

Canadian Railway and Marine World

October, 1917.

Some Present Day Problems in Railway Maintenance Work.

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Railway maintenance, as performed by the maintenance department is a constant building up of the breaking down process caused by the wear and tear of traffic, and the effect of the elements and time. It covers a pretty broad field, embracing in its scope the roadbed, track, bridges, waterways, fences, buildings, water supply and other kindred work. The subject is too extensive to be covered, even in a general way, by one paper, so this paper will be confined to a few notes on the track structure itself, and the present day problems pertaining thereto. The track structure, as it is called, embraces the roadbed as well as the rail and ties. The roadbed and track of a railway is one of the most important parts of the complete railway structure, and may, on account of its importance, be called the backbone of the system. To keep it in good condition, the railway must provide a certain sum of money each year, have a stock of material, and a trained organization of men.

The present day tendency in Canadian railway practice is toward the large car and the long train, and, as Canada is a country of long distances, this tendency will grow. Large cars and long trains require big locomotives to haul them, and big locomotives mean more wear and tear on the track. This condition is manifesting itself at a time when material is high in price and hard to get hold of; when labor is scarce and independent in attitude; when operating costs are growing in volume; while rates, both freight and passenger, remain almost stationary. Yet the Canadian railways must have and maintain good tracks if passengers and freight are to be carried safely and expeditiously. Canada's long winter climate and short season for the carriage of water borne inland traffic places the railways in the premier position in the transportation field.

The railway maintenance men of Canada, in common with those of the rest of the continent of North America, are today facing three important problems, viz., (1) Stronger and more permanent track; (2) The obtaining and holding of labor; (3) The more economic use of material and labor. The first may be obtained in a degree by better drainage, both of the surface and under type; ballast of a better grade and more of it; heavier tie plates of the shoulder type, and the more extensive use of treated ties.

Should you ask a maintenance man what he thinks of the importance of track drainage, he will concede right off that it is one of the most important matters there is, and nine times out of ten he will tell you that the farther you keep the water away from the subgrade the better the track will be. He generally recognizes water as an enemy to be feared and guarded against, all as a matter of theory. As a matter of practice, track drainage gets secondary consideration. There are many good reasons for this.

When the extra forces are put on in the spring there is great anxiety to get the ties in, the new rail laid, and the track surfaced, because the men higher up know about these things, and take a natural interest in their completion. The side ditches and other drainage work, instead of receiving first attention in the spring, are left until the last. We go into the winter with nice clean side ditches, when there is little or no water running, and through the spring and summer with dirty ditches, when it rains the greater part of the time. All this time the drains are working the moisture down into the subgrade, and storing up trouble and extra expense for cold weather. My own opinion is that we should start in the first thing in the spring and carry on the ditching work, simultaneously with the tie renewals, surfacing and other work, with extra section men specially taken on for this purpose. In this way all the work in connection with the track will be carried on in an orderly manner, and the greatest benefit derived. There are many locations where conditions must be met with drainage works of a special character, but for ordinary conditions, and ordinary conditions predominate, a good ditch well maintained is all that is required.

Ballast pits in the past have, in the majority of cases, been chosen more with a view to short haul and low cost in handling rather than to the desirability of the ballast. The result has been that a lot of fine dusty ballast has been put out, which has given us dusty track, and the money put into the venture has not proved a good investment. In the future we shall have to make a closer study of these things, and when it is not possible to obtain bank gravel of the right quality, resort to the use of broken stone or washed gravel. Ballast of this kind is bound to be high in cost, so that we shall have to be more critical of the quality of the material chosen, pay more attention to our handling methods, and see to it that the dead ballast is stripped off the roadbed so that the new ballast will not become mixed with the old.

Shoulder tie plates have proved money savers in lessening labor in holding track to gauge; and those with the canted rail seat have helped to prolong the life of the rails by adjusting the wearing surface of the railhead to conform more closely with the coning of the wheels. My own opinion is that we should lengthen the outside margin of the plate an extra inch to get more bearing on the outside, and to prevent the plate being shoved down into the tie by the crushing force of the loaded rails. This feature should prove a help on the inside of curves. The extra margin would of course, increase the weight of the plate about three-quarters of a pound, and, no doubt, it would have to be thickened slightly to make it stiffer, on account of the increased length, making the increase in weight around a full pound. The ex-

tra cost at ordinary prices would amount to about 2c each, and at present prices about 4c each. Personally, I would favor a tie plate with shallow, blunt ribs, or a smooth bottom, rather than those with deep sharp ribs, as there is less danger of the wood fibre being cut into and destroyed by rot. With a more extensive use of treated ties, which must surely take place in the future, this feature will require close attention.

Time was when the cedar tie occupied the first place in Canadian railway tracks. It was chosen because it was low in price, easy to manufacture, and resisted rot for a longer time than other woods. Under heavy loads it has not lived up to the first impression it gave, and has given out in other ways. Experience has shown that it is not so good as the harder woods for curved track, and without tie plate equipment it is very easily cut by the rail bases. This led the railways to cast around for a harder tie, and the result has been that you will see the harder woods, such as jack pine, tamarack and hemlock favored today, although the life in some respects is shorter. Oak ties are nearly out of the question in Canada, as the supply of native timber is too small, and the cost of importing too high. With the treated tie we can increase the lifetime to about 12 years, and bring into use varieties of wood which today cannot be used in the untreated state. The argument has been set forth that the treated tie showed such a small margin in saving over the untreated article that a drop of a cent or two in the price of a tie would wipe the saving out. This argument carries a good deal of weight with the powers that hand over the money, but my prediction is that the prospective future supply of ties will alter this viewpoint.

The second problem which is staring us in the face is the obtaining of labor; and the retention of it after it has been obtained is becoming a still more serious matter. It is the opinion of some quarters that wages may remain high after the war, and that there will be a scarcity of good labor. This is a reasonable view and the prophets may be right. Be that as it may, we are sure to face a labor shortage for the next three or four years. The solution of the problem would, at the first glance, appear to be to go into the market and bid up to the price the other employers of labor are offering, and take our chance of getting men. However, there are some sceptical people who will tell you that you cannot make bricks without straw, that men are scarce, and that the few who are available are offered more attractive living conditions by other branches of industry. It is true that the manufacturer and the contractor have offered higher wages and more attractive living quarters to the men than the railways have, but we can overcome this in a degree by providing better living accommodation. Railways with their commissary departments for the supply of their dining car services, should be in a

position to feed their men in a more substantial way and at a lower relative cost than they can do it themselves, or have it done for them by contractors. Better and more sanitary living quarters, combined with good food, will increase the efficiency of the worker and go a long way toward establishing a contented body of men willing to stay on the job until the work is finished. Railway maintenance work should appeal to the laborer, on account of its variety and its outdoor environment. The railways should be as keen to obtain and hold men as the contractor or manufacturer. Railway maintenance work has not in the past been regarded with favor by the better class of men. If a quick improvement in the housing and feeding conditions can be effected, then a little work by the publicity department of the railways, setting forth the attractions of railway maintenance work might work wonders. Railways buy a lot of advertising space in the daily papers, and a live advertisement once in a while, appealing to labor, would undoubtedly help. If we give our track laborers as good quarters as are enjoyed by the bridge and building men, we will have taken a long step in the right direction.

I read the other day of the experience of a prominent American railway in doing some track elevation work in a large city. It hired 2,874 laborers in six months to keep a working force of 400 men filled up. In other words they hired the men over seven times, and the average working time of each laborer amounted to a trifle over 21 days. In the same article the experience of a firm of contractors doing public work adjacent to another large city, by force account, is given. The work consisted of ordinary hand work in a lock, which is about as hard and unattractive as you could make it, yet very few changes in the working force took place, in spite of the fact that the rate of wages paid was on the whole considerably below the scale obtaining in the vicinity, and that labor agents from munitions plants endeavored to entice the workmen away by the promise of higher wages. The reasons for the successful holding of the men on the job were quite simple. The contractor saw to it at the start that comfortable buildings were provided in which to house the men, and that a supply of good food, cooked and served in the way the different nationalities desired it, was on hand. These two influences were the main things which kept the men satisfied and on the job for a year, in spite of the efforts to get them away. Keeping the men on the job has the big advantage of a larger output of work per man, and a more efficient working gang. It is obvious to anyone familiar with the various features of maintenance work that the longer a gang works together and the fewer the changes made, the more the work goes with a better swing, and a higher class of work and more of it will be turned out in the working day.

So much has been said about the vast amount of money to be saved by the care, rehabilitation and the re-use of old material, that one is prone to approach the subject with fear and trembling. We can, however, by a freer use of the rail saw, treat our released rails to advantage and prolong their life in branch line service. My idea would be to do the sawing work in the winter when the work is slack, maintaining a small gang for this purpose, or the work might be carried on throughout the entire year, if there were enough of it to justify it. Take a year when main rail renewals were fairly heavy. The re-

leased rail could be sorted over, and after the main line repair rail had been set aside, the remainder could be gathered up and hauled in to the saw, there to be treated and laid in a branch track the next season. In this way we would get a pretty fair sample of branch line rail, and one calculated to last a good many years under light traffic.

Handling the rails after this fashion should not tie up cars for any great length of time, if the location of the saw were carefully chosen to provide ample piling and handling space. The work of relaying would be facilitated in the end, as holding the rails over the winter would permit of a start the first thing in the spring, instead of in the early fall, as is usually done under present methods of handling. Care should be taken to oil all bolts to be wrenched off a sufficient time in advance of the wrenching to soften the rust. As many as can should be carefully wrenched off and oiled, packed in boxes and sent into the reclaim yard, to be held there until the sawn rail goes out again. I think this way of handling bolts a better one than the usual one of putting them through the joint bars and leaving them to rust. Many bolts, which have been successfully wrenched off, have been lost because they had to be cut off from the angle bars later. In the opinion of many men, second hand bolts cannot be successfully used in relaying rail. I think this is a mistake, as they will keep tight if equipped with a good spring lock washer. Angle bars and tie plates should be similarly reserved to accompany the rail when laid.

