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STEAM RAILWAY DEPARTMENT AND GENERAL MATTER.

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Notes on Heavy Electric Railway Traction

By J. A. Shaw, General Electrical Engineer, Canadian Pacific Railway.



The rapid replacement of all motive power by electrical on street railways and the mushroom like growth of light inter-urban electric railways in the more closely settled districts of this continent has aroused a general feeling that a similar revolution will occur with steam operated railways. Conditions, however, are radically different with the latter. In the case of the former, the ability to furnish speedy units for facilitating the passenger transportation has provided a more remunerative return. In the case of the majority of steam railways, the freight service furnishes the most profitable return, and due to its inherent greatest efficiency being in the moving of large units, the application of electric power is made more difficult. However, with the growth of the country, the main problem is now becoming how to make better use of existing track facilities, especially where there is difficulty in increasing trackage in main terminals. Therefore, due to the almost unlimited power possible to concentrate for propulsion with electrical power, train speeds may be increased with consequent greater frequency of movement, and the importance of an electrical solution in relieving traffic congestion has recently been demonstrated successfully in both passenger and freight service. This also in the face of rapid advances in steam motive power design.

In addition the electrical locomotive has already demonstrated a power economy of one half that of its steam opponent, as measured for equal power at the draw-bar, and is now showing even a greater improvement from the new regenerative power feature. This advantage of making use of the energy otherwise lost in stopping a train is one of the first applied solutions of a problem that inventors have worked at for a century or so, with varying success, from the old plan of stopping horse cars by winding up a spring and then starting them by setting it loose, to the recent successful plan of building elevated stations on a hill of track.

While the electrification of steam roads is primarily a railway problem, there is a closely connected aspect of material interest to the country at large, viz., the result of the use of electric power by a railway will mean the availability of cheap power for light and manufacturing purposes in communities that could not otherwise have hoped for such advantages for years. The result of this must inevitably be to stimulate both trade and population, which will react favorably to the railway company as well as the district.

From the time of Sprague's first successful railway experiment at Richmond, Virginia, in 1888, it has been the chief ambition of the electric railway engineer to invade the broad field of heavy traction, for many years practically monopolized by the steam locomotive. Material progress in this direction has marked the intervening years, but only recently has

the electrification enthusiast reached the height of his ambition. The crowning achievement in the great struggle to supplant the steam locomotive has been attained in the complete electrification of the mountain divisions of the transcontinental lines of the Chicago, Milwaukee & St. Paul Ry. A brief review of some of the principal electrifications leading up to this great project may be of interest.

Baltimore & Ohio Rd.—The first undertaking of this kind which could be classed as heavy electric traction was the B. & O.R. Baltimore Terminal, which has been operated electrically since 1895. The electric zone lies entirely within the city limits and is a part of the so-called belt line extending from Camden on the west to Waverly interlocking tower on the east, 3.75 miles. There are eight tunnels in this zone, which together constitute 48% of the total distance. The longest of these tunnels is 7,300 ft. in length and extends from Camden station to Mt. Royal. Needless to say, the change to electric haulage was made to eliminate the smoke and dangerous gases in these tunnels. As a matter of fact, however, the ordinances governing the construction of certain of these tracks through the city required that they be operated electrically. The part of the zone through which trains are handled by electric locomotives is entirely up grade, averaging 0.9%, with a ruling grade of 1.5%. Trains are handled electrically only in the up grade direction, the locomotives returning light. Regular service was started with three locomotives, weighing 96 tons each, equipped with gearless motors. Four additional locomotives of the geared type were put in service in 1903, one in 1906, and 4 more in 1910 and 1912.

New York Central Rd.—The second steam road electrification and, perhaps, one of the most important in the United States, was the New York Central terminal, initial operations being started the latter part of 1906. The present electric zone includes 251 miles of track, equipped with underrunning third rail, distributed over about 53 miles of route. All through passenger trains are handled by electric locomotives within the electric zone, the change being made at Harmon on the main line, about a mile south of Croton, and at North White Plains on the Harlem Division. Suburban passenger traffic is handled by multiple unit trains. As on the Baltimore & Ohio electrification, 600 volts is used on the third rail, power being generated in duplicate steam turbine stations, one located at Port Morris, on Long Island Sound, and the other at Glenwood, near Yonkers, on the river front. Each plant contains four 5,000 k.w. Curtis steam turbine generating units delivering 25-cycle, 3-phase current at 11,000 volts. This current is distributed over an 11,000 volt transmission to 9 synchronous converter substations aggregating over 40,000 k.w. In some of the earlier substations storage

batteries are also used as a reserve and to take peak loads.

Operation was started with 35 115-ton electric locomotives of the gearless type, supplemented within a few years by 12 additional units of similar design. In 1913 and 1914, 16 additional locomotives of a new design were put in service. These machines are also equipped with gearless bipolar motors, but are constructed with 8 driving axles instead of 4, and the capacity is considerably greater than the original type. The last 6 locomotives, weighing 133 tons each, are probably the most powerful electric locomotives ever used in passenger service. They are capable of hauling 1,200-ton passenger trains on level track at nearly 60 m.p.h. These trains are also hauled at reduced speed up the 1.1% grades leaving the Grand Central terminal. On account of the gearless construction of the motors they operate at appreciably higher efficiency than geared designs. It has also been found that the maintenance is very low, averaging on the entire equipment during 8 years of service approximately 3½¢ per locomotive mile.

In order to take care of high speed express and local suburban service, multiple unit cars are employed on both the White Plains and the Harlem Division. Local service requires trains of from 2 to 11 cars, usually made up in the proportion of 2 motor cars to 1 trailer. Suburban express trains are made up of from 2 to 10 motor cars. These trains are capable of reaching a speed of over 50 m.p.h. and are very flexible in terminal operation, since they can be run in either directions with equal facility. There are now in service 192 motor cars and a number of trailers, each having a seating capacity of 64 passengers. These cars are equipped with type M Sprague G. E. control and 2 G.E.-69-200 h.p. motors. They are of all steel construction, 60 ft. long, and weigh approximately 57 tons completely equipped. Repair shops are maintained at Harmon and at North White Plains, where both locomotives and multiple unit cars are inspected and repaired. The electrical equipment in this terminal service has shown remarkable reliability, there being very few interruptions whatever to traffic from electrical causes. No interruptions whatever to traffic have occurred from power station troubles during eight years of operation.

New York, New Haven & Hartford Rd.—The well known installation which this railway carried out shortly after that of the New York Central now consists of a total mileage of 500, and includes 61 miles of 4-track and 5 miles of 6-track right of way. There are 100 passenger, freight and switching locomotives and 69 multiple unit cars in service, which relieved 150 steam locomotives. The power service was formerly supplied from a single power house, but is now supplemented by a purchased supply from one of the New York power companies at the easterly end of zone. Certain of the pas-

senger locomotives average 500 miles daily, and are in continuous service 24 hours daily for 30 days. In the case of switching locomotives, a large number are now used in the yards, 4 electric units having been found to displace 6 freight switchers, principally on account of the fact that the electric switchers can be used almost continually with no lay-over periods. The equipment on this railway was made more complicated than on any other electrified railway, due to the fact that apparatus was required to operate from alternating current on the main system and from direct current supply when within the New York terminal zone. Probably more information has been obtained in guiding electrical engineers on the design of electric railway equipment for heavy service through the work carried out on this railway than in any other similar project, and the electrical profession is under a heavy debt to the New Haven Company in this opportunity, as otherwise progress would have been greatly retarded without this undertaking.

West Shore Rd.—Shortly after the New York Central terminal electrification was completed, an electrification project was undertaken by the West Shore Rd., a subsidiary of the New York Central system. On account of the parallel trolley lines it became necessary for this road, operating between Utica and Syracuse, N.Y., to increase the capacity of the road and to develop a high speed passenger traffic over the portion of its tracks between these two cities. The electrified section of the road is double tracked throughout, and a third and fourth track are provided at some points to enable steam trains to pass the multiple unit trains. The distance between terminals is 44 miles, with a total mileage on a single track basis of 106 miles. Formerly, only 2 steam passenger trains were run daily in each direction and at night 2 trains of sleepers passed over the tracks. With these tracks electrified there are fast limited cars hourly from each terminal, local cars or trains once an hour from each terminal and also a fast freight service which is still hauled by steam locomotives.

The electrified division is equipped throughout with an underrunning third rail similar to that used on the New York Central terminal electrification, current being fed from synchronous converter substations at 600 volts. Power is received by 4 substations from the Adirondack Electric Power Corporation at 60,000 volts. Each substation contains 2 synchronous converters of 300 k.w. capacity, each with reserve space for an additional unit. The rolling stock equipment includes 19 4-motor multiple unit cars, which are operated either singly or in trains as the traffic requires. With the third rail construction used this line has never been seriously handicapped by snow. Interruptions to the service from all causes have been practically negligible and the traffic of the system has shown a steady growth.

West Jersey & Seashore Rd.—One of the earlier railways to take advantage of electrification as a means of increasing facilities for handling passenger traffic was the West Jersey & Seashore Division of the Pennsylvania System, extending from Camden to Atlantic City, 65 miles, and a branch from Newfield to Millville, 10 miles. The contract for the entire equipment of this railway, including installation and the equipment, was placed in service in a little over five months, which is a remarkable record, considering the fact that included in this work were

the erection of a power station, 8 substations and the electrical equipment of over 150 miles of single track, the building of 71 miles of high tension transmission in duplicate and the equipment of 68 multiple unit cars. The line from Camden to Atlantic City is double tracked throughout and at points there are three tracks. With the exception of a short stretch of track near Camden, the entire road is equipped with an overrunning third rail operating at 600 volts and taking power from the synchronous converter substations. Multiple unit equipment is operated in trains of from 3 to 10 cars without trailers. The express service between terminals operates on a headway of 15 minutes in each direction at speeds up to 60 m.p.h. Frequent local service is also provided for Camden suburbs and on the branch line to Millville.

Electricity is generated in a steam turbine station at Westville, generating 6,600 volts, 3-phase, which is stepped up to 33,000 volts for transmission. At the substations this voltage is stepped down and delivered from the synchronous converters at 650 volts to the third rail. The power station equipment consists of 3-2,000 k.w. Curtis turbo-generators with the necessary auxiliary units. Each of the substations is equipped with 2 750-k.w. synchronous converters with space for an additional unit. The present rolling stock equipment consists of 109 motor cars, some of which are constructed for combination baggage and smoking cars, and others for mail cars. Each is equipped with 2 200 h.p. motors and type M automatic control. The standard passenger cars have a weight of about 45 tons and a seating capacity of 58 persons.

The operation of this electrified steam road has been most satisfactory in every way. The number of delays chargeable to electrical equipment has been less than 6% of the total number of train minutes detention, and the increase in traffic gained by the use of multiple unit cars instead of steam trains enabled the railroad to make a remarkable increase in the number of passengers carried, on account of the local service furnished to the smaller towns and the high speed express service between terminals.

Great Northern Ry.—One of the most unique electrifications in the country, and the only road to use 3-phase equipment, is the Cascade tunnel on the G.N.R., near the summit of the Cascade Mountains, Wash. This tunnel is 2.65 miles long and has a uniform grade of 1.7%. In the yards at each end are grades of 2.2%, on which all trains must be started. Under steam operation this tunnel had become the limiting feature of the road. Heavy freight trains, requiring from 2 to 4 of the heaviest locomotives, could not operate trains faster than from 7 to 8 miles an hour. In the tunnel operation was still more difficult. The smoke and steam coated the rails with damp, greasy soot, causing the wheels to slip, and the smoke and gases made operation positively dangerous to train crews.

The electrification involved about 4 miles of route with 6 miles of single track, including sidings. Power is generated in a 5,000 k.w. hydro electric plant at Leavenworth, transmitting 3-phase, 25-cycle current at 33,000 volts for about 30 miles. The contact system consists of double trolley construction carrying 3-phase, 6,600 volts a.c., using the rail and ground return for the third conductor. These overhead wires are spaced about 8 ft. apart in the tunnel and 5 ft. apart in the yards. Ordinary pole trolleys are

used for collecting the current.

There are 4 electric locomotives weighing 115 tons each, all of which is on the driving axles. Three-phase induction motors are connected by twin gears to each axle and the trucks are adequately equalized to take care of twisting strains. These motors are of the 3-phase induction type, wound for a primary voltage of 500, the rotors being equipped with wound secondaries brought out through collector rings. There are 13 steps in the resistance used in connection with the rotor, allowing for ample speed control. The average freight train hauled weighs approximately 2,000 tons, including both steam and electric locomotives. On down grades the induction motors automatically return power to the system when the train exceeds the normal speed of about 15.5 m.p.h. The Great Northern has the distinction of being the first railway electrification in America to use regenerative braking, this feature having been in very successful operation for more than six years. The Norfolk & Western has begun using the same principle recently, and the Chicago, Milwaukee & St. Paul has adopted direct current regeneration.

This installation was made in July, 1909, and since that time all traffic through the tunnel has been handled by the electric locomotives, with the exception of delays due to avalanches and snow slides, some of which have interrupted traffic for several days at a time. On March 1, 1910, an avalanche came down the mountain through the yards near the tunnel carrying all the cars of two trains, with 2 steam and 3 electric locomotives, down into the bottom of the canyon, from 200 to 400 ft. away. The electric locomotives were untouched for about three weeks during the task of clearing the line. They were then taken to the railway company's shops and put in operating condition. The average cost of repairs, including labor and materials on the 3 locomotives, was \$962 each, while the expense of similar repairs on the 2 steam locomotives was \$1,284 each.

The Grand Trunk Ry., in May, 1908, electrified the St. Clair Tunnel and replaced 4 steam locomotives of 100 tons with 6 66-ton electric units, which, as a rule, are used in sets of two. During the period that these electric units have been in service no failure has occurred in the main motors, and they have been available for service throughout 90% of the time. The average annual cost for the maintenance of the 4 steam locomotives was \$21,173, while that for the 6 electrical locomotives has been \$11,131. The average cost per car handled through the tunnel, a distance of approximately 5 miles, by steam locomotives, was 26c, against 17.2c by electrical locomotive, although the capacity of cars handled today is much greater than the capacity of those of 1907 and 1908. The cost of fuel for the steam locomotives was \$42,000 a year, whereas the average cost of fuel consumed for generating energy for the electric locomotives is \$17,000 a year. This difference in cost is partly due to the fact that slack coal is now used, whereas hard coal was used for the steam locomotives. Power is supplied from one plant, containing 2 1,500 h.p. turbo-generator sets, and stokers of boilers are so arranged that their operation is practically controlled automatically from the operation of locomotives on the main line.

Michigan Central Rd.—One of the most successful electrifications of a trunk line steam railroad is the section of the

M.C.R. operating under the Detroit River. The 2 track tunnel connecting the M.C.R. lines terminating at Windsor, Ont., and those in the United States terminating at Detroit, was completed in 1910, and since that time all trains have been hauled by electric locomotives through the tunnel, instead of being ferried across the river. Under the old method it required about 30 minutes to make the crossing and the facilities were very limited. With the tunnel trains pass through in less than 6 minutes, and the capacity of the tracks is limited only by the length of train which can be handled. The general scheme of electrification includes the purchase of 3-phase, 60-cycle energy at 4,400 volts from the Detroit Edison Co., and transformation in the company's substation to 650 volts d.c. At this voltage current is fed to the locomotives through an underrunning protected third rail reaching all of the electrified tracks.

The substation is located near the Detroit end of the tunnel, and contains 2,100 k.w. synchronous motor generator sets, with auxiliary equipment for excitation and for controlling a 312 cell storage battery (capacity 630 amps. for 8 hours, and momentary discharges up to 11,000 amps.). The control equipment is so arranged as to reduce the peak loads and thus obtain a practically constant load at unity power factor. The original equipment consisted of 6 electric locomotives designed for hauling both freight and passenger cars through the tunnel and also for switching service in the yards. Each is equipped with 4 railway motors and weighs 200,000 lbs., all of which is on driving axles. The service consists of hauling an 1,800-ton trailing train from one yard to the other, negotiating a 2% grade when 2 locomotives are operated multiple unit. The second order of locomotives placed in service in 1914 consisted of 4 similar units, each weighing 240,000 lbs. The total electrified trackage now in operation is approximately 24 miles, including yards on both sides of the river and the two track tunnel.

Norfolk & Western Ry.—The electrification of 30 miles of this road was the solution of the problems to double the capacity of a hilly section with a tunnel. The limit in capacity by the use of the heaviest steam power had been reached, and continual delays were being met with through the severe starting difficulties on grades, the latter condition arising partially through necessary stops for coal or water. Twelve electric locomotives have displaced 33 Mallet locomotives, and have increased the average speed up the ruling 2.4% grade from 6 to 14 miles an hour. The principle of braking by regenerating power has proved a complete success on this railway. The fact that the speed on down grades is constant and inflexible prevents the possibility of surges in the train which would result in broken drawbars. The main electrical feature in this electrification was the application of the polyphase induction type of motor to locomotive axles, and the use of a converter on each locomotive, so as to permit operation by single phase alternating current, and thus permit of the advantages of a single trolley wire. Trains are operated with one locomotive hauling and a pusher on the heavier grades. The method of starting is for the locomotive man on the head locomotive to release brakes and let the slack run back. As soon as the locomotive man on the pusher feels the resulting blow, he applies power and holds the train until the front man gets under way. This method is due to the two men not being able to signal due to

curves and train length and works out very satisfactorily.

The Southern Pacific Co.'s suburban lines in the immediate vicinity of San Francisco were changed over from steam to electric operation in 1911. The electrified district includes the Oakland, Alameda & Berkeley Divisions, which carry the heavy suburban traffic from the ferries to the residential districts.

Power is generated for this system in an oil burning steam station located at Fruitvale, the generating units consisting of two 5,500 k.w. turbo-generator sets delivering 3-phase, 25-cycles. Power is transmitted at 13,200 volts to 2 outlying substations, the third being located in the power house. Each of the substations is equipped with two unit synchronous converter sets operating two in series for 1,200 volts. Each of these sets is of 1,500 k.w. capacity, there being in all 10 double units in the 3 substations.

The rolling stock equipment consists of 81 all steel multiple unit cars, each equipped with four 145 h.p. 600/1200-volt motors. Trains of from 2 to 12 cars, made up of motor cars and trailers, are operated, depending upon the demands of the traffic. The contact system is of a flexible type built for the use of pantograph trolleys.

The Pennsylvania Rd., in addition to the direct current third rail electrification of its New York entrance has electrified recently suburban lines operating out of the Philadelphia Broad St. station. This station, when completed in 1881, contained 8 tracks and handled 160 trains a day, with 18 trains in the rush hour. In 1910 tracks had been increased to 16 and trains to 574, with 53 in the rush hour. Electrification has given relief by reducing the train movements, averaging from 4 to 15 down to 2. This was achieved by the use of 93 motor cars. Up to the present, trains of these cars are only running on one division, but this will be increased shortly. It is found that, due to the higher rate of acceleration possible, these trains can be more quickly despatched, thus reducing running time considerably. Each car has 2/225 h.p. motors and an 8 car train is found to draw 6,800 h.p. when accelerating. The fluctuations in power demand for present service varies from 27,000 h.p. to zero, averaging 8,000 h.p. per hour during the rush period. The power demand in this service is, therefore, not only considerable, but very fluctuating. Power service is purchased from the Philadelphia Electric Co.

The Butte, Anaconda & Pacific Ry., which began electrical operation in 1913, is in many ways one of the most remarkable examples of electric train haulage in America. While previous examples of steam road electrification have been equipped for various reasons, either tunnel and terminal operation or for high speed suburban service, this road was electrified purely for reasons of economy. The results of this change over have amply justified the initial cost of the electrification, a comparison of operating results during the first 6 months of electrification showing a saving of an amount equal to 20% of the initial cost, not allowing any salvage for steam engines released.

The electrified tracks consist of 30 miles of route between the mines at Butte and the smelters at Anaconda and about 114 miles on a single track basis. Power is purchased from the Montana Power Co.'s system at 2,300 volts, 60 cycles, and is transformed by motor generator sets to 2,400 volts direct current for use on the trolley. There are two

substations, one at Butte and the other at Anaconda, both of these being installed in the power company's existing transformer stations. The initial rolling stock included 15 freight and 2 passenger locomotives and 8 additional locomotives have since been purchased to take care of the heavy increase in traffic.

The freight traffic consists largely of transfer of copper ore, and at present amounts to more than 6,000,000 tons a year. This material is handled in steel ore cars, having a capacity of about 50 tons each. The weight of train hauled over the main line, including a 0.3% grade, frequently reaches 5,000 tons trailing. Eight passenger trains a day are operated between Butte and Anaconda, each consisting of from 3 to 5 passenger and baggage cars. The overhead construction on this system is made especially flexible by the use of loop hangers which allow the contact wire to rise without lifting the weight of the messenger. There also may be other novel features in the switching yards and at street railway crossings.

The eminently successful operation of this initial 2,400 volt railway was largely influential in the Chicago, Milwaukee & St. Paul Ry.'s decision to electrify its mountain divisions at 3,000 volts direct current.

The Chicago, Milwaukee & St. Paul Ry. electrification differs from all previous projects of this kind in that the transcontinental lines involved embrace 4 complete locomotive divisions as operated by steam locomotives. None of the existing electrifications on trunk line railways, either in America or in Europe, have included more than one engine division. For this reason there has been no opportunity for interchange of spare locomotives and no possibility of materially reducing the number of spare steam locomotives required for the operation of the system.

The Missoula and Rocky Mountain divisions include 440 miles of route, embracing approximately 650 miles of single track lying between Harlowton, Montana, on the east, and Avery, Idaho, on the west. This road is one of the main transcontinental highways of the country and the divisions being electrified contain the most serious grades encountered on the C. M. & St. P. between Chicago and the coast. Under steam operation these 4 divisions required 103 steam locomotives of the heaviest types, and even with this number the schedule was maintained with difficulty. In the winter when temperatures range as low as 40 to 50 below zero, it is extremely difficult to keep steam locomotives in operation. It is no uncommon occurrence to find several locomotives stalled during cold weather, with fires drawn and water removed from the boiler, owing to the freezing of some of the piping which is exposed to the weather. Furthermore, it has been found that after hauling a train over a 112 mile division for about three days in succession it is necessary to put the locomotive into the shops for a day's overhauling.

The electrical equipment for this electrification includes 42 main line passenger and freight locomotives and 2 switchers, and experience with electric locomotives on the first two divisions seems to indicate that these locomotives will be amply sufficient to take care of the present traffic and normal increase within the next few years. In addition, it is probable that trains will be operated much more nearly on schedule time and with less damage to equipment owing to accidents. In the operation of the first division it

has been found that 1 electric is capable of easily replacing 3 steam locomotives and possibly 4, when other divisions are put in operation. The reasons for the much greater capacity of the electric locomotive per unit are: first, ability to operate a large per cent. of the 24 hours with minor inspections; and, second, ability to haul equivalent trains at approximately double the speed of the steam locomotives. Many other advantages may be mentioned which tend to increase the capability of the electric locomotive as compared with the steam. Not the least of these is the regenerative braking feature which relieves the brakes of a large portion of the wear and heating due to holding heavy trains on severe grades.

The 440 miles of route involved in this electrification will be fed from 14 substations located at points averaging 33 miles apart, each station receiving power from the Montana Power Co.'s system at 100,000 volts and transforming to 2,300 volts for synchronous motor generator sets. These sets are of the three unit type, consisting of a synchronous motor and two 1,500 volt d.c. generators connected permanently in series to deliver 3,000 volts to the trolley. Each station contains either 2 or 3 of these sets, there being a total of 32 sets in the 14 substations. Two small generators, one on each end of the set, furnish exciting current for the main fields of the generators and for the revolving field of the motor. The substation equipment is so arranged that in case the regenerated power sent back by the locomotives exceeds that being used nearby, the motor generator sets will operate inverted and thus return excess energy to the transmission system and thence to other substations requiring power. Measuring instruments are arranged to credit the amount of this returned energy to the railway company. Each of the substations is in charge of 3 operators working on 8-hour shifts, and these men are at all times under the direction of the train and power dispatcher, who gives instructions for the operation of the station. Two model bungalows have been built by the railway company at each station for housing the operators.

As above mentioned, electric power is received at 100,000 volts, 60 cycles, from the Montana Power Co.'s transmission network, operating numerous hydro electric plants in various parts of the state. The largest of these stations are located at Great Falls and Thompson's Falls. In order to ensure power supply at all times there are several feeding-in points, and the railway company maintains a separate 100,000 volt transmission line the entire length of the electrification. One of the most completely equipped hydro electric plants on this system is the Volta plant, in the Great Falls of the Missouri River. This station at present contains four 10,000 k.w. vertical generators and two additional units are being installed. The available head at this point in the Missouri River is 155 ft., and the supply of water at all times is ample.

The main line locomotives, a number of which are now in service, have a total weight of 228 tons, with 224 tons on the driving axles. The cab consists of 2 similar sections extending practically the full length of the locomotive. The freight and passenger locomotives are similar in all respects, except that passenger locomotives are provided with a gear ratio permitting the operation of 800 ton trailing trains at approximately 60 m.p.h., and are furthermore equipped with oil-fired steam boilers for heating

the trailing cars. Each locomotive carries 8 430 h.p. motors, each geared to a driving axle with twin gears. These motors are designed to operate at 1,500 volts per commutator, 2 motors being permanently connected in series across the 3,000 volt circuit. The tractive effort available for starting trains is approximately 135,000 lbs. at 30% co-efficient of adhesion, and the continuous tractive effort of the freight locomotives is 71,000 lbs. In addition to the eight driving wheels, each half of the locomotive carries a 2-axle guiding truck which supports approximately 30 tons weight. The motors are ventilated by a forced draught from a blower, which is driven from the control motor generator set located in the locomotive cab.

The control equipment is the type arranged for multiple unit operation. This allows two locomotives to be operated from a single controller. The main control switches are located in steel compartments inside the cab, convenient for inspection and repairs. Current for operating contactors, lights and other auxiliary apparatus is taken from a 3,000/125 volt motor generator set, one of which is located in each half of the locomotive. Compressed air for the air brakes, whistles, pantagraph trolleys and other auxiliaries is supplied by a 3,000 volt, 2-stage air compressor having a piston displacement of 150 cu. ft. of free air a minute against a pressure of 135 lb. Current is collected from 2 pantagraphs, 1 located at each end of the locomotive.

One of the most distinctive features of this electrification is the regenerative braking on the locomotives, which permits the return of energy to the system on descending grades instead of checking the speed of the train by means of the air brakes. The amount of braking is directly under the locomotive man's control and the air brakes are relieved of practically all service except when bringing the train to a final stop. It should be understood that when braking a train by the regenerative method, there is no overheating as is the case with air brakes, and consequently there is a material reduction in the wear on brake shoes, tires and rails. In addition to this the air brakes will always be in good condition when required for emergency service and delays due to excessive wear will be greatly reduced. In actual practice it has been found that a large portion of the power regenerated by trains on descending grades is used up by other trains taking power on the level or on ascending grades. In some cases when there is no train available for absorbing the excess energy the power is taken up by one or more substations and returned to the transmission system connecting the several substations.

The overhead construction consists of two 4/0 trolley wires flexibly suspended from a steel catenary supported on wooden poles. Bracket construction is used wherever the track alignment will permit and cross span on the sharper curves and in the switching yards. The 2 wires are suspended side by side from the same catenary by independent loop hangers alternately connected to each trolley wire. This type of construction permits the collection of the very heavy currents by reason of the twin contact on the pantagraph with the 2 trolley wires, and also ensures sparkless collection under the extremes of either heavy current or more moderate current at high speeds. A 500,000 c.m. feeder parallels the track for about 80% of the 440 miles, being used on all grades up to and including 1%. On

heavier grades a 1,000,000 c.m. feeder is used. A 4/0 negative feeder or ground wire is carried on top of the poles.

During the early part of Dec., 1915, an interesting comparative exhibition was staged by the C. M. & St. P. R. to show prominent officials the comparative capabilities of steam and electric locomotives. The observation party was stationed at Janney substation, on the western slope of the Rocky Mountains, and about midway on the 1.66% ascending grade. The first train sent up the hill was hauled by one of the 282-ton electric locomotives, assisted by a similar unit acting as a pusher. The train consisted of 48 cars weighing approximately 3,000 tons trailing and negotiated the grade very easily at about 16 m.p.h. Following this was a second train hauled by 2 mikado type steam locomotives and one Mallet steam pusher. The steam train consisted of 37 cars, weighing about 2,200 tons, and difficulty was encountered in making the grade at a speed of from 9 to 10 m.p.h. Upon completion of the test, President Earling indicated his entire approval of the electrical equipment and gave instructions for putting it into regular service immediately.

It may be safely concluded that there are important economical and expedient reasons why the number of electrifications will continue to increase rapidly and especially in our own country with its numerous water powers, the ever increasing cost of coal and growth of population.

Wellsville & Buffalo Rd. Corporation.—

This railway, which runs between Buffalo and Wellsville, N.Y., which was operated as a portion of the Buffalo & Susquehanna Ry., and which was placed under separate management about the commencement of last year, is to be abandoned. The present intention is to discontinue the freight and passenger service, scrap the rolling stock, rails and equipment, and sell the right of way. It is stated that since its separate operation, it has been run at a loss of \$45,000. It was operated by receivers for a time, also at a loss, and it was proposed to electrify it in an effort to make it pay. The officers are:—C. A. Finnegan, President; T. Hofeller, Vice President; A. Weber, Vice President; F. C. Schumaker, Auditor and Car Accountant; E. Joyce, Treasurer; I. P. Sping, General Freight and Passenger Agent; C. T. Tewkesbury, General Agent, Traffic Department, and C. J. McDonald, Soliciting Freight Agent.

Passenger Meetings at Quebec. The Niagara Frontier Summer Rate Committee's rate representatives will meet Jan. 9 and 10, at 9 a.m. for compilation of fares, etc. The committee's annual meeting will be held Jan. 11 at 10.30 a.m. The International Water Lines Passenger Association will meet on Jan. 10 at 4 p.m. The Great Lakes & St. Lawrence River Rate Committee will meet on Jan. 11, immediately following the adjournment of the Niagara Frontier Summer Rate Committee meeting. All the meetings will be at the Chateau Frontenac.

The Roy Elevator-Milling Co., Ltd. has been incorporated under the Dominion Companies Act, with \$100,000 authorized capital, and office at Fort William, Ont., to build, own and operate a hospital and a mill elevator and to carry on a general grain handling business, and to own and operate steam and other vessels, and to carry on a general navigation business. M. C. King, O. Sabourin, F. P. Germain and C. M. Dickinson, Fort William, are the incorporators.

Discipline, Theoretical and Practical.

By H. E. Haanel, Trainmaster, C.P.R., Regina, Sask.

Your grandfather can remember when they beheaded people for pocket picking, horse stealing and over two hundred other offences against society. Now capital punishment is lawful for but one crime, and we may live to see it abolished altogether. Perhaps your grandfather can also remember when train employes, regardless of record, were dismissed from the service on the slightest provocation. It has since been realized that this was a prodigal waste of resources that take time and money to produce. Since "it costs five thousand dollars to make an engineer," for instance, is it not economically wiser to pursue, if possible, a process for his correction, reformation and education, than to discard him for uncertain raw material should he fail to measure up to requirements? Many men are swayed by a multitude of pernicious mental and physical influences and affections, and their normal conception of rational performance is intermittently distorted because of unfortunate, albeit remediable idiosyncracies and tendencies. But, as Fouillee expresses it, "Man is a machine that thinks and has ideas for springs. Each thought is a force. The thought of future punishment is a force as truly as any other idea, and is, per se, no less fatal or less powerful. It may counteract other forces in the mind of man. Hence punishment may be threatened and used as a means of efficacious influence upon action. The fear of punishment will tend to cause a man to avoid the act with which the idea of punishment is associated." Since any carelessness or negligence, however small, in the business of transporting passengers and freight is so pregnant with dire consequences, this salutary fear of punishment must, by some method, be constantly induced to keep the individual attuned to the exacting nature of his work. Hence the *raison d'être* of railway discipline.

Modern discipline is a growth. Fines that were imposed in the early days as punishments, and which were deducted from offenders' pay cheques, were superseded gradually by suspensions and consequent loss of pay for periods commensurate with the seriousness of the offence. One day Geo. R. Brown, General Superintendent of the Fall Brook Rd., began to think seriously about the hardship to innocent members of an offender's family through loss of income that resulted from such disciplinary methods. He was well aware of the regrettable moral lapses often accompanying periods of enforced idleness, and so it was that finally, from his efforts to obviate these objectionable features, the system of "Discipline by Record" was evolved. It is now often referred to as the "Brown System," and the demerit mark has received the familiar epithet of "Brownie," although meriting and demeriting are among certain modifications the system has since undergone. Each road employing this system of discipline has introduced some original variations applicable to its own peculiar requirements, but the essentials differ little. The accumulation of a stipulated number of demerit marks automatically causes dismissal. The number of demerits is doubled for the repetition of any offence, while the deletion of a set number of marks automatically occurs with the fulfilment of a certain continuous period of service free from discipline. In changing

from the old suspension system to the system of discipline by record, one of the southern roads gave the following as some of the leading objects of the change:—

"To avoid that incorrect and pernicious feeling on the part of the employe who has been actually suspended, and thus lost money in wages, that he has paid the company for the loss and trouble he has caused and can settle again in the same manner.

"To encourage and stimulate all employes to cooperate with the officers of the company in all matters tending to produce harmony, safety and efficiency, and thereby secure better service resulting both in profit and credit to the company and to its employes, as well as increased satisfaction to the public. Each employe can work with the knowledge that the excellence of his record, the prospect of his continued employment, his promotion and final success depend on his own good conduct and exertions. By both good and faithful work he can accumulate a stock of credits that will practically insure him against dismissal in case of some oversight or error that otherwise would deprive him of employment. The most efficient men will be encouraged, developed, benefited and retained, while those who prove to be unfit for the railway service, though dismissed, will feel they have been dealt with fairly and justly.

"To enable the employe to gain in purse, in self respect, in manliness, in interest in his work, in permanence of employment, in loyalty to the company, and in solicitude for its interests; by which the company expects to gain a man more contented, more intelligent, more courteous, more watchful and zealous for its interests, realizing that they are practically his own, thus securing a more harmonious, economical and efficient service in which the element of force is not predominant."

While such acts as disloyalty, dishonesty, desertion, intemperance, insubordination, wilful neglect, gross carelessness, immorality, etc., subject the offender to summary dismissal, dismissal is also the only possible recourse in cases of serious consequence regardless of the degree of error. A man is morally as much a murderer when he shoots to kill but misses, as when his shot hits and kills, but the law provides varying penalties according to the results. Similarly, consequences govern the punishment to a certain extent of the employe, and, although he is morally as culpable for laxity in flagging when nothing occurs as when the result is a collision, he is demerited in the first case, but in the second case is dismissed, not only because a strong deterrent example is imperative, but also because public opinion would not acquiesce in any half way measures being taken with wrong doing of direct public concern.

Rewards in recognition of meritorious acts have always been accepted as an efficient complement of punishment. Hume argues that "all laws being founded on rewards and punishments, it is supposed, as a fundamental principle, that these motives have a regular and uniform influence on the mind, and both produce the good and prevent the evil actions." When offenders were punished by fines, commendable acts were rewarded by monetary gifts. Now that the demerit mark is the punishment, the reward is the merit mark. To reward consistently requires hardly less care than to punish judiciously. Some consider it good procedure to recognize by merit marks mere acts of duty such as discovering broken arch bars, fallen brake beams, etc., on the employes' own train, as it tends to encourage a more assiduous examination. Unless the conferring of rewards is judiciously curtailed; however, the normal, healthy conception of reasonable service might easily become warped, and rewards would lose their effect. It must be borne in mind that the effectiveness of the de-

merit mark varies directly with the value placed upon the merit mark.

The influence of example is a force which is being turned to account with excellent results by some roads through the agency of the educational bulletin. Seneca taught that one of the principal expectations of punishment is "that it may render other men better," while Plato tells us that punishment is inflicted not only "in order that persons punished may not again commit the fault, but that his punishment may restrain from similar acts those persons who 'witness' the punishment." Bethune is more emphatic and asserts that "example is the most important end of all." The educational bulletin, issued periodically and posted where all can study it at leisure, describes offences committed and commendable acts recognized during the period, and generally the action taken is indicated. Care is exercised to avoid any references which might identify persons or localities. The educational value of these bulletins is, of course, wholly dependent upon the degree of intelligent understanding exercised in the presentation of details. No useful impression is made on one who reads, for instance, that punishment was inflicted for "contributory negligence resulting in damage to equipment." A few pertinent facts forcefully presented would, however, start wholesome thinking and discussion. I have at hand a number of educational bulletins from different parts of the continent, and the following might be considered a fair sample of their contents:—

"Conductor, 10 demerits, failure to take prompt action which would have avoided delay to traffic.

"Brakeman, dismissed, improper flagging.

"Conductor, 10 merits, promptness in insuring proper protection of his train.

"Brakeman, 5 merits, ejecting tramps from his train."

To my mind such curt and colorless details cannot awaken interest and create any useful impression. The educative material is wholly lacking. Why not try to drive the lessons home by an expose of the facts, and bulletin these cases somewhat as follows:—

A car in a westbound train was derailed at 6 a.m. The car ran up the main track far enough for trains to pass through siding, had not the frog been damaged. Conductor reported that auxiliary was needed, and it was ordered out. Instead of taking his locomotive and going forward to section house two miles distant, getting the section men and telling them what was required to make the siding ready for passing trains, he remained at the derailment. The auxiliary had orders to pick up the section men who were found surfacing the track about 8 a.m. When section men arrived at the derailment they had to return to the tool house for necessary material and tools to make the repairs. It was about five hours after the derailment before trains could pass. Had the conductor taken his locomotive and gone immediately for section men, the track could have been made ready in about one and a half hours. This was an exhibition of negligence or very poor judgment on the part of the conductor and he has been demerited.

A train stopped on main track in an obscure place on account of locomotive breaking down. Conductor at once directed flagman to go back to protect train, going forward himself to ascertain cause of trouble, after which he started to look after flagman, thinking he might not get back far enough. Although the flagman had at least five minutes start of conductor, he was overtaken about three telegraph poles from rear of train. Conductor passed flagman and succeeded in stopping a following train which could not have been stopped in time to avoid a rear collision if flagged at point where flagman was overtaken. The conductor is commended for his action and has received merit marks. The flagman has been dismissed.

A freight brakeman found two tramps in an empty car. Though they threatened to do him bodily harm and tempted him with money to let them ride, he ejected them. His conduct in this case has been rewarded with merit marks.

