairways on the east side. The plans provide for future stairways opposite the present proposed stairways, and another to a platform contemplated for the south side of the tracks.

The baggage room, 137 x 62 ft., will oc-

stairway will ascend to the track level, where the station master's office will be located in the tower above the vestibule. Passenger communication with the baggage room will be through the concourse.

The building will be of brick construction, faced with Tyndale stone, while the section under the tracks will be of steel and concrete construction. Around the sidewalk

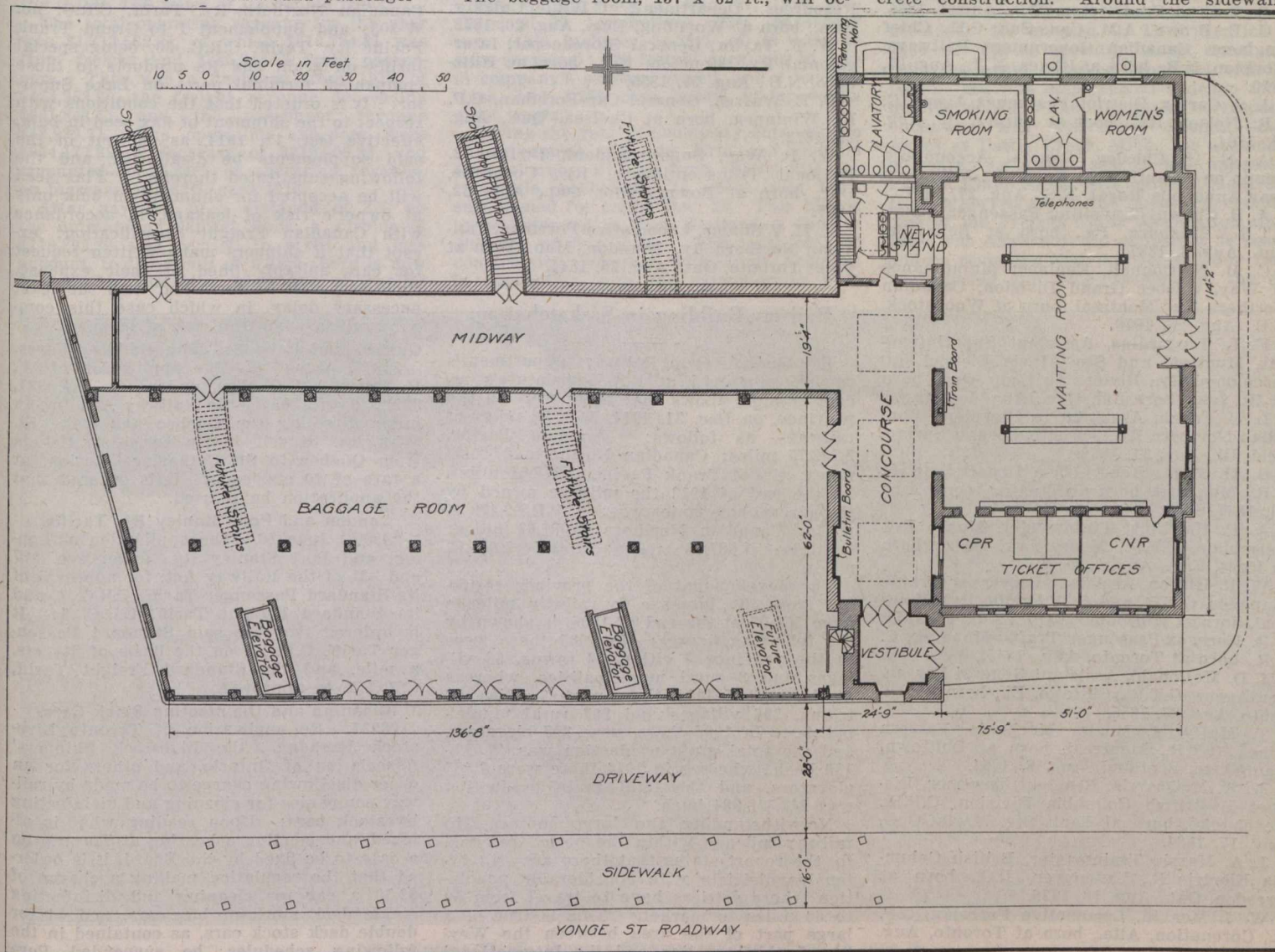


Fig. 2.—Ground Floor Plan of New North Toronto Station.

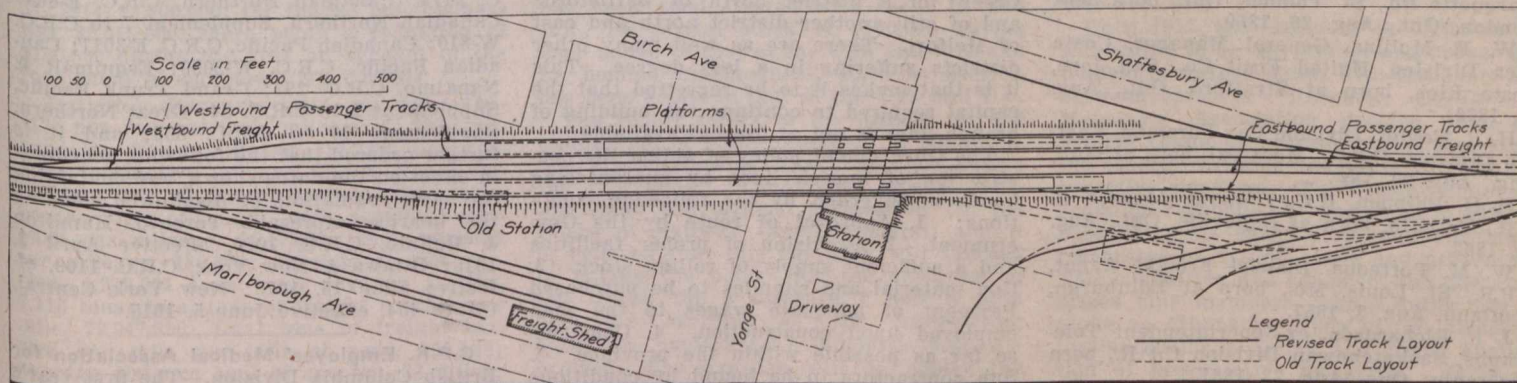


Fig. 3.—Track Arrangement in Vicinity of New North Toronto Station.

service and the two northerly for westbound passenger service, at 31 ft. centre, with an 800 ft. platform 20 ft. wide between each pair. The central pair of tracks, at 13 ft. centres from each other and from the adjoining passenger ones, will be for through freight, the southerly one for eastbound, and the northerly for westbound freight. The passenger platforms will be

copy all the section beneath the tracks between the midway and Yonge St. driveway. From the latter the baggage is to be received through 5 doorways, and will be raised on trucks to the platform level by two 15 x 5½ ft. elevators. Provision is made for a future elevator to the contemplated southerly platform. From the southwest corner of the baggage room a spiral

section there will be a metal canopy. The whole will be of a fireproof construction.

Darling and Pearson, Toronto, prepared the plans, under J. M. R. Fairbairn, Assistant Chief Engineer, and D. H. Mapes, Engineer of Building Construction, C.P.R.

The excavations and the foundations have been done by P. Lyall and Sons, on a percentage basis.

Birthdays of Transportation Men in August.

Many happy returns of the day to—
V. T. Bartram, ex-Purchasing Agent, Timiskaming and Northern Ontario Ry., now of Toronto, born at Ottawa, Aug. 2, 1880.

J. C. Beckwith, Engineer of Construction, Canadian Government Railways, Moncton, N.B., born at Fredericton, N.B., Aug. 1, 1875.

C. B. Brown, A.M. Can. Soc. C.E., Chief Engineer, Canadian Government Railways, Moncton, N.B., born at Ithaca, N.Y., Aug. 27, 1879.

J. S. Carter, District Passenger Agent, C.P.R., Nelson, B.C., born at Aurora, Ill., Aug. 14, 1864.

A. E. H. Chesley, General Accountant, Dominion Atlantic Ry., Kentville, N.S., born near Annapolis Royal, N.S., Aug. 27, 1877.

A. B. Chown, Travelling Passenger Agent, G.T.R., Pittsburg, Pa., born at Belleville, Ont., Aug. 4, 1887.

C. H. N. Connell, Engineer Maintenance of Way, Quebec Grand Division, Canadian Northern Ry., Montreal, born at Woodstock, N.B., Aug. 26, 1876.

E. L. Desjardins, Assistant Superintendent, Montreal and Ste. Flavie District, Intercolonial Ry., Riviere du Loup, Que., born at St. Jean Port Joli, Que., Aug. 1, 1859.

L. C. Fritch, Assistant to President, Canadian Northern Ry., Toronto, born at Springfield, Ill., Aug. 11, 1869.

G. H. Ham, Head Office Department, C.P.R., Montreal, born at Trenton, Ont., Aug. 23, 1847.

A. F. Hawkins, Trainmaster, Moose Jaw Terminals, C.P.R., Moose Jaw, Sask., born in Kent, Eng., Aug. 9, 1884.

W. P. Hinton, Assistant Passenger Traffic Manager, G.T.R. and G.T. Pacific Ry., Montreal, born at Hintonburg, Ont., Aug. 30, 1871.

R. Kerr, ex-Passenger Traffic Manager, C.P.R., born at Toronto, Aug., 1845.

J. D. McDonald, Assistant General Passenger Agent, G.T.R., Chicago, Ill., born at Toronto, Aug. 27, 1855.

T. McHattie, Master Mechanic, Eastern Lines, G.T.R., Montreal, born at Dufftown, Banffshire, Scotland, Aug. 8, 1854.

M. K. McQuarrie, Resident Engineer, District 1, British Columbia Division, C.P.R., Revelstoke, born at Sault Ste. Marie, Ont., Aug. 17, 1884.

J. A. Marsh, Trainmaster, British Columbia Electric R., Vancouver, B.C., born at Dresden, Ont., Aug. 16, 1876.

W. J. Meakin, Locomotive Foreman, C.P.R., Coronation, Alta., born at Toronto, Aug. 22, 1869.

C. Montgomery, Master Mechanic, Pere Marquette Rd., St. Thomas, Ont., born near London, Ont., Aug. 29, 1860.

W. E. Mullins, General Manager, Costa Rica Division, United Fruit Co., San Jose, Costa Rica, born at Stratford, Ont., Aug. 13, 1870.

H. R. Naylor, Division Car Foreman, Eastern Division, C.P.R., Montreal, born at Hull, Eng., Aug. 30, 1885.

F. H. Phippen, K.C., General Counsel, C.N.R., Toronto, born at Belleville, Ont., Aug. 26, 1862.

W. M. Porteous, District Freight Agent, C.P.R., St. Louis, Mo., born at Edinburgh, Scotland, Aug. 3, 1857.

J. F. Richardson, ex-Superintendent Telegraphs, Saskatchewan Division C.P.R., born at Granby, Que., Aug. 23, 1861.

W. G. Ross, chairman, National Harbor Commissioners, born at Montreal, Aug. 6, 1873.

W. Le B. Ross, Local Treasurer, G.T. Pacific Ry., Winnipeg, born at Ottawa, Ont., Aug. 9, 1868.

F. C. Salter, European Traffic Manager, G.T.R., and Canadian Ex. Co., London, Eng., born at Sarnia, Ont., Aug. 31, 1863.

C. R. Scoles, General Manager, Quebec

Oriental Ry., New Carlisle, Que., born at Grantham, Lincoln, Eng., Aug. 27, 1856.

A. O. Seymour, General Tourist Agent, C.P.R., Montreal, born at Ogdensburg, N.Y., Aug. 14, 1887.

J. F. Sweeting, Industrial Agent, Natural Resources Department, C.P.R., Calgary, Alta., born at Worthing, Eng., Aug. 20, 1872.

W. F. Taylor, General Storekeeper, Intercolonial Ry., Moncton, N.B., born at Hillsboro, N.B., Aug. 20, 1855.

F. E. Warren, General Car Foreman, C.P.R., Winnipeg, born at Chelsea, Que., Aug. 29, 1872.

W. B. Way, Superintendent, District 2, National Transcontinental Ry., Cochrane, Ont., born at Bowmanville, Ont., Aug. 22, 1867.

E. H. Williams, Locomotive Foreman, Canadian Northern Ry., Brandon, Man., born at West Toronto, Ont., Aug. 26, 1844.

Railway Building in Saskatchewan.

The Saskatchewan Railways Department's report, submitted at the Legislature's recent session, shows that there were in the province, on Dec. 31, 1914, 5,980.58 miles of railways, as follows: Canadian Pacific, 2,762.75 miles; Canadian Northern, 2,099.32 miles; Grand Trunk Pacific, 1,118.51 miles. At the end of 1913 the mileage owned by the several companies was: C.P.R., 2,479.34 miles; Canadian Northern, 2,087.63 miles; G.T.P.R., 1,087.56 miles; total, 5,654.53 miles.

The development of the province resulting from the increase in railway mileage from 551.97 at the end of 1905, is shown by the following figures: In 1905 there were in the province 3 cities, 16 towns, 63 villages and 2 rural municipalities, whereas at the end of 1914, there were 7 cities, 72 towns, 296 villages and 297 rural municipalities. In 1905 there were 307 elevators, and the total grain production was 46,612,136 bush., whereas in 1914 there were 1,465 elevators, and the total grain production was 243,513,384 bush.

Notwithstanding the large increase in railway mileage within the period referred to, the report states that there are still extensive districts with considerable population where settlers have to travel from 50 to 60 miles to market. "This is true of a large part of the area between the Weyburn-Lethbridge line and the International Boundary, of a district north of Maple Creek; of a district north of Battleford; and of still another district north and east of Melfort. There are as well many other districts suffering in a less degree. This it is that makes it to be regretted that the capital required to continue the building of branch lines is not at present available."

The Government policy of aiding the construction of branch lines by guaranteeing bonds is governed by the following conditions: 1. Approval of route by the Government. 2. Provision of proper facilities and a sufficient supply of rolling stock. 3. Provision of material and supplies to be purchased. 4. Payment of adequate wages to the men employed upon construction. 5. Construction so far as possible within the province. 6. Sub contractors to be bound by conditions 3 and 4. 7. Provision to be made for protection against forest and prairie fires along the lines under construction.

Suspicious Character at C.P.R. Angus Shops.—A man of Austrian nationality with explosives and incriminating documents in his possession, was arrested while measuring some of the buildings at the C.P.R. Angus shops, Montreal, July 19.

Traffic Orders by the Board of Railway Commissioners.

Leakage in Flax Shipments.

23894. June 22.—Re complaint of Northwest Grain Dealers' Association against provisions of Supplement 3 to C.P.R. Special Tariff, C.R.C. no. W-1962; Supplement 1 to Canadian Northern Ry. Tariff, C.R.C. no. W-803; and Supplement 1 to Grand Trunk Pacific Ry. Tariff, C.R.C. 30, being special tariffs on grain and its products to those companies' terminal ports on Lake Superior: It is ordered that the conditions with respect to the shipment of flax seed in bulk, effective Oct. 12, 1914, as set out in the said supplements be disallowed, and the following substituted therefor: "Flax seed will be accepted for shipment in bulk only at owner's risk of leakage, in accordance with Canadian Freight Classification; except that if shippers make written request for cars suitably lined at their expense, such cars will be furnished with the least necessary delay, in which case this company will assume the risk of leakage."

Quebec and Lake St. John Railway Fares.

23877. June 19.—The application of W. H. Brown, of Quebec, under sec. 284, 331, 332, 339 and 395 of the Railway Act, for an order directing the Quebec and Lake St. John Ry. to sell 10-trip series of tickets from Quebec to St. Catharines station, at a rate of 40 cts. each: It is ordered that the application be refused.

London and Port Stanley Ry. Tariffs.

23900. June 26.—The application of London and Port Stanley Ry., under sec. 327 and 331 of the Railway Act, for approval of its Standard Passenger Tariff, C.R.C. 1, and its Standard Freight Tariff, C.R.C. 1: It is ordered that the said Standard Passenger Tariff, C.R.C.1, on the basis of 2½ cts. a mile, and the Standard Freight Tariff, C.R.C. 1, be approved.

Cleaning and Disinfecting Stock Cars.

23927. Re application of Toronto Livestock Exchange, the Livestock Shippers' Association of Ontario, and others for an order disallowing charge to be made by railway companies for cleaning and disinfecting livestock cars: Upon reading what is alleged, and pending a hearing at Toronto on a date to be fixed by the Board, it is ordered that the regulation making a charge of \$2.50 a car for cleaning and disinfecting single deck stock or box cars, and \$4 for double deck stock cars, as contained in the following schedules, be suspended—Pere Marquette, C.R.C. 1962; Grand Trunk, C.R.C. 3174; Canadian Northern, C.R.C. E-668; Canadian Northern, Supplement 7 to C.R.C. W-810; Canadian Pacific, C.R.C. E-3011; Canadian Pacific, C.R.C. W-2050; Esquimalt & Nanaimo, C.R.C. 297; Grand Trunk Pacific, Supplement 1 to C.R.C. 84; Great Northern, Supplement 46 to C.R.C. 869; and it is further ordered that the following schedules in effect on the dates shown, and containing the same regulation, be disallowed, pending the hearing aforesaid—Toronto, Hamilton & Buffalo, C.R.C. 1050, effective April 1, 1915; Ottawa & New York, C.R.C. 1109, effective June 15, 1915; New York Central, C.R.C. 454, effective June 5, 1915.

C.P.R. Employees' Medical Association for British Columbia Division.—The first year's operations of this association are reported to have been successful and to have demonstrated the necessity for its existence. The officers for the current year are:—President, F. W. Peters, Vancouver; Vice President, G. R. Thompson, Smelter; Secretary-Treasurer, A. M. Innes, Vancouver; Executive Committee: D. A. Munro, Dr. Proctor, Vancouver; R. H. Urquhart, Revelstoke; F. R. McCharles, Nelson.

Toronto, Hamilton and Buffalo Railway Annual Report.

Following is a summary of the annual report for the calendar year 1914: The company operates 79.88 miles of main line, 7.39 miles of branches and over 4.36 miles of other companies' lines under trackage rights. It has 9.79 miles of second track; 65.10 miles of yard tracks and sidings, and leases to the C.P.R. 1.50 miles of its double track.

The total operating revenue for the year was \$1,313,562.21, of which \$810,734.81 was from freight and \$385,744.71 from passengers. This was a decrease from 1913 of \$434,353.20, the freight revenue decreasing \$361,843.11 and the passenger revenue \$42,939.71. The operating expenses were \$954,177.39, a decrease of \$216,009.81, and amounted to 72.64% of operating revenue, an increase of 5.62% over 1913.

After payment of a dividend of 3% on the outstanding capital stock, a surplus of \$116,292.30 was carried to profit and loss account, to the credit of which there is now \$948,920.24. Of the \$5,000,000 of capital

age number per train mile, 55.77; average number per car mile, 17.98; average number of cars per train mile, 4.67; average amount received from each passenger, 63 cts.; average revenue per passenger per mile, 2.17 cts.; average passenger service train revenue per train mile, \$1.33.

The rolling stock at Dec. 31, 1914, consisted of 30 locomotives, 23½ passenger cars (this includes 34.23% of 19 cars in joint services); 228 freight cars, and 23 cars in company's service, owned, and 4 locomotives, and 1,299 cars leased under equipment trusts.

During the year the company entered into an agreement with the Erie and Ontario Ry., whereby a line from Smithville to Dunnville, practically 15 miles, was built and opened for traffic Dec. 22. This line is to be extended to Port Maitland, a further distance of five miles. The total cost of construction, together with lands acquired in connection with the extension to Port

The Freight Claim Association Elects a Canadian President.

The Freight Claim Association, which is composed of freight claim agents of the various railways in Canada, the United States and Mexico, at its annual meeting in Chicago recently, elected as President Edward Arnold, Freight Claim Agent, G. T. R., Montreal. He was born at Kingston, Ont., Aug. 26, 1864. He entered G. T. R. service in 1880, serving as operator, ticket agent and relieving agent between Montreal and Toronto. He was employed at Chicago for a number of years handling claim correspondence, and was Travelling Freight Claim Agent at Battle Creek, Mich., for a number of years. In April, 1908, he was appointed Freight Claim Agent with office at Montreal. He has served on all the important committees of the Freight Claim Association since 1908, was Arbitrator for a number of years, and on resigning that position in June 1913, was elected 2nd Vice-President of the As-



The Quebec Bridge, showing Progress of Construction to June 18.

stock authorized there was outstanding Dec. 31, 1914, \$3,500,000; the funded indebtedness was \$5,555,000, there being a reduction of \$150,000 during the year on account of the repayment of equipment trust bonds.

Statistics—Revenue train mileage, 446,617; non revenue train mileage, 11,393; revenue locomotive mileage, 731,234; non revenue locomotive mileage, 39,706 (these latter two sets of figures include other companies locomotives in joint service); revenue car mileage, 6,147,358; non revenue car mileage, 185,370; revenue freight carried, 1,919,251 tons; non revenue freight, 7,116 tons; total tons of freight carried one mile, 72,947,390; total tons of freight carried one mile per mile, of road, 796,108; average distance haul of one ton, 38 miles; average number of tons of freight per train mile, 576; average amount received for each ton of freight, \$0.42; average revenue per train mile, \$6.40; average revenue per mile of road, \$8,847.92; average revenue per ton, per mile, 1.113 cts. Passengers carried, 615,151; total carried one mile, 17,764,890; total carried one mile per mile of road, 210,884; average distance carried, 28.88; aver-

age number per train mile, 55.77; average number per car mile, 17.98; average number of cars per train mile, 4.67; average amount received from each passenger, 63 cts.; average revenue per passenger per mile, 2.17 cts.; average passenger service train revenue per train mile, \$1.33.

The report refers to the project for the elimination of grade crossings in Hamilton, and after reviewing what was done during the year adds: "The matter is now pending under the original application (to the Board of Railway Commissioners), and it is believed that this company will succeed in having the plans (for the elevation of the tracks for a distance of half a mile and the carrying of the intersecting highways underneath) adopted and approved. The expense will be, under the Railway Act, apportioned by the Commission among the various interests affected, such interests being the City of Hamilton, the County of Wentworth, the Hamilton Street Ry. Co. and this company."

The Grand Trunk Pacific Ry. Hotel, the Macdonald, Edmonton, Alberta, was opened July 6.

sociation. In May 1914 he was elected 1st Vice-President.

Until 1913, the object of the Association was stated to be the prompt and proper settlement of freight claims with claimants and between carriers. Recently, the General Managers' Association decided that the Freight Claim Association should also study the causes of claims and application of preventative measures. The Freight Claim Association responded at Galveston in 1914 by broadening its constitution and electing a committee of five on cause and prevention. This committee was added to, and now comprises nine members, whose duties are to make an exhaustive study of the causes of loss and damage claims, and proper application of preventative measures. It is expected that good results will be accomplished along these lines during the coming year, and that recommendations to be made to the General Managers' Association, if approved by that body, will have a tendency to cause a large reduction in the enormous amounts paid out in loss and damage claims, the amount disbursed for the year 1914 being about \$35,000,000.

Transportation Routes to Northern Alberta.

The accompanying sketch map shows the principal points in the territory immediately north of Edmonton which is the gateway for Northern Alberta and the Peace River District, etc., indicating the railway lines and the water routes available.

The Canadian Northern Ry. has a train leaving Edmonton 9 a.m. Mondays, Wednesdays and Fridays, and arriving Athabasca Landing (now called Athabasca) 95 miles distant, at 4.10 p.m.

The Edmonton, Dunvegan and British Columbia Ry. is in operation to McLennan, 262 miles northwest of Edmonton, passing through Smith and Sawridge. Train leaves Edmonton 7.30 a.m. Tuesdays and Fridays, and is due at McLennan 3.40 a.m. Wednesdays and Saturdays. Stage runs from McLennan to Peace River Crossing, 32 miles, and connects with the train. The line is under construction to Peace River Crossing and to Spirit River (southwest of Dunvegan), and is expected to be into Grand Prairie next spring. The E.D. & B.C. station at Edmonton is outside the city, on the St. Albert trail, some five miles distant from the C.P.R. station.

The Hudson's Bay Co. advise that the only way of getting from Athabasca (Landing) to Lake Athabasca is by scow or canoe, and that no one should go without employing expert river men—the safest way to travel is by a scow weighing about seven tons and requiring a steersman and at least three other men—the trip would take, under best conditions, 20 days. Fond du Lac, where silver and nickel are reported to have been found, is at the east end of Lake Athabasca and 587 miles from Athabasca (Landing). It would be impossible to proceed across Lake Athabasca to Fond du Lac by scow unless arrangements could be made to have the scow towed by either of the tugs which are on the lake. The Hudson's Bay Co. during the summer season operates steamboats between Peace River Crossing and Hudson's Hope on the west and Ft. Vermilion and Vermilion Chutes on the east, leaving Peace River Crossing whenever sufficient cargo has been secured—also the steamboat Fort McMurray between Peace River Crossing, the Chutes and Smiths Landing and between Smiths Landing and Fort McMurray, leaving Vermilion Chutes and Fort McMurray whenever sufficient cargo has been secured.

The Peace River Navigation Co., Ltd., has during the summer a steamboat leave Peace River Crossing on the 1st and 15th of each month for Fort Vermilion, connecting with Hudson's Bay Co.'s steamers for Fort Chipewyan and the Mackenzie River; Fort Chipewyan being at the western end of Lake Athabasca, the Lake and Fond du Lac may be reached this way also. The P.R.N. Co. also has a steamboat leave Peace River Crossing the 8th and 23rd of each month for Dunvegan, Fort St. John and Hudson's Hope. The P.R.N. Co. may also place a steamboat in service on the Athabasca River, but nothing is decided.

People for Grand Prairie and the Peace River Block travel via Peace River Crossing.

Railway Rolling Stock Notes.

The Asbestos and Asbestic Co., Asbestos, Que., has ordered one 6 wheel switching locomotive from Canadian Locomotive Co.

The Grand Trunk Pacific Ry. has received an express refrigerator car, no. 6047, making 48 received on an order of 50, from Canadian Car and Foundry Co.

The Intercolonial Ry. built in its Moncton shops recently, a tank car for dealing with forest fires. It is not a new car, but has been arranged by placing a tank of about 10,000 gals. capacity on a flat car. It is equipped with a pump, which can be connected to the locomotive, thus securing a pressure of at least 60 lbs.

The Imperial Oil Co. has ordered 75 steel underframes, trucks and tank trimmings, for tank cars of 10,000 gallons capacity, from Canadian Car and Foundry Co. The trucks are of 40 tons capacity, standard gauge, length over buffers 36 ft. 3 ins., truck centres 26 ft. The tanks will be applied to the cars by the Imperial Oil Co., at Sarnia, Ont.

Toronto Mail and Empire:—"It sounds like 'good old times' to hear of large orders for cars and locomotives being placed with the railway rolling stock companies of this country. After the freight moving equipment has been procured for the National Transcontinental the requirements of the Hudson Bay Ry. will have to be looked after. It is a queer year in this young country when railway equipment business does not spring up from somewhere."

Canadian Explosives, Ltd., has ordered 3 wooden box cars, each of 2 tons capacity, from Canadian Car and Foundry Co. Following are the chief measurements,—

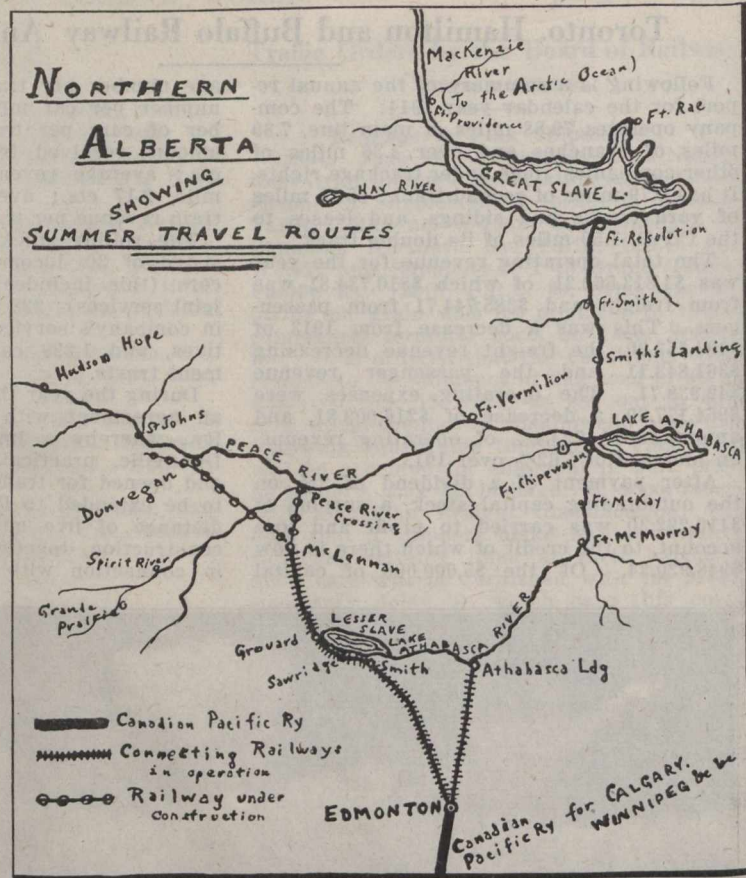
Length inside 15 ft. 6 ins.
 Length over buffers 19 ft. 10 1/4 ins.
 Width over side posts 5 ft. 4 3/4 ins.
 Height top of rail to top of roof 9 ft. 0 1/4 in.
 Height top of floor to roof 6 ft. 7 3/4 ins.
 Gauge of track 3 ft.
 Wheels 24 ins. cast iron
 Wheel base 6 ft.

Following are some details of the 50 decapod (2-10-0) locomotives which the Russian Government has ordered from Canadian Locomotive Co., as mentioned in our last issue,—

Gauge 5 ft.
 Cylinder 25 x 28 ins.
 Drivers 52 ins.
 Weight in running order, engine .. 198,000 lbs.
 Weight in running order, tender .. 132,000 lbs.
 Boiler pressure 180 lbs.
 Heating surface 2,623 sq. ft.
 Grate area 64.5 sq. ft.
 Superheating surface 541 sq. ft.

The British War Office has ordered 1,200 box cars from Canadian Car and Foundry Co., each equipped with two side buffers on each end, and wooden steps at each side door. They are to be of the Belgian type, delivery to commence in 60 days from date of contract. Following are the chief details,—

Capacity 15 metric tons
 Style Steel frame inside sheathed
 Trucks Single
 Wheels Rolled steel, 38 ins. diam.
 Length over end sills 24 ft. 1 1/2 ins.
 Couplings Screw arrangement
 Side lining 1 in.



End lining 1 3-16 ins.
 Side posts 3 in. channels
 End posts 4 in. I beams
 Brakes Hand only, Stillmant type
 Roof 13-16 in. wood with canvas covering
 Doors Two side doors with bottom rollers
 Draft rigging—Continuous in connection with volute springs.

Carlines Channel type, flooring 1 3/4 ins.