A process for rerolling worn rails into rails of slightly lighter section, with heads of an altered shape, both symmetrical and unsymmetrical, for use on branch lines, has been patented in the United States, and several of the prominent railways over there have had some of their rails treated in this manner. In the majority of cases the alteration to the rail is so slight that the old fastenings can be used. Briefly, the process consists of a reshaping of the worn head. This process is worth looking into.

We can make better use of our locomotive cinders than we have in the past, by spreading them on the sides of new cuts and banks, where vegetation is slow to start, and the material slides. Cinders will prevent sliding to a considerable extent, and are useful in keeping down the dust. They make good ballast in rock cuts, and in other places where rails batter because of a hard, unyielding subgrade.

There is an extensive field for the introduction of motordriven section cars to convey section crews to and from their work. The time saved in pumping a hand car will, under the right kind of foreman, be used to the railway's advantage in increasing the day's output of work. Having employed the man, it is essential that he be kept working profitably and effectively during the hours of work.

I think it can be safely estimated that the use of motor-driven section cars will save one hour a day per man employed on the track section. This saving under present schedule hours will amount to about 10% of the day's work, and this time, if properly and efficiently employed, would add just so much more work to the upkeep of the track. In other words, the gain of one extra day in every ten would be made, or say three days each month. Apart from the gain in time, I believe the motor section car would help to attract men to, and hold them on the job. The

railway maintenance practice of the future will bring labor saving machinery into more extensive use; the tools will be improved, so that a larger output of labor, with the same or less effort on the part of the men, will be obtained. The tendency will be towards permanency of the gangs, both section and extra; our men will be better trained by keeping them steadily employed. I believe the extra gangs will be smaller and more efficient, made so through training, and a more liberal use of labor saving machinery. The large, unwieldy, not very efficient, and wasteful extra gangs will gradually disappear.

In concluding I wish to make an appeal to the maintenance engineers of Canada for closer co-operation in the detailing of track material. The conditions on each of the various railways do not differ so widely that we cannot get together and adopt a standard to which we can all work. With one type of material in each class or weight, better deliveries and slightly lower prices from the manufacturers will be obtained, as they will be under a lighter investment expense and providing fewer machines than they are to date. With one type of bolt, spike, or angle bar, they would carry larger stocks, as they would feel more certain of a ready sale for their product, than if they waited to see which railway was going to come into the market and buy. About the only thing in railway track material which is interchangeable today is the track spike; our angle bars, bolts, and rail drilling are pretty much all different, not in any important feature, but in the little unimportant details. Yet these small differences prevent the material from interchanging.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

Set Slope Stakes a Foot Outside.

A deviation from the usual manner of setting slope stakes for railway grading has been used successfully by L. M. Mitchell, Assistant Engineer, Minneapolis & St. Louis Ry, Oskaloosa, Iowa. Instead of the stake being driven slanting at the toe of the embankment or top of the cut, it is moved out 1 ft. farther and driven down straight. Thus, each centre line stake is practically referenced by two hubs, which are much less likely to be displaced than if set at the edge of the slope. If the contractor is advised of the method of setting the stakes, it has proved easy and convenient for him to make his measurements accordingly.

The Winnipeg Traffic Club has been incorporated under the Manitoba Companies Act, with authorized capital of \$5,000 in \$10 shares, to establish and maintain a social club in order to promote closer relations between the shipping and travelling public and transportation interests by personal acquaintance and the friendly discussion of traffic problems. The provisional directors are: C. A. Taylor, local freight agent; D. W. Thomas, steamship company manager; P. G. Denison, traffic manager; E. W. Travis, clerk; R. K. Gemmill, railway agent, all of Winnipeg.

United States Military Transportation in France.—W. W. Atterbury, Vice-President, in charge of operation, Pennsylvania Rd., Philadelphia, Pa., has been appointed Director General of Transportation for the U.S. expeditionary forces in France.

Birthdays of Transportation Men in October.

Many happy returns of the day to:

E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., Montreal, born at Thorold, Ont., Oct. 16, 1877.

L. S. Brown, General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., born at Nelson, N.B., Oct. 19, 1864.

R. A. Burford, cashier, C.P.R., ticket office, New York, N.Y., born at Brooklyn, N.Y., Oct. 4, 1878.

Lieut.-Col. G. E. Burns, ex-Freight Claims Agent, Eastern Lines, C.P.R., Montreal, now District Intelligence Officer, Military District No. 4, Montreal, born at St. Thomas, Ont., Oct. 6, 1863.

F. F. Busted, C.E., formerly Engineer in charge of C.P.R. revision and second tracking, west of Calgary, Kamloops, B.C., born at Battery Point, Que., Oct. 10, 1858.

J. M. S. Carroll, Sales Manager, Canadian Consolidated Rubber Co., Montreal, born at Ballarat, Australia, Oct. 22, 1875.

C. E. Cartwright, M.Can.Soc.C.E., ex-Division Engineer, C.P.R. Vancouver, B.C., born at Toronto, Ont., Oct. 13, 1864.

A. F. Dion, Traffic Manager, Quebec Harbor Commission, Quebec, born at L'Islet, Que., Oct. 1, 1871.

L. V. Druce, Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., born at London, Eng., Oct. 20, 1873.

C. E. Dewey, Freight Traffic Manager, G.T.R., Montreal, born at Cheshunt, Eng., Oct. 2, 1873.

C. E. Friend, General Auditor, Canadian Northern Ry., Winnipeg, born at Brighton, Eng., Oct. 12, 1871.

W. P. Fitzsimmons, Commissioner of Industries, G.T.R., Montreal, born at Detroit, Mich., Oct. 27, 1868.

C. N. Ham, Secretary, Express Traffic Association of Canada, Montreal, born at Winnipeg, Oct. 21, 1884.

G. Hodge, Assistant to General Manager, C.P.R., Montreal, born there, Oct. 2, 1874.

J. H. Hughes, Assistant Superintendent, Ottawa Division, Quebec District, C.P.R., Montreal, born at Charlottetown, P.E.I., Oct. 7, 1865.

H. Irwin, M.Can.Soc.C.E., Consulting Right of Way and Lease Agent, C.P.R., Montreal, born at Newgrove, County Down, Ireland, Oct. 27, 1847.

W. B. Johnson, Master Mechanic, District 6, Intercolonial Division, Canadian Government Railways, Truro, N.S., born there, Oct. 8, 1872.

K. deS. Joseph, Assistant Trainmaster, C.P.R., Sudbury, Ont., born at Quebec, Que., Oct. 6, 1892.

W. M. Kirkpatrick, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, now on active military service, born at Kingston, Ont., Oct. 8, 1874.

W. B. Lanigan, Assistant Freight Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Three Rivers, Que., Oct. 12, 1861.

F. McDowell, Storekeeper, Canadian Northern Ry., Winnipeg, born there, Oct. 22, 1883.

Sir William Mackenzie, President, Canadian Northern Ry., Toronto, born at Kirkfield, Ont., Oct. 30, 1849.

C. Malcolm, chief clerk, Auditor of Stores and Mechanical Accounts, Alberta Division, C.P.R., Calgary, Alta., born at Tatamagouche, N.S., Oct. 18, 1881.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., born in Montgomeryshire, Wales, Oct. 9, 1850.

C. R. Moore, Assistant to Vice Presi-

dent in charge of operation, G.T.R., Montreal, born at Hamilton, Ont., Oct. 12, 1867.

Hugh Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrew, Scotland, Oct. 5, 1852.

J. W. Porter, Chief Engineer, Hudson Bay Ry., Pas, Man., born at Aberdeen, Scotland, Oct. 15, 1877.

T. F. Rahilly, Superintendent, Algoma Eastern Ry., Sudbury, Ont., born at Diorite, Mich., Oct. 6, 1892.

H. G. Reid, Assistant Superintendent of Rolling Stock, Canadian Government Railways, Transcona, Man., born at Pembroke, Ont., Oct. 27, 1863.

A. G. Richardson, District Passenger Agent, C.P.R., Winnipeg, born at Rockford, Ill., Oct. 16, 1880.

W. S. Rollo, joint agent, G.T.R. and Central Vermont Ry., St. Johns, Que., born at Dundee, Scotland, Oct. 8, 1852.

J. K. Savage, Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., born at Forrester, Ill., Oct. 5, 1876.

Lord Shaughnessy, K.C.V.O., President, C.P.R., Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

T. Duff Smith, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, Man., born at Barking, Essex, Eng., Oct. 2, 1868.

E. Sterling, Assistant Superintendent, Interurban Lines, British Columbia Electric Ry., New Westminster, born at Thornbury, Ont., Oct. 3, 1875.

K. Stewart, Assistant Superintendent, District 4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S., born at Little River, N.S., Oct. 21, 1868.

C. E. Stockdill, Assistant to Vice President and General Manager, Western Lines, C.P.R., Winnipeg, born at London, Ont., Oct. 25, 1881.

D. A. Story, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B., born at Halifax, N.S., Oct. 26, 1853.

E. N. Todd, Division Freight Agent, Eastern Division, C.P.R., Montreal, born at Huntingdon, Que., Oct. 17, 1879.

J. H. Valteau, Secretary-Treasurer, Thousand Islands Ry. and Oshawa Ry., Gananoque, Ont., born at Selby, Ont., Oct. 14, 1889.

A. W. Wheatley, President, Lima Locomotive Corporation, Lima, Ohio, born at Ashford, Kent, Eng., Oct. 12, 1870.

The Pacific Great Eastern Railway Situation.

P. Welch, the general contractor, announced, recently, that an audit of his books had been made by chartered accountants, showing that he received \$16,422,262.42 for work which cost him \$13,690,394.90. This shows a profit of \$2,731,867.52, and the books also show that Welch made a profit from stores and other sources of \$1,081,255.08. This gross profit, the auditors find, was reinvested in various ways, including equipment and development company, with the exception of \$409,000, which is on deposit in the Union Bank, and is available for the use of the government when it takes over the contract. The auditors find that Welch put \$149,409.45 of his own money into the construction, and is that amount poorer than when he took the contract. The auditors also find that the P.G.E.R. Co. received as the proceeds of the pro-

vincially guaranteed bonds \$19,296,886.31, all of which is accounted for, and they affirm that none of that money was used for political purposes or by appropriations in large profits.