A freight train stopped at a station to do some way work. Head brakeman, unknown to locomotive man or fireman, was cutting off locomotive. He leaned over the drawheads, resting his body on them to reach angle cock on other side. Rear brakeman, not knowing what head brakeman was doing, gave back-up signal to cut train near rear. Locomotive slacked back and body of head brakeman was caught between deadwoods and he was almost instantly killed. Had he walked around the locomotive to get on proper side to turn the cock, or had he climbed over the drawheads, or even under them, as good practice required, he would not have been injured. This opportunity is taken to again impress on trainmen the danger of recklessness, carelessness or undue haste in doing their work. The company does not ask or expect you to take any unnecessary risks of life or limb in the performance of your duties. You are directed to take ample time to do your work safely.

I have placed the last case in my pattern bulletin to indicate that there are occurrences which teach valuable lessons, besides those in connection with which discipline is inflicted. The educational bulletin should only include such cases as are of distinct educational value, whereas the bulletins I have before me are little else than clerical statements of demerits distributed during the period, and as such have an effect more injurious than otherwise. Why show the number of credits and debits at all? Do not such details simply afford opportunity for unreasonable comparisons, suggesting discrimination, when we know that discipline is not something that can be done up in certain sized parcels and delivered to all alike, because of the endless variation of attendant circumstances and conditions? The successful disciplinarian spends much thought on the diagnosis of each case. He must, among other things, consider temperament and disposition, interpret impulses and analyze motives. He knows this medicine of discipline must be dispensed according to the individual needs. A conscientious man, with a sensitive disposition, will often lose heart and become sour and petulant if given an overdose. One of the supercilious, bombastic variety, always convinced of his own perpetual immunity from all disorders, goes into convulsions from the slightest dose, and stridently threatens revenge. Some never even begin to show signs of life until the pill box is nearly empty, while others, perfectly indifferent to their condition, are only mildly amused when told they have but an hour to live. The large majority, however, providing their cases have been properly diagnosed, respond to the tonic effect of the treatments prescribed, and by their exemplary efforts to avoid relapses, create a wholesome atmosphere in which the weak and backward find enthusiasm and vigor.

Even the cleverest disciplinarian might confound motives and attribute a certain result to a wholly irrelevant or non-existent cause. It is, of course, better that no discipline be given than to apply it without ample justification. The most elementary instinct of man is to oppose injustice, and the imposition of unwarranted punishment gnaws like a canker-worm and infects a whole organization. Snap decisions, "soak-it-to-him" predilections and other such slapstick curiosities are perhaps gone forever, but the scar they made is plainly visible in the present attitude of organized labor. It is now perfectly safe in the majority of cases, to leave the correction of his men to the head of the department, and the discipline he imposes, with the concurrence of his superintendent, is usually just. But, because of the inherent tendency of some officers to settle cases by personally bombarding the guilty ones with noisy invective, or because of a desire to insure impartiality, or, if you please, to avoid any element of personal spleen, some roads have instituted a court, of which

the superintendent is presiding judge and his official staff the jury. At the weekly sittings the judge submits all cases that have arisen wherein the question of discipline is outstanding. Facts are weighed and details discussed, and the discipline that is finally given must be the result of an unanimous decision. This method fosters a spirit of confidence among the employes, and fosters, also, a more impressive sense of the gravity of misdeeds. Discipline given by such a body is unalterable. Too often that imposed by the individual is not, and nothing is more inimical to the efficiency of punishment, or more demoralizing in its effect upon the attitude of the men towards the officers, than for a committee of the men to establish the injustice of an officer's decision and compel the withdrawal of any discipline resulting from it.

In referring to the deterrent principle, Dr. McConnell says:—"It aims to punish, and through punishment to instruct, and through instruction to restrain." Only in so far as punishment points out more clearly and emphatically the narrow pathway of infallible procedure is it constructive. The idea should be to inculcate the wrongdoer directly, and by example all others in similar work, with a mental impulse which will thenceforth act as a positive deterrent under similar circumstances. A punishment that fails to create the distinct mental impression that will ever afterwards make the particular error concerned more real and serious, has, through insincerity or lack of severity, failed fundamentally. Of course, regardless of what the effect may be, each punishment brings the offender that much nearer to automatic dismissal, by reason of his accumulating record, but it must be remembered that to make it possible for a man to so perform that he can retain his position, is the highest concern of discipline. Any influence which will weaken or nullify the corrective effect of punishment should be strongly combatted, and yet such influences unfortunately emanate continually from some

of the very officers who apply the punishment. By sharp criticism, relentless pressure, and unfair comparisons, men are oftentimes provoked into taking chances and violating safety regulations in order to perform with the promptness and cheapness that meet the required standard of merit set by an over zealous officer. Under such conditions, punishment for exceeding the speed limit, for failing to clear superior trains by the full time margin, etc., is hardly likely to be received in the proper spirit. Safety first lectures and dictums are but sounding brass, and efficiency tests merest inconsistency to a man whose superior officers are not themselves, in precept and example, invariable and constant regarding the principles involved.

In its modern application, discipline, as has been suggested, is prospective rather than retrospective. In other words, its highest economical mission is to mould the future rather than requite the past. From the ethical standpoint, it is not a species of expiation or retaliation, but is inflicted solely to educate and constrain, and such education and constraint of the collectivity, as well as the individual, will be attained and profitable results accrue only—

1. If wrongdoing is sharply defined and invariably recognized as wrongdoing under any and all circumstances.
2. If discipline is justifiable, commensurate and inevitable.
3. If meritable acts are sufficiently elevated above those of plain duty—and
4. If the educative information is properly promulgated.

Saskatoon Stock Yards.—The Saskatoon, Sask., Board of Trade has completed arrangements with the railway companies entering the city to erect stock-yards there next spring. Provision is made that the city may acquire the yards whenever a bylaw is passed by the rate-payers and the sanction of the Provincial Local Government Board is obtained for that purpose.

The Canadian Pacific Railway's Roll of Honor.

LIST 15

Abbey, Samuel	Timekeeper	Kamloops	Wounded
Bedinfield, Sydney C.	Waiter	Vancouver	Killed in action
Betts, Thomas A.	Porter	Pt. McNicoll	Killed in action
Booth, Arthur	Agent	Two Creeks	Wounded
Brown, Isaac G.	Machine helper	Winnipeg	Wounded
Chapman, Andrew G.	Stower	Winnipeg	Wounded
Charrel, Alexander R.	Clerk	Montreal	Killed in action
Cosgrove, James	Conductor	Calgary	Wounded
Daly, Joseph	Clerk	Montreal	Died of wounds
Donald, Ernest	Storeman	Angus	Wounded
Fisher, Harry	Night porter	Winnipeg	Wounded
Forsyth, William	Wiper	Branford	Wounded
Fuller, Percy D.	Clerk	Montreal	Wounded
Luxton, Wesley	Machine apprentice	North Bay	Wounded
Macdonald, Kenneth M.	Watchman	Gimli	Suffering from shock
Mathison, Albert	Craneman	B.C. Dist.	Wounded
Morgan, Cyril W.	Brakeman	Moose Jaw	Wounded
Nash, Harry B.	Clerk	Victoria	Wounded
Parsons, William	Constable	Cranbrook	Wounded
Paterson, Wilfred	Timekeeper	Red Deer	Wounded
Smith, Cecil H.	Tool grinder	Ogden	Wounded
Smith, George	Constable	Calgary	Killed in action
Squires, William G.	Boilermaker's helper	Toronto	Killed in action
Stewart, James H.	Locomotive fireman	Moose Jaw	Wounded
Stone, Edward W.	Machinist's apprentice	Ogden	Wounded
Swanson, John	Locomotive fireman	Cranbrook	Suffering from shock
Thrower, Leonard	Yardman	Fort William	Wounded
Twist, John	Laborer	Finmark	Died of wounds
Wellspring, William	Locomotive fireman	Nelson	Wounded
Wilson, Frank R.	Yardman	Calgary	Died of wounds
Willins, Henry J.	Car repairer	Toronto	Killed in action

Gondola Cars for the Paris and Orleans Railway.

Fifteen hundred 20-metric ton, 4-wheel, high sided gondola cars, and 500 sets of steel work are being shipped from Montreal to France for the Paris and Orleans Ry. Their general dimensions are as follows:

Length over buffers	7,672 m.m.
" end sills	6,500 m.m.
Wheel base	3,050 m.m.
Length inside	6,420 m.m.
Width over all	2,808 m.m.
" inside	2,530 m.m.
" c. to c. of buffers	1,740 m.m.
Height of sides above floors	1,457 m.m.
Door opening	1,342 m.m.

They have a light structural steel underframe, steel side frame, and end frame with wood lining, being of the regular continental type. They rest on two axles, through the medium of laminated elliptic bearing springs, with link connection to brackets on side sills. The springs rest on malleable iron journal boxes, which are made in two pieces. The top and bottom parts are fastened together by two bolts, making the box oil tight. The inside of the box and also the surfaces of

side doors, having steel framing, and lined with wood. There is a hinged tarpaulin rod running full length of car, to support a tarpaulin cover when one is used. The brake arrangement is of the hand lever type, the brake being applied from the ground and operates on one wheel only. The manufacture of all fittings is required to be perfect in all respects. The sides, ends and doors were all built in jigs so as to ensure absolute interchangeability. This is essential on account of the difficulties in re-erecting the cars in France.

They have been built by Canadian Car and Foundry Co., Ltd.

Birthdays of Transportation Men in January.

Many happy returns of the day to:—

J. Abrams, Wharf Freight Agent, C.P.R., Vancouver, B.C., born at Manchester, Eng., Jan. 24, 1870.

A. Davidson, General Agent, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at St. Henri, Montreal, Jan. 29, 1885.

G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, Ottawa, Ont., born at Quebec, Que., Jan. 27, 1861.

J. E. Everell, Superintendent, Montmorency Division, Quebec Ry., Light and Power Co., Quebec, and District Passenger Agent, Canadian Government Railways, Montreal, born at Cap Rouge, Que., Jan. 1, 1863.

Gordon Grant, Chief Engineer, National Transcontinental Ry., Ottawa, born at Dufftown, Scotland, Jan. 2, 1861.

G. F. Hichborn, formerly Agent, Great Eastern Fast Freight Line, New York, born at Boston, Mass., Jan. 13, 1875.

C. Hood, Local Freight Agent, C.P.R., Saskatoon, Sask., born at Edinburgh, Scotland, Jan. 20, 1864.

D. W. Houston, Superintendent, Regina Municipal Ry., Regina, Sask., born at Bathurst, N.B., Jan. 3, 1879.

Carl Howe, Manager, New York Central Fast Freight Lines, Chicago, Ill., born at Berrien Springs, Mich., Jan. 11, 1870.

H. J. Humphrey, Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, born at Berrys Mills, N.B., Jan. 26, 1879.

W. C. Hunter, Assistant Superintendent Shell Shops, Nova Scotia Steel and Coal Co., New Glasgow, N.S., ex-Manager New Brunswick Coal and Ry. Co., born at St. John, N.B., Jan. 4, 1865.

H. G. Kelley, Vice President, G.T.R. Montreal, born at Philadelphia, Pa., Jan. 12, 1858.

John Macrae, Locomotive Foreman, C.P.R., North Bend, B.C., born at Springburn, Glasgow, Scotland, Jan. 30, 1879.

P. A. Macdonald, Manitoba Public Utilities Commissioner, Winnipeg, born at Gananoque, Ont., Jan. 6, 1857.

J. J. Nelligan, ex-Division Freight Agent, Canada Steamship Lines, Ltd., Montreal, now on active service with Canadian Expeditionary Force, born at Hamilton, Ont., Jan. 20, 1876.

G. Pepall, Assistant Foreign Freight Agent, G.T.R., and representing National Despatch-Great Eastern Line, Toronto, born at High Wycombe, Bucks., Eng., Jan. 15, 1849.

William Phillips, Canadian Representative, Cunard Steamship Co., Montreal, born at Toronto, Jan. 31, 1870.

W. Pratt, General Superintendent, Sleeping and Dining Cars and Hotels, Canadian Northern Ry., Winnipeg, born at Sibbertoft, Northamptonshire, Eng., Jan. 18, 1870.

John Pullen, President, Canadian Express Co., Montreal, born at Shepton Mallet, Eng., Jan. 23, 1863.

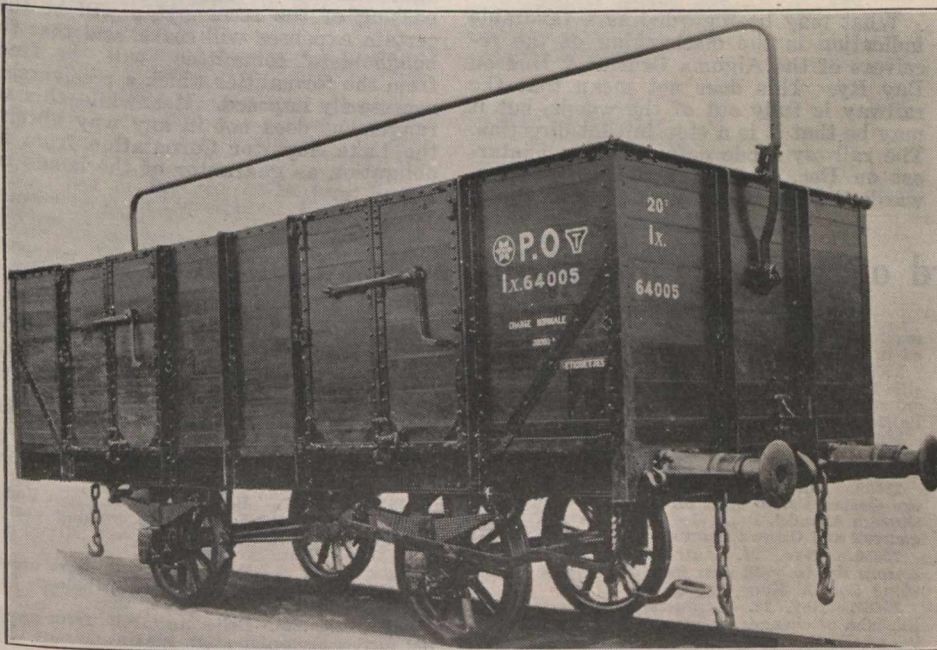
Ralph M. Reade, Superintendent, City and Quebec County Railways, Quebec Railway, Light & Power Co., Quebec, born at Llanelly, Wales, Jan. 1, 1868.

L. J. Rouleau, Travelling Freight Agent, G.T.R., and Agent, National Despatch-Great Eastern Line, Montreal, born there, Jan. 6, 1879.

B. G. F. Rutley, ticket agent, Canadian Northern Ry. and Grand Trunk Pacific Ry., Fort Garry Union Station, Winnipeg, born at Chatham, Ont., Jan. 25, 1879.

C. Senay, Assistant Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, born at St. Cesaire, Que., Jan. 31, 1873.

A. F. Stewart, M.Can.Soc.C.E., Chief Engineer Eastern Lines, Canadian Northern Ry., Toronto, born at West Bay, N.S., Jan. 1864.



Gondola Car for the Paris and Orleans Railway.

the journal bearing are machined to gauge, in order that the brass will fit perfectly. The journal bearing is made of a composition of copper, tin, and zinc and has a hard white metal lining about 1/8 in. thick, composed principally of tin and antimony. No journal wedge is used. An oiling pad of the European style is placed in the bottom of the box, to lubricate the journal.

The wheels are 1040 m/m in diameter, with cast steel centres and rolled steel tires secured by Gibson rings. The cars are equipped with forged steel drawhooks cast steel buffers with springs, forged screw couplings and safety chains. The screw couplings are made from high carbon steel, and are heat treated, so as to have a tensile strength of approximately 100,000 lb. per sq. in. A certain percentage of all drawhooks, couplings and safety chains are tested to destruction and must stand a specified load before failing. Test specimens are also cut from these forgings and pulled, in order to get the percentage of elongation of the steel in the finished forging.

Each car is equipped with four pairs of

W. U. Appleton, General Master Mechanic, Canadian Government Railways, Moncton, N.B., born there, Jan. 29, 1878.

R. Armstrong, Superintendent, Souris Division, Manitoba District, C.P.R., Souris, born at Kingston, Ont., Jan. 27, 1865.

F. X. Belanger, General Freight and Passenger Agent, Temiscouata Ry., Riviere du Loup, Que., born at Chlorydormes, Que., Jan. 20, 1876.

G. McL. Brown, European Manager, C.P.R., London, Eng., born at Hamilton, Ont., Jan. 20, 1866.

R. F. Chapman, dispatcher, C.P.R. Brandon, Man., born at Coal Branch, N.B., Jan. 21, 1874.

C. A. Cotterell, Superintendent, Lethbridge Division, Alberta District, C.P.R., Lethbridge, born at Enden, Eng., Jan. 18, 1877.

W. A. Cowan, A.M.Can.Soc.C.E., acting General Superintendent, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., born at Galt, Ont., Jan. 22, 1877.

J. E. Dalrymple, Vice President, G.T.R., G.T.P.R., and Central Vermont Ry., Montreal, born there Jan. 1, 1869.

J. G. Sullivan, M.Can.Soc.C.E., Chief Engineer, Western Lines, C.P.R., Winnipeg, born at Bushnell's Basin, N.Y., Jan. 11, 1863.

Ross Thompson, ex-Chief Engineer and Managing Director, St. John and Quebec Ry., Fredericton, N.B., born at Newry, Ireland, Jan. 1, 1865.

T. H. White, Chief Engineer, Canadian Northern Pacific Ry., Vancouver, born at St. Thomas, Ont., Jan. 27, 1848.

A. Wilcox, General Superintendent, Central Division, Canadian Northern Ry., Winnipeg, born at Kincardine, Ont., Jan. 2, 1865.

Alberta Board of Public Utility Commissioners.

The board issued order 157, Nov. 4, approving Alberta & Great Waterways tariffs as follows:—

A. & G.W.Ry. no. 1, P.U.C. no. 1, Sup. 1 to A. & G.W.Ry. no. 1, Sup. 1 to A. & G.W.Ry., P.U.C. no. 1, Table of distances.

A. & G.W.Ry. no. 2, P.U.C. no. 2, Sup. 1 to A. & G.W.Ry. no. 2, Sup. 1 to A. & G.W.Ry., P.U.C. no. 2, Various commodities.

A. & G.W.Ry. no. 3, P.U.C. no. 3, Sup. 1 to A. & G.W.Ry. no. 3, Sup. 1 to A. & G.W.Ry., P.U.C. no. 3, Various commodities to Edmonton.

A. & G.W.Ry., no. 4, Distributing class rates.

A. & G.W.Ry. no. 5, P.U.C. no. 4, Class rates.

A. & G.W.Ry. no. 6, P.U.C. no. 5, Farm settlers' effects.

A. & G.W.Ry. no. 7, P.U.C. no. 6, Standard mileage freight tariff.

Sup. 1 to A. & G.W.Ry. no. 4, Distributing class rates.

Sup. 1 to A. & G.W.Ry. no. 6, C.R.C. 6, P.U.C. no. 6, Farm settlers' effects.

A. & G.W.Ry. no. 8, C.R.C. no. 7, P.U.C. no. 7, Rates, rules and regulations.

A. & G.W.Ry. no. 1, P.U.C. no. 1, Standard maximum passenger rates.

Order 158, issued Nov. 9, authorized the Canadian Northern Western Ry. Co. to build its Oliver-Battleford Branch across the highways at the points set out in the following plans:—Plan of right of way through Tp. 59, R. 15-14, w. 4th Meridian, mileage 75.83-88.76. Plan of right of way through Tp. 59, R. 13-12, w. 4th Meridian, mileage 88.76-101.37, subject to such terms and conditions as to protection, safety and convenience to the public as the board may deem it expedient to make.

The Algoma Central and Hudson Bay Railway's Finances.

What may be regarded as a favorable indication is the discharging of the receivers of the Algoma Central & Hudson Bay Ry. This does not mean that the railway is fully out of the woods, but it may be that it is a step in that direction. The railway made default of bond interest on Dec. 1, 1914, and shortly afterwards the Algoma Central Terminals de-

faulted. The latter's chief and only source of revenue was from the railway, which held its property under lease, the terms of which were that the railway should pay to the Terminals an amount sufficient to cover administration expenses, taxes and interest on its bonds. Incidentally, it may be mentioned, in view of the interest manifested in the United States in the Lake Superior Corporation stock, that that corporation guaranteed the bonds of the terminals and the railway companies. So far, the corporation has not been able to fulfil its undertaking. In Feb. 1915, receivers were appointed for the railway company by the Exchequer Court, and in May, 1915, for the terminals company. A question arose as to the rights respectively of the two companies, which were parties to the lease, respecting which an agreement was made between the bondholders of the two companies, and which was ratified by the Dominion Parliament at its last session. Under this arrangement a bondholders' committee was appointed, which now is in practical control. The revenues of both companies are paid to this committee, and they are distributed according to the agreement arrived at. The effect of the passing of the receivership will be that certain expenses will cease, and that the bondholders' committee will be freed from the formalities which a receivership necessarily imposed. Meanwhile, this arrangement does not in any way absolve the Lake Superior Corporation from its obligation as guarantor of the bonds referred to.

Orders by Board of Railway Commissioners for Canada.

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

The dates given of orders, immediately following the numbers, are those on which the hearings took place, and not those on which the orders were drawn.

25645. Nov. 17.—Dismissing F. N. Trite's application for order requiring C.P.R. to build a water gate at culvert about 3 miles west of Agassiz, B.C.

25646. Nov. 18.—Extending to Nov. 30 time for building transfer tracks between Canadian Northern Ry. and Grand Trunk Pacific Ry. at Yorkton, Sask.

25647. Nov. 20.—Authorizing York Tp. to extend Craydon Ave. easterly over G.T.R. and C.P.R. lands to easterly limit of C.P.R. lands.

25648. Nov. 17.—Authorizing C.P.R. to build branch line for Prairie City Oil Co., Moose Jaw, Sask.

25649. Nov. 20.—Relieving G.T.R. from further protection at first public crossing west of Dublin station, Ont.

25650. Nov. 18.—Ordering Canadian Northern Quebec Ry. to replace and maintain train service in effect last year leaving Huberdeau 5 a.m., arriving at Montfort Jct. 7.50 a.m., and leaving Montfort Jct. 5.30 p.m., arriving Huberdeau 7.15 p.m.

25651. Nov. 17.—Ordering G.T.R. to employ watchman at first public crossing west of Lansdowne, Ont.

25652. Nov. 20.—Approving deviation in G.T.R. through Campbellford, Ont., necessitated through construction of Trent Canal.

25653. Nov. 20.—Dismissing G. T. McKeough's application for order directing Chatham, Wallaceburg & Lake Erie Ry. to put in force, between Chatham and Cedar Springs, Ont., a business passenger rate not to exceed 25c for one round trip ticket. This order was published in full in our last issue.

25654. Nov. 21.—Extending to May 31, 1917, time within which Canadian Northern Ry. shall build a shelter station and siding with cattle pen and loading chute at Twin Elm, Ont.

25655. Nov. 21.—Approving G.T.R. plan of London Road crossing, Thamesville, Ont., as built.

25656. Nov. 23.—Ordering G.T.R., C.P.R. and Canadian Northern Ry. to file not later than Nov. 27, to become effective Dec. 1, supplements to joint class freight tariffs, rates not to exceed those now in effect by more than 2c per 100 lbs. in the 1st class; the remaining classes of Canadian Freight Classification to be proportioned to the 1st class rates so increased in accordance with the standard

maximum mileage tariff. This order was published in full in our last issue.

25657. Nov. 22.—Authorizing Grand Trunk Pacific Branch Lines Co. to build a spur to mile 46.2 crossing First Ave., Sixth St. South and a lane in Battleford, Sask.

25658. Nov. 23.—Authorizing Wright Tp., Que., to build highway crossing over C.P.R. Gatineau Branch at road between lots 20 and 21, R. 6.

25659. Nov. 23.—Authorizing Canadian Northern Quebec Ry. to open for freight traffic its line through Arundel, Ponsonby and Amherst Tps., Argenteuil and Ottawa counties, mileage 0 to 9.57.

25660. Nov. 25.—Authorizing Schomberg & Aurora Ry. to build spur for Sir Henry M. Pellatt along Con. 3, King Tp., Ont.

25661. Nov. 23.—Approving Michigan Central Rd. plan of changes in interlocking plant at crossing of G.T.R. at Campbellford, Ont.

25662. Nov. 24.—Approving agreement between Bell Telephone Co. and Canadian Explosives, Ltd., Nobel, Ont.

25663. Nov. 24.—Authorizing Esquimalt & Nanaimo Ry. to build spur for W. F. Clark Lumber Co., Victoria, B.C.

25664. Nov. 24.—Approving agreement between Bell Telephone Co. and Parkhill Rural Telephone Co., Middlesex county, Ont.

25665. Nov. 23.—Relieving C.P.R. from speed limit of 10 miles an hour at crossing of Aylmer Road, Hull, Que.

25666. Nov. 23.—Ordering Canadian Northern Ry. to grade road south of and parallel to its right of way between the road allowance and west end of station grounds, Alask, Sask.

25667. Nov. 27.—Ordering G.T.R., C.P.R. and Canadian Northern Ry. to file commodity rates on white lead, in carloads, from Montreal, of 2c per 100 lbs., over commodity rates which were being charged thereon when the application in the Eastern Rates Case was presented to the Board, but restricted to destinations where paints are manufactured, to become effective by Dec. 15.

25668. Nov. 25.—Approving Canadian Northern Ry. plans of standard farm crossings for its eastern lines.

25669. Nov. 27.—Authorizing Town of Welland, Ont., to build highway over G.T.R. at Hagar St.

25670. Nov. 27.—Approving agreement of City of Brantford, Ont., as owner of Brantford Municipal Ry. with Lake Erie & Northern Ry. for sale by the city of a portion of Grand Valley Ry.

25671. Nov. 28.—Authorizing C.P.R. to build spur for Hammond Cedar Co., Port Hammond, B.C.

25672. Nov. 28.—Authorizing G.T.R. to build spur on part of lot 2509, St. Cunegonde Ward, Montreal.

25673. Nov. 28.—Authorizing C.P.R. to open for

freight traffic its Stirling East Branch, Alta., from mileage 71.7 to 85.1.

25674. Nov. 28.—Authorizing Harris rural municipality to build highway crossing over Canadian Northern Ry. at Tessier, Sask.

25675. Nov. 27.—Approving G.T.R. stock and cattle pass standard plans.

25676. Nov. 27.—Ordering G.T.R. to flag all train movements over Sherman Ave. crossing Hamilton, Ont.

25677. Nov. 28.—Relieving G.T.R. from limitation of 10 miles an hour at first crossing west of Lakeview golf links station between Mimco and Port Credit, Ont.

25678. Nov. 28.—Relieving C.P.R. from providing further protection at crossing at mileage 84.9, Lachine Subdivision, Plaisance, Que.

25679. Nov. 28.—Relieving C.P.R. from providing further protection at crossing at mileage 18.79, Ste. Agathe Subdivision, St. Jerome, Que.

25680. Nov. 29.—Authorizing Town of St. Laurent, Que., to build highway crossing over G.T.R. at Grande Alle de Florence.

25681. Nov. 28.—Approving agreement between Bell Telephone Co. and Mallorytown Telephone Co., Leeds county, Ont., Nov. 20.

25682. Nov. 28.—Authorizing G.T.R. to build spur for International Nickel Co., Humberstone Tp., Ont.

25683. Nov. 27.—Authorizing Campbellford, Lake Ontario & Western Ry. and Canadian Northern Ry. to operate at crossing of C.N.O.R. by C.L.O. & W.Ry. spur at mileage 1.05, Trenton, Ont.

25684. Nov. 27.—Dismissing application of City of Chatham, Ont., for removal of telegraph and telephone poles and wires from the streets by C.P.R., Great North Western Telegraph Co. and Bell Telephone Co.

25685, 25686. Nov. 30.—Authorizing Canadian Northern Ontario Ry. to cross Wharf St. with its proposed connection between passing siding and spur to the rolling mills at Belleville, Ont., and authorizing it to connect the passing track with the spur to the rolling mills at Belleville, Ont.

25687. Nov. 28.—Approving proposed supplement 8 to Canadian Freight Classification 16, revising ratings of furs, hides, pelts and skins.

25688. Nov. 30.—Extending to June 1, 1917, time within which C.P.R. may divert highway at mile 15.45, Sagwa, N.B.

25689. Dec. 2.—Authorizing Hamilton St. Ry. to operate over crossings of Hamilton Radial Ry. and G.T.R., pending installation of interlocking plant.

25690. Dec. 1.—Authorizing C.P.R. to build two spurs for St. Maurice Paper Co. at Cap de la Madeleine, Que.

25691. Dec. 1.—Authorizing C.P.R. to build spur to existing siding of Gutta Percha & Rubber, Ltd., between Lansdowne and O'Hara Aves., Toronto.

25692. Dec. 1.—Ordering London & Port Stanley Ry. to install improved type of automatic bell at crossing at William St., St. Thomas, Ont.

25693. Nov. 30.—Ordering G.T.R. to reopen old farm crossing on Lot 5, R. 5, Ashton Tp., Que.

25694. Nov. 30.—Extending for 50 days from date time within which C.P.R. shall install gates at crossing of Main St., Farnham, Que.

25695. Dec. 4.—Authorizing Canadian Northern Ry. to remove station agent at Allans, Ont., caretaker to be appointed for accommodation of passengers and l.c.l. freight and express matter.

25696. Nov. 30.—Ordering Canadian Northern Ry. to build crossing over its tracks at Kelly St., Carillon, Que.

25697. Dec. 1.—Authorizing Essex Terminal Ry. to open for traffic its line through portion of Windsor and through Sandwich, Ont., to north side of Titcombe Road, Ojibway, Ont., mileage 3.25 to 8.58.

25698, 25699. Dec. 4.—Approving agreements between Bell Telephone Co. and Sandwich West Co-Operative Telephone Association, Essex County, Ont., and East Middlesex Telephone Co., Middlesex, Oxford and Perth Counties, Ont.

25700. Dec. 5.—Relieving C.P.R. from further protection at highway crossing between Secs. 11 and 12, Tp. 10, R. 21, w.p.m., Man.

25701. Dec. 4.—Authorizing Canadian Northern Ry. to cross 12 highways in Norton municipality, no. 69, Sask.

25702. Dec. 6.—Extending to May 30, 1917, time within which G.T.R. may erect station building and spur for City of Toronto Water Works Department at John St. pumping station.

25703. Dec. 6.—Extending to May 31, 1917, time within which G.T.R. may erect station building at Eganville, Ont.

25704. Dec. 7.—Approving agreement between Bell Telephone Co. and Mississippi Telephone Co., Lanark County, Ont., Nov. 29.

25705. Dec. 4.—Extending to such further time as Board otherwise directs, the requirements of order 12723, Dec. 6, 1910, re Canadian Northern Ry. crossing of Hurdman's Road, Nepean Tp., Ont.

25706. Dec. 9.—Relieving G.T.R. from further protection at Town Line between Middleton and Wyndham Tps., Ont.

25707. Dec. 2.—Authorizing Canadian Northern Ontario Ry. to appropriate additional lands for connection with C.P.R. near Chaudiere Jct., Ont.

25708. Dec. 2.—Ordering Canadian Northern Ry. from Dec. 11 to run train which leaves Ottawa at 8 a.m. for Montreal, and train which leaves Montreal at 3.30 p.m. for Ottawa, up Huberdeau Branch after reaching Rinfret Jct. as far as St. Jerome and back again.

25709. Dec. 2.—Ordering Canadian Northern Quebec Ry. to provide additional train service between St. Jerome, Montfort Jct. and Joliette; effective Dec. 11.

25710. Dec. 12.—Authorizing C.P.R. to build spur on its MacTier Subdivision at mileage 52.8, from Ypres, Ont., to Borden Camp.

25711. Dec. 9.—Ordering C.P.R. to plank crossings from mileage 34, 34.4 36.7, and 36.9 on Yale Road, B.C., also the farm crossings at mileage 36 and 36.3.

25712. Dec. 11.—Approving plans and specifications of Hartnett Drain near G.T.R., Canboro Tp., Ont.

25713. Dec. 9.—Authorizing G.T.R. to build siding for Canada Stove & Foundry Co., St. Laurent, Que.

25714. Dec. 9.—Approving clearances at track shed of Lake of the Woods Milling Co., Medicine Hat, Alta., on C.P.R. undertaking to keep employees off sides of cars.

25715. Dec. 12.—Amending order 25702, Dec. 6, by changing the year from 1916 to 1917. This has already been done in our summary.

25716. Dec. 14.—Amending order 25706, Dec. 9, by changing word Counties to Townships. This has already been done in our summary.

25717. Dec. 13.—Authorizing C.P.R. to open for traffic portion of its Mountain Subdivision, B.C., from mileage 76.51 to 91.33, including Connaught Tunnel.

25718. Dec. 13.—Authorizing C.P.R. to build spur for Polson Iron Works, Toronto.

25719. Dec. 13.—Authorizing G.T.R. to build extension of siding for C. W. Sharp & Co., Toronto.

25720. Dec. 13.—Authorizing Grand Trunk Pacific Ry. to build highway crossing over diverted highway s.w. ¼ Sec. 6, Tp. 36, R. 14, w.3.m., Biggar, Sask.

25721. Dec. 15.—Authorizing Canadian Northern Ry. to remove station agent at Crosby, Ont., caretaker to be appointed for accommodation of passengers.

25722. Dec. 15.—Ordering C.P.R. to build highway crossing in Sec. 3, Tp. 8, R. 2, e.p.m., Man.

25723. Dec. 13.—Authorizing City of Winnipeg, Man., to build highway crossing over C.P.R. Pembina Branch at St. Matthews Ave.

25724. Dec. 15.—Authorizing Canadian Northern Saskatchewan Ry. to build transfer track with C.P.R. at Yorkton, Sask.

25725. Dec. 16.—Authorizing Grand Trunk Pacific Branch Lines Co. to cross 15 streets in Regina, Sask.

25726. Dec. 18.—Extending to June 18, 1917, time within which C.P.R. shall build extension to Boake Mfg. Co.'s siding, for Harry Webb Co., Toronto, as authorized by order 25116, June 28.

25727. Dec. 18.—Ordering Lake Erie & Northern Ry. to build cattle pass for R. P. Irving, South Dumfries Tp., Ont.

Steam Railway Track Laid in 1916.

A preliminary table of new track laid in 1916 by railways throughout Canada, made up from official replies to our annual circular, and from estimates made from information otherwise obtained, is given below. The principal tracklaying done was on the three lines in Alberta, running out from Edmonton, and being built by J. D. McArthur, viz.: the Edmonton, Dunvegan & British Columbia Ry., the Alberta & Great Waterways Ry., and the Central Canada Ry., the greater part of which was done early in the year. The mileage on the railways marked with an asterisk (*) has been estimated, and is subject to revision.

	Miles.	Miles
*Alberta & Great Waterways Ry.—		
Mileage 174.5 to Fort McMurray, Alta., approximate mileage 300		125.50
Canadian Northern Ry. System—		
Canadian Northern Quebec Ry., Arundel to Kaolin, Que.	9.00	
*Canadian Northern Pacific Ry.—		
Victoria to Patricia Bay	13.72	
Victoria towards Alberni	1.00	
	14.72	23.72
Canadian Pacific Ry.—		
*Camp Borden lines	2.75	
Pakowi to Manyberries, Alta.	16.40	
Stoney Creek to Cambie	10.50	
	24.65	
*Central Canada Ry.—		
Heart River to Peace River Landing, Alta., M. 47.60 to M. 49.50		1.90
*Edmonton, Dunvegan & B.C. Ry.—		
M. 336.9 to Spirit River, M. 357 ..	20.10	
Spirit River to Grande Prairie Settlement, Alta.	48.50	
	68.60	
Grand Trunk Pacific Ry.—		
Moose Jaw N.W. Branch M. 67 to 70	3.00	
Regina-Moose Jaw Branch to Elevator	2.65	
	5.65	
Grand Trunk Ry.—		
Angus to Camp Borden, Ont.	4.21	
Hudson Bay Ry.—		
Manitou Rapids, M. 241.24, to Kettle Rapids	91.00	
*Intercolonial Ry.—		
Halifax Terminal Ry.	2.75	
Kettle Valley Ry.—		
To connect track ends in Coquihalla Valley, B.C.	1.70	
*Pacific Great Eastern Ry.—		
Clinton northerly towards Prince George, B.C.	16.00	
*Prince Edward Island Car Ferry—		
Connections at Port Borden, P.E.I., and Cape Tormentine, N.B.	1.00	
Quebec & Lake St. John Ry.—		
Lorette to Huron River, Que.	10.00	
Toronto, Hamilton & Buffalo Ry.—		
Dunnville to Port Mortland, Ont. ...	5.00	
Vancouver, Victoria & Eastern Ry. & N. Co.—		
Completion of Sumas Landing, Connor Line	1.13	
Connection between Kettle Valley Lines and Canadian Northern Pacific Ry. at Hope, B.C.	0.17	
	1.30	
Total		382.98

United Yardmasters' Association.—A branch of this association has been formed in Alberta, with Calgary as its headquarters, and the following as officers for the current year:—President, D. A. Dart, C.P.R.; Vice President, G. H. Turner, C.N.R.; Secretary, T. Doherty, C.P.R.; Treasurer, A. E. Irvine, C.P.R., all of Calgary. The association was originally established in Duluth, Minn., and devotes its attention exclusively to efficiency studies in connection with yard and terminal work, labor and wages questions not being among the matters dealt with. There are between 70 and 80 men on the different railways in Alberta eligible for membership.

Necessity for Increased Per Diem Charges for Cars.

The Board of Railway Commissioners has issued a statement dealing with car shortage, saying that the per diem rates and any system of fines which may be adopted ought to be sufficient to make it to the interest of receiving lines to return freight cars as called for by the Car Service Rules. The statement proceeds:—"Nothing short of this will produce a material improvement. The present movement of cars is so multifarious that it is impossible to provide for what would or would not be misuse for each particular movement without resulting in a situation so complicated and requiring so much accounting that it would probably defeat its own means. It must also be remembered that the use of cars in certain trades differs from that of others. For example, the G.T.R. does a large business in coal from the Niagara gateway to Ontario points. The car equipment used does not belong to the G.T.R., but either to the originating railway or to the coal mine operators themselves. These railways and mine operators, having special equipment which particularly suits their purposes, have in the past insisted on all commercial loadings being carried on their own equipment. To increase the per diem in this particular case would simply add to the cost of the movement without the slightest benefit. Without a large per diem charge the different carriers ought to be able to use at least a fair proportion of their own equipment. On the other hand, so far as the coal movement into Toronto is concerned, if the G.T.R. did not carry the cars with proper efficiency and speed the movement would be helped and congestion would be relieved if the G.T.R. was compelled to give a proper car service by a substantial fine."