Following are chief details of the 15 consolidation (2-8-0) locomotives which the Canadian Government Railways ordered from Canadian Locomotive Co., as mentioned in our last issue,—

Weight on drivers 208,000 lbs.
 Weight in working order, total 236,000 lbs.
 Wheel base, rigid 16 ft. 6 ins.
 Wheel base, total 25 ft. 5 ins.
 Wheel base, engine and tender .. 69 ft. 11 ins.
 Heating surface, firebox 207 sq. ft.
 Heating surface, tubes 1,885 sq. ft.
 Heating surface, total 2,092 sq. ft.
 Driving wheels, diam. 63 ins.
 Driving wheels, material Cast steel
 Driving journals 10 by 14 ins.
 Cylinders, diam. and stroke 24 by 32 ins.
 Boiler, type Straight top, radial stay
 Boiler pressure 180 lbs.
 Tubes, no. and diam. 227 2 ins.; 30 5 1/2 ins.
 Tubes, length 15 ft. 2 1/2 ins.
 Injectors and safety valves .. Locomotive type
 Brakes Westinghouse American
 Packing Metallic
 Superheater Schmidt type A.
 Superheater Schmidt type A
 Weight of tender loaded 140,000 lbs.
 Tank capacity 6,500 imp. gals.
 Coal capacity 10 tons
 Tender truck Outside equalized
 Tender wheels 34 ins. diam.
 Wheel, type W. I. centre steel tued.
 Truck journals 5 1/2 by 10 ins.
 Brake beam Steel I section

Following are the details of the 50 decapod (2-10-0) locomotives which the Russian Government has ordered from Canadian Locomotive Co., as mentioned in our last issue,—

Gauge 5 ft.
 Weight on drivers 176,000 lbs.
 Weight, total 198,000 lbs.
 Wheel base, rigid 18 ft. 8 ins.
 Wheel base, total 27 ft. 10 ins.
 Wheel base, engine and tender .. 60 ft. 1 1/2 ins.
 Heating surface, firebox 196 sq. ft.
 Heating surface, tubes 2,428 sq. ft.
 Heating surface, total 2,624 sq. ft.
 Driving wheels, diam. 52 ins.
 Driving wheel centres Cast steel
 Driving journals 10 1/2 by 12 ins., and 8 1/2 by 12 ins.

Cylinders, diar. and stroke	25 by 28 ins.
Boiler, type	Straight top, radial stays
Boiler pressure	180 lbs.
Tubes, no. and diar.	195 2 ins.; 28 5½ ins.
Tubes, length	17 ft.
Injectors	Two on back head
Safety valves	Two on main dome
Brakes	Westinghouse
Packing	Metallic
Superheater	Schmidt double loop
Firebox plate	Copper
Fire door	Franklin
Reverse gear, Rushton screw type with air motor	
Radial buffer, Economy device, Corporation type	
Arch brick	Security arch
Weight of tender loaded	132,000 lbs.
Tank capacity	6,200 imp. gals.
Coal capacity	9 to 10 tons
Tender truck, type	Arch bar with C.S. bolsters
Wheels, diar.	36 ins.
Wheels, type	Solid forged steel
Journals	5½ by 10 ins.
Brake beam	High speed type

Canadian Pacific Railway Construction, Betterments, Etc.

Quebec Terminals.—A contract for the erection of the new passenger station near the old Palais station has been let to the Downing-Cook Co., Ltd., which completed the freight terminal buildings there recently.

Montreal Terminus.—The Board of Railway Commissioners has authorized the building of two additional tracks across Greene Ave., Westmount.

Eastern Division.—The Glengarry & Stormont Ry., which was opened recently, is being operated as the Cornwall Subdivision, Eastern Division. Starting from St. Polycarpe Jct., the stations on the branch are: Bridge End, mileage 6.6; North Lancaster, 10.4; Glen Gordon, 14.1; Williamstown, 17.7; Glenbrook, 21.6; Cornwall, 29.00.

Manitoba Division.—The C.P.R. subway at Main St., Winnipeg, is reported to be completed, and ready for the filling in of the roadway and raising of the grade. The filling in is to be done by the C.P.R., and the other work necessary is to be done by the city.

Alberta Division.—The point on the old Alberta Ry. and Irrigation Co.'s line, known as Montana Jct., has been finally done away with and the buildings moved. A local paper says: "The junction was built in 1890, when the old turkey trail from Lethbridge to the boundary was completed by the A.R. & I. Co. Just one mile from the station this line joined the narrow gauge from Dunmore Jct., which had been built in 1885. Some years later, when the C.P.R. bought this line, they widened the gauge to standard. From the junction to the station the road had three rails, the narrow gauge using one of the C.P.R. rails and one of its own between the other two. This spring the C.P.R. doubletracked the line from the old junction to the station, so that now the line from Coutts and the one from Medicine Hat do not meet, but run parallel into the city."

British Columbia Division.—Work is reported to have been restarted on the Porcupine fill in the Boundary country. The work is the filling of a high piece of trestle work on which a start was made in the fall of 1914. W. P. Tierney, Vancouver, is the contractor. (July, pg. 258.)

Transmission Lines Crossing Railways.—The Board of Railway Commissioners has notified the owners of electric power transmission lines to file on or before Aug. 7, reasons, if any, why there should not go into effect on that date an order reading as follows: "All the insulators at wire crossings, which are operated at a potential of 10,000 volts or over, are to be renewed or tested, and reported upon on or before Nov. 1, 1915, and until further notice at least once annually thereafter."

Kettle Valley Railway Construction.

The Kettle Valley Ry. is now operating 274.8 miles of line, from the C.P.R. Crowsnest branch at Midway, B. C., to a junction with the C.P.R. Nicola branch at Merritt, B.C., thus giving a double route westerly from Calgary. A section of this line from Coldwater Junction to Merritt, 23 miles, will eventually be a branch line, as the main line will run down the Coquihalla Valley to Hope, effecting a junction there with the C.P.R., by bridge across the Fraser River. The line now being operated is not the line originally planned, by the act and its amendments. Early in 1914 an arrangement was made by which the section from Osprey Lake to the Hope Mountains via Aspen Grove, 65.5 miles, was abandoned temporarily, in favor of a line from Osprey Lake to a junction with the Vancouver, Victoria and Eastern Ry. at Princeton, and the joint use of that company's line from Princeton to the Hope Mountains, 40 miles. As originally located the line from Midway to Merritt was 267.8 miles long, but as now constructed it is 274.8 miles. Previously an arrangement was made with the V., V. and E. Ry. by which it would use jointly with the K. V. Ry. the Coquihalla line from Coldwater Jct. to Hope, 53 miles.

In Canadian Railway and Marine World for Feb., 1914, pg. 80, a statement was given as to the conception of the company, the various agreements under which the line was being built, the contracts let, and the progress made to that date, together with a plan of the line as originally laid out. Subsequently details were given of the several agreements with the V., V. and E. Ry., and of the progress made on the several contracts. Since the line has been opened from Midway to Merritt, an official statement has been issued covering the whole work. From this the following particulars have been extracted:—

Surveys and Construction.—Location started in 1910, a number of parties being sent out in the early spring. In July of that year the first grading was done at the Merritt end, where a connection is now made with the C.P.R., by Macdonell, Gzowski & Co. This company had a contract for the work from Merritt south to Otter Summit, 30 miles, which was finished in 1911. At the same time work was being carried out on the Midway section, where Rice and Co. had a contract for 35 miles west from that point. This also was finished the next year. Surveys were going on simultaneously, the surveyors having considerable difficulty in fixing the final location lines. The Kettle Valley Ry. runs across mountain chains instead of paralleling them, as is usually the case with railways, and thus it has to cross three ranges, the Kettle-Okanagan, the Okanagan-Similkameen and the Hope. A third grading contract was given in 1911, this going to Rice and Co., for the 40 miles from mile 35 west of Midway to mile 75, at Hydraulic Summit. This grading was finished in 1912, and in 1913 the bridges were completed. The same firm got the contract for the section from Penticton to Osprey Lake and finished it in 1912. During that year, also, the section from Hydraulic Summit west to Penticton, a distance of 58½ miles, was completed by Grant, Smith and Co. Twohy Bros. graded the 13 miles from Coldwater Jct. to Coquihalla Summit, and McArthur Bros. the 40 miles from the latter point to Hope, finishing it in 1914, except for a number of the bridges. In 1913 Guthrie, McDougall and Co. got a contract for grading the line from Osprey Lake to Princeton, 31 miles, and work on this was begun and finished in 1914.

Track laying.—The first steel was laid in 1910, by Macdonell, Gzowski and Co., for 10 miles south from Merritt. In 1911 Rice and Co. laid steel for 35 miles west from Midway and another 20 miles was laid on the Merritt end by the contractors there. In 1912 Penticton saw its first steel, seven miles being laid west to Trout Creek Canyon by Kettle Valley workmen. Another 11 miles of steel was added on the Rice contract stretch from mile 35, west of Midway, to mile 46. The year 1913 saw the finishing of laying of steel from mile 46, west of Midway to mile 75, Hydraulic Summit, by the railway itself, K.V.R. workmen that same year also laying seven miles of steel from Hydraulic Summit towards Penticton. In addition, the K.V.R. finished steel laying from Trout Creek to mile 40 west of Penticton, being to Osprey Lake, and also laid rails for 11 miles from Coldwater Junction to Coquihalla Summit. Last year steel was finished by the K.V.R. between Penticton and Hydraulic Summit, 51 miles being laid. Two additional miles of rails was also put down by the railway on the Towhy Bros. contract at Coquihalla and three miles on the McArthur Bros.' section over the Coquihalla Summit. Another two miles was laid at the Hope end, from the C.P.R. tracks to the river bridge there. This year steel has been finished from Osprey Lake to Princeton; another eight miles has been laid at the Hope end of the cut off, and two miles more at the upper end, leaving 25 miles to be laid to finish the cut off line. This work will undoubtedly be finished this year.

Bridge work.—There are many large bridges on the line, the largest being that which is across the Fraser at Hope, where the line crosses from the cut off to the connection with the C.P.R. at Hope. This structure is 960 ft. long, having 4 steel spans of 240 ft. each. A highway for pedestrians and vehicles is provided above the railway track deck of the bridge. The bridge was finished this year. The highest bridge on the K.V.R. is at Trout Creek Canyon, a few miles out of Penticton. It is 245 ft. above the water. The steel work on the bridge, which was built in 1913, is 250 ft. long and the approaches 450, making a total length of 700 ft. Two or three of the bridges now under way in the Hope cut off section are worthy of more than passing interest. There is one over Ladner Creek which is 230 ft. high and 600 ft. long. Another bridge, over Slide Creek is 400 ft. long having a single span of 320 ft. Canyon Creek, east of Princeton is bridged by a wooden trestle, which is 180 ft. high.

A. McCulloch is Chief Engineer in charge of the work.

Railways and Weed Destruction in Saskatchewan.—The railway companies are cooperating with the Saskatchewan Agricultural Department in weed extermination. Each railway is furnishing a gasoline track motor car and a man to operate it, and the department is sending out a man skilled in the destruction of weeds. Work was started on the C.P.R. June 15, and it was estimated it would take three months to cover the line. On June 17 work was started on the Canadian Northern Ry., which will be covered by Aug. 31, and work was started on the Grand Trunk Pacific Ry., July 19, one month being allotted to cover its lines. The work being done not only covers the eradication of weeds on the railway right of way, but the instruction of the people in every town, village, and settlement point along the line as to the best means to be adopted to destroy weeds, with practical demonstrations.

Railway Development.

Projected Lines, Surveys, Construction, Betterments, Etc.

Athabasca and Fort Vermillion Ry.—A. C. Galbraith, with a staff of engineers, is reported to have arrived at Athabasca Landing, Alberta, June 21, to start a survey for this projected railway to Fort Vermillion. He started work at once on making a survey for a site for a bridge to cross the river, and as soon as a suitable location is secured, will, it is stated, start on a reconnaissance survey to Fort Vermillion. The party includes F. P. Wilson and F. D. Rice, who represent D. A. Thomas, Cardiff, Wales, who is investigating the project in connection with his Pacific, Peace River and Athabasca Ry. project. (July, pg. 255.)

The Dominion Atlantic Ry.'s locomotive house at Kentville, N. S., was destroyed by fire, July 7, the machine shop being saved. It is reported that the locomotive house will be rebuilt at once. (June, pg. 222.)

Edmonton, Dunvegan and British Columbia Ry.—Grading on the section from Smoky River to the Spirit River was reported to be 45% completed, June 30. The remainder of the work is classed as heavy, but it is expected to have it completed by Oct. 1. The grading contractor is A. T. Wright.

The Board of Railway Commissioners has approved of location plans for the line through tp. 76, ranges 21, 22 and 23, west 5th meridian, mileage 269.85 to 286.65, and through tp. 78, ranges 3 and 6, and tp. 77, ranges 4 and 5, west 6th meridian, mileage 331.77 to 357. We are officially advised that the revised location in tps. 77 and 78, ranges 1-6, west sixth meridian, 27 miles, is a minor revision, rendered necessary owing to the fact that original location was made from the preliminary line, and the new location varied more than one mile from it.

The grading outfit of G. H. Webster, Calgary, arrived at Spirit River early in July. The contract covers the grading of about 60 miles in the Grand Prairie Settlement, and it is expected to have it completed this season. J. D. McArthur, President, is reported to have said it is hoped to have tracklaying on the line from the Smoky River completed to the Spirit River by Christmas, when it will be gone on with on the Grand Prairie branch. It is hoped to have the line ready for traffic by the summer of 1916. The construction generally is average, but there is some heavy work to be done in the vicinity of the Saddle Mountains. (July, pg. 255.)

Halifax and Southwestern Ry.—Tenders are said to be under consideration for building of a passenger station at Yarmouth, N.S. J. Bain, is General Superintendent, Bridgewater, N.S. (Nov., 1912, pg. 557.)

Intercolonial Ry.—We are officially advised that the management is not at present considering the renewal of the superstructure of the bridge across the St. John River at Fredericton, N. B., as stated in a press report. (July, pg. 255.)

Kettle Valley Lines.—According to press reports, about 25 miles of tracklaying is yet required to complete the line from Otter Summit to Hope, B. C., which it is hoped will be fully completed this year. There are two bridge structures of some importance on the Otter Summit-Hope section, viz.: that over Ladner Creek, 600 ft. long, and 230 ft. above high water mark, and that at Slide Creek, 400 ft. long. The most important bridge, however, is that across the Fraser River at Hope, which consists of four steel spans of 240 ft. each on concrete piers and abutments.

Snow sheds are to be built on the line in the Coquitlam Valley, for which purpose

orders are said to have been placed for 13,000,000 ft. of lumber. (July, pg. 255.)

Lake Huron and Northern Ontario Ry.—At the annual meeting of shareholders called to be held at Sault Ste. Marie, Ont., July 30, in addition to the business of electing directors and passing accounts, the shareholders were to be asked to approve of all the acts done, and agreements entered into by the directors since the last annual meeting.

A press report states that a contract has been let by the National Engineering Co., Cleveland, Ohio, for the building of the line from Sault Ste. Marie to a junction with the National Transcontinental Ry., between Cochrane and Hearst, Ont., about 300 miles. The company owns a line from Bruce Mines to Rock Lake, 17 miles, and the contract, it is said, calls for a line in extension of this along the Mississauga River, through the forest reserve, into the Sudbury district, crossing the C. P. R. and the Canadian Northern transcontinental lines, and terminating by a junction with the N. T. R. The line would run through a new country, and the construction will involve the building of 14 steel bridges, one of which, it is stated, would be 750 ft. long. It is said that the National Engineering Co. is endeavoring to finance the building of the line, and of course there will not be any construction work undertaken until this has been arranged. The President of the Lake Huron and Northern Ry. advises us that the report referred to is premature. (April, pg. 176.)

Toronto Union Station.—Press reports state that arrangements have been made with the Bank of Montreal for advances of \$4,000,000 on the guarantee of the C.P.R. and the G.T.R. for the purpose of financing the construction of the new Union Station on Front St., Toronto. There are at the time of writing no signs of activity at the site.

Progress of the Rogers Pass Tunnel Construction, Canadian Pacific Railway.

The following table shows the progress made during June, also the totals to June 30, for which we are indebted to J. G. Sullivan, M. Can. Soc. C.E., Chief Engineer, C.P.R. The figures give the number of feet. There were a number of corrections, which accounts for the difference in totals:

	Progress.	Total.
EAST END—		
Pioneer tunnel	897	10,128
Main heading	562	6,012
Main tunnel	787	4,556
WEST END—		
Pioneer tunnel	961	8,231
Main heading	529	6,601
Main tunnel	867	3,032

Liquors on Canadian Northern Dining Cars.—The C.N.R. management at Winnipeg has denied the report that liquors will not be sold on its dining cars. The statement says: "Owing to the present license laws in Manitoba, we are unable to sell liquors on our main line, the Alberta Express and the Capital Cities Express, as they leave after 7 p.m. and arrive at an early hour in the morning; therefore, demand for liquor is a negligible quantity. Liquors, etc., will be carried on the dining cars as in the past for the accommodation of the travelling public, subject to the liquor laws of each province. Commencing July 1, it is illegal to sell any liquor in Saskatchewan."

Dominion Government Railway to Hudson Bay.

A contract is reported to have been let to R. McDonald, Winnipeg, for the substructure of the bridge across the Nelson River, at Manitou Rapids. The superstructure will be of steel, of the cantilever type, and will be fabricated and erected by the Canadian Bridge Co.

J. D. McArthur, the general contractor, is reported to have stated recently that the grading gangs have reached to within 50 miles of Port Nelson and that the whole of the grading will be completed this year. The track laying will not be completed until the spring of 1916.

Chief Engineer Porter is reported to have said in Winnipeg, July 13, that the construction of the terminals at Pas, Man., would not be started until the spring of 1916. The plans are under consideration by the Railways Department. The contracts, when let, will call for the completion of the work in time for the opening of the line right through in 1917.

The question of operating part of the line by electricity is said to be under consideration and it is reported that the water falls of the Nelson and Grass Rivers are being examined with a view of determining how far they are available for the development of power to be used on the line.

Timber and other materials for the terminal work at Port Nelson are being forwarded by steamship from Halifax, N.S., and one cargo of special timber has been despatched from Vancouver, B.C., a 10,000 mile voyage. (June, pg. 225.)

Qu'Appelle, Long Lake and Saskatchewan Railroad Land Grants.

The Saskatchewan Legislature has ordered that an address be presented to the Lieutenant Governor asking that a resolution passed June 24 respecting various contracts made between the Dominion Government and the Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. be forwarded to the Secretary of State for transmission to the Governor General in Council. The resolution stated that, in the Legislature's opinion, a serious drawback to municipal progress and a gross injustice to the people of the province would be removed if the Dominion Government would at once take the necessary steps towards winding up the contract with the company and the releasing of the lands in question so that they might be liable for a just portion of taxation.

The preamble of the resolution states that under the contracts of 1884, 1887 and 1889 it was provided, among other things, that 6,400 acres of land a mile be made to the company; that the company should receive for 20 years from 1889, \$80,000 a year, and that until a final settlement between the Government and the company, one third of the land be retained by the Government. The land grant carried is 1,625,244 acres, of which one third has been retained under the contract. All the land retained is exempted from taxation, but under a contract of 1907 the Saskatoon and Western Land Co., to which company the railway company's lands had been transferred, it was agreed that the retained lands might be sold on condition that \$5 an acre of the price obtained be paid to the Government, the lands thus sold becoming taxable. A large area of the lands still remains unsold, and as the 20 years from 1889 has expired the province desires that the accounts be adjusted and the contract wound up so that the lands may be taxed by the various municipalities.

Mainly About Railway People Throughout Canada.

W. E. Foster, Solicitor, G. T. R., Montreal, has been appointed a K. C.

Sir William Van Horne is in residence at his summer home, Covenhoven, St. Andrews, N. B.

J. R. McDonald, City Ticket Agent, Canadian Northern Ry., Port Arthur, Ont., died suddenly at his work there, July 4.

A. C. Lewis, Secretary, Toronto Harbor Commission, is going to the front in the Canadian Overseas Expeditionary Force.

Geo. Kidd, General Manager, British Columbia Electric Ry., was the chief speaker at the American Club's luncheon in Vancouver, July 12.

A. E. Cox, General Storekeeper, Canadian Northern Ry., Winnipeg, has been elected a member of the Railway Storekeepers' Association's Executive Committee.

Sir Thomas Shaughnessy, Lady, and Miss Shaughnessy were in St. Andrews, N. B., at the end of June, when they opened their summer home, Fort Tipperary, for the season.

Lieut. W. N. Malcolm, of the Royal Engineers, who was wounded at the Dardanelles, and died at Malta, in June, was, until the commencement of the war, engaged on location surveys with the C.P.R.

H. Whitehead, chief ticket agent, C. P. R., Windsor St. station, Montreal, committed suicide by shooting in the station, July 7. He left a letter giving financial embarrassment as the cause of the act.

J. K. L. Ross, director, C. P. R., Montreal, is the sole beneficiary of the estate of his mother, Mrs. James Ross, who died in February, without a will. The estate is valued at \$289,639.

Thomas C. Ashworth, of the Canadian Overseas Railway Construction Corps, was reported in the casualty list cabled from England on July 6 as seriously wounded in the neck (self inflicted).

C. Bermingham, formerly Vice President, Canadian Locomotive Co., Kingston, Ont., and Mrs. Bermingham have given an automobile for Queen's University Stationary Hospital Corps.

H. Kemp, employed in the Audit Department, G.T.R., Montreal, was drowned in the Back River, there, July 4, whilst attempting to rescue two boys who got out of their depth, and were eventually rescued.

S. H. Sykes, Assistant Chief Engineer, Canadian Northern Pacific Ry., Vancouver, B.C., was presented with a case of silver tableware by the staff there recently, on the occasion of his marriage.

W. E. Duperow, Assistant General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, has been absent from business for a few weeks on account of illness, which the latest report received states may necessitate an operation.

Lt. Col. J. J. Creelman, son of A. R. Creelman, K.C., director C.P.R., who suffered from shock caused by the incessant cannonading in the St. Julien battle, was reported on July 6 as recuperating rapidly at Shorncliffe, Eng.

W. M. Guy, whose appointment as General Traffic Manager, London and Port Stanley Ry., London, Ont., was announced in our last issue, resigned after three days on duty, for personal reasons, and has returned to Pere Marquette Rd. service.

J. Edgar LePage, whose appointment as Division Freight Agent, National Transcontinental Ry., Quebec, Que., was announced in our last issue, was born in 1882,

and entered railway service in 1902, since when he has been, to 1912, in Transportation Department, Intercolonial Ry.; 1912 to 1915 in Traffic Department, same road.

Thomas Cantley, heretofore Vice President and General Manager, Nova Scotia Steel and Coal Co., has been elected President of the company, vice R. E. Harris, who has been appointed a judge of the Supreme Court of Nova Scotia. He will also continue to act as General Manager.

Duncan Ross, who died suddenly at Victoria, B. C., June 30, was one of the contractors on the Grand Trunk Pacific Ry. construction, having built a section of six miles including a tunnel near Hazelton, B. C., a ten mile section in the South Bulkeley Valley, and a third near Fraser Lake.

P. E. Ryan, Secretary, National Transcontinental Railway Commission since its establishment in Sept. 1904, has resigned,



R. G. Edwards,
Assistant Superintendent, District 2, Eastern
Division, Canadian Pacific Railway.

on account of the work being practically completed and the operation of the railway taken over by Canadian Government Railways.

Major D. R. McCuaig, 13th Canadian Battalion, who has been awarded the Distinguished Service Order for conspicuous gallantry and ability between Apr. 22 and 24, near Ypres, is a son of C. J. McCuaig, Montreal, President, Sherbrooke Ry. and Power Co.

T. R. McCarthy, who died at Montreal, June 30, after a long illness, had carried on a general steamship and freight brokerage and shipping business for 18 years, and acted as agent for the Northern Shipowners' Association, Christiania, Norway, and also as shipping agent for the Asbestos and Asbestic Co., Asbestos, Que.

In announcing the appointment of an acting Manager of the Temiscouata Ry., the President, J. H. Walsh, issued a circular as follows,—“On June 9, G. G. Grundy, General Manager of the company, passed away at the

early age of 38, the greater part of his life having been spent in the service of the company. He rendered invaluable services, and his death is to be greatly deplored.”

Capt. C. L. Conacher, formerly Traffic Manager, Cambrian Railways, Wales, who visited Canada last year, and who has been serving as a railway transport officer on the War Office staff since October last, has been transferred to the administrative staff of the Ministry of Munitions in London. He will retain his military rank and serve under Sir Percy Girouard, Controller General of the Department.

Miss Helen G. McNicoll, daughter of D. McNicoll, director, and formerly Vice President, C. P. R., died at Swanage, England, suddenly, June 27. She had resided in England for several years, where she maintained a studio. Many of her paintings have been exhibited in the Royal Academy. At the outbreak of war in Aug. 1914, she was in Germany, and experienced considerable difficulty in returning to England.

J. Harvey Hall, who died at Toronto, July 5, from toxic poisoning following a slight operation, was born at Bolton, Ont., in 1857, and for some time was a conductor on the Toronto, Grey and Bruce Ry. In later years he was President of the local branch of the Order of Railway Conductors, and acted as the parliamentary representative in Canada of the order, spending considerable time in Ottawa.

Charles A. Stewart, whose appointment as acting Manager, Temiscouata Ry., Riviere du Loup, Que., was announced in our last issue, was born at Bathurst, N.B., June 19, 1885, and entered Temiscouata Ry. service May 22, 1904, since when he has been, to Mar. 3, 1908, clerk in General Manager's office; Mar. 3, 1908 to Oct. 1, 1909, chief clerk to General Manager; Oct. 1, 1909 to July 1, 1915, Accountant.

Captain F. A. Wanklyn, of the Royal Field Artillery, and a flight commander of the Royal Flying Corps, who has been given the military cross, is the eldest son of F. L. Wanklyn, General Executive Assistant, C. P. R., Montreal, and grandson of R. B. Angus, Director, C.P.R., and is 27 years old. His brother, Andrew Wanklyn, B.A., B.C.L., who is 25 years of age, is a lieutenant in the McGill Overseas Corps.

R. Falshaw Morkill, Signal Engineer, G.T.R., Montreal, who went to Europe with the 1st Canadian Expeditionary Force as a lieutenant in the engineering corps, has, in recognition of work which he did at the front in France under heavy shell fire, been promoted to a captaincy in the Royal Engineers, and has been posted to the 34th (Norfolk) Divisional Royal Engineers as captain of the 209th company. He expects to return to the front early in August.

W. McNab, Principal Assistant Engineer, G. T. R., Montreal, has retired from the board of direction of the American Railway Engineering Association, after 11 years of continuous service. On his retirement, resolutions of appreciation for his services in various positions, including that of President, were passed, and engrossed and bound in book form for presentation. He has been elected an honorary member of the governing board.

John Macrae, who has been appointed Locomotive Foreman, C. P. R., North Bend, B. C., was born at Springburn, Glasgow, Scotland, Jan. 30, 1879, and entered C. P. R. service, Feb. 19, 1904, since when he has been, to May 1907, fitter; May 1907 to July 1908, Roundhouse Foreman; July 1908 to

Nov. 30, 1909, Night Foreman; Dec. 1, 1909 to June 10, 1914, Locomotive Foreman, all at Revelstoke, B. C.; July 1, 1914 to June 15, 1915, Shop Foreman, Kamloops, B. C.

George Bury, Vice President, C.P.R., arrived in Winnipeg from Montreal, July 6, to make a complete inspection of the company's western line. From Winnipeg west he was accompanied by Grant Hall, Vice President and General Manager, Western Lines; J. G. Sullivan, Chief Engineer, Western Lines, and by the various general superintendents and superintendents over their several jurisdictions. Mr. Bury is expected to return to Montreal early in August.

A. H. Willet, whose appointment as Assistant Division Engineer, National Transcontinental Ry., Cochrane, Ont., was announced in our last issue, was educated in Scotland and England, and entered railway service in Canada in 1904, since when he has been, to 1905, on location and construction on the C. P. R. in Manitoba and Alberta; 1905 to 1906, Resident Engineer on Construction, District F, National Transcontinental Ry., Kenora, Ont.; 1909 to 1914, Assistant District Engineer, District D., N. T. R., Cochrane, Ont.

H. A. Laird, whose appointment as Division Freight Agent, National Transcontinental Ry., Cochrane, Ont., was announced in our last issue, was born at Brantford, Ont., and entered railway service in 1899, since when he has been, to 1907, in the export and import department, G.T.R., at Montreal and Portland, Me.; 1907 to 1910, Travelling Freight Agent, G.T.R., Montreal; 1910 to May 1914, chief clerk to General Freight Agent, G.T.R., Montreal; May 1914 to June 1, 1915, City Freight Agent, G.T.R., Montreal.

Ross Garfield Edwards, whose appointment as Assistant Superintendent, District 2, Eastern Division, C. P. R., Montreal, was announced in our last issue, was born at Maitland, Ont., Oct. 10, 1883, and entered C. P. R. service Dec. 24, 1900, since when he has been, to May 31, 1901, caller; June 1, 1901 to July 1902, checker, July 1902 to Apr. 14, 1904, yard office clerk; Apr. 15, 1904 to Oct. 21, 1906, chief clerk; Oct. 22, 1906 to Apr. 5, 1907, yard man and yard foreman; Apr. 6, 1907 to Feb. 11, 1909, Yardmaster; Feb. 11, 1909 to May 31, 1915, General Yardmaster, all at Smiths Falls, Ont.

Jos. Bellingham, whose resignation of the position of Superintendent of Motive Power, Grand Trunk Pacific Ry., was announced in Canadian Railway and Marine World recently, has returned to his former position of General Inspector, American Locomotive Co., and is living in Schenectady, N.Y. The American Locomotive Co. is very busy making shells and cartridge cases for the allies, and expects to be able through all its plants to turn out about 15,000 shells a day. Mr. Bellingham visits all the plants, including Montreal, and reports direct to the Vice President. He has a staff of inspectors at each point.

Joseph Emile Gibault, A. M. Can. Soc. C. E., whose appointment as Resident Engineer, District 2, National Transcontinental Ry., Cochrane, Ont., was announced in our last issue, was born at St. Jerome, Terrebonne County, Que., Nov. 16, 1887. He graduated in science from the Mont St. Louis Institute, Montreal, in 1906, in civil engineering from Laval University in 1910, with the degree of B. A. Sc. He was from May to July 1910, draughtsman, with the Riter Conley Manufacturing Co., Pittsburg, Pa.; Aug. to Dec. 1910, instrument man, District C, National Transcontinental Ry.; Jan. to Mar. 1911, Resident Engineer, District E., N. T. R.; Apr. 1911 to Apr. 1913, Resident Engineer, N. T. R., Armstrong, Ont.; May 1913 to Feb. 1915, Resident Engineer, N. T. R., Cochrane,

A. R. Macgowan, whose appointment as Division Engineer, Intercolonial Ry. and Prince Edward Island Ry., Moncton, N.B., was announced in our last issue, was born at Moncton, N.B., Jan. 16, 1883, and entered railway service in Jan., 1899, since when he has been, to June, 1902, clerk in Accountant and Treasurer's office, Intercolonial Ry., Moncton, N.B.; June, 1902, to Mar., 1905, rod man and transit man, I.R.C., Moncton, N.B.; Mar., 1905, to Jan., 1906, contractors' engineer, North Maine Seaport Ry., Bangor, Me.; Jan. to Nov., 1906, Resident Engineer, Somerset Ry., Moosehead, Me.; Nov., 1906, to May, 1915, Assistant Engineer, Intercolonial Ry., Moncton, N.B.