K. Walkem, solicitor for Welch, said recently: "It is clear from a perusal of the audit report that neither P. Welch nor Foley, Welch & Stewart put the profits on the the P.G.E.R. into their pockets, but instead placed the earned profits back into the general project, in addition investing store profits and other revenue and bringing to the road in the first place about \$750,000 worth of contractors' equipment, which has been used or has depreciated to the extent of \$500,000. No charge was made for the use of this equipment, it is claimed. Nor did Foley, Welch & Stewart take profits from any of the sub-contracts."

Negotiations are reported to be in progress between the general contractor, the company and the government, for a settlement of the matter, and the auditors' statement referred to was made public to put the contractors' case before the public.

The Toronto, Hamilton & Buffalo Ry. and the Town of Dundas.

The question raised in committee of the whole, in the House of Commons as to the legality of the Railway Committee of the house amending an agreement made between the Hamilton and Dundas St. Ry., and the Toronto, Hamilton & Buffalo Ry., which as stated in Canadian Railway and Marine World for August, was referred to the Minister of Justice for consideration came before the house upon the Minister's report on July 27. After reciting the facts, the Minister concluded as follows: "The proposed amendment to the bill obviously would effect a material change in the terms of the original agreement, and in my opinion this is incompetent to Parliament, seeing that the Hamilton and Dundas St. Ry. is a provincial corporation and consequently that its contract rights and obligations are not within the legislative authority of Parliament."

T. J. Stewart, M.P., who had charge of the bill for the T. H. & B. Ry., said the parties had come to an understanding and he would move that sections 1 and 2, which confirmed the agreement, be struck out. This was agreed to and the bill was passed as amended, containing only two sections, enabling the company to enter into agreements under sec. 364 of the Railway Act with the Michigan Central Rd., the Canada Southern Ry. and the Grand Trunk Ry., or any of them, for a term exceeding 21 years, and to authorize the company to hold stock in any navigation or steamboat company.

The position of the T. H. & B. Ry. agreement with the H. & D. St. Ry. continues the same as it has been since the agreement was entered into, and confirmed by the Ontario Legislature. Under the agreement the T. H. & B. Ry. operates its freight traffic into the town of Dundas over the H. & D. St. Ry. tracks.

The Railways Department has sold to the Edmonton Junk Co., Edmonton, Alta., a quantity of second hand railway spikes and bolts, which were removed from the Canadian Northern and Grand Trunk Pacific Railways west of Edmonton, and which, upon inspection, were found not to be suitable for shipment with the rails and other materials for use in France.

Little Things in a Railway Office.

By Charles Dorian, Sudbury, Ont.

A bank manager, spick and span in neatness, and happy with the reflection that things were running as smoothly as a well oiled dynamo, stepped into a railway office where papers were scattered chaotically and the typewriters jarred raucously. He intended to interview the superintendent but felt instinctively that he would be sworn at.

He was agreeably surprised, of course, to find that the superintendent was the most urbane of men. The appearance of the office had undoubtedly given him the opposite impression. The unit system was in the throes of birth there. The office had just been enlarged, to take in the staffs of the superintendent, assistant superintendent, chief dispatcher, trainmaster, bridge and building master, resident engineer and roadmasters. The movement had been rigidly opposed. Each officer had grown conservative under the old system, and the habits of himself and the staff clung like barnacles. The unit system brought them into the sunlight, where the dust motes were glaringly prominent. Reductions were not made at first, because the system would automatically weed out the ones not fitted to take up the new order of things efficiently and cheerfully.

The first of the many little things to be taught them was order. One clerk had not a square inch of his desk top clear of correspondence, invoices, partly used writing paper, soiled blotters, etc. He had a ruler with a rough edge and a calendar out of date. Somehow he managed to push aside enough of the miscellany to place a dust covered typewriter into position for operation. In his erstwhile cubicle some of this litter often overflowed, but since the private offices were given over to the use of officers only, and the clerical work all done in one big office, a literal clean sweep was imminent. All papers were to be taken off desks at closing time and typewriters put away in a cabinet. The move was taken apathetically at first and it was some time before the desks were absolutely clear at closing time.

In one desk an important file was found beneath a heap of crushed papers, which brought about a further sweep. In the drawers of that desk were stowed each day's stack of unfinished work, in such a state of disorder as to require ten times the work to straighten it out. Mixed in with it were mussed carbon papers, ink stained letter heads, rubbers, pins, pencils, pens, an old cap, a pair of hair brushes—and some pills. It all reflected the state of mind of the man who sat at that desk as plainly as a littered backyard reveals the habits of the tenant. That clerk had his desk publicly cleaned out for him, papers put in order, ink stains removed from the wood, etc. But he had the wrong habits. Instinct prompted him to poke papers into the handiest receptacle, and no amount of drilling would get him to keep his surroundings clean. He had to make room for one who would.

The truly clean will not only bathe frequently, and wear neat clothes, but will contribute to the freshening of their environments. They will not leave it to the office boy to clean the ink wells, or the janitor to wipe the spots off their desks, and the floor and wall in their vicinity. They will, rather, prevent the ink spots from appearing. Cleanliness, then, was

another thing to be taught that staff. The junior clerk, when running off a mimeograph, usually daubed on more ink than was necessary and spilled some on the floor. When he was compelled to clean it up once, he became more careful. It saved work for the janitor. He did not respect the janitor, but he was taught to do so. He was taught the golden rule. Another clerk had a habit of knocking his pipe against a radiator, emptying the tobacco on the floor, and after lighting up, throwing the burnt match in the same direction. This was usually in a vacant private office. Now and then a burning butt of a cigarette would be found on the edge of a desk, the resultant pyrography marring an otherwise handsome piece of furniture.

The care of office equipment was another detail, then, to be taught this errant staff. When a clerk, with a number nine boot, puts it into a waste basket, to press down the contents, the result is a requisition for a new basket. Waste baskets were, however, finally done away with. There are enough drawers in the average desk to reserve one for waste paper. Energy in an office employe is much to be desired but when it slops over it means breakages. Clumsiness in handling typewriters, telephones, filing cabinets and chairs, brings around a big repair bill. When the chief is absent there is likely to be horse play, with the usual toll of broken glass, walls and furniture.

Silence was another of the little things to be inculcated. Loud talking was condemned. It disturbed those who were calculating. Whistling and humming were likewise under ban. There was one clerk who invariably started off his day with a loud sneeze, and repeated it occasionally, purposely prolonging the sound. Such things as scraping a chair along the floor, when rising or sitting down, shuffling of feet, opening cabinet drawers loudly, tapping with a pencil, slapping books down hard, stamping letters on a bare desk, instead of using some kind of padding to deaden the sound, were all prominent under the old regime.

Economy had to be preached frequently. Using company's paper and envelopes for private purposes ran away with more stock than one might imagine. Pencils were made to last longer, by a system of exchange. Red carbon paper was made the standard for copies of telegrams. The long sheets were cut in two as the supplies came in, and these half sheets distributed to the clerks who were to use them. A too lavish use of carbon paper invariably resulted in much of it becoming wrinkled. As much as \$2 worth of carbon paper thus spoiled was taken out of one desk. When the distribution was curtailed a saving of 75% on this item alone was noted. In taking stationery from the cabinet where it was kept, it was noticed that some clerks would turn over several packages to get something choice, leaving behind bruised and torn paper. It was the habit of stenographers to throw into the waste basket letterheads and the two accompanying sheets which made up the office record, if they happened to make a typographical error. This was changed. The two under sheets when reversed could be used again and the letterhead saved to be used for memorandum paper. Forms that had served their purpose, or grown obsolete, were used for scribbling paper. Thus the sta-

tionery bill was cut 50%.

Economy in other things came in due course. An electric light was found burning at 8 a.m., had been burning all night, was passed between dark and daylight by at least a dozen employes—and only the last one thought of turning it out. Wasting time is something that only the very conscientious will not do, but when it comes to placing a magazine in the centre drawer of one's desk and snatching surreptitious glances at it, the payroll is due for another trimming. A number of little things that marked improvement would be done by some clerks instinctively, while others learned only by example.

A fountain pen should never be filled until a blotter has been placed under it to catch the possible overflow.

If papers are pinned together, the pin should be put in perpendicularly with the long side of the sheet on the left top side, so that when it is placed in the cabinet for filing it will not tear papers placed beside it. The file number should be placed in the top right corner. It can there be seen at a glance when thumbing the files.

A clerk loses time tearing sheet after sheet off a pad of paper when preparing for typing, it takes so much less time to roll the pad from the loose end back to the gummed edge, the process forcing off the gum and releasing the whole pad for instant use. Stenographers were taught to have their pencils sharpened at both ends and always to have notebook ready and dated, and to spend two minutes in the morning cleaning their typewriters. That two minutes would save two hours some day—the day of a certain big rush.

When all these details were brought out and acted upon the staff was a hundred per cent. smaller and a hundred per cent. more efficient. The bank manager dropped in one morning, six months after his first visit, just before the day's work had commenced and saw rows of shining desks, drawers closed and locked and a general air of freshness about the place. His appraisal of railway offices from that date was more complimentary.

[EDITOR'S NOTE.—The writer of the foregoing was formerly the C.P.R. Superintendent's chief clerk at Sudbury and is now in the Canadian Copper Co.'s transportation department.]

Locomotive Manufacturing at Montreal. — The American Locomotive Co.'s annual report for the year ended June 30 contains the following paragraph: "The munitions work at Richmond, Va., and Montreal, Que., will be completed in Aug. 1917. The work of restoring these plants to locomotive production uses has already been started and when completed the entire capacity of all of the company's plants will be devoted exclusively to the manufacture of locomotives, which are urgently needed abroad as a war necessity, and also by the railways of this country."