The statement points out that while the cost of freight cars has advanced, the per diem charge of 45c has remained constant notwithstanding. The railways in the east and the west have placed embargoes on the traffic of other lines owing to the fact that the lines against whose business the embargoes have been placed have on their tracks a large quantity of cars belonging to the embargoing line. The direct result of such embargoes penalizes traffic and shippers for what is claimed to be misuse of cars by railways, the shippers being much more injured than the railways can possibly be. In this connection railways which are short of equipment can well afford to hold the cars of other railways, pay the per diem charge and make money. In effect, cars that have been interchanged have frequently been used by the receiving line practically as its own equipment, resulting in car shortage on lines which otherwise would have been able to properly look after their business.

Obtaining Maximum Use of All Freight Cars.—The Southern Pacific Co. is utilizing open freight cars for carrying freight which is usually shipped in box cars in order to relieve the car shortage. These cars are fitted with tarpaulins, which are stencilled with the company's name and numbered consecutively. These are billed at forwarding stations with \$40 advance charges, and agents at destinations secure the tarpaulin and bill it back to the forwarding point. The St. Louis & San Francisco Rd. papers certain stock cars for shipping merchandise to western points.

Lord Shaughnessy Takes His Seat in the House of Lords.

Lord Shaughnessy, President, C.P.R., during his recent visit to England, took his seat in the House of Lords on Nov. 23, the ceremony being referred to by the Canadian Gazette as follows:—"The new

T. Shaughnessy; Sir Thos. Skinner, director, C.P.R.; G. McL. Brown, European Manager, C.P.R., and Mrs. Brown; Sir Montague and Lady Allan; Hugh A. and Mrs. Allan; H. Maitland Kersey, Managing Director, Canadian Pacific Ocean Services, Ltd.

"It is of sentimental interest to note that Lord Shaughnessy has the peg used

Canadian Railway Track for Military Railways in France.

In order to help in providing adequate railway facilities behind the fighting lines in France, the British Government has appealed to the Canadian Government to help in providing steel rails, and a memorandum issued at Ottawa, Dec. 18, says in part:—"The Imperial Government has asked the Dominion to help solve the difficulties of the French railway situation, both in the relief of port congestions and the movement of guns and munitions behind the lines. The transportation facilities in France have been inadequate to permit the allies to take full advantage of the material and supplies available, and it is felt that the war could be materially shortened and thousands of lives saved if sufficient additional railway facilities could be provided promptly. The British Government is doing what it can to supply the deficiency from England, and Canada was asked whether there was any possibility of securing rails and other track material from the Dominion to meet what is regarded by the British Minister of War as a vital need, and suggesting that if no other solution was possible certain already existing trackage might be taken up and sent forward. The call on the Dominion is for from 1,200 to 1,500 miles of railway trackage."

After canvassing the steel situation in Canada, the Railways Department authorized the immediate taking up of sufficient steel rails on unused sidings of the Canadian Government Railways in the east to lay 20 miles of track for shipment at once. It was reported, Dec. 20, that the taking up of this track had already been put in hand. In order to provide a further supply of rails, the department is said to have authorized the taking up of an additional 300 miles of track on the Government railways, consisting of duplicate tracks and sidings at points where the traffic demands are lightest. The Canadian Pacific, Canadian Northern, Grand Trunk Ry. and Grand Trunk Pacific Ry. have been invited to cooperate, and it was reported, Dec. 20, that arrangements would likely be made for taking up about 220 miles of track west of Edmonton, where the G.T.P.R. and the Canadian Northern Ry. parallel each other, and where the present traffic is not too heavy to be worked over one line.

The selection of the points at which track is to be taken up has been considerably facilitated by the work of the commission of enquiry which has been appointed since the Dominion Parliament's last session to investigate the whole Canadian railway situation. This commission had obtained much information as to parallel lines, etc., throughout the Dominion which could with advantage be eliminated, and this commission, the Board of Railway Commissioners and the Railways Department are working in harmony to give the greatest possible aid to the Imperial authorities in the matter. Local labor is being utilized, and where there are not sufficient men in any district to do the work, troops will be sent in to remove the track.

L. W. Hill, Chairman and President, Great Northern Ry., is reported to have stated that a conference of representatives of western railways in Chicago, recently, tentative arrangements had been discussed for the control of about 48,000 miles of telegraph lines, but that nothing could be made public.



The Right Hon. Baron Shaughnessy, of Montreal, Canada, and Ashford, Ireland. In his robes on his introduction into the House of Lords.

peer, attired in his robes of scarlet and ermine, appeared with his sponsors, Lord MacDonnell and Lord Northcliffe, also robed, and accompanied by Black Rod and the gorgeously clad Garter King of Arms. The little procession advanced to the table, where the oath was taken and the roll signed by Lord Shaughnessy. Then the new peer was escorted to his seat, from which he rose thrice to make the obeisance to the Lord Chancellor. Subsequently he was escorted to the woosack and introduced to the Lord Chancellor."

Among those present were:—Mrs. A.

by the late Lord Strathcona to hang his hat and coat on, this peg happening to be vacant."

A Land Grant Suit.—A British Columbia court has before it the action of Bagley against the British Columbia Southern Ry., one of the C.P.R. lines. The plaintiff bought from the company in 1911 some 2,560 acres of its subsidy grant lands, which he immediately subdivided and sold at a profit. He claims that he could not secure a title to the land from the company, thereby failing to realize his profit. He asks \$25,000 damages.

The Death of Lieutenant Bruce H. A. Burrows.

A few hours after Canadian Railway and Marine World for December had gone to press, on Nov. 29, our Managing Director, Acton Burrows, received a telegram from the Militia and Defence Department, Ottawa, stating that his younger son, Bruce Hosmer Acton Burrows, B.A.Sc., lieutenant, 12th Field Co., Canadian Engineers, had been killed in action in France. The following particulars were received subsequently by mail.

MAJOR C. T. TROTTER, of St. John's, Que., in command of the company, wrote: "In the field, Nov. 26.—It was with the deepest regret that I heard this morning of the death of your son. He went out last night in charge of a party which was to put in some barbed wire at a very important strategical point, but on the way in, a chance shot, dropping right in front of him, wounded him so severely that he lived but a very few moments Mr. Henderson" (another lieutenant of the company), "who was with him at the time, did all in his power for him, but without avail. He passed away almost immediately, and it is certain that he was in no pain, because he was unconscious from the time he was hit.

"He will be a great loss to the company, for he was an excellent officer, very efficient and absolutely reliable. All the officers of the company, and, in fact, all ranks, will miss him very much indeed, for he was most popular with all. You have every reason to be proud of your son, sir, for he was one of the best officers I ever had anything to do with, and the work he has done since coming to France would be a credit to any man. I thought a great deal of him, and can appreciate your loss and sympathize with you in your grief."

J. BALFOUR THOM, of Montreal, another lieutenant in the same company, wrote on the same date, in part: "As I was probably Bruce's greatest friend in the company, I am writing to give you what details I can and to extend my deepest sympathy to you and his other relatives in your great loss. Since joining the Engineers in Ottawa, Bruce and I have been almost inseparable, always living together, and in that time I have grown to appreciate him more every day, and a better friend I shall never have. One learns more about a friend in a few nights out here than would be possible in years of civilian life, and Bruce and I have gone through some very tough nights here together. He was always absolutely himself, cool and collected, seeing that the work was properly done and also looking after his men. He was absolutely cool under fire, and it was probably this coolness and the great interest he showed in their welfare that made him so popular with the men of his section, and there was nothing they would not do for him, and do gladly.

"Last night he and another officer, Mr. Henderson, were taking a party of sappers to put up wire out in front, and although it was a ticklish bit of work we had no anxiety for them, as we had been out the night before and had found it fairly quiet. On the way into their work a high explosive shell fell just in front of them and one of the flying fragments struck Bruce, death following instantaneously. His body was brought out at once, and it was a great token of the respect in which the men held him that they volunteered to do this under shell fire. The funeral was held today at 4 p.m., being

attended by Major Irving, D.S.O., of Toronto, the C.R.E. of the division, Major Ward, the Adjutant, and all the officers of this company. The officers of the other two companies were unable to attend. The service was performed by Capt. McCaskell, Chaplain of the 73rd Battalion, and afterwards a wooden cross, painted white with black lettering, was erected. The sergeant especially asked me to extend his sympathy, and also our servant, Foulkes. I cannot express my own feelings more than by saying that I have lost my best friend, and who can say more, and although I shall miss him, yet I feel proud to think that he died as a man should, and it is a memory I shall always cherish."

CHARLES IVEY, of London, Ont., also a lieutenant in the same company, wrote



Bruce H. A. Burrows, B.A.Sc.,
Lieutenant, 12th Field Co., Canadian Engineers.
Killed in action Nov. 25, 1916.

from London, Eng., on Dec. 4, in part:—"I cannot tell you how cut up we all are over Bruce's loss, as we have all been together over a year now and have grown to be like a big family. It was especially hard, as it was our last night in before leaving the Somme, and Bruce had done such good work and had been so cool under fire. We laid him to rest in a little British cemetery about a mile from Albert, on the south side of the Albert-Bau-paume Road. There have been a good many buried there, but none more regretted than Bruce. The whole company turned out, together with our headquarters staff, and after the service and he was laid to rest they filed by and saluted him. His men feel his loss keenly. We do indeed get attached to the men while more or less taking care of them, and I am sure there were a great number of them who found it hard to keep back the tears and a lump in the throat. It seems so hard that Bruce should be snatched away from us when just in the prime of life, and after doing such good work, too. He was always cool and considerate of

his men. When he was hit, he was going in ahead of them, to reconnoitre before they came up to work. He never asked them to do anything nor go anywhere that he would not undertake himself, and he had the universal respect of all."

The late B. H. A. Burrows was born in Winnipeg, June 30, 1893, and went to Toronto in 1895, when his father removed there from Winnipeg with his family. He was educated at the Toronto Model School, Harbord Collegiate Institute and Toronto University, taking the mechanical engineering course at the latter and graduating June 6, 1913, with the degree of B.A.Sc. During his university vacations he did practical mechanical work in the G.T.R shops at Stratford, Ont. After graduating he was in charge of the Coleman Fare Box Co.'s factory at Tottenham, Ont., for a year and was afterwards in the Canadian Allis Chalmers, Ltd., works, Toronto.

On Sept. 15, 1915, he was gazetted a provisional lieutenant (supernumary), Canadian Engineers, and trained at Rockcliffe Camp, Ottawa. After passing a very satisfactory examination he was appointed a lieutenant in the 7th Field Company, Canadian Engineers. He left Ottawa on Mar. 9, 1916, when three companies of engineers started overseas. After a short stay Camp Bordon, in Hampshire, he took a two months course at the Royal Engineers College at Brightlingsea, Essex, where he passed another very successful examination. After that, with the exception of a short time spent at Christchurch, in Hampshire, where he instructed two engineers companies in pontooning, etc., he was at Bramshott Camp, Hampshire, until Aug. 11, 1916, when he went to France with the 4th Canadian Division, his company's designation being then changed to 12th Field Company, Canadian Engineers. He was at the front in Belgium until towards the end of September, when he was transferred to France and went to the front on the Somme.

He was a student of the Canadian Society of Civil Engineers and a member of Ionic Lodge, A.F. & A.M., Toronto. His surviving relatives, besides his father, are his elder brother, Aubrey Acton Burrows, Secretary and Business Manager, Acton Burrows, Limited, proprietors, Canadian Railway and Marine World; and two sisters, Miss Blair Acton Burrows, of Toronto, and Mrs. G. Grenville Hunter, of Hartford, Conn.

Glimpses of the Military Engineers' Work.

Lieut. Burrows was most enthusiastic about his work, and his letters from the front were always very cheerful and optimistic. For obvious reasons he spoke of his work only in general terms, but the following extracts from recent letters will give an idea of some of the military engineers' duties.

Aug. 30. "We are having two or three days' rain to warn us that winter is coming, although we are counting on another month of fine weather. The rain plays the deuce with the trenches, unless they are in first class shape, and when we came into this area really none of them could be said to be in that condition. I have been fighting the rain for a couple of days, and it is no easy task. I have never seen any rain to quite compare with what we are working in. After half an hour's rain the bottom of a trench has about a foot of 'pea soup' in it, and the only way to cope with it is to put what they call 'bath mats' in every trench. In this small job alone millions of feet of lumber are used, and the cost is appall-

ing. You can get no idea at all without seeing things."

Sept. 8. "I have a very big area to look after and it keeps me busy getting round it in day time, supervising my different jobs, and then at night I have to plan out future work and make out reports of what I have done, am doing and am going to do. The infantry are popularly supposed to do a lot of walking, but they are not in it with us at present. I average at least 10 miles a day over land, through communicating trenches and reconnoitring new parts of my area."

Sept. 13. "My men are an exceptionally fine lot, making good at nearly everything, and consequently making things much easier for me. I have a couple of hundred men working for me, besides my own sappers, and so I have quite a bit to do. My n.c.o.'s and most of my sappers are getting used to handling parties. The other day I showed one of my sappers about 100 yards of trench which I wanted dug, and which I had already laid out with tape. I got a party of 50 men, and he and his brother got the job done in two nights, and well done. My work is very varied at present. My chief jobs are fixing a couple of communication trenches, building some dugouts, a trench motor emplacement, and a tram line, quite a variety, isn't it?"

Sept. 22. "I have been lucky enough to be looking after the area held by the 72nd Battalion, which is about the finest that ever left Canada, and have got in a lot of good work. Although we have only been here about five weeks, we have earned a very favorable reputation as to the amount of work done. We were using such a lot of material that the Chief Engineer of our army wanted to know where it was going. He was promptly shown that it was right on the job."

Oct. 14. "I have had a couple of nights' work up in front, and have tonight off, unless some orders come. The first night we started off about 5 p.m. and got back about 5 next morning. Another lieutenant and I were working together that night, with a couple of sappers, and laid out a lot of work. We were wandering around above ground in behind our own front line, and things were much quieter than I expected. Last night we dug most of the work we laid out the night before. I had to meet parties totalling more than 1,000 men, so that you can see that an engineer subaltern has at times quite a bit of responsibility. I started at 4.45 p.m. on a bicycle with my sergeant, and met the parties and guided them up to the work over several miles of ploughed up country and remains of villages; worked until 3.30 a.m., came home and got to bed about 7, not a bad night's work."

Oct. 19. "Everything continues to go very satisfactorily, although it is pretty strenuous at times. I have had five nights in the line out of eight that we have been in this area. We start out about 5.30 in the afternoon and get back into bed on an average of twelve hours later. Our casualties have been very slight and we have got in some very good work. The chief trouble the engineers have is getting on to the work, as it is terribly difficult to find one's way about, and some companies have managed to lose a lot of their working parties and have had to go back without getting on to the work at all. However, we have not lost a party yet. You have no idea of the conditions of the country. The shelling has practically removed all landmarks, and at times we have to march over land by the compass. The country we are

working has had very heavy shelling from us and is now getting a second shelling from the Germans."

Nov. 17. "Thom" (another lieutenant) "and I have built ourselves a very nice new dugout, about 11 x 15 inside, with a good open fireplace, and now live in comfort, with hot water in the morning for shaving."

On Nov. 23, two days before he was killed, he wrote:—"We are just about at the end of our tour in the lively area and are due for a rest in one of the 'cushy' spots of the line. None of us will be sorry, as we have had a pretty strenuous time. I think leave will start for our division quite soon now."

C.P.R. Shares and Enemy Holders.

A correspondent of the London, Eng., daily press states that German holders of C.P.R. shares are shipping them to New York by submarine and selling them in the U.S. at a discount sufficient to recoup the purchasers for loss of dividend during the war. He urges that the British Government should induce the Dominion Government to declare that such sales will not be recognized, and that it is not too late to take such a step now, as the bulk of German holdings is still unsold. The C.P.R. has pointed out that the company's shares on the Montreal and New York registers do not come within the scope of the public trustee's activities, but that observing the Royal proclamation at the commencement of the war, the company has stopped transfer of shares to enemy names and the payment of dividends thereon. This leaves it open for alien enemies to transfer their shares to British subjects or to neutral aliens, and it is to be presumed that purchasers are fully aware of the risk attached to the purchase. Just prior to the war, about 15% of the 2,600,000 shares in the C.P.R. were held on the European continent, but not all in Germany or by enemy aliens.

The British Columbia Institute of Civil Engineers, which is in progress of organization, is, we are advised, intended to be a protective society, more of a union and less of a society. It is aimed to place the engineering profession in the province on an equally strong footing with the legal and medical professions, and to be strong enough to prevent municipal or provincial governments from importing United States and other outside engineers or employing inferior men to fill positions while capable engineers are available within the province. It is also aimed at having salaries and other remuneration fixed at rates in keeping with the character of the work and the responsibilities of the work. It is not, however, intended to have this a close corporation. At present about 50 men have enrolled as members, including civil engineers, land surveyors and architects. As soon as the Vancouver branch is fully organized, a provincial charter will be applied for. L. P. Macrae is Secretary Treasurer.

Railway Noises.—The Mayor of Brantford, Ont., was informed by the Board of Railway Commissioners recently that it was not a function of the board to advise as to the operation of civic bylaws affecting railways. The matter submitted to the board was in reference to the ringing of bells and making noises "calculated to disturb the inhabitants." The board suggests that the matter is one to be decided by the civil courts.

C.P.R. Land Settlement Plans for Soldiers.

The C.P.R. has announced a comprehensive scheme for the settlement of soldiers on the company's land in Western Canada. It is proposed to provide farms in various districts throughout the west for men producing evidence of having served in the Canadian units of the British Army or Navy during the present war, who are married, are physically fit, and are approved by an examining committee appointed by the company. Two kinds of farms are to be provided in each area, improved farms and assisted colonization farms. The improved farms will have on them a house, barn and fencing, a water supply, and 40 acres of land will be broken. The colonization farms will be ordinary wild lands, selected by the colonist, who will be aided by advances and directed in making of his improvements by the company. In each area there will be a central control farm conducted by the company, in charge of the superintendent of the colony. This farm will be used for demonstrations only, the maintenance of service animals, and to have on hand the larger and more expensive machinery which individual settlers would not be able to buy at any rate at the beginning. In the case of the colonization farms, the land will be sold on a 20 years contract, no payments being due during the first 2 years. The improved farms will be rent free for 3 years, when 6% will be added to the cost of the original improvements and 20 years will be given to pay for the same. No water rent will be charged for the first two years on irrigation lands. The area of an improved farm is to be 80 acres irrigation land, or 160 acres non-irrigation land; and of a colonization farm 320 acres. Live stock, implements and seed purchased with advances made by the company are to be secured by lien notes or mortgages. The use of the heavy machinery on the central farm may be had at fixed charges per day. The superintendent will advise all settlers as to work to be done, etc. One of the improved farm colonies is being prepared north of Coaldale, Alta., where 40 farms are being laid out.

Canadian Society of Civil Engineers.—The following nominations for 1917 have been made for submission to the membership:—President, J. S. Dennis, Assistant to President, C.P.R., Montreal; Vice Presidents, G. R. G. Conway, bondholders' representative, Mexican Light & Power Co., Mexico, and formerly Chief Engineer and Assistant General Manager British Columbia Electric Ry.; J. M. R. Fairbairn, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; J. G. Legrand, Bridge Engineer, Grand Trunk Pacific Ry., Winnipeg; C. N. Monsarratt, Chairman, Quebec Bridge Commission, Montreal; Councillors, District 1—J. Duchastel, F. H. Pitcher, R. A. Ross, J. C. Smith. District 2—H. Longley, C. M. Odell. District 3—A. R. Decary, S. S. Oliver. District 4—John Murphy, James White. District 5—G. A. McCarthy, E. W. Oliver. District 6—A. T. Fraser, W. Pearce. District 7—R. F. Hayward, J. H. Kennedy. Two vice presidents are to be elected and two councillors in District 1, and one each in the other districts.

New York Central Rd. Plans for a \$6,000,000 passenger station at Washington and Exchange Sts., Buffalo, N.Y., are reported to have been approved by the Terminal Commission.

Track Maintenance Inspection Trip on Eastern Lines, C.P.R.

The C.P.R. management takes a deep personal interest in the standardizing of track maintenance to a high point of efficiency on both main lines and branches, and a trip made last autumn, during which the photograph reproduced in the accompanying illustration was taken, is one of the many schemes which have been worked up with a view to having all our roadmasters work along the same lines and follow the best possible practice in carrying out their work. The party, which was in charge of Alfred Price, Assistant General Manager; A. C. Mackenzie, Engineer, Maintenance of Way, and E. Keough, Assistant Engineer, Maintenance of Way, assembled at Ottawa. A special observation car took the party from Ottawa to Montreal over the Montreal and Ottawa Subdivision's single

C.P.R. Enquiry into Labor Situation.

J. S. Dennis, Assistant to the President, C.P.R., Montreal, has issued the following circular:—

"Before the close of the war Canada should prepare for the return to civil employment of our returned soldiers and for the immigration of a large number of ex-soldiers from the disbanded armies of Europe. The larger number of these men will be looking for work, and unless some scheme is prepared in advance for their reception and assistance, serious congestion of unemployed in the larger centres will be sure to occur. To permit of the problem being intelligently dealt with, it is necessary to have available some reliable statistics as to the present labor situation, with an estimate of the openings for additional skilled and unskilled labor. The C.P.R. Co. desires to obtain this information as fully as pos-

trade, agricultural societies, steam and electric railway companies and the larger industrial concerns throughout Canada. It is the company's intention, after receiving replies, to compile the information in the form of graphic charts and maps which will show at what points congestion would seem most likely to occur by the influx of returned soldiers and others after the war, so that some means may be taken to avert such congestion and relieve the situation.

Government Elevator at St. John, N.B.

—The contract for the construction of the Dominion Government grain elevator at St. John, N.B., has been awarded to the Fegles-Bellows Engineering Co., Fort William, Ont., and the contract for the concrete foundations to Engineers & Contractors, Ltd., St. John, N.B. This elevator will be the complement of the Dominion Government elevator at Transcona, Man., and will cost approximately



C.P.R. Track Maintenance Inspection Party at Farnham, Que.

The officials shown in this illustration are the following, reading from left to right. In each case, unless otherwise mentioned, they are roadmasters.
LOWER—W. B. Hall, White River Subdivision; F. W. Nicholls, Windsor Subd.; J. S. Richardson, Shogomoc Subd.; O. Kirkland, Montreal Terminals Subd.; J. C. Walsh, Newport and Orford Subd.; A. Price, Asst. Genl. Mgr.; A. C. Mackenzie, Engr. Maintenance Way; E. Keough, Asst. Engr. Maintenance Way; S. Lackey, Orangeville, Elora & Teeswater Subd.; L. Berger, Winchester Subd.; P. Chicoine, St. John, Mattawamkeag, Shore Line Subd.; N. McLaughlin, Sherbrooke & Megantic Subd.; J. Hurson, Trois Rivieres West Subd.
MIDDLE ROW—T. J. Armstrong, Parry Sound Subdivision; C. Verner, Trois Rivieres East Subd.; C. Lampard, H. & G. & Listowel Subd.; T. Netterfield, MacTier & Coldwater Subd.; J. Goodman, Kingston & Godfrey Subd.; J. E. Steele, St. Marys, Port Burwell & St. Thomas Subd.; J. H. Guthrie, Moosehead & Mattawamkeag Subd.; J. R. Brennan, Montreal & Ottawa Subd.; J. H. Boyle, Quebec District; L. Bazinet, Acting Roadmaster, Drummondville, St. Guillaume & Stanbridge Subd.; L. Hebert, Nemegos Subd.; A. Seal, North Bay Subd.; Geo. Spicer, Oshawa, Subd.
UPPER ROW—M. Long, Belleville Subdivision; A. Frost, Peterboro Subd.; A. Mercier, Lachute Subd.; F. Belkia, Prescott Subd.; D. Wilson, Heron Bay Subd.; J. Coughlin, Nipigon Subd.; T. Landers, Adirondack Subd.; R. Shanks, Webbwood & Thessalon Subd.; W. Kelly, Cartier Subd.; J. Kelly, Chalk River Subd.; A. Purvis, General Superintendent, Ontario District; C. Donnelly, Acting Roadmaster, Havelock Subd.; P. Coakley, Galt Subd.; W. Code, Toronto Terminals Subd.; A. Mackenzie, Port McNicoll & Bobcaygeon Subd.; D. McMillan, Acting Roadmaster, Winchester Subd.; S. Jeffrey, Roadmaster, Maniwaki Subd.

track and the rock ballasted double track between Vaudreuil and Montreal. From Montreal the party went over the gravel ballasted double track to Farnham, and from there over one of the branch lines to Stanbridge, in this way giving the roadmasters a comprehensive idea as to the management's desire in the way of appearance and maintenance on different classes of track. On the return trip a few hours was spent at Farnham, and a demonstration given by the Assistant Engineer, Maintenance of Way, of an excellent method of curve lining by the string method developed by J. H. Sheahan, one of the roadmasters. The party then returned to Montreal and dispersed.

D. Morice, who retired recently from the position of Freight and Customs Agent, G.T.R., Niagara Falls, Ont., and who has removed to Stratford, Ont., in writing asking to have his address changed to the latter place, says: "I certainly cannot do without Canadian Railway and Marine World."

sible, so as to enable it to answer intelligently through its large number of offices in Canada, the United States and Europe, the questions which will be asked officials regarding openings for employment, and also to enable them to assist, as far as possible, in directing the movement of those seeking employment so as to prevent congestion and trouble. Attached to this letter is a blank form setting forth certain questions which we will be pleased if you will fill in and return. It is understood that the information will be treated as strictly confidential as regards individual firms."

The following information is asked:— Name of firm. Location. Province. Nature of business. Average number employed—men—women. Present labor shortage, if any—men—women. How do you obtain additional labor when required? If business continued normal, how many additional laborers do you estimate you could place at the end of the war, skilled—unskilled—women?

The circular has been sent to boards of

\$250,000. Its structure was designed by John S. Metcalf Co., Montreal.

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

	Acres.
Calgary and Edmonton Ry.	1,276.00
Canadian Northern Ry.	642.00
Canadian Pacific Ry grants .....	.45
Canadian Pacific Ry. roadbed and station grounds	81.26
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	2,474.87
Winnipeg River Ry.	8.22
Total	4,482.80

Dynamiter Horn.—The hearing of the charge against Werner Horn for alleged acts in connection with the dynamiting of the C.P.R. international bridge at Vanceboro, Me., has been fixed by the U. S. courts to open Jan. 8. The present stage of the proceedings is Horn's appeal to the Supreme Court at Washington against the dismissal of his suit for a writ of habeas corpus.

Increased Demurrage Charges Authorized by Board of Railway Commissioners.

The Canadian Pacific, Grand Trunk, Michigan Central and Toronto, Hamilton & Buffalo Railway Companies on behalf of themselves and other railway companies in Canada applied to the Board of Railway Commissioners, on Dec. 20, for an order amending General Order 1, known as "The Canadian Car Service Rules," so as to provide that the demurrage charge for each 24 hours as provided in rule 1 be increased from \$1 to \$4, and also that the additional free time beyond 48 hours authorized by exception (a) to rule 2 be cancelled. The reasons were stated as follows:—That a shortage of cars exists at present and there is good reason to apprehend that this will increase, due to the heavy demands upon the companies' equipment and to the fact that cars are detained by shippers and consignees for unreasonably long periods when they should be released and put back into service. That the congestion of cars interferes seriously with the speedy conveyance of war munitions and thereby constitutes very serious danger. That the present charges provided under the Canadian Car Service Rules are so low as not to offer any inducement to shippers and consignees in their own interest to load and unload cars as speedily as possible, and it is the opinion of the applicant companies largely due to the neglect of shippers and consignees to do so that the car shortage does and will exist. That under the present scale of charges it often much cheaper for shippers and consignees to retain cars in their possession, using them as temporary warehouses, and for the purpose of distributing freight therefrom in small quantities, instead of providing proper warehouse facilities or utilizing public warehouses for storing freight. That such improper use of the companies' equipment is most pronounced and the consequent congestion most severe in large terminals. That the value of a freight car to a railway company under normal conditions is much greater than the daily amount which it is allowed to collect as demurrage, and such value becomes much greater in times such as the present, when the companies' facilities and equipment are taxed to their fullest capacity. Moreover, in large terminals, the track space actually occupied by a car is of very great value in itself, and consequently must and should be used to its maximum capacity, in the interests of all shippers and consignees, rather than that its use should be restricted by the improper detention of cars in the interests of one shipper or consignee. That this application is not made because the companies wish to collect increased demurrage charges, but solely with a view to compelling shippers and consignees to permit all available rolling stock to remain in active service continuously, or as nearly continuously as possible, and consequently to facilitate the expeditious handling of freight generally.

The Board's Judgment.

The application was heard by the Board in Toronto, Dec. 11 and 12, and, on Dec. 23, the Chief Railway Commissioner, Sir Henry Drayton, gave the following judgment:—At the Board's request, the many shippers and shipping associations represented at the hearing met the railways in an effort to arrive at an agreement. On the following day the shippers' associations, with the exception of the Toronto Retail Coal Dealers' Association and the Lumbermen's Asso-

ciations, reported that they had arrived at an agreement with the railways, as a result of which the present application was abandoned, that the free time of 48 hours should be allowed after cars had been spotted for unloading and that at the expiration of this free time the charge should be \$1 for the 1st day's default, \$1 for the 2nd, \$3 for the 3rd, and \$5 for the 4th and each succeeding day; computation of the free unloading time of 48 hours to be from 7 a.m. of the day following the day on which placement, actual or constructive, had been effected. In order to give effect to the arrangement, the following changes must be made:—

Rules 1, 2, 5 and 15 of the Canadian Car Service Rules are suspended in their entirety from Jan. 1 to Apr. 30, 1917, both inclusive, and the following rules bearing the same numbers are submitted. Rule 11 is also suspended for the same period.

Rule 1.—When cars are held under load, or awaiting loads, beyond the free time allowed by rule 2, for any reason for which the consignee or shipper is responsible, the following tolls for each day of 24 hours, or any part thereof, shall be charged to, and paid by, the shipper, consignee or other party responsible therefor, in addition to all other tolls paid, or payable, in respect of the goods carried, or to be carried, in or on each such car, viz.: For the 1st day \$1, for the 2nd day \$1, for the 3rd day \$3, for the 4th and each succeeding day \$5.

Rule 2.—(a) After notice of arrival of a car at its destination, or in the outside break-up or sorting yard, if such be used for the purpose, all consignees shall be allowed 24 hours within which to pay the tolls or charges (if any), to give order for special placing or delivery if such orders be necessary, and for customs entry of freight in bond. If more than 24 hours be used for these purposes, the excess time shall be deducted from the succeeding unloading period, except as provided in rule 15. (b) Forty-eight hours free time shall be allowed for loading or unloading all commodities, computed from 7 a.m. of the day following the day on which the actual or constructive (see rule 13) placement has been effected, provided that any portion of such placement day may be utilized by the shipper or consignee, in addition to the said 48 hours, without charge. Exceptions:—(a) Five days free time shall be allowed at Montreal and at tide-water ports for unloading lumber and hay for export. (b) In the portion of Canada in which the Canada Grain Act prescribes a specified time for loading grain the said act shall apply. (c) If the destination is not a port of entry, 48 hours shall be allowed for clearance of customs at the outside port of entry.

Rule 6.—If wet or inclement weather, according to local conditions, renders loading or unloading impracticable during business hours, or exposes the goods to damage, the time allowance shall be extended so as to give the full free time of suitable weather. But if the parties neglect or fail to avail themselves of the herein authorized free time of suitable weather, they shall not be allowed additional free time by reason of such neglect.

Rule 15.—If after arrival at destination a car is reconsigned under switching arrangements, the original consignee alone shall have 24 hours in which to give order for placing or delivery, and he shall

pay the tolls prescribed in rule 1 for all time in excess of the 24 hours, so that the final free time allowed by rule 2 (b) shall still remain to the party who accepts delivery.

Both the Toronto Retail Coal Dealers' Association and the lumber shippers objected to the settlement arrived at, insisting in each case that 3 days free time should be allowed for unloading. The settlement arrived at has since been taken up with the boards of trade in the west and the western section of the Canadian Manufacturers' Association. The boards of trade of Winnipeg, Saskatoon, Calgary, Regina, Edmonton, Lethbridge, Vancouver and Fort William concur in the arrangements made, some of the boards suggesting that the demurrage rates should be even higher, in order that rolling stock may be kept constantly in service, as is urgently required. The Board is of the view that notwithstanding the objections raised by the protesting associations, the settlement arrived at must be adopted.

In so far as coal is concerned, it will may be that large cars of coal unloaded by hand cannot be released under certain conditions within 48 hours; but as a matter of fact, under the settlement arrived at, in most instances, more than 48 hours will be available, as free time does not commence until 7 a.m. of the day after the car has been spotted, and apart from this, the settlement after all only imposes upon the local coal dealers without proper facilities a penalty of \$1 for the 3rd day, or about 2c. a ton. The coal situation at present is one of peculiar difficulty, the traders complaining of lack of deliveries, and of embargoes against the movement of coal into Canada placed by U.S. carriers who object to the free use of their cars in Canada for a longer time than consignees are allowed in their own territory. It must be borne in mind that all of the coal delivered in Toronto—which is the only place to protest—originates in U.S. mines, and is hauled to a very large extent in U.S. cars. A much larger proportion of the coal brought into Toronto is unloaded mechanically than is unloaded by hand, but in any event, in the public interest, the settlement must be given effect to and the movement of coal facilitated, even if local Toronto dealers are penalized an extra 2c. a ton for the 3rd day coal cars may be held.

In so far as the lumber situation is concerned, it will may be that certain lumber merchants will be unable to unload within 48 hours. The admission, however, of a protesting shipper, Mr. Rutherford, of Montreal, that with 2 teams and 4 men a large car can be unloaded in 8 hours, robs the protests of much force which they otherwise might have. It is quite true that this unloading is predicated upon a proper yard, and proper facilities, and easy access to the tracks. It is also quite true that some consignees have not these facilities, and have not lumber yards conveniently placed. However, the absence of these facilities cannot be made a justification at present for a refusal to put into effect regulations accepted by a majority of Canadian shippers and calculated to assist traffic conditions at a time of great emergency. The whole issue is merely as to whether the lumber merchant shall have, or shall not have, an extra day. If he does not get the 3rd day he is merely charged \$1, which amounts to a small sum per thousand feet.

The settlement after all is only temporary. It was agreed to by the shippers, not because the railways were entitled to any increased demurrage, not because the railways were not themselves in large part responsible for delays in transportation owing to lack of motive power and cars, but because it was felt that the increased demurrage fee was the only practical way in which a real public emergency resulting from shortage of cars could be in some degree relieved. The reciprocal "per diem" allowance, so called, which is paid one railway company by another for the use of its cars while on the tracks of the paying company has been increased by agreement amongst the railway companies, from 45c. to 75c. a day per car, with the proposal of a further increase if necessary to attain the object in view. In addition to this per diem allowance, the railway companies have agreed that the company having possession of the car shall pay a penalty of \$5 a car if it moves it in a direction away from the lines of its owner when available for the return movements. This \$5 charge is made in cases where the company having possession of the car notifies the owning company of the diverted movement. If the car is so moved and the owning company is not notified, the penalty is \$10.

The agreement arrived at between the shippers and the railways was that increased tolls should go into effect on Dec. 20, but owing to the fact that the matter has had to be delayed by the Board in order to obtain the views of the western shippers, the increased tolls will go into effect on Jan. 1, 1917. They must cease on the close of business of Apr. 30, 1917. It should also be understood that this increase is not a retroactive increase. On Jan. 1, when the new schedule comes into effect, there will undoubtedly be many cars which have been held for an undue time by consignees; the tolls now prescribed will only apply to defaults taking place on and after Jan. 1. In like manner the tolls on cars already subject to demurrage on Apr. 30, when the higher tolls cease, will be reduced on May 1 to the old basis.

A further question arises as to the calculation of demurrage on the new scale at Cartier and other points where stop-over privileges are allowed. The present scale, based on the present demurrage plus the track storage chargeable at these detention points is as follows:—

hours	Demurrage.	Track Storage.	Total.
24	..	..	..
28	..	..	..
72	\$1	..	\$1
96	..	..	2
120	3	\$1	4
144	4	2	6
168	5	4	9
	6	6	12

The railways ask that the following schedule be adopted:—

hours	Demurrage.	Track Storage.	Total.
24	..	..	..
48	..	..	..
72	\$1	..	\$1
96	2	..	2
120	5	\$1	6
144	10	2	12
168	15	4	19
	20	6	26

The railways urge in support of their application the fact that a rate higher than the rate which they ask has been allowed by the Interstate Commerce Commission, as follows:—

hours	Demurrage.	Track Storage.	Total.
24	..	..	..
48	..	..	..
72	\$1	..	\$1
96	3	..	3
120	6	\$1	7
144	11	2	13
168	16	4	20
	21	6	27

Full consideration has been given the different schedules and the measure of traffic, and the Board is of opinion that the proper charge during the period of increased tolls, including both demurrage and track storage should be as follows:—

24 hours	..	..	..
48	..	..	..
72	..	..	..
96	..	..	..
120	..	..	..
144	..	..	..
168	..	..	..

Subject to a further increase of \$5 for each successive 24 hours.

General order 174 was passed Dec. 23, putting the new demurrage rules into effect in accordance with the judgment, which was concurred in by the Assistant Chief Commissioner, D'Arcy Scott, and Commissioner McLean.

Railway Finance, Meetings, Etc.

Algoma Central & Hudson Bay Ry.—Theer has been deposited with the Secretary of State at Ottawa, a supplemental trust deed, dated Oct. 31, 1916, between the company and the United States Mortgage & Trust Co. and the Lake Superior Corporation, affecting the terms of a mortgage and deed of trust, dated July 1, 1910, and also a supplemental agreement, dated Mar. 14, 1916, and a second mortgage supplemental agreement, dated Oct. 31, 1916, between the same parties, affecting the terms of a mortgage and deed of trust, dated Aug. 14, 1914.

Algoma Eastern Ry.—There has been deposited with the Secretary of State at Ottawa an agreement, dated Nov. 8, 1916, between the company and the Lake Superior Corporation relative to the purchase of rolling stock.

Canadian Pacific Ry.—It is reported that the German submarine vessel, Deutschland, on her recent trip to New London, Conn., brought over a considerable number of certificates of C.P.R. stock owned in the German Empire, which have been placed upon the New York market for sale.

Canadian Northern Ry.—Lazard Bros. & Co., London, Eng., are prepared to purchase £75,000 of C.N.R. 4% first mortgage land grant bonds at 93, a brokerage of ½% being paid to authorized agents. The offer is liable to be withdrawn at any time without notice.

Central Vermont-Southern New England Rd.—Attachments have been filed in the Registry of Deeds of Hampton County, Mass., by John Marsch, of Chicago, Ill., amounting to \$6,000,000. One of the attachments is against the Southern New England Rd., and the other against the S.N.E. Rd., the Central Vermont Ry., and the G.T.R. Mr. Marsch was the contractor for building the S.N.E. Rd. from Palmer, Mass., to Providence, R.I., on which work was suspended. The S.N.E. Rd. is owned by the Central Vermont Ry., which in turn is controlled by the G.T.R.