Arthur S. Piers, whose appointment as Manager, Real Estate Department, C.P.R., Montreal, was announced in our last issue, was born at Montreal, May 23, 1885, and entered C.P.R. service Jan. 3, 1903, since when he has been, to Sept. 1, 1903, office boy, Freight Traffic Manager's office; Sept. 1, 1903, to July 20, 1904, secretary to Freight Traffic Manager; July 20 to Nov. 1, 1904, secretary to General Freight Agent; Nov. 1,



J. E. Gibault,
Resident Engineer, District 2, National
Transcontinental Railway.

1904, to Mar. 1, 1907, secretary to Vice President; Mar. 1, 1907, to May 1, 1910, assistant chief clerk to Vice President; May 1 to Aug. 1, 1910, assistant to Right of Way Purchaser; Aug. 1, 1910, to Feb. 1, 1915, Assistant Real Estate Agent; Feb. 1 to June 15, 1915, Real Estate Agent.

Aaron M. Harvey, whose appointment as Signal Supervisor, Canadian Government Railways, Moncton, N. B., was announced in our last issue, was born at Champlain, Ill., Sept. 26, 1870, and entered railway service Nov. 1898, since when he has been, to Sept. 1900, fitter, Cleveland, Cincinnati, Chicago and St. Louis Ry., Galion, Ohio; Sept. to Dec. 1900, repair man, Toledo, St. Louis and Western Rd., Frankfort, Ind.; Jan. to July 1901, repair man, Chicago and Eastern Illinois Rd., Danville, Ill.; July 1901 to July 1902, foreman, Toledo, St. Louis and Western Rd., Frankfort, Ind.; July 1902 to July 1907, foreman, Chicago and Eastern Illinois Rd., Danville, Ill.; June 1907 to Dec. 1909, general electric maintainer, same road, Danville, Ill.;

Jan. 1910 to July 1915, General Construction Foreman, Railway Signal Co. of Canada, Lachine, Que.

Archibald D. Watt, who has been appointed District Locomotive Foreman, G.T. Pacific Ry., Prince Rupert, B.C., was born at St. Louis Station, Que., Mar. 5, 1874, and entered railway service July 3, 1890, since when he has been, to July 20, 1892, wiper, G.T.R., Montreal; July 20, 1892, to Aug. 16, 1897, fireman, G.T.R., Montreal; Aug. 30, 1897, to Sept. 12, 1902, locomotive driver, G.T.R., Montreal; Oct. 1, 1902, to Nov. 1, 1905, machinist, G.T.R., Point St. Charles Shops, Montreal; Nov. 10, 1905, to Nov. 20, 1906, Locomotive Foreman, Central Vermont Ry., St. Albans, Vt.; Dec. 1, 1906, to Dec. 15, 1907, Locomotive Foreman, Turcot, Que.; Jan. 1 to Dec. 31, 1908, Locomotive Foreman, G.T. Pacific Ry., Melville, Watrous, Sask., and Wainwright, Alta.; Jan. 1, 1909, to Mar. 10, 1910, Mechanical Foreman on construction work west of Edmonton, G.T.P.R.; Mar. 10, 1910, to Feb. 11, 1911, Locomotive Foreman, G.T.P.R., Prince Rupert, B.C.; Feb. 11, 1911, to June 30, 1915, General Foreman, G.T.P.R., Prince Rupert, B.C.

The question of a public memorial to the late **Walter Moberley**, civil engineer, is being discussed in Vancouver. During his lifetime two portraits were placed in public institutions, one in the Vancouver Museum, and a second in the Conservative Association's rooms, whilst one of the public schools in South Vancouver was named the Moberley School. A meeting was held in Vancouver June 29, under the chairmanship of G. R. Gordon, President of the Vancouver Pioneer's Society. It was stated that there was at the credit of the fund which was subscribed during his illness \$400, which could be utilized for the purposes of a permanent public memorial. F. C. Wade, K.C., G. R. G. Conway, M. Can. Soc. C. E., W. Burdes, A. K. Robertson and N. Robinson were appointed a committee to communicate with Sir Thos. G. Shaughnessy as to the placing of a memorial on the C.P.R. at Loggan, to represent Mr. Moberley's work on that line. Suggestions were also made as to a public memorial in Vancouver.

J. F. Chapman, Manager, Thousand Islands Ry. and Oshawa Ry., died at Gananoque, Ont., July 19, from heart disease, after an illness of a year, the latter half of which he had been practically confined to his home. The funeral took place at Gananoque, July 21. He was born at Frankford, Ont., Aug. 25, 1863. Having learnt telegraphy, he was appointed first agent of the northern extension of the Central Ontario Ry. at Frankford, and as the line was opened up, he was moved to other stations, being officially located at Coe Hill Mines, the northern terminus. On the closing down of the mines, he entered Bay of Quinte Ry. service, being from June, 1886, to Aug., 1890, chief clerk to General Freight and Passenger Agent, Deseronto, Ont.; Aug., 1890, to Jan., 1895, Superintendent Thousand Islands Ry., Gananoque, Ont.; Jan., 1895, to Jan., 1904, Assistant General Freight and Passenger Agent, Bay of Quinte Ry., Thousand Islands Ry., Oshawa Ry., and Deseronto Navigation Co., Deseronto, Ont.; Jan., 1904, to Jan., 1912, General Freight and Passenger Agent, same lines; Jan. 1912, until his death, Manager, Thousand Islands Ry. and Oshawa Ry.

Compensation for Carrying Mails.—Washington, D. C., press dispatch, July 18:—Claims against the Government aggregating \$10,880,865 were filed at the Court of Claims today by the seven New England railways, which allege that they have lost this sum in the past six years through carrying the mails under the present system of weights.

The Interstate Commerce Commission Cannot Modify Baggage Rules

The following article is reproduced from Greater New York, which is published by the Merchants' Association of New York:—

Attention was called in some detail in Greater New York recently to the baggage regulations imposed by the railways in order to comply with the provisions of the Cummins amendment to the Interstate Commerce Act. In view of the great inconvenience inflicted upon the travelling public by the amendment, and the absence of any real public demand for the application of such a law to baggage and express shipments, the Traffic Bureau asked the Interstate Commerce Commission whether the commission by specific orders could not give the statute an interpretation under which a passenger would not be required to declare the actual value of baggage, except where the actual value was in excess of \$100 for weight of 150 lbs. or less, or 66 2-3 cts. per lb. where the weight was in excess of 150 lbs., and the passenger desired to insure with the carrier for the increased value. In response to this inquiry the Traffic Bureau is in receipt of the following advice:

"Referring again to the correspondence which has passed relative to the declarations of value in connection with checking of baggage under carriers' revised tariffs, I have to say that this matter has been fully considered by the commission, and the commission has directed me to say that the Cummins amendment is but an amendment to the act, which in common with all other portions of the act must be read in connection with other provisions thereof, and that where the carriers' tariffs provide for the declaration of value as a condition of shipment of forwarding the value declared should be the true value."

We are unable to see how a different ruling in this regard could be applied to the forwarding of baggage and to the forwarding of express packages. The Cummins amendment seems to have wiped out all released rates and all provisions therefor. As many of our members are perhaps unaware of the provisions of sec. 10 of the Act to Regulate Commerce, which must be construed in connection with the Cummins amendment, we quote therefrom an abstract of the portions of the section which relate to the duties of a shipper: "Any person, corporation, or company . . . who shall deliver property for transportation to any common carrier . . . who shall knowingly and wilfully, directly or indirectly, himself or by employe, agent, officer, or otherwise, by false billing, false classification, false weighing, false representation of the contents of the package or the substance of the property, false report of weight, false statement, or by any other device or means . . . obtain or attempt to obtain transportation for such property at less than the regular rate then established and in force on the line of transportation; or who shall knowingly and wilfully, directly or indirectly . . . by false statement or representation as to cost, value, nature, or extent of injury . . . knowing same to be false, fictitious, or fraudulent . . . obtain or attempt to obtain any allowance, refund, or payment for damage or otherwise in connection with or growing out of the transportation of or agreement to transport such property . . . whereby the compensation of such carrier for such transportation, either before or after payment, shall in fact be made less than the regular rates then established and in force on the line of transportation, shall be deemed guilty of fraud, which is hereby declared to be a misdemeanor, and

shall, upon conviction . . . be subject for each offense to a fine of not exceeding \$5,000 or imprisonment in the penitentiary for a term of not exceeding two years, or both, in the discretion of the court."

Inasmuch as the Interstate Commerce Commission in its administrative functions must be guided by the law, and as it cannot make administrative rulings at variance with the law, the only recourse apparently is the repeal or modification of the Cummins amendment. A good many controverted questions have arisen and more will probably arise under the amendment. By the time Congress assembles the desirability and necessity for some modification of its provisions will undoubtedly become apparent.

National Transcontinental Railway Operation.

The most important feature of the operation of the National Transcontinental Ry. by the Dominion Government as part of the Canadian Government Railways, has been the starting of a tri-weekly through passenger service between Toronto and Winnipeg. The first train left Toronto Tuesday, July 13, at 10.45 p.m., for Winnipeg, arriving there on Thursday, July 15, about two hours late, the schedule time for arrival being 3.50 p.m. The first eastbound train left Winnipeg Sunday, July 18, at 5.15 p.m., and arrived in Toronto July 19 at 12.05 p.m. Westbound trains leave Toronto, Tuesdays, Thursdays and Saturdays. Eastbound trains leave Winnipeg, Sundays, Tuesdays and Thursdays.

The service is given by a combination of the G.T.R., the Ontario Government railway (the Timiskaming and Northern Ontario) and the National Transcontinental Ry. The total distance covered by the service is 1,257 miles, distributed as follows: G.T.R., Toronto to North Bay, 227 miles; Timiskaming and Northern Ontario Ry., North Bay to Cochrane, 253 miles; National Transcontinental Ry., Cochrane to Winnipeg, 777 miles. The points on the N.T.R. west of Cochrane at which the train stops, including flag stops, are: Jacksonboro, 512 miles; Fauquier, 530; MacPherson, 550; Mattice, 591; Hearst, 609 (junction with Algoma Central and Hudson Bay Ry.); Kabina, 631; Wilgar, 694; Grant, 734; KowKash, 777; Willett, 842; Armstrong, 866; McDougall's Mill, 987; Lake Superior Jct., 999; Graham, 1,005; Pyrites, 1,012; Quibell, 1,081; Redditt, 1,129; Minaki, 1,143; Dugald, 1,244; Winnipeg, 1,257, all these mileages being calculated from Toronto. The distance from Toronto to Winnipeg, on the C.P.R. via Sudbury, is 1,231.17 miles, and by the Canadian Northern Ry., now nearly ready for operation, it will be 1,229 miles.

The trains being operated in the new service consist of colonist sleeping cars, electric lighted first class coaches, tourist sleeping cars, dining car and standard sleeping cars. The rolling stock is being supplied for the present by the Canadian Government Railways and the Grand Trunk Pacific Railways, and Pullman sleepers are being used until the Government can provide its own.

The new service, which is named the National, is operated in conjunction with the Intercolonial Ry. Ocean Limited from Halifax to Montreal, the G.T.R. International Limited from Montreal to Toronto, and at the Fort Garry Station, Winnipeg, with the G.T. Pacific Ry. to Prince Rupert.

On the line in Quebec and Ontario, not previously operated over, except by contractors' trains, suitable services are being operated, new schedules having been put in operation July 11. Two trains a week each

way are being operated between Quebec and Cochrane, 573.16 miles; and a two train a week service from Cochrane to Graham, 524.42 miles, in addition to the National Limited.

The lease of the G.T. Pacific Ry.'s Lake Superior branch from Lake Superior Jct. to Fort William, with its terminals, was signed in Ottawa, July 2. The rental is said to have been fixed at \$600,000 a year for 99 years. (July, pg. 256.)

Grand Trunk Pacific Railway Construction.

The Saskatchewan Legislature has passed an act extending the time for the building of a number of branch lines, for which the province has guaranteed the bonds of the G.T. Pacific Ry., and of the G.T.P. Saskatchewan Ry., and also extending the time within which these companies may build terminals at Regina, Saskatoon and Moose Jaw, and certain railway bridges, for which the province is guaranteeing the bonds of the companies. While the act specially grants extensions in each case to Dec. 31, 1916, the Lieutenant-Governor in Council is given power to grant further extensions, not exceeding 12 months, if required.

The Board of Railway Commissioners has approved a revised location of the Biggar-Calgary branch, in s.e. ¼ sec. 23, and n.e. ¼ sec. 14, range 3, west third meridian, and amended location for Y turning out from branch at Loverne, Sask.

The company has deposited with the Minister of Public Works, Ottawa, description of site and plan of wharf and ware house proposed to be built in Burrard Inlet, Vancouver harbor, in front of Block 1, subdivision of District Lot 196, Vancouver District, and is asking approval of the same. (July, pg. 256.)

A. E. Doucet's Services Recognized.—The Quebec Board of Trade, at its annual meeting recently, unanimously passed the following resolution in reference to A. E. Doucet, M. Can. Soc. C.E., who was District Engineer at Quebec during the location and construction of the National Transcontinental Ry.: "The board, in view of the completion of the National Transcontinental Ry., the great new highway from Quebec to Prince Rupert on the Pacific Ocean, takes this opportunity of expressing to A. E. Doucet, R.M.C., the chief engineer in charge of construction in the Province of Quebec, its high appreciation of the great services he has rendered to the City of Quebec and to the province, in having discovered and located the route by the valley of the St. and seaport, and that copies of this resolution be sent to Mr. Doucet, and also to the Prime Minister, the Minister of Railways, Maurice, which shortens the distance between tide water and Winnipeg by no less than 214 miles, secures an almost air line, and makes this great railway tributary to the City of Quebec as its summer terminus and the Postmaster General.

The Canadian Overseas Railway Construction Corps, which sailed from Montreal on the s.s. Herschell, June 14, and arrived at Plymouth, Eng., June 23, as previously announced in Canadian Railway and Marine World, is quartered in the Aldershot district with two companies of the Royal Engineers.

The Grand Trunk Pacific Ry. started on July 22 to burn fuel oil on its locomotives between Jasper and Prince Rupert, B.C., 719 miles. A fully illustrated description of these locomotives and of the oil storage tanks, etc., was published in the Canadian Railway and Marine World for May.

The Western Passenger Rate Question.

The Interstate Commerce Commission, by Examiner Thurtell, opened an inquiry at Chicago, Ill., July 6, into the application of 15 Western railways for authority to increase passenger rates. The companies expect to be able to show by the evidence that the net operating income of the lines involved during the past seven years has been materially less than in the preceding seven. During the same period there has been an increase in the volume of business done, and in the amount of money invested in the undertaking. This results in a higher operating rate and naturally a lesser rate of return than has been maintained heretofore. The expenses of the companies have also been increased through the higher cost of labor and increased taxes. It is claimed, and evidence is being put in to show, that notwithstanding the economies effected, the increased volume of business has not been sufficient to meet the increased cost of operation, and that the present return upon the capital devoted to passenger service is less than 3%. The hearing will occupy some time, and it is not expected that there will be any finding for some months.

The Public Service Corporation of Quebec has been incorporated under the Quebec Companies' Act, with an authorized capital of \$3,000,000, to sell electric power in the City of Quebec, and surrounding area. The provisional directors include H. Murray, J. C. Smith, T. McDougall of the Shawinigan Water and Power Co., and M. L. Hersey, Montreal. It is reported that one of the objects of the company is to take over the Dorchester Electric Co.'s plant and franchise, which were sold by auction, June 30, in liquidation proceedings instituted by the Royal Trust Co. The purchaser was C. H. Brauchaud, Montreal, President of a committee of shareholders, the purchase price being \$100,000. It is said that the Shawinigan Water and Power Co. holds a majority of the Dorchester Electric bonds, and that the reorganization is to take place under its auspices. The S. W. and P. Co. has offered to its shareholders \$1,237,500 of new common stock, at par on the basis of one share of new stock to every 10 of the outstanding registered holdings at the close of business July 10, the right to subscribe expiring Aug. 30. The S. W. and P. Co. is building an electric railway at Three Rivers, Que., under the Three Rivers Traction Co.'s charter.

A Canadian Northern Pacific Ry. Contract Suit.—Proceedings were started in a British Columbia court, July 15, by Palmer Brothers and Henning, contractors, against the Northern Construction Co., the Cowan Construction Co., Mackenzie, Mann and Co., the Canadian Northern Pacific Ry., the National Trust Co., and the British Empire Trust Co., in an action to recover \$393,197 for work done. The two trust companies are made parties to the action as trustees for the bondholders, and it is sought to have the claim dealt with as a mechanic's lien and to have a declaration made that it takes precedence of the mortgage. The contractors carried out three subcontracts covering 53 miles of line, all of which appears to have been heavy work as the amount of the contracts worked out at: mileage 49 to 74.6, \$743,714; mileage 27 to 35, \$463,714, and mileage 405 to 424.50, \$1,008,276. There remained a balance outstanding of \$393,197 which it is now sought to recover.

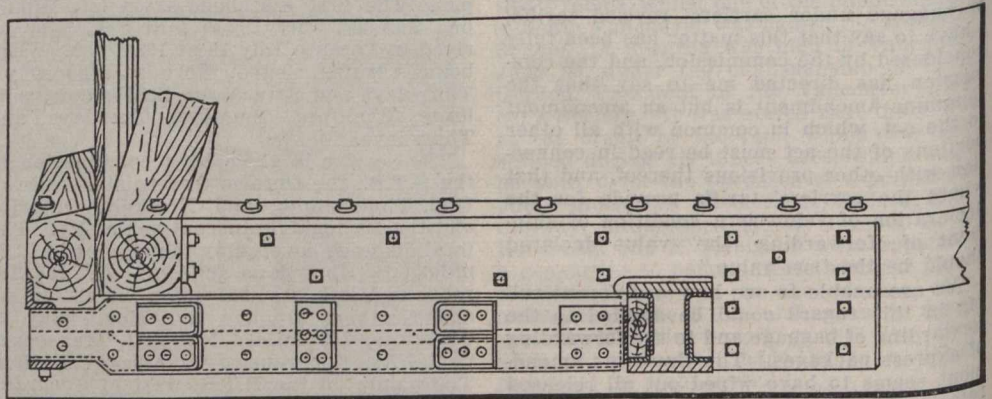
Shrinkage allowance in drop forging dies usually amounts to 3-16 in. to the foot, but the practice varies.

Reinforcing Wooden Frame Freight Cars on Intercolonial Railway.

By G. E. Smart, General Master Car Builder, Moncton, N. B.

Material is being arranged for reinforcing the first 500 freight cars. Three sample cars have been fitted up at Moncton shops with metal plates pressed so that the upper part can be bolted to the side of the centre sill and extend back 2 ft. behind the body bolster and notched out so that the buffing and pulling strains are distributed to the body bolster as well as to the centre sills. The lower portion forms the draught arm and is reinforced with angle irons on the outside and pressed steel plates rivetted on the inside to form the lugs for the draught gear. The draught arms are made 2 ins. longer than the present wood draught timber which permits more room between the cars and will provide more clearance between the end ladder or any other part of the end of the cars than the Board of Railway Commissioners or the Interstate Commerce Commission call for. All parts of this draught arm can be manufactured from plates, angles and material of standard sizes and shapes that can be manufactured in Canada.

The manner of application is as follows: The old wood draught timber and body bolster are removed, and serviceable ma-



Steel Reinforcing Member for Wooden Frame Freight Cars, Intercolonial Ry.

terial, such as couplers, springs, followers and bolts are utilized on the new metal draught arm to reduce the cost, as it is intended that all cars in the 17,000, 18,000, 19,000, 20,000 and 21,000 series will be equipped with the standard double springs 6 1/4 x 8, using the 24 in. twin spring, and cars in the 60,000 and 80,000 series of numbers will be equipped with the double class G springs 8 x 8 and the large double pockets. It also has been arranged that the same draught timber bolts will be utilized in bolting the arms to the centre sills and in addition 1 1/4 in. bolts and two 1 in. bolts through the end sills for each draught arm, making a total of 48 bolts per car, or 72 bolts as against 24 formerly, and the additional strength from the plates notched out the full depth of the bolster and also the front end angle so as to butt up against the sill.

It is also intended to dispense with the wooden deadwood between cars and substitute a cast steel one in place of same, which will permit the two centre truss rods to pass through without lengthening the rods. At through the end sills of the deadwood at through the end sills of the dead wood at each end and by allowing them to pass through this steel deadwood block it will strengthen the end sill and stiffen up the draught gear by the weight of the car pulling on the point where the draught gear is pulling out against the end sill.—Can. Gov. Ry.'s Employees' Magazine.

Great Northern Railway Lines in Canada.

Vancouver Terminals.—Under the original order the company was to complete the extension of its station on the False Creek property, Vancouver, at the corner of Prior St. and Park Lane by March, 1916. The company failed to file plans for the building and there were negotiations for a two years' extension on the part of the company, while the city proposed appealing to the Board of Railway Commissioners for an order compelling the immediate filing of plans. Ultimately the matter came before the Board upon an application of the company for a change of location of the station. The city did not offer any serious objection to the change, which would bring it alongside the proposed Canadian Northern Ry. station, so long as steps were being taken to go ahead with the building. In the evidence given it was stated that the company had about 800,000 cubic yards of filling yet to do on its portion of the flats which were being reclaimed. The order of the Board approves of the new location; directs the submission of preliminary sketches of the layout of the station and tracks at once; the filing of complete plans to follow in order; the letting of contracts for the building within six months from the date of order, and the completion of the whole work by June 1, 1917. The filling

work is to be expedited in order that these directions may be carried out

The Canadian Society of Civil Engineers has arranged for an excursion to the Pacific Coast, to leave Montreal about Sept. 15, going by special train over the Grand Trunk, Timiskaming and Northern Ontario, National Transcontinental and Grand Trunk Pacific Railways to Prince Rupert, B. C., thence by steamship to Victoria, where three days will be spent. One or more days will be spent in Vancouver, and the return trip will be made over the C. P. R. from there. Short stops will be made at Winnipeg and Edmonton on the westbound journey, and at Calgary on the return journey. At Victoria there will be a garden party at Government House, motor drives, a dinner and one or two meetings.

Wentworth St. Incline Ry., Hamilton.—Plans for the extension of the Wentworth St. Incline Ry. in Hamilton, Ont., under the G. T. R. tracks, and to the level of the Toronto, Hamilton and Buffalo Ry. tracks, were before the Board of Control recently. It was recommended that the City approve of the plans, and take steps in conjunction with G. F. Webb, owner of the incline railway, to have the same approved by the Ontario Railway and Municipal Board, and the Board of Railway Commissioners, leaving it to the latter to apportion the cost of the improvement. (April, pg. 148.)

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The Late Sir Sandford Fleming.

Sir Sandford Fleming, K.C.M.G., died at his summer home at Halifax, N.S., July 22, after a short illness. He was born at Kirkcaldy, Fifeshire, Scotland, Jan. 7, 1827, and was educated in Scotland, where he studied surveying and engineering. He came to Canada in 1845, and later joined the engineering staff of the Northern Ry., Toronto, of which he was appointed Chief Engineer in 1857. He subsequently engaged in private practice as a member of the firm of Fleming, Ridout and Schreiber. In 1863 he was chosen by the people of the Red River settlement, now incorporated in the Province of Manitoba, to proceed to England to urge the Imperial authorities to open railway communication between Red River and eastern Canada. On his return, he was appointed by the Governments of Canada, Nova Scotia and New Brunswick, in conjunction with the British Government, to conduct a survey for the first link of a railway to extend from the Atlantic to the Pacific, on British territory. Of a section of this railway, the Intercolonial, he was Chief Engineer during location and construction. In the meantime, in 1871, he was appointed Engineer in Chief to carry on the surveys for the Canadian Pacific Railway. In 1872 he headed an expedition which proceeded through the Rocky Mountains by the Yellowhead Pass. While engaged on the Intercolonial Ry., and in the exploring operations for the Canadian Pacific Railway, between Ottawa and British Columbia, he carried on, at his own expense, an examination of Newfoundland, to ascertain the possibility of establishing a railway service across the island. After the engineer engaged by him reported satisfactorily, he was thanked by the House of Assembly, and charged by the local government to conduct a railway survey from St. John's to St. George's Bay. The outcome of that survey is the road now built and operated by the Reid Newfoundland Co. In 1880 he retired from the Dominion Government service, at which date the transcontinental surveys had established the practicability of the proposed railway to the Pacific and the means of overcoming the formidable barriers. Construction was then being proceeded with at both ends, and between Lake Superior and Manitoba, in all over 2,000 miles, some 600 miles of which was practically completed.

After his retirement from Government service, he devoted himself to special branches of science and literature, and in lending his assistance to the Government in an advisory capacity in various departments of public service. In 1883, when in England on a visit, he was asked by cable to assist in the establishment of the Canadian Pacific Ry. by its present route through the Rocky Mountains, and he immediately returned to Canada for that purpose, and made the first through journey from ocean to ocean, in advance of the rails, his experiences being embodied in a book entitled "From Old to New Westminster." He gave considerable time and study to the question of universal time, his efforts having contributed in no small degree to the adoption of an initial meridian common to all nations. He also studied and made a specialty of an all British cable service, of which the Pacific cable is the first section. In 1879 he submitted to the Canadian Government a scheme for spanning the Pacific Ocean by electric cable, which, in connection with the overland telegraph would complete the electric girdle of the globe, and bring Great Britain, Canada, Australia, New Zealand, India and South Africa into unbroken telegraph touch of each other without passing over foreign soil, and since that

date he has consistently advocated the establishment of such a work. He contributed a number of papers to various scientific and political societies, and wrote several books dealing with his unique experiences in railway location and construction in Canada, which stand as authorities on all points, geographical, geological and engineering. In recognition of his services he was created a Companion of the Order of St. Michael and St. George in 1877, and a Knight Commander of the same order in 1897, and at different times has been presented to the present and the two previous monarchs. He was elected an honorary member of the Canadian Society of Civil Engineers in 1908, and was also a member of the Institute of Civil Engineers, England, and of the American Society of Civil Engineers, a Fellow and Past President of the Royal Canadian Society, Canadian Landmarks Association, Royal Conservation Commission, director Hudson's Bay Co., director C.P.R., Honorary President Canada Cement Co., Fellow of the Geological Society of the Victoria Institute, Royal Historical Society, Royal Geographical Society, and numerous other business, philosophical and social organizations. He has been variously spoken of as one of the most public spirited Britons the Empire ever produced, and as one who could look back upon a life of great and varied usefulness. The funeral, which took place at Ottawa, July 24, was largely attended by representatives of organizations with which he had been connected and by the general public.

The Pennsylvania Rd. test department, which was opened in 1874 in a small way, has since made as many as 120,000 tests in one year, at a cost of about 0.6% of the material purchased by the railway.

Locomotives overhauled for the first time are said to be in better condition than when first received, as any weak points that have been developed are often changed at that time.

The Canadian Ticket Agents Association's 29th annual gathering will be held at Denver, Col., October 18 to 21, both inclusive, the date having been changed so as not to conflict with the Travelling Passenger Agents Association's meeting in Boston.

The Canadian Northern Ry. has again operated in Alberta this year, at its own expense, under the Provincial Agriculture Department's auspices, a special agricultural demonstration train. Reduced rates are given from all stations within twenty-five miles of the points at which the train stops for lecture purposes.

The Marine Department has issued a notice to all mariners advising as to the necessity of keeping a sharp lookout and reporting any suspicious craft which they may sight. Small fishing and coasting vessels are particularly urged to report any such craft to the nearest customs officer for transmission by telegraph on the east coast to the Captain in charge at the Halifax dock yard and on the west coast to the Superintendent of the Esquimalt dock yard. Definite facts only are to be reported, and not hearsay evidence.

SITUATION VACANT.

Situation for experienced electrician as Foreman and Assistant Superintendent of Light, Power, Telephone and Railway lines; construction, installation, maintenance in each department. State experience, references, salary expected, and when services available. Secretary, Public Utilities Commission, City of Port Arthur.

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.

Canadian Government Railways.—B. A. BOURGEOIS has been appointed Assistant to the Comptroller and Treasurer. Office, Moncton, N.B.

F. W. WHELPLEY is reported to have been appointed Assistant to the Treasurer. Office, Moncton, N.B.

Canadian Northern Ry.—E. D. TOYE, Division Storekeeper, Ontario Grand Division, has had his office moved from Toronto to Trenton.

A. W. MARTIN has been appointed City Ticket Agent, Port Arthur, Ont., vice J. R. McDonald, deceased.

C. D. FRENCH is reported to have been appointed storekeeper, Humboldt, Sask., vice S. K. Moorcroft, promoted.

Canadian Pacific Ry.—A. C. DOUGLAS, Purchasing Agent, Vancouver, has been transferred to Montreal temporarily to discharge the duties of Assistant General Purchasing Agent, while E. Fitzgerald is assigned to British War Office Service for the purchase of supplies.

L. A. CLEARY has been appointed General Foreman with supervision over the back shop and roundhouse, McAdam, N. B., vice W. Wells, transferred.

W. H. FLETCHER has been appointed District Master Mechanic, District 1, Lake Superior Division, C.P.R., vice L. G. Roblin, resigned to enter Canadian Government Railways service. Office, North Bay, Ont.

J. WEEGAR, heretofore Travelling Freight Agent, Eastern Manitoba, Winnipeg, has been appointed District Freight Agent, Fort William, Ont., vice G. Hiam, who has volunteered for active service in Europe.

W. A. LOWE has been appointed Travelling Freight Agent, Manitoba Division, with territory covering main line and branches, Neening to Ninga, Banting, Douglas, Moorepark and Harrowby inclusive, vice J. J. Weegar, promoted. Office, Winnipeg.

J. F. EARL has been appointed Roadmaster, Emerson and La Riviere Subdivisions, Winnipeg, Man., vice J. F. Larson, appointed section foreman, Winnipeg Terminals.

A. DESHARNAIS has been appointed Roadmaster, Coutts, Cardston and Stirling subdivisions, not A. Deharnais as stated in our July issue. His office is at Lethbridge, Alta., not Langton as stated in our July issue.

JOHN McRAE, heretofore Shop Foreman, Kamloops, B.C., has been appointed Locomotive Foreman, North Bend, B.C., vice C. Brown, who has left the service. The position of Shop Foreman at Kamloops, we are advised, will not be filled at present.

Central Vermont Ry.—The handling of freight claims has been transferred from the Freight Department, and fire, damage and injury claims from the Legal Department, to the Auditing Department.

S. S. RUSSELL, heretofore Special Agent, has been appointed Claims Agent, and all correspondence in regard to loss, damage and overcharge claims, claims for fire, damage and injury are addressed to him. Office, St. Albans, Vt.

Dominion Atlantic Ry.—D. J. MURPHY, Sr., Roadmaster, will have charge of bridges and buildings, vice H. Bailey, whose services were secured during the erection of a number of large steel bridges, which is now completed, and who has left the service. Office, Kentville, N.S.

Edmonton, Dunvegan and British Columbia Ry.—Following are the officials of this

company.—President, J. D. McArthur, Winnipeg; Secretary-Treasurer, J. K. McLennan, Edmonton, Alta.; Assistant Secretary-Treasurer, D. W. Campbell, Winnipeg; General Manager and Chief Engineer, W. R. Smith; Traffic Manager and Purchasing Agent, A. Campbell; Superintendent, R. M. Halpenny; Master Mechanic, R. Weit, and Accountant, D. A. Pennicuick, Edmonton, Alta.

Grand Trunk Pacific Ry.—G. E. DECKER has been appointed Car Foreman, Repair Yard, Transcona, Man., vice J. Reeves, assigned to inspector.

H. G. PEPPER, formerly Manager, Majestic Hotel, New York, has been appointed Manager, The Fort Garry, G.T.P.R., Winnipeg.

H. R. SIMPSON, heretofore Road Foreman, Jasper, Alta., has been appointed General Locomotive Foreman, with jurisdiction from west switch at Watrous to Winnipeg, including intervening branch lines, reporting to H. McCall, Superintendent.