The Avon Coal Co. has been incorporated under the New Brunswick Companies Act, with a capital of \$150,000, and offices in Queen's County, to carry on a coal and general mining business, and in connection therewith to construct or acquire tramways, sidings, switches, spur tracks and telegraph lines, and to own and operate steam and other vessels. The provisional directors are: S. M. Jones, Bangor, Me.; Miss A. F. Coughlan, and G. L. Dodge, St. John, N.B.

Official Evidence on the Hudson Bay Route.

W. A. Bowden, B.A.Sc., M.Can.Soc.C.E., Chief Engineer, Railways and Canals Department, Ottawa, appeared before the Dominion's Royal Commission in Ottawa recently and in response to questions by some of the commissioners gave evidence, of which the following is a summary:—

The project is designed to connect the western provinces with Europe by the most direct route. The railway makes connection with a Canadian Northern branch at Pas, Man., and runs in a direct line northeasterly to Port Nelson, at the mouth of the Nelson River. It will be 425 miles long. Track has been laid to mileage 332, where a delay results from the necessity for the construction of a rather large bridge over the Nelson River. Grading is nearly completed between the end of track and Port Nelson.

The mouth of the Nelson River is a typical estuary. The site of the terminals is about 15 miles upstream from deep water of the bay proper, and about 7 miles below the limit of tide action in the river. The range of tides is from 11 ft. at neaps to 16 ft. as extreme of ordinary spring tides. There is a deep water natural channel extending up the middle of the estuary, in which a depth of 20 ft. exists near the site of the development and a greater depth is available for the remainder of the distance to the bay. It is intended to provide a depth of 30 ft. in the immediate neighborhood of the wharves, and allow the 20 ft. to remain as the limiting depth at low tide, in the approach channel. Vessels drawing more than 20 ft. would await a suitable stage of the tide for entering or leaving. The wharves are being built near the deep water channel and are connected with the shore by a steel bridge. The cost of the enterprise is not exceeding the estimates made before construction was commenced, which were, for the railway \$16,000,000, and for the harbor works and terminus at Port Nelson, including a grain elevator, \$11,000,000.

Development of the route was undertaken primarily for the transportation of grain. Neglecting all other considerations than geographical position a saving would be possible of the cost of transporting grain from the head of the Great Lakes to Montreal, for which rates vary from about 5c to 12c a bushel in different seasons of the year. Port Nelson is as near to the centres of grain production as is Fort William, and is as near to Liverpool as is Montreal. It will not be possible to give the shipper the full benefit of this saving of the haul from Fort William to Montreal, owing to the effect upon costs of the short traffic season by the Hudson Bay route, and to the special difficulties inherent to the marine end of the enterprise. Nor can it be expected that the route will have any material effect upon grain rates in general, owing to the fact that its capacity is limited. Its advantage will lie in the circumstance that while the season of operation will be short it will approximate fairly well to the most desirable period of the year. Further, in so far as the route will add to existing facilities at all, it will become an "enlargement of the spout" for the ultimate disposal of the grain, and not merely an additional channel for the conveyance of grain to an already congested seaboard.

It was formerly thought that the season of navigation opened in June or early in July. Our experience has shown that

June is out of the question and also the greater part of July. The date when navigation would close was not stated definitely in early discussions. We have sent out tramp steamers as late as Oct. 23 without accident. A government survey vessel which was especially constructed for navigation in ice came out once on Nov. 1, but she reported having encountered ice which would have damaged an ordinary tramp. The close of navigation under present conditions results from the arrival at the western entrance of Hudson Strait of the Fox Channel ice. This ice starts down from the north during the summer, and the loose strings which precede the main floe usually arrive between Mansel and Coats Island about the middle of October. These strings may cause a slight delay, but are then a serious menace to navigation, as vessels may either pass around them or pass in through in a few hours. Later, heavier strings arrive. In the interest of safety we have had to act on the assumption that these block the whole western entrance of the strait, which would effectually stop navigation. We have no positive evidence on this subject. Extended observation may reveal that for some considerable further period the conditions are not insurmountable with suitable aids to navigation, such, for instance, as a wireless station at the north end of Mansel Island, through which vessels could be advised of the results of observation by aeroplane as to the position of ice and open water. Such a course would be quite practicable, as the critical area is of very limited extent. Hudson Bay ice has in some seasons a bearing on the question of the date of opening navigation, but is not a factor in the matter of closing navigation.

While the grain trade was the prime motive, the possibilities of developing other traffic are not negligible. There is great promise of mining development in the territory tributary to the railway. In the Grass River region there are some good agricultural lands, but in general the country is of a muskeg character and perhaps not easily drained; while in the neighborhood of the bay the climate is probably too cold for profitable cultivation. The soil throughout is very rich. Something may be done in the export of live stock, the short route having a distinct advantage for this trade. The Hudson Bay fisheries are reported to be valuable, and will no doubt furnish some traffic. There is sufficient timber for local use in the region, but probably insufficient for the development of an export trade. Westbound imports would be coal and general merchandise.

The shipping season would cover the months of August, September and October, with the possibility of extension at the latter end, but with little hope for improvement in the opening date. The grain which would be shipped out in August would be from the crop of the preceding year, of which there is always some available at that season. During two months shipments would be made of the new crop. No arrangements were made to ensure a steamship service before commencing construction, and in my opinion none should have been made. Such arrangements would have been based upon the assumption of the worst possible conditions that might then have been anticipated, and which will probably never occur.

It is improbable that for a few years tramp steamers would utilize the route

without special inducements. Nor can we hope for a just and reasonable arrangement with vessel owners for the provision of a regular line of steamers at the inception of operation. The best interests of the country, and of the route, require that, for a few years at least, vessels owned or chartered by the government should be put on and operated by the government. With these vessels the feasibility of the route could be demonstrated, after which it might be left to stand on its own merits. At any rate information would be available to form a sound basis for negotiations for further service. The trade will take some time to work up, particularly with respect to that westbound. Provision for the handling of 5,000,000 or 6,000,000 bushels of grain would probably best meet requirements at the outset. The ultimate capacity of the route would be that of the single track railway, about 50,000,000 bushels.

Our experience with respect to insurance is characteristic of the difficulties which must be overcome. In 1913 the insurance rates on vessels and cargoes for Port Nelson were guessed at, and were very high. That year two vessels were lost at the mouth of the Nelson River under circumstances which had no bearing upon merits or demerits of the route. The result, however, was that rates proposed for the following year were prohibitive, and we have operated during the past three seasons without insurance. During this time we have not met with a single accident, although in one of the seasons 38 passages through Hudson Strait were made.

The European & North American Ry.—

The name of which is still maintained by a separate corporation in the state of Maine, extended from Bangor, Me., via St. John, N.B., to Shediac, N.B. The portion of the line in Maine is leased to the Maine Central Rd., while part of the Canadian section was taken over by the Canadian Government and utilized in the building of the Intercolonial Ry., and the remainder ultimately passed into C.P.R. control. The section of the line from Moncton to Shediac, 17 miles, was opened for traffic, Aug. 20, 1857, and was ultimately extended to Pointe du Chene, which was made the station for the summer steamship traffic to Prince Edward Island. A large amount of money was spent at Shediac for machine shops, deep water terminal, etc. The principal commercial business and shipping traffic, which hitherto had been conducted at Shediac Cape, nearly three miles distant, were transferred to Shediac and Point du Chene, two miles east. Later the machine shops were burned and reconstructed at Moncton, which then became the headquarters of the system under the government ownership.

H. A. Woods, who has retired from the position of Assistant Chief Engineer, Grand Trunk Pacific Ry., and who has been on Canadian Railway and Marine World's subscription list since coming to Canada some years ago, writes from paper to be forwarded to him at that address, and says: "I shall want to keep in touch with railway matters in Canada, and I know of no better way than through your journal."

The G.T.R. has moved its San Francisco, Cal., passenger office to Monadnock Arcade, 681 Market St., from 687 Market St.

Conversion of Canadian Pacific Freight Cars.

As stated in Canadian Railway and Marine World for September, the C.P.R. is converting 336 single insulated refrigerator cars to vegetable cars, half at Angus shops, Montreal, and half at Weston shops, Winnipeg, and is also converting 1,161 steel side dump ballast cars to coal cars, and 600 stone cars to coal cars at Angus shops.

The 336 vegetable cars being converted from standard single insulated refrigerator cars are 38 ft. 8 in. long over end sills and have standard refrigerator doors. After removing the ice bunkers, floor slats and meat racks, the side and end walls are covered with refrigerator insulating paper, and on the inside of this, vertical strips are spaced about 2 ft. centres along the sides of the car. These vertical strips are 2 in. square, fastened to 1 in. blocks, providing a total of 3 in. air space. The linings on the inside of the strips consists of $\frac{3}{8}$ in. t. and g. insulation, 1 layer of insulating paper and 13/16 in. standard t. and g. car lining. This inside lining extends to within 6 in. of the car floor and to within about 12 in. of the ceiling, leaving an opening at top and bottom, so that the heat, supplied from the charcoal heaters, located at the centre of the car, may be circulated freely all along the sides and ends of the load, and return to the centre of the car through a space 5½ in. high provided by a false floor, which is made of two courses of t. and g. lumber with insulating paper between. The floor is in sections, about 4 ft. wide, extending between inside linings. This permits of the floor being taken up, whenever necessary, for cleaning underneath, and for repairs to underframe, draft timber bolts, etc.

At each end of the car there is a bulkhead, just in front of the hatch opening, constructed in the same manner as the side linings. The open space, above the side lining and end bulkhead, is covered with heavy wire mesh, to prevent consignees throwing culled vegetables over into the air spaces. At the bulkhead this mesh also prevents theft through the hatch opening. Hatch openings are equipped with standard insulated plugs, attached to chains, so that they can be lowered into the space back of the bulkheads when the car is operating under ventilation. Hatch covers are hinged so as to open towards the centre of the car. It is believed that this arrangement provides the best distribution of fresh air throughout the interior of the car.