Guelph Junction Ry.—The income available for dividend for the quarter ended Sept. 30, 1916, was \$11,260.50, equal to 6½% upon the capital of \$170,000. The total amount paid to the City of Guelph, Ont., which owns the line, for the year ended Sept. 30, was \$41,012.50.

Kaslo and Slocan Ry.—The Dominion Parliament is being asked to declare this railway to be a work for the general advantage of Canada, to change the head office from Field, B.C., to Montreal, and to authorize it to enter into agreements with the C. P. R.

Lotbiniere and Megantic Ry.—The hearing was started before the Court of Exchequer at Ottawa, Dec. 15, in the proceedings to fix the value of this railway, which was purchased by the Dominion Government under the terms of the act, to take over the Quebec and Saguenay Ry. and other lines. The price fixed for the line was \$310,000, subject to the Court of Exchequer's valuation. The principal question before the court is the company's claim for \$35,000 for the charter rights of the Quebec Eastern Ry. for which a route was survey to include the L. & M. R.

Pere Marquette Rd.—The plan for the reorganization of the P.M.R. is under consideration by the Michigan State Railroad Commission. It provides for the issuance of new securities amounting to \$90,000,000 which with securities which the road is said to own will bring the capitalization of the new company up to \$105,000,000, and it is claimed that after the various indebtednesses, which are nearly all of long standing, have been wiped off, there will be a cash balance of \$16,000,000. The company owns or controls the Lake Erie & Detroit River Ry. in Canada and leases running rights over the Michigan Central Rd. lines in Canada from St. Thomas to the Niagara frontier.

Spokane International Ry.—Referring to the reported purchase of this railway in our last issue, D. C. Corbin, President, is reported to have said that it has been acquired by the C.P.R. and the latter's subsidiary, the Minneapolis, Saint Paul & Sault Ste. Marie Ry. jointly from him and his associates. The bonded indebtedness of the line with the Coeur d'Alene and Pen d'Oreille branches is \$4,744,000, and the outstanding debt is \$4,200,000.

Temiscouata Ry.—Gross earnings for September, \$16,588; operating expenses, \$15,365; net earnings, \$1,223. Aggregate net earnings for three months ended Sept. 30, \$11,725.

Wellington Colliery Ry.—The British Columbia Minister of Railways has consented to the increase of the company's capital from \$50,000 to \$500,000 by the issue of 450,000 new shares of \$1 each, and has defined the company's borrowing powers at \$500,000 and approved the issue of debentures and other securities covering the company's line, which is 21 miles long.

A general meeting of shareholders was called to be held in Victoria, Dec. 15, to authorize the directors to issue bonds or other securities for \$500,000, secured by mortgage upon the whole or any part of the company's undertaking, franchises, etc., and to authorize the directors to carry out the terms of an agreement made between the Canadian Collieries (Dunsmuir), Ltd., and the company, dated June 12, 1916. This agreement conveys to the Wellington Colliery Ry. Co. certain properties consisting of the right of way of the railway, the railway constructed thereon, and the railway equipment and rolling stock at a price fixed by valuation, and the issuance to the Canadian Collieries (Dunsmuir), Ltd., the \$500,000 of bonds or other securities to be issued and sufficient paid up shares of the company's stock in payment for the same. H. Browning is Secretary of the W.C.R. Co.

White Pass & Yukon Ry.—The accounts for the year ended June 30, show a loss of £14,107, after charging interest on debenture stock and debentures payable in income debenture stock. This increases the debit balance on profit and loss account to £24,675. For the previous year there was a loss of £26,182.

Mainly About Railway People Throughout Canada.

G. McLaren Brown, European Manager, C.P.R., arrived in Canada, Dec. 9, from England, on a business trip.

Corporal **R. R. Hutchison**, who has received the Military Medal for bravery on the field, is a son of **Dr. J. A. Hutchison**, Chief Medical Officer, G.T.R., Montreal.

N. P. Dalziel, formerly of Mackenzie, Mann & Co.'s engineering staff, Toronto, and now with the Imperial Munitions Board, Ottawa, has gone to England on official business.

L. E. Silcox, formerly Division Engineer on the Dominion Government Railway to Hudson Bay, and stationed at Kettle Rapids, Man., is now with the Canadian Engineers on active service.

W. M. Acworth, who was appointed a member of the board to enquire into the Canadian railway situation, in place of Sir George Paish, arrived in Canada, Dec. 9, to consult with the other members of the board.

A. J. Gayfer, until recently Division Engineer, Canadian Northern Ry., Hornepayne, Ont., is at present serving in the No. 2 Construction Battalion as a Captain, and is stationed at Edmonton, Alta., preparatory to going overseas.

Jas. Dunsmuir, director, C.P.R., has given \$7,500 to Canadian Red Cross Society's Victoria City and District Branch to cover the cost of an operating theatre in the hospital which the society is presenting to France.

Lieutenant Arthur Dean, 10th Royal Lancashire Fusiliers, who has been killed in action, had been in G.T.R. service for about 10 years, serving in the Freight Department at Glasgow, Liverpool and London, respectively.

Lieut. R. C. Young, formerly Superintendent, Canadian Northern Transfer Co., Montreal, has been appointed acting Quartermaster, First Reinforcing Company, 5th Royal Highlanders of Canada, and is on active service.

George Bury, Vice President, C.P.R., arrived in England, Dec. 21, to see his son, Major G. A. E. Bury, Deputy Assistant Quartermaster General of the Training Division, C.E.F. He was accompanied by Mrs. and Miss Bury.

G. F. P. West, heretofore Assistant Superintendent of the Line, London & Southwestern Ry., England, has been appointed Superintendent of the Line, succeeding Henry Holmes, M.V.O., who has retired after many years service.

Miss Myra Goodeve, daughter of A. S. Goodeve, member of the Board of Railway Commissioners for Canada, has been decorated with the Royal Red Cross by the King, in recognition of her nursing work in France, the Dardanelles and Salonika.

Roy Smith, secretary to the General Manager, Canadian Government Railways, Moncton, N.B., has his shoulder blade broken recently, when the horse attached to the vehicle in which he was driving to business, bolted and threw him out.

George Bury, Vice President, C.P.R., has been made a Knight of Grace of the Order of St. John of Jerusalem; and **A. D. MacTier**, General Manager, Eastern Lines, C.P.R., and **W. D. Robb**, Superintendent of Motive Power, G.T.R., have been made esquires of the same order.

W. H. Moore, Secretary, Canadian Northern Ry., has appealed against an

assessment of \$13,500 on income in Toronto, on the ground that while he has a house there, it belongs to his wife, and that he lives on his farm in Pickering Tp. the greater portion of the year.

Mrs. Sinclair, wife of Angus Sinclair, railways contractor, Toronto, who died there recently, left an estate of \$24,730. As she had not made a will one third the estate goes to her husband, the remainder being equally divided between six sons and daughters.

Robert Home Smith, who has been elected President, Algoma Central & Hudson Bay Ry., was born at Stratford, Ont., July 12, 1878. He is also President of the Mexico North Western Ry., and a member of the Toronto Harbor Commission. He is located in Toronto.

W. D. Davidson, whose appointment as Superintendent, Detroit Division, West-

Lines, G.T.R., London, Ont., was mentioned in our last issue, was presented with a club bag and a silver framed address, and Mrs. Forrester was presented with a travelling companion, by the Stratford Division staff, Dec. 2, on leaving for London.

Lord Shaughnessy is mentioned as a possible member of a commission to administer the City of Montreal's affairs. The Quebec Legislature has decided that such a commission cannot be appointed until a referendum is taken in September to settle the question as to whether the board of control system shall be abolished or not.

F. P. Brady, General Superintendent, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., who is on leave of absence through illness, underwent an operation at Rochester, Minn., Dec. 2, for intestinal trouble, which proved entirely successful. At the time of writing he is still in Rochester, but is expected to return to his home in Winnipeg early in the New Year.

Wm. Iball, who was appointed Chief Engineer of Power House, Canadian Government Railways, Transcona, Man., recently, to succeed T. Turner, deceased, who was on nactive service in the Canadian Expeditionary Force for about two years and having been wounded returned to Canada in November. He was formerly Assistant to Chief Engineer, Power House, Transcona.

George C. Cahan, who has been appointed Assistant General Auditor, C.P.R., Montreal, was born there, Dec. 28, 1874, and entered C.P.R. service in April, 1890, since when he has been, to Oct., 1891, junior clerk, Auditor of Freight and Telegraph Receipts' office; Oct., 1891, to Aug., 1896, junior clerk, Auditor of Disbursements' office; Aug., 1896, to Dec. 1, 1916, clerk, bookkeeper and chief clerk, successively, in Comptroller's and General Auditor's offices, all at Montreal.

J. B. Lambkin, who was in the Passenger Department, Canadian Government Railways, for several years, and latterly had been in charge of the transportation of enemy aliens under the internment regulations, has been appointed transportation officer under the Military Hospitals Commission, to superintend the arrival of wounded Canadian soldiers, and to make arrangements for their removal to their various destinations.

Horace McEwen, whose retirement from active service, after 41 years and 8 months service with the Prince Edward Island Ry., was announced in our last issue, was born at St. Peters, P.E.I., Apr. 27, 1852, and entered P.E.I.R. service May 14, 1875, since when he was, to Dec., 1891, station master, Mount Stewart; Dec. 20, 1891, to Feb. 1, 1892, assistant dispatcher, Charlottetown; Feb. 1, 1892, to Apr. 30, 1912, dispatcher, Charlottetown; May 1, 1912, to Nov. 1, 1916, Superintendent, Charlottetown.

C. R. Needs, of Galt, Ont., formerly a resident engineer on the Canadian Northern Ry., and latterly a munitions inspector, is reported to have enlisted in the Canadian Aviation Corps and to have left for England. He was employed by Mackenzie, Mann & Co., Ltd., on construction as follows:—Oct. 24, 1910, to Apr. 1, 1911, draughtsman; April 2, 1911, to May 1, 1911, rodman; May 2, 1911, to June 22, 1911, instrument man; June 23, 1911, to Aug. 14, 1911, rodman; Aug. 15, 1911, to Nov. 21, 1913, Resident Engineer.



E. W. Delano
Division Engineer, Lake Superior Division,
Canadian Northern Railway.

ern Lines, G.T.R., Detroit, Mich., was announced in our last issue, was presented with a travelling bag and equipment, and a leather upholstered chair, at the end of November, on leaving London, Ont., where he had been Superintendent.

Sir C. Rivers Wilson, K.C.M.G., formerly President, G.T.R., who died about a year ago, left the material for a book, "Chapters From My Official Life," which has been edited by Eva MacAllister, and published recently. The chapter dealing with the G.T.R. is of special interest to Canadian readers.

A. Rankin, a railway contractor, who built some sections of the Canadian Northern Ry. and the Grand Trunk Pacific Ry. in the west, returned to Vancouver, B.C., recently, after having spent some months in studying railway conditions in Russia with a view to acquainting himself with the opportunities for new construction.

C. Forrester, whose appointment as Superintendent, London Division, Ontario

C. Norman Ham, who has been appointed Secretary, Express Traffic Association of Canada, Montreal, was born at Winnipeg, Oct. 21, 1884, and entered transportation service in Feb., 1902, since when he has been, to Apr., 1902, clerk, General Baggage Department, C.P.R., Montreal; May 1, 1902, to Oct. 1, 1904, stenographer, General Freight Department, Intercolonial Ry., Montreal; Oct. 3, 1904, to Oct. 30, 1908, statistical clerk, Traffic Department, Board of Railway Commissioners, Ottawa; May 1, 1904, to Apr. 30, 1910, percentage clerk, Freight Tariff Bureau, C.P.R., Montreal; May 1, 1910, to Nov. 30, 1916, chief clerk, Traffic Department, Dominion Express Co., and Western Express Co., Toronto.

M. K. McQuarrie, who has been appointed Engineer, Dominion Atlantic Ry., Kentville, N.S., was born at Sault Ste. Marie, Ont., Aug. 17, 1884, and entered railway service in 1905, as transit man in the Resident Engineer's office, C.P.R., Vancouver, B.C. He graduated from the School of Practical Science, University of Toronto, in 1907, since when he has been, to 1909, transit man on Nicola-Penticton survey, and in charge of revised location of a portion of the Esquimalt & Nanaimo Ry.'s Nanaimo-Alberni extension; 1909 to Dec. 31, 1910, Assistant Engineer, C.P.R., Vancouver, B.C.; Dec. 31, 1910, to Dec. 4, 1916, Resident Engineer, Revelstoke Division, British Columbia District, C.P.R., Revelstoke.

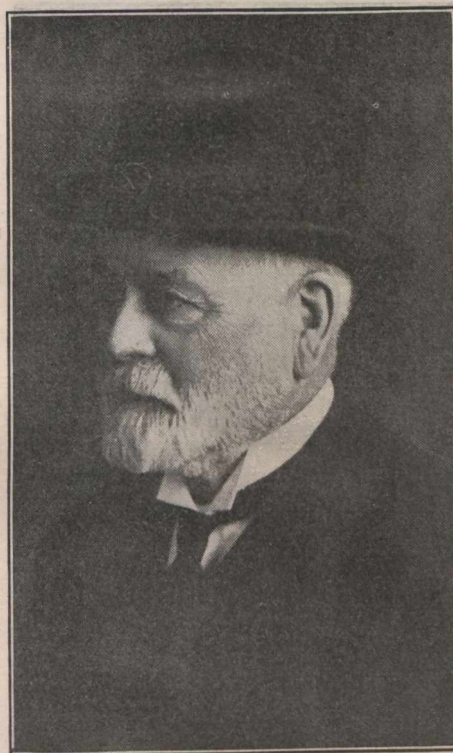
Julius Pearson Mader, who has been appointed General Freight and Passenger Agent, Algoma Eastern Ry., Sudbury, Ont., was born at Newmarket, Ont., and entered railway service in Sept., 1906, since when he has been, to Apr., 1909, clerk, G.T.R., Newmarket, Ont.; Apr. to Nov., 1909, clerk and car checker, G.T.R., Collingwood, Ont.; Nov., 1909, to July, 1910, Local Freight Office, G.T.R., North Bay, Ont.; July, 1910, to Mar., 1912, chief clerk to Division Freight Agent, C.P.R., North Bay, Ont.; Mar., 1912, to Jan., 1913, clerk, Freight Tariff Bureau, C.P.R., Montreal; Jan. to Dec., 1913, chief clerk to General Freight and Passenger Agent, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont.; Dec., 1913, to Dec., 1916, General Agent, A.C. & H.B.R. and Algoma Eastern Ry., Sudbury, Ont.

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

Hon. Robert Mackay, who died at Montreal, Dec. 21, aged 77, was connected with several transportation and allied companies. Among them were:—Montreal, Light, Heat & Power Co., Quebec Ry., Light, Heat & Power Co., Dominion Iron & Steel Co., Dominion Coal Co., Dominion Transport Co., St. Maurice Construction Co., Shedden Forwarding Co., Western Coal & Coke Co., Port Hood-

Richmond Coal & Ry. Co., Canada Cement Co., Canadian Pacific Ry., Bank of Montreal, Bell Telephone Co., Lake of the Woods Milling Co., Pacific Pass Coal Fields Co., Shawinigan Water & Power Co., etc. He was Chairman, Montreal Harbor Commissioners, from 1886 to 1907; President, Montreal Board of Trade, 1900-01. He was made a Senator in 1901.

J. A. DeWolfe, who has been appointed Trainmaster, Portage Division, Manitoba District, C.P.R., Winnipeg, was born at Woodstock, Ont., Aug. 31, 1884, and entered railway service July 10, 1899, since when he has been, to Apr. 16, 1900, stenographer to Locomotive Foreman, G.T.R., London, Ont.; Apr. 17, 1900, to May 12, 1903, not in railway service; May 13 to June 23, 1903, clerk to Car Foreman, C.P.R., Toronto; June 23, 1903, to May 22, 1905, clerk in Trainmaster and Superintendent's offices, C.P.R., London, Ont., and Toronto; May 22, 1905, to May 7, 1907, clerk to Manager of Construction,



Robert Kerr.

C.P.R., Toronto; May 7, 1907, to June 21, 1909, Secretary to General Manager, C.P.R., Montreal; June 23 to Aug. 24, 1909, assistant chief clerk, Second Vice President's office, C.P.R., Winnipeg; Aug. 24, 1909, to Dec. 31, 1914, chief clerk, Engineering Department, Western Lines, C.P.R., Winnipeg; Dec. 31, 1914, to Oct. 31, 1916, chief clerk to Vice President and General Manager, Western Lines, C.P.R., Winnipeg.

J. Mitchell Silliman, who has been appointed Resident Engineer, London Division, Ontario District, C.P.R., London, was born at Easton, Pa., Sept. 8, 1885, and graduated from Lafayette College, Easton, Pa., with the degree of C.E., in June, 1907, since when he has been, to Aug., 1907, leveller right of way survey, Atlantic Division, C.P.R.; Aug. to Dec., 1907, transit man, District 2, Atlantic Division, C.P.R.; Jan. to Apr., 1908, rodman, reconnaissance surveys, Lake Superior Division, C.P.R.; May, 1908, to Oct., 1909, transit man, District 1, Atlantic Division, C.P.R.; Nov., 1909, to Mar., 1910, transit man, District 1, Lake Superior Division,

C.P.R.; Mar., 1910, to Mar., 1911, transit man, District 3, Lake Superior Division, C.P.R.; Mar., 1911, to Sept., 1912, Resident Engineer, Construction Department, Guelph Jct.-Hamilton Line, C.P.R.; Sept., 1912, to Mar., 1915, Resident Engineer in charge of construction, Forsyth St. Branch, C.P.R., Montreal; Mar. to Dec., 1915, District Engineer of Construction in charge of Lake Erie & Northern Ry., Brantford, Ont.; Jan. 1 to Nov. 28, 1916, Resident Engineer, Laurentian Division, Quebec District, C.P.R., Montreal.

James Russell, who was appointed Vice President and General Manager, Minneapolis & St. Louis Rd., Minneapolis, Minn., recently, was born Feb., 1865, and commenced railway work in 1879 with the G.T.R., being employed as agent and operator until 1882 and in 1883 he worked as operator for the Chicago, St. Paul, Minneapolis & Omaha Rd., the Kansas Pacific Rd., and the Atchison, Topeka & Santa Fe Ry. From 1883 to 1887, he was operator and dispatcher, Canada Southern Ry. and Michigan Central Rd., and subsequently was dispatcher, chief dispatcher and Superintendent, successively, St. Paul, Minneapolis & Manitoba Ry., and Great Northern Ry. In 1903 he was appointed Superintendent, Missouri Pacific Rd., and in 1907 transferred in the same capacity to the Chicago, Burlington & Quincy Rd. From 1908 to Jan. 1, 1914, he was General Superintendent, Spokane, Portland & Seattle Rd., and from an. 1 to Apr. 1, 1914, was General Superintendent, Great Northern Ry., and then went to the Denver & Rio Grande Rd. as Assistant to the Vice President. Later on he became General Manager, which position he resigned to take up his present appointment.

Robert Kerr, formerly Passenger Traffic Manager, C.P.R., died at Toronto, Dec. 9. He was a son of Capt. Robert Kerr, a well known lake captain on the old Royal Mail and other lines, and who is still remembered in Toronto as commanding the Admiral, Gore, Burlington and Maple Leaf. He was born at Toronto, Aug. 23, 1845, and was educated at Upper Canada College, graduating in 1856. He served for a time in the regular U.S. army, Battery A, 2nd U.S. Artillery. He returned to Toronto in 1861, and was a member of No. 3 Company, Queen's Own Rifles. He entered railway service in 1866, since when he was, to 1879, warehouse clerk, etc., Northern Ry. of Canada; 1879, Through Freight Agent, same road; 1879 to 1884, General Freight and Passenger Agent, Northern & Northwestern Ry.; June 1, 1884, to Jan. 1, 1896, General Freight and Passenger Agent, Western and Pacific Divisions, C.P.R., Winnipeg; Jan. 1, 1896, to June, 1899, Traffic Manager, Lines West of Lake Superior, C.P.R.; June, 1899, to Sept., 1910, when he retired on superannuation, Passenger Traffic Manager, Montreal. The funeral took place at Toronto, Dec. 11, and was attended by a number of representatives of the C.P.R. and other transportation companies. The pall bearers were:—C. E. E. Ussher, Passenger Traffic Manager, C.P.R., Montreal; W. G. Annable, General Passenger Agent, Atlantic Service, Canadian Pacific Ocean Services, Ltd., Montreal; Wm. Davidson, Manager of Marlatt & Armstrong Co., Ltd., leather merchants, Montreal; David Henderson, barrister; P. d'Eyncourt Strickland, and W. Cecil Lee, Toronto.

Walter Reginald Baker, C.V.O., Secretary of the C.P.R. Co., and Assistant to the President, who has, at his own request, been relieved of his duties and placed on the retired list, and whose port-

rait appears in this issue, was born at York, Eng., May 25, 1852. From Nov., 1865, to Oct., 1872, he was with the Allan Line Steamship Co.; Nov., 1872, to Oct., 1873, Local Freight and Passenger Agent, Canada Central Ry., Ottawa; May, 1874, to July, 1877, Private Secretary and Comptroller to the Earl of Dufferin, Governor General; July, 1877, to Feb., 1881, Assistant Secretary, Treasury Board, Ottawa; Feb., 20, 1881, to Jan., 1882, Local Treasurer and Assistant to General Superintendent, Western Division, C.P.R., Winnipeg; Jan., 1882, to June, 1883, Purchasing Agent, Western Division, and Assistant to General Manager, C.P.R., Winnipeg; June, 1883, to Aug. 31, 1892, General Superintendent, Manitoba & Northwestern Ry., Portage la Prairie and Winnipeg; Sept. 1, 1892, to May, 1900, General Manager, Manitoba & Northwestern Ry., Winnipeg; May, 1900, to June, 1901, Executive Agent, C.P.R., Winnipeg; June, 1901, to Aug. 31, 1905, Assistant to Vice President, C.P.R., Montreal; Sept. 1, 1905, to Feb., 1908, Assistant to President, C.P.R., Montreal; Mar. 1, 1908, to Dec. 31, 1916, Assistant to President and Secretary to Company, C.P.R., Montreal. On leaving Winnipeg for Montreal in 1901 he was presented with a solid silver service by the business community "in recognition of the integrity, unflinching courtesy and great ability displayed by him as an official and as a public-spirited citizen." He had charge of the royal trains over the C.P.R. lines during the several visits of the Prince and Princess of Wales (now King George and Queen Mary), Prince Arthur of Connaught and Prince Fushimi, and of several tours of the Duke and Duchess of Connaught from 1912 to 1916, and was presented with handsome testimonials from each of these personages, as well as from the late King Edward VII., in acknowledgment of his and the company's services and attentions to the illustrious visitors. He was decorated with the 3rd class of the Order of the Sacred Treasurer by the Emperor of Japan, 1906; appointed an Esquire of the Order of St. John of Jerusalem, 1910; appointed Commander of the Royal Victorian Order, June, 1911. Married Jane Helen Cruice, daughter of the late R. W. Cruice, Ottawa, 1875 (deceased May, 1902); secondly, Belle Drysdale Paton, daughter of the late Andrew Paton, Sherbrooke, Que., Oct., 1907 (deceased June, 1908); thirdly, Elsa Dicke, Vienna, Austria, Dec., 1909. He is a member of the following clubs:—Mount Royal, Royal Montreal Golf, Montreal Jockey, Rideau, Ottawa Country, and Manitoba. He expects to go to England at an early date for a short visit and will probably, with Mrs. Baker, leave in March for Japan and China.

Grand Trunk Pacific Ry. Suit.—An action has been brought in a Manitoba Superior Court involving the Grand Trunk Pacific Ry., the G. T. P. Development Co., and the Transcontinental Townsite Co., and affecting the purchase of townsites and right of way for the G.T.P.Ry. branch lines in Saskatchewan and Alberta, and the obtaining of an area of land from the Dominion Government. The claims made amount to \$761,174.22, and there is a counterclaim of \$2,025,000.

T. McHattie, who resigned his position as Master Mechanic, Eastern Lines, G.T.R., Montreal, recently, on account of ill health, in remitting his current subscription, writes,—"The Railway and Marine World is always received with much pleasure, for the splendid information which it contains from month to month."

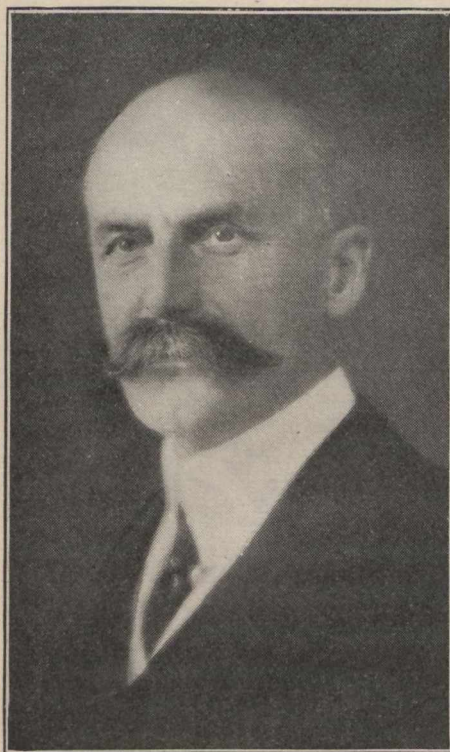
Freight and Passenger Traffic Notes.

The Pacific Steamship Co. has reduced the round trip fares between Victoria, B.C., and San Francisco, Cal., to \$32.50.

The C. P. R. on Dec. 10 put on a standard sleeping car between Montreal and Grand Mere, Que., leaving Montreal at 11.55 p.m. daily, and Grand Mere, at 7 p.m. weekdays, and 4.30 p.m. Sundays.

The Pacific Steamship Co., in order to relieve the freight situation in the Pacific coast, has increased its service by putting on two freight steamships on the run between Seattle, Wash., Victoria, B.C., and Californian ports.

On the Dominion Government Ry. to Hudson Bay a weekly train service with sleeping car accommodation is being operated from Pas, Man., to the end of track at Kettle Rapids, 332 miles, within 93 miles of the terminus at Port Nelson, on Hudson Bay.



Walter R. Baker, C.V.O.

The Canadian Northern Ry. has made some alterations in the dining car tariff on its trains. Club breakfasts will be served at 25c, 50c, 65c and 80c; luncheons at 50c, 70c, 80c, and \$1, and dinners at 50c, 75c, 85c, and \$1. An a la carte service is also given.

The C. P. R. proposes to feature Vancouver and the Pacific Northwest as a holiday resort both for summer and winter visitors. The tourist possibilities of this district were explained to the C.P.R. officials at the recent conference at Winnipeg by H. Cuthbert, Industrial and Publicity Commissioner, Victoria, B.C., and Secretary of the North Pacific Tourist Association.

The White Pass & Yukon Ry. has announced that for next season the fares for all round trip tourist trips will be raised as follows: To Atlin and return, from \$100 to \$110; to Dawson and return, from \$160 to \$170; to Fort Yukon and return, from \$200 to \$215; to Fairbanks and return, from \$250 to \$255. The excursion known as the Grand Tour, which includes a trip down the Yukon

and to St. Michael and Nome, will cost \$305, against \$300 this year.

The Pacific Great Eastern Ry. is carrying considerable quantities of produce, timber, etc., from points between Squamish and Clinton into Vancouver, B.C. Freight is carried to Squamish by train and thence by steamship to Vancouver. A recent statement is that during the summer and autumn of 1916 the traffic to Squamish for shipment covered 4,500 live stock, 100 cars of potatoes, 300 cars of hay, about 50 cars of beans, and numerous cars of timber for piles and other construction purposes.

Decision was given recently in a Montreal Court in the action of Dacosse against the G. T. R., dismissing the suit, which was to recover \$397 value of goods lost in transit between Montreal and Winnipeg. The plaintiff shipped some furniture by the G. T. R. from Montreal to Winnipeg, packing some articles valued at the amount claimed in the furniture. He claimed that during transit the goods had been lost or stolen. The defence was that the company has not been advised of goods having been packed in the furniture, and that they had been lost on one of the other lines over which they were routed.

The development of the Peace River country consequent upon the coming of a railway is shown by the fact there was shipped in from Edmonton, Alta., over the Edmonton, Dunvegan & British Columbia Ry. during the first year 40,000 tons of freight and that there was shipped out about 1,000,000 bush. of grain. In previous years, when the only means of shipment was by the Canadian Northern Ry. to Athabasca Landing, and thence by water and overland routes to Groward, Peace River Landing and other points, the average shipments inwards amounted to about 1,500 tons, and practically nothing but furs came out.

Victoria business men asked Esquimalt and Nanaimo Ry. officials recently to put on an evening freight train to Nanaimo, stating that the present day service unfairly handicaps shippers. H. E. Beasley, General Superintendent, informed the representatives of the Board of Trade, who brought the matter before him, that the traffic would not justify the putting on of an evening train, but arrangements had been made so that Nanaimo merchants could get their bills of lading at 8 a.m., so that they might get their freight delivered earlier than at present. During October, he stated, the amounts collected for freight carried on the present train averaged \$93.26 a day, of which the Nanaimo freight only averaged \$18.32 a day.

French Railway Earnings.—Recent reports concerning the state of French railways, which are being operated under government control, show that the earnings for August were \$26,037,732 against \$23,397,353 in Aug., 1915, and \$15,086,539 for Aug., 1914. The line with which these figures are concerned are the French State Railways, the Western Ry. of France, the Paris, Lyons & Mediterranean Ry., and the Paris & Orleans Ry. The Northern Ry. of France and the Eastern Ry. of France are chiefly in the territory which is, for the present, in German occupation.

The C. P. R. Colonization and Development Department has for its object the assisting of settlement on the land, and looking into the labor situation in the territory served by its lines. It is in charge of J. S. Dennis, Assistant to the President, and Wm. Pearce is Statistician.

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

Alberta & Great Waterways Ry.—Tracklaying was expected to be completed into Fort McMurray, Alta., Dec. 31. Track was laid up to that date from Carbondale, the junction point with the Edmonton, Dunvegan & British Columbia Ry., to mileage 174.5, and at the end of June, 1916, had been laid to mileage 203. All the steel necessary to lay the track into Fort McMurray, at approximately mileage 300, had been delivered in November, when all the company's available forces were set to work in an endeavor to get it laid by the end of the year. (July, 1916, pg. 281.)

Athabasca Northern Ry.—The Dominion Parliament is being asked to declare the company's corporate powers to be in full power and effect, and to extend the time fixed for the building of the projected railway. The company was incorporated in 1905 to build a railway from Edmonton, paralleling the North Saskatchewan River to Tp. 59, R. 19, W. of 5th Meridian, thence north easterly past Smoky Lake to Lac la Biche, and thence northerly to the Athabasca River at the junction with the Clearwater River (Jan. 1915, pg. 10.)

Cascade Scenic Ry.—We are officially advised that it is expected to start construction in the spring. The line will start from near the C.P.R. station at Banff, Alta., and will run along the valley of Forty Mile Creek to the base of Cascade Mountain, there ascending the direct slope of the mountain. Its length will be 2.5 miles. The rise from the base to the summit of the mountain is 5,290 ft., and as the slope distance is a little over 11,000 ft., the angle of elevation is practically 30 degrees and the gradient 50%. The section directly ascending the mountain will consist of 4 tangents of about 2,600 ft. each. The operating devices will be at the upper end of each of these tangents. The line will be a double track one, the rails being laid in concrete at certain points, and it will be operated by a system of balanced cars. T. R. Deacon, Winnipeg, is principally interested. (Dec., 1914, pg. 424.)

Application is being made to the Dominion Parliament to incorporate a company with this title to operate a scenic or funicular railway at Banff, Alta., or elsewhere in Canada as may be permitted. The railways to be run on rails or aerial cable or otherwise as may be desired and to be operated by steam, electricity, gasoline, water power or by such other means as may be most convenient or expedient. The company's office is to be at Winnipeg. Noran, Anderson & Guy, of Winnipeg, are solicitors for applicants.

Dominion Government Ry. to Hudson Bay.—The suspension of work on this railway from Pas to Port Nelson, Man., is merely the ordinary suspension for the winter months. Certain bridge work at Kettle Rapids will be gone on with during the winter. The nature and extent of the work for next year will not be decided upon until the spring, but it is generally anticipated that the line will be completed during the year.

Nothing definite has been decided, we are officially advised, as to the various terminal buildings to be erected at Pas. It is reported that the dock for ocean going steamships at Port Nelson has been completed. It is 3,000 ft. from the shore line, with which it is connected by a steel trestle over which trains will be run. Considerable progress was made with the

other harbor works during the past year. (Dec., 1916, pg. 484.)

Edmonton, Dunvegan & British Columbia Ry.—Ballasting and other work on the section from McLennan to Spirit River and on the branch from Spirit River to Grande Prairie is reported to have been finally completed.

The grading from Spirit River to Pouce Coupee, 54 miles, is reported completed. No track has been laid, but it is expected to begin this work early in the spring.

The line as originally projected was to effect a junction with the Pacific Great Eastern Ry. at the Alberta-British Columbia boundary. This P.G.E.R. is not yet completed to Fort George, there being a gap between Dundarave and Squamish at the western end of the line, and between Clinton and Fort George. Preliminary surveys have been made for the line between Fort George and the Alberta-British Columbia boundary. J. A. McArthur, President of the E.D. & B.C.R., was in Victoria Dec. 1, conferring with the B.C. Government on railway matters, and it is reported that some agreement may be reached under which the routing of the projected connection between the E.D. & B.C.R. with the P.G.E.R. will be worked out from Alberta rather than from Fort George, and that the E.D. & B.C.R. will be the constructing line. (Nov., 1915, pg. 447.)

Esquimalt & Nanaimo Ry.—The Victoria City Council has decided to eliminate the E. & N.R. from the negotiation in connection with the Johnson St. bridge matter. A general traffic bridge will be built by the British Columbia Government at the joint cost of the province and the city. (Dec., 1916, pg. 484.)

Essex Terminal Ry.—The Board of Railway Commissioners has authorized the opening for traffic of the company's line through a portion of Windsor, Ont., and through Sandwich to the north side of Titcombe Road, Ojibway, mileage 3.25 to 8.58. This piece of line was built in 1915, but was not approved by the board for traffic until quite recently.

We are officially advised that the company may arrange to build an additional 2 miles of main line track during this year. (June, 1916, pg. 222.)

Grand Lake Ry. & Transportation Co.—The Quebec Legislature has incorporated a company with this title to build tramways to connect Christopherson Lake, on Bell River, and Lake Lamy, with navigable water on the Ottawa River and to operate steam and other vessels in connection therewith. (Nov., 1916, pg. 447.)

Grand Trunk Ry.—A large amount of work has been done in the vicinity of the Victoria Jubilee bridge, Montreal, in retaining land for yard purposes. It has been going on for many years, and is a slow process, but when completed, will give some much needed space for additional freight tracks.

Negotiations are still in progress between the City of Brantford, Ont., and the Board of Railway Commissioners as to the cost of the subway under the G. T. R., on St. Paul's Ave.

The new station erected at Port Colborne, Ont., is a brick structure over 100 ft. long, laid out in the most modern manner. New freight sheds and offices have also been erected and are in use. The yard facilities have been considerably improved.

A new classification yard has been practically completed at Pontiac, Mich., with a capacity of 456 cars. A new steel bridge on concrete abutments is also being erected to carry a double track. In connection with this new yard work there will be laid 2.08 miles of new second track.

The company is laying 7 miles of new second track easterly from Milwaukee Jct., with a new receiving, departure, and classification yard, with a capacity of 2,040 cars. All the grading is practically completed and track has been laid to accommodate 600 cars.

Railway and Marine World for Oct. 1916, gave on page 400 some particulars of the new G. T. R. shops being built at Port Huron, Mich., to replace those burned in the winter of 1914-15. The buildings will cover a total area of 55 acres, a considerable area being devoted to the trackage necessary and are estimated to cost \$700,000. Power for the operation and lighting of the plant in the various buildings will be supplied by six 150 h.p. boilers, serving double turbo steam generating units of 300 k.w. (Dec., 1916, pg. 484.)

Greater Winnipeg Water District.—Tenders are under consideration for the purchase of steel rails up to 60 lb. to the yard, sufficient to lay about 10 miles of track.

The Greater Winnipeg Water District Commission, which has built a steam railway along the aqueduct right of way from Transcona to Indian Bay, Shoal Lake, Man., is reported to be contemplating building an electric railway from Provencher Bridge, via St. Boniface, Notre Dame and Mission Road, to Transcona.

Another statement is reported to have been made to the effect that the Greater Winnipeg Water District Commission was considering a project to build an electric railway from Provencher bridge through St. Boniface to Transcona. (Oct., 1915, p. 404.)

Grenville, Harrington & Northern Ry.—The Quebec Legislature has under consideration the incorporation of a company with this title to build a railway from Grenville to Harrington East, and northerly in Argenteuil County.

Great Northern Ry.—Application is being made to the Dominion Parliament by the Vancouver, Victoria & Eastern Ry. & Navigation Co., a British Columbia subsidiary of the G.N.R., for an act confirming an agreement with the Canadian Northern Pacific Ry. for the joint use of the V.V. & E.R. & N. Co.'s tracks between New Westminster and Vancouver, and for the ratification of a second agreement with the same company for the joint use of the C.N.P.R. tracks between Hope and Sumas Landing, B.C.

The line which the V.V. & E.R. & N. Co. put in operation recently between Sumas Landing and Connor, B.C., is 9.32 miles long. Of this 8.19 miles was built in 1912-13, and the remaining 1.13 miles was completed in 1916.

Plans have been filed with the Vancouver City Council for the proposed freight sheds at False Creek. These show buildings of brick and timber construction with a 2 storey office building 40x100 ft. facing on Port Lane. A cold storage plant will be located at one end of the shed. The total estimated cost of the buildings is said to be about \$125,000.

It was expected that the station build-

ing being ere... false Creek flats, Vancouver... for joint use with the 1... Ry., would be completed... entire building was repo... to be 85% completed. T... laying in the station and yard has been in progress since that date. There will be in all 9 miles of tracks; 7 lines being laid in the station out of 11 proposed to be laid; 6 freight house tracks, 1 industry track, and 11 car tracks. We were officially advised Dec. 13, that the plastering of the station was being gone on with, and that the brick work of the G. N. R. freight shed was well under way while the foundations for the Northern Pacific Ry. freight shed had been completed. The power house has also been completed. These freight sheds, local reports state, are each 600 x 50 ft., including a 2 story brick office building.