J. ABBOTT, heretofore Chief Dispatcher, Regina, Sask., has been appointed Chief Dispatcher, Melville, Sask., vice M. D. Thompson, assigned to other duties, and his former position has been abolished.

W. G. McCONACHIE, heretofore Road Foreman, Edmonton, Alta., has been appointed General Locomotive Foreman, with jurisdiction from west junction switch, Edmonton, to the west switch at Watrous, including intervening branch lines, reporting to N. B. Walton, Superintendent.

G. H. LAYCOCK, heretofore Locomotive Foreman, Endako, B.C., has been appointed Locomotive Foreman, Jasper, Alta., vice D. W. Hay, transferred.

J. A. MILER has been appointed Locomotive Foreman, Endako, B.C., vice G. H. Laycock, transferred.

A. H. MAHAN, heretofore Locomotive Foreman, Prince George, B.C., has been appointed General Locomotive Foreman, with jurisdiction from Prince George to west switch, Edmonton, including intervening branch lines, reporting to J. P. Kirkpatrick, Superintendent.

D. W. HAY, heretofore Locomotive Foreman, Jasper, Alta., has been appointed Locomotive Foreman, Prince George, B.C., vice A. H. Mahan, promoted.

A. WATT, heretofore General Foreman, Prince Rupert, B.C., has been appointed General Locomotive Foreman with jurisdiction over territory from Prince Rupert to west switch, Prince George, B.C., reporting to J. H. Todd, Superintendent.

W. G. CONNOLLY, heretofore in the city ticket office, Vancouver, B.C., has been appointed City Passenger and Ticket Agent there, as reported in our last issue.

The following station agents have been appointed,—Elie, Man., A. Fullum; Landis, Sask., A. Lerner; Lebert, Sask., F. X. Landry; Battleford, Sask., R. L. Harrop; Edgerton, Alta., F. H. Keefe; Trichu, Alta., H. B. Briggs; Beiseker, Alta., H. E. Frank.

Grand Trunk Ry.—W. H. ARCHER has been appointed Locomotive Foreman, Palmerston, Ont., vice J. A. Walton, transferred.

The following station agents have been appointed,—Admaston, Ont., (passenger), A. A. McIntyre; Suspension Bridge, N.Y., (passenger), C. P. Brohmann; outside agency, Windsor Hotel, Montreal, A. M. Robert.

G. H. BROWN, heretofore Soliciting Freight Agent, Chicago, Ill., has been appointed Commercial Agent, Omaha, Neb., vice J. Waugh, transferred.

J. WAUGH, heretofore Commercial Agent, Omaha, Neb., has been appointed Commercial Agent, San Francisco, Cal., vice F. H. Lord, resigned.

Inverness Railway & Coal Co.—J. McGILLIVRAY, heretofore General Manager, has been appointed Receiver and Manager by a Nova Scotia court, on the application for the trustees for the bondholders, the interest on the bonds being in default.

Lehigh Valley Rd.—G. H. LEE, heretofore General Passenger Agent, District 3, Chicago, Rock Island and Pacific Ry., St. Louis, Mo., has been appointed General Passenger Agent, L.V.R., vice G. W. Hay, resigned. He reports to the General Traffic Manager. Office, New York.

London and Port Stanley Ry.—W. GUY, whose appointment as Traffic Manager, was announced in our last issue, has resigned for personal reasons, and has returned to Pere Marquette Rd. service.

J. J. CALLAGHAN, Superintendent of Transportation, Montreal and Southern Counties Ry., Montreal, has been appointed Manager of Operation, L. & P. S.R., with office at London, Ont.

F. T. LEVERSUCH, heretofore Freight and Ticket Agent, Michigan Central Ry., Windsor, Ont., has been appointed Traffic Manager, L. & P.S.R. Office, Lindon, Ont.

Michigan Central Rd.—T. EVANS, heretofore Local Freight Agent, London, Ont., has been appointed General Agent there, representing both freight and passenger departments.

National Transcontinental Ry.—The Dominion Government having assumed the operation of the National Transcontinental Ry. and the Lake Superior Branch of the Grand Trunk Pacific Ry. between Fort William, Ont., and Winnipeg, Man., the following officers of the G.T.P.R., will, until otherwise announced, also represent, in their respective capacities, the Canadian Government Railways, with jurisdiction over the line between Fort William and Winnipeg.—A. E. Rosevear, General Freight Agent; F. R. Porter, Assistant General Freight Agent; F. G. Adams, Division Freight Agent; W. E. Duperow, Assistant General Passenger Agent; W. J. Quinlan, District Passenger Agent; T. E. P. Pringle, City Passenger Agent, and E. McDonald, District Baggage Agent, all with offices at Winnipeg.

C. E. Brooks, acting Superintendent of Motive Power, G. T. Pacific Ry., Transcona, Man., has issued a notice, as follows,—“Commencing July 1 the Dominion Government has taken over the operation of the Transcona roundhouse and roundhouses, shops, and work pertaining to this department, between Winnipeg and Westfort, Ont. The supervision of all employees engaged on this section of the road will be in the hands of the G.T.P.R. officials until such time as the Dominion Government appoints its own staff, or takes over the present staff.”

Wabash Rd.—L. J. FERRITOR, formerly Superintendent, Chicago and Alton Rd., has been appointed personal representative of E. F. Kearney, President, Wabash Rd., in charge of affairs in Canada. Office, Buffalo, N.Y.

S. E. COTTER, heretofore General Superintendent, St. Louis, Mo., has been appointed General Manager for the Receivers, in charge of operation and maintenance. Office, St. Louis, Mo.

R. H. HOWARD has been appointed Chief Engineer Maintenance of Way, in charge of the Maintenance of Way and Signal Departments, and Superintendents and Signal Engineers will report to him. Office, St. Louis, Mo.

The best results in locomotive operation will, it is claimed, be obtained when there are enough travelling engineers to make it possible for them to ride at least once a month on every locomotive under their surveillance.

Canadian Northern Railway Construction, Betterments, Etc.

Canadian Northern Ry.—The question of the link in Port Arthur, Ont., to connect the C.N. Ontario Ry. from eastern points, with the C.N.R. to Winnipeg and the west, was under discussion between representatives of the company and the City Council July 9.

M. H. MacLeod, General Manager, is reported to have stated that there are a number of gangs working on the lines west of Winnipeg improving the roadbed and in general fixing up work. There is a little construction work being done. Twelve cars of steel have been delivered in the Saskatoon yards for the Elrose line, on which it is expected to lay 35 miles of track this year.

A number of cargoes of steel rails are reported to be due at Port Arthur for transfer to western points.

The Saskatchewan Legislature has passed an act extending the time until Dec. 31, 1916, and authorizing the Lieutenant Governor to grant further extensions as required, "but for no longer period than one year," for the building of all the branch lines agreed to be built under guarantee of bonds by the province.

Replying to questions in the Saskatchewan Legislature recently, the Minister of Railways said the Government was pressing on the company the necessity of completing its Radville-Moose Jaw line near the latter city, and hoped that the work would be completed so as to allow farmers to make use of the terminal elevator there this season.

The Board of Railway Commissioners has authorized the opening for traffic of the line from Melfort, southerly to St. Brieux, Sask., 22 miles.

M. H. MacLeod, General Manager, arrived in Edmonton, July 14, on the return to Winnipeg after a trip of inspection of the whole line. He is reported to have during his trip made an inspection of the country between Battleford, Sask., and Oliver, Alberta, with a view of deciding on a general location for the balance of which is at present called the Oliver-St. Paul line. Considerable progress is reported to have been made with the grading on the 40 mile section for which D. F. McArthur has the contract. It is reported that the remainder of the distance to St. Paul will be put under contract this year.

The line to the Grand Prairie country branches off from the transcontinental line at Onoway, and the railhead is at present at Sangudo on the Pembina River, 65 miles from Edmonton. A bi-weekly service is being given. Grading is completed from the Pembina to the McLeod River, and it is expected to lay the steel on this section during this year. The location of the extension from the McLeod River crosses the Athabasca River at Chaissons Crossing, and then runs west by north to the Little and Big Smoky Rivers, and on to the Grand Prairie country.

It is reported that grading is being proceeded with on the line from Calgary to MacLeod, in Southern Alberta, and that it is expected the line will be ready for track-laying by the end of the year.

Canadian Northern Pacific Ry.—Sir William Mackenzie, President, is reported to have said in an interview in Toronto, June 30, that satisfactory work is being made with the work of providing the necessary station and terminal facilities on the line in British Columbia, and that it is expected that by the autumn conditions will allow of the inauguration of a train service of a permanent character. The line, he is reported to have added, has cost on the average more than twice the amount of the

bonds guaranteed by British Columbia. In the building of railways it is necessary to organize subsidiary companies in order to more expeditiously carry on certain portions of the work. On completion of the contracts the various properties are handed over to the parent company. All the terminals and bridges on the line are owned by the C.N.P. Ry. A part of the company's terminal work has already been provided, but the major portion of the guaranteed terminal funds remain intact, and will not be used until circumstances for more rapid construction are favorable and the need of the facilities is more acute.

It was reported June 30, that with the exception of strips, aggregating 75 miles, on which some ballasting had to be done, the line was practically completed. The unfinished sections include 35 miles between Lytton and Kamloops, and 40 miles between mileage 110 and Albretha Summit.

Work is reported to be in progress on the station buildings at Langley, Matouqui, Rose-dale and Lytton, and preparations are being made for starting work on the locomotive houses at Boston Bar and Kamloops. These are the first two divisional points east of Port Mann, the other divisional points on the line are at Blue River and Lucerne, the latter being five miles west of the Yellow-head Pass. R. W. Graham is reported to be in charge of the building work. (July, pg. 259.)

British War Office Purchases in Canada.

Since early in April a specially organized division of the C.P.R. General Purchasing Department has been handling British War Office purchases in Canada for practically all lines of goods required except explosives, shells and parts thereof, forage, and fodder. Since the return of Sir Thos. G. Shaughnessy, President of the C.P.R., from England recently, the purchasing operations have been extended considerably, and he has placed in charge of them E. Fitzgerald, Assistant General Purchasing Agent, C.P.R., who has established himself in room 114, on the lower floor of the Windsor St. station, Montreal, where he has a large space. He has manned his staff exclusively from the C.P.R. General Purchasing Department, one of the best organized on the whole American continent; and an organization has been perfected which would not have been possible otherwise. Practically all purchases are being made direct from the manufacturer or producer, and the best prices possible are therefore being obtained without the intervention of middlemen. The purchasing is to be carried on entirely independent of the C.P.R. All orders are given on War Office Service, and payments are made through the Bank of Montreal.

Calgary Municipal Ry.'s Record.—Calgary, Alta., press dispatch, July 6: "The municipal street railway system completed six years of service yesterday. It commenced business six years ago with one mile of track and two cars. The system has grown in that time to 71 miles of track and 90 cars, representing the investment of \$2,500,000. It has increased the employes from 12 to 275. The system has set aside profits for contingencies averaging \$55,000 a year."

Toronto Suburban Ry.—It is said that the Hydro Electric Power Commission of Ontario, in addition to negotiating for the purchase of the Chatham, Wallaceburg & Lake Erie Ry., as referred to on another page, is also trying to secure the Toronto Suburban Railway's nearly completed line from Toronto to Guelph, another Mackenzie-Mann enterprise, and to include the same in the Ontario hydro electric railway system.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,594,300	\$1,163,800	\$430,500	x \$83,800
Aug.	1,367,700	1,123,000	244,700	x 163,900
Sept.	2,109,900	1,519,000	590,700	65,800
Oct.	1,895,300	1,332,100	563,200	x440,900
Nov.	1,670,200	1,123,100	547,100	x17,700
Dec.	1,329,100	908,000	421,100	200,900
Jan.	950,800	773,000	177,800	x175,100
Feb.	1,105,100	823,700	281,400	42,800
Mar.	1,379,000	956,000	423,000	62,600
Apr.	1,429,000	940,000	489,000	74,800
May	1,193,900	871,000	322,900	x158,700
	\$16,024,300	\$11,530,900	\$4,493,400	x\$1,395,000
Decr.	\$4,573,400	\$3,337,100	\$1,236,300

x Decrease.
Approximate earnings for June, \$1,201,300, against \$1,655,300 for June, 1914, and for two weeks ended July 14, \$537,900, against \$737,000 for same period 1914.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$10,481,971.72	\$6,703,525.89	\$3,778,445.83	\$338,347.35
Aug.	8,917,764.38	6,554,606.68	3,373,157.70	597,981.54
Sept.	10,754,139.67	6,387,091.28	4,367,048.39	48,580.30
Oct.	9,282,923.49	5,961,600.13	3,321,323.36	2,281,529.43
Nov.	8,057,358.89	5,413,286.72	2,644,072.17	2,244,173.89
Dec.	7,443,962.43	5,244,438.62	2,199,523.81	2,027,297.90
Jan.	6,109,026.94	4,968,793.64	1,140,233.30	140,059.24
Feb.	6,735,678.49	4,756,663.87	1,979,014.62	507,438.16
Mar.	7,852,989.67	4,879,974.94	2,973,014.73	x126,224.14
Apr.	7,455,859.54	4,768,104.33	2,687,755.21	657,109.81
May	7,261,495.63	4,818,493.44	2,443,002.19	x520,009.52
	\$91,353,175.85	\$60,256,579.54	\$30,896,596.31	x\$8,193,706.47
Decr.	\$28,407,226.92	\$20,213,520.45	\$8,193,706.47

xDecrease.
Approximate earnings during June, \$6,990,000, against \$9,561,000 for June, 1914. During June the mileage was increased to 12,921.

Approximate earnings for two weeks ended July 14, \$3,301,000, against \$4,623,000 for same period 1914.

Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. for May:

Grand Trunk Railway.	
Earnings	\$3,234,900
Expenses	2,183,900
Net earnings	\$1,051,000
Grand Trunk Western Railway.	
Earnings	\$576,400
Expenses	570,400
Net earnings	\$6,000
Detroit, Grand Haven and Milwaukee Ry.	
Earnings	\$204,000
Expenses	239,700
Deficit	\$35,700

Approximate earnings for June, \$4,403,613, against \$4,543,686 for June, 1914, and for two weeks ended July 14, \$1,979,907, against \$2,120,878 for same period 1914.

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to June 30:

	1915	1914	Incr.	Decr.
G.T.R.	\$18,507,573	\$20,349,529	\$2,841,956
G.T.W.R.	3,479,230	3,453,633	\$25,597
D.G.H.&M.R.	1,208,805	1,177,702	26,103
Totals	\$23,195,608	\$24,980,864	1,790,256

Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section and Lake Superior Branch, 1,104 miles, for June, were \$270,241, against \$427,103 for June, 1914. Aggregate earnings from Jan. 1 to June 30, \$1,701,938, against \$2,482,511 for same period 1914.

An arrangement is reported to have been completed under which practically the whole of the product of the U. S. fisheries in Alaska waters will be sent over the Grand Trunk Pacific Ry. from Prince Rupert, B.C.

Railway Finance, Meetings, Etc.

Grand Trunk Western Ry.—The Michigan Railway Commission has authorized this company, which is the G.T.R. organization west of the St. Clair River, to issue bonds for \$3,879,000 to cover expenditures amounting to \$3,103,000 for betterments already made and rolling stock purchased.

Pere Marquette Rd.—The junior bondholders are reported to have put in a claim for the Lake Erie and Detroit River Ry., which is the Canadian portion of the company's system, on the ground that it is not included in the mortgaged property. It is expected that the courts will, at an early date, order a sale of the property.

Inverness Ry. & Coal Co.—At Halifax, July 6, on the application of the National Trust Co. of Toronto, trustee for the holders of \$3,000,000 I. R. & C. Co.'s bonds, interest of which is in default, J. McGillivray, General Manager of the company, was appointed by the court as Receiver and Manager, with authority to receive amounts owing to the company and to carry on the work for the present.

Pere Marquette Rd.—A decree for the sale of the Pere Marquette Rd. was signed by Judge Tuttle at Detroit, Mich., July 22, and the date for the sale fixed as Nov. 15. The reserve price is stated to be \$41,000,000, and a combination of underlying bond and consolidated mortgage holders will, it is said, buy in the road. The actual price to be paid in is \$12,000,000, the amount owing to the court.

White Pass and Yukon Route.—Gross earnings from Jan. 1 to May 31, \$139,062 against \$176,254 for same period 1914.

Grand Trunk Railway Betterments, Construction, Etc.

Alexander, Ont.—The G.T.R. station and restaurant at Alexandria, Ont., were destroyed by fire July 14, by sparks from a locomotive. The buildings were of frame and were erected over 30 years ago. The erection of a new station, which has been talked of for some time, will now be taken in hand immediately.

Brantford, Ont.—H. E. Whittenburger, General Superintendent, had an interview recently with representatives of the city council respecting sidings and other matters, including the betterment of the freight service at Paris.

Port Huron, Mich.—The G.T.R. freight sheds along the St. Clair River, Port Huron, Mich., were destroyed by fire, July 6. The total loss, including 22 freight cars, and freight in store and transit is placed at \$300,000. (July, pg. 257.)

The Canadian Autobus Company and Its Montreal Franchise.

The city legal department advised the Montreal Board of Control July 9, "that the city cannot, in virtue of the powers it possesses, guarantee the Canadian Autobus Co.'s obligations. The opinion went on to state that to give the guarantee "it would be necessary to obtain the authorization of the Legislature," and that after deciding to give the guarantee "this decision could only become operative when it had been ratified by the Legislature." The department further reminds the Board "that the case concerning the annulment of the bylaw and of the contract between the city and the company is at present before the Supreme Court."

The Jitney Situation in Canada.

There are signs all over Canada that the popularity of the jitney is waning, and that even with moderate regulations, jitneys cannot be profitably operated. Outside the larger cities where there are electric railways, there have been few attempts to operate jitneys, and these have been mainly to meet temporary conditions.

The jitney has practically disappeared from Montreal, one of the city papers stating July 9: "Search as you may one cannot be found." The management of the Montreal Jitney Association refused to make any statement on the matter, but the newspaper referred to stated that the cause for its disappearance was that the car owners, after a few days running on a route, "discovered" that they owned the car, and that as soon as a party of tourists came along they were ready to take them anywhere, and the schedule on the routes went all to pieces. An attempt was made to patch up a truce, but the new arrangement only lasted for a day or two, and now everything is apparently at an end.

The jitney situation in Toronto is constantly changing so far as the men engaged in the business are concerned. One statement made is that few men are making anything out of it, and that a considerable number are losing. The wear and tear on cars is reported to be heavy, and owners of single cars get out of the business as soon as they find that there is not "large" money in it. The total number of jitneys in the business is about the same, but they are running on a larger number of routes, and there is not the congestion of traffic on Yonge St. and other central routes that prevailed in June. The city bylaw as to the traffic was finally passed, with the section fixing the license fee at \$1 per seat a year. The Toronto Jitney Association has taken out a bond of \$10,000 for insurance against accident, in place of the \$1,000 for each car called for by the regulations. Under the bond the insurance company will pay up to \$1,500 for each person in an accident, but not more than \$10,000 for any one accident.

The Hamilton, Ont., City Council has finally passed a jitney bylaw. Under it the cars are described as "licensed omnibuses"; the license fee is fixed at \$2 a year for each seat, exclusive of the driver's seat; the cars must not be used in the owner's private business, or as taxicabs; and must be kept clean, dry and in good order; must be provided with safety appliances; they shall not be operated on Sundays, and while they are being operated the drivers must not smoke. Other regulations set out the procedure for the granting of licenses; a restriction of area within which the cars may not be stopped, etc. Counsel for the jitney owners is reported to have informed the police commissioners recently that the owners are having a mighty hard time of it. They are not making money hand over fist as many people believe, but on an average not more than \$7 a day is taken by each car. Out of this amount the driver must be paid and also the expense of operation and upkeep of the car. Some of the jitney owners say that the city should not ask more than 8% of the receipts, the same as the Hamilton St. Ry. pays, and puts forward as one reason for a percentage of receipts instead of an annual fee, that the jitney service at its best will only be an eight months one.

The Galt, Ont., Town Council passed a by-law, July 5, fixing a license fee of \$20 a year for carrying on the business of using autos for hire, with a charge of \$5 extra for a second or any further cars so used.

There has been a considerable diminution of the number of breaches of the traffic

bylaw in Winnipeg, owing to the vigilance of the police. One case in particular has attracted some attention. Two men were brought up charged with refusing to pay taxicab rates, the driver alleging that they had taken the car by the hour and that it was no longer a jitney. The magistrate refused to consider this claim, on the ground that the driver was licensed to run a jitney, and could not run it as a taxi, when he saw a chance of getting a higher rate from his customers.

One of the reasons which has prevented the rapid development of the jitney business in Saskatchewan has been the fact that the Legislature has increased the fees for autos from a registration fee of \$10 and an annual fee of \$3 for all types of car, to a registration fee of \$10 and an annual payment of \$10 for cars under 30 h.p., and a registration fee of \$15, and an annual payment of \$15 for cars over 30 h.p. There are about 10 cars in operation in Regina at a 5c. fare, but it is not thought that the competition with the municipally owned electric railway can be maintained for long at this fare. The Saskatoon City Council has framed a bylaw as to jitney traffic, which is waiting final action. The regulations are framed on the bylaws in operation elsewhere, but contains several special sections having for their object the protection of the interests of the municipal railway. These sections provide that jitneys shall not pick up traffic nearer than two blocks from the terminal points of the railway, and that no jitney shall run alongside the street car line on unpaved streets for more than one block. The owner of the first jitney in Saskatoon has gone out of business, and E. G. White, the man who is now running it, is reported to have said: "If the bylaw goes through in its present shape it will be absolutely out of the question for any jitney to attempt to make expenses." The Saskatoon Phoenix, in commenting on the bylaw, July 12, said: "The jitney as a commercial proposition is a failure in the west. Even now at rates which are equivalent to double that of the street car service, in the sense that for the same fare only one half of the distance is covered, the jitney is not profitable in the business sense of the word. . . . The jitney will doubtless disappear. . . . as the cars get worn out, for allowance for depreciation, wear and tear, does not figure in the jitney owner's bookkeeping. He gets wages out of his car and that is all; he is consuming his capital. . . . The amount which the jitney takes out of the street car revenue is a mere bagatelle."

The insurance companies in Vancouver have cancelled the joint car bond issued under the jitney bylaw, and the car owners now have to take out individual bonds. A number of drivers have been fined nominal sums for various breaches of the bylaws, and a warning was given that regulations would be rigidly enforced and the maximum penalties inflicted.

In Victoria, B.C., there is no civic regulation of the jitney traffic, the only regulation being the rules of the Victoria Jitney Association, which controls the business. The city council has been urged to adopt regulations, but has always refused, the third attempt to draw up a bylaw having been defeated June 29.

London Train Service.—It is announced that owing to the electrification of the London and Port Stanley Ry., operating between London and Port Stanley, Ont., the train service hitherto operated by the Michigan Central Rd. and Pere Marquette Rd.

Electric Railway Department

The Electric Railway Situation on North Yonge Street, Toronto.

Canadian Railway and Marine World for July contained full particulars of the Toronto and York Radial Ry.'s franchise expiry on Yonge St., south of Farnham Ave., Toronto, and of the city's action in removing the company's rails, overhead work, etc., from the street between Farnham Ave. and the southerly terminus at Shaftesbury Ave., although the Toronto Ry. Co. claimed to have bought that section of the line from its subsidiary company, the T. & Y. R. R. The Toronto Ry. then applied to the Ontario Railway and Municipal Board, the chairman of which, D. M. McIntyre, K.C., gave its decision July 5, as follows:

"This is an application by the Toronto Ry. Co., in which the City of Toronto is respondent. As originally launched, the application sought authority for that company to operate the track formerly owned by the Toronto & York Radial Ry. Co. on Yonge St., in the City of Toronto, extending approximately from Farnham Ave. to the C.P.R.—that track having been purchased as alleged by the applicant under an agreement of the sale dated June 25, 1915. The instrument of sale was not produced, but as counsel for the alleged vendor and purchaser respectively affirmed its existence, there seems to be no room for doubt on the point.

"At the hearing it appeared that the track in question had been torn up by the city after the application was launched, and its scope was extended to claim an order restraining the respondent, its servants, workmen and agents from interfering with the applicant in the operation of the said track, and a mandatory order requiring the respondent to replace all tracks torn up by it on the said road in a safe operating condition, and an order restraining the respondent, its servants, workmen, and agents from interfering with or preventing the applicant from replacing the said tracks if the respondent shall not immediately replace the same, and an order declaring that the applicant may replace the said tracks without prejudice to its remedy at law, and damages against the respondent for violation of its agreement.

"The facts out of which the application has arisen are not the subject of substantial controversy. At the time of the making of the contract between the city and the company in 1891, which was confirmed by legislation at the session of 1892, the Metropolitan St. Ry. Co., now the Toronto and York Radial Ry. Co., had an exclusive right to operate surface street railways over the portion of Yonge St. over which the track in question extends. This right was fixed to expire on June 25, 1915, and the agreement of the applicant with the city vested in the former the exclusive right to operate surface street railways over the portion of Yonge St., so far as the city could legally grant the same. This is construed by the applicant's counsel, and rightly the Board thinks, to confer now upon the applicant the exclusive right in possession and enjoyment to operate a surface street railway on that portion of Yonge St. As stated above, on June 25, 1915, and immediately before the expiry of the Toronto and York Radial Ry. Co.'s franchise in respect of that portion of Yonge St. the applicant purchased from the former company its track and overhead work on that portion of Yonge St., and this track the applicant claims the right to operate as a railway, in situ and,

in view of its removal by the city, the right to relay and thereafter operate it for the remainder of its franchise term.

"A preliminary objection was taken on behalf of the city to the Board's jurisdiction to entertain the application, and in a proper case to grant the relief sought. In view, however, of the ample powers conferred by the act constituting the Board (R.S.O. 1914, c. 186), and the Ontario Railway Act (R.S.O. 1914, c. 185)—and in particular sec. 21 of the former, and sec. 260 of the latter—the Board is of the opinion that its jurisdiction is clear and unmistakable.

"Upon the expiry of the Metropolitan Co.'s franchise, its rights to maintain its tracks and operate its cars upon that portion of Yonge St. ceased. The transaction of sale no doubt vested in the applicant the ownership of the rails and other material, the property of the vendor company, affixed to the street, but not without more, in the opinion of the Board, as a part of its railway, clothed with all the rights and immunities of its system throughout the city. The portion of Yonge St. referred to must be regarded as the proposed site of an extension of the applicant's railway. Now, where the applicant proposes to extend its railway within the area defined by its charter, its power to do so is conditioned on the observance of certain pre-requisites fixed in part by agreement between the parties, and in part by statute. For instance, clause 12 of the award, conditions, tender and bylaw, forming part of the agreement between the city and applicant declares that 'the location of the railway on any street shall not be made by the purchaser (the company), or confirmed by the city council until plans thereof showing the proposed position of the rails, the style of rail to be used, and the other works in each such street, have been submitted to and approved in writing by the City Engineer.' Again clause 15 of the award, conditions, tender and bylaw provides that 'no new lines shall be opened for traffic until the purchaser (the company) has obtained a certificate in writing from the City Engineer that the same has been constructed to his satisfaction.'

"It is true that in this case the railway is, or was when the application was launched, already constructed. But it was constructed under an agreement between the Metropolitan Co. and the city, or its predecessor, the County of York, and what is now sought to be done is to have it naturalized, and its existence in situ legalized and confirmed under an agreement between the applicant and the city. How this can be done without a compliance with the terms of the agreement, under which alone the applicant's railway can be lawfully located in this street, the Board is unable to conceive. Admittedly there has been no such compliance. Now that the track is as a structure non-existent, by reason of the action of the city, the obligation of the applicant to comply with these conditions precedent is certainly not relaxed.

"Again, clause 12 above cited, provides that 'the gauge of the system (4 ft. 11 in.) is to be maintained on main lines and extensions thereof and branch lines and extensions thereof.' It appears that the gauge of the track in question on Yonge St. is different from this defined gauge of the applicant's system and extensions thereof. The applicant's purpose is in effect to adopt this

track as an extension of its system, and this to be done legally must be done in conformity with this provision of the agreement, unless the city chooses to waive it.

"Under sec. 105 of 'The Ontario Railway Act,' the Board may, in the case of proved inadequacy of a railway company's tracks, order the company to make additions thereto, but it is expressly declared that such additions shall be subject to all the provisions of the agreement between the company and the corporation of the municipality. The provisions of the agreement are thus given legislative sanction and authority. The case Mitchell & Dresch v. Sandwich, Windsor & Amherstburg Ry. Co., 32 O.L.B. 594, illustrates how imperative is the obligation on a railway company seeking to extend its tracks, to observe every legal pre-requisite to its action. In that case, the defendant company, proposing an extension of its railway in the city of Windsor, with the approval of the municipal council, failed to observe a statutory requirement in that it had not procured the consent of this Board to the proposed extension, and the Appellate Division held that the defendant was properly enjoined from proceeding with the construction of the extension until such consent was procured. For these reasons the application is dismissed, without costs.

"The Board is in receipt of letters from persons alleging themselves to be residents or ratepayers in northern Toronto, who complain of the inconvenience they suffer by reason of the removal of this track, and the consequent interruption of the car service. To such complaints the Board's only answer is that as, upon this application the city took its stand upon its strict legal rights, the Board is obliged to determine the issues involved solely upon that basis. If the city authorities have caused discomfort and loss to citizens, by destroying needlessly and in haste property which might, under some interim arrangement, have continued to serve the transportation requirements of a portion of the community, the citizens must carry their complaint to the city authorities."

The result of the city's action in removing the tracks, etc., is that the gap between the north end of the Toronto Ry.'s Yonge St. line where the C.P.R.'s Leaside-West Toronto branch crosses that street, and the T. & Y. R. R.'s southern terminus is now about 1,220 ft. Until a few months ago, when the building of the Yonge St. subway was commenced in connection with the C.P.R. track elevation, the T. & Y. R. R. tracks ran down to the north side of the C.P.R. tracks and it had a station on the west side of Yonge St. so that passengers had only a few feet to walk to transfer from the city to the interurban cars. Then the T. & Y. R. R.'s southern terminus was moved further up Yonge St. to Shaftesbury Ave. and now it has been moved still further north to Farnham Ave., the result being that a considerable impetus has been given to the jitney service.

Toronto Civic Railway Car Shop.—The Works Commissioner, who was instructed by the Board of Control to prepare an estimate for a car building shop, has reported that in his opinion it would be unwise to establish one, and that it would be more economical to have cars required built by car builders catering to a Dominion wide business.

Lavatory Accommodation on Rural Electric Railways in Ontario.

The Board of Railway Commissioners issued a circular recently to suburban and interurban electric railways enclosing a copy of a report by its Mechanical Expert, Jas. Ogilvie, re lavatory arrangements on cars, and asked the companies to furnish the Board with their views on the installation of lavatory equipment in each car as compared with supplying station buildings at convenient distances apart, each one to be equipped for both men and women. Mr. Ogilvie's report is as follows:—

"In connection with Mr. Gillett's report attached in which he refers to lack of lavatory accommodation on Chatham, Wallaceburg & Lake Erie Electric Ry., I deferred reporting on this matter until such time as I had an opportunity of visiting some of the electric railways under the Board's jurisdiction to see if accommodation of this kind was provided, and if it was really necessary for the benefit of the public.