The heating of each car is to be accomplished by means of standard no. 2 charcoal heaters. In moderate weather one or two heaters may be used in the collapsible galvanized iron heater cages attached to the inside of the car doors. These cages are so arranged that, when the heater requires to be recharged with fuel, it is not necessary to enter the car, and the exchange of air from the outside to the inside of the car is reduced to a minimum by one side of the heater cage being secured in a position to close the aperture of the open car door in much the same manner as revolving doors in public buildings. In severe weather additional heaters may be used suspended from the ceiling from substantial fastenings provided for the purpose.

The company has 1,161 50-ton steel side dump ballast cars that are to be fitted with end gates and extension sides so as to carry their maximum tonnage in bituminous coal. The extension sides consist of planks, 30 in. high, secured to stakes

that pass through openings in the top channel of the steel side construction, and secured at the bottom in malleable blocks provided for the purpose. To prevent the wooden sides bulging near the centre of the car, tie rods are provided, reinforced against bending, by means of a cross timber, 3 x 8 in., securely supported and fas-

tened at the ends to the extension sides. In order that these cars may meet the safety appliance requirements, additional hand holds are required, and the brake mast, originally located on the corner, is removed, and a new brake mast and fittings are applied about 18 in. from the centre of the car.

Canadian Pacific Railway Honor Roll 27.

Amos, Alfred V. H.	Clerk	Vancouver	Wounded
Anderson, Henry T.	Machinist	Ogden	Wounded
Baxter, George L.	Brakeman	Lethbridge	Wounded
Bingham, William H.	Bridgeman	Sutherland	Wounded
Blakey, Harold A.	Bell boy	Victoria	Wounded
Breeze, Jack	Locomotive fireman.	Kenora	Wounded
Brundrett, Walter	Clerk	Calgary	Died of wounds
Bryan, John W.	Locomotive fireman	Strathcona	Wounded
Burns, Archibald	Brush hand	Ogden	Wounded
Campbell, R. H. M.	Checker	Smelter	Wounded
Caprani, Joseph	Carpenter	Winnipeg	Wounded
Cassidy, Patrick J.	Switchman	Brandon	Wounded
Chapman, Horace	Angus	Winnipeg	Wounded
Clarke, Joseph V.	Yardman	Winnipeg	Wounded
Cochrane, Robert H.	Watchman	Strassburg	Wounded
Collins, Lewis	Chef	Toronto	Killed in action
Curveon, James L.	Conductor	B. C. District	Wounded
Dallas, Donald	Conductor	Calgary	Gassed
Daly, James R.	Clerk	Maniwaki	Killed in action
Davies, Edward V. H.	Clerk	Weyburn	Wounded
Devlin, William T.	Trainman	Minnedosa	Presumed dead
Douglas, William	Checker	Coquitlam	Wounded
Eades, Robert	Constable	Montreal	Died of wounds
Ellinson, Joseph G.	Clerk	Calgary	Wounded
Farrow, Thomas	Car repairer	West Toronto	Wounded
Fergie, Richard H.	Linen handler	Winnipeg	Presumed dead
Ferguson, John	Fitter	Winnipeg	Wounded
Ferguson, Thomas	Car repairer	Place Viger	Gassed
Forrest, Thomas	Clerk	Calgary	Wounded
Gaff, Wilfred J.	Clerk	Winnipeg	Killed in action
Grant, John C.	Wiper	Swift Current	Wounded
Gray, Donald H.	Clerk	Montreal	Wounded
Hall, Samuel	Helper	Winnipeg	Believed killed
Henderson, William M.	Locomotive man	Bay Shore	Presumed dead
Herron, Jack	Tracer	Toronto	Died of wounds
Hewitt, Henry	Boilermaker	Calgary	Presumed dead
Hillman, George C.	Craneman	North Bay	Killed in action
Hook, James A.	Seaman	Victoria	Wounded
Hornsby, John	Machinist	Angus	Killed in action
Hutchinson, W. K.	Clerk	Fort William	Wounded
Irvine, Earl	Transitman	Schreiber	Wounded
Jackson, Edward J.	Blacksmith	Calgary	Presumed dead
James, Harold C.	Clerk	St. John, N.B.	Wounded
Jarvis, Arthur H.	Boilerwasher	Kenora	Wounded
Johnson, Peter	Checker	Innisfail	Wounded
Kay, John T.	Yardmaster	Medicine Hat	Wounded
Kelly, George	Chef	Vancouver	Wounded
Kelly, Michael J.	Clerk	North Bay	Wounded
Kinnear, Alfred	Helper	Angus	Wounded
Kirkbride, William B.	Wiper	Kamloops	Wounded
Kubota, James	Wiper	Swift Current	Wounded
Leslie, David	Wiper	Regina	Wounded
Lewis, Jesse S.	Operator	Moose Jaw	Wounded
Lucas, Albert J.	Fitter	Winnipeg	Wounded
McBurnie, John	Helper	Winnipeg	Killed in action
McCalden, John	Locomotive fireman	West Toronto	Wounded
McCubbin, Alexander	Apprentice	Angus	Killed in action
McDonald, John H.	Operator	Minnedosa	Wounded
McGibbon, James R.	Operator	Weyburn	Presumed dead
McGowan, Anthony	Clerk	Vancouver	Wounded
McNamee, Leslie B.	Assistant agent	Canmore	Died of wounds
McVeigh, Charles H.	Clerk	Kenora	Wounded
Mallin, Patrick	Inspector	Angus	Wounded
Miller, Harry	Stover	Calgary	Wounded
Milne, John D.	Clerk	Fort William	Presumed dead
Minshull, Charles E.	Cleaner	Montreal	Killed in action
Moir, Lyall T.	Laborer	Field	Wounded
Olden, Fred	Trimmer	Toronto	Wounded
Owens, Thomas	Apprentice	Winnipeg	Wounded
Parks, Andrew	Car repairer	Calgary	Wounded
Parnell, Harold	Trucker	Toronto	Killed in action
Paterson, John S.	Locomotive man	Winnipeg	Wounded
Pearce, Harry J. L.	Clerk	Calgary	Wounded
Pearce, Leo Elmira	Operator	Camrose	Wounded
Phipps, Frank	Checker	Midway	Wounded
Poole, John	Locomotive fireman	Kenora	Killed in action
Porritt, Stanley	Brakeman	Havelock	Wounded
Post, Fred	Locomotive fireman	Shaunavon	Killed in action
Prizeman, George A.	Cashier	Weyburn	Wounded
Raymer, Harold J.	Locomotive man	Victoria	Wounded
Richards, Thomas	Car repairer	Calgary	Killed in action
Roberts, George	Locomotive fireman	Calgary	Killed in action
Rumsey, Francis C.	Stenographer	Calgary	Killed in action
Salter, William	Porter	Brandon	Killed in action
Scott, Andrew	Carpenter	Ogden	Wounded
Simpson, Alexander	Punch hand	Angus	Wounded
Smith, Duncan G.	Chief clerk	Moose Jaw	Wounded
Smith, Joseph	Storekeeper	Brooks	Wounded
Summers, Charles	Wiper	Vancouver	Wounded
Surtees, Andrew	Laborer	Calgary	Killed in action
Swansborough, G. E.	Clerk	Saskatoon	Wounded
Teape, George F.	Clerk	Edmonton	Killed in action
Turner, Alfred W.	Clerk	Pembroke	Wounded
Underwood, Arthur	Laborer	Calgary	Wounded
Weber, Andrew	Trucker	Sudbury	Presumed dead
Wilson, Charles	Locomotive man	Medicine Hat	Killed in action
Wilson, Harold W.	Timekeeper	Vancouver	Wounded
Wilson, Stanley	Yardman	Lethbridge	Wounded
Wiltshire, William H.	Clerk	Montreal	Killed in action

Shown on Honor lists to date: Killed, 487; wounded, 1,064; Total, 1,551.

Special Trade Commission's Report on Transportation.

The special trade commission, which was appointed by the Dominion Government, in April, 1916, to visit Great Britain, France and Italy, to make an enquiry into the new conditions brought about by the war, and as to the possibilities for the supply of many commodities needed in Canada, and which were obtained formerly from Germany and Austria, and also to look into the question of profitable exchange with Great Britain and allied European countries, consisted of J. W. Woods, Toronto, Chairman; T. H. Wardleworth, Montreal, Vice Chairman; G. W. Allan, Winnipeg; H. E. Dupre, Quebec; W. F. Hatheway, St. John, N.B.; and F. Pauze, Montreal. The commission's report, issued recently, deals with transportation as follows:

"The commission was at every point confronted by the problem of ocean transportation. Prior to the war regular lines were running between Great Britain and Canadian ports, viz.: the Allan, C.P.R., White Star, Dominion, Canadian Northern, Donaldson, Cunard, Manchester, La Compagnie Generale Transatlantique, and La Navigazione Generale Italiana. Between France and Canada the only British line operating at the outbreak of hostilities was the Allan Line between Montreal and Havre. La Compagnie Generale Transatlantique established in 1912 between Montreal and Havre, and only ceased at the outbreak of hostilities. Communication between Italy and Canada was established by La Navigazione Generale Italiana, which ran a regular steamship line, Genoa-Canada. However, as soon as war was declared, this line was suspended. The C.P.R. also had a line running between Canada and Trieste, but naturally this service was immediately suspended on the declaration of war.

"In taking a general view of the transportation between Canada and the allied nations, it would appear that the established lines have not given that service in linking up Canada with other countries which might have been expected. It has been felt for years that the rates of freight have been of such a character as to seriously impair their usefulness as a means of developing Canadian trade. Canada's ocean transportation will have to be completely reorganized if the Dominion is to derive the fullest benefit from her natural resources and manufactured products. The question is one of such serious importance to the Dominion that the commission feels that it calls for prompt and scientific treatment by the government. It was suggested to the commission that greater use might be made of tramp steamers, but this class of vessel requires a cargo outward as well as home, and if encouraged to come to Canada, a steamer of this class is heavily penalized in the matter of insurance, particularly if the voyage is by the St. Lawrence route. As the tramp steamer forms by far the larger proportion of ocean cargo tonnage, it would appear that Imperial control centralized, say in London, might so adjust the employment of ships that the different needs of the Empire might be met as the requirements of the crop or season might demand. Mr. Pauze dissented from this. If such a mobilization of imperial transportation facilities could be achieved, it would lead to an adjustment of freight carrying which would ensure adequate return to the steamships and at the same time

bring about a reduction of freight rates which would enormously assist transportation between Canada, the ports of Great Britain and the allied nations.