We are also officially advised that plans are being prepared for a 15 stall locomotive house, a machine shop and boiler house 50 x 160 ft., store house 30 x 73 ft., and an oil house 20 x 36 ft. F. L. Townley, Vancouver, is the architect. The grading and filling of the yard space on the company's area of the flats is expected to be completed by April. The transfer of the various departments of the company's business from the present offices to the new building will be made during January. (Dec. 1916, pg. 484).

High River & Hudson Bay Ry. — A press report states that capital has been secured in England for starting upon this projected railway. Surveys have been made within the last two or three years, and the Department of Railways approved part of the route in the vicinity of High River in 1915. The company was originally incorporated in 1910, and it has secured extensions of time for construction from time to time from the Alberta Legislature. The line as originally projected was to run from the western boundary of Alberta at the Elk and Sheep River passes, thence down Sheep River to Black Diamond and into Calgary. From Calgary it was to run east to High River, Vulcan, Bow City, and thence to the eastern boundary of the Province in Township 23. The company has also secured incorporation from the Dominion Parliament as the High River, Saskatchewan & Hudson Bay Ry. Co., with power to build not only in Alberta, but in Saskatchewan and on to Hudson Bay. (June, 1916, pg. 222.)

Interprovincial & James Bay Ry.—The Dominion Parliament is being asked to extend the time for the building of this projected railway from the C.P.R. branch line from Mattawa, now terminating at Lumsden's Mills, Que., to or towards the Des Quinze River. Pringle, Thompson, Burgess & Cote, Ottawa, are solicitors for applicants.

The Quebec, Montreal & Southern Ry. has, we are officially advised, built a new locomotive house at St. Lambert, Que., to replace the one destroyed by fire at Longueuil. The new house is a two stall one, 70 ft. deep, 27 ft. across the front and 54 ft. at the back. It is of frame construction, and was expected to be completed by Dec. 25. (Nov., 1916, pg. 447.)

Michigan Central Rd.—During 1916 the company laid a number of new sidings and passing tracks on its Canadian lines. (Aug., 1916, pg. 317.)

The Minneapolis, St. Paul & Sault Ste. Marie Ry. Sunbrose branch at present terminates at Whitetail, Mont., and a press report states that it is proposed to extend it to Havre early in the spring. President Pennington was through the district recently and local reports state

that it is proposed to build a line from Havre northerly to connect with the C.P.R. Wayburn-Lethbridge line, either at Pakowki or Foremost, Alta. The company now has a line connecting at Emerson, Man., and another connecting at Portal, Sask.

Ontario Niagara Connecting Bridge Co. —A press report states that the bridge proposed to be built by this company across the Niagara River near Niagara Falls, Ont., will be of steel on concrete abutments, and will provide accommodation for steam and electric railways, general vehicle traffic and for foot passengers. The estimated cost is \$1,000,000. (May, 1916, pg. 182.)

Pacific Great Eastern Ry.—In connection with the harbor improvement scheme for Vancouver, which includes the building of a railway to encompass Burrard Inlet, it is reported that it is proposed to acquire the P.G.E.R. line along the north shore as far west as opposite the First Narrows, the price to be paid to be the cost to the railway company.

The North Vancouver City Council is consulting with the Vancouver City Council with a view to taking concerted action to form a plan to compel the P.G.E.R. to complete the construction of the line from North Vancouver to Squamish at an early date. The line has been built from North Vancouver to Dundarave a few miles out and local trains are being operated over it.

We are officially advised that 16½ miles of track was laid during 1916, northerly from Clinton, B.C. The company has on hand sufficient steel to take care of its immediate tracklaying requirements, and has contracted for delivery during the summer of 1917 of 19,500 tons of 60 and 70 lb. steel rails with the necessary angle bars, bolts and spikes for the continuance of tracklaying northerly to Prince George, where a junction will be effected with the Grand Trunk Pacific Ry.

The company has no branch lines under construction or projected at present. (Dec., 1916, pg. 484.)

Pacific, Peace River & Athabasca Ry.—A Vancouver press report states that development work is about to be started on a large coal area in the Groundhog River district of northern British Columbia, and that in the spring the construction of a railway from the coal area down the Naas River valley to Nasoga Bay, about 50 miles north of Prince Rupert, will be started. Lord Rhondda is the principal promoter. This projected line would appear to be a part of the P.P.R. & A.R. project, which is represented in Vancouver by C. K. Law. (May, 1916, pg. 183.)

Pere Marquette Rd.—The company owning the sit selected for the new station in Sarnia, Ont., for the P.M.R. has refused to sell, and preparations are being made for expropriation proceedings. The plans for the building are ready, and the Sarnia St. Ry. has extended its line to the site. (Oct., 1916, pg. 401.)

Port Arthur, Ont.—An agreement has been signed between the Port Arthur, Ont., City Council and James Richardson & Sons, Ltd., respecting the building of an elevator there. The city is to secure a right of way from the wagon works for a spur track to the elevator, and to grant permission to the Canadian Northern Ry. and the C.P.R. to lay tracks to serve this and any other industry that may locate along the spur.

Quebec & Saguenay Ry.—It is reported that the work being done towards the completion of this railway is being carried out by the company, under the super-

vision of Gordon Grant, Chief Engineer, National Transcontinental Ry. This is being done, it is stated, in order that the company may be enabled to give a clear title to the Dominion Government. (Dec., 1916, pg. 484.)

Roberval-Saguenay Ry. — We are officially advised that the only construction in view is the electrification of the yards at Port Alfred, near Bagotville, Que. They are situated on the Ha Ha Bay Ry., which has been incorporated with the R.-S.R. (Apr., 1916, p. 139.)

Toronto Terminals Ry. Co.—The Toronto City Architect, on Dec. 9, granted a permit for the erection of the new union station on Front St. The permit is for the main building and east wing between Bay and York Sts., the estimated cost being \$2,800,000. The total estimated cost of the completed building is \$3,400,000. This is the largest permit ever issued in Toronto.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	\$3,834,200	\$2,636,800	\$1,197,400	\$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
Sept.	3,187,900	2,455,300	732,600	177,300
Oct.	3,716,800	2,496,500	1,220,300	436,700
	\$14,423,800	\$10,201,500	\$4,222,300	\$1,111,300
Incr	\$4,043,000	\$2,931,700	\$1,111,300	.....

Approximate earnings for Nov., \$3,722,300, and for two weeks to Dec. 14, \$1,810,500, against \$3,535,400 and \$1,654,100 for same periods respectively in 1914.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	\$12,247,440.39	\$8,230,348.66	\$4,017,091.73	\$1,216,688.61
Aug.	13,570,467.31	7,802,680.46	5,467,786.85	2,025,472.13
Sept.	12,134,159.96	7,004,400.80	5,129,759.16	384,458.52
Oct.	13,237,086.36	7,562,346.99	5,674,739.37	904,694.78
	\$50,899,154.02	\$30,599,776.91	\$20,299,377.11	\$2,721,924.48
Incr.	\$10,475,947.14	\$7,754,022.66	\$2,721,924.48	.....

Grand Trunk Railway Earnings.

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

	1916.	1915.
Earnings	\$4,618,000	\$3,591,305
Expenses	3,270,000	2,527,500
Net earnings	\$1,348,000	\$1,063,805
Grand Trunk Western Railway.		
Earnings	\$ 767,300	\$ 781,944
Expenses	650,300	562,392
Net earnings	\$ 117,000	\$ 219,552
Detroit, Grand Haven & Milwaukee Ry.		
Earnings	\$ 275,000	\$ 293,442
Expenses	295,650	212,887
Net earnings	\$ 20,650*	\$ 80,555

Approximate earnings for November, \$5,343,653, and for two weeks ended Dec. 14, \$2,355,174, against \$4,190,871 and \$2,035,759, for same periods respectively in 1915.

Grand Trunk Pacific Railway Earnings.

The approximate earnings for the Prairie Section, 916 miles, for Oct., were \$566,503, against \$973,581; and from July 1 to Oct. 31, \$1,643,008, against \$1,858,557 for same period 1915, and for three weeks ended Nov. 21, \$375,719, against \$591,472 for same period 1915.

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Northern Colonization Ry.—The Quebec Legislature has ratified an exchange of lands with the company. This measure affects the lands originally granted by the Province as a subsidy in aid of the building of the railway, which is now part of the C.P.R. system.

Track Section Prize Competition on Eastern Lines, Canadian Pacific Railway.

For the past four years an annual track section prize competition has been carried out on the Eastern Lines, C.P.R., which has aroused a healthy spirit of rivalry and keen competition among the officers and section forces of the different divisions and districts. Sixty-two prizes are awarded in the competition, as follows:—A General Manager's prize to the foreman having done the best season's work on Eastern Lines. Four General Superintendent's prizes, to the foreman on each district who has done the best season's work, exclusive of the winner of the General Manager's prize. Fourteen Division Superintendent's prizes, to the foreman on each division who has done the best season's work, exclusive of winners of higher prizes. Forty-three Roadmaster's prizes, to the foreman on each Roadmaster's territory who has done the best season's work, exclusive of winners of higher prizes.

Under this system no man can win more than one prize, and all foremen have an equal chance, as the quality of the work done throughout the season is the deciding factor, and not the actual physical condition of the section at the end of the season. The basis on which the sections are judged is entirely efficiency, and careful consideration is given throughout the season to the condition of, and work done on, ditches, gauge, spiking, line, surface, bolts, rail wear, so far as it can be controlled by the section forces, switches, sidings, right of way and station grounds, track signs, cattle guards and fences. The amount of work done and the hours of labor put in, both by regular force and extra gang, are also carefully considered, and the foreman accomplishing the best work with the least amount of labor—the physical condition of the section, as to grades, alignment, drainage, and character of roadbed being taken into consideration—wins the first prize.

The number of hours of regular labor and the number of hours of extra labor on the section are figured against the number of ties renewed, tie plates installed or changed, rails changed over on curves and ditching done, etc. The amount of track handled, right of way, spikes and bolts is fairly uniform on all sections, so that the condition with respect to these items at the end of the season is usually a criterion of the amount and quality of the work done thereon throughout the season. Where special conditions affect such work they are taken into consideration. Some idea of the care exercised in judging a foreman's work can be formed by following the work in connection with the selection of a prize section. Toward the end of the season, on each of the 43 roadmasters' territories, a section is picked out as the most deserving in point of work done during the season with the material and labor available. These are carefully inspected by the Superintendent and Resident Engineer, who select the best one on each district for inspection by the General Superintendent and Division Engineer. All divisions of a district are covered by these two officers, and the section selected which they consider eligible for the General Manager's prize. The judging for the General Manager's prize is done personally by the General Manager, the Engineer, Maintenance of Way, the Assistant En-

gineer, Maintenance of Way, and district officers.

The winner of the General Manager's prize for 1916 is Foreman Allan King, Section 8, Shogomoc Subdivision, a branch line on the New Brunswick District. The winners of the General Superintendents' prizes are as follows:—New Brunswick District, Foreman O'Maillet, Section 15, Moosehead Subdivision. Quebec District, Foreman O. Tremblay, Section 7, Drummondville Subdivision. Ontario District, Foreman J. McMinn, Section 10, MacTier Subdivision. Algoma District, Foreman A. Raiche, Section 13, Cartier Subdivision.

Alaska Railway Construction Progress.

The United States Interior Department reports the following progress in the construction of the new government railways in Alaska up to Oct. 1:—During the present year, grading has been completed on the 38 mi. branch to the Matanuska coal field from Matanuska Jct., a point 36 mi. northeasterly from Anchorage Jct., a point on Cook Inlet, where construction began a year ago, and rails are being laid. It is anticipated that the branch will be completed before the end of the open season. At Moose Creek, a point on the branch line, about 12 mi. from Matanuska Jct., a coal mine has been opened, and coal is being taken out for the use of the railway and the town of Anchorage. Clearing and grading are under way on other portions of the line, particularly at points northward from Matanuska Jct., southerly from Anchorage toward Turnagain Arm of Cook Inlet and in the vicinity of Talkeetna (the junction of the Talkeetna and Susitna River about 100 mi. north of Anchorage).

The heaviest work to be encountered on the line is the hard rock cliffs along Turnagain Arm. Blasting and excavation for line here will be actively pursued during the winter. The Alaska Northern Ry., extending from Seward to Kern Creek, 71 mi., is being rehabilitated through and put into condition to haul construction material for the work along Turnagain Arm between Kern Creek and Anchorage. Clearing and grading are under way on the northern end of the main line in the vicinity of the crossing of the Tanana River at Nenana—the aim being to connect the Fairbanks mining region with the Nenana coal fields (a distance of 110 mi.) as early as possible. By the end of the present working season it is anticipated that at least 85 mi. of new construction will have been completed.

A recent press dispatch from Seward, Alaska., says:—Delays in construction will prevent the completion of the government railways between Seward and Fairbanks before 1920 or 1921, instead of 1918 as contemplated, Capt. F. Mears, of the Alaska Railroad Commission, said here to-day before departing for Washington, D.C., where he will make his report. The tracks along the Turnagain arm, between Seward and Anchorage will probably not be completed before 1918 instead of 1917. Rough weather and difficulties in obtaining supplies are responsible for the delay. (Oct., 1916, pg. 400.)

Canadian Northern Railway Construction, Betterments, Etc.

Montreal Tunnel and Terminal Co.—Work has been started on the "cut" for the erection of the Canadian Northern Ry. station in Montreal. This cut will extend from Cathcart St. on the north to Lagachetiere St. on the south, and from Mansfield St. on the west to St. Monique St. on the east. The work is being gone on with on Dorchester St., between Mansfield and St. Monique Sts., tramway service being temporarily suspended. The cut at this point will be 170 ft. wide and 50 ft. deep, which will be covered with a steel trestle bridge, with a concrete deck on which a double track car line will be laid.

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the opening for freight traffic of the line through Arundel, Ponsonby, and Amherst townships, Argenteuil and Ottawa counties, Que., mileage 0 to 9.57. This is the recently complete line from Arundel to Kaolin.

Toronto-Hamilton-Niagara line.—A route map has been filed with the Railways Department at Ottawa for a line from Toronto to Hamilton and thence to Thorold, Ont. The object is to secure a right of way for the line as between Bronte and Thorold, 44 miles. The Board of Railway Commissioners' approval has been given for sections of the route, between Toronto and Bronte, on the plans for the actual location of the line. The plans filed show a route along the Toronto and Niagara Co.'s power line.

Canadian Northern Ry.—A press report states that the company proposes to build a new station in Fort William, Ont., early in the summer. Two sites are said to be under consideration.

Canadian Northern Pacific Ry.—There has been deposited with the Public Works Department at Ottawa plan and description of the site and elevation of a proposed railway bridge across the South Thompson River at Kamloops.

The British Columbia Minister of Railways has approved of the company's plans for a temporary frame trestle over the British Columbia Electric Ry. at station 157+94, mileage 2.7, the plan having been approved by the B. C. E. R.

Vancouver Terminals.—Sir William Mackenzie, President, and M. H. MacLeod, General Manager and Chief Engineer, arrived in Vancouver, Dec. 12, to deal with a number of matters affecting the company's interests. They met the Mayor and city council to discuss the erection of the sea wall, the hotel, and other matters connected with the development of the False Creek terminals project. The company desires to secure an extension of time for carrying out the sea wall work, but the council wants it to be gone on with and completed within the time originally specified. Sir William is reported to have stated that the work would be resumed as soon as he had an opportunity of verifying certain matters. So far as the hotel site was concerned, Sir William stated that under present circumstances it would not be wise to go on with the erection of a large new hotel in the city. The company would prefer to build on its own property or on property near the same ground acquired from the city. The company would put up a better building on its own site than the one called for by the agreement. The terms of the

agreement would be carried out, but he thought there was a just ground for granting an extension of time.

Sir William Mackenzie and Mr. MacLeod met the New Westminster City Council, Dec. 14, to discuss matters affecting the company's interests in that city. In the course of an interview he is reported to have said the new car shops at Port Mann would be opened about Feb. 1.

Lines on Vancouver Island.—D. O. Lewis, District Engineer, in charge of construction of lines on Vancouver Island, is reported as stating, Nov. 30, that the line from Patricia Bay to Victoria was ready, and traffic could be operated over it at any time.

Sir William Mackenzie and General Manager MacLeod, were in Victoria, Dec. 12, and made a trip of inspection over the line. Sir William said the line would be opened for traffic as early as possible; the electric motor car which would be used on the line would not be taken over from Port Mann until the ferry slip at Patricia Bay was finished. The line for through traffic from the mainland would be opened after the arrival of the car ferry from Quebec, but whether the Victoria-Patricia Bay line would be opened before that time would depend upon what local traffic could be obtained. (Dec. 1916, pg. 490.)

Greater Winnipeg Water District Railway Construction.

W. G. Chace, M. Can. Soc. C. E., read a paper on the aqueduct for the Greater Winnipeg Water District before the Canadian Society of Civil Engineers recently. The water supply is to be obtained from Indian Bay, Shoal Lake, a branch of Lake of the Woods. The distance being about 97 miles. The right of way, 300 feet wide (except for the easterly 12 miles which is 500 ft. wide) was cleared by contract in the winter and early spring of 1914. A standard gauge railway was constructed 40 ft. from the south boundary of the right of way during 1914 at a total cost of \$1,325,000. The construction of the railway presented no unusual difficulties, and was carried out with such dispatch that trains were operating over the whole of it in Jan. 1915. The equipment consists of four 60-ton mozul locos, twenty-five 16-yard dump steel cars (now under contract), 20 flat cars, 10 box cars, 3 cabooses and 2 passenger cars. Additional equipment is being purchased.

The road, which is operated by the Greater Winnipeg Water District Commissioners, is connected with the Paddington transfer yard, meeting there all the railways running into Winnipeg, so that contractors' shipments can be made direct to their camps without reloading. Railway headquarters have been established at Deacon, where the operating staff is located, and where a machine shop, forge shop, and locomotive shed have been erected. A station building containing offices for the operating department and for one of the division engineers has also been erected at this point, as well as a cement shed, pumping plant, coal dock, oil house, camp buildings and electric light plant. Nine sidings and five 12,000-gallon water tanks have been located at nearly equidistant

points along the line. A telephone line has also been erected from end to end of the right of way, which is used both for train dispatching and for communication between the division engineers and headquarters at Winnipeg. A circuit for use of one of the contractors has also been erected on the District's poles.

The London and Port Stanley Railway and the G.T.R.

In the London & Port Stanley Ry.'s early days an agreement was made with the then Great Western Ry under which the L. & P.S.R. was to have the use of the G.W.R. station at London, Ont., and that the G.W.R. agents should sell tickets and check L. & P.S.R. passengers' baggage in the same way as for G.W.R. passengers. The agreement was carried out by the G.W.R. and its successor, the G.T.R., until the electrification of the L. & P.S.R. The London Railway Commission, which now operates the L. & P.S.R., under the new order of things, has applied to the Board of Railway Commissioners for an order directing the G.T.R. to carry out the original agreement, which is dated April 25, 1870. The commissioners reserved judgment, after refusing the G.T.R. counsel's application to have the matter settled in the courts, on the ground that the commission has no jurisdiction over an agreement affecting the working of two railway companies.

Grain Inspection at Western Points.

The following figures, compiled by the Department of Trade and Commerce, show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division, for November, and for three months ended Nov. 30, compared with those inspected for three months ended Nov. 30, 1915.

	Nov. 1916	3 months to Nov. 30, 1915	3 months to Nov. 30, 1915
C. P. R.	21,067	48,189	80,018
C. P. R., Calgary ..	847	1,708	1,517
C. N. R.	8,908	23,964	39,487
G. N. R., Duluth ..	128	538	2,043
G. T. P. R.	4,697	9,172	19,504
Totals	35,647	83,571	142,569

Mail Transportation on U.S. Railways.

—The U.S. Postmaster General's annual report, issued recently, says,—"For many years the department has brought to the attention of Congress the necessity for a change in the basis of compensating railways for carrying the mails, asserting that the then existing basis of pay according to weight was inequitable and unjust, resulting in cases of both overpayment and underpayment to certain railways, and which in the aggregate resulted in the payment by the Government of an excessive sum for this service. The department will, on Jan. 1, file with the Interstate Commerce Commission its comprehensive plan of service, which will embody a recommendation looking to a reduction of the rates but at the same time assure to the railways a just and adequate compensation for the service performed." As a matter of fact, they have repeatedly shown that the compensation has been wholly inadequate.

F. W. Peters, General Superintendent, C.P.R., Vancouver, B.C., received a letter recently from Portland, Ore., asking for forgiveness of a man who stole a ride on a C.P.R. train some years ago. The writer did not enclose the price of the ride.

Transportation Appointments Throughout Canada.

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

Algoma Central and Hudson Bay Ry.—Following the termination of the receivership, the following appointments have been made:

R. HOME SMITH, Toronto, has been appointed President;

G. A. MONTGOMERY, heretofore General Superintendent, has been appointed Vice President and General Manager. Office, Sault Ste. Marie, Ont.;

R. S. McCORMICK, Chief Engineer, has also been appointed Superintendent, vice G. A. Montgomery, promoted. Office, Sault Ste. Marie, Ont.;

A. SENIOR has been appointed Trainmaster, Sault Ste. Marie, Ont., vice T. F. Rahilly, resigned.

None of the above mentioned officials has jurisdiction on the Algoma Eastern Ry., which has been placed under separate management.

Following is a list of other officials, all with offices at Sault Ste. Marie, Ont., except where otherwise stated: Secretary, A. TAYLOR, Toronto; Comptroller and Treasurer, I. L. GODFREY; Assistant Comptroller and Treasurer, E. B. BARBER; General Freight and Passenger Agent, H. J. HERROLD; Purchasing Agent and Chief Storekeeper, F. W. ACHESON; Master Mechanic, T. FRASER; Locomotive Foreman, H. D. BARLOW; Car Foreman, C. ROSE; Roadmaster, O. AUBIN; Roadmaster, D. A. McINNIS, Franz, Ont.

Algoma Eastern Ry.—Following the termination of the Algoma Central and Hudson Bay Ry. receivership the man-which was formerly under A. C. & H. B. R. officials, has been separated, there being no physical connection between the two roads. The following appointments have been made:—President, W. C. FRANZ, Sault Ste. Marie, Ont.; Vice President, J. FRATER TAYLOR, Sault Ste. Marie, Ont.; Secretary, A. TAYLOR, Toronto; Treasurer, E. W. SHELL, Sault Ste. Marie, Ont.; Comptroller T. F. RAHILLY, heretofore Trainmaster, A. C. & H. B. R., Sault Ste. Marie, Ont., Sudbury, Ont.; General Manager, D. F. THOMAS, heretofore Superintendent, Trans St. Marys Traction Co., Sault Ste. Marie, Ont., Sudbury, Ont.; Superintendent, A. J. DONEGAN, Sudbury, Ont.; J. P. MADER, General Agent, Sudbury, Ont.

Canadian Government Railways.—W. B. JOHNSON has been appointed Master Mechanic, District 6, Intercolonial Division. Office, Truro, N.S.

Canadian Northern Ry.—WM. PHILIPS, Freight Traffic Manager, Eastern Lines, Toronto, has resigned to enter the Cunard Steamship Co.'s service.

V. NICHOLSON, heretofore chief clerk to City Agent, Kingston, Ont., has been appointed City Ticket and Express Agent, Belleville, Ont.

C. E. JONES has been appointed Supervisor of Fuel, Eastern Lines, in charge of distribution and accounting of all fuel, for locomotives, shops, stations, water stations and all other purposes. All reports on fuel consumption are sent direct to him and he reports to the General Manager. Office, Toronto.

R. R. COOPER, heretofore ticket clerk, Union Station, Toronto, has been appointed Ticket Agent there, vice A. R. Burk, who has enlisted with the 255th

Battalion, Queen's Own Rifles, for overseas service.

W. M. HOOD, heretofore Travelling Freight and Passenger Agent, North Bay, Ont., has been appointed District Freight and Passenger Agent, Sudbury, Ont.

W. J. COUGHLIN has been appointed Assistant Supervisor of Bridges and Buildings, between Port Arthur and Hornepayne, Ont.

B. L. RUNKLE has been appointed Track Supervisor, with jurisdiction from Longue Lac to Fire River, Ont. Office, Hornepayne, Ont.

P. VICKS has been appointed Track Supervisor, with jurisdiction from Fire River to Capreol, Ont., vice J. Quinlan, transferred. Office, Foleyat, Ont.

J. QUINLAN, heretofore Track Supervisor, Fire River to Capreol, Foleyat, Ont., has been appointed Track Supervisor, with jurisdiction from Port Arthur to Longue Lac, Ont., vice W. M. Jacklin, appointed Inspector of Maintenance of Way, Toronto, as announced in our last issue. Office, Port Arthur, Ont.

J. A. ROSS has been appointed station ticket agent, Saskatoon, Sask., vice W. E. Presscott, resigned.

Canadian Northern Transfer Co.—D. H. MURRAY has been appointed acting Superintendent, vice R. A. C. Young on active service. Office, Montreal.

Canadian Pacific Ry.—E. ALEXANDER, heretofore one of the two assistant secretaries of the company, has been appointed Secretary, vice W. R. Baker, C.V.O., who, at his own request, has been relieved of his duties and placed on the retired list. Office, Montreal.

G. W. CURTIS, Industrial Agent, Eastern Lines, Montreal, having enlisted in the Royal Flying Corps, any communications or actions in connection with the company's industrial work are being attended to by H. P. TIMMERMAN, Industrial Commissioner, or by one of the traffic or operating officials immediately in touch with the situation.

K. D. JOSEPH, heretofore acting Assistant Superintendent, Bruce Division, Ontario District, Toronto, has been appointed Trainmaster, McAdam, N.B. This is a new position occasioned by winter traffic to the seaboard.

G. C. GAHAN, heretofore chief clerk, General Auditor's Office, has been appointed Assistant General Auditor, Montreal.

F. BENDER has been appointed acting Engineer of Tests, Angus Shops, Montreal, vice G. St. G. Sproule, loaned to the Imperial Munitions Board.

M. KELLY, heretofore Resident Engineer, Toronto Terminals, has been appointed Resident Engineer, Farnham Division, Quebec District, vice D. A. Wallace, resigned. Office, Farnham, Que.

J. H. REEDER, heretofore Resident Engineer, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Resident Engineer, Smiths Falls Division, Quebec District, vice T. B. Ballantyne, transferred. Office, Smiths Falls, Ont.

E. A. CAMPBELL, heretofore Freight Agent, Ottawa, Ont., has been appointed Assistant Superintendent, Smiths Falls Division, Quebec District. Office, Smiths Falls, Ont.

F. P. TINKER has been appointed District Freight Agent, Ottawa, Ont., vice G. P. Ruickbie, transferred.

W. COULTER, heretofore Assistant Superintendent, Smiths Falls Division,

Quebec District, Smiths Falls, Ont., has been appointed Freight Agent, Ottawa, Ont.

L. G. ROGERS, heretofore Assistant Superintendent, Trenton Division, Ontario District, Trenton, has been appointed Yardmaster there.

D. O. WOOD, General Freight Agent for Ontario, Allan Line Steamship Co., Toronto, has also been appointed Assistant Export and Import Agent, C.P.R., vice W. C. Duncan, loaned to the acting Director of Overseas Transport for the balance of the war. Office, C.P.R. Building, Toronto.

J. A. TOBIN, heretofore Assistant Superintendent, London Division, Ontario District, London, has been appointed Assistant Superintendent, Bruce Division, Ontario District, vice K. D. Joseph, transferred. Office, Toronto.

F. S. ROSSETER, heretofore Resident Engineer, London, Ont., has been appointed Assistant Superintendent, London Division, Ontario District, vice J. A. Tobin, transferred. Office, London, Ont.

J. M. SILLIMAN, heretofore Resident Engineer, Laurentian Division, Quebec District, Montreal, has been appointed Resident Engineer, London Division, Ontario District, vice F. S. Rosseter, transferred. Office, London.

T. B. BALLANTYNE, heretofore Resident Engineer, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Resident Engineer, Schreiber Division, Algoma District, vice J. H. Reeder, transferred. Office, Schreiber, Ont.

J. A. DeWOLFE, heretofore chief clerk to Vice President and General Manager, Western Lines, Winnipeg, has been appointed Trainmaster, Portage Division, Manitoba District. Office, Winnipeg.

A. J. SHULMAN, heretofore Travelling Passenger Agent, Edmonton, Alta., has been appointed Travelling Passenger Agent, Alberta District. Office, Calgary.

E. OFFICER, heretofore Travelling Passenger Agent, Southern Alberta, has been appointed chief clerk to District Passenger Agent, Calgary, Alta., vice V. A. Bowes, who has taken out a commission for active service.

W. J. McLEAN, heretofore Road Foreman of Locomotives, Medicine Hat Division, Alberta District, Medicine Hat, has been appointed Trainmaster, Medicine Hat Division, Alberta District, vice A. A. Smith. Office, Medicine Hat.

J. L. JAMIESON, heretofore locomotive man, Medicine Hat, Alta., has been appointed Foreman of Locomotives, Medicine Hat Division, Alberta District, Medicine Hat, vice W. J. McLean, transferred.

E. TASKER, heretofore Car Foreman, Crownsnest, B.C., has been appointed Car Foreman, Field, B.C., vice M. J. Jordan, transferred to Vancouver, B.C., as car repairer.

F. W. ADAMS, heretofore boiler maker, Lethbridge, Alta., has been appointed Foreman Boilermaker, Revelstoke, B.C., vice S. Blower, transferred.

A. E. CHESTERMAN, heretofore car repairer, has been appointed Car Foreman, Crownsnest, B.C., vice E. Tasker, transferred.

W. S. STEWART, heretofore ticket clerk, City Ticket Office, Victoria, B.C., is reported to have been appointed ticket agent, Hotel Vancouver, Vancouver, B.C.

Cunard Steamship Co.—WM. PHILIPS, heretofore Freight Traffic Manager, Eastern Lines, Canadian Northern

Ry., Toronto, has been appointed Canadian Representative, Cunard Steamship Co. Office, Montreal.

Dominion Atlantic Ry.—W. K. McQUARRIE, heretofore Resident Engineer, Revelstoke Division, British Columbia District, C.P.R., Revelstoke, B.C., has been appointed Engineer, D.A.R., vice G. C. Hare, resigned. Office, Kentville, N.S.

Duluth, South Shore & Atlantic Ry.—W. J. ELLISON, heretofore acting Treasurer, has been appointed Treasurer. Office, Marquette, Mich.

Grand Trunk Ry.—P. J. PHELAN has been appointed Supervisor of Bridges and Buildings, Montreal Division, vice W. J. Tyers, transferred. Office, Montreal.

W. J. TYERS, heretofore Supervisor of Bridges and Buildings, Montreal Division, has been appointed Supervisor of Bridges and Buildings, Belleville Division, vice J. McMahon, deceased. Office, Belleville, Ont.

The following station agents have been appointed:—Bromptonville, Que., P. J. Bernard; Danville, Que., L. D. Cormier; Strathmore, Que., T. W. Brown; St. Polycarpe Jct., Que., A. C. Ritza; Lorneville Jct., Ont., W. R. Dickson; Woodville, Ont., W. Oliver; Collingwood, Ont., R. W. Thom; Longwood, Ont., H. G. Simmons; Marshville, Ont., G. F. Haynes; Hespeler, Ont., N. A. Walford; Walkerton, Ont., J. F. Clancy; Cargill, Ont., W. Russell.

Grand Trunk Pacific Ry.—A. H. MULCAHEY has been appointed Assistant Purchasing Agent, Winnipeg.

The following station agents have been appointed:—Pope, Man., F. D. Livingstone; Zelma, Sask., J. W. McGhee; Lewvan, Sask., J. H. Walker; Edgerton, Alta., G. L. Jordon; Viking, Alta., J. L. Dodds; Bruce, Alta., R. L. Summer; Calgary, Alta., J. J. Lucas; Giscome, B.C., C. W. Jaminette.

Hudson Bay Railway.—A. V. FRANKLIN, of the Manitoba Comptroller's office, Winnipeg, has been appointed acting Auditor, H.B.R., vice W. J. Logan, appointed Assistant to the Comptroller General for Manitoba. Office, Pas, Man.

Kettle Valley Ry.—A. A. SMITH, heretofore Trainmaster, C.P.R., Medicine Hat, Alta., has been appointed Assistant Superintendent, K.V.R. Office., Penticton, B.C.

Michigan Central Rd.—D. W. DONAHUE, heretofore Superintendent, Detroit Division, Detroit, Mich., has been appointed Superintendent, Northern Division, Bay City, Mich.

R. B. TURNEY has been appointed Superintendent, Detroit Division, Detroit, Mich., vice D. W. Donahue, transferred.

Minneapolis, St. Paul & Sault Ste. Marie Ry.—R. G. NORRIS has been appointed Travelling Passenger Agent, Kansas City, Mo., vice K. A. Cook, promoted.

Oshawa Ry.—J. J. CALLAHAN has been appointed Superintendent, vice D. A. Valleau. Office, Oshawa, Ont.

Pennsylvania Rd.—S. T. STACKPOLE, heretofore Canadian Freight Agent, Toronto, has been appointed Representative, Foreign Freight Department, New York, devoting his entire time to the work of that department.

EDWARD PLUMMER, heretofore in the Toronto Office, has been appointed Canadian Freight Agent, vice S. T. Stackpole, promoted. Office, Toronto.

Railway Electrification was the subject of an address to the American Institute of Electrical Engineers, Toronto section, on Dec. 15, by G. H. Gill, Assistant Engineer, Railway and Traction Department, General Electric Co.

Traffic Orders by Board of Railway Commissioners.

Rates on White Lead and Paint.

25667. Nov. 27. Re Montreal Board of Trade complaint against advances made in rates on paints, dry or in oil, and on white or red lead, in carloads, from Montreal. Upon consideration of the evidence presented in the Eastern Rates Case relating to these commodities, and its appearing that the rates on white lead were not disposed of in the judgment in that case, and upon the reading of what is filed in support of the present application, and the report of the Board's Chief Traffic Officer, it is ordered that the Grand Trunk, Canadian Pacific and Canadian Northern Railways be ordered to publish and file commodity rates on dry white lead, in carloads, from Montreal, of 2c. per 100 lb. over the commodity rates which were being charged thereon when the application in the Eastern Rates Case was presented to the Board, but restricted to destinations where paints are manufactured; the said rates to become effective not later than Dec. 15, 1916; and it is further ordered that the application with

railway and the C.P.R. in the n.w. ¼ sec. 36 and the n.e. ¼ sec. 35, Tp. 25, R. 4, west 2nd m., at Yorkton, Sask. Upon reading what is filed in support of the application and on behalf of the C.P.R., and upon the report and recommendation of the Board's Assistant Chief Engineer, it is ordered that the application be granted, the question of the cost of the transfer track to be reserved for further consideration by the Board.

Grand Trunk Railway Track Inspection Trip.

The official inspection trip over G.T.R. lines, referred to in previous issues, was completed on Oct. 23, and we have been officially advised recently the names of the section foremen who received the highest general average and honorable mention on each supervisor's territory, as follows:—

Eastern Lines—GROUP 1.—J. S. Burnett, B. Little, O. Arsenault, A. Dufour, M. Peters, F. Serviss, A. Woods. GROUP 2.—F. W. Skeates, H. Le Page, J. Manley, F. Buchey. GROUP 3.—F. Therrien, W.



Box Car, Duluth, Winnipeg and Pacific Railway

The above illustration shows one of the 750 box cars which the Canadian Northern Ry. has built in the U. S. recently for its subsidiary, the D. W. & P. Ry. They were fully described in Canadian Railway and Marine World for November, 1916, pg. 438.

regard to the rates on paints be dismissed.

Rates on Furs, Hides, Pelts and Skins.

25687. Re application of Canadian Freight Association, on behalf of the railway companies subject to the Board's jurisdiction under sec. 321 of the Railway Act, for approval of proposed Supplement 8 to Canadian Freight Classification 16, revising the ratings on furs, hides, pelts and skins. Notice of the proposed revised ratings having been given in the Canada Gazette as required by sec. 321 of the Railway Act, and to the business organizations enumerated in General Order 153, and the proposed changes having been agreed to by the parties interested therein; upon the consideration of what has been filed, and upon the recommendation of the Board's Chief Traffic Officer, it is ordered that the proposed Supplement as amended and revised and resubmitted for approval by the Canadian Freight Association's Chairman, by his letter dated Nov. 15, 1916, be approved.

Transfer Track at Yorkton.

25724. Dec. 15. Re application of the Canadian Northern Saskatchewan Ry. Company (Wroxton Westerly Branch), under secs. 227 and 237 of the Railway Act, for approval of proposed transfer track between the applicant company's

Cooke, J. Bell, W. Woodward, H. Colwell, J. McKenney, C. Frebel.

Ontario Lines.—GROUP 1.—A. McKellar, J. Eyre, J. Thompson, D. Dargie, E. Dybal, J. Moore, J. Ballard, W. Kirchen, J. Peltier. GROUP 2.—H. Hildenbrandt, W. Waldruff, H. Melway, J. Kavanagh, J. Massinger, I. Vandenberg, A. Bidwell, F. Fukajewski, C. Bullock. GROUP 3.—C. Martin, R. H. Kearns, R. Stonehouse, J. Townsend, E. Stephenson, R. Hill, J. McFarland.

Western Lines.—GROUP 1.—J. Hubbard, C. F. Hanicke, B. Long, W. Smith, B. Wedel. GROUP 2.—J. Cooney, W. Johnston, C. Wendt, J. Coughlin, A. Wetkanski. GROUP 3.—G. Boehl.

Skilled Railway Employes for Overseas Service.—T. L. Scott, of Mulgrave, N.S., has been authorized to raise No. 1 Section, Skilled Railway Employes, for railway operations in France. The unit will consist of one captain, two lieutenants and 268 other men. It will be recruited throughout Canada and will be finally mobilized in Montreal, Mr. Scott being appointed Captain.

The Geographic Board announces that the name of Carleton Point, P.E.I., has been changed to Borden Point, and that the new car ferry terminal site there has been named Port Borden.

Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—The new shops at McAdam Jct., N.B., are expected to be completed and ready for occupation by Jan. 31. Only some minor fittings are required in the stores building, the blacksmiths' shop, and the coaling plant; and the power house is ready for the installation of the boilers and machinery.

Northern Colonization Ry.—The Dominion Parliament is being asked to extend the time for the construction of the extension of this railway now terminating at Mont Laurier, Que., westerly to Lake Timiskaming, where it would effect a junction with the C.P.R. branch from Mattewar to Timiskaming and Kippewa Lakes, and the Interprovincial and James Bay Ry.

Manitoba District.—D. C. Coleman, Assistant General Manager, Western Lines, who was in Port Arthur, Ont., Dec. 1, on an inspection trip, is reported to have said in the course of an interview that while the company had immense interests at Fort William, which it was its duty to conserve and protect, it should be understood that it would endeavor to do so without injury to Port Arthur's special interests. The company received a great deal of traffic from Port Arthur, and it would be folly on its part to jeopardise these observations were made by him on account of some feeling having developed in Port Arthur that the C.P.R. was in opposition to some plans being worked out for the extension of the harbor facilities of the city easterly.