"The London & Lake Erie Ry. and Transportation Co. runs between London, St. Thomas and Lake Erie, and has 16 large motor cars, each car being equipped with one lavatory room. The Windsor, Essex & Lake Shore Rapid Ry., which runs out of Windsor, has 7 large motor cars and 3 trailers, the mileage being about 36 miles. It has provided lavatory accommodation on all its cars with the exception of the trailers. The Chatham, Wallaceburg & Lake Erie Ry. has 5 large motor cars and 2 open trailers. It has one run out of Chatham 18 miles long and the other 14 miles. It has no lavatory accommodation on these cars. The Oshawa Ry. has 7 large motor cars, but no lavatory accommodation is provided as the longest run is about 4½ miles, and from the centre of the city. The Brantford & Hamilton Electric Ry. has 3 large motor cars, and no lavatory accommodation. The mileage is about 25 miles. The Hamilton & Dundas St. Ry. has 3 large motor cars, and no accommodation for a run of 7 miles. The Hamilton Radial Ry. has 4 cars, a 21½ miles run, and no lavatory accommodation. The Niagara, St. Catharines & Toronto Ry. has 26 large motor cars, and no lavatory accommodation provided in any of them.

"From interviews which I had with the managers and other officers of the various railway companies which I visited, they are very much opposed to the idea of providing lavatory accommodation, owing to the fact that their systems run through and in and out of cities and through quite a number of villages. Some of them stated they had already tried it in some of their cars and had taken them out on account of its being a nuisance and source of annoyance. The Ontario Railway and Municipal Board has taken this matter up with the Hamilton, Grimsby & Beamsville Ry. management, and has asked it to provide the accommodation above referred to, but I understand from the management that the people along the route have very decided objections to the installing of lavatories in the cars, owing to the fact that the railway in a great many instances runs along in front of their residences and is located close to the sidewalk. In an interview which I had with officials of the Ontario Railway and Municipal Board, I was advised that the Hamilton, Grimsby & Beamsville Ry. management has appealed against the Ontario Board's order, claiming that that Board has no jurisdiction, and that the responsibility for such orders would rest entirely with the Dominion Board of Railway Commissioners.

"Some of the Montreal and Southern Counties Ry. cars have been equipped with

lavatory accommodation, but are not in general use. While there is no doubt that the accommodation above referred to might be beneficial, I am afraid it would also prove a considerable nuisance, if it was made compulsory for all cars to be equipped with accommodation of this nature. If on the other hand it is deemed necessary, I would recommend that the matter be taken up with the management of the various electric roads under the Board's jurisdiction, and that they be asked to file a statement showing the number of cars on the various runs with lavatory accommodation, if any, also to file their objections, if any, to providing this accommodation on all their suburban cars, or runs of 15 miles or over."

Dominion Power & Transmission Co.'s Reply.

The following reply was sent to the Board by E. P. Coleman, General Manager, Dominion Power & Transmission Co.: "I beg to submit our views in this matter as applied to each and all of the interurban electric railways under our control and management regardless of jurisdiction:

"HAMILTON & DUNDAS ST. RY. (Provincial jurisdiction).—This railway has an extreme distance between terminals of 6.98 miles, of which 4.34 is on city streets. It is obvious that the use of car lavatories on this line would be uncalled for and unnecessary, as the stations at each end are provided with conveniences.

"HAMILTON RADIAL ELECTRIC RY. (Dominion jurisdiction).—This railway has an extreme distance between terminals of 21.46 miles, of which 8 miles is on the highways. The heaviest traffic is confined to the section between the Hamilton terminal and Burlington, 10.87 miles, and is more in the nature of street railway than of interurban railway traffic. This portion of the line crosses Burlington Beach and, with the exception of 3.25 miles, is on city streets and highways which are so thickly settled that it would be impossible to use conveniences on the cars without creating a public nuisance. The section from Burlington to Oakville, which is nearly all on private right of way, is only 10.59 miles in length, with a schedule running time of half an hour. The traffic is, and will be for a long time, extremely light on this section. Ample conveniences are provided at Hamilton and Oakville and provision is being made at Burlington.

"HAMILTON, GRIMSBY & BEAMSVILLE ELECTRIC RY. (Jurisdiction in question).—This railway has an extreme distance between terminals of 22.6 miles, practically all on or along the public highway and for a large portion of the way in front of residences and over city and village streets. Many objections to the use of car lavatories have been made by residents along the line, and there is no doubt that their use would create a nuisance. Accommodations are provided at Hamilton, Bartonville, Grimsby and Beamsville.

"BRANTFORD & HAMILTON ELECTRIC RY. (Dominion jurisdiction).—This railway has an extreme distance between terminals of 22.91 miles, of which all but 1.24 miles is on private right of way. Hourly trains are run on schedule time of one hour east and 65 minutes west and we have no complaints of lack of accommodation of this nature, as well equipped lavatories are provided at Hamilton and Brantford.

"IN GENERAL.—As all cars are habitually interchanged between these railways, the installation of lavatories on any of them would compel their use on all, and while

we are willing and anxious to provide all necessary or desirable accommodation for the comfort and convenience of our patrons we are firmly of the opinion that accommodation of this nature is unnecessary and unwise, principally for the following reasons, viz:—

"Electric railway traffic is generally of a different nature to that obtaining on steam railways, as it is mainly confined to local patrons who are never far from their own homes or the convenience of their hotels or offices, and the short time spent on electric cars comes more in the category of the cab ride or the walk between office and home than in the case of the traveller who settles down for a journey of some distance on the larger railway lines.

"An electric car is usually smaller than the standard steam railway car, is more likely to be crowded, on account of the fact that single car units are used, and the problem of ventilation under the best of conditions is a serious one. Lavatories, when installed, are necessarily placed in a conspicuous position near the centre of the car, and among the passengers, and our observation has convinced us that it is impossible to prevent a disagreeable odor throughout the car from their use.

"The conspicuous location of the lavatories above referred to has a tendency to discourage ladies and the better class of passengers from taking advantage of the accommodation and their use will be generally confined to the rougher class of men, particularly those partially under the influence of intoxicating liquor, who will neglect the terminal accommodations and use those on the cars, many times in a manner which will be offensive to other passengers. That this is a serious objection to car lavatories is proved by the great difficulty that we have in keeping our terminal lavatories in a decent condition, even with an attendant always on duty.

"Electric cars are not confined to a private right of way, but must of necessity occupy thickly settled streets for a very considerable portion of the time and, with the best of care, a vehicle of this description, when provided with a lavatory, will at times become a carrier of the best imaginable type for the distribution of disease germs.

"As electric railway terminals and yards are, from the nature of the traffic, invariably located in the most congested and busiest portions of the communities which they serve, the cleaning of cars and disposal of the sweepings and waste water is always a serious problem, and it will be readily perceived that the cleaning of lavatories in these yards without danger to public health is practically impossible. Under the best of conditions, and even if proper sewer connections can be arranged, constant cleaning of accommodations of this description will inevitably create a condition of the station surroundings which will in time become a public nuisance.

"The use of car lavatories is not a common practice even on electric railways of large mileage, and the fact that some lines have thoughtlessly adopted their use, apparently from a desire to become as much like a steam railway as possible, should not be accepted as a convincing argument in favor of forcing them upon electric lines of the nature and extent of those operated by this company and generally throughout the Dominion. It is our opinion that the safest and best method to adopt in the interest of public health and safety, as well as for the convenience of the patrons of electric railways as a whole, is to establish proper stationary lavatories at the terminals and at convenient points along the line for the use of patrons who may be constrained by necessity, and at which cars may be held or stopover checks issued."

Steel Motor Cars, London and Port Stanley Railway.

Canadian Railway and Marine World for July contained a complete description of the L. & P.S.R. rolling stock, the steel motor cars being illustrated by an elevation and floor plan. An illustration of one of the completed cars is given herewith. They are 61 ft. 1 1/4 ins. long, over buffers, and are exceptionally wide, viz., 9 1/2 ft. over posts. This makes possible seats 40 ins. long, with aisle 26 ins. wide. The car is divided into baggage, smoking and general passenger compartments. In the main compartment there are two lavatories, one for men and one for women, with metal tile walls, and tile floor set in cement. The bottom fram-

mahogany being finished in a rather light tone, and great care having been exercised in selecting soft harmonizing colors for ceiling and stained glass. Nothing in the way of incidental equipment, such as buzzers, air sanders, fire extinguishers, etc., has been omitted, and a large switch cabinet extends from floor to ceiling, with slate back, containing all electrical switches. The roof is a compromise arch design. They were built by the Jewett Car Co., Newark, Ohio, and electrically equipped by the Preston Car & Coach Co.

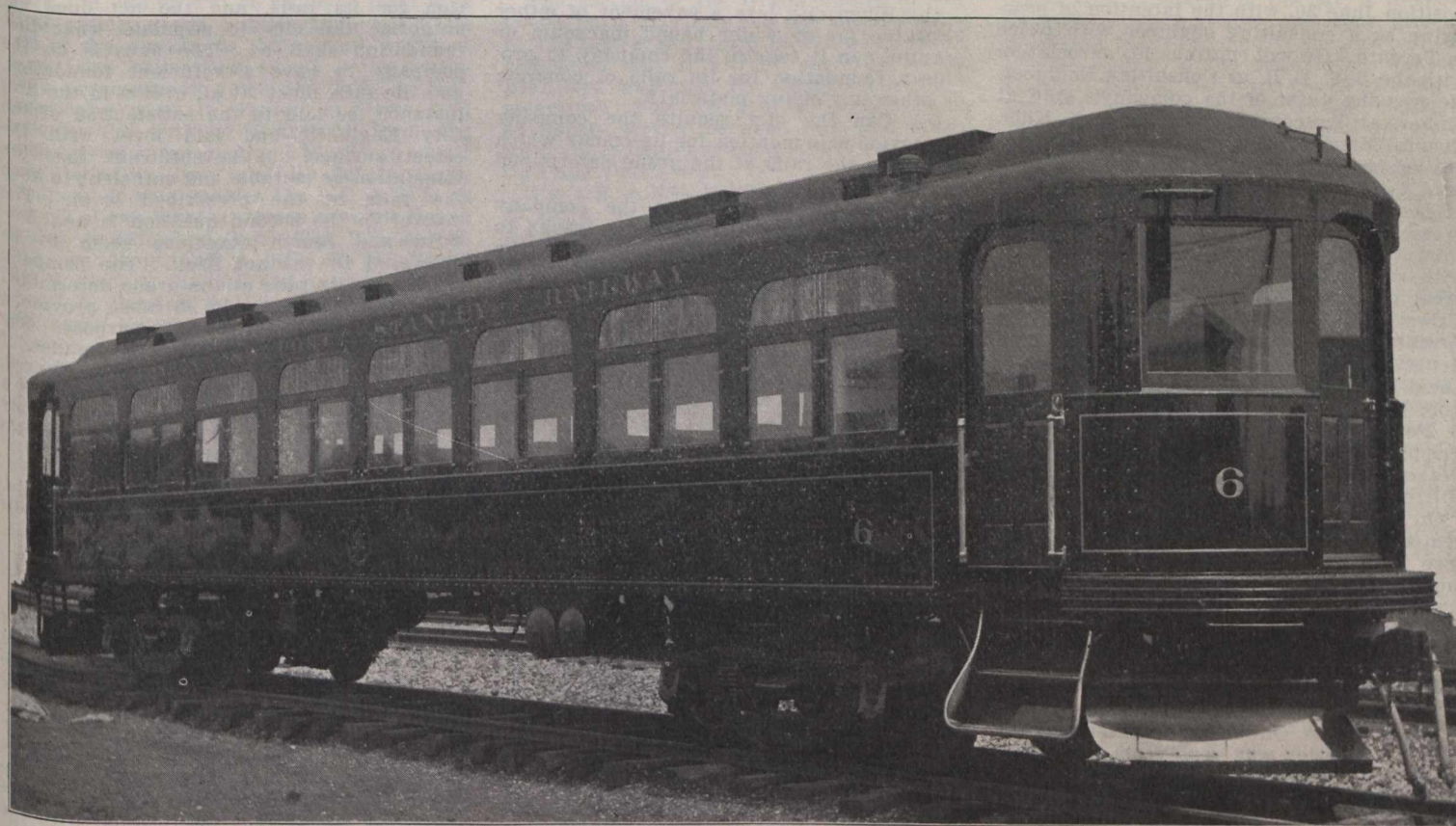
Berlin and Waterloo Street Railway Annual Statement.

Following is the statement for the calendar year 1914 of this line, which is

Debenture interest	\$8,723.27
Interest on loans	780.22
Bad accounts written off	29.04
	9,532.53
Net profit	\$5,329.73

ASSETS.	
Plant	\$181,346.94
Accounts receivable	2,544.06
Supplies on hand	10,402.34
Cash on hand	683.02
	\$194,976.36

LIABILITIES.	
Debenture account	\$157,914.24
Accounts payable	3,708.48
Interest accrued but not due	3,807.03
Depreciation account	22,048.05
Profit and loss balance, 1913	2,117.50
Bank overdraft	51.33
Balance, 1914	5,329.73
	\$194,976.36



Steel Motor Cars, London and Port Stanley Railway.

ing is made up of structural sills with pressed steel cross bridging, plate bolsters with pressed steel fillers being used. Side posts are of channel and tees of light section, with angle iron corner posts. The posts in bulkhead and partitions are also of channels, with channel header across between side plates. The entire outside and bulkheads are composed of steel plates. Carlines are pressed steel, and the roof is of large steel plates laid across the full width of the car. The cars are fitted with extra heavy steel pilots, and M.C.B. draw bars. The interior finish is mahogany inlaid, with inside and outside Gothic sash with cathedral glass, and storm sash fitted to all body windows. The ceiling is of agasote, and the wooden floor is covered with linoleum. The car is lighted by semi-indirect system with pendant fixtures, light wiring being in concealed conduit, as is also heater wiring, heaters being of the cross seat electric type. There is a vestibule on the rear end only, with triple steps covered with steel trap doors. The lavatories are very completely equipped with flush hoppers, wash stand with liquid soap holder, towel rack, etc., all fixtures being nickel plated. The interior of the cars present a tasteful appearance, the

owned and operated by the City of Berlin, Ont.:

RECEIPTS.	
Passengers	\$45,241.94
Mails	1,805.59
Parcels	233.15
Tolls from other companies	3,586.92
Advertising	564.00
	\$51,431.60

EXPENDITURES.	
General Expense.	
Salaries	\$1,392.29
Office expenses	1,169.66
Legal expenses	37.35
Insurance	2,054.17
Uniforms, advertising, etc.	1,909.19
Heating barns	319.32
	\$6,881.98

Repairs and Maintenance.	
Track and line	\$1,819.10
Building repairs	4.94
Car and motor repairs	4,504.21
Storage battery repairs, etc.	95.05
	6,423.30

Transportation Expenses.	
Power	\$7,422.48
Wages	12,351.27
Removing snow	115.10
Supplies	1,910.40
G.T.R. crossing	1,464.81
	23,264.06

Gross profit \$14,862.20

Rolling Stock for Three Rivers Traction Company.

The Three Rivers Traction Co., Three Rivers, Que., has ordered from the Ottawa Car Manufacturing Co. six semi-convertible single truck electric railway cars, the principal particulars of which are as follows:

Car bodies: Semi-convertible type for one-man operation. Construction, wood, with underframe reinforced with steel plates. Roof, arched type, with automatic ventilators. Interior finish, wood throughout. Seats, standard rattan upholstered. Trimmings, polished bronze. Heaters, electric. Electric lighting and bell systems, standard. General dimensions as follows: Length of body over end cross sills. 21 feet Length of car over vestibules 31 feet Length of front vestibule 6 feet Length of rear vestibule 4 feet Length of car over bunters 32 feet Width over posts 8 1/2 feet Height from rail to top of roof 11ft. 5 ins. Seating capacity 34 persons

Trucks: 12 ft. wheel base, with chilled iron wheels and standard hot rolled steel axles.

Motor equipments: Westinghouse 101-

B-2, two motors per car, with one controller, circuit breaker and other accessories.

Air brakes: Westinghouse schedule S-M-E complete, with motor driven compressor and other accessories. Cars will also be equipped with life guards and standard track sanders.

The Three Rivers Traction Co. has also ordered from the Ottawa Car Manufacturing Co. one snow sweeper, which, with the cars, fully equipped, will be ready for delivery by the end of August.

Retirement of British Columbia Electric Railway's Chief Engineer.

G. R. G. Conway, M. Can. Soc. C. E., for over four years Chief Engineer of the British Columbia Electric Ry., retired from that position June 30, with the intention of practising as a consulting engineer with office in Toronto. He will continue his association with the B. C. E. R. as Consulting Engineer. He was the guest of the company's staff at dinner, at Vancouver, June 28, Geo. Kidd, General Manager, being in the chair. In proposing Mr. Conway's health, the chairman read a cable from the company's head office in London, Eng., in which the directors expressed regret at Mr. Conway's "withdrawal from the duties which he has carried out with such conspicuous success, and to the great advantage of the company." In addition to Mr. Kidd and Mr. Conway, the speakers of the evening were: F. R. Glover, General Executive Assistant; A. T. Goward, Local Manager, Victoria; V. Laursen, Solicitor; W. G. Murrin, General Superintendent; G. Porter, Assistant Chief Engineer; G. M. Tripp, Superintendent, Victoria; W. H. Fraser, Electrical Superintendent, and A. Hill, of the engineering staff.

On the following day Mr. Conway was presented by the company's employes with a rose bowl, of solid silver, gold lined, and mounted upon an oak base, suitably inscribed.

The Galt, Preston and Hespeler Street Railway's Rights in Berlin.

At the Berlin, Ont., City Council's meeting July 19, a letter was read from Martin N. Todd, President Galt, Preston and Hespeler St. Ry., respecting the action of the council in fixing a franchise price of \$75 a month for the use of the city streets. The company is at present paying \$150 a month to the Light Commission for the use of the tracks and power, which is considered \$75 more than the actual value of the privilege. Mr. Todd informed the council that if the recent action is insisted on the company will use a branch line running to Waterloo exclusively, and erect a station on Queen St. south for the convenience of city passengers. Mr. Todd reminded the council that the city will in the near future be connected with Port Dover when the new Lake Erie & Northern line is electrified, toward which Berlin has not been asked to contribute, but from which it will receive the same benefit as other towns which have voted considerable sums as bonus. The communication was referred to the railway committee to endeavor to arrive at an amicable arrangement.

The Toronto City Council passed a resolution recently instructing the Commissioner of Works to report on the probable cost of inaugurating a rail-less trolley system in conjunction with the civic railway, with a view to providing a one-fare service to the down town districts, with a transfer to any part of the civic railway. The Works Committee reported against the proposal.

St. John Railway Rights re Track Construction.

Judgment has been rendered in the case of the St. John Ry. against the City of St. John, N.B., for damages for an interruption of its railway and service, for preventing the company from relaying its tracks, for a declaration as to its rights where tracks have been taken up by the city in changing street grades, and for an injunction restraining the city from interrupting or interfering with the railway. During the course of the original action, the parties agreed on a special case, and the following four questions were submitted to the Supreme Court of Appeal.

(a) When city removes rails under sec. 11 of 50 Vic. ch. 33, can it require a grooved rail to be used instead of a T rail

(b) When city lays a pavement of either bitulithic tar or water bound macadam or granite, can it require the company to provide a foundation for its rails of concrete or other unyielding material?

(c) Can the city require the company to provide a foundation for its tracks which will keep the rails at the grade determined by the city?

(d) Can the city require the company from time to time to restore its tracks to grades which have been established by the city at the time of the laying of the tracks, or to grades which from time to time may be established by the city?

Following is a summary of the judgment.—The answers to these questions depend on the construction given to secs. 7, 8, 9, and 11 of ch. 33 of the acts of 1887, concerning the Peoples St. Ry. Co., which was acquired by the St. John Ry. Co. The company was originally incorporated to operate by horse cars, but power was subsequently obtained to operate by electricity. Sec. 7 empowers the company to operate over such streets as may be agreed upon between the company and the city. Sec. 8 provides that the tracks shall be laid so as not to interfere with ordinary traffic, the rails to be of such pattern as the city council may approve, and laid level with the street surface to the satisfaction of the City Engineer, or other authorized person. Sec. 9 provides that the tracks shall from time to time conform to the grades of the various streets and highways through which they run, and the grades shall not be changed without consent of the city. Sec. 11 provides that the city or municipality through which the tracks pass shall have the right to take up or open the streets traversed, for altering the grades or any other purpose, the removal of rails to be done so as to cause as little interference as possible with the operations of the railway, and that the city shall not be liable to make compensation to the company for anything done under the authority of the act.

Regarding sec. 8, the words are very plain and clear. When the company built its line, the rails were of a pattern approved by the council, and were T rail, which pattern has since been used by the company. Dealing with the first question (a), sec. 11 gives the city the right to take up the streets traversed by rails for altering the grade or other purposes, but if the city removes the rails it is not obliged to replace them, that must be done by the company. Regarding an order to change from T to grooved rail, if the company desires to extend its lines and lay a new track, it has to get the city's approval of the pattern of rail to be used, and the city can prescribe any pattern of rail it deems best, and it may be that if rails are worn out and it becomes necessary to lay new rails, the city could prescribe a different pattern from those previously used.

In this case, however, it is not necessary to decide that point. This is not the laying of new rails. The city for its own purpose has removed the rails, and when that has been accomplished, the company can replace the rails so removed, and the city cannot compel the company to throw aside the rails so removed and replace them with others of a different pattern. The only difference between the city removing rails and a private corporation doing so, is that in the latter case the private corporation must replace the rails, and in the former case, the company must do it.

The answer to the first question is no. Regarding the second question (c), the company is obliged to have a proper foundation for its rails, and the act does not authorize the city to stipulate what that foundation shall be. The onus is on the company to have a sufficient foundation, and the rails must, at all events in the first instance, be laid to the satisfaction of the City Engineer, and laid level with the street surface. It is sufficient that the foundation be suitable and sufficient to keep the rails at the prescribed level. The answer to the second question is no. The third and fourth questions seem to be answered by the act itself. The company must keep its rails at the grade determined by the city, and to do so must provide a foundation sufficient for that purpose. The city has the right to alter the grades of streets, and when the grades are so altered, the company must restore its tracks to a level with the new grade, and supply foundation suitable to keep them so. No order was made as to costs.

Negotiations for the Purchase of Chatham, Wallaceburg and Lake Erie Railway.

The Hydro Electric Power Commission of Ontario is said to be negotiating to secure the C.W. & L.E.R., to be used as part of the proposed hydro electric railway system for Ontario to be operated under the commission. The C.W. & L.E.R. runs from Wallaceburg, Ont., to Erie Beach, on Lake Erie, 32.85 miles, with a short branch from Paincourt Jct. to Paincourt, a total mileage of 40.77. It has freight interchange with the Michigan Central at Charing Cross, Canadian Pacific at Chatham, Pere Marquette at Wallaceburg, and Wabash and Grand Trunk at Chatham. Some two or three years ago the C.W. & L.E.R. passed into the control of Mackenzie, Mann & Co. interests. The principal officials are President, D. A. Gordon, Wallaceburg, Ont.; Vice President, A. J. Mitchell, Comptroller, Mackenzie, Mann & Co., Ltd., Toronto; General Manager, W. Norris, Chatham. It is said if the negotiations are successful the line will be made the nucleus of a hydro radial railway system in that part of the province, and that it will be extended through Petrolia to Sarnia.

The Ontario West Shore Ry. Fiasco.—The Kincardine, Ont., Town Council passed a resolution, July 5, further extending the powers of the special committee appointed to act in conjunction with committees of the municipalities interested in this derelict railway. The council has now authorized the committee to secure expert advice in reference to the suit to recover money alleged to have been paid out illegally, and also authorize it to engage new counsel in the event of the counsel at present engaged declining to act.

The Lake Erie and Northern Railway Takes Over Part of the Grand Valley Railway.

The negotiations which have been in progress for some time between the Lake Erie and Northern Ry., represented by its General Manager, Martin N. Todd, and the City of Brantford, with reference to a portion of the Grand Valley Ry. section of the lines operated as the Brantford Municipal Ry., and the electrification of the L.E. & N.R., have been brought to a successful termination. As a result, the L.E. & N.R. acquires for \$30,000 the portion of the Grand Valley Ry. from Paris to Galt, about 13 miles, and the G.V.R. transformer station in Galt. The City of Brantford retains the rails, overhead work, etc., which will be removed from Blue Lake siding, about 4 miles from the Paris end of the section, as the cement works at Blue Lake have been closed permanently. This arrangement gives the L.E. & N.R. practically what it wanted in Paris, and relieves the City of Brantford from the necessity of spending about \$65,000 to repair the Paris-Galt line, and its future maintenance. It also enables the L.E. & N.R. to get rid of two level crossings over the Grand Valley at Paris and Galt. The L.E. & N.R. will use about half a mile of the Grand Valley track at the Galt end, to connect with the Galt, Preston & Hespeler St. Ry., and will scrap the rest of the line to Paris, but later on it may operate over a short distance of the Paris end of the Galt-Paris section of the Grand Valley, into the industrial section of Paris, for freight purposes only. It will handle passenger business from its own station in Paris, that being the stipulation by the City of Brantford, which does not want the L.E. & N.R. to compete with it for passenger business on the lower level in Paris.

The important feature of the arrangement is the fact that the entire L.E. & N.R. line from Port Dover to Galt, 53 miles, is to be electrified, and that a new electric car terminal will be established at the foot of the embankment near Lorne Bridge, Brantford. The electrification work on the line between Galt and Brantford, about 22 miles, has been started. Contracts for the electrical material for this section were placed in May, with the option of extending them to also include the Brantford-Port Dover section. It is expected to have the Galt-Brantford section electrified and ready for traffic in October. The grading, track laying, and other work on the Brantford-Port Dover section, about 30 miles, is being pushed forward, and it is hoped to have the electrification of it completed by December. The overhead equipment will be of catenary construction, aluminum messenger wire with steel centre having been ordered from the Northern Aluminum Co. Steel trolley wire will be hung at 15 ft. spacings, with feeders every 50 ft. This system is a new one in Canada, but it has been used by the Pacific Electric Co. in California, and by other United States companies, with, it is said, satisfactory results.

The L.E. & N.R. has ordered 4 motor and 2 trailer cars, and 2 combination passenger and baggage cars from the Preston Car and Coach Co. The bodies will be 48½ ft. long, with steam railway car type of vestibule at each end, standard buffing device, M.C.B. couplers, Canadian Westinghouse motor equipment, multiple unit control, 1,500 volts, seating accommodation for 70 passengers, steel underframes and steel frames covered with wood inside and outside. The various cars will be of the same size and type as, and will be very similar in appearance to those on the Galt, Preston and Hespeler St. Ry. Two 60-ton electric freight locomotives

and the electric car equipment have been ordered from the Canadian Westinghouse Co. A contract for the sub station equipment has been given the Canadian General Electric Co. The sub station at Galt will be a portable one for the present, and there will be sub stations at Brantford and Simcoe, each equipped with 500 k.w. outfits.

Power will probably be taken from the Hydro-Electric Power Commission of Ontario, through its local subsidiaries. The Galt, Preston & Hespeler St. Ry. is said to have been the first electric railway in Ontario to use this power.

The section of the Grand Valley Ry. between Paris and Galt will not be taken over by the L.E. & N.R. until its electrification is completed, but it will be operated by the Brantford Municipal Ry. Commission in the meantime. The L.E. & N.R. intends giving an hourly service between Galt and Brantford, and a two hour service between Brantford and Port Dover.

The L.E. & N.R. is leased to the C.P.R. for 99 years. It is expected that the Galt, Preston & Hespeler St. Ry., which also operates the Preston & Berlin St. Ry., and is owned by the C.P.R., will be amalgamated with the L.E. & N.R. under the latter name. M. N. Todd is President of the Galt, Preston & Hespeler St. Ry., and General Manager of the L.E. & N.R., and will doubtless continue in charge of the amalgamated lines. A Galt paper points out that while the lines referred to have the benefit of close affiliation with the C.P.R., they have the advantage of being locally operated, which is a great convenience to the communities in the districts served.

The Brantford Municipal Ry. will, in future, consist of the old Brantford St. Ry., and the Brantford-Paris section of the old Grand Valley Ry., the latter being about 8 miles. The entire transaction by the city in acquiring the Brantford St. Ry. and the Grand Valley Ry. involved \$300,326, of which \$137,000 was provided in cash, the balance representing original bonds \$125,000, mortgages \$2,400, and installments to accrue on pavement account about \$36,000. The city has provided money for the betterment of the city lines and the line to Paris, the construction of the East Ward and Eagle Place loops and for new cars, etc. Plans had been made for bringing the Paris-Galt section up to standard at a cost of about \$65,000. The city, by the present arrangement, is relieved from this expenditure, and will receive \$30,000 for the Paris-Galt section. The business done on the line is reported to be sufficient to cover operating expenses and interest on debt, but not to provide for depreciation or sinking fund. For the latter purpose \$4,000 a year is required.

Toronto Ry. Wages.—The negotiations between the company and the men regarding the continuance of the agreement regarding wages have resulted in the agreement which has been in force for the past three years being renewed for a further two years. The men originally demanded an all round increase of half a cent an hour, which was refused by the company. It was then suggested that the old agreement be renewed, the only difference being as to whether it was to be for two or three years. The rates paid are as follows: Motormen, conductors and motor truck repairers, first year 23½c an hour, second year 25½c, third year 27½c, for Sundays 4c extra; shed men 24c, foremen 27c. Regarding uniforms, first year men pay cost, second year men half cost, third year men supplied free.

Serious Electric Railway Wreck at Queenston.

While an excursion party from Toronto was returning from Niagara Falls, to take the boat at Queenston, for Toronto, July 7, one of the cars on the Niagara Falls Park and River Ry. left the track while descending the Queenston Heights hill and collided with a tree, wrecking the car, killing 13 of the passengers and injuring several others. Later, two of the injured passengers died, making 15 deaths. A coroner's inquest was opened at Queenston, July 19, representatives of the various parties interested, including the Ontario Government, the Ontario Railway and Municipal Board and the City of Toronto, as well as relatives of the deceased and injured, being present. The motor man in charge of the car, is reported to have stated that for some time prior to it leaving the track, he felt that he had lost control, owing to the rails being wet and greasy. The car had seats for 84 passengers and the conductor is said to have collected 157 tickets, which did not include children in arms.

Replying to a number of allegations against the construction and equipment of the car E. G. Connett, President, International Ry., Buffalo, N. Y., which controls the Niagara Falls Park and River Ry., issued the following statement, July 9: "Mr. Clark, representative of the Ontario Railway and Municipal Board, examined the track and car yesterday and as I understand it, found no fault with the track or the equipment, nor did he find any defects that would have caused the accident. As near as I have been able to learn and as stated by the motorman, the car got beyond control due to the slippery rails on account of the weather conditions. Showing there was no defect in the car, it had previously stopped at the foot of the heavy grade from Brock's monument to the junction, in order to throw a switch. This shows the brakes were in good working order. The company had furnished plenty of cars to handle the people from Brock's monument to the dock but on account of the rain they were disposed to overload the first car. The sand box was full of heavy sand. The car certainly was in first class condition, having come out of the shops on July 6."

The Halifax Power Co., by S. M. Brookfield, President, informed the Halifax, N.S., City Council, July 8, that "it has the right to supply light and power in the city, so that if the city acquires the power company's property or joins it in the development of the undertaking, the street lighting could be done, it is claimed, and 50% more light supplied for the price now paid. The private light and small power users could also be supplied at a saving of at least 25%." The letter concluded by stating that the company's representatives would wait on the council upon an early day and lay before it a proposition for the development of the company's water powers on the Indian and Northern Rivers, the city taking a half interest.