"In the commission's opinion the question is too important to be left to the decision of private corporations, as the future of Canada in respect to overseas trade will depend almost entirely upon the securing of favorable service and freight rates. It is to be remembered that a great number of Canada's competitors are geographically in a much better position, owing to their nearness to the markets of Great Britain and the allies, and it will be necessary to overcome this drawback if Canada is to have an important share of European trade now so freely offered to her.

"At Havre, Bordeaux, Marseilles and Genoa, the establishment of direct lines was urged as a matter of supreme importance. In the commission's opinion the service could be better rendered by the adoption of an imperial scheme of mobilization of our transportation resources. While direct lines have their advantages, it was felt that many of the subsidized lines in the past had not rendered the service which might have been expected from them. In the Italian conference which the commission held, it was pointed out that one of the assets which Italy boasted was surplus manual labor, which gave rise to the large emigration of recent years. While it is not likely that the emigration movement from Italy to Canada will assume pre-war proportions for some time to come, still, it may be reasonably expected that the movement of emigrants from Italy to Canada would in a large measure compensate for any shortage of cargo from that country to Canada on the return voyage. It may be recognized that full cargoes from both France and Italy to Canada could not always be looked for, seeing that Canadian shipments were of large bulk as a rule—lumber, wheat, etc., whereas French and Italian cargoes consisted of finer and less bulky goods.

"It may be claimed that governmental interest in transportation would encourage mainly a certain section of the community; but looked at broadly, an ocean service is simply a sort of bridge between one country and another, and while the direct benefit which may be enjoyed by one section is manifest, all sections profit by the easier and cheaper means of transit. As the conditions brought about by the war are abnormal, the commission does not wish to deal specifically with them as regards transportation. The question for the future will be the prevention of conditions which interfere with cheap and adequate distribution of Canada's products.

"The commission ventures to suggest that the question of shipbuilding in Canada should receive the government's most careful attention. It is convinced that the expansion of this industry would contribute much to the industrial welfare of Canada, and at the same time would help in some measure to provide the additional tonnage required to bring about a better condition in the matter of transportation. The commission is strongly of opinion, Mr. Hatheway dissenting, that no subsidies, bounties or other concessions should be granted to any steamship companies or to individual vessels until the whole question of transportation has been thoroughly studied, and not until

the methods of moving our grain, etc., are based upon sound and scientific methods. The commission on more than one occasion in Great Britain had the question of unsatisfactory bills of lading brought to its notice. The claim was put forward that bills of lading should be uniform, that a standard should be fixed which would be equitable to the shipper and to the shipping companies. The commission feels that this subject is one of great importance and merits the careful attention of the Department of Trade and Commerce. It was suggested to the commission that an expert official should be employed by the department to advise on shipping matters, to watch freight rates, movements of shipping, and to act as general adviser to exporters and importers on all matters connected with transportation of goods by sea.

"The commission found at all shipping points in Great Britain that there was a strong desire to encourage Canadian trade. This applies perhaps with special reference to Bristol, where the dock authorities have made special provision for handling Canadian produce and welcome every indication of increased trade with Canada. Cold storage plants of the most modern type, and grain warehouses have been erected, and the commission was assured that every possible encouragement would be given to merchandise coming from the Dominion. Hull has also made special provision for Canadian trade, and would be disposed to give every possible facility for this development. Manchester importers and exporters display the keenest interest in Canadian trade and desire that the traffic between that port and the Dominion should grow. The wonderful development of the Trafford Park Estate promises to place Manchester in a unique position for handling and storing goods. London, Liverpool, Glasgow and Belfast also encourage the development of Canadian imports and exports, and are prepared to encourage to the full any efforts which are made for its expansion.

"In France the port authorities at Havre, Nantes, Bordeaux, Marseilles, all expressed the desire that trade between their ports and the Dominion should increase. At Havre, Bordeaux and Marseilles, the commission found that special provision had been made for handling cargoes such as Canada is prepared to send to France. In these ports extensive improvements were being carried out by the harbor commissioners for the purpose of extending the facilities of the ports, in the building of warehouses and providing mechanical appliances for loading and unloading vessels, so as to reduce to a minimum the time occupied in discharge and receipt of cargo. Nantes was also visited by one of the commissioners and the same evidence of good will and desire to foster the trade between Canada and France was manifest. The commissioners are now advised that a direct line has already been established between Canadian ports and Ste. Nazaire. The main port of Italy, Genoa, was visited by the commission, which found that extensive improvements are being executed in the harbor and facilities were being provided for loading and unloading, which the port has not hitherto possessed.

"The commission feels that it can only report conditions respecting freight rates as it finds them, but it would reaffirm that it believes the question is a matter of

such material importance to the country's export and import business, that it recommends as strongly as possible a complete governmental survey of the freight situation, and prompt application of such remedial measures as may be found necessary. One of the most important factors that will have to be considered by the Canadian authorities in connection with the encouragement of vessels to use the St. Lawrence route, will be the question

of an improved rate of insurance. Exactly how this is to be done does not come within the province of the commission, but undoubtedly until the high rate of insurance charged on vessels coming up the St. Lawrence is remedied, there will be reluctance on the part of ship owners to send their vessels to Quebec and Montreal, as the difference in premium constitutes a serious charge on the vessel. It may, however, be suggested that the

plan adopted by the British Government for controlling marine insurance rates be seriously considered by the Canadian Government. Some improvement is vital to the development of the St. Lawrence route, even if the Canadian Government has to absorb the difference between the insurance rates to Quebec and Montreal, where they are higher than those charged by insurance companies to other North Atlantic ports."

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.

26442. Aug. 20.—Ordering Grand Trunk Pacific Ry. to build farm crossing for J. E. Holdcroft, McBride, B.C., at his expense.

26443. Aug. 18.—Authorizing C.P.R. to rebuild bridge 77.6 Sherbrooke Subdivision, Little Magog Lake, Que.

26444. Aug. 18.—Extending to Oct. 18 time within which bell may be installed at C.P.R. crossing at Duke St., Guelph, Ont.

26445. Aug. 18.—Authorizing C.P.R. to build spur for Canada Feldspar Corporation at mileage 22.47, Belleville Subdivision, Bathurst Tp., Ont.

26446. Aug. 18.—Authorizing C.P.R. to build spur for Grain Growers Grain Co., Ltd., at East Kildonan, Man.

26447. Aug. 18.—Authorizing London & Port Stanley Ry. to build spur on Bathurst St., London, Ont.

26448. Aug. 20.—Ordering G.T.R. to build farm crossing for G. French, McBride, B.C., at his expense.

26449. Aug. 18.—Ordering Grand Trunk Pacific Ry. in connection with application of residents of Edgerton, Alta., for overhead crossing of railway to remove material to a depth of at least 2½ ft. at northeast angle of the railway and road allowance intersection; also to take a small point off n.w., s.w. and s.e. angle of same at least 1 ft. deep.

26450. Aug. 20.—Ordering that lever operating crossing of G.T.R. and Toronto Ry. at Queen St., Toronto, be placed in electric cabin and additional signal be erected for westbound trains.

26451. Aug. 20.—Extending to Nov. 20, time in which bell may be installed at G.T.R. crossing of Riddell St., Woodstock, Ont.

26452. Aug. 20.—Approving crossing by Kettle Valley Ry. of Lake Shore Drive, Martin, Winnipeg, Brunswick, Bigsby, Bassett, Eckardt and Hastings Sts., Westminster Ave., and along and across Fairview Ave., between Pentiction and Coldwater Summit, B.C.

26453. Aug. 20.—Authorizing C.P.R. to build spur for Forsythe Elevator Co., Transept, Man.

26454. Aug. 20.—Extending for six months after the war, time within which Toronto, Hamilton & Buffalo Ry. shall build new bridge at King St. Hamilton, Ont., over its track, as required by order 24614, Dec. 28, 1915.

26455. Aug. 21.—Authorizing C.P.R. to build three spurs for A. McArthur & Co., Hochelaga Ward, Montreal.

26455. Aug. 21.—Authorizing C.P.R. to build revision to existing spur for Ontario Stone Corporation, Ltd., in Lot 10, Co. 4 and 5, North Orillia Tp., Ont.

26457. Aug. 9.—Ordering C.P.R. to erect class A station at Oakbank, Man.

26458. Aug. 23.—Ordering Canadian Northern Ry. to erect 4th class station at Fairmount, Sask., and to make roadway on north side of right of way through station grounds.

26459. Aug. 23.—Directing Victoria & Sidney Ry. (G.N.R.) to divert Brookleigh Road, Saanich District, Vancouver Island, in Sec. 57, Lake District.

26460. Aug. 18.—Ordering Canadian Northern Pacific Ry. to build transfer track with Victoria & Sidney Ry., near Sidney, B.C.

26461. Aug. 22.—Extending to Oct. 15 time within which C.P.R. shall build spur for Jas. Richardson & Sons, Port Arthur, Ont., authorized by order 26190, June 7.

26462. Aug. 22.—Extending to Oct. 22 time within which Kettle Valley Ry. may fence its right of way east of Glenfir, B.C., as required by order 26129, May 21.

26463. Aug. 23.—Authorizing Grand Trunk Pacific Ry. to build spur for David Bowman Coal & Supply Co., Winnipeg.

26464. Aug. 21.—Ordering Grand Trunk Pacific Ry. to build farm crossing for T. R. Lloyd, McBride, B.C., at his expense.

26465. Aug. 24.—Approving Niagara, St. Catharines and Toronto Ry. plan showing interchange track with G.T.R., at Thorold, Ont.

26466. Aug. 20.—Amending order 26232, June 22, re opening for traffic of C.P.R. Moose Jaw Northwesterly Branch from mileage 50 to 64.5.