The question of the supply of water to the C.P.R. from the Greater Winnipeg Water District's plant now under construction, is reported to be again under consideration. The C.P.R. has paid over \$40,000 towards the expense of this work, out of \$200,000 promised. The company pays no direct taxes towards the construction of the aqueduct, and in July, 1916, it was notified by the Winnipeg City Council that as it did not pay taxes it could not be supplied with the water.

Alberta District.—The Board of Railway Commissioners has authorized the opening for traffic of the extension of the line easterly from Sterling, Alta., between mileage 71.7 and 85.1. Track has just been laid to the latter point, at the Manyberries settlement.

We are officially advised that S. E. Jenkins & Co. have secured the contract for the new pier at Granville St., Vancouver. The dimensions of the pier with some description of the work to be done were given in Canadian Railway and Marine World for October on page 403. S. S. Jenkins has been in Vancouver recently arranging for starting the work, which is to be pushed as fast as possible.

A Chicago press report stated on Dec. 5 that the C.P.R. was preparing to spend between \$10,000,000 and \$15,000,000 upon grain elevators and additional terminal facilities at Vancouver. The company has just let a contract for the erection of a new pier at Vancouver, and has plans prepared for further development of its ocean terminals at Vancouver, for carrying on as the extension of its business demands, but it is scarcely likely that they include a grain elevator, as the one built by the Dominion Government has not yet had a bushel of grain stored in it. (Dec. 1910, pg. 492.)

British Columbia District.—While some trains have been operated through the Connaught Tunnel at Rogers Pass, the

company announced recently that it would not be opened for regular traffic until Dec. 31, or later." The distance from Calgary, Alta., to the tunnel's Bear Creek portal is 216.84 miles, and from the Glacier portal to Vancouver is 419.56 miles; the tunnel itself is about 5 miles long. The mileage to Vancouver from various points by the old route and by the tunnel are:—

	Old Route.	Tunnel Route.
Toronto	2,720	2,715.50
Montreal	2,895	2,890.10
Winnipeg	1,483	1,478.50
Calgary	646	641.40

G. A. Mountain, Chief Engineer Board of Railway Commissioners, inspected the tunnel Dec. 7, and the Board has authorized its opening for traffic.

Railway Rolling Stock Notes.

The C.P.R. has received 423 box cars from its Angus shops, Montreal.

The G.T.R. is reported to be ordering material and specialties for repairing 480 box cars in its own shops.

Orders are reported to have been received from France, by the Baldwin Locomotive Works, for 100 heavy type locomotives.

A cable dispatch from England states that the British War Office has placed an order with the Canadian Locomotive Co. for 40 consolidation locomotives.

The C.P.R. has ordered 432 freight refrigerator cars from its Angus shops, Montreal, and has cancelled the order placed there for 74 steel underframe box cars, 40 ton capacity, which was mentioned in our November issue.

The Canadian Northern Ry. has received a further 400 box cars, nos. 30,300 to 31,098 inclusive, from Haskell & Barker Car Co.; 1 rotary snow plough from American Locomotive Co.; 2 electric locomotives from General Electric Co., and 1 from Canadian General Electric Co., for Mount Royal Tunnel service.

It is reported from Russia that the decapod (2-10-0) locomotives shipped from this continent recently, and some of which were made by the Canadian Locomotive Co., have created records there for haulage capacity. One of these locomotives, operating over the Nikolaief Division of the Southern Ry., is stated to have hauled a load of 4,424 tons, on an experimental trip. The length of the train was 2,800 ft.

The Russian Government, which was mentioned in our last issue as having placed orders for decapod (2-10-0) locomotives as follows:—Canadian Locomotive Co., 20; American Locomotive Co., 40, and Baldwin Locomotive Works, 40, is now reported to have increased the orders, with the Canadian Locomotive Co., by 21; and with the American Locomotive Co. and the Baldwin Locomotive Works, by 66 each, making a total of 253 altogether.

Canadian Government Railways have received 7 mikado locomotives from Canadian Locomotive Co. 1 rotary snow plough and 10 Santa Fe (2-10-2) locomotives from the American Locomotive Co. Particulars of the mikado locomotives were given in a previous issue. Following are some details of the Santa Fe locomotives:—

Weight in working order, engine	324,000 lbs.
Weight in working order, engine and tender	514,000 lbs.
Weight on drivers	260,000 lbs.
Cylinders	26 by 32 ins.
Boiler pressure	200 lbs.
Water capacity	8,300 imp. gals.

Among the Express Companies.

P. E. Matthews, Springside, Sask., has been appointed agent, Dominion Ex. Co., Viscount, Sask.

G. L. Shearer has been appointed acting agent, Canadian Ex. Co., Prince George, B.C., vice M. E. McLeod.

The Canadian Ex. Co. has opened offices at Lawson, Quinton and Riverhurst, Sask.; Mountain Park, Alta., and Giscome, B.C.

V. Nicholson, City Ticket Agent, Canadian Northern Ry., Belleville, Ont., has also been appointed agent, Canadian Northern Express Co. there.

The Canadian Northern Ex. Co. has moved its accounting department from Winnipeg to Toronto, in charge of J. A. Hill, with office at 39 Wellington St. East.

The Canadian Northern Ex. Co. has opened offices at Bristol, Que.; Vista, Man.; and Brule, Forestburg and Meeting Creek, Alta., and has closed its offices at East Selkirk and Oakland, Man., and Errington, Alta.

The Express Traffic Association of Canada has removed its offices from the Dominion Express Building, King and Simcoe Sts., Toronto, to Canadian Express Building, 95 McGill St., Montreal. As stated in our last issue, C. N. Ham has been appointed Secretary.

The United States Ex. Co. has made a third distribution of assets, amounting to \$8 a share, the total amount paid since the commencement of liquidation being \$48 a share. All the securities have now been disposed of, and it is anticipated that some of the real estate will be offered for sale shortly. The building at 2 Rector St., New York, is valued at \$3,500,000, and when this has been sold a further dividend will be paid.

The Good Cheer Club, an organization of Dominion Ex. Co.'s employes in Winnipeg, is looking after the welfare of the 36 employes who have gone to the front from Winnipeg. Since March, a wrist watch has been given to each man enlisting, and 160 parcels have been sent overseas. In addition to this, arrangements have been made with a catering firm in London, Eng., to see that any of the company's employes who may be wounded and in hospital are well looked after.

Canadian Ex. Co.'s earnings, expenses, etc., for August and for two months ended Aug. 31, 1916, compared with those for same periods, 1915, are as follows:—

	Aug. 1916	Aug. 1915
Mileage lines covered	12,049.93	10,238.13
Transportation charges	\$380,452	\$325,941
Express privileges, Dr.	220,090	170,060
Operations other than transportation	6,067	5,370
Total operating revenue	166,429	161,250
Operating expenses	163,943	133,942
Net operating revenue	3,385	27,307
Uncollectible revenue from transportation	10	13
Express taxes	4,700	4,290
Operating income	1,325	23,094
	July 1 to	July 1 to
	Aug. 31, 1916	Aug. 31, 1915
Transportation charges	763,266	633,515
Express privileges, Dr.	410,191	327,182
Operations other than transportation	11,719	10,632
Total operating revenue	364,794	316,966
Operating expenses	321,456	270,763
Net operating revenue	43,337	36,202
Uncollectible revenue from transportation	55	16
Express taxes	9,400	8,400
Operating income	33,881	37,789

C.P.R. Ontario Employes have contributed \$500 to the Toronto and York County Patriotic Fund, making their 15th contribution, with a total of \$11,589 since Sept., 1915.

Electric Railway Department

Proposed Hydro Electric Radial Railways in the Niagara Peninsula.

A number of municipalities concerned in the proposed construction of radial railways between Port Credit and St. Catharines, and between Welland and Bridgeburg, will be asked to vote, on Jan. 1, 1917, to authorize the councils to enter into agreements with the Hydro Electric Power Commission of Ontario for the construction and operation of such lines.

The Port Credit-St. Catharines line is intended to connect with the proposed hydro radial line between Toronto and London, already authorized, at Port Credit, and the municipalities interested are,—Toronto, Trafalgar, Nelson, East Flamboro, West Flamboro, Barton Saltfleet, North Grimsby, Clinton, Louth and Grantham townships; Grimsby and Beamsville villages; Oakville and Burlington towns, and Hamilton and St. Catharines cities. The total mileage from Port Credit to St. Catharines is 59.57. The route proposed is as follows,—

Port Credit-Hamilton section: From a point approximately one mile west of Port Credit on the projected Toronto-London line it is proposed to parallel the Grand Trunk Railway to near Clarkson, thence southwesterly across the Toronto-Hamilton highway to Con. 3, thence through same to Oakville, where Oakville Creek will be crossed near Sheddon Ave. From Oakville the line will strike straight for the Hamilton Radial Ry. crossing of Bronte Creek, from which it is proposed to parallel the Hamilton Radial Ry. to Burlington. Through Burlington the line will cross the town in the neighborhood of Wellington Ave., and thence direct to a crossing of the old Desjardins Canal at Valley Inn;

Hamilton City section: Through Hamilton it is proposed to parallel the G.T.R. main line on the west side between the railway and the highway. Through Harvey Park and Dundurn Park the line will be south of and as close to the G.T.R. as possible, and will continue easterly, crossing Barton St. near Greig St., and keeping on the south side of Barton St. to the corner of Tiffany St., where it will cross Barton St. and continue northeasterly across Bay, Park, Murray and McNab Sts. and James St. between Murray and Stuart Sts., thence in the same general direction across Hughson, Mary, Catharine, Ferguson and Wellington Sts., at which latter point it will turn and follow south of Ferire St., across Victoria and Emerald Sts. to a point just north of the T.H. & B.R. spur, which it will parallel on the north side to Sherman Ave., thence it bears northeasterly to the south side of the Hamilton and Northwestern Ry., which it will parallel to the city limits;

Hamilton-St. Catharines section: From Kenilworth Ave., Hamilton, just south of the Hamilton and Northwestern Ry., the line will turn and bear southeasterly to midway between the G.T.R. Stoney Creek station and the village, thence to about ¼ mile north of Fruitland and at about the same distance north of the Hamilton stone road as far as Winona, from which it will parallel the G.T.R. on the south side through Grimsby and as far east as the Grimsby and Clinton township line, from which it will bear southeasterly to Beamsville, just north of the Hamilton stone road, and thence parallel the same

to Jordan. From Jordan to the town line between Louth and Grantham it is proposed to follow in the neighborhood of the road allowance between concessions 6 and 7 of Grantham Tp. to where it crosses the G.T.R., thence southeasterly to near Victoria and Permilla Sts. and along Permilla St. to the west end of the new bridge over the old Welland Canal.

Following is an estimate of the cost of construction, equipment and operation, with estimated operating revenue,—

Capital Cost:	
Right-of-way, track construction, and buildings	\$8,935,363
Sub-station, car shops, and rolling stock	2,425,000
	\$11,360,363
Annual Operating Revenue:	
Passenger revenue	\$760,000
Freight revenue	545,000
Miscellaneous revenue	57,000
	\$1,362,000
Annual Charges:	
Operating expenses	\$570,289
Maintenance expenses	152,193
	\$722,482
Total operating and maintenance expenses	\$722,482
Interest charges	568,018
	\$1,290,500

The class of construction covered by the estimates is based upon a single track line of 80 lb. rails on private right of way for practically the entire distance. The line will be double tracked through Hamilton, with practically no level highway crossings, thus allowing high speed right through the city. By connecting with the Toronto-London line at Port Credit it will be possible to utilize the high speed entrance of that line to the large radial terminal to be provided in the centre of Toronto. The Toronto entrance will have no level highway crossings between the centre of the city and New Toronto, and will utilize a steel viaduct along the harbor front, a tunnel under the exhibition grounds, an open cut through South Parkdale, and an elevated embankment from Sunnyside to the Humber River. Ample allowance is said to have been made to cover a very high class of construction, and 80 lb. steel rails, concrete culverts, steel bridges and other similar structures are designed to carry, in an economical manner, the heaviest types of freight cars now in use on steam railways. Proper station facilities, freight sheds and team tracks have been provided for in the various municipalities, and especially in Hamilton, where provision is made for a passenger terminal of sufficient size to accommodate the other lines which are proposed for that district.

The 1,500 volt direct current system of power has been estimated upon, with 4 substations located at various points between Port Credit and St. Catharines. This voltage and substation spacing will ensure ample power supply to heavy freight trains. The following equipment has been estimated upon,—

30 3-compartment, all steel, passenger motor cars.
6 suburban passenger motor cars.
15 passenger trailer cars.
4 express motor cars.
2 motor work cars.
10 60-ton steel locomotives.
350 freight cars.

The furnishings of the passenger cars will be of a high standard, and approximately 500 h.p. in motor capacity on each car will allow high speed even when a trailer is hauled.

It is anticipated to give practically hourly service between Toronto and St. Catharines, with a suburban service for a few miles both east and north of Hamilton. Limited cars, making few stops between termini, will be run at certain hours to take care of through business, and these cars should, it is claimed, make practically the same running time between Toronto and St. Catharines as is now in effect on the G.T.R. Local cars will, of course, be run in addition to the limited trains, and these will stop at approximately one mile intervals. The 10 locomotives provided for in the estimates will be used to haul heavy freight trains, and it is anticipated that from 3 to 6 round trips a day will be required to handle the freight business which has been estimated. In addition to this, express cars will also be used to handle light package, milk and freight business. These cars can make frequent stops along the line and collect milk cans, farm produce, etc., at points convenient to the residents of the different sections.

Following are the municipalities to vote on the project, with the total amount of debentures to be issued by each for deposit with the commission under the agreements,—

Toronto Township	\$243,087
Trafalgar Township	538,735
Nelson Township	374,812
East Flamboro Township	266,626
West Flamboro Township	66,669
Barton Township	284,484
Saltfleet Township	1,002,296
North Grimsby Township	424,077
Clinton Township	473,746
Louth Township	563,595
Grantham Township	128,280
Grimsby Village	101,817
Beamsville Village	51,469
Oakville Town	203,098
Burlington Town	144,536
Hamilton City	5,869,286
St. Catharines City	623,750
Total	\$11,360,363

The Proposed Welland-Bridgeburg line, via Humberstone, Port Colborne and Fort Erie, concerns Crowland, Humberstone and Bertie townships; Humberstone, Port Colborne and Fort Erie villages, and Welland and Bridgeburg towns. The route proposed is as follows,—From East Main St., Welland, southward over South Main St. to east of the Welland Canal at the Michigan Central Rd. bridge, thence along the east bank of the canal through Humberstone and Port Colborne. From Port Colborne eastward, midway between the G.T.R. and Lake Erie, as far as a point south of Sherks, thence southeasterly to the northern limits of Crystal Beach, thence to the south side of the G.T.R. a short distance east of Ridgeway, thence following the G.T.R. on the south side past Crescent Beach and Erie Beach, thence parallel to the old Huron & Erie right of way to Fort Erie. From Fort Erie northward along Niagara St. as far as the north boundary of Fort Erie, thence along the north side of the Erie & Niagara Ry., thence northward across the G.T.R. and M.C.R. to Central Ave., Bridgeburg.

Following is an estimate of the cost of construction, equipment and operation, with estimated operating revenue,—

Capital Cost:	
Right-of-way, track construction, and buildings	\$1,566,216
Sub-stations, car shops and rolling stock	642,500
	\$2,208,716

Annual Operating Revenue:	
Passenger revenue	\$176,490
Freight revenue	149,850
Miscellaneous revenue	6,660
	<hr/>
	\$333,000
Annual Charges:	
Operating expenses	\$160,214
Maintenance expenses	44,351
	<hr/>
Operating and maintenance charges	\$204,565
Interest charges	110,435
	<hr/>
	\$315,000

Humberstone Village	66,194
Port Colborne Village	141,297
Fort Erie Village	128,007
Welland Town	166,926
Bridgeburg Town	90,422
	<hr/>
Total	\$2,208,712

Answers to Questions on Electric Railway Topics.

Following are answers by Canadian electric railway officials to questions sent to the American Electric Railway Association's question box:—

Cost of Carbon Brushes.—What is the cost of carbon brushes for various types of motors, on a 1,000 car mile basis?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.—I have no information on comparative cost of brushes for different types of equipment, but careful tests show an average of approximately 1c per motor per 1,000 car miles. This is with high grade brushes and slotted commutators. Note—42½% duty on carbon products.

Headway of Cars on Joint Tracks.—(a) Where two or more lines unite as they approach the business district, and operate for a considerable distance over the same track, do you attempt to make an even headway between the cars of these different lines on such joint track, or do you let them run independently of each other, regardless of the resultant headway? (b) Suppose you have two lines uniting as above with eight cars on each line, the best headway the first line can maintain is 8 minutes, while the second line can maintain a 7½ minute headway, would you put the second line on an 8 minute headway, giving it a layover each trip, in order to have a 4 minute headway on joint track, or would you hold each line to its best schedule, disregarding the service on joint track?

A. Gaboury, Superintendent, Montreal Tramways Co.—(a) Yes, as much as possible, except on a street which is a neck through which several lines pass and where the headway is already very close, in which case we aim to keep an even headway between two of the passing lines which run to districts closely related. (b) Would consider it good policy to allow layover and maintain even 4 minute headway. This would not only encourage local short haul traffic, but would help general loading.

Time Points in Operating.—(a) Do you maintain time points along your line; (b) if so, how far apart are they; (c) in establishing time points, what basis do you use in determining the amount of time to be used between them; (d) do you require a rigid observance of time points; (e) how do you determine if they are being observed, and what means do you employ to force observance?

A. Gaboury, Superintendent, Montreal Tramways Co.—(a) Yes. (b) Approximately 5 minutes apart in centre of city and 10 minutes in outer parts of city. (c) Running time is computed to agree with civic regulations and headway of line and time between time points is established arbitrarily and then corrected by observation of actual running of the cars. (d) Yes. Running time between points is changed frequently to suit changing conditions of traffic, temperature and rail, and the service demands that cars pass time points on time so as to provide correct headway where needed. If on a 3 minute headway one car passes a time point one minute ahead of time, he leaves part of his load to the car following, which will likely be put late

through heavy loading, thus backing him up on the car following him and taking part of his load, result being that first and third cars are practically empty and second car is packed with consequent discomfort and dissatisfaction to our patrons. (e) By our inspectors or roadmasters, who check the cars on the lines in their districts.

Disciplining for Minor Accidents, etc.—Do you apply the same disciplinary methods to new as to old trainmen when they are responsible for minor accidents or breach of rules, or do you have a stated period, during which such infractions are considered cause for further instruction, rather than penalty?

A. Gaboury, Superintendent, Montreal Tramways Co.—Trainmen for the first 90 days of service are considered as being still attached to the training school, and for all minor infractions of the rules are sent there for further advice or instruction. For a serious offence they are disciplined in the regular way.

Automobile Accident Reports.—Have any member companies made it a practice to have conductors report the license numbers of automobiles whose drivers are reckless, or who are responsible for near accidents, with the idea of reporting them to the owners, to automobile clubs, or to the police; if so, what results have been obtained?

A. Gaboury, Superintendent, Montreal Tramways Co.—We have been doing this for some years, and have obtained very excellent results. On receipt of report from our car men or inspectors, whether for a near accident, reckless or wilful delay by drivers of autos or vehicles, we take up the matter with the owner by letter, and if necessary, send one of our staff to interview. In nearly all cases we have found owners ready to meet us more than half way, and have found that this helped not only in reducing accidents but in engendering a better feeling on the road.

One-Man Electric Cars in Moncton, N.B.

The Moncton Tramways, Electricity & Gas Co. started, Nov. 27, to operate one-man p.a.y.e cars. They are old style, single truck, with short platforms, longitudinal seats, double sliding doors in bulk heads, stationary steps and doors on both sides of vestibules. The left hand side of each vestibule has been closed up permanently, the step having been taken off on that side, and folding doors have been installed on the right hand side of each vestibule. A Coleman no. 4 stationary fare box has been installed at the right side of the sliding doors on a standard made of 1 in. pipe. The Coleman Fare Box Co. made brackets to fasten on this standard and the fare box rests on the brackets, and can be transferred from one end of the car to the other, as the company has to operate from both ends at present, having no loops. International two dial registers for tickets and cash have also been installed. A rod runs through the car on both sides, to which connection is made with the register with connecting arms and a lever handle in each vestibule for operating the registers. On reaching the end of the line the motorman takes the fare box to the opposite end of the car, locks the back door and is ready to go ahead again. The company has had one of the cars on its suburban line equipped with this arrangement for some time and reports it as working nicely.

The class of construction covered by the estimates is based upon a single track line of 80 lb. rails on private right of way for practically the entire distance. Ample allowance is said to have been made to cover a very high class of construction, and 80 lb. steel rails, concrete culverts, steel bridges and other similar structures are designed to carry, in an economical manner, the heaviest types of freight cars now in use on steam railways. Proper station facilities, freight sheds and team tracks have been provided for in the various municipalities. The 1,500 volt direct current system of power supply has been estimated upon, with 2 permanent substations located between Welland and Bridgeburg, and 1 portable substation, which can be located at various points along the line as required by the traffic. By using the 1,500 volt system and 2 permanent substations ample power supply will be provided for moving heavy freight trains. The following equipment has been estimated upon,—

- 9 3 compartment, all steel, passenger motor cars.
- 12 passenger trail cars
- 4 motor express cars.
- 50 freight cars.

The furnishings of the passenger cars will be of a high standard, and approximately 500 h.p. in motor capacity on each car will allow high speed even when a trailer is hauled. The freight traffic is intended to be transported by motor express cars, as it was felt that this type would be best suited to the particular local conditions existing between Welland and Bridgeburg. However, if it is found, when the line is actually placed in operation, that 50 or 60 ton steel locomotives would take care of the business in a more economical way, there would be ample allowance in the estimates to provide for the slightly higher cost.

It is anticipated to give practically hourly service between Welland and Bridgeburg. Limited cars, making few stops between termini, will probably be run at certain hours to take care of through business, and the running time of these cars between Welland and Bridgeburg should, it is claimed, be much below that now in effect on the G.T.R. Local cars will be run in addition to the limited trains and these will stop at approximately one mile intervals. The 4 motor express cars provided for in the estimates will be used to handle from 10 to 15 freight cars, and it is anticipated that from 2 to 3 round trips a day will be required to handle the freight business. These express cars would also be used with the passenger cars mentioned above, or with rented cars, to carry excursions to Crystal Beach or other points, and in addition would frequently be used to handle light package, freight and milk business. Frequent stops will be made along the line to collect farm produce, and these points can be made convenient to the residents of the different sections.

Following are municipalities concerned in the proposal, with the amounts of debentures to be issued by each, for deposit with the commission,—

Crowland Tp.	\$203,449
Humberstone Tp.	629,755
Bertie Tp.	782,666

Regina Municipal Railway Earnings, Etc.

Following are the earnings, expenses, etc., for November, compared with those for Nov., 1915, and also the totals for 11 months ended Nov. 30.:

	Nov. 1916.	Nov. 1915.	11 months to Nov. 30, '16.
Total revenue	\$19,366.88	\$15,982.62	\$189,065.84
Expenditure	14,933.31	14,659.93	171,508.81
Net earnings	4,403.57	1,322.69	17,557.03
Fixed charges	8,022.96	8,466.61	89,335.90
Deficit	3,619.39	5,364.94	71,778.87
Average exp. per car mile with power	13.32c	14.53c	15.12c
Average exp. per car mile with power	18.62c	19.59c	20.31c
Cost per k.w.h.	1.41c	2.02c	1.69c
Cost per car mile	5.29c	5.04c	5.19c
Platform wages per car hour	71.43c	73.14c	72.08c
Expenses less fixed charges percentage of earnings			77.23%
Expenses with fixed charges percentage of earnings			118.72%

The Montreal Tramways Co's Franchise.

The Montreal Board of Control has appointed B. J. Arnold, Chicago, Ill., to advise it as to electric railway matters in connection with the investigations now in progress with respect to granting the company a new franchise. This appointment was approved by the City Council, Dec. 8, and \$10,000 was voted to cover the cost of Mr. Arnold's investigation and report.

Public interest in the tramway negotiations was given a new turn recently when a petition was presented in a Quebec court asking for the holding of a judicial enquiry into the administration of civic affairs generally and particularly with matters connected with negotiations with the Montreal Tramways Co. as to its franchise. The court directed Justice McDougall to hold the enquiry, and Dec. 11 was fixed for its opening. The city opposed the holding of the enquiry, and on Dec. 13, asked the court to issue a writ of prohibition to prevent Justice McDougall from proceeding with his investigation. Justice McDougall has ordered the city to pay into court \$2,000 on account of the expenses of the court, and has adjourned his investigation pending the result of the hearing of the city's application.

As a result of representations made to the Quebec Government, the Quebec Legislature passed an amendment to the City of Montreal's act and affecting the tramways franchise. The addition to the act is as follows:— (1) A commission composed of Senators J. P. B. Casgrain, of Montreal, and C. Beaubien, of Outremont, and J. Cockburn, of Montreal, is created to prepare a contract between the city and the Montreal Tramways Co., as provided for by sections 14 and 15 of chapter 77 of the acts of 1911, and for this purpose it has the power and rights which the act confers upon the city. The contract prepared by the commission will come in force after having been signed by the commission or the majority of its members, the day it is signed by the President and the Secretary of the Montreal Tramways Co., duly authorized by the directors of the company, and will bind the company and the city for 36 years from the time of its coming into force, except for changes and modifications which may be made from time to time by the mutual consent of the city and the said company. Counting from the same date, this contract will annul and replace

all other contracts between the city and the company for similar purposes relative to the same territory. At the expiration of the 36 years and at the expiration of each period of 5 years subsequent, the city will have the right, upon giving six months notice to the company in the 12 months which immediately precede the expiration of the 36 years as well as similar notice of 6 months and the same conditions at the end of each 5 years subsequently, to appropriate the company's lines as well as the real estate, material and cars belonging thereto, and necessary to the running of the tracks, by paying the value as fixed by arbitrators and 10% more for good will. The arbitrators will be named one by the city, one by the company, and a third by a judge of the Superior Court for the district of Montreal. The expenses incurred by the commission in the exercise of its functions, as well as the salary of the commissioners, secretary, experts, and all other persons it may employ, will, when they become due, be determined and approved by the Lieutenant Governor in council, and paid half by the city and half by the company.

Toronto Railway Company Increases Wages.

Although the agreement between the Toronto Ry. and its employes, in regard to wages, does not expire until June 16 next, the management announced, Dec. 21, that it had decided to increase wages of conductors, motormen, shedmen and repair men $2\frac{1}{2}$ c an hour, and car washers $1\frac{1}{2}$ c an hour, the increase to date from Nov. 1. The new rates are as follows:—

Conductors and motormen, 1st year, 26c; 2nd year, 28c; 3rd year, 30c.

Shed foremen, 30c; operating shedmen, i.e., men who operate cars and do general shed work, 27c; shedmen doing general shed work, but not operating cars, 26c; car washers, 25c.

Motor and truck repair men, 1st year, 26c; 2nd year, 28c; 3rd year, 30c.

In announcing the increases, the General Manager, R. J. Fleming, made the following statement:—"For some months the management has noted the steady increase in the cost of living contrasted with the prices of last year, when the wage agreement was made, and since October last has had under advisement the question of wages paid by the company under that agreement. Two courses were open to the company: one, to adhere to the agreement and allow the present wages to obtain until the expiry of the agreement in June, 1917; the other, to deal with the wages this year in the same manner as if the agreement had expired. After due consideration the directors chose the latter course, and decided to grant such a liberal increase in wages as they felt certain should effectually obviate any agitation for a further increase at the expiry of the agreement.

"Employes will remember that the company's rates of fares are permanently fixed, thus placing it in an entirely different position financially to a manufacturing or other concern, which can add an increase in wages to the price of its product, so that the increase is really paid by the purchasers, the public. This company cannot charge its passengers an extra fare to cover additional costs of operating due to increase in wages or increased costs of other commodities that are necessary to the running of the road. Thus the burden is one-sided, the benefits going to the public and the employes

only. The increase will date from Nov. 1, 1916, thus giving the employes the additional advantage of enjoying it during the unexpired term. Employes in other departments who have not had an increase in wages since the agreement was signed will be dealt with upon their merits. In taking this action the company has been influenced solely by the change in living conditions and the additional burdens upon the employes as a result of the war."

London and Port Stanley Railway Finances.

Canadian Railway and Marine World for December contained general particulars of the L. & P.S. Ry. operating results of the year ended June 30, showing a surplus of \$18,474.14 after paying taxes, interest, rental, sinking fund and patriotic contributions. Following are fuller details, —

EARNINGS	
Passenger	\$114,869.62
Baggage	570.23
Parlor, sleeping and special car	43.00
Mail	1,039.50
Express	1,630.74
Milk	20.40
Freight	130,897.24
Switching	18,583.24
Miscellaneous transportation	138.00
Storage	37.33
Demurrage	1,265.00
Rent of tracks and facilities	6,386.65
Rent of building and other property	2,570.20
Miscellaneous	3,007.17

Gross earnings \$281,058.32

EXPENSES	
Maintenance of way and structures	\$12,573.03
Maintenance of equipment	14,138.76
Transportation	109,491.20
General and miscellaneous	39,898.89

Total operating \$180,619.88
Fixed charges 76,524.72

Total expenses \$257,144.60
Red Cross donation \$1,300.00
Sinking fund for 1915 4,139.58

\$262,584.18

The expenditure on construction account during the year was as follows, —

Engineering and superintendence	\$ 25,480.54
Right of way	2,306.37
Other land used in electric railway operations	8,000.35
Grading	30,689.16
Ballast	20,948.49
Ties	41,826.29
Rails, rail fastenings and joints	127,041.13
Special work	8,847.93
Track and roadway labor	35,474.50
Paving	507.89
Roadway, machinery and tools	3,811.24
Bridges, trestles and culverts	19,018.16
Crossings, fences and signs	16,484.85
Signals and interlocking apparatus	2,575.33
Telephone and telegraph lines	8,029.82
Poles and fixtures	72,332.83
Distribution system	126,281.70
General office buildings	413.57
Shops and car houses	23,682.39
Stations, miscellaneous buildings and structures	25,133.40
Wharves and docks	53.07
Park and resort property	8,088.42
Cost of road purchased	10,000.00
Reconstruction of road purchased	46.66
Other expenditures, way and structures	134.05
Passenger and combination cars	102,012.58
Freight, express and mail cars	8,326.90
Service equipment	4,293.26
Electric equipment of cars	66,799.22
Locomotives	80,049.43
Shop equipment	4,904.65
Furniture	4,225.48
Miscellaneous equipment	56.76
Substation equipment	1,188.17
Law expenditures	845.06
Interest	13,464.53
Insurance	1,257.87
Miscellaneous	3,932.07

\$908,562.12

The Montreal Tramways Co. has discontinued its service on Dorchester St., Montreal, during the construction of certain work on the Canadian Northern Ry. terminals.

Moose Jaw Electric Ry. Employes' Wages.

Canadian Railway and Marine World for December contained the report on this matter by a Board of Conciliation and Investigation appointed by the Minister of Labor under the Industrial Disputes Act. As then stated, the company refused to accept the award, and the men subsequently accepted the offer as made by the company in July, 1916, fixing conductors' and motormen's wages per hour as follows:—1st 6 months, 26c; 2nd 6 months, 26½c; after 1st year, 28½c; after 2nd year, 31c. Motormen having two years experience on other roads and whose ability is satisfactory to the Superintendent will be paid 27c from the commencement of employment. Five cents extra an hour will be paid for May 24, July 1, Civic Holiday, Labor Day, Good Friday, Thanksgiving Day, Christmas Day and New Year Day. The other principal terms of the agreement are as follows:—Uniforms will be supplied by company. Cost of first uniform and overcoat to be borne half by company and half by employe. Should employe leave within 12 months he must pay full cost of uniform. Subsequent uniforms will be supplied by company one per year free; subsequent overcoats will be supplied by company, to remain company's property, and to be returned to company upon employe leaving if so requested. Stools will be provided for motormen, their use being restricted in certain districts. Violation of rules governing them will entail dismissal and a total of five violations will mean discontinuance of stool privileges.

The company reserves the right to terminate employment of any employe for violation of rules and regulations. For minor offences warning will be given, for more serious offences suspension or dismissal. The following will be treated as serious offences:—Acts or words of disloyalty to the Empire; acts or words tending to bring the company's officials or any employe into disrepute or dishonor, or tending to disrupt the harmony of the employes or the system; drinking when in uniform or drinking when on cars or within three hours of going on duty; destruction of property, accidents through carelessness or neglect, missing fares, carrying people free, using stools on portion of route not allowed, violating explicit instructions as to manner of fare collection or violation of any rules now in force or which may hereafter be in force. Employes may be disciplined, suspended or dismissed without notice at the Superintendent's discretion. The employes' committee shall consist of 3 employes chosen by the Superintendent and satisfactory to the employes. Any employe disciplined or dismissed may have his case taken up by the committee with the company.

Fifteen minutes will be allowed men taking car from barn and 15 minutes for returning car to barn at night. This time is allowed so that crew taking car out will inspect it, seeing that bells, lights, brakes, sanders, etc., are in working order, and that car is supplied with trolley, pickup, sand, coal and proper destination boards. Fires must be lit only after pulling car from barn. On returning car to barn, anything amiss with equipment or repairs to be made must be reported in trouble book. Dampers in stove must be closed, check draft opened and check in pipe closed. Fires to be regulated so that on cars returning to barn fires will be low. Spare men reporting for duty

and not obtaining a run will be allowed one hour. When men making regular runs fail to report at specified time the run will automatically revert to spare man in order of seniority.

Order of seniority will be recognized by length of time in one position. An employe desiring to change from conductor to motorman, or vice versa, will lose his seniority and start at foot of list but retain rate of pay. If the change is made at the company's request, seniority will be lost as to position changed to, but if at any time the employe is changed back, or voluntarily wishes to change back, the original seniority in the original position will be retained, and service put in in new position at company's request will count as service in original position.

The British Columbia Electric Ry. and the Jitney Traffic.

After considerable discussion and hearing the views of representatives of the British Columbia Electric Ry., and of the jitneymen, the Vancouver, B.C., City Council, on Dec. 8, passed part of a new set of regulations affecting jitney traffic in the city. The regulations are made much more drastic than those formerly in operating, and it was proposed to raise the license fee from \$25 to \$50 for 5 seat cars and from \$50 to \$100 for 7 seat cars, with an increase in the drivers' licenses from \$2 to \$3 a month. Subsequently the regulations were completed and it was hoped to have the bylaw finally passed by Dec. 31, so that the licenses for 1917 could be issued under it.

The jitneymen, on Dec. 13, asked the council to postpone the coming into operation of the new regulations. In the course of the discussion, J. A. Kerr, President of the Jitney League, is reported to have said that the league had not attempted to interfere or in any way retaliate against the British Columbia Electric Ry. in that company's legitimate transportation business, but that should the company persist in its efforts to have the jitney league put out of business, then its members would seriously consider finding ways and means of making the company live up to its own rules and regulations.

In connection with this statement, W. G. Murrin, Assistant General Manager, B.C.E.R., is reported to have said in an interview, Dec. 14:—"It is grossly incorrect, as stated by the jitney men, that my company is trying to 'put the jitney out of business.' We are asking solely for regulations on a par with those we operate under and as a matter of fact those proposed are not nearly so exacting as ours are. We did not come forward to the city council with our requests until the council invited us. I believe that the public will view this matter in the right light and insist on regulations which will protect their own rights and not those of the jitney operators only. The B.C.E.R. operates under very strict regulations, which have for their purpose the obtaining of a transportation service which fills the needs of the public, which safeguards the lives of the public, and caters to the general welfare of the community. We are asking no more than that the regulations we operate under or their equivalent be placed on the jitney. If this jitney league is permitted to run as it likes, it cannot be said to fill the position of a transportation system on which the city can depend. It is obviously unfair for one means of transportation to be saddle with obligations and its competitor not, and

that this condition cannot continue will be clear to every impartial person. The B.C.E.R. is required to give transfers and to run regular services of cars in the rush as well as the slack hours, on week days, Sundays and holidays and at many times that it does not pay to run cars. It pays more than 5% of its gross earnings to the city, whereas the jitney pays less than 1%, and a great deal of this is eaten up by the extra expenses placed upon the city. The company pays heavy bridge rentals and maintains its own tracks at a cost of \$40,000 a year. We must carry city officials and firemen and policemen on our cars free. The jitney has no such obligations. If the jitneys are allowed to compete with an established transportation system on an unfair basis, taking the smooth without the rough, and carrying few of the burdens the street railway must carry, there can be only one result. A severe blow will be dealt to capital which may invest in Vancouver at some future date. The jitney men are asking the city council for protection. It is the street railway, having been promised protection in the form of a franchise, that is entitled to first consideration."

Electric Railway Track Laid in 1916.

Below is a preliminary table showing track laid on electric railways in Canada during 1916. It is not published as a complete one, owing to the fact that some of the companies have not yet replied to the circular sent, but it is believed to be approximately correct. The * mark indicates that the figures given are estimated:—

	Miles.
Brantford and Hamilton Ry.—	
Market St. to Water St., Brantford..	0.25
Calgary Municipal Ry.—	
17th Ave. and 28th St. W. to Sarcee	
Military Camp	3.00
4th Ave. and Centre St. to Sunnyside	0.50
	—3.50
*Edmonton Redial Ry. or Edmonton Interurban Ry.—	
Connection between two lines near G. T. Pacific Ry	1.00
Hamilton St. Ry.—	
Kenilworth Ave. and Burlington St. to Barton St.	0.50
*London and Port Stanley Ry.—	
Richmond St. to Ridout St., London...	1.00
London St. Ry.—	
Egerton St. to West St.	0.41
Quebec Ry., Light and Power Co.—	
C.P.R. Cross'g to St. Charles Cemetery	0.50
5th St. to 4th St.	1.25
3rd Ave. to Abattoirs	0.25
	—2.00
Regina Municipal Ry.—	
C.P.R. Arcola line to 16th Ave.	0.72
4th Ave. to Standard Ave. and Winnipeg St.	0.58
	—1.30
Sarnia St. Ry.—	
St. Clair and Christina Sts. to Clifford and King Streets	0.50
*Saskatoon Municipal Ry.—	
On 25th St. Bridge	0.23
Three Rivers Traction Co.—	
Cap. de la Madeleine extension	3.06
Toronto Civic Ry.—	
St. Clair Ave. to C.P.R. tracks on Lansdowne Ave., double track	0.61
Toronto Ry.—	
New entrance to Exhibition	1.91
Yonge St. gap	0.14
Woodlawn Ave. extension	0.04
	—2.09
	16.45

The London St. Ry., in addition to the new line above mentioned laid 2,000 ft. of second track on Dundas St. from the exhibition grounds to the G.T.R. inter-switching track.