Winnipeg Electric Ry. Fares.—The company agreed, July 15, to sell 5 combination tickets from any part of the city to Kildonan Park, for 25 cts., and 7 children's tickets for the same amount, and the Manitoba Public Utilities Commission is making the necessary order. The Commissioner declined to make an order for reduced fares to St. Paul, on the ground that it was not advisable under present financial conditions to reduce fares. B. S. McKenzie was appointed to make a special investigation to see if a quicker service could not be given on the St. Paul's line, and platforms provided.

Electric Railway Projects, Construction, Betterments, Etc.

Berlin, Ont.—A press report states: "W. D. Euler, Berlin, is interested in the construction of an electric railway to connect Berlin, Bridgeport, Bloomingdale, New Germany and Guelph." This district is already pretty well supplied with electric railways, including the Guelph Radial Ry., the Berlin and Waterloo St. Ry., the Berlin and Northern Ry., and the Berlin, Waterloo, Wellesley and Lake Huron Ry. (which includes the Galt, Preston and Hespeler Ry. and the Preston and Berlin Ry.), while the Toronto Suburban Ry. is extending its lines into the district. A number of the local municipalities are moving in the direction of having a line built in connection with the projected lines under the plans of the Hydro Electric Power Commission of Ontario. Under these circumstances it is not likely that there is anything in the report.

Brandon Municipal Ry.—We are officially advised that the City Council has under construction the following lines in the city: Victoria Ave., from Franklin St. to Percy St., 350 ft.; Percy St., from Victoria Ave. to Princess St., 1,800 ft., including turnout; Princess St., from Percy St. to Franklin St., 350 ft.; Princess St., from 22nd St. to 24th St., 650 ft.; Victoria Ave., 18th St. to Athletic Grounds, 250 ft.; 18th St., from Victoria St. to College, 1,725 ft.; College St., from 18th St. to 15th St., 1,625 ft., including special work. Total, 6,700 ft. For the construction at present in hand there have been purchased four curves, one right hand cross over, one left hand branch out, from the United States, and miscellaneous overhead and other material from the Bovd Electric Co., Brandon, Man. T. Boden, Brandon, Man., is Superintendent. (Feb., 1914, pg. 87.)

British Columbia Electric Ry.—We are officially advised that the new car barn at Mount Pleasant, Vancouver, is practically completed, and is being used. (June, pg. 229.)

Calgary Municipal Ry.—We are officially advised that the only permanent construction to be done this year will be some special work on street intersections, the material for which is on hand. It is proposed to construct immediately 1.5 miles of temporary track to a point outside the city limits so as to give connection with the military camp on the Sarcee reserve, where 6,000 soldiers are undergoing training. The material for this work is on hand. T. H. McAulay, Calgary, Alberta, is Superintendent. (July, pg. 277.)

The Cape Breton Electric Co. is enlarging its high tension room in its Sydney power station, to provide for another outgoing transmission line, which is in process of construction, and runs from that station to the new pumping station being built by the City of Sydney at Middle Lake, about six miles from Sydney. This sub-station will contain for the present 2 kva transformers, stepping down 22,000 three phase to 2,200 three phase, for operating the pump at present under order for the city. The pumping station and the company's sub-station, which is contained therein, is being built for double this capacity. The company has a 10 year contract with the city for supplying power to operate the station. Orders have been placed for all equipment for this work. (May, pg. 190.)

Edmonton Radial Ry.—The residents of the Glen Park district applied to the Edmonton, Alberta, City Council in May to have a line built, and the council has recently authorized a committee to negotiate an arrangement with the Edmonton Interurban Ry. for the use of its tracks to Glen Park, pending

further consideration of plans to build a more direct city line. (May, pg. 190.)

Hydro Electric Power Commission of Ontario's Electric Railways.—The Brampton Town Council has passed a resolution favoring the building of an electric railway through the town under the Commission, and has joined the Ontario Hydro Electric Radial Railway Association.

The Trent Valley district of the H.E. Ry. Association, meeting at Campbellford, Ont., June 10, passed a resolution asking the H.E.P.C. of Ontario to investigate and report upon several routes for proposed radial railways in the Trent River valley, where there is at present practically no railway accommodation. (July, pg. 277.)

London and Lake Erie Ry. and Transportation Co.—The St. Thomas, Ont., City Council has approved of the laying of the necessary switches so that the company can connect its tracks with the Michigan Central Rd., and to the changes proposed to be made for switching purposes. (Mar., pg. 108.)

Montreal and Southern Counties Ry.—It is expected that the extension from St. Cesaire to Granby, Que., 16 miles, will be completed as far as Abbotsford early in the autumn. The contract is being carried out by the Grant Campbell Co.

The construction of the sub power station at Granby is being proceeded with, so as to be in readiness for the completion of the line. (July, pg. 277.)

Morrisburg and Ottawa Electric Ry.—An unconfirmed press report states that work will be resumed at an early date upon the construction of this projected railway, three miles south of Billings Bridge, near Ottawa, and that it will proceed southerly to Morrisburg. (June, pg. 227.)

Oshawa Ry.—In the event of the town council deciding to do any further street paving, of which about half a mile is being considered, the company will do its proportion of the work. D. A. Valleau, Oshawa, Ont., is Superintendent.

Ottawa Electric Ry.—The pavement renewal work on Bank St., Ottawa, was completed June 30, and the Somerset and Britannia cars, which had been run on temporary routes, returned to their regular routes, July 1. The work was done by the Ottawa Construction Co. (July, pg. 277.)

Quebec Ry., Light and Power Co.—We are officially advised that the company is installing a double track right hand curve at the corner of Palace and St. John Sts., Quebec, on its City Division. (April, 1914, pg. 184.)

St. John Ry.—Under a decision of the Supreme Court of New Brunswick, which was reported to the St. John city council, July 7, the company must now supply a rigid base under all its rails. Up to the present the city has laid a concrete base of from 5 to 7 ins. in thickness, which work, under the decision, will have to be done in future by the company. Commissioner Potts states that work on the Douglas Ave. line will be started very shortly, and that he would see that the company puts in a satisfactory base.

The city commissioners on July 7 inspected the company's lines, and it is reported found defective rails on several streets. (July, pg. 277.)

Toronto Civic Car Lines.—We are officially advised that the City of Toronto is building 0.75 mile of double track on Bloor St., from Dundas St. to Quebec Ave.; and 0.63 mile of double track on Lansdowne Ave., from St. Clair Ave. to the C.P.R.

The building of car barns on Danforth Ave. is also under consideration.

The approval of the Ontario Railway and Municipal Board for the building of the line on Bloor St. was given July 7, and on the same day the Board of Control directed the preparation by the Works Commissioner of a report on the cost of establishing a car construction and repair shop for the civic car lines. (April, pg. 145.)

Toronto Civic Ry.—The City Council has awarded a contract for the supply of oak ties for the construction of the Lansdowne Ave. line, to the Robert Laidlaw Co., at \$30.25 per 1,000 ft. b.m., equivalent to 84.7c. a tie. They are to be 6 by 8 ins. by 7 ft.

Transcona, Man.—The Transcona Town Council on July 9 asked H. W. Adcock, Winnipeg, to put up a satisfactory bond at once that he would carry out his proposal for the building of an electric railway from Transcona to Winnipeg. In the event of failure to put up the bond the negotiations will be dropped. (July, pg. 277.)

The Montreal Tramways Company's Franchise Question.

The question of the granting of a new, comprehensive and extended franchise to the Montreal Tramways Co., in return for the old one held by the old Montreal St. Ry., which expires in 1922, and the subsidiary ones held by it and the allied companies in the districts added to the city since the original franchise was granted, has been brought into the courts. Several propositions had been submitted to the Board of Control, notably one by Controller Hebert, which was placed before the Board June 18. The plan proposed to grant a new franchise for 30 years upon the surrender of all existing franchises; that the city appoint two directors on the M.T. Co. board; the city percentage of earnings to remain as at present, with a minimum payment; gross earnings of subways to be built by the city to be divided between the city and the company; new lines and routes to be arranged on the advice of a city planning expert; the removal of all old cars and the building of new cars; the adoption of all new devices and inventions for the betterment of the service; and a 5 cent fare. The proposal was discussed at several meetings of the Board of Control, and a special meeting was called for June 30 for the purpose of approving of the plan and sending it on to the City Council for consideration. Meanwhile, a statement was made that there was a letter in existence, dated June 16, in which Controller Hebert submitted conditions upon which he would support the plan, viz., a receipt in full of a certain account which he owed; the payment of \$100,000 in cash before the vote was taken in the Board of Control, and a further payment of a similar sum in cash within 24 hours of a favorable report made by the controllers to the council. On the morning of June 30, R. Tourangeau, a citizen, made an affidavit in which Controller Hebert's letter was set out, upon which an interim injunction was granted, operative to July 6, restraining the Board of Control from taking any action on the matter. Although the interim injunction had been obtained, it does not appear that it was actually served upon the Board prior to the time of the meeting. When a vote was called for by the Mayor on Controller Hebert's motion to send forward his plan for approval by the Council, Controllers McDonald and Amey protested and refused to vote, but Controllers Hebert and Cote voted in favor and the Mayor declared the motion carried. On receipt of the order of court at a subsequent stage, the Mayor stated that no action would be taken upon the

motion pending developments. On July 2, R. Tourangeau obtained a further injunction restraining not only the Board of Control, but the City Council and the Secretary of the Board of Control from taking any action in the matter until after July 6, and calling upon the Mayor and Controllers Cote and Hebert to show cause why they should not be committed for contempt of court. Pending further action by the courts all the papers were stored in the safe at the city hall. The injunction case was finally adjudicated upon July 14, when Justice Pauveton made an order directing the Mayor and Controllers Cote and Hebert to appear before the court on July 16, to show cause why they should not be adjudged guilty of contempt of court.

An interlocutory injunction was granted at Montreal, July 20, to restrain the Board of Control and the City Council from further dealing with the Montreal Tramways Co.'s franchise renewal question until such time as the court shall have been afforded an opportunity to enter upon deliberations as to the merits of the allegations and counter allegations arising from the board adopting the proposal of a 30 years franchise.

A number of affidavits have been filed in connection with the matter, bringing in the proposed franchise to the Canadian Auto Bus Co., and the recent Drolet St. land deal, in all of which allegations are made respecting dealings between Controllers Hebert and McDonald respecting votes at the Board of Control. (July, pg. 275.)

Proposed Absorption of Halifax Electric Tramway Company.

The hearing by the Nova Scotia Public Utilities Commission of the application of the Nova Scotia Tramways and Power Co. to take advantage of the powers contained in its act of incorporation, was concluded at Halifax, July 9. The company in its petition asks that the capital of the company be increased to \$10,000,000; that \$5,000,000 first mortgage 30-year bonds be issued at 5%, \$3,000,000 to be presently issued, and the balance of the future requirements only to be issued against 80% of expenditures on capital account when the earnings of the company for the fiscal year preceding any proposed issue have been at least one and three quarters times the net charges on the bonds already issued and on those proposed to be issued, and when such issue is approved by the Public Utilities Commissioners. The petition also asks the board to approve of \$3,000,000 par value of said bonds, 32,500 shares of preferred stock and 62,500 shares of ordinary or common stock, to the order of the Nova Scotia Light and Power Co. The petition is followed by schedules giving a description of the Halifax Electric Tramway Co.'s property and plant, of the power sites, lands and privileges on the Gaspereau River, a description of the equipment of the cost of development of the Gaspereau made by J. G. White and Co. of New York, which is placed at \$1,534,960. The net earnings under the proposed arrangement are estimated to be sufficient to pay between 5 and 6% on a total indebtedness of \$12,500,000.

H. A. Lovatt, K.C., the principal counsel for the petitioners, made a lengthy statement in opening the proceedings. The money which would be received would be devoted to the following purposes:—\$800,000 to the retirement of mortgages outstanding on the Halifax Electric Tramways Co.; \$1,227,780 to construction of works; to provide for taking over of the various properties, and the balance for contingencies and working capital. The J. G. White Co.'s report showed that within 55 miles of Hal-

ifax, on the property owned by the company there was a lake area which would give a storage of 2,000,000,000 cubic feet of water, which would produce about four times the electric power at present available in Halifax. The estimated cost of the works necessary for the development of this power was put at \$1,534,000. The report of P. Sothman, formerly Chief Engineer of the Hydro Electric Power Commission of Ontario, confirmed the White report.

The Halifax City Council and the Municipal Association were represented, and several expert witnesses were examined. The commission simply heard the evidence, which when transcribed will be sent to the city council and to the Municipal Association, on behalf of which arguments will be submitted in writing for the consideration of the Commission before judgment is given.

Calgary Municipal Railway Investigation.

Charges made against the management of the Calgary, Alberta, Municipal Ry., and particularly against the Superintendent, T. H. McCauley, at the instance of Alderman Frost, are being investigated by Justice Simmons. The inquiry was opened July 8. No formal charges were made, and the judge has been occupied in taking evidence. During the first four days of the hearing 45 documents were referred to and put in evidence, and a number of witnesses were examined. It was stated, July 10, that Alderman Frost had 70 additional witnesses to call, which would show that the inquiry would be a protracted one. From the evidence given it appears that there has been some friction between the Superintendent and the employees. It appears that the men are not connected with a union, but that there is an association, which has a grievance committee, at the meetings, of both of which the Superintendent is frequently, if not always present. The association meets in two distinct sections—the day men and the night men meeting separately. The two sections apparently do not work in harmony, as evidence has already been given showing that what one section does is frequently not approved by the other, and that one president, who presides at the meetings of both sections, resigned because of the differences. The evidence so far given does not make any direct charges, although there are suggestions of charges, but they all appear to have to do with the internal relationship of the chief operating officer and the employees.

Cars for the Toronto Civic Railway.

The Toronto City Council invited alternative tenders recently for 4 double end single truck cars complete, and for equipment for 4 cars for the Toronto Civic Ry.'s Lansdowne Ave. line extension. For 4 cars complete there were two tenders, one at \$5,525 a car and one at \$5,200. The Works Commissioner reported that he estimated it would cost approximately \$4,750 to purchase and assemble each car, a saving of \$450 on each car as against buying them complete, and it was therefore decided to accept the following tenders:

Preston Car & Coach Co., 4 double end single truck car bodies, \$2,386 each.

Canadian Westinghouse Co., 8 ventilated motors, \$593 each; 8 circuit breakers, \$23 each, and 4 lightning arresters, \$4 each.

Canadian General Electric Co., 8 K-10 controllers, \$126.75 each; 4 choke coil cores, \$1 each; 4 sets of resistors for two motor equipment, \$32 each.

Northern Electric Co., no. 6 rubber covered double braid car cable copper wire,

\$44.40 per thousand feet. No. 4 rubber covered double braid car cable copper wire, \$60.30 per thousand feet. 1-0 rubber covered double braid car cable copper wire, \$132.80 per thousand feet.

Dawson & Co., Ltd., 4 coal burning forced ventilation car heaters, \$166.50 each. 4 21-E trucks, \$285 each.

Allen General Supplies, Ltd., 8 gears and pinions, \$48.45 each; 8 controller checks, \$9 each.

Dominion Wheel & Foundries, Ltd., 8 cold rolled steel axles, \$31.25 each.

Coleman Fare Box Co., Ltd., 8 stationary fare boxes, new type, \$50.10 each.

Opening of the Electrified London and Port Stanley Railway.

The newly electrified London and Port Stanley Ry., a detailed description of which was given in Canadian Railway and Marine World for July, was opened for traffic July 1, when some 2,500 passengers were carried from London, and over 1,000 from St. Thomas to Port Stanley, in addition to local traffic along the line. No freight was carried during the day. The power machinery is reported to have worked very well, but some slight defects developed which required adjustment. To enable these adjustments to be made, steam was used for the operation of the line for a few days after July 1, and the electrical operation of the line was reported to be working reasonably satisfactorily July 8. Freight carrying was started July 2, and it was reported July 8, that it was increasing and was being handled expeditiously.

The work of electrifying the line was done under the direction of F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario, the assistant engineers of the Commission employed being E. G. Hewson, electrical work; H. L. Bucke, track work; A. E. Davison, pole work; and E. Brandon, substations. D. M. Morrison was resident engineer in charge of the whole work, with office at St. Thomas.

The official opening of the line took place July 22, when a large number of guests attended on the invitation of the London City Council, Board of Trade and Public Utilities Commission. They were taken over the line from London to Port Stanley and return in the afternoon, and were then entertained at dinner in London.

Bridge Repair Work in Vancouver.—The ratepayers of Vancouver, B.C., defeated seven money by-laws, June 29, among them being one for the expenditure of \$65,000 for repairing and altering the Connaught Bridge, which was burned recently, and another for \$150,000 for the purchase of land to complete the Georgia-Harris Viaduct, which was formally opened for traffic July 1. The city council on July 2 authorized the making of temporary repairs at a cost of \$10,000. The work to be done includes an 18 ft. roadway and a 5 ft. sidewalk, no provision being made for electric railway tracks.

Proposed Sale of the Detroit United Ry.—The Detroit Street Railway Commission has been advised by the Detroit United Ry., that the draft of the proposed agreement whereby the city purchases the company's property within the one fare zone, is acceptable to the officials. On the acceptance of the contract by the commission, the company will obtain the necessary consent of the trustees for the bondholders to appear in the Chancery Court, to fix the price to be paid, presuming that the contract is accepted by the ratepayers. The commission has accepted the contract, and has given the company until Aug. 2, to obtain the ratification by stockholders, etc.

Mainly About Electric Railway People.

Norman Coryell has been appointed Master Mechanic, Moncton Tramways, Electricity and Gas Co., Moncton, N.B., vice A. R. McCharles, who has left the service.

H. A. MacLean has been appointed Accountant Moose Jaw Electric Ry., vice Captain C. E. McGee, who was killed in action May 24, as mentioned in our July issue.

Capt. N. C. Pilcher, General Manager, Sherbrooke Ry. & Power Co., Sherbrooke, Que., is in the 5th Mounted Rifles and is going to the front with the Canadian Overseas Expeditionary Forces.

F. T. Leversuch, heretofore Freight and Ticket Agent, Michigan Central Rd., Windsor, Ont., has been appointed Traffic Manager, London & Port Stanley Ry., London, Ont.

J. J. Callaghan, heretofore Superintendent of Transportation, Montreal & Southern Counties Ry., Montreal, has been appointed Manager of Operation, London & Port Stanley Ry., London, Ont.

W. O. LeBer, heretofore dispatcher, Montreal & Southern Counties Ry., Montreal, has been appointed acting Superintendent of Transportation, vice J. J. Callaghan, who has been appointed Manager of Operation, London & Port Stanley Ry.

C. E. A. Carr, railway supplies, etc., Toronto, formerly General Manager, Quebec Railway, Light, Heat and Power Co., received a cablegram from the British War Office, July 23, that his son, Private C. Clifton Carr, of the 3rd Battalion, Canadian Overseas Expeditionary Force, previously reported missing, but from whom he subsequently received a letter, had been officially reported as having died of wounds while a prisoner of war at Cassel, Germany. A dispatch states that the wounds consisted of a shattered thigh.

Electric Railway Notes.

The Calgary Municipal Ry. is reported to have carried over 60,000 passengers on July 1.

The London & Port Stanley Ry. has received the Board of Railway Commissioners' approval of its standard passenger tariff on the basis of 2½c. a mile.

The Public Utilities Commission in Port Arthur, Ont., has removed to new and larger offices in the Whalen Building, all its business now being transacted on the ground floor.

Owing to the increased cost of the Hydro Electric Power Commission of Ontario's power in St. Thomas, the cost of power for operating the St. Thomas St. Ry. increased from \$441 in May to \$647 in June.

The Sandwich, Windsor and Amherstburg Ry. has ordered two single truck city cars, with bodies 21 ft. long mounted on 21E trucks, 8 ft. wheel base, from Preston Car and Coach Co.

In a recruiting campaign inaugurated in Toronto during July, one of the Toronto Ry. cars was utilized. It was decorated with bunting, and bore a destination sign of Berlin and signs of various sorts to induce men to enlist.

The British Columbia Electric Ry. Co. entertained 150 delegates of the National Electric Light Association at Vancouver recently. The party left for San Francisco after the annual convention, and visited Vancouver in the course of a trip.

The Sandwich, Windsor & Amherstburg Ry. has ordered 2 single truck car bodies from Preston Car & Coach Co.; 2 trucks,

21E single, from G. C. Kuhlman Car Co.; and 4 no. 323 railway motors from Canadian Westinghouse Co.

Thirty of the Vancouver employees of the British Columbia Electric Ry. have been awarded "First Aid" certificates by the St. John's Ambulance Association local branch. The class was conducted during the winter by Dr. S. Paulin and Dr. W. Keith, who were, June 25, each presented with gold sleeve links by members of the class in recognition of their services.

The question of the best method of issuing transfers to passengers on the municipal railway is agitating the Calgary, Alberta, Commissioners. Several of them advocate the issue of transfers as passengers are getting on the cars, while Superintendent McCauley prefers the plan of issuing them as passengers leave. A report on experiences of both plans is being prepared.

The London & Port Stanley Ry. has received 5 steel motor cars, one baggage and express car 61¼ ft. long, one freight car and three trailer cars from the Preston Car & Coach Co. The interior finish of the trailer cars is of mahogany, with a seating capacity of 68. The cars are equipped with G.E. air brakes, G.E. multiple unit control, Tomlinson M.C.B. couplers form 12 draw bars. The trucks were made by the National Steel Car Co.

The Edmonton, Alberta, City Council recently gave Superintendent Larmouth a free hand in the management of the Edmonton Radial Ry. for a certain time. At the June meeting of the council a petition by certain residents on Namayo Ave. asked that Mr. Larmouth's decision not to stop at a certain corner be overruled, and the council requested the commissioners to discuss the matter with the Superintendent and see what could be done to meet the request.

The London St. Ry. is having two of its older type cars remodelled into p.a.y.e. cars by Preston Car and Coach Co., making them as nearly like the new cars added to the system recently as possible. The work involves the strengthening of the frames and new vestibules both front and rear. The company has 23 of these cars but it will not be decided until the testing of the two now being changed, whether the remainder will be so altered or not.

Contracts for Toronto Civic Railway Equipment, Etc.

The Toronto City Council has awarded contracts for the Toronto Civic Ry.'s Danforth Ave. machine shop equipment tendered for recently. The contracts were divided among several firms. Following is the equipment ordered: Double back geared gap lathe, belt driven, with a swing of 44 ins. in the gap, 28 ins. over the shears, 20 ins. over the carriage and 14 ins. over the face plate, with a bed about 14 ft. long to admit 8½ ft. between centres. Wheel press, 150 tons capacity, to be used with 33 in. wheels and axles, with 5½ in. wheel seats. Double back geared shaper, to plane not less than 24 in. face. Double back geared radial drill, 3½ ft. clear arm, belt driven. Double back geared upright drill to drill up to 1½ in. holes, belt driven. 3,000 lb. portable crane. Double emery stand, for 12 x 2 in. wheels. Vise. 16 in. hack saw. 35 h.p. constant speed induction motor, 550 volts a.c., 3 phase, 25 cycles, 720 r.p.m.

The City Council has awarded the contract for the sweeper for the St. Clair Ave. line, for which tenders were invited recently, to the C. E. A. Carr Co., Toronto, agents for a United States manufacturer.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies.

	May 1915	May 1914	July 1, 1914 to July 1, 1915	July 1, 1915 to July 31, 1914
Gross earnings	\$512,568	\$678,314	\$6,808,470	\$8,128,904
Expenses	488,584	505,640	5,490,897	5,981,407
Net earnings	23,714	172,674	1,308,573	2,107,407

Cape Breton Electric Co.

	May 1915	May 1914	July 1, 1914 to July 1, 1915	July 1, 1915 to July 31, 1914
Gross earnings	\$26,611.66	\$29,485.78	\$127,765.12	\$137,624.78
Expenses	16,410.80	16,095.03	80,255.15	83,488.85
Net earnings	10,200.86	13,390.75	47,509.97	54,135.93

Detroit United Ry.—The City Council of

Detroit, Mich., has approved of an agreement with the D. U. R. directors for the purchase of the line, at a price to be fixed by the judges of Wayne County, Mich., to be paid by the city assuming mortgages to the full extent of its borrowing powers, that is, 2% of the total value of the taxable property within the city limits, and by a sinking fund to be provided out of the line's earnings. It is estimated that the lines represent a value of \$25,000,000, and that the 2% on the city property will represent \$16,000,000. The D. U. R. directors issued a letter to shareholders, July 14, advising the acceptance of the agreement. They will meet Aug. 2, to consider the question.

Saskatoon Municipal Ry.—Receipts for June, \$8,843.71 against \$13,303.66 for June 1914. Operating expenses \$9,931.33 and \$10,874 respectively.

Toronto Civic Ry. The City Works Commissioner states that the receipts for the current year from the various lines operated by the city have increased over the same period last year by about 25%, chiefly due to passengers using the cars more in the middle of the day.

Toronto Ry., Toronto and York Radial Ry. and allied companies.

	May 1915	May 1914	Jan. 1 to May 31, 1915	Jan. 1 to May 31, 1914
Gross earnings	\$795,262	\$871,733	\$4,022,505	\$4,163,988
Expenses	420,459	449,627	2,152,304	2,169,109
Net earnings	374,803	422,106	1,870,201	1,994,879

The receipts of the Toronto Ry. from Jan. 1, and the percentages paid to the city, for 1915, compared with those for 1914, are as follows:

	1915		1914	
	Receipts	City percentage	Receipts	City percentage
Jan. ...	\$ 471,226	\$ 70,486	\$ 501,844	\$ 75,277
Feb. ...	440,814	67,047	461,274	72,060
Mar. ...	488,468	93,141	530,751	102,159
Apr. ...	467,702	93,540	501,435	100,287
May ...	468,953	93,790	534,465	106,893
June ...	450,582	90,116	525,033	105,106
	\$2,787,245	\$508,120	\$3,054,802	\$561,773

Winnipeg Electric Ry.

	May 1915	May 1914	Jan. 1 to May 31, 1915	Jan. 1 to May 31, 1914
Gross earnings	\$263,302	\$337,664	\$1,496,707	\$1,756,536
Expenses	176,552	189,643	959,808	1,026,132
Net earnings	86,750	148,021	536,909	730,407

The Winnipeg, Selkirk and Lake Winnipeg Ry. Co. is a subsidiary of the Winnipeg Electric Ry. Co., and operates a line from Winnipeg to Selkirk, Man., 22.13 miles, with the Stony Mountain branch, from Middlechurch to Stonewall, 24 miles. It had outstanding, June 30, 1914, \$111,500 in stocks, and \$400,000 in bonds. The bonds were issued in 1908, redeemable in 30 years from their date, and bear 5% interest.

Under an order issued by the Manitoba Public Utilities Commission, July 10, the Company is authorized to issue bonds for \$1,400,000. It is said that the present outstanding bonds will be amalgamated with the new issue, and that the balance will be used to repay to the Winnipeg Electric Ry. Co., the \$980,000 advanced for construction of the Stony Mountain branch and other purposes. The order provides that it is subject to the shareholders' approval; that the new bonds shall not be sold at less than 85% of face value, and that the company account to the Commission for the disposition of the proceeds.

Marine Department

The Question of Tonnage for Export Trade.

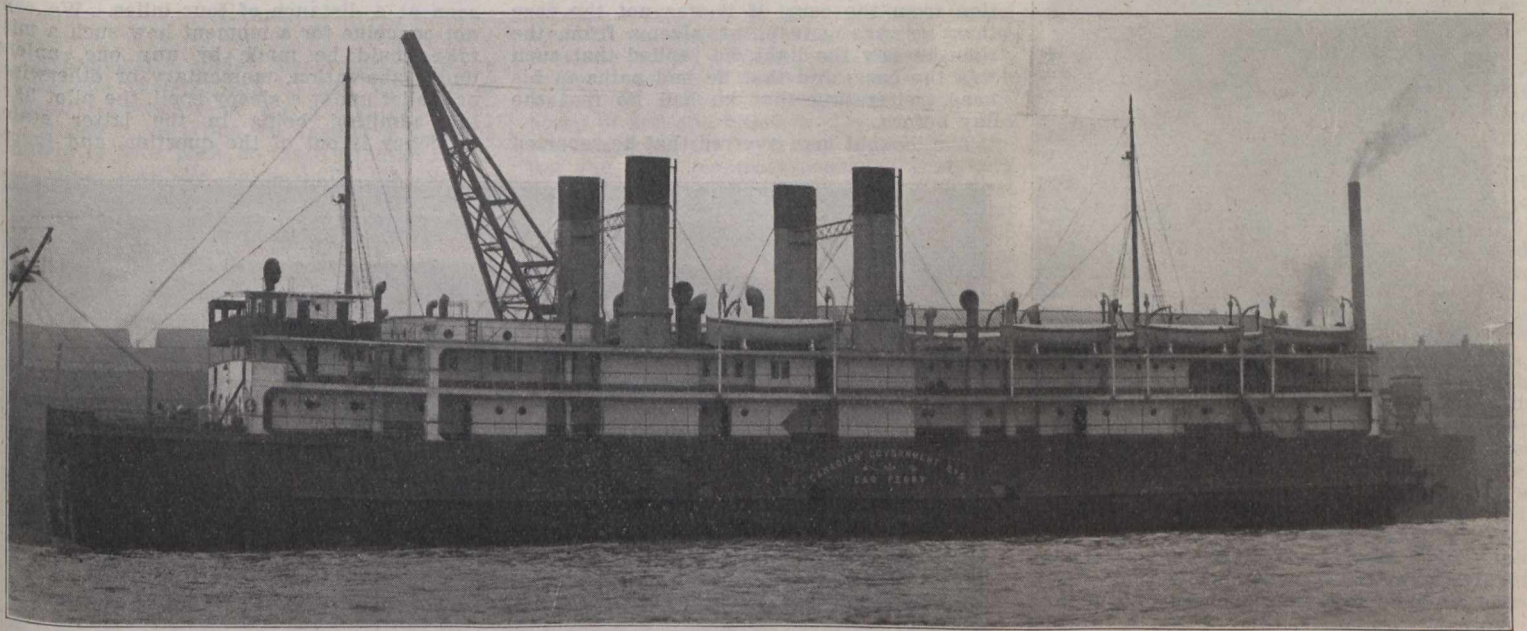
One of the most serious problems which the Dominion Government has under consideration, and which is one of the matters that Premier Borden will take up with the Admiralty and the home authorities, is that of the shortage of ocean tonnage and the tying up of the Canadian export movement. The impending harvest in Canada, and the necessity of moving the immense crop which at present is expected, brings the problem more forcibly to the front, and makes its solution a matter of pressing importance. The general export business of the country has been hampered seriously for the past 10 months, owing to the shortage of ocean tonnage both on the Pacific and the Atlantic, though exporters have shown an inclination to take the situation philosophically and to resign themselves to the inevitable loss of business. In

Canada, but South Africa, Australia, New Zealand and all the British possessions, also suffer. While German shipping has been driven from the seas, there is a very large German tonnage locked up in United States ports, which before the war was plying on the trade routes of the world. Neutral shipping is also to some extent seriously hampered. A number of prize vessels have, it is stated, been placed at the disposal of shippers in Great Britain, but these are not many. In response to the urgent demand for ocean tonnage many of the steamships formerly engaged on the Great Lakes have taken to the Atlantic.

At best, the movement of the 1915 grain crop under present conditions of scarcity of tonnage must be slow. There is a capacity of 168,000,000 bush. in Canadian elevators which, to a great extent, will take care of the storage of the crop, but there is only a capacity of 29,250,000 bush. in the elevators in the eastern inspection division, including Montreal, with a capacity of 7,400,000 bush.,

the available tramps pressed into the service. These latter are already reaping a rich harvest, and ocean freight rates are up all around.