26467. Aug. 24.—Extending for one year from Apr. 10, 1917 time in which City of Regina, Sask., shall build bridge across C.P.R. on Hamilton St., as authorized by order 26082, Dec. 31, 1914.

26468. Aug. 25.—Authorizing G.T.R. to build certain extensions of existing sidings at Camp Borden, Ont.

26469. Aug. 25.—Authorizing C.P.R. to build loading platform and provide stock yard at Tyn-dall, Man.

26470, 26471. Aug. 27.—Approving Bell Telephone Co. agreements with Hazeldean Rural Telephone Co., Ltd., Carleton County, Ont., July 15, and Wright & Pontiac Telephone Co., Ottawa and Pontiac Counties, Que., Aug. 13.

26472, 26473. Aug. 28.—Extending to Oct. 15, time within which Canadian Northern Ry. shall build standard third class stations at Sibbald and Excel, Alta.

26474. Aug. 29.—Extending to Nov. 15, time within which C.P.R. shall install bell at Queen St., Guelph, Ont.

26475. Aug. 29.—Approving G.T.R. revised plan B2-53A, of station and track changes at Nelles Corners, Ont.

26476. Aug. 29.—Suspending advanced rates on pulpwood in carloads from stations on Canadian Northern Ry. to Campbellford, Ont., as published on page 3 of Supplement 20 to C.N.R. Tariff C.R.C. no. E-860, issued to become effective Sept. 1, 1917; also suspending cancellation of supplement 1 to C.N.R. tariff C.R.C. no. E-156, effective Sept. 1, and ordering that rates on pulpwood published in C.N.R. tariff C.R.C. no. E-156, effective Oct. 2, 1912, be continued in effect, pending hearing by board.

26477. Aug. 29.—Approving location of Canadian Northern Ry. third class station at Palmer, Sask.

26478, 26479. Aug. 30.—Extending to Nov. 30, time within which Canadian Northern Ry. shall erect station at Stanmore, Alta., required by order 25614, Nov. 6, 1916, and also to complete erection of station at Krydor, Sask., required by order 25282.

26480. Aug. 30.—Relieving G.T.R. from providing further protection at 4th Range Crossing, 2½ miles east of Actonvale, Que.

26481. Aug. 31.—Authorizing C.P.R. to build extensions to Swift Canadian Co.'s siding at mileage 5, Galt Subdivision, Ont.

26482. Aug. 31.—Authorizing G.T.R. to build spur for Montreal Country Club, St. Bazile Parish, Que.

26483. Aug. 30.—Approving location and details of G.T.R. new station at St. Catharines, Ont., and rearrangement of sidings west of station.

26484. Aug. 28.—Approving C.P.R. plan, of Jan. 12, 1914, showing interchange tracks to be built between C.P.R. and G.T.R. at Port Hope, Ont.

26485, 26486. Aug. 27.—Authorizing Saskatchewan Government, on behalf of rural municipality of Edenwold no. 158, to build highway crossing at east end of C.P.R. station grounds, at Richardson, Sask., and on behalf of rural municipality of Montmartre no. 126, to build highway over Canadian Northern Ry., Regina-Brandon Branch, Sec. 18, Tp. 15, R. 12, West 2nd Meridian.

26487. Aug. 31.—Authorizing C.P.R. to build sidings for Northern Elevator Co., St. Boniface, Man.

26488. Aug. 31.—Extending to Sept. 30, time within which C.P.R. shall install gates at Church St., Weston, Ont.; and ordering that, pending installation of same, crossing be protected by day and night watchmen.

26489. Aug. 31.—Extending to Nov. 30, time within which Canadian Northern Ry. shall erect station at Carmel, Sask., as per order 24991, May 18, 1916.

26490. Sept. 1.—Approving agreement between Bell Telephone Co. and Sydenham Union Telephone Co., Grey County, Ont., Mar. 10, 1915.

26491. Sept. 1.—Approving clearances, shown on C.P.R. plan, of proposed box structure for carrying pipes from old to new locomotive house at Smiths Falls, Ont.

26492. Aug. 27.—Authorizing C.P.R. to reopen highway crossing on northwest boundary and to close crossing on north boundary of Sec. 22, Tp. 29, R. 11, West 3rd Meridian.

26493. Aug. 27.—Authorizing G.T.R. to build siding for Lincoln Paper Mills Co., Merriton, Ont.

26494. Aug. 27.—Approving C.P.R. plan showing extension to spur for Gibson, McCormack,

Irvin Co., West Toronto, Ont.

26495. Aug. 31.—Extending to Nov. 1, time within which Canadian Northern Ry. shall erect gates at Bay Bridge Road, Belleville, Ont., as required by order 25932, Mar. 10.

26496. Sept. 1.—Approving location and detail plans of G.T.R. new station at Scotia Jct., Ont.

26497. Sept. 5.—Authorizing C.P.R. and G.T.R. to operate trains over crossing at St. Polycarpe Jct., Que., without first stopping.

26498. Sept. 5.—Approving agreement between Bell Telephone Co. and Balsam Hill Telephone Co., Renfrew County, Ont., Aug. 25.

26499. Sept. 5.—Authorizing Grand Trunk Pacific Branch Lines Co. to open for traffic its Young to Prince Albert Branch between mileage 87 and 111.8 (Prince Albert); speed not to exceed 15 miles an hour.

26500. Sept. 5.—Extending for four months from date time within which G.T.R. shall install interlocking plant at Gilkinson St., Hamilton, Ont., as required by order 21305, Jan. 31, 1914.

26501. Sept. 5.—Authorizing Kettle Valley Ry. to build spur for F. Demuth, at mileage 27.6 west of Pentiction, B.C.

26502. Sept. 6.—Approving C.P.R. plans showing layout of bridges 0.9 and 1.8, North Toronto Subdivision; and rescinding order 26073, May 1, in same connection.

26503. Sept. 5.—Relieving C.P.R. from providing further protection at crossing of Cremanze near Jacques Cartier station, Que.

26504. Sept. 7.—Approving Canadian Northern Ry. Standard Freight Tariff, C.R.C. no. W-1025, cancelling C.R.C. no. W-862.

26505. Sept. 7.—Ordering C.P.R. to erect a one-pen stock yard at Enchant, Alta., to be completed by May 31, 1918.

26506. Sept. 7.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Imperial Munitions Board, into Foundation Co.'s premises, on former Songhees Indian Reserve, B.C.

26507. Sept. 7.—Authorizing G.T.R. to build extension to siding for Beaver Wood Fibre Co., Thorold Tp., Ont., and approving clearances shown on plan.

26508. Sept. 7.—Authorizing Berlin & Northern Ry. to operate its cars over crossing of Louisa St., Kitchener, Ont., without first stopping; speed not to exceed 10 miles an hour; G.T.R. to stop its trains before crossing, so that tranman can operate interlocking levers.

26509. Sept. 10.—Approving agreement between Bell Telephone Co. and Glenview Rural Telephone Co., Lanark County, Ont., Aug. 9.

26510. Sept. 10.—Amending order 26438, Aug. 17, re C.P.R. spur for R. A. Lister & Co., Winnipeg.

26511. Sept. 10.—Approving agreement between Bell Telephone Co. and Wallingford Bros., East Templeton, Que., July 25.

26512. Sept. 5.—Approving plan of City of Lachine, Que., showing lighting Rockfield Bridge, Rockfield, Que.

26513. Sept. 10.—Authorizing C.P.R. to build spur for Nicola Branch, B.C.

26514. Sept. 11.—Authorizing G.T.R. to build spur for Canada Paper Co., Factory St., Windsor Mills, Que., and to build additional track across Factory St.

26515. Approving automatic bell installed at Grier St., Belleville, Ont., by G.T.R., and protection by watchman, during rebuilding overhead bridge on North Front St., authorized by order 26210, June 11.

26516. Sept. 13.—Authorizing C.P.R. to build spur for Reliance Investment & Developing Co., Winnipeg.

26517. Sept. 14.—Approving location of Essex Terminal Ry. from Lot 39, Con. 1, Sandwich West Tp. to northerly limit of Amherstburg, Ont., 9.3 miles.

26518. Sept. 13.—Requiring G.T.R. to erect fruit shelter, 16 x 48 ft., at east end of station platform, at Bronte, Ont., to be completed by May 1, 1918.

26519. Sept. 10.—Approving agreement between Bell Telephone Co. and Gore G. Telephone Co., Prince Edward County, Ont., July 30.

26520. Sept. 14.—Extending to Sept. 30 time within which C.P.R. shall build interchange track on Pinnacle St., Belleville, Ont., between C.N.R., C.P.R. and G.T.R., required by order 25980, March 30.