The Sandwich, Windsor & Amherstburg Ry. laid 2,200 ft. of entirely new double track line on London St. West, Windsor, replacing a single track line; this, however, does not increase the company's track mileage.

Electric Railway Projects, Construction, Betterments, Etc.

Brantford & Hamilton Ry.—We are officially advised that track has been laid on the extension from Market St. to connect with joint station with the Lake Erie & Northern Ry. on Water St., Brantford, Ont., 0.25 of a mile. (Dec., 1916, pg. 502.)

British Columbia Electric Ry.—The North Vancouver, B.C., City Council has under consideration a plan for securing a connection between the B.C.E.R. and the Pacific Great Eastern Ry., under which the B.C.E.R. would be the distributing agency in the city. The only difficulty in the way of the project is the transportation of heavily loaded cars on some of the streets where there are steep gradients. (Dec., 1916, pg. 502.)

Edmonton Radial Ry.—A press report states that the acting City Engineer of Edmonton, Alta., and the Traffic Manager of the E. R. Ry. are investigating the advisability of constructing a belt line in the centre of the city at a cost of \$40,000. (Dec., 1916, pg. 502.)

Hamilton St. Ry.—The new Kenilworth St. line was opened for traffic Dec. 19. G. Waller, General Superintendent of Buildings, is reported to have stated that until early in the new year cars would be operated on the new line between 7 and 8 a.m., and between 4 and 6.30 p.m. Early in the new year a regular belt line service will be put in operation, thus forming a third belt line in the city. (July, 1916, pg. 295.)

The London St. Ry. has, we are officially advised, completed track laying on Dundas St., London, Ont., from Quebec St. to the G.T.R. interswitch track, the work including the paving of the tracks. An extension of 2,000 ft. from Egerton St. to West St., which was opened for traffic Dec. 1, is not to be paved. (Nov., 1916, pg. 460.)

London & Port Stanley Ry.—We are officially advised that the London Railway Commission is considering the construction of 600 ft. of retaining wall at Port Stanley, Ont., to protect the right of way in front of the station from the encroachments of Kettle Creek. The estimated cost of the work is \$6,500.

The 65 ft. addition to the shops at London, with a one story addition for an office section, is expected to be completed early in January. A bath house costing \$25,000 at Port Stanley is under consideration. (Nov., 1916, pg. 460.)

The Quebec Ry., Light & Power Co. expected to have track laid by Dec. 31 on the following extensions.—C.P.R. crossing, St. Vallee St. to St. Charles Cemetery, 0.50 mile; 5th Ave., along 3rd Ave. to 18th St., along that street to 1st Ave., and down that avenue to 4th St., 1.25 miles; 3rd Ave. and 18th St., along 18th St. to 4th Ave., and up that avenue to Abattoir, 0.25 mile. The work has been done by the company's own forces.

We are also officially advised that the company has under consideration a project for building a line from 3rd Ave. and 5th St. along Beauport Road to the city limits, 1.50 miles. (Nov., 1916, pg. 461.)

Regina Municipal Ry.—We are officially advised that during 1916 the following additional lines have been laid.—From the C.P.R. Arrico line, from Atkinson St. to 16th Ave., 0.72 of a mile; and from Scott St., from 4th Ave. to Standard Ave., and along that avenue to Winnipeg St., 0.58 of a mile, a total of 1.3 miles. (July, 1916, pg. 295.)

The Sandwich, Windsor & Amherstburg Ry. is, we are officially advised, putting up a building in Windsor, Ont., to be used for freight and express purposes.

We are officially advised that the new building to be erected on London St. West, Windsor, adjoining the power plant and car barns, will be 26 x 100 ft., 2 stories high in front. The basement will be fitted up for lavatory purposes; on the ground floor there will be the Superintendent's office and an office for the freight and express department, the top floor, about 26 ft. square, will be used as an assembly room for motormen and conductors. The main part of the one story rear of the building will be used for receiving and delivering freight and express. In the rear of this will be a store room for the track department. Under the rear of the building will be the overhead department, with room to run automobiles or trucks under the building from the rear. This will also be used as a stockroom for the overhead department. Each of the different parts of the building behind the freight office will be about the same dimensions, about 25 x 25 ft. The building will be of brick and will be finished as soon as the weather permits. (Oct., 1916, pg. 425.)

The Sarnia St. Ry., we are officially advised, laid in 1916 an additional half mile of track from the corner of St. Clair and Christian Sts. to the corner of Clifford and King Sts., Sarnia, Ont. (Aug., 1916, pg. 338.)

The St. John Ry. is demolishing the buildings on a wharf at St. John, N.B., purchased recently from W. B. Tennant. It is reported that a deep water berth will be made at the face of the wharf and a coal handling plant located on the wharf for the company's purposes. (Nov., 1916, pg. 461.)

Sudbury-Copper Cliff Suburban Electric Ry.—We are officially advised that the company has under consideration a proposal to build an extension to Murray Mine, about 4 miles west of Sudbury, Ont., but a definite decision has not been reached. The company is also contemplating the erection of a new car barn. (Dec., 1916, pg. 503.)

Three Rivers Traction Co.—We are officially advised that of the total of 7.01 miles of track there were laid during 1916, 3.06 miles, constituting the line to Cap de la Madeleine, Que. The extension was opened for traffic Nov. 21, when a 20 minute schedule was put in operation. (Dec., 1916, pg. 500.)

Toronto and York Radial Ry.—We are officially advised that while plans for a terminal station at North Toronto are under consideration, they have not been finally approved. It is the company's intention to put in during the winter should weather conditions permit, 2 temporary tracks from Yonge St. to take care of the long distance passenger traffic.

Toronto Civic Ry.—We are officially advised that the addition to the car barns on St. Clair Ave. is 42 ft. 7 in. x 198 ft., and is almost an exact duplicate of the present barn. It has been erected parallel to the original barn, the windows in the south wall of which have been bricked up and form a fire wall between the two buildings. Each barn has 3 tracks, with accommodation for 3 cars on each track. There are pits under all the tracks in the new structure. The cost of the

work is approximately \$25,000, which includes a few alterations to the old barn and the addition to and extension to the old heating plant. The addition in general is of steel framework with the walls faced on the outside with red brick. (Dec., 1916, pg. 460.)

Toronto Suburban Ry.—The changing of the gauge from 4 ft. 10 $\frac{3}{8}$ in. to 4 ft. 8 $\frac{1}{2}$ in. has been completed on all the old portions of the system between Lambton and Bathurst St., Toronto, the Crescent section and the branch to Weston and Woodbridge. The cars have also been changed to the new gauge by substituting new axles and wheels.

Progress is being made with the stringing of the wire and other finishing up work on the new standard gauge line built from Lambton to Guelph, which it is hoped to have opened for traffic early in the spring, if not before. (Dec., 1916, pg. 460.)

Transcona, Man.—A press report states that negotiations are practically completed with the Transcona Town Council, under which a 25-year franchise is to be granted for the building of an electric railway from Transcona to Winnipeg. The line, it is stated, is to be completed by Sept., 1917. Winnipeg men are said to be interested.

It was reported in our December issue that the Winnipeg Electric Ry. was negotiating with the Transcona Town Council in reference to the building of this railway. We are advised that no negotiations have taken place directly between the Winnipeg Electric Ry. and the Transcona Town Council with respect to the matter. There have been negotiations of which the company is cognizant about the matter, but nothing definite has yet been settled.

Employment of Women on British Columbia Electric Ry.—W. G. Murrin, Assistant General Manager, speaking at a meeting of the Manufacturers' Association in Vancouver, B.C., recently on the question of the employment of women in connection with the war situation, stated that the company had met with some difficulty at first in getting men to fill vacant places, but experienced no trouble at present. The company, however, had an agreement with its men, which, while it did not specifically state that men only should be employed, still, no doubt, if a fair interpretation was given, inferred that men would be given the preference. Otherwise the company had no objection to the employment of women. Anything that added to the resources of the Empire should be considered and the male labor absolutely necessary for munition work should be given consideration. Duplication of labor should also be avoided, and in this connection, and he hoped that his remarks would be taken in the right spirit, there was a duplication of labor in transportation facilities in Vancouver that was not necessary at the present time.

Extra Fares in Detroit.—The U. S. Supreme Court at Washington, D.C., decided, Dec. 11, that the Detroit United Ry. may charge extra fares for transporting street railway passengers beyond the old city limits in the towns of Greenfield, Grosse Point, and Fairview, Mich., annexed to the city, and it was also held that the company need not sell reduced rate tickets during workmen's hours in the annexed territory.

Quebec Railway, Light & Power Co's Employes' Wages, Etc.

The Board of Conciliation and Investigation appointed by the Minister of Labor, under the Industrial Disputes Act, on the application of the Q. R. L. & P. Co.'s conductors and motormen, presented a unanimous report Dec. 6 recommending that the men receive from Dec. 1, 1916, an increase of 2½c an hour, making the new scale of pay per hour as follows: 1st year 21c, 2nd year 22c, after two years 24c, after 7 years 26c, the agreement to be for 3 years, from Dec. 1, 1916. The other principal provisions of the agreement are as follows: Overtime after the regular day's work, and all special work which they may be called upon to perform after the distribution of the regular work, to be paid 2c an hour extra. An employe relieved from work before the regular hour, by a company's official, to be paid for time he is supposed to make, except in cases of serious misconduct justifying his immediate suspension or dismissal. No employe to be required to work more than 10 hours a day without necessity. Every employe to be entitled to at least 2 hours rest after working 6 consecutive hours. Employes to be entitled to rest on Sundays, each in turn, except in cases of necessity. An hour is to be allowed every spare man who reports regularly at the time of changing crews on any day and who has not secured any work. Twelve hours work a week is assured to all employes who thus report.

For labor conventions in Canada, funerals of co-employes, Labor Day and national holiday, leave of absence shall be given 3 conductors and 3 motormen, provided request is made in advance and men found to relieve them. Leave of absence for conventions not to exceed 8 days.

All conductors and motormen to be entitled to 2 uniform caps each year free of charge, 1 for summer and 1 for winter. First and second year men to pay half of cost of summer and winter uniforms. After second year uniforms to be paid for by company. Winter overcoats supplied in future to come down 6 in. below knee. Men not to be obliged to return uniforms supplied them free, when they leave the service. Detailed statement to be given any employe from whom part of wages is being held to pay for uniform.

Cars to have heaters, protecting frames for motormen, and on the sides of open cars, eaves to protect conductors against water falling from roof. Open cars to be only in service between May 15 and Oct. 1. Motorman's vestibule to be enclosed, heated in winter and supplied with curtain to prevent reflection. Conductors and motormen to be required to make only urgent and temporary repairs to brakes, sand boxes, motors, and trolleys. Cars to be supplied with bell from forepart to back of car for signals from motorman to conductor. Suitable and clean waiting room, properly lighted, ventilated and heated, to be provided for employes.

Reprimands to employes before public to be avoided as much as possible. An employe suspended or dismissed, on an unfounded complaint, and reinstated, to be paid full wages for all time lost. No employe to be dismissed on a complaint, or suspended, before being heard. Employes to be received by General Manager, to appeal from Superintendent's decisions, or to state any other dispute, after giving notice to the Superinten-

dent. Employes to be free to belong to National Brotherhood of Street Railway Employes. At meetings of employes called by company's officers, communications and instructions to be given in both English and French. No employe shall be forced to accept a promotion. Actions taken in connection with the 1916 strike shall be abandoned and no further action taken in connection with it.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—

	Oct. 1916	Oct. 1915	Oct. 31, '16	Oct. 31, '15
			Jan. 1 to Jan. 1 to	
Gross	169,210.78	019,202.78	928,888.88	779,319.53
Expenses	480,126	480,051	1,908,767	1,928,530
Net earnings	93,418	58,775	293,803	145,167

The percentage paid to the City of Vancouver for Nov., 1916, was \$3,893.71 against \$3,323.14 for Nov., 1915. Passengers carried on the city and suburban lines were 2,231,699 against 2,269,543 in Nov., 1915.

Cape Breton Electric Company:

	Oct. 1916	Oct. 1915	Oct. 31, '16	Oct. 31, '15
			12 mths to	12 mths to
Gross	\$36,466.20	\$34,152.20	\$387,757.87	\$347,773.12
Exp's	18,204.89	16,891.18	227,251.19	205,636.89
Net	18,261.31	17,261.02	160,506.68	142,136.23

Regina Municipal Ry.—In the report presented to the annual meeting of rate-payers recently by the city officials of Regina, Sask., the following references were made to the municipal railway:—

"Operating expenses are slightly higher than for last year's period, but are some \$35,000 less than in 1914. There is a surplus in operation of \$13,000 compared with a deficit of \$12,500 last year. The receipts show an increase of 23%, mostly accounted for by the greater passenger earnings, as the freight business has fallen off somewhat. The net improvement over last year's period in the street railway statement reduces the deficit \$36,500, which reduction will be greater when the last two months of the year are accounted for. For the corresponding 10 months period of 1915 and 1916, the total passengers carried, the total car mileage, and receipts per car mile were: 2,908,339 and 3,756,645; 777,776 and 764,358; 16.15c and 21.07c respectively."

Alderman Barr, in discussing the matter, said: "The most difficult utility with which your city has to contend is the street railway, and when your council has changed a deficit of some \$13,000 into a surplus of \$13,000 there is some reason to believe that we shall ultimately solve even this difficult problem. It is only fair to state in connection with last year that about \$10,000 of the deficit referred to was incurred on account of the very difficult winter and heavy snowstorms which kept the tracks continually tied up and had to be removed at no small expense."

The financial statement presented covered the 10 months ended Oct. 31, 1916. The net loss for 1915 after paying fixed charges, was \$68,159.48 and the total revenue for the 10 months was \$169,728.96. The operating expenses were \$166,576.50, and the fixed charges \$81,312.94.

Saskatoon Municipal Ry.—The Saskatoon, Sask., Phoenix says:—"The street railway was completed in the latter part of 1912 and commenced operation in the early part of 1913. The total track mileage on a single track basis is 16½ miles, and the average number of cars operating is 12. The original fares were 6 tickets for 25c, but they were altered in 1915 to a straight 5c fare. The alteration has

undoubtedly meant an increase in revenue rather than a decrease in the number of passengers carried. The operating expenses have been reduced from \$137,334.11 in 1913 to \$106,982.26 in 1915, a reduction of \$30,395.85, or 22%. In spite of the reduction in operating costs, however, the loss increased from \$19,664.83 in 1913 to \$30,973.92 in 1915, due to the falling off in revenue the first six months of the latter year. The revenue during 1916, however, has so greatly increased that the railway is now being operated at a profit."

Toronto Railway:—

	City		City	
	1916	percentage	1915	percentage
Jan.	\$473,784	868,847	\$471,226	\$70,486
Feb.	470,704	70,614	440,313	66,047
Mar.	518,555	97,237	488,468	93,141
Apr.	496,172	99,234	467,701	93,540
May	500,516	100,103	468,953	93,790
June	467,086	93,417	450,582	90,116
July	469,845	93,969	449,108	89,821
August ...	474,824	94,964	447,968	89,593
Sept.	506,621	40,530	489,574	39,166
Oct.	487,954	39,036	461,682	36,934
	\$4,866,061	\$797,951	\$4,635,575	\$762,634

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

	Oct. 1916	Oct. 1915	Oct. 31, '16	Oct. 31, '15
			Jan. 1 to	Jan. 1 to
Gross	\$907,460	\$792,001	\$8,913,224	\$7,942,666
Expenses	469,837	358,957	4,557,490	3,993,909
Net earnings	437,623	433,044	4,355,734	3,948,607

Winnipeg Electric Railway:

	Oct. 1916	Oct. 1915	Oct. 31, '16	Oct. 31, '15
			Jan. 1 to	Jan. 1 to
Gross	\$278,817	\$286,146	\$2,740,271	\$2,799,595
Expenses	152,574	181,176	1,765,145	1,848,025
Net earnings	96,243	104,970	975,126	951,570

Trolley Express Service.—Business interests in and around Buffalo, N.Y., have for the past two years enjoyed a trolley express service on the International Ry. lines and it has become one of the factors in the general prosperity of that community. The idea of an express service on the electric line was conceived by the Chamber of Commerce and accepted by the railway company. Immediately a package express service was inaugurated between Buffalo, Lockport and Olcott, and by arrangement with the Lockport & Rochester Ry., to Rochester. The business done has doubled during the past year. It has been found cheaper to use this service for deliveries in the Tonawandas and other points between Buffalo and Lockport than to use delivery trucks, which had been the practice of many lines of business. Another feature of the service, affecting shippers along the line outside of Buffalo, is that during the period of navigation on the lakes they can make shipments to Cleveland and Detroit.

Toronto Ry. Overcrowding Case.—The Toronto Ry.'s appeal against the Supreme Court of Canada's decision, confirming a conviction for overcrowding on its cars, came before the Imperial Privy Council, Dec. 19. An objection was made to the appeal on behalf of the respondents, on the ground that the Judicial Committee of the Privy Council was not competent to entertain an appeal in reference to a criminal or quasi criminal matter. After some discussion it was arranged that the Attorneys General of Great Britain and Canada be communicated with as to their intention to be heard on the question of jurisdiction or to decide not to proceed further with the case, and the matter was adjourned sine die.

H. R. Mallison, of Montreal, who is connected with the Halifax Electric Tramway Co., addressed the Commercial Club at Halifax, N.S., recently, on "Some general ideas of how the H.R.T. Co. can and will benefit Halifax today and in the future."

Electric Railway Notes.

The Dominion Power & Transmission Co., Hamilton, Ont., has ordered a snow sweeper from Preston Car & Coach Co.

The Lake Erie & Northern and the Hamilton and Brantford Ry. joint station at Brantford, Ont., was opened for business Dec. 16.

The Three Rivers Traction Co. has received a combination freight car and snow plough from the Ottawa Car Manufacturing Co.

The Saskatoon, Sask., City Council decided, Dec. 13, to provide a shelter for convenience of street car passengers at the corner of Seventh Ave. and Princess St. at a cost of \$150.

The Vancouver City Council is considering the acquiring of sites for the erection of power plants, so as to be in a position to have its own electric power when the British Columbia Electric Ry.'s franchise expires.

The Board of Railway Commissioners has approved the agreement of the City of Brantford, Ont., as owner of the Brantford Municipal Ry., with the Lake Erie & Northern Ry., for the sale by the city of a portion of the Grand Valley Ry.

The Quebec Ry., Light & Power Co. is building 2 additional double truck, single end, p.a.y.e. cars, 40 ft. long over all, to be numbered 654 and 655, at its Ste. Anne de Beaupre shops. This makes 6 cars of this type built at the company's shops.

Alderman R. G. Duncan, of Fort William, Ont., speaking at a meeting at Port Arthur, Dec. 15, is reported to have said that it costs 6c to furnish a street car ride between Port Arthur and Fort William, in which both cities are interested, and for which only a 5c fare is charged.

The British Columbia Electric Ry. Social Club's annual gathering was held recently, W. G. Murrin, Assistant General Manager of the company and President of the club, being in the chair. The speakers included G. Kidd, General Manager; A. T. Goward, Local Manager, Victoria; G. Porter, Chief Electrical Engineer, and V. Laureson, Permanent Counsel.

Controller Cote, of Montreal, has been fined \$1,000 for contempt of court in connection with the disregarding by the Board of Control of an injunction to restrain it from considering what is known as the Hebert proposal for a new franchise for the Montreal Tramways Co. This is the third fine inflicted, the other fines of a similar amount being upon Mayor Martin and ex-Controller Hebert.

On a motion to commit R. J. Fleming, General Manager, Toronto Ry., to jail for contempt, in not complying with the court's order to furnish certain information to the City of Toronto, Justice Middleton, at Toronto, Dec. 18, postponed judgment for three months, to enable the parties concerned to get together with a view to agreeing as to the information required and the best means of obtaining it.

A plan is under the consideration of the Port Arthur, Ont., Utilities Commission for the installation of a clock at the corner of Arthur and Cumberland Sts., on which there will be a dial showing the time of arrival at that point of cars travelling in all directions. As the clock will register the time and at the same time show when the next car is due, it is believed that the installation would be of great benefit.

The City of Vancouver, B.C., in order to safeguard the public at bridges in

which there is a draw or swing span, has decided to adopt special protective devices. The Granville St. bridge is to be provided with them at once, and it is expected that the Connaught St. swing span over the Main St. bascule bridges will be equipped later. These devices are in addition to those already provided by the British Columbia Electric Ry.

It is reported that Montreal ratepayers will vote in September next as to whether the present system of city government, consisting of a mayor, board of control and aldermen, shall be abolished or not, and replaced by a commission, Lord Shaughnessy, Sir Alexander Lacoste and Senator Beaubien being spoken of as probable commissioners. It is also stated that a special subcommission consisting of Senators Beaubien and Casgrain, and F. J. Cockburn, of the Bank of Montreal, will arrange a new franchise for the Montreal Tramways Co.

Mainly About Electric Railway People.

W. Perrin, Superintendent, Metropolitan Division, Toronto & York Radial Ry., Toronto, has resigned.

L. P. McClelland has been appointed acting Superintendent, Metropolitan Division, Toronto & York Radial Ry., vice W. Perrin, resigned.

Lt. Col. G. C. Royce, General Manager, Toronto Suburban Ry., is endeavoring to enlist 1,200 men for the 255th Queen's Own Battalion, Toronto, which he has been authorized to raise.

J. J. Callahan, formerly Manager of Operation, London & Port Stanley Ry., London, Ont., has been appointed Superintendent, Oshawa Ry., Deseronto, Ont., vice D. A. Valteau, resigned.

C. W. Mott, heretofore Chief Dispatcher, Metropolitan Division, Toronto & York Radial Ry., has been appointed Superintendent of all the company's lines. Office, Toronto. This is a new position.

George Lowery, heretofore dispatcher, Metropolitan Division, Toronto & York Radial Ry., has been appointed Chief Dispatcher of that division, succeeding C. W. Mott, promoted to be Superintendent. Office, Toronto.

A. K. Bunnell, City Treasurer of Brantford, Ont., and a former member of the Brantford Railway Commission, lectured on municipal finance to the Epworth League of Colborne St. Methodist Church, Brantford, recently.

Sir Geo. White, who died at Bristol, Eng., Nov. 23, was largely interested in electric railways. The firm of which he was head manufactured electric railway cars, and was the first in England to manufacture aeroplanes.

A memorial tablet to the late Major N. C. Pilcher, General Manager of the Sherbrooke Ry & Power Co., and formerly Manager of the Port Arthur & Fort William, Ont., electric railway, who was killed on active service, was unveiled in St. Peter's Church, Sherbrooke, Que., recently.

C. B. Hare, police magistrate for Grantham, Port Dalhousie and Merritton, Ont., who died at St. Catharines, Ont., Dec. 13, aged 63, was also the Dominion Power & Transmission Co.'s special agent in the St. Catharines district, his duties mainly consisting of the general supervision of the company's real estate there.

J. W. Sutherland, who died in Hamilton, Ont., Nov. 29, aged 64, was a director

of the Dominion Power and Transmission Co. He was one of the founders of the old company which developed power at Decew Falls, acting as Superintendent and Paymaster. Prior to taking an interest in electrical matters he was in the G.T.R. service at Midland and Niagara Falls.

Albert E. Pickering, who was appointed Manager, International Transit Co., Sault Ste. Marie, Ont., recently, was born at Brampton, Ont., Feb. 16, 1883, and from 1904 to 1914 was successively operator and lineman, Assistant Engineer, Superintendent, and Manager, Tagona Water & Light Co., and Lake Superior Power Co., later, the Algoma Steel Corporation's water power department; and from 1914 to 1916, Manager, City Water & Light Department, Sault Ste. Marie, Ont., formerly the Tagona Water & Light Co.

William George Murrin, who has been appointed Assistant General Manager, British Columbia Electric Ry., Vancouver, was born at Greenwich, Eng., Aug. 27, 1875, and prior to entering electric railway service in Jan., 1899, was, from 1891 to 1893, a student at the Finsbury Technical College, London, Eng., and from 1893, in the City of London Lighting Co.'s shops and stations. From Jan., 1899, to 1901, he was shift engineer, Middlesbrough & Stockton Tramway Co., Stockton, Eng.; 1901 to 1904, Superintendent of Power, London United Tramways Co., London, Eng.; 1904 to Mar., 1913, Works Manager and Electrical Engineer, same company; Mar., 1913, to Mar. 30, 1914, Mechanical Superintendent, British Columbia Electric Ry.; Mar. 30, 1914, to Nov. 30, 1916, General Superintendent, same company.

Quebec and Saguenay Ry.—Under the terms of the Dominion Act of Parliament providing for the purchase of the Quebec and Saguenay Ry., from the Quebec Ry., Light and Power Co., the price to be paid is to be fixed by the Exchequer Court. The matter came before the court recently, when, after statements had been made, Judge Cassels gave his decision on certain points. Counsel for the railway and the Government were asked to get together and agree upon as many points to be decided as possible.

Wood Block Paving.—The Moose Jaw, Sask., City Commissioners, in their report for the 10 months to Oct. 31, say that the use of wood block paving on the streets is not as satisfactory as in eastern cities, and "this is especially the case where attempts have been made to use wood blocks between street car tracks." The question of what type of street paving is to be adopted to overcome the admitted defects of wood block paving is being considered by the City Engineer.

W. P. Cook, Chairman, Public Utility Commission, Port Arthur, Ont., and M. M. Inglis, Manager, Port Arthur Civic Ry., who attended the American Electric Railway Association's annual convention at Atlantic City recently, presented a report upon improvements in machinery, etc., in connection with the operation of street railways and their adaptability to Port Arthur's needs, at a meeting of the Port Arthur Public Utilities Commission recently.

Hydro Electric Power Commission of Ontario.—In connection with the acquiring of lands in the Niagara peninsula for the new power development, it is reported that a railway line will be built for construction purposes along the route of the proposed canal.

Marine Department

Canadian Shipbuilding for Neutral Countries.

As indicated in a recent speech by the Minister of Marine, published in our last issue, permission has been given to 7 shipbuilding firms throughout Canada, for the construction and export of 21 steel steamships for foreign neutral countries, chiefly for Norway. As such construction and export was forbidden, special permission has to be granted in each case and orders in council have been passed, the following being a copy of the one issued to the Nova Scotia Steel and Coal Co., all being in identical terms, except for the date, name, and the number of vessels to be built.

"The committee of the Privy Council have had before them a report, dated Oct. 31, 1916, from the Minister of Marine and Fisheries, submitting that he has had under consideration an application on behalf of the Nova Scotia Steel and Coal Co., New Glasgow, N.S., for permission to export to Norway on completion two steel steamers, which they are about to construct in their shipyard at New Glasgow, for certain neutral owners who propose to place these ships under Norwegian registry. The Minister states that the applicants are prepared to give an assurance that such ships will not engage during the war in enemy trade, and that no demand on Great Britain for labor, material or machinery will be made in connection with the construction. The Minister recommends that authority be granted the Nova Scotia Steel and Coal Co., New Glasgow, N.S., to export the two steamers referred to in this present application, to Norway for Norwegian register in the name of neutral owners. The committee concur in the foregoing recommendation and submit the same for approval."

Following is a list of the firms to whom permission has been granted, with the dates of the orders in council, and the number of vessels allowed under the permit:—

Sept. 19—Polson Iron Works, Ltd., Toronto	2
Sept. 19—Thor Iron Works, Ltd., Toronto	2
Sept. 28—Canadian Vickers Ltd., Montreal	2
Nov. 3—J. Coughlan & Sons, Vancouver	1
Nov. 3—Western Dry Dock and Shipbuilding Co., Port Arthur, Ont.	3
Nov. 3—Wallace Shipyards, Ltd., Vancouver	4
Nov. 14—J. Coughlan & Sons, Vancouver	2
Nov. 15—Nova Scotia Steel and Coal Co., New Glasgow	2
Nov. 15—Polson Iron Works Ltd., Toronto	2

The foregoing list only covers 20 vessels, but it is understood that the Nova Scotia Steel & Coal Co. is building three vessels for export and not two as indicated above.

All of the vessels mentioned in this list are for Norwegian registry, with the exception of the two being built by Thor Iron Works, Ltd., Toronto, which are for export to the United States. As mentioned in another column certain of these contracts are being offered for sale in London, Eng., on behalf of the Norwe-

gian interests concerned and in the case of sales being made, it is to be presumed that there will be a profit on the transactions for the principals, as well as a commission for the agents in the matter.

The Montreal Transportation Company Changes Ownership.

The Montreal Transportation Co.'s property and assets have been acquired by L. L. Henderson, heretofore Managing Director, and his associates. The only changes in the directorate at present, are the resignation of the President, Bartlett McLennan, the election of L. L. Henderson as President and Managing Director, and the election of A. A. Wright, Managing Director, St. Lawrence and Chicago Steam Navigation Co., Toronto, as Vice President and Treasurer. The other directors are Farquhar Robertson, A. Kingman, A. G. Thomson, H. A. Calvin, and A. E. Ogilvie.

The Montreal Transportation Co. was originally incorporated with an authorized capital of \$300,000, and in 1903 obtained a new charter with an authorized capital of \$1,000,000, with authority to make advances on goods stored, and to hold shares in other companies, which was an addition to the original business which was confined to transporting grain and general freight. The actual paid up capital stock of the company was \$913,300, represented by a property in Kingston, Ont., its fleet of vessels and floating elevators, and the entire capital stock of the Prescott Terminal Co., Ltd., nominally \$500,000. The company owns the following vessels: Steamships—Advance, Glenmount, India, Kinmount, Rosemount, Simla, Stormount, Windsor; Tugs—Bartlett, D. G. Thomson, Emerson, Glide, H. F. Bronson, M. P. Hall, Mary; Lake barges—Augustus, Burma, Dunmore, Hamilton, Hiawatha, Kingston, Lapwing, Melrose, Muskoka, Quebec, Selkirk, Thrush, Ungava, Valencia, Winnipeg; and a number of river barges and floating elevators.

Transfer of Vessels from the Canadian Register.

During the year ended Mar. 31, 1916, there were transferred from the Canadian register, 32 vessels of a total tonnage of 25,834 tons. Of these, 15 were transferred to foreign registers, 14 to the U. S., and 1 to Russia, and 27 vessels, representing 20,964 tons, were transferred to British registry outside Canada. The principal changes were the transfer of 21 vessels, 7,183 tons, to British registers in Newfoundland and Barbadoes.

The Deputy Minister of Marine in his annual report says it is generally understood that a large proportion of these transfers was made with the sole purpose in view of securing immunity from some of the provisions of the Canada Shipping Act, in which it is provided that no ship registered in Canada, over 150 tons, shall go to sea from any port in Canada on any voyage not being a coasting voyage, unless the master and first mate, or only mate, possesses valid certificates, and that no sailing ship over 150 tons, and no steamship registered in Canada, shall go from any port in Canada on any coasting

voyage, or be licensed or allowed to ply on any Canadian water, unless the master possesses a valid certificate. In Newfoundland and Barbadoes there is no legislation of this nature, with the result that vessels registered there may engage in trade from any Canadian port without being obliged to secure the services of certificated masters and mates. It does not appear reasonable that vessels on the Canadian register and their owners should be thus discriminated against, and it is submitted that the matter should engage the attention of Parliament at its next session. It may be pointed out in further reference to this matter that while steamships registered in Canada engaged in foreign coasting and inland trade, are obliged to carry certificated masters, steamships registered in the United Kingdom may engage in all these trades without any obligation to employ certificated masters. Both the Merchant Shipping Act and the Canada Shipping Act appear to be defective in this respect. The former provides that every British foreign going ship when going to sea from any port in the United Kingdom, shall be provided with officers duly certificated. When, however, that ship reaches a Canadian port and undertakes to clear for a foreign, coasting, or inland voyage, it is under no obligation to employ certificated officers. In the revision and consolidation of the Canada Shipping Act, the result of which has been embodied in a bill which was introduced into Parliament in the 1914-15 session, provision was made to overcome this difficulty and remove what is in reality a discrimination against steamships on the Canadian register. Owing to the time of Parliament being so much occupied with matters relating to the war during the past two years, it has not been deemed inexpedient to take up the bill so far, but it is hoped to deal with the matter at the next session.

Coal Deliveries to Coasting Vessels on the Atlantic Coast.

A commission, consisting of W. E. Tupper, Inspector of Subsidized Steamship Services, of the Trade and Commerce Department; A. R. Tibbits, Officer in Charge of Harbor Commissions, Marine and Fisheries Department, and J. F. McDonald, Collector of Customs, New Glasgow, N.S., has been appointed under the provisions of part 1 of the Inquiries Act, to enquire into and report upon the conditions regarding deliveries of coal cargoes to coasting vessels in the Maritime Provinces. This action was taken at the instance of the Prince Edward Island Legislature, which complained that captains and owners of coasting vessels suffered hardship in having their vessels laid up during the winter, and to further hardship and financial loss owing to the long delays, often extending to several weeks, at coal delivering ports. It is pointed out that the greater part of the coal used in the province is imported in sailing vessels, and owing to the many shallow water harbors, must continue to be carried in vessels of shallow draught, and that by preventing these delays, the building of coasting vessels could be profitably undertaken and an industry established that would be of benefit to the whole province.

Stranding of the s.s. Samuel Marshall.

An investigation was held recently by the Dominion Wreck Commissioner, Capt. L. A. Demers, at Quebec, assisted by Capt. C. Koenig and T. Gough, as nautical assessors, into the causes of the stranding of the Central Canada Coal Co.'s s.s. Samuel Marshall near Lark Reef at the entrance to the Saguenay River, Sept. 8. The judgment set out that the absolute trust and the possible misinterpretation of the duties and responsibilities of a pilot, caused two men, the master, W. A. Tulloch, and the mate, C. Ross, especially the master, to forget their duties to a most regrettable extent. When the vessel left Little Saguenay wharf, the master saw to her unmooring and headed her down the river. Although according to the system followed on the vessel, his watch was until midnight, he left the bridge and retired to his room between 10.30 and midnight, and went to sleep, without issuing instructions of any kind, leaving everything to the pilot; even the lookout was not sent to his post. If the pilot's version is true, that he sounded the fog whistle, it failed to bring the master on deck to his duty. It was only when the shock of grounding was felt, that he was awakened and proceeded to the bridge. The mate also went to sleep without advising someone to call him, basing himself on the tacit understanding that the watchman would do that without request. It was also considered by him as understood that the watchman or lookout man was to keep his lookout on the fore-castle head, and such was not done on this occasion. While the court finds much to blame in the mate's conduct, there is an extenuating reason for leniency in his case, and causes his excuse that had he been called he would have been at his post, to be accepted. The master's conduct in leaving the bridge without giving orders of any kind, is astonishing. It is true that both he and the mate had been working all day, and there being no second officer, the mate had to be about constantly to see to the cargo and prepare the vessel for her trip. The master was also undoubtedly busy with the cargo, getting ship's paper in order, and many other details to which a master is in duty bound to attend. The situation being known that there was one officer short, and being satisfied that the vessel was to leave at a certain time during the night, it seems to the court that if either the master or the mate felt some rest was needed before sailing, some means could have been devised to secure that rest before the vessel sailed, but such was not thought of, the idea predominating, no doubt, that there was a pilot on board, and through a mistaken interpretation of responsibilities, a happy-go-lucky method was adopted; perhaps such is general, but only discovered when a casualty occurs.

The court, composed as it is, of members who have had a vast and varied experience in shipping matters, each member having been in command, realizes that in these momentous times crews cannot be selected as one would wish, and owners have found difficulty in obtaining sufficient men to run their vessels, and those found are generally deficient in qualifications and experience. These conditions apply to foreign as well as inland navigation. The wheelman and watchmen examined are young fellows who have not had sufficient training to understand their duties unless a superior officer

is present, to guide, advise and instruct them. It was known by the master and mate, or should have been, that there was no light on the compass on the bridge. In view of the circumstances prevailing, of shortage and indifferent crews, it behoves the master and his official subordinates to redouble their vigilance and prudence and face conditions as they are found in a manly fashion. Weighing all details together, the court, without showing any undue severity, should deal at least with the certificate of the master, but in doing so, the intention to bring about a realization on the part of the masters and officers of their duties, would be nullified by the fact that the navigation season is nearly at an end, and a suspension of certificate would be fruitless. The court therefore exercises the other power it possesses, and condemns the master to pay two-thirds of the expenses of the investigation, and the mate the other third, the total being \$123.70. In addition, both master and mate are severely reprimanded for their indifference. The court found the pilot, E. Langlois, in default for failing to acquaint himself with the so-called telegraph to the engine room, for not having insisted on the presence at his side of the responsible officer of the vessel, and for not making some attempt to supervise the courses he was giving, and the work of the wheelman. His excuse that he thought some one in the wheelhouse was responsible for this, cannot be accepted. Owing to the circumstances already mentioned for not dealing with the master's certificate, the court fined the pilot \$100, to be paid by Dec. 27, and cautioned him that should he come before the court again and be found in default, his license will be dealt with.

Hawking Canadian Shipbuilding Contracts.

The following letter which appeared in a recent issue of the Journal of Commerce, Liverpool, Eng., from Donald Macleod and Co., London, Eng., will, no doubt, be read with considerable interest by Canadian shipbuilders and others concerned in the welfare of the shipbuilding trade on this side of the ocean.

"We have the following contracts for new steamers for sale building in British yards (Canada) for Norwegian account, viz:—Three 8,800 tonners, Robert Dollar type, one delivery end July-early August, one October, and one November, building by Wallace Shipbuilding Co., Vancouver, and we can sell them at \$145 a ton for the first steamer and \$140 for the two later. Also two 7,000 tonners building by Vickers, Montreal, delivery end of 1917, for which we will try \$135 a ton, all net to us.

"May we put on record here it seems to us absolutely disgraceful that it is possible for British colonial yards to take contracts to build ships for neutral countries when it is impossible for British owners to get reasonable deliveries from our home yards, and when we need every ship we can possibly secure in the near future to be under British control, and if the above is an example of how Britain is preparing for 'The War After the War,' the result can only be disastrous.

"British owners can still secure these contracts, but now only after the Norwegian holders have taken their profit. Surely this is a criminal loss of foresight on the part of our Government, who give no encouragement to British owners to

build ships abroad at prices required by builders, otherwise we could long since have secured a large fleet of up-to-date merchant vessels recently built and now building both in America and Japan, all of which have been secured by neutral countries."

It is not Canadian Railway and Marine World's intention to comment on the ethics of these particular transactions. Similar deals are probably taking place frequently, so we merely accept the information and note the prices quoted as evidence of abnormal times.