The increased insurance rates, on account of war risks, are comparatively light as contrasted with the boost in the freight rates following decreased supply and increased demand for shipping. If the ocean freight rates go still higher it is not improbable that joint action will be taken by the Imperial and Canadian Governments to requisition all the available freighters for the handling of food exports from Canada at fixed freight rates, with the Governments assuming all risks of loss. Sir Robert Borden will spend at least part of his time while in England in discussing the question with the Admiralty and the British Board of Trade. In the meantime transportation and business interests are endeavoring to co-operate in looking for a solution of the problem.—Ottawa correspondence Toronto Globe.



Car Ferry Steamship Prince Edward Island, for service between Cape Tormentine, N.B., and Carleton Point, P.E.I.

the movement of the new crop this autumn the railway systems, the shipping interests, the financial concerns, and, in fact, the whole Dominion, are vitally interested. The total yield of wheat in Canada last year was 158,000,000 bush., and this year, with an estimated increase in the acreage of 25%, and with generally good prospects for an increased yield per acre, it is estimated that the crop will not fall far short of 250,000,000 bush. In the United States it is estimated that there will be 100,000,000 bush. more than last year. It will therefore be seen that a very considerable increased tonnage will be required to carry the exports of the two countries.

Much of Canada's shipping is now engaged on the King's business, having been taken over by the Admiralty for purposes of transport, etc. A tremendous amount of tonnage formerly available for ocean freightage is carrying troops to the various theatres of war, to the Dardanelles, to France, and from Canada to England. Other ships are engaged in the carriage of ammunition, army stores, horses, hay and fodder, etc., so that a comparative few are available for the ordinary export business of the Dominions. In this respect not only

so that unless export is freer than it is at present the crop will have to be moved very gradually from the west. This in itself, however, is not regarded as an unmixed evil, since a gradual movement, from the financial viewpoint, is perhaps better than a rush during a month or so.

The cry for ships has been incessant for some months past, and both the export and import business have been seriously hampered by lack of ocean shipping facilities. There are hundreds of ocean steamships which were formerly available, but which are now being used exclusively for war purposes, some of them being kept as prison ships in England. When the crop movement starts it will take several hundred vessels to handle Canada's wheat exports alone, with a similar increased demand from the United States. It is not improbable that there will be serious congestion of wheat at the ocean terminals by the end of September, and in consequence the rail movement to the east will be held up. That may bring about a glut of wheat on the western markets and a consequent big drop in price, unless the Government succeeds in its present efforts to have some of the ships now on war service released, and all

Car Ferry Steamship for Prince Edward Island Service.

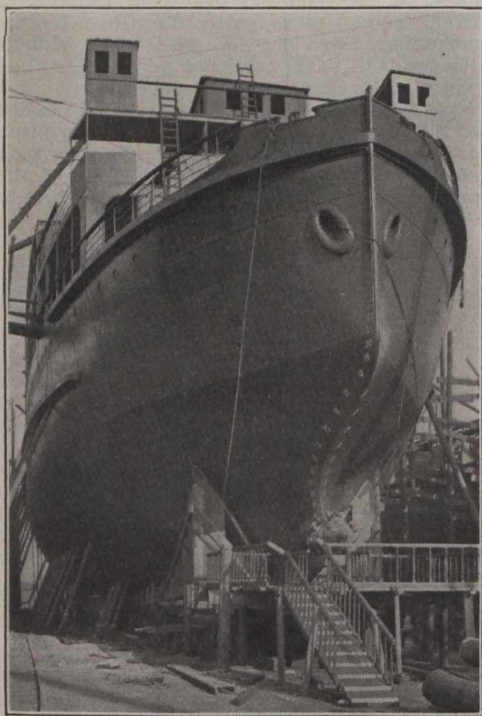
The car ferry steamship Prince Edward Island, for service between Cape Tormentine, N.B., and Carleton Point, P.E.I., arrived at Halifax, N.S., July 4, having sailed from Newcastle, Eng., June 24. The voyage across, under Capt. W. Manning, was accomplished in complete safety and without incident or accident.

Her dimensions are, length overall 305 ft., breadth 53 ft. 10 ins.; draught 18 ft. On this draught she will carry a full complement of 10 freight cars, or 6 passenger cars, about 150 tons of coal and general stores. One of her features is the provision of a forward propeller, which it is considered will be of considerable use on account of the manoeuvring necessary through ice at the landing points. The accompanying illustrations show the vessel complete, prior to leaving England, the bow, and also the car deck. Complete descriptions of the vessel, with plans and profile, were given in Canadian Railway and Marine World for Sept., 1913, pg. 444, and Nov., 1914, pg. 518.

Grounding of the s.s. Romney.

A formal investigation was held at Quebec, June 29, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. J. A. Murray, harbor master, Quebec, and Capt. F. Nash, Montreal, as nautical assessors, into the causes of the grounding of the British s.s. Romney on Green Island reef, in the St. Lawrence River, June 24.

The master, Thomas Moss, stated that the Romney is a single screw, steel built vessel, of 2,316 tons net, with triple expansion engines, capable of a speed of 11 knots, carrying a crew of 56 all told, and is provided with all the necessary navigation instruments, including four compasses, one



Bow of Car Ferry s.s. Prince Edward Island, just before launching.

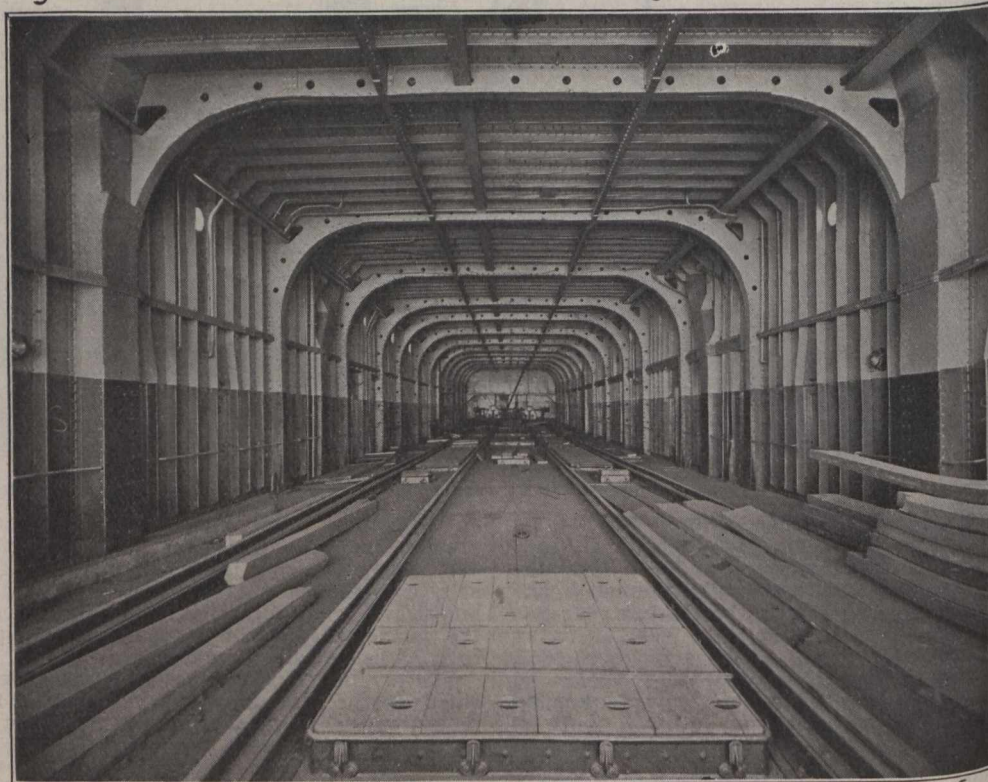
of which is of Lord Kelvin's make, upon which there is very little deviation. From the time he left Liverpool he encountered more or less misty, thick weather. During the 10 days crossing until Sydney was reached, he had scarcely any rest, all hands having been kept on the alert while the vessel was in the war zone. After leaving Sydney, where he had gone to bunker, he encountered misty weather. He first sighted Cape Gaspe, then Cape Chatte, and finally made Father Point. He was on the bridge constantly during this time, and after having boarded the pilot, and passing Bic Island, he left the bridge about 11.30 p.m., after having given verbal orders to be called if the weather became thick or misty. He did not retire to his room until 12.30, the weather being then overcast, with fresh wind from a northeasterly direction. He had informed the pilot that on the course s 67 w there was but one degree of deviation, which was not worth considering. He was awakened by the ship striking, and rushed up on deck, and found that orders for the engines to be put full speed astern had been given by the pilot, but notwithstanding this the ship remained fast. The tide was then ebbing, and soundings were immediately taken, and a call for assistance was sent by wireless, and the s.s. Lady Evelyn arrived and made efforts to pull the vessel off without success, until that night, when the ship was floated at high water, and proceeded to Quebec.

Jules Lamarre stated that he had been a Quebec branch pilot for some 12 years, having had but one accident previously, which was not made the subject of an investigation, as it was trivial. He had piloted the Celtic King down the day before and landed at Father Point on June 23, and attempted to rest, but owing to pains in his legs could not obtain any sleep. The same evening he took charge of the s.s. Romney, and steered the usual courses to Bic, and after passing that point shaped a course s 67 w, which in ordinary circumstances would lead him between Red Island lightship and Green Island. He saw a light half a point on his starboard bow, but could not distinguish its character, owing to the smoke from the ship obliterating its brilliancy, the wind being aft, or a little on the port quarter. The lookout reported breakers ahead, the helm was put hard astarboard, engines ordered full speed astern, and the ship grounded. Prior to this, he assumed that the light in sight was the lightship, but did not make sure by means of the glasses, that such was the case.

Upon being recalled, in answer to a question from the court if it was not the case that he was asleep, or sleepy from the time he saw the light, he replied that such was the case, and that he had pains in his head, reiterating that he had no rest the day before.

The lookout man averred that he reported

respect to the pilot, Jules Lamarre, the court cannot,—in view of his evidence, and admission that he might have been drowsy or sleepy at the time, due to lack of sleep the day before, occasioned by pains in his legs,—exercise any leniency. Though many years a pilot, he evidently has not yet realized the extent of the responsibility he assumed when taking charge of a ship. We claim that it was his duty to inform the master of his temporary physical disability. Had he done so, it is not probable that the master would have left the bridge. We assume, and rightly so, that the statement that the smoke obscured the light is but an excuse, and not a valid one. We know that there are intermissions in the emission of smoke from the funnel, and during those intervals the light must have been visible sufficiently to show the difference between the light exhibited on Green Island and the one on the lightship, or on Red Island, each one of which is of a different type. Accepting the evidence adduced that the lightship and Red Island lights were not visible, owing to mist, the difference in the exhibition of those lights and their character is great enough to observe in a moment, especially in the almost normal climate conditions which existed that night, lights being seen at a distance of four miles. We cannot conceive for a moment how such a mistake could be made by any one, unless under aberration, momentary or otherwise, or whilst under a sleepy spell, the pilot having admitted being in the latter state. Leniency is out of the question, and there-



Car deck on Car Ferry Steamship, Prince Edward Island.

two small lights indistinct on the starboard bow, then another nearer ahead on the starboard side, then two lights which he assumed were lanterns, on the shore. The quartermaster said the ship steered well, and he showed such remarkable memory for details that the court did not attach much importance to his statement.

The court finds that Capt. Moss has given satisfactory reasons and explanations for his absence from the bridge prior to and up to the moment of the accident, and therefore exonerates him from blame. With

fore, for his lack of attention to duty, which has caused a loss of thousands of dollars, we suspend Jules Lamarre's pilot's license for six months, from June 29 to Dec. 29, and further order him to pay \$100 towards the costs of the investigation. With regard to second officer Cooper, we find that he showed a marked indifference in the navigation of the ship. His orders were to call the master if it became thick or hazy. If the character of the light could not be discerned owing to smoke obscuring it, we are of opinion that it was his right and duty to

Shipping Letters From the Head of the Lakes.

advise the master, further, when such a condition existed, and he should have shown sufficient interest to refer to the chart or sailing directions, as, had he done so, he could have pointed out to the pilot that he was piloting the ship into danger. It is in such a time as this that the officer on duty should assure himself that the pilot is right, besides increasing his knowledge of the conditions existing in the waters he is called upon to navigate. We repeat that second officer Cooper has shown an extraordinary and most lamentable indifference in the accomplishment of his duties, and while we will not deal with his certificate, we severely reprimand him, and caution him to be more careful in the future and exercise that intelligence and caution which every master expects from those he entrusts with navigational duties. This court points out that in dealing apparently in a lenient manner with the second officer, it recognizes the peculiar situation created by the war, which has reduced the number of officers available to a minimum, therefore causing untold delay to vessels carrying out their schedule.

Suggested Customs Officer in New York for Canadian Shipment via Panama Canal.

A proposal is under consideration by the Dominion Government, at the instance of eastern members of the Canadian Manufacturers Association, to appoint a customs officer in New York, so that Canadian manufactures may be shipped to the Pacific coast via New York and the Panama Canal. When a deputation waited on the Premier at Ottawa recently, it was pointed out that in certain manufactures Canadian eastern makers, by having to ship to the Pacific coast by the all rail route, could not compete with U. S. eastern manufacturers who could send by the Panama Canal route at much cheaper rates. The Premier was understood to say that if certain products were to move to the Pacific coast via New York, which at present had no movement, it would follow that manufacturers would be sending other products by that route which now move by the all rail route, and this would be to the detriment of Canadian railways. He promised that the point would, however, receive careful consideration. S. R. Parsons, Chairman of the Transportation Committee of the Canadian Manufacturers Association, has since stated that the matter is becoming somewhat involved in that Canadian railways have in some instances been making low commodity rates in order to meet, as far as possible, the competition via New York, and it is understood that they are giving further consideration to the matter. On the other hand, owing to the scarcity of steamships, freight rates via New York to Pacific coast points have advanced considerably.

Cruiser Sterns on Merchant Vessels.—A correspondent of a New York shipping paper objects to the use of the words cruiser stern, which have been applied to the design of a stern which is being applied to certain vessels in Europe, and which it is said is likely to be copied on this continent. The paper states that cases where the real cruiser stern is applied to merchant vessels are very rare; the only correct ones so built up to the present are the C.P.R. steamships Empress of Russia, Empress of Asia, Metagama, Missanable and Princess Irene, and the Allan Line steamships Alsatian and Calgarian. The C.P.R. s.s. Princess Margaret, a sister vessel of the Princess Irene, should be added to the list.

F. and W. Jones, brokers, Fort William, Ont., have issued weekly letters as follows:

July 3.—Coal receipts this week show an increase over last week—seven cargoes arriving—5 bituminous and 2 anthracite—only one cargo was carried in U. S. bottom. Four cargoes are reported en route, 3 for the Canadian Northern dock, 1 anthracite and 2 bituminous, and 1 vessel with both anthracite and bituminous will discharge part at the Canadian Pacific and part at the Canadian Northern. Car shipments to the west have also picked up considerably during the past week, dealers are now commencing to replenish their stocks throughout the west and it is expected that commercial coal will move somewhat more freely. The railways, however, are shipping only sufficient service coal to fill their actual requirements. This condition is likely to continue until cars are needed in the west to move the grain crop. Two cargoes of bituminous coal have been unloaded at Jackfish during the week, about 6,000 tons each. One cargo of ore (about 2,500 tons) was shipped this week to Cleveland. Stocks on the dock are estimated at about 6,000 tons, but no further charters are reported.

Lake movement of grain has continued steadily on about the same parity as the previous week, 928,486 bush. having been shipped east in 7 vessels, only 1 of which was U. S. bottom. This cargo was composed of flax and billed to Cleveland. Grain arrivals from the west are steadily declining and it is generally conceded that very little of the old crop is now left in the west to come forward. Total elevator stocks at the head of the lakes now stand at 4,754,865 bush., a decrease from the previous week of 447,121. It will thus be seen that with the lake movements steadily in excess of western arrivals the available stocks must soon be greatly depleted and the prospects of grain charters will lessen from week to week until new crop movement commences. The heavy rain storms referred to in our last week's letter and which was general over the western provinces, have continued in a modified form, accompanied by warmer temperature and more sun. There are no reports which would denote serious damage to the crops, at the same time it cannot be expected but that the continuous rainfall must have at least retarded advancement. The total result will probably be a greater percentage of lower grade grain and a setback in harvesting of possibly two weeks. From reliable sources it is computed that it will be some 2 weeks before the "ear" is developed, after which it will take about 4 weeks to ripen, thus bringing commencement of harvest up to second or third week in August. The grain movement should, therefore, be commencing well in advance of Sept. 1. It is still maintained that a full crop will be harvested equal to any previously known in Canada, even if it does not reach a bumper crop. The heavy floods which have been reported in the west are mainly confined to the city areas. Stocks on hand at date, receipts and shipments during the week are:

	Stocks.	Receipts.	Shipments.
Wheat	2,399,718	319,482	616,615
Oats	994,590	115,408	74,942
Barley	86,756	15,950	101,395
Flax	1,273,801	30,160	155,165

July 10.—Coal receipts this week show a slight increase over last week—9 cargoes arriving, 6 bituminous and 2 anthracite, and one part bituminous and part anthracite—4 cargoes were in U. S. bottoms and 5 in Canadian. One cargo of a U. S. steamship was discharged at two docks, part at the Canadian Pacific and part at the Canadian Northern. On Tuesday and Wednesday the Canadian Pacific worked on three steam-

ships. All vessels received good dispatch and in only one case was a steamship held over 12 hours waiting turn. Two cargoes are reported en route, both bituminous—one for the Canadian Northern, the other for Fort William coal dock. Shipments to the west were on the same parity as last week, there is no change in the western coal situation and there is nothing to indicate any immediate business activity.

No ore was shipped out this week. Considerable ore is on the dock ready for shipment and a cargo will probably go east next week. Contracts have been closed recently for the delivery of about 45,000 tons of steel rails. The first shipment is expected the latter part of next week.

There has been a marked decrease in lake shipment of grain from these points during the past week; 633,274 bush. have been moved in five Canadian steamships and four passenger vessels; three of the former were billed to Buffalo. Receipts from the west have been round the same parity for the past several weeks with sufficient weakening to show end of stocks in sight. The elevator stocks also show a decrease, the total of grain in all elevators being 4,665,857 bush. The rain storms mentioned in our last letter have abated and the floods are subsiding. Weather reports throughout the west are universally favorable, warmer temperature being general. Grain is reported as filling out rapidly and in healthy condition. It is remarkable that the heavy storms have done little damage, the only noticeable effect being a setback in the time of harvesting. The prospective figures are still from 200,000,000 to 250,000,000 bush. of all grains. Stocks on hand, receipts and shipments during the week are as follows:

	Stocks.	Receipts.	Shipments.
Wheat	2,429,777	354,267	324,208
Oats	941,014	148,528	206,855
Barley	103,951	17,203	8
Flax	1,191,115	20,516	103,203

July 16.—Coal receipts fell off again this week—five cargoes arriving—all bituminous and all in Canadian bottoms. Four cargoes are reported chartered or en route, three anthracite and one bituminous. Two of these are in U. S. bottoms. Shipments to the west still remain light and the coal situation is unchanged. One cargo of about 2,500 tons of ore was shipped this week. There is still considerable ore to come down from the mines but no further charters are reported.

Grain shipments took a big jump this week, 10 cargoes (aggregating 1,243,801 bush.) going east. All were in Canadian bottoms, one cargo of about 100,000 bush. of wheat was to Buffalo. Receipts also show an increase of about 181,822 bush. over last week, but owing to the heavier shipments stocks have decreased, the total of grain in all elevators being 4,044,390 bush. Crop reports for the past week covering the three prairie provinces are very satisfactory, the weather for the most part has been warm and bright with sufficient rain to keep up the supply of moisture. A number of samples have been sent in from Southern Manitoba districts and examined by experts who state they are well satisfied with the appearance and predict better than an average crop. The Department of Agriculture reports conditions in both Saskatchewan and Alberta as excellent, in Southern Alberta some early sown wheat is as high as 42 to 44 ins., showing every indication of a good yield. It is expected that cutting of fall wheat will commence early in August. Stocks on hand, receipts and shipments during the week:

	Stocks.	Receipts.	Shipments.
Wheat	2,168,304	442,578	703,990
Oats	607,531	148,093	481,576
Barley	67,817	18,926	55,059
Flax	1,200,678	12,739	3,176

Canadian Vessel Statistics for 1914.

The total number of vessels on the Dominion register at Dec. 31, 1914, was 8,772, measuring 932,422 tons, being an increase of 227 vessels and 35,457 tons over 1913. The number of steamships on the register was 4,054, with a gross tonnage of 744,783, which, at an assumed average value of \$30 a ton, shows the value of the net registered tonnage to be \$24,972,660. The number of new vessels built and registered in the Dominion in 1914 was 327, measuring 43,346 tons, which at an assumed value for new tonnage of \$45 a ton, gives the value of \$1,950,570. During the year 212 vessels were removed from the register. It is estimated that 45,163 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	2,100	1,492	337,668	314,660
Quebec	1,663	590	177,958	259,143
British Columbia	1,591	1,173	131,550	147,192
Nova Scotia	2,098	416	47,580	135,052
New Brunswick	1,052	253	33,106	55,522
Prince Edward Island	149	26	4,760	10,029
Manitoba	103	90	8,785	7,999
Yukon	11	10	2,716	2,295
Saskatchewan	5	4	660	529
	8,772	4,054	744,783	932,421

Ports of registry are distributed as follows: Ontario, 38; Nova Scotia, 21; New Brunswick, 7; Quebec, 6; British Columbia, 4; and Manitoba, Saskatchewan and Yukon, one each. No provision is made for the registry of vessels in Alberta. The new vessels built during the year, according to provinces, are as follows:

	Number.	Net tonnage.
Ontario	78	23,167
Quebec	51	6,753
British Columbia	97	5,867
Nova Scotia	56	3,303
Manitoba	11	2,899
New Brunswick	31	1,319
Prince Edward Island	2	35
Yukon	1	3
Saskatchewan
	327	43,346

Of the 212 vessels which were removed from the register during the year, 86 were broken up, reported out of existence, condemned, dismantled, abandoned, etc.; 27 were sold to foreigners; 17 were burnt; 17 were wrecked; 14 foundered; 12 stranded; 11 were lost; 8 were abandoned at sea; 7 were transferred to Newfoundland; 7 were transferred to Barbadoes; 2 were transferred to Great Britain; 2 were reported missing; 1 was lost in a collision, and the registry of 1 was closed on the ground that it was no longer required. In a list of the tonnage of each of the maritime countries of the world, Canada takes tenth place, but her tonnage is included with that of Great Britain, which is shown as 13,320,493, more than the aggregate tonnage of the next seven countries. A comparison of the building of new tonnage in Canada during the past 40 years gives some interesting results, which in view of the suggestions made recently by shipbuilders in the Dominion regarding Government subsidies for the trade, may serve some purpose. In 1874, 481 vessels were built, having a total tonnage of 183,010, an average tonnage of 380, while in 1914, 327 vessels were built, with a total tonnage of 43,346, an average of 133 tons. In 1874 the chief vessel building was done in the Maritime Provinces, with Nova Scotia leading, whereas in re-

cent years Ontario has taken the lead in the amount of new tonnage, the amount for 1914 being the highest, but it is little more than a quarter of the tonnage built by Nova Scotia in 1874. The total number of vessels on the Canadian register in 1874 was 6,930, with a tonnage of 1,158,363, compared with 8,772 vessels and 932,422 tons

Dominion Government s.s. Grenville for Buoy Work in St. Lawrence River.

The s.s. Grenville, a buoy tending steamboat for the Dominion Government, placed in service recently on the St. Lawrence River, with the station at Prescott, Ont., is illustrated herewith. This vessel was described in detail in Canadian Railway and Marine World for Dec., 1914, shortly after launching. The following are the principal dimensions:

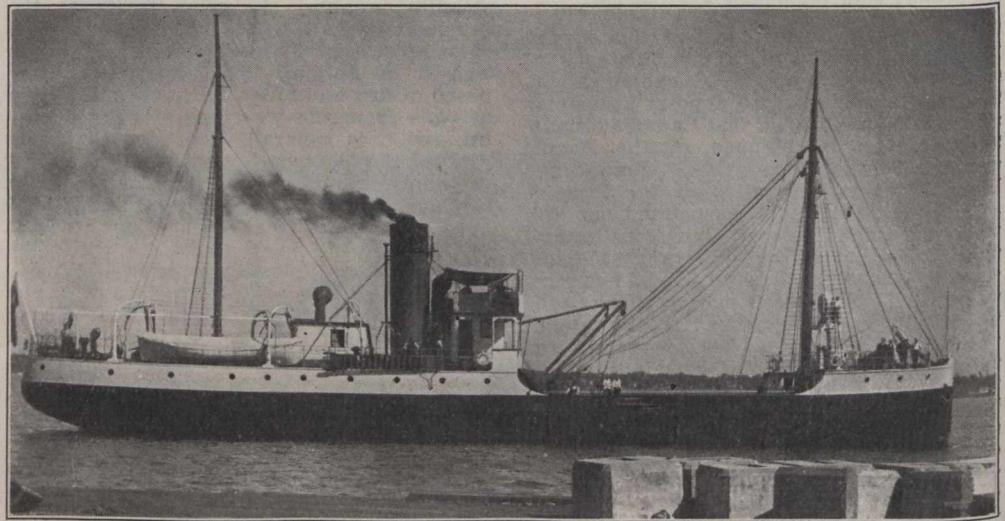
Length between perpendiculars	155 ft.
Length overall	164½ ft.
Breadth moulded	30 ft.
Depth moulded	13 ft.
Draught, loaded with 183 tons	9½ ft.
Coal bunker capacity	100 tons
Complement, officers and men	24

The vessel is of steel construction throughout, built under the government

are sailing vessels, equipped for service in stormy and ice frequented water. Some of them will be used directly by the Canadian Government for the transport of men, construction material and food supplies. Others are engaged by the fur companies for the collection of last winter's accumulation of peltries along the Labrador and Hudson Bay coasts.

Toronto Harbor Improvement Works.

The Canadian Stewart Co., general contractors for the various works in progress in the Toronto harbor, by the Dominion Government and the Toronto Harbor Commissioners, announced July 19, that work on certain of the sub contracts had been stopped temporarily pending their rearrangement. Local reports state that complaints have been made regarding the manner in which some of the work done under sub contracts has been done, and that a number of inspectors acting under the Dominion Government have been dismissed. The Canadian Stewart Co. is reported to have stated that about 20% of the sub contracts have been completed, and that the complaints made refer to about 2% of the com-



Dominion Government Buoy Tending Steamship Grenville.

survey, to be classed as 100 A1 at Lloyd's. She has six main transverse watertight bulkheads—a watertight bulkhead at the bow and stern with bulkheads adjoining forming trimming tanks. She is engine with a 14 x 22½ x 38 x 24 in. 900 i.h.p. reciprocating engine, with two Scotch boilers. She was built by the Polson Iron Works, Toronto.

Vessels for Hudson Bay.

St. John's, Nfld., press dispatch, July 18.—In order that the proper kind of lumber for the construction of piers and docks may be available at Port Nelson, where the Canadian Government is building a railway and steamship terminal on the shores of Hudson Bay, it has been found necessary to send a steamship around the greater part of North America. The Durley Chine, which left Vancouver, B. C., June 30, will cover approximately 10,000 miles to land her cargo of Douglas fir at Port Nelson, which is only about 1,200 miles distant from Vancouver in an air line. Her route lies down the Pacific coast, through the Panama Canal, up the Atlantic coast to Newfoundland, and thence into Hudson Bay. In preparation for this season's work at Port Nelson, a fleet of vessels is fitting out at St. John's. Most of these

pleted portion. If the sub contractors failed to make this good, the general contractors will do so.

One of the Toronto Harbor Commissioners, is reported to have said that Government work in connection with the harbor development scheme had not been accomplished to the Government engineer's satisfaction and the result is that the inspectors had been instructed to cease work until a readjustment can be made. The imperfections were found before they were irreparable, and would be made good by the contractors.

Press reports state that the Government has appointed E. L. Cousins, Engineer, Toronto Harbor Commissioners; Engineer Sweeney, of the Public Works Department at Winnipeg; and Roger Miller, Toronto, to go over the entire work and submit an estimate of the cost of reconstruction. In the meantime the Canadian Stewart Co. is holding the subcontractors' plants.

The C.P.R.'s New York Passenger and Ticket Office has been removed from 450 Broadway to 1231 Broadway, corner of 30th Street, which is more central than the old office. The downtown office is being maintained at 1 Broadway and the freight office as usual in the Woolworth Building.

Atlantic and Pacific Ocean Marine.

The Cairn Line, which operates a number of steamships between England and Canada, has paid an interim dividend of 10% against 2½% last year.

It is announced that the British Admiralty has placed a large order for British Columbia lumber, and that vessels have been arranged for its transportation.

The Osaka Shosen Kaisha s.s. Chicago Maru, bound from Hong Kong, China, to Victoria, B.C., which struck a rock near Shanghai recently, proceeded to Kobe for repairs.

It is announced that the Danish steamships calling at Vancouver will increase their sailings from six to 11 in August, on account of increased lumber and shingle exports from British Columbia.

The s.s. Cheltonian, which stranded near Cape Ray, Nfld., May 23, and which was docked at Halifax, N.S., for examination, will, it is said, be repaired in New York, the amount involved approximating \$100,000.

The British s.s. Anglo-Californian, bound from Montreal to Europe, with horses and war supplies, was shelled by a German submarine early in July, and the captain and 11 of the crew were killed. The vessel was eventually taken into Queenstown, Ireland.

It is reported that the Scottish Co-operative Wholesale Society sent representatives to the Pacific coast recently to make arrangements for the shipping of Canadian grain to Great Britain by the Panama Canal route.

The s.s. Durley Chine sailed from Vancouver, B.C., June 30, with Douglas fir for the Dominion Government dock and terminal work at Port Nelson, Hudson Bay. She will travel by way of the Panama Canal and Newfoundland.

The British s.s. Carisbrook, which was sunk by Germans, off Kinnaird Head, Scotland, recently, while bound from Montreal to Leith, Scotland, with war supplies, was owned in Glasgow, and was insured for £23,500. She was built in 1907 and was 2,352 tons gross.

The s.s. Morwenna, which was owned by the St. Lawrence Shipping Co., Montreal, and which was sunk by Germans in June, when bound in ballast from Cardiff, Wales, to Sydney, N.S., was insured for £30,000. She was built in 1904, and was 1,414 tons gross.

A dispatch from Denmark states that the Hamburg-American Line has made a declar-

ation of bankruptcy, and a similar declaration by the Norddeutscher Lloyd is expected shortly. Both of these companies have suffered severely from the war, all of their vessels having been tied up in neutral harbors, chiefly in the United States.

The shareholders of the Suez Canal Company, which is under British control, are being asked to bring to an end the term of service of the only German director on the board, who is also a director of the North German Lloyd.

The British s.s. Romney, which was stranded on Green Island reef in the St. Lawrence River, June 24, while bound from Liverpool to Montreal, is being repaired by the Davie Shipbuilding Co., Levis, Que. She is owned by F. Bolton and Co., London, Eng., and was built in 1903. She is 2,806 tons gross and insured on a value of £13,000.

The Osaka Shosen Kaisha s.s. Seattle Maru, which arrived at Victoria, B.C., early in July, had a cargo of silk valued at \$500,000. The company has launched recently another vessel named Hawaii Maru, of 100,000 gross tons, and a speed of 17 knots an hour. She will be operated between Hong Kong, China, and Puget Sound ports.

The C.P.R. and Allan Line are reported to have taken a considerable amount of business lately on a time charter basis, and are said to be looking out for other vessels of large size and good speed for their various requirements. It is stated that the rate of freight current for this time business is 15c. 6d. a ton dead weight for six months or longer.

Navigators are warned that obstructions have been placed in Queenstown harbor, Ireland. For safety of navigation, two trawlers are moored midway between Corkbeg and Spike Island. Pilotage is compulsory for all vessels without exception between the examination anchorage and the outer man-of-war anchorage and vice versa, and all vessels must pass between the trawlers passing directly up and down the harbor. No vessels must pass each other when approaching or passing the trawlers.

The Atlantic Transport Line s.s. Minnehaha, which was reported to be on fire at sea, when en route from New York to London, put back to Halifax, N.S., July 9. The fire was confined to one of the holds, and was believed to be the result of an explosion. It was soon extinguished, without great damage having been done, but owing to the quantity of explosive material aboard, it was not deemed safe to allow the vessel to go up to the usual landing piers.

The report of Lord Mersey, appointed by the British Government to enquire into the sinking of the Cunard Line s.s. Lusitania by the Germans, whereby a large number of lives were lost, exonerates the company and the officers of the vessel from any blame, and places it solely on those who plotted and those who committed the crime. There was possibly a tendency to attach some blame to the captain, owing to the exercise of his judgment in carrying out certain Admiralty orders, but Lord Mersey states that the Admiralty advice was not intended to deprive the captain of the right to use his judgment, and his omission to follow the advice strictly cannot fairly be attributed either to negligence or incompetence.

Maritime Provinces and Newfoundland.

The St. John, N.B., schooner William B. Herrick, bound to Newport, Eng., was towed into Berehaven early in July, with her rudder broken.

The s.s. Bellaventure, under charter to the Dominion Government, sailed from Halifax, N.S., early in July for Port Nelson, Hudson Bay, with supplies and materials, and also a number of dock laborers.

The Dominion Government s.s. Sheba, which arrived at Halifax from Sydney, N.S., July 11, with coal for the Dominion Coal Co., left later in the month for Florida to load lumber for Port Nelson, Hudson Bay.

The Russian Government is reported to have purchased the ice breaking steamship Bruce from the Reid Newfoundland Co. for service at Archangel. This is the second of the company's vessels which have been acquired for the service named.

The Department of Naval Service is negotiating for the services of a strong wrecking tug for service on the Atlantic coast. It must be not less than 100 ft. long, equipped with powerful winches, salvage and fire pumps and derrick of not less than 15 tons capacity.

The Eastern Steamship Co.'s s.s. Calvin Austin, while outward bound from St. John, N. B., to Boston, Mass., July 16, collided with the lighthouse tender Azalea, in St. John harbor. The reports state that she was practically undamaged, but that the Azalea had several feet of rail torn off and her steering gear damaged.

The car ferry Prince Edward Island, which is to be operated between Cape Tormentine, N.B., and Carleton Point, P.E.I.,

List of Steam Vessels Registered in Canada During June, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner
134,487	David Seath	Montreal	Montreal, Que. 1915	67 5	18 5	8 8	111	52	28 sc..	Harbor Commissioners of Montreal, Montreal, Que.
137,892	Earl Boss	Toronto	Wallaceburg, Ont. 1914	81 0	20 0	10 2	118	65	30 sc..	J. A. Henning, Port Burwell, Ont.
134,545	Geo. W. Yates	Ottawa, Ont.	Greenock, Scotland 1913	100 0	19 1	8 9	111	3	51 sc..	Minister of Railways and Canals, Ottawa.
137,982	H. N. Jex	Kingston, Ont.	Cleveland, Ohio 1868	170 2	26 5	10 3	441	231	59 sc..	J. F. Sowards, Kingston, Ont.
134,268	Harry A.	Midland, Ont.	Midland, Ont. 1909	31 5	11 3	3 8	11	7	2 sc..	J. M. Syer, Midland, Ont.

List of Sailing Vessels and Barges Registered in Canada During June, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
134488	Derrick No. 8	Montreal	Scow	Montreal 1915	90 0	31 3	6 4	282	Montreal Harbor Commissioners, Montreal, Que.
137873	Emily E. Selig	Lunenburg, N.S.	Schr.	Lunenburg, N.S. 1915	90 2	24 0	9 4	82	A. Selig, M.O., Volgers Cove, N.S.
134489	Floating Concrete Mixer	Montreal	Scow	Montreal 1915	101 2	34 8	5 9	308	Montreal Harbor Commissioners, Montreal, Que.
134489	G. of G. No. 1	Vancouver, B.C.	"	New Westminster 1909	70 0	26 0	6 8	113	Gulf of Georgia Towing Co., Vancouver, B.C.
134440	G. of G. No. 3	"	"	Vancouver, B.C. 1915	47 7	10 8	5 5	46	"
137891	J. W. Hennessy	Toronto	Dredge	Tonawanda, N.Y. 1908	96 0	29 0	5 6	238	Ottawa Contractors, Ltd., Ottawa, Ont.
134544	New Welland	Ottawa, Ont.	"	Kindereijk, Holland 1913	151 0	26 7	7 3	207	La Cie. Generale d'Enterprises Publiques Ltd., Levis, Que.
111965	Wiley M. Egan	Montreal	Barge	Cleveland, Ohio 1887	260 7	39 9	19 8	1577	Ontario and Quebec Navigation Co., Picton, Ont.

(1) Foreign name Niagara. (2) formerly a steamer.

by the Intercolonial Ry., was given a series of test runs at Halifax, N.S., July 13. Trips were made in Bedford Basin and out to sea for about 20 miles, attaining a speed of 14.12 knots an hour.

The Dominion Government s.s. Minto and the auxiliary schooner Burchell are announced to sail from Halifax, N.S., Aug. 1, for Hudson Strait. The schooner will proceed to Mansell Island, where a wireless telegraph station is to be established. The s.s. Minto will continue the work of attending the buoys and lights which she established in the strait last year.

It is announced that the Prince Edward Island Government has entered into an agreement with W. Macdonald, Sydney, N.S., for the operation of the s.s. Senlac on a regular route between Prince Edward Island and Newfoundland until December. The route is said to cover the following places, Summerside and Charlottetown, P.E.I., Sydney, N.S., and St. John's, Nfld., and if required, also Souris, P.E.I., and North Sydney, N.S.

The Dominion Coal Co.'s s.s. Cabot, while bound from Charlottetown, P.E.I., for Sydney, N.S., was sunk by the bursting of her water ballast tank. The captain and crew took to the boats and after 12 hours were landed at Hastings, N.S. The s.s. Cabot was built at Grangemouth, England, in 1907, and was screw driven by engine of 63 n.h.p. Her dimensions were, length 155.1 ft., breadth 25.1 ft., depth 9.7 ft.; tonnage 465 gross, 162 register.

The Canada Atlantic and Plant Steamship Co. is announced to have withdrawn its steamship service between Charlottetown, P.E.I., and Boston, Mass., owing to small bookings. The steamships Evangeline and Halifax were utilized on this service. Jas. Carragher, agent for the company at Charlottetown, is reported to have stated that he had received instructions to cancel all sailings of the company's vessels from the Island eastward, for the remainder of the season. It is suggested locally that the Government be asked to offer some inducement to the company to continue the service, at least to the end of the year. Efforts are also being made to get the local board of trade to take the matter up.

Province of Quebec Marine.

Canada Steamship Lines s.s. Tadousac stranded in shallow water near Ste. Irene at the end of June, and was refloated the same day with trifling damage.

Canada Steamship Lines s.s. Quebec, while on her way to Quebec, July 6, grounded near Three Rivers during a gale, but was refloated the following day without damage.

Ontario and the Great Lakes.

The Dredging and Drainage Co. of Ontario, Ltd., has changed its name to the Dredging and Dock Co., Ltd.

The U. S. Government has placed a horizontal striped gas buoy to mark the point where the wrecked s.s. Charles S. Price lies, in 60 ft. of water near Fort Gratiot light station, Michigan.

Canada Steamship Lines, Ltd., has placed an extra boat on its Toronto-Niagara route for its Sunday service, on account of increased traffic. Five round trips are now made each Sunday.

Canada Steamship Lines, Ltd., has secured supplementary letters patent amending the powers in its original letters patent by substituting a new clause respecting mortgages, bonds and debentures.

The C.P.R. has added verandah cafes to its steamships Assiniboia and Keewatin, and new smoke rooms to its steamships Alberta and Manitoba, and has also installed reading lights in every berth.

Mathews Steamship Co.'s s.s. Easton transported a cargo of 2,000 tons of iron ore from Marquette, Mich., to the Atlantic coast, recently, which is said to be the first cargo ever shipped direct to the coast from Marquette.

F. E. Hall and Co.'s s.s. Carleton was docked at Buffalo, N.Y., early in July for general repair and overhaul, after striking bottom in the St. Lawrence. It is stated that on completion of the repairs the vessel will sail for England.

The Algoma Central Steamship Line's s.s. Paliki is undergoing repair at Port Arthur, after sustaining bottom damage through grounding some time ago. She was expected to be ready for service early in August.

The s.s. Florence, owned by Sir John Eaton, Toronto, has been overhauled and painted grey, and has been taken to Quebec, where it is stated she will be used by the Government for patrol duty on the river and along the sea coast.

A new edition of Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay has been issued by the Hydrographic Survey, Naval Service Department, and will be supplied to mariners free on application.

The Atlantic Steamship Co.'s s.s. International, which left the builders' yards at Detroit, Mich., July 6, arrived at Quebec, July 13, on her maiden voyage, with coal for the Nova Scotia Steel and Coal Co., and then loaded pulp wood at Gaspé for the return trip to Erie, Pa.

The Marine Department has placed a fixed white light on the steel frame work of the back range lighthouse tower, on the east side of Sydenham River at Owen Sound, until the original lighthouse which was destroyed by fire in June, has been replaced.

A press report states that the Dominion Government has awarded the contract for the transportation of the 1,000,000 bush. of wheat which it has purchased on behalf of the New Zealand Government, from the head of the lakes to Montreal, to the C.P.R.

Lake carriers, were asked by the Government to tender for this service, and it is stated that the tender of the C.P.R. was the lowest.

The s.s. Matoa, formerly owned by Pittsburgh Steamship Co., which was wrecked during the 1913 storm on the Great Lakes and subsequently purchased and repaired by the Reid Wrecking Co., Sarnia, was cut in two recently for passage through the canals, and has been sent to the coast for service on the Atlantic.

A lighthouse and fog bell have been established on a pier in 18 ft. of water in the Detroit River at the head of the Livingstone Channel, about 200 ft. south of the intersection point of the east edge of the Livingstone channel and the west edge of the Ballard Reef channel. The light, which is alternating white and red for 10 and 5 seconds respectively, is 42 ft. above water level, and is visible at 8 miles from all points of approach. The fog bell, which is operated by machinery, gives one stroke every 5 seconds. The gas buoy 79D at the junction of the two channels has been removed.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tide water, for June, as follows: Superior, 601.95; Michigan and Huron, 579.78; Erie, 571.86; Ontario, 245.12. Compared with the average June levels for the last ten years, Superior was 0.32 ft. below; Michigan and Huron, 1.20 ft. below; Erie, 1.11 ft. below, and Ontario, 1.92 ft. below. It was anticipated that during July, Superior would be 0.2 ft. higher, Michigan and Huron 0.1 ft. higher, and Erie and Ontario 0.1 ft. lower.

Mariners are cautioned in regard to approaching the works in progress in the neighborhood of Port Weller, where the Welland Ship Canal will debouch into Lake Ontario. The artificial harbor of Port Weller is situated about 2½ miles east of the Port Dalhousie entrance to the existing Welland Canal, and will consist of a basin protected by earth work and riprap breakwaters, terminating in crib work running about 1¼ miles due north into the lake. Cribs are being sunk in connection with the outer works, and it may at times prove impossible to maintain efficient lights on them, though every effort will be made to keep the outer extremity marked by fixed white lantern lights.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during June.

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL	
Copper.....	Eastbound	Short tons	1,988	13,216	15,154
Grain.....	"	Bushels	1,494,512	1,246,871	2,741,883
Building stone.....	"	Short tons			
Flour.....	"	Barrels	288,320	539,574	827,894
Iron ore.....	"	Short tons	125,706	5,028,268	5,753,974
Pig iron.....	"	"			
Lumber.....	"	M. ft. b.m.	7,227	73,252	80,479
Wheat.....	"	Bushels	2,119,229	2,807,562	4,926,791
General merchandise.....	"	Short tons	16,328	24,530	40,858
Passengers.....	"	Number	1,798	1,969	3,767
Coal, hard.....	Westbound	Short tons	12,006	288,625	300,631
Coal, soft.....	"	"	36,300	1,588,235	1,624,535
Flour.....	"	Barrels			
Grain.....	"	Bushels			
Manufactured iron.....	"	Short tons	4,504	23,800	28,304
Iron ore.....	"	"			
Salt.....	"	Barrels		84,872	84,872
General merchandise.....	"	Short tons	33,631	120,482	154,113
Passengers.....	"	Number	1,361	2,365	3,726
Summary.					
Vessel passages.....		Number	431	2,150	2,581
Registered tonnage.....		Net	684,871	5,846,300	6,531,201
Freight—Eastbound.....		Short tons	284,001	5,956,517	6,240,518
—Westbound.....		"	86,441	2,033,873	2,120,314
Total freight.....		"	370,442	7,990,390	8,360,832

British Columbia and Pacific Coast.

The lights shown from the gas buoys at Roberts Bank, Vancouver rock, Hodgson reefs and Browning entrance, Vancouver, have been made white instead of red, in contravention of the general rule to show red lights from starboard buoys, in order that their range of visibility may be as great as possible. Notwithstanding the color of the lights, these buoys remain starboard or red buoys and must be so treated.

With reference to the recent statement that the Robert Dollar Steamship Co. was arranging to transfer two of its vessels from the U.S. to the Canadian register, Robert Dollar is reported to have stated, July 8, on his return to San Francisco from Vancouver, B.C., that he went to the latter place with the intention of making the transfer of the steamships M. S. Dollar and Robert Dollar, but found out when there that a sale would be more profitable. He stated that the s.s. M. S. Dollar had been sold to Birkhall and Co., Shanghai, China, and that negotiations were then progressing for the sale of the s.s. Robert Dollar. He is reported to have stated that he had come to the conclusion that the new U.S. regulations made it impossible for the profitable operation of U.S. vessels in any other than the coasting trade.

Vessel Losses During the War.

A record of merchant vessels of all classes destroyed from Aug. 1, 1914, to June 30, 1915, compiled by the Journal of Commerce, Liverpool, shows a total of 511, with a gross tonnage of 915,547 (approximate). Naturally the greatest proportion of the total loss has fallen on Great Britain. This amounts to 170 steamships of 577,986 gross tons, and 157 trawlers, smacks and sailing vessels, of 31,948 tons, a total of 327 vessels of 609,934 tons. Other vessels owned by the allied nations destroyed during the same period are: France, 24 vessels of 42,233 tons; Russia, 17 vessels of 16,024 tons, and Italy, 2 vessels of 3,826 tons. Of the enemies' vessels 34 German vessels of approximately 102,062 tons, 4 Austrian vessels of 5,691 tons, and 9 Turkish vessels have been destroyed. These figures are only of vessels actually destroyed, and do not include the numbers and tonnage of vessels which have been interned in neutral countries, of which the greater number are German. Taking the last figures available of the total merchant tonnage of the various countries of the world, the loss of tonnage by Great Britain shows approximately 4½%, and of Germany approximately 3%.

Ships for transportation of war supplies.

—A memorandum issued in Ottawa, July 6, by Senator Loughheed, acting Minister of Militia, respecting orders for war materials placed in Canada by the allied Governments, contained the following paragraph: "In February last representations were placed before the Admiralty as to the inadequacy of transportation facilities across the Atlantic, as that condition prevented our producers and manufacturers from availing themselves of opportunities which might otherwise be open. As a result of these efforts 18 ships were detailed by the Admiralty for the purpose of transporting across the Atlantic supplies purchased in Canada for the British and allied Governments."

The Marine Department has issued lists of all lights and fog signals on the Atlantic coast of the Dominion, including the Gulf of St. Lawrence and the St. Lawrence River to Montreal, and also on the Pacific coast, corrected to Apr. 1.

Car Ferry on Lake Ontario for Niagara, St. Catharines and Toronto Railway.

The N., St. C. and T. R., a subsidiary of the Canadian Northern Ry., applied to the Board of Railway Commissioners, July 16, for an order providing for the transfer of traffic between the Toronto Harbor Commissioners' dock at the mouth of the Don River, as diverted, and the Canadian Northern yards at Chery St. A. Lewis, Secretary of the Toronto Harbor Commission, stated that the actual agreement for the lease of the dock to the N. St. C. & T. R. had not been drawn up, but the parties had agreed to terms, the dock to be leased for five years, the commission reserving the right to take over the dock when three years of the lease have expired, in which case the commission would provide another dock. The N. St. C. & T. R.'s intention is to operate a car ferry steamship between its terminus at Port Dalhousie and Toronto, the switching of the cars between the dock at Toronto and the Canadian Northern's Cherry St. yards and vice versa to be done by the G.T.R. G. Ruel, Chief Solicitor, Canadian Northern Ry., who made the application to the Board, on behalf of the N. St. C. & T. R., stated that negotiations were under way for the purchase of a car ferry, with capacity for 16 or 17 freight cars, and that the service would be carried on until the completion of the N. St. C. & T. R., which it is proposed to extend to Toronto sometime in the future.

The Board ordered that plans of the dock and the connecting railway lines be filed, and that the G.T.R. and C.P.R. agree on a tariff for the switching.

Mail Subsidies and Steamship Subventions Voted.

The following amounts for steamship services were voted at the Dominion Parliament's recent session:

Atlantic Ocean.	
Between Annapolis and London or Hull, Eng., or both	\$ 5,000 00
Between Canadian Atlantic ports and Australia and New Zealand	140,000 00
Ocean and mail service between Canada and Great Britain	1,000,000 00
Between Canada and Cuba	25,000 00
Between Canada and Newfoundland	70,000 00
Between Canada and the West Indies or South America or both	340,666 66
Between Canada and South Africa	146,000 00
Between Halifax, St. John's, Nfld., and Liverpool	20,000 00
Between Montreal, Quebec, and Manchester, Eng., during summer, and between St. John, Halifax, and Manchester during winter	35,000 00
Winter between St. John, Dublin, and Belfast	7,500 00
Winter between St. John and Glasgow	15,000 00
Winter between St. John, Halifax, and London	15,000 00
Between St. John, Halifax, and London	25,000 00
Pacific Ocean.	
Between Canada and Australia or New Zealand or both, on Pacific Ocean	180,500 00
Between Canada, China, and Japan	253,333 34
Between Prince Rupert, B.C., and Queen Charlotte Islands	16,000 00
Between Victoria and San Francisco	3,000 00
Between Victoria, Vancouver, way ports, and Skagway	12,500 00
Between Victoria and west coast, Vancouver Island	5,000 00
Between Vancouver and northern ports of British Columbia	16,800 00
Local Services.	
Between Baddeck and Iona	5,825 00
Between Charlottetown, Victoria, and Holiday's Wharf	2,500 00
Between Froude's Point and Lockport	600 00
Between Gaspé Basin and Dalhousie or Campbellton	20,000 00
Between Grand Manan and the mainland	10,000 00
Between Halifax and Canso	5,000 00
Between Halifax and Newfoundland, via Cape Breton ports	10,000 00

Between Halifax, Mahone Bay, Tan-cook Island, and La Have River ports	4,000 00
Between Halifax and Spry Bay and Cape Breton	4,000 00
Between Halifax, South Cape Breton, and Bras d'Or Lake	4,000 00
Between Halifax and West Coast Cape Breton, calling at way ports	4,000 00
Between Halifax and Sherbrooke	2,000 00
Between Kenora and Fort Frances	8,000 00
Between mainland and Magdalen Islands	18,000 00
Between Mulgrave and Canso	6,500 00
Between Mulgrave and Guysboro, calling at intermediate ports	5,500 00
Between Newcastle, Neguac, and Escuminac, calling at all intermediate points on Miramichi River and Miramichi Bay	2,500 00
Between Pelee Island and mainland	8,000 00
Between Petit de Grat and Intercolonial Ry. terminus at Mulgrave	7,000 00
On Petitcodiac River, between Moncton and way ports, and a port or ports on west coast of Cumberland County	2,500 00
Between Pictou and Montague, calling at Murray Harbor and Georgetown	6,000 00
Schooner between Pictou, New Glasgow, Antigonish County ports, and Mulgrave	1,000 00
Between Pictou, Mulgrave, and Cheticamp	7,500 00
Between Port Mulgrave, St. Peter's, Irish Cove, and Marble Mountain, and other ports on Bras d'Or Lakes	6,500 00
Between Prince Edward Island and Cape Breton and Newfoundland	16,500 00
From opening to closing of navigation in 1915, between Prince Edward Island and mainland	12,500 00
Between Quebec and Harrington, calling at ports and places along northern shore of the River St. Lawrence	28,000 00
Between Quebec and Gaspé Basin and intermediate ports	8,500 00
Quebec and ports on north shore of Isle of Orleans	4,500 00
Between Rivière du Loup, Tadoussac, and other north shore ports	6,000 00
Winter service between St. Catharines Bay and Tadoussac	3,500 00
Winter steam service between Rivière du Loup, Tadoussac, and other St. Lawrence ports	8,000 00
Between St. John and ports in Cumberland Basin	3,000 00
Between St. John, N.B., and St. Andrews, N.B., and intermediate points	4,000 00
Between St. John and Bridgetown	2,500 00
Between St. John and Digby	20,000 00
Between St. John, Digby, Annapolis, and Granville, viz. along west coast of Annapolis Basin	2,000 00
Between St. John, N.B., and ports on Bay of Fundy and Minas Basin, and Margaretsville	8,000 00
Between St. John, Westport, and Yarmouth, and other way ports	8,500 00
Between St. Stephen, N.B., St. Croix River points, Deer Island, Campobello, and the inner islands, Passamaquoddy Bay, and L'Etete or Back Bay	6,000 00
Between Sydney and Bay St. Lawrence, calling at way ports	6,000 00
Between Sydney and Whycocomagh	3,000 00
From Sydney, N.S., around east coast of Cape Breton to Hastings and return to Sydney, via Bras d'Or Lakes	5,500 00
Expenses in connection with supervision of subsidized steamship services	3,000 00
	\$2,641,234 00

All vessels must be marked with names.—Further precautions are being taken against the presence in Canadian waters of suspicious craft of any kind. A notice sent out by the Customs Department states that "complaint having been made that schooners and other small craft are sailing Canadian waters without being marked with their names and port of registry, as required by law, attention is directed to the section of the Merchant Shipping Act which provides that the name of every British ship shall be marked on each of her bows and the name of her port of registry must be marked on her stern." Customs officers are instructed not to grant clearance to or allow to ply within the limits of any port any vessel not so marked.

Transportation Conventions in 1915-16.

Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.
 Aug. 19, 20.—American Association of Railroad Superintendents, San Francisco, Cal.
 Sept. 14-16.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.
 Sept. 14-16.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.
 Sept. 14-17.—Railway Signal Association, Salt Lake City, Utah.
 October.—American Association of Dining Car Superintendents.
 Oct. 4, 5.—American Association of Traveling Passenger Agents, Boston, Mass.
 Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.
 Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.
 Oct. 13-15.—American Association of Railway Surgeons, Chicago, Ill.
 Oct. 19-21.—Maintenance of Way and Master Painters' Association of the United States and Canada, St. Louis, Mo.
 Oct. 19-21.—American Railway Bridge and Building Association, Detroit, Mich.
 Dec. 7-10.—American Society of Mechanical Engineers, New York, N.Y.
 Jan. 18-20, 1916.—American Wood Preservers' Association, Chicago, Ill.
 March 21-23, 1916.—American Railway Engineering Association, Atlantic City, N.J.
 May 2-5, 1916.—Air Brake Association, Atlanta, Ga.
 June 28, 1916.—Association of American Railway Accounting Officers, Detroit, Mich.

Among the Express Companies.

The Canadian Ex. Co. has announced that it will carry free to relatives the effects of soldiers who have died whilst on active service.

F. H. Hill has been appointed agent, Dominion Ex. Co., Kelowna, B.C., vice E. C. MacIntyre, who has rejoined his regiment in England for war service.

The Dominion Ex. Co. is operating over the Kettle Valley Ry. from Midway to Merritt, B.C., by way of Penticton. An office has been opened at Penticton.

The Canadian Northern Ex. Co. has commenced its service on Canadian Northern Ry. lines between St. Albert and Peace River Jct., and between Camrose and Edmonton, Alta.

The Dominion Ex. Co. has notified its agents that according to an intimation from British railway companies, the latter will not now accept shipments on which charges have not been fully prepaid. This is made necessary owing to the depletion of staffs due to employes being on active service.

H. Hynes, J. Todd and W. Ellis, employes of the Canadian Ex. Co. at Toronto, were arrested, July 20, on charges of theft of \$2,141, alleged to have been stolen in different sums during 1914 and 1915. The system is stated to have been difficult of detection owing to the way in which shortages have been covered and books falsified. Action was taken at the instance of a bonding company.

The Canadian Ex. Co. on June 16 placed its service in force over the Grand Trunk Pacific Ry. Moose Jaw Northwesterly line between Regina and Gilroy, Sask. A tri-weekly service is given, and offices have been opened at Adams, Archydale, Burdick, Burt, Central Butte, Eastview, Eskbank, Forgray, Gilroy, Keystown, Lake Valley, Lawson, Mawer, Moose Jaw, North Regina, Pattie, Rowletia, Sidmar and Stony Beach.

The Canadian Ex. Co. announces arrangements, effective July 13, for a through express service between eastern and western Canada, on through passenger trains, operating over the Canadian Government Railways (Intercolonial, Prince Edward Island, and National Transcontinental Rys.), G.T.R., Timiskaming and Northern Ontario Ry., and G. T. Pacific Ry. Through express cars will be operated between

Toronto and Winnipeg without transfer, in charge of messengers. The company has arranged with the Canadian Government Railways for the handling of express matter over the N.T.R., and services have been established between points where passenger trains are in operation, viz., Fort William and Winnipeg, Cochrane and Winnipeg, Quebec and Fitzpatrick, Que., and Quebec and Monk, Que. The jurisdiction of the company's superintendents has been extended as follows: F. Norman, Winnipeg to Fort William, office Winnipeg; E. Allen, east of Superior Jct. to the Ontario-Quebec boundary, office Toronto; N. J. Ross, east of Ontario-Quebec boundary to, but not including Edmundston, N.B., office, Montreal; H. C. Creighton, Edmundston to Moncton, N.B., office St. John, N.B.

Telegraph, Telephone and Cable Matters.

The Dominion Government has had built at Vancouver, a small motor boat for telegraph service along the coast.

T. E. Dudley, agent, Great North Western Telegraph Co., St. Catharines, Ont., has been retired on a pension, after 51 years of continuous service.

The C.P.R., the Great North Western Telegraph Co. and the Bell Telephone Co. have been ordered by the Board of Railway Commissioners to remove their poles from streets in Hamilton, Ont., on which a conduit system has been built.

The Great North Western Telegraph Co. has opened offices at Sarcee Camp, Alta., Beaver, Man., Barriefield Camp and Royal Muskoka Hotel, Ont., Abenakis Springs Hotel, Capucins, Hotel Manoir Richelieu, Lake St. Joseph Hotel, Little Metis and Pointe au Pic, Que., and has closed its office at Neepawa, Man.

The Western Union Telegraph Co.'s earnings for the first six months of 1915 were \$24,019,260, an increase of \$1,532,682; maintenance and depreciation \$3,878,138, an increase of \$365,567; expenses \$15,481,607, a decrease of \$704,949; balance \$4,659,515, an increase of \$1,891,064; surplus after charges \$3,990,915, an increase of \$1,891,089.

The wireless telegraph station at Sayville, Long Island, N.Y., owned and operated by the Atlantic Communication Co., which was said to be under German control, was taken over by the U.S. Government, July 8, "in the interest of American neutrality and to avoid contravention of the Hague convention forbidding the establishment of a wireless station on neutral soil during a war." The company has protested against the Government action.

The Marconi International Marine Communication Co.'s report for 1914, presented at the annual meeting in London, Eng., July 7, stated that during the last five months of the year, the business suffered considerable disorganization and some loss, owing to the war entailing a great increase of work and strain on those responsible for the conduct of the business, but notwithstanding this substantial progress was shown. The revenues showed considerable increase over those of 1913. The company owns and operates on the high seas 905 public telegraph stations against 788 in 1913, and during this year up to June 19 the number was increased to 970.

The Dominion Telegraph Co.'s 46th annual report for the year ended June 30, shows total assets of \$1,309,612.25 and current liabilities of \$1,017,650.37. The company's property is leased to the Western Union Telegraph Co. for 99 years from July 1, 1879, on a guarantee of interest at 6% per annum, which has been paid regularly quarterly in advance since the commence-

ment of the lease. The report says "Your directors deeply deplore the demise on Feb. 25, after a protracted illness, of their old and faithful friend and colleague, Thos. Swinyard, who was connected with the company for 40 years, first as General Manager, then as Managing Director and Vice President, and for the last 32 years as President, and acting upon their feelings of regret and esteem, promptly conveyed to the family of the deceased an official expression of their sorrow and regret, and their sincere condolences, which they felt would be fully shared in and approved of by the stockholders of the company."

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.

American Locomotive Co.—W. Spencer Robertson has been appointed Secretary, vice C. R. Denny, resigned.

Taylor & Arnold, Limited, railway material and supplies, Montreal, announce the appointment as Vice President, of Herbert Ewan, who resigned his position as Sales Manager, Canadian Steel Foundries, Ltd.

Canadian Car & Foundry Co., Ltd., Montreal, has opened an office at 11 Waterloo Place, Trafalgar House, London, Eng., in charge of Geo. Condon, formerly of Montreal. Two of the company's engineers, E. R. Viberg and G. G. Elster, are also located in London.

M. Beatty & Sons, Ltd., Welland, Ont., manufacturers of contractors' machinery, etc., announce that the control and management of the company has been changed. H. L. Beatty has been elected President, and A. O. Beatty, heretofore Consulting Engineer, has been elected Vice President and General Manager. H. T. Dunbar, of Buffalo, N. Y., has been elected a director. V. R. Browning, heretofore President, B. F. Miles, Director, and R. A. Greene, General Manager, who have had charge of the business for the past three years, have severed their connection with the company.

Wireless Telegraph Equipment on Vessels.—Canadian Railway and Marine World for February, 1914, contained a list of vessels which had been equipped with wireless telegraph installations by the Marconi Wireless Telegraph Co. of Canada, prior to Dec. 31, 1913, in preparation for the coming into force on Jan. 1, 1914, of the regulations respecting such equipment. We have been advised that the following vessels were equipped between Jan. 1 and Aug. 1, 1914: Chippewa, Kingston, Macassa, Cayuga, Majestic, Corona, Toronto, Chicora and Caspédia, owned by Canada Steamship Lines, Ltd.; Yarmouth and St. George, owned by the C.P.R.; Garden City and Dalhousie City, owned by the Niagara, St. Catharines and Toronto Navigation Co.; Adventure, owned by Harvey and Co., St. John's, Nfld.; Sable I., owned by Farquhar and Co.; Venture, owned by the Union Steamship Co., and Deliverance, owned by the Southern Salvage Co. Other wireless installations have been made since the war began, but information in regard to them is not available.

Drop forging dies usually have a draught of 7 degrees on the sides or vertical walls to permit the easy removal of the forgings.