The correspondents quoted characterise it as "absolutely disgraceful" that Canada should take contracts to build vessels for neutral countries when it is impossible for British owners to get reasonable deliveries from their home yards. Surely this reason is very illogical. If it is impossible for British owners to obtain deliveries from home yards, and Canadian yards are open to accept contracts, one would think that British owners would flood Canadian yards with orders for new vessels. The Minister of Marine in a recent speech stated that there were plants splendidly equipped for the construction of steel steamships at New Glasgow, N.S.; Montreal, Que.; Kingston, Toronto, Collingwood and Port Arthur, Ont., and Vancouver, B.C., and that orders in council had been passed allowing these plants to build and export to foreign neutral countries, 21 steel steamships of varying tonnage. There is therefore sufficient evidence of the capacity and capabilities of the yards on this side to build vessels of a type especially suitable for ocean service under war conditions. Will British owners in search of new tonnage take advantage of the opportunity of building new tonnage within the Empire? Or will they, as is done in the letter quoted above shelter themselves under the complaint that "surely this is a criminal loss of foresight on the part of our Government, who give no encouragement to British owners to build ships abroad at prices required by the builders." There is no criminal loss, or lack, of foresight in the matter, except possibly on the part of the owners, who have not taken full advantage of the facilities offered. It is not a Government matter, and in the face of the figures quoted, viz., \$135 to \$145 a ton, the reference to "prices required by the builders" is superfluous.

In answer to a question in the British House of Commons, Nov. 30, it was stated that the British Government would communicate with the Dominion Government on the question as to whether it was in the national interest that the Dominion shipbuilding yards should build ships for neutrals, when it was so difficult for British shipowners to get deliveries.

Floating Dry Dock for Vancouver.—It is reported that arrangements have been completed for building a floating dry dock of double section, 18,000 tons capacity, by Vancouver Dry Docks, Ltd., the incorporation of which was mentioned in our last issue. C. Meek, of Vancouver, is stated to be the chief organizer of the project, and reports state that \$2,000,000 of bonds have been sold to Breed, Elliott & Harrison, Cincinnati, Ohio. The scheme covers also the building and operating of a complete shipbuilding and repair plant. Contracts for construction and machinery are reported to have been let, and it is hoped to have the plant in operation within a year. It is the intention to apply to the Dominion Government for aid under the act granting aid for the construction of dry docks.

Change of Collingwood Shipbuilding Co. Ownership.

H. B. Smith, Owen Sound, Ont.; J. W. Norcross, Montreal; and R. M. Wolvin, Winnipeg, have bought all the assets and undertakings of Collingwood Shipbuilding Co., Ltd. The outstanding capital of the company, which is an Ontario one, is \$1,300,000. A new company, with the same name, will be incorporated under Dominion charter, with a capital of \$2,600,000. H. B. Smith will be President, and Messrs. Norcross and Wolvin Vice Presidents. The old company's shareholders will receive \$1,950,000 of 6% 10 year bonds and \$650,000 paid up stock of the new company at the rate of \$150 in bonds and \$50 in stock for each share of the old company. Included in the purchase is 96% of the outstanding capital of the Kingston Shipbuilding Co., Ltd. J. S. Leitch, Manager, and S. H. Lindsay, Secretary Treasurer, of the old company will receive similar appointments in the new one. The company's stock is firmly held, and there will be no public issue.

The old company owned two dry docks, machine shops and a quantity of land at Collingwood, as well as 96% of the Kingston Shipbuilding Co.'s shares. The directors, according to the last return available, were:—Alex. McDougall, Superior, Wis., President; Thomas Long, Toronto, Vice President; S. H. Lindsay, Secretary-Treasurer; H. B. Smith, S. Dymont, M. P. Byrnes and P. M. Campbell, the last mentioned director having died since. The business was originally established in 1889, under Ontario charter, as Shipbuilding, Dry Dock & Wrecking Co. of Collingwood, Ltd., its name being subsequently changed to the Collingwood Shipbuilding Co., Ltd.

Grounding of s.s. W. B. Morley.

An investigation was held recently into the causes which led to the damage sustained by the s.s. W. B. Morley, whilst in charge of the pilot, G. Perreault, when being swung in the neighborhood of Plum Island, in the St. Lawrence, June 17. Following is a summary of the judgment delivered by Capt. L. A. Demers, Dominion Wreck Commissioner, and concurred in by Capt. C. Koenig and L. R. Demers, as nautical assessors.—The court had contradictory evidence from each of the four witnesses called with regard to the anchoring of the vessel. The casualty having occurred on June 1, it may be expected that the actual happenings were not memorized, and hence the court concludes, that in the absence of any log books, the evidence, though contradictory in the extreme, is not due to any intention to mislead or mystify the court, but rather to forgetfulness. The pilot's action is the only point for the court to discuss. If it was the intention to anchor when fog came on, the pilot should have stopped the vessel, keeping her in the course and letting go his starboard anchor, and the tide of 1½ miles at that place would have swung the vessel gently either one side or the other, or else have canted the head of the vessel slightly to starboard, which would have answered the purpose and assured the pilot and master that the vessel would swing as desired. Instead of this, the vessel was caused to leave midchannel on a starboard helm, and, after a short interval, to evolute under a hard to port helm, and whilst swinging to the starboard side, her heel struck shoals, injuring the keel and rudder, and then she was allowed to

come head to tide before the anchor was let go. From this there is no other conclusion than that the pilot showed lack of judgment in carrying out the evolution. His conduct is not serious enough to cause his license to be dealt with, especially in view of the fact that this is his first trouble in 20 years, but he is condemned to pay the cost of the enquiry, and is cautioned to be more logical and to use better judgment in future. The costs of the investigation are as follows.—Travelling expenses of Wreck Commissioner and stenographer \$70, French stenographer \$18.75, assessors' fees \$20, total \$108.75.

The court deprecates the system which prevails on many lake boats. There is a lack of discipline. It is evident that there was no lookout as required by the Board of Trade and the Rules of the Road, that soundings taken and given were incorrect, whether through lack of care or knowledge the court was unable to ascertain, as the second mate, who was detailed to take soundings, has left the vessel, and his evidence was not available, but in view of the conditions existing and the scarcity of labor, the court feels inclined to view the matter leniently. Though the lack of lookout did not contribute to the casualty, it is nevertheless a breach of the regulations. If some discipline had been observed, there would have been no necessity for the master to relieve the man at the wheel so that he might help the second officer to take soundings, unless the casting of the lead was continuous, and lengthy experience has taught the court that two men are not required. Owing to the investigation being delayed so long, due to no particular fault, and causing incomplete evidence, the court only reprimands the master, H. Larosie, for not maintaining better discipline, and cautions him that though a pilot is on board, it is up to the master, and to him only, to observe the Rules of the Road.

Regulations Regarding Vessels' Lights on East Coast.

Vice Admiral C. E. Kingsmill, who signs as Competent Naval Authority, issued the following notice, dated Nov. 24.—“By virtue of the authority conferred upon me by orders in council of Sept. 12, 1914, and Mar. 25, 1915, the following orders regarding ships' lights on the East Coast of Canada are hereby made to come into force forthwith,—

1. Anchor lights—No electrically lit lanterns shall be employed as anchor lights. The normal brilliancy of all other anchor lanterns shall be reduced by 50%.

2. Bow and steaming lights—Vessels are not to use electrically lit lanterns as bow or steaming lights in the vicinity of the harbor.

3. Other lights—No lights, either aloft, on deck or below, except those required by the Regulations for the Prevention of Collisions at Sea, and such as may be necessary for authorized signalling purposes, shall be permitted to be visible from outboard. This shall apply to all vessels whether under way or at anchor.

4. The above orders shall apply to vessels of every description, other than H.M. ships, within the waters of Canada on the East Coast, and extending up the St. Lawrence River as far as the Port of Quebec.

Masters of ships not complying with these orders render themselves liable to a penalty not exceeding \$5,000 or imprisonment not exceeding 5 years, or to both fine and imprisonment.

Stranding of the Japanese s.s. Shintsu Maru.

Judgment was delivered recently, at Victoria, B.C., by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, and which was concurred in by Capt. S. W. Bucknam and C. Clarke as assessors, in the matter of the stranding of the Japanese s.s. Shintsu Maru, near Point Roberts in the Gulf of Georgia, Sept. 22. Following is a summary: After studying the evidence, which was fairly satisfactory throughout, the court can come to no other opinion than that the sole blame for the stranding must be imputed to the pilot, H. R. Jones, belonging to the Vancouver Pilotage District, and that no blame can be attached to any members of the crew. In the court's opinion there is no doubt that the night, though dark, was clear, and that there was no fog nor any signs of it at the time, though it was probably misty over Point Roberts. The evidence of the master and crew of the vessel, the log book, as well as the log book of the Fraser River light vessel, clearly substantiate this, as also does the fact that the light of the Sand Heads gas buoy, 4 miles to the north of the stranding, was clearly visible. The court is therefore confident that the accident was due to two causes, the first being that the pilot set the vessel on much too fine a course to be safe, after rounding East point, and the second, that he made no allowance for easterly deviation, due to retained magnetism, which from his long experience he should have suspected to exist, after the vessel had been steering east from Japanese ports for several days. In addition to these two cases there is every probability that the tide, small as it was on that night, had a tendency to set the vessel over toward Roberts Bank.

Owing to the fact that the pilot has already been suspended for three months by the Vancouver Pilotage Authority, for the stranding, the court refrains from dealing with him in any manner, and makes no comment other than that in its opinion, the Vancouver Pilotage Authority dealt with him most leniently, especially in view of the fact that this is the second serious accident to large ocean going vessels under his charge within three months. The Court regrets that the pilot took up the somewhat defiant attitude he did in refusing to appear and give evidence, until forced to do so, thus causing not only considerable delay and inconvenience, but also unnecessary expense. The court being of opinion that public money is certainly not for the purpose of being needlessly wasted, more especially at the present time, therefore orders under Sec. 794, part 10, cap. 113 of the Canada Shipping Act, that the pilot pay all costs for the two extra and unnecessary days which the court was forced to sit, such costs being \$70. This will not only be a lesson to him, but a deterrent to others who might in future cases feel inclined to take up a similar attitude. The court wished to place on record the appreciation of the courtesy, characteristic of their nation, shown by the Japanese master, officers and crew of the s.s. Shintsu Maru, in coming over voluntarily from a U. S. port, knowing that they could not be compelled to, to give evidence when requested to do so, and also to convey its thanks to the British Consul at Seattle, Wash., and to Frank Waterhouse & Co., agents for the vessel, for the interest they took and the help they gave in the matter.

Atlantic and Pacific Ocean Marine.

It was announced from London, Eng., in the early part of December, that war risk insurance in London had been advanced from 5% to 10% for trans-Atlantic and Cape of Good Hope trade, on the report that a German commerce raider was at large in the Atlantic Ocean.

The steamships Blaamyra and Thorjerd, which were mentioned in our last issue as having left Port Arthur, where they were built, for the Atlantic Coast, are owned by Hans Hensen, Christiania, Norway, and will be operated between North and South America in the general trade until the end of the war.

Cable reports from London, Eng., Dec. 15, state that rumors were current on the Stock Exchange to the effect that the Cunard Steamship Co. was taking over the C.P.R. Atlantic steamships, and that the C.P.R. was taking over the Union Steamship Co. of British Columbia, thus confining its steamship service to the Pacific. In referring to this report, G. M. Bosworth, Vice President, C.P.R., is reported to have stated that it was entirely unfounded.

The Marine Navigation Co. is operating the steamships Nigaristan and North Cambria between Halifax, N.S., and France, and also controls a number of sailing vessels, 8 in all, 3 of which have auxiliary power. These latter are engaged in the lumber trade. The s.s. Cardiff is to be added for the Canada-France service when she is released by the British Government. The company is reported to have under construction in England 2 steamships to be named William Wallace and Robert Bruce, respectively 7,500 tons and 8,400 tons, and one steamship the Dominion, under construction in Holland, for U.S. trade.

A steamship is under construction at the Wallace Ship Yards, North Vancouver, for the Kishimoto Kissen Kabuskiks Kaisha, of Japan, for service on the Pacific Ocean. The vessel will be a steel cargo steamship, with capacity for 4,500 tons dead weight, driven by single screw, and built to Lloyd's A1 classification, under special survey. She will be built with a straight stern, with 2 masts, machinery placed amidships, and will be of the bridge deck type. The propelling machinery will consist of triple expansion engine, with cylinders, 24, 38 and 62 in. diam. by 42 in. stroke, supplied with steam by 2 single end Scotch boilers, 14½ by 10¼ ft., at 160 lbs., and fitted with tubes giving 4,268 sq. ft. of heating surface.

Tide Tables for the Eastern and the Pacific Coasts for 1917 have been issued by the Naval Service Department's Tidal and Current Survey. These are issued free on application to the department.

Welland Ship Canal Construction.—With the close of the construction season for the winter, work has been suspended on the Welland Ship Canal, with the exception of a few small matters which will be cleared up very early in January. It is not the Government's intention to proceed further with the work until the close of the war. This decision has been reached owing to the shortage of labor and the difficulties experienced in obtaining adequate supplies as required. The work done on the four contracts under way is of such a nature that it will not deteriorate in the interval, and after the war the remaining contracts will be awarded and the whole pushed through with all speed.

Maritime Provinces and Newfoundland.

Pickford & Black have been appointed Lloyd's agents at Halifax, N.S. They have been acting in that capacity since the resignation of the position by S. Cunard & Co.

A fire in the Marine Navigation Co.'s office in the Pickford & Black Building, Halifax, N.S., Dec. 3, did considerable damage to the property and to the workshop and store where Pickford & Black conducted their stevedoring business.

A steamship is reported to be under construction at Wedgeport, Yarmouth, N.S., by Capt. H. T. Leblanc for freight service. It is stated that she will be launched in the spring, and that she is being built on the same lines as those used on the Great Lakes, with machinery aft and a clear cargo space amidships.

The Boston & Yarmouth Steamship Co., which is operated in connection with the Dominion Atlantic Ry., placed an additional vessel in service between Yarmouth and Boston, Dec. 15. The steamships Prince Arthur and Boston are now giving the service, the latter vessel making an additional two trips a week in the freight service only.

The Dominion Government is offering for sale, its s.s. Ostrea, which has been attached to the Department of Naval Service for some time, in connection with oyster culture. She is being replaced by another vessel, bearing the same name, which was described and illustrated in our last issue. The purchaser of the old vessel will be required to change her name.

A channel 200 ft. wide has been dredged from deep water to 175 ft. inside the lighthouse on the Government pier at Digby, N.S. The depth of the channel is generally 20 ft. or more, but there is a spot outside the lighthouse which is only 16 ft. From 1,800 ft. north of the lighthouse a channel 120 ft. wide has been dredged for 700 ft. towards Sproule's wharf, and inside this channel a cut 20 ft. wide has been made approximately to low water mark for a further 780 ft.

The s.s. Hampstead, which operates during the summer between St. John and Fredericton, N.B., was destroyed by fire at St. John, where she was berthed for the winter, Dec. 9. It is stated that some person boarded the vessel and started a fire in one of the stoves. She was built at Hampton, N.B., in 1893, and was screw driven by engine of 20 n.h.p. Her dimensions were, length 94 ft., breadth 17.7 ft., depth 7 ft.; tonnage, 235 gross, 159 register.

Reference was made in our last issue to New York reports to the effect that the Canada Atlantic & Plant Steamship Co. intended to discontinue business and to sell its steamships Evangeline and Halifax. We are advised that such statements are premature. The service between Charlottetown and Hawkesbury is always withdrawn during the winter, and the service between Halifax and Boston is altogether dependent on freight conditions. It is not likely that the vessels will be running during January. Neither of the two vessels has been sold.

The Dominion Government s.s. Grilse, which was purchased in the U.S. for the Government by J. K. L. Ross, and was reported to have sunk at sea with all hands, Dec. 13, landed at Shelburne, N.S., Dec. 14, in a damaged condition, due to excessively bad weather, and reported the loss of 6 of her crew. She was built

in Scotland on the lines of a torpedo boat destroyer, and after purchase by the Government was fitted with torpedo tubes and utilized in war service on the Atlantic Coast. She sailed from Halifax Dec. 11 for Bermuda, and reported on Dec. 12 by wireless that she was returning to Shelburne for shelter. Later a wireless message was received that she was in a sinking condition and required immediate assistance. Nothing more was heard of her until she arrived in port.

The Bathurst Lumber Co. had under consideration recently a proposal to start a shipbuilding yard at Bathurst, N.B., and A. McLean, the General Manager, is reported to have made a statement that there is at present an acute scarcity of labor, and any new venture would necessarily be handicapped on this account. Apart from this, such a business would require careful nursing for some time, and his company could not undertake to go into the business except under some system of Government subsidy. This, he believed, would occupy the Government's attention in the course of the next session, and if such a system of subsidies was started, the company would immediately start shipbuilding. They would undertake the construction of sailing vessels of from 500 to 1,000 tons, equipped with auxiliary power.

Ontario and the Great Lakes.

The Sault Ste. Marie canals and locks were closed Dec. 21, for the winter.

The Kingston Shipping Co., Ltd., Kingston, Ont., has surrendered its charter, which has been cancelled.

The Western Dry Dock & Shipbuilding Co., Port Arthur, is reported to have closed contracts for the construction of 8 steel steamships, 6 for ocean service, and 2 for the Great Lakes.

Mention was made in our last issue of the sale of the motor ship Fordonian and the s.s. Algonquin to United States interests, and it is now stated that they were sold to the American Star Steamship Corporation, New York.

The master of the U. S. s.s. Morrill has reported the discovery of a wreck with one mast, 6 ft. above water, about 9 miles from the southeast shoal lightship in Lake Erie. It is supposed to be the wreck of the s.s. Marshall Butters, lost Oct. 20. The least depth over the hull is 6¼ fathoms.

During the past navigation season, 226 vessels with grain arrived at Port McNicoll, and 106 trips were made by C.P.R. vessels with passengers and freight. The elevator there handled nearly 44,000,000 bush. of grain, and 282,433 tons of flour and feed eastbound, and 69,100 tons of package westward, passed through the sheds.

A retrial of an action for damages against the Lake Simcoe Navigation Co. by J. C. Freelan, a bridge tender on the Trent Valley Canal, for injuries sustained when the s.s. Otonabee struck a bridge, took place at Whitby, Dec. 15, and the claimant was awarded \$1,800 and costs. In the first trial he was awarded \$2,000, and an appeal by the company resulted in an order for retrial.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level for November, as follows,—Superior, 603.50; Michigan and Huron, 580.64; Erie, 571.70, and Ontario, 245.65. As compared with the average November levels of the past ten years, Superior was 1.07 ft. above; Michigan and

Huron, 0.49 ft. above; Erie, 0.06 ft. below, and Ontario, 0.13 ft. above.

Canada Steamship Lines' s.s. Wahcondah, which has been engaged in ocean service latterly, has been sold to a British firm for £46,000. She was built at Port Glasgow, Scotland, in 1903, and is of steel, with 4 watertight bulkheads, with triple expansion engines with cylinders 12, 28 and 47 in. diam. by 33 in. stroke, 750 i.h.p. Her dimensions are,—Length 230 ft. 4 in., breadth, 37 ft. 1 in., depth 24 ft.; tonnage, 1,554 gross; 996 register.

Navigation on the Great Lakes closed, officially, Dec. 1, when ordinary marine insurance expired, but as customary, certain insurance was extended for 12 days, and general navigation was suspended Dec. 12, for the winter. Several vessels continued operations beyond that date. The losses for the year were comparatively small, and the underwriters are reported to have had a profitable season.

The demand for ocean tonnage amongst Great Lakes shipping is reported from Cleveland, Ohio, to be continuing strong. Further orders have been placed there recently for new tonnage of Welland Canal size for ocean service, for delivery in the early autumn. It is stated that builders will be unable to take all the orders offering, owing to the uncertainty of obtaining materials in reasonable time. It is also stated that a number of lake vessels have been sold and are being taken to the Atlantic Coast.

J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., who returned recently from Great Britain, is reported to have stated that negotiations had been completed for the chartering of 15 steamships for ocean service for 1917. During the past year, 18 of the company's steamships were engaged in this trade under charter, and it is expected that eventually the number of vessels so engaged for 1917 will be the same. The rates obtained are considerably higher than those paid in 1916.

The Board of Grain Commissioners has issued a statement showing that during the past year a record was created in the shipping of grain cargoes for Port Arthur and Fort William, both in number and quantity. In 195 Canadian, and 565 U. S. vessels, 253,969,599 bush. of all kinds of grain were carried east. This was an increase of 341 cargoes and 52,200,000 bush. over 1915, and was more than double the amount shipped in 1914. In 1914, U. S. vessels carried only one-third of the grain shipped from the head of the lakes, but in 1916, Canadian vessels carried only 13,000,000 bush. more than U.S. vessels.

Reports are current in Montreal that Canada Steamship Lines Ltd. has secured control of the Montreal Coal and Dock Co., that it may in the near future get control of the Montreal Transportation Co., and that it is negotiating for the control of an important Ontario shipping company. Canada Steamship Lines' officials are reported to have stated that while the Montreal Coal and Dock Co.'s property has been secured, there is no ground for the report regarding the Montreal Transportation Co. So far as the Ontario shipping concern is concerned we may say that negotiations were in progress some time ago for acquiring a very successful shipping company, but the matter was dropped for a time.

The Timiskaming Navigation Co.'s property, including four steamboats, the Jubilee, Meteor, Silverland and Temiskaming, and wharf and dock accommoda-

tion at Haileybury, was reported recently to have been sold to P. Gibbons, but we are officially advised that no sale has as yet been concluded. An order for the winding up of the company was made in Toronto, Sept. 25, 1914, and Jas. Hardy, Toronto, was appointed liquidator. Since then the property has been operated by P. Gibbons, under lease from the liquidator. Several propositions are under consideration, but at the time of writing, no offer for taking over the property has been accepted.

Lt. Col. W. P. Anderson, Chief Engineer, Marine Department, was at Midland, Dec. 14 and 15, for the purpose of noting ice conditions there, and if necessary organizing a service to keep the harbor clear so as to enable all vessels still out to enter. On arrival he found that practically all the vessels were already in port. The bay was covered with solid ice from 2 to 3 in. thick, but as the Dominion Government s.s. Simcoe had just gone out and the tug Pratt had crossed from Midland to Port McNicoll a couple of times, vessels were experiencing no difficulty in making port. Some moving of the vessels was necessary to enable them to come in succession under the elevator legs for discharging, but this was work to be done by the vessel owners.

The Sault Shipping Co., Ltd. has purchased the s.s. Valcartier from Lake Commerce, Ltd., Toronto, and it is announced that on the reopening of navigation it will be operated under the management of the Algoma Steel Corporation, Sault Ste. Marie, Ont. The s.s. Valcartier, formerly William Henry Mack, was built under special survey at Cleveland, Ohio, in 1903, and is constructed on the channel system, with steel tank top, three watertight and two non-watertight bulkheads, steel boiler house, steam pump wells, and complete electric installation. The hold is divided into 4 compartments, with hatches spaced 24 ft. centres. She is equipped with triple expansion engines, 20, 33½ and 55 in. diam., by 40 in. stroke, 1,170 i.h.p. at 85 r.p.m., and is supplied with steam from 2 Scotch boilers 12 ft. 10½ ins. by 13 ft. at 175 lbs. Her dimensions are,—length 354 ft., breadth 48 ft., depth 28 ft.; tonnage, 3,748 gross, 2,250 register.

Obstruction in Lake Superior.—The United States Lake Survey is in receipt of a report made by Capt. Samuel Hill, of the St. Lawrence & Chicago Steam Navigation Co.'s s.s. J. H. G. Hagarty, concerning an obstruction encountered by his vessel in Lake Superior on the evening of Nov. 4. The vessel, bound down from Fort William, had proceeded about 38 miles on a course 121° (SE. x E. ¼ E.—true) taken from a point 1 mile south of Passage Island, when she came in contact with some obscure obstacle, breaking off three flanges of her wheel, no other part of the vessel appearing to have been hit. As there was no metallic sound attending the striking, it is assumed that the obstruction was of wooden formation. The damage sustained by the vessel indicates that the obstacle, if still in the locality reported, is a dangerous menace on the direct course from Passage Island to Whitefish Point, and mariners are cautioned accordingly.

The Turn of Tidal Streams in Relation to the Time of the Tide is the title of a paper read by W. Bell Dawson, Superintendent, Tidal and Current Survey, before the Royal Society of Canada in May, 1916, and an abstract of which has been issued in booklet form.

Manitoba, Saskatchewan and Alberta.

Plans have been filed with the Public Works Department at Ottawa, and at Winnipeg, by Brown & Rutherford, Winnipeg, for the construction of a wharf or dock on the Red River at Winnipeg. The site covers lots 25 and 26 in St. John Parish, from the intersection of the northerly limit of Sutherland Ave. with the easterly limit of Buchanan St., 597.5 ft. to the northwesterly limit of the proposed dock lines, and thence easterly for 315 ft. and southerly along the north limit of Higgins Ave. to 50 ft. from the northwestern limit of land taken for the right of way of the Manitoba Southwestern Colonization Ry., and thence southwesterly to the southwestern limit of Sutherland Ave.

British Columbia and Pacific Coast.

Yarrows, Ltd., Victoria, B.C. are reported to have received an order for a stern wheel, shallow draught steamboat, similar to the one built there recently, for operation in Indian waters.

The Canadian Robert Dollar Co., Ltd., has acquired about 40 acres on the north shore of Burrard Inlet, where, it is reported, a sawmill and docks are to be erected.

The Canada West Coast Navigation Co.'s auxiliary vessels Geraldine Wolvin and Mabel Brown, will, as soon as they are out of the builders' hands, be chartered to the Canadian Trading Co., for loading lumber in March or April, at Vancouver, for Sydney, Australia, at 120 shillings, and for Melbourne, Australia, at 130 shillings.

The Dominion Government s.s. Quadra, which was used until recently as a light-house tender on the Pacific Coast, has been sold to the Howe Sound Mining Co., and will be utilized for carrying ore to the company's smelter at Tacoma, Wash. The Quadra was sunk in Nanaimo harbor, Feb. 26, 1916, in collision with the C.P.R. s.s. Charmer, and was raised and practically rebuilt to suit the ore trade.

A steamship company is being organized in Prince Rupert to operate vessels in the Southeastern Alaska trade. It is stated that the company will work as an independent concern, but will handle freight to and from the Grand Trunk Pacific Ry., and is reported to have made contracts for the carriage of a large quantity of fish from the canneries, and to have arranged for the chartering of one vessel.

The White Pass & Yukon Ry. is reported to be building 2 stern wheel steamships for service on Taku Arm and the Atlin Lake to replace the steamships Gleaner and Scotia. The two latter vessels have been run ever since the company has operated between Carcross and Golden Gate, and the growth of the tourist traffic has made the improvement of the boat service a necessity. The company is also reported to be considering the building of 2 additional steamships, at an approximate cost of \$200,00, for the tourist business between Whitehorse and Atlin.

It was anticipated that the breakwater at Victoria would be practically completed by the end of December. The work at Ogden Point was commenced in 1913. The breakwater consists of three arms, the first running out from the shore being 550 ft. long, the middle or main arm being 1,500 ft. and the extreme arm, 700 ft.

About 550 ft. of the parapet is still to be finished, but it is expected that this will be done early in January. The contractors are Sir John Jackson (Canada) Ltd. Work is progressing on the Government piers. All the crib caissons have been sunk, with the exception of one, which is built and awaiting a favorable opportunity for placing it. The concrete superstructure is practically completed on one side of the pier next the breakwater, and it is estimated that about 30% of the whole work is done. The contractors are Grant, Smith and McDonnell Ltd.

The master of the s.s. Cheakamus has reported to the Marine Department the existence of an uncharted shoal in the west end of Cordero channel, between Lyall Island and Grismond Point. The shoal extends about one cable in a 48 deg. direction from Lyall Island, and the depth on the shoal varies from 8 to 20 ft. The formation is rocky and it is marked by kelp in the summer. There is a good channel with 10 fathoms and no bottom on the mainland side of mid-channel.

With reference to a report that the Amalgamated Engineering & Dry Dock Co. had negotiated a loan in the U.S. which would enable it to carry out its schemes for the construction of a dry dock and shipbuilding plant on the north shore of Burrard Inlet, Vancouver, H. Stevens, M.P., is reported to have stated that he was not surprised to learn that such a loan had been effected, but he was doubtful with the increased cost of materials whether the plans and the contract could be proceeded with without some revision. Press reports stated that C. J. V. Spratt, of Victoria, holds a Dominion subsidy of a 4½% interest guarantee on an investment of \$5,500,000. We are officially advised that no subsidy agreement has as yet been entered in to with the Amalgamated Engineering & Dry Dock Co. for the construction of a dry dock and shipbuilding plant at North Vancouver.

Loss of Steam Tug Chambly.—The Wreck Commissioner, Capt. L. A. Demers, assisted by Capt. C. Lapierre and Faubert, enquired into the causes of the sinking of the Marine Department's steam tug Chambly, at Cap a la Roche in the St. Lawrence River, on Oct. 4, and found that there was no negligence or carelessness, but that the cause of the disaster was bad judgment, and held the master, Capt. Robideau and the second master, Capt. Laroche, jointly responsible, and condemned them to each pay half the cost of the investigation, a total of \$95.97. One of the assessors, Capt. Faubert, dissented from the judgment, and considered that no blame could be attached to the crew, as owing to the swiftness of the current they could not foresee the result.

Shipbuilding in the United States.—Figures issued by the U. S. Commerce Department show that the shipbuilding industry in that country is reaching proportions comparable with those of the industry in the British Isles. On Sept. 30 last, there were ordered and under construction in U. S. shipyards 417 steel vessels, aggregating 1,454,000 gross tons. There were at the same time under construction in the United Kingdom 469 vessels of the same class, aggregating 1,789,000 gross tons.

Clara Shipping Co., Ltd., has been incorporated under the Nova Scotia Companies Act, with \$45,000 capital, to own and operate schooners and ships and carry on a general carrying business.

Mainly About Marine People.

H. H. Drake has been appointed shipping master for the port of Halifax, N.S.

Mr. Justice F. E. Hodgins, of the Appellate Division of the Supreme Court of Canada, and latterly acting Deputy Judge in Admiralty, has been appointed Local Judge for the Toronto Admiralty District of the Exchequer Court.

Major B. R. Hepburn, M.P., formerly of the Ontario & Quebec Navigation Co., Picton, Ont., has been appointed temporary Lieutenant Colonel, while engaged as Assistant Director of Timber Operations in Great Britain.

Mrs. Katherine F. Foote, who died at Fergus, Ont., Dec. 6, aged 101 years, 6 months and 14 days, was mother of Capt. R. D. Foote, master of the Northern Navigation Co.'s s.s. Noronic, and Commodore of the fleet. Capt. J. B. Foote, of the Toronto Vessel Insurance Agency, and A. Foote, who has been superintending dredging operations in connection with the Welland Canal, are grandsons.

T. A. Sparks, of the firm of Funch, Edye & Co., New York, has been appointed General Agent Cunard Steamship Co., for the United States, at New York, vice C. P. Sumner resigned. In addition to U. S. territory, he has jurisdiction over any business that may be done in Canada via New York or Boston. We are advised that the business of Funch, Edye & Co. is being taken over by the Cunard Steamship Co., The Robert W. Reford Co., Montreal and Toronto, are the General Agents for Canada, of the Cunard Line, on appointment from Liverpool, Eng.

Steel Steamships for Norway.—Mention was made in our last issue that seven vessels had been ordered in Vancouver for Norwegian interests, and that the builders had been granted permission by the Dominion Government to build them for export for foreign registry. Three of them are being built by J. Coughlan and Sons, and 4 by Wallace Shipyards, Ltd. They will all be of approximately the same type. The three first mentioned will be 8,800 tons dead weight capacity, length 423 ft., beam 54 ft., moulded depth 29¾ ft. They will be engined for a speed of about 10½ knots when fully loaded. Delivery is to be made during the next 12 to 15 months.

The Long Sault Development Co.'s Project for the construction of a dam across the St. Lawrence in connection with its power development scheme, has been finally quashed, the U. S. Supreme Court having dismissed the company's appeal against the ruling of the New York courts annulling its franchise. This matter has been before the courts for several years, and has been persistently fought at every stage by the Dominion Marine Association and the Shipping Federation of Canada, on the ground that it would interfere considerably with the safe navigation of the St. Lawrence River.

Rumored Control of British Shipping.—Reports from London, Eng., indicate that with the change in the British Government, a policy will be adopted whereby all British shipping will be brought under the Government's direct control in a somewhat similar manner to that adopted with the railways there in the early stages of the war.

The Provincial Steamship Co., Ltd, has been incorporated under the Nova Scotia Companies Act, with \$20,000 capital, to own and operate steam and other vessels, and to assist wrecked and stranded vessels.

The Storstad-Huftero-Jason Collision.

The Dominion Wreck Commissioner delivered judgment recently in the matter of the collision between the steamships Storstad, Huftero and Jason, which is summarized as follows:—The court, having carefully weighed the evidence which was contradictory on many points, finds that the master of the Storstad, Capt. Anderson, gave the proper signals up to the time of the collision appearing imminent, then his duty, according to articles 27 and 29, was to reverse his engine and sound three blasts, that is when both vessels were two or three ships lengths from each other, which he failed to do. With respect to the Huftero collision that is the only point in which he failed; but regarding the damage to the Jason the court holds that he is responsible, as the order full speed ahead after a full speed astern order was unwarrantable. The court wishes to point out that there was an improper and indifferent lookout kept on this vessel, though it did not contribute to either collision. The court finds that the master of the Huftero, Peter Dessington, wilfully by his actions brought about this collision between his vessel and the Storstad and force the latter into such a position that the court must also find him partly responsible for the collision between the Storstad and the Jason. The court finds him in default for having an improper lookout and for deliberately violating articles 19, 22, 23, 25 and 29 of the Rules of the Road. With respect to the pilot of the Huftero the court has determined that after he counselled the master to port and his timely suggestions were rejected, he acted wisely in relinquishing his responsibilities as pilot, and leaving the master to act for himself and therefore the court exonerates the pilot from all blame.

Telegraph, Telephone and Cable Matters.

The C.P.R. telegraph offices in Lethbridge, Alta., have been moved to 5th St. South, the new building there having been completed early in December.

J. McMillan, Manager of Telegraphs, C.P.R., returned to Montreal, Dec. 8, after completing the usual periodical trip of inspection over the lines through the west.

The Great North Western Telegraph Co., has opened offices at Paisley and St. David's, Ont., and Forestburg and Meeting Creek, Alta., and has closed its offices at Beaumarie and Muskoka Wharf, Ont., and Greenbush, Sask.

The Great North Western Telegraph Co. at Christmas gave all employees who had been in the service for not less than a year, bonuses as follows: Those receiving less than \$1,200 a year, 7% of the annual wage, and those receiving between \$1,200 and \$2,000 per annum, 6% of the annual wage.

E. Cameron, agent, Great North Western Telegraph Co., Brantford, Ont., has been retired, after 61 years in telegraph service. He was born in Scotland in 1841, and came to London, Ont., in 1849. He commenced his telegraph service in 1855 with the Montreal Telegraph Co. as a messenger, and later was an operator at London, Ont. He had been in charge of the Brantford office since 1868.

The Board of Railway Commissioners has dismissed the application of the City of Chatham, Ont., for the removal of tele-

graph and telephone poles and wires from the streets, by the C.P.R., the Great North Western Telegraph Co., and the Bell Telephone Co. The application also asked that if the G.N.W.T.Co. desired to maintain its wires on King and William Sts., that they be placed in underground conduits, and the poles on the streets removed within 6 months, and that it remove its poles on Queen and Fourth Sts., which also carry Bell Telephone Co.'s wires.

Norman W. Bethune, who died at Ottawa, Ont., Dec. 7, aged 88, was a nephew of the late Commodore Kitson, of St. Paul, Minn., well known as a steamboat owner and railway builder in the early days of railway construction in the Canadian Northwest. He commenced to learn telegraphy in 1847, and was one of the first Morse operators in America. He was for a time in the Montreal Telegraph Co.'s service, and occupied the position of manager. He had lived in Ottawa since 1866, and was manager of the Great North Western Telegraph Co. office there for some years, until his retirement a few years ago.

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.

Pratt & Letchworth Co., Ltd., Brantford, Ont. D. P. Lamoreux has been appointed General Manager.

W. F. Angus, Vice President and Managing Director, Canadian Steel Foundries, Ltd., Montreal, has resigned to become a Vice President of the Dominion Bridge Co., Ltd., of which he has been a director for some time. He remains as a director of Canadian Car & Foundry Co., Ltd., and Canadian Steel Foundries, Ltd.

The Canadian Fairbanks Morse Co., Ltd., has appointed F. W. Evans Manager of its Toronto House, 26 Front St.

West. He has had a number of years experience with the company, particularly in its machine tool department, and has been acting Manager in Toronto for the past year.

Right of Way for the Union Jack.—The rules and regulations governing the port of Halifax, N.S., have been amended by adding the following,—When any of His Majesty's ships, whether British or Canadian, or other vessels in charge of His Majesty's officers, about to pass in or out of the harbor, hoists the Union Jack at the foremast head, all other of H. M. ships, whether British or Canadian, present in port shall hoist the pilot jack as a general warning, and the pilot jack will also be hoisted on the flagstaff at the dockyard for the same purpose, and all other vessels of every description under way in the harbor shall keep out of the way of the vessel flying the Union Jack, provided always that the said vessel shall be navigated with due care and at moderate speed, and that she shall be, so far as practicable, kept on the side of the fairway which lies on her starboard side.

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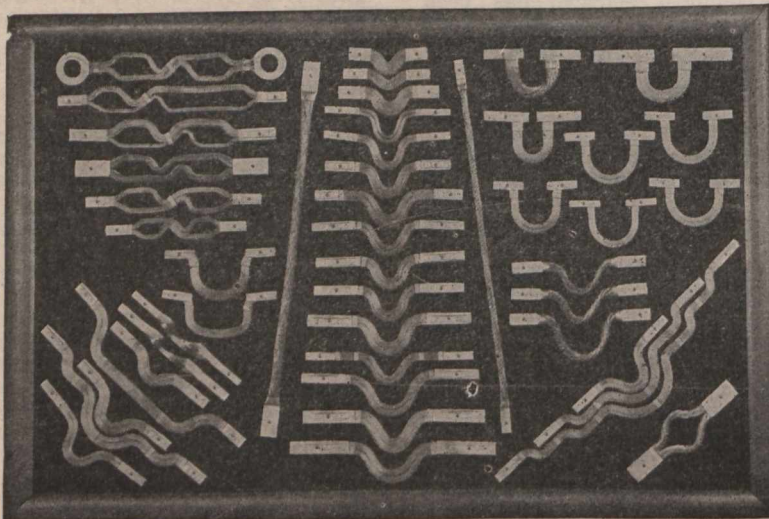
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