26521. Sept. 13.—Ordering C.P.R. to erect Standard 2 station at Amisk, Alta., by Sept. 1, -918.
26522. Sept. 13.—Authorizing C.P.R. to build ballast pit spur across road allowance between Secs. 26 and 27, Tp. 34, R. 26, west 2nd meridian, Sask., mileage 62.5, Sutherland Sub. Div.
26523. Sept. 13.—Authorizing C.P.R. to rebuild bridges 56.4 and 56.5, Galt Subdivision, Ontario District.
26524. Sept. 13.—Extending to Nov. 15 time within which Canadian Northern Ry. shall build station between east switch and road crossing at Kuroki, as per order 26372, July 26.
26525. Sept. 15.—Relieving Quebec & Lake St. John Ry. (C.N.R.) from providing further protection at highway at mileage 13.1 from Quebec, Que.
26526. Sept. 17.—Approving Canadian Northern plan showing transfer track between C.N.R. and C.P.R. at Rosetown, Sask.
26527. Sept. 11.—Ordering that Burwell, Adelaide and Rectory Sts., London, Ont., crossed by G.T.R., be protected by gates, operated by day and night watchmen; gates to be installed by Dec. 31, and reserving, for further consideration, question of apportionment of cost.
26528. Sept. 14.—Authorizing Grand Trunk Pacific Ry. to build highway over Ottawa St., Prince George, B.C.
26529. Sept. 18.—Dismissing complaint of H. E. Dumphy, Excel, Alta., against demurrage charge of \$24 on car of grain.
26530. Sept. 15.—Authorizing Essex Terminal Ry. to build across certain highways between Ojibway and Anderson, and between Ojibway and Amherstburg, Ont., and across certain unopened road allowances.
26532. Sept. 14.—Authorizing C.P.R. to rebuild bridge 77.8 over Horner's Creek, Galt Subdivision, Ont.
26533. Sept. 14.—Approving clearances at New York Central Rd. mechanical coaling plant at Valleyfield, Que.
26534. Sept. 17.—Authorizing Toronto Hamilton & Buffalo Ry., to take certain lands belonging to estates of late Senator McCallum and late T. C. Street, in Sherbrooke Tp., Ont., for storage of bulk shipments of ore, coke, and coal, and for freight sheds and trackage.
26535. Sept. 17.—Relieving Windsor, Essex, & Lake Shore Rapid Ry. from providing further protection at 8th Concession road between Lots 12 and 13, Sandwich South Tp., Ont.
26536. Sept. 17.—Refusing application of residents Nepean Tp., Ont., for order directing Canadian Northern Ry. to establish flag station where it crosses forced road on Lot 17, Con. 3.
26537. Sept. 18.—Rescinding order 26249, June 18, and authorizing Village of Forres, Sask., to build highway over C.P.R. 600 ft. west of west switch at Hatton, Sask.
26538. Sept. 18.—Approving Canadian Northern Ry. Standard Howe truss plans showing 60 ft. and 120 ft. deck Howe trusses.
26539. Sept. 20.—Ordering Pere Marquette Ry. to erect station and freight shed at Tupperville, Ont., and place man in charge to sell tickets, bill out freight and express and receive same, and deliver in proper manner; to build stock yard there, suitable for two or more shippers, with loading chute at each end and separation fence in centre; all to be completed by Nov. 1.
26540. Sept. 20.—Rescinding order 26325, July 18, and authorizing Montreal & Southern Counties Ry. to resume train service in effect prior to order 26325.
26541. Sept. 20.—Authorizing Esquimalt & Nanaimo Ry. to build spur for C. Hoard, Bainbridge station, B.C.
26542. Sept. 20.—Authorizing C.P.R. to rebuild bridge 56.6, Galt Subdivision, Ont.
26543. Sept. 19.—Authorizing Niagara, St. Catharines & Toronto Ry. to build branch line from Ontario St. to G.T.R. station at St. Catharines, Ont., to be completed within three months from date.
26544. Sept. 20.—Ordering Vancouver, Victoria & Eastern Ry. & Navigation Co. (G. H. R.) to extend bridge 528 for 42 ft. at west end, to widen channel to original width; remove gravel bar to east of bridge 530; and clean out channel from Thynne Lake to lower side of bridge 530; J. C. Thynne, Otter Valley, Merritt, B.C., to remove fish dam near outlet of Thynne Lake.
26545. Sept. 20.—Authorizing C.P.R. industrial tracks serving Gunn Packing Co., Toronto, and rescinding orders 16834, 18481, 22867, and 2336, June 21, 1912, Jan. 10, 1913, Nov. 18, 1914, and Dec. 12, 1906, approving clearances and authorizing G.T.R. to operate over said spurs.
26546. Sept. 19.—Authorizing Central Vermont Ry. to build spur for Bennett, Ltd., Chambley Tp., Que.
26547. Sept. 20.—Rescinding order 24915, Apr. 22, 1916, subject to condition that rates on wood Hawkesbury and Buckingham to destinations in pulp and sulphite pulp, from Ottawa, Hull, Central Freight Association's territory included in suspended tariffs, except Jackson, Battle Creek, Vicksburg, and Kalamazoo, Mich., be revised to basis of 19 1/10c to Chicago in accordance with established percentages; fractions of 1c in rates, excepting 1/2c, be eliminated as follows: under 25c drop, 25 to 74c—1/2c; over 74c, 1c; rates from Ottawa, Hull, Hawkesbury, and Buckingham to Jackson, Battle Creek, Vicksburg and Kalamazoo, Mich., to be made 1c less than rates from Grand Mere, Que.
26548. Sept. 19.—Ordering that rates and minimum weight to be charged by railway companies on fibreboard cheese boxes, in carloads, be those concurrently charged between same points in Canada on wooden cheese boxes, in carloads; prompt effect be given this order by amendment to Canadian freight classification, or by commodity tariff of general application.
26549. Sept. 20.—Authorizing Alberta Government to build highway over C.P.R. in n.e. 1/4 Sec. 34, Tp. 24, R. 2, west of 5th Meridian.
26550. Sept. 21.—Extending to Nov. 30, time within which C.P.R. shall install gates at crossing of Church St. by G.T.R. and C.P.R. at Weston, Ont., and that pending installation, crossing be protected by day and night watchmen.
26551. Sept. 22.—Exempting Toronto, Hamilton & Buffalo Ry. and Michigan Central Rd. from complying with conditions referred to in Sec. 364 of Railway Act, in connection with agreement of Oct. 2, 1916, between the companies, for joint use, for interchange of traffic between them, of T. H. & B. R. spur between Smithville and Port Maitland, connecting with M. C. R. near Attercliffe, Ont., at Erie and Ontario Jct., and recommending agreement to Governor in council for sanction.
26552. Sept. 21.—Rescinding order 15965, Feb. 12, 1912, in so far as it exempts C.P.R. from fencing right of way from mileage 83 to 92, Bigwood Tp., Ont.; and ordering C.P.R. to fence said portion of right of way by Dec. 1.
26553. Sept. 21.—Approving Edmonton, Dunvegan & British Columbia Ry. bylaw 7, Sept. 1, and rescinding order 23459, Mar. 29, 1915.
26554. Sept. 13.—Approving plan and specifications of Blanchard Tp., Ont., showing work to be done on Bolton Drain, under G.T.R.
26555. Sept. 22.—Approving location and details of G.T.R. station at Delhi, Ont.
26556. Sept. 20.—Ordering C.P.R. to repair fences on its Kootenay Central Subdivision, B.C., mileage 10 to 166.
26557. Sept. 24.—Authorizing G.T.R. to build extension to spur for Jefferson Glass Co., Toronto.
- General order 206. Sept. 7.—Amending general order 203, Aug. 11, re regulations for carriage of explosives.

Traffic is being carried over the ravines at present on temporary timber trestles.

The yard at West Toronto is being increased by the addition of tracks to accommodate 500 cars, thus bringing its capacity up to 2,200 cars. The biggest piece of the work is the completion of the subway at Runnymede Road. When the capacity of the yard was last increased, the substructure for a 12-track subway was put in, but the superstructure for 6 tracks only was completed. The superstructure for the additional 6 tracks is now being put in. Reinforced concrete is being used, the contractors being Archibald & Hilmer, Ltd., Toronto. The grading and track laying, with the exception of that over the subway has been completed by the company's own forces, and ballasting is being gone on with. The last extension of the yards was fully described and illustrated in Canadian Railway and Marine World, Nov. 1913, pg. 532. The present extension lies between the locomotive house built in 1913, and the old West Toronto yard.

Work has been started on a new bridge at London St., Windsor, Ont., which will be wider and of heavier construction than the old one. One third of the cost is being contributed by the city.

Grand Trunk Pacific Inspection Trip.

An official trip of inspection over the Grand Trunk Pacific Ry. was begun at Winnipeg, Sept. 14. The official party, which started from Montreal, Sept. 12, consisted of A. W. Smithers, Chairman of the Board, G.T.R.; W. Molson Macpherson, director; Jules Hone, Dominion Government representative on the directorate; H. G. Kelley, President; J. E. Dalrymple and F. Scott, Vice Presidents. The party was joined at Winnipeg by P. McAra, the other government director, and W. P. Hunter, Vice President and General Manager. Three days were spent in Winnipeg, the party leaving Sept. 17, and travelling by day in order that they might have the best opportunity of seeing the whole of the line and the country which it traverses. At Regina, Sask., on Sept. 20, the party was met by the mayor and other civic officials and was entertained at the Assiniboia Club, the ladies of the city taking charge of the ladies in the party. The principal feature of the visit was a luncheon given by the Canadian Club, at which Mr. Smithers was the chief speaker. The party returned to the main line at Melville, Sept. 22, and proceeded westward to travel over the line to Prince Rupert, thence to Victoria, where they are expected early in October. President Kelley is making his first official trip over the line.

Canadian Northern Ry. property in Hamilton.—The assessment commissioner for Hamilton, Ont., prepared a list of properties owned by the company and its subsidiaries there showing a total assessment of lands, \$247,080, and of buildings, \$417,280. The taxes for this year are \$9,594.44. This statement was prepared with a view of considering the city's position in regard to the taking over of the company's properties by the Dominion Government.

Consolidated Railway Bill.—The bill to consolidate and amend the Railway Act, which passed the House of Commons at the recent session, after having been considered by a special committee, did not get through the Senate before prorogation.

Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—The new locomotive house at Bay Shore, St. John, is reported to be completed, and grading on the surrounding area for additional trackage is being gone on with.

Montreal Terminals.—Four umbrella protections of reinforced concrete are being erected over the platforms at Place Viger station, Montreal. Each covering is 500 ft. long, with a spread of 20 ft., and composed of 16 central pillars, with arms stretching out to each side of the platform. The ends of the arms of each pillar are connected up with concrete beams 30 ft. long, 2 ft. wide, and 6 in. high; a similar beam connects the pillars at the centre. Cross beams of concrete, 10 ft. long, 10 in. wide and 10 in. thick are then laid transversely, on which the roof is laid. The roof slopes inward from each side to the centre and the water will be drained off by spouts placed in alternate pillars. About 300 tons of cement will be used, and the cost of the whole work is estimated at \$40,000.

Ontario District.—Good progress is reported to have been made to date with the second track work on the line between Leaside Jct. and North Toronto station. The grading is comparatively light, and is being done by the company's own forces, which will also do the track laying. The heaviest part of the work is the removal of two single track steel viaducts which are being replaced by reinforced concrete structures. Each structure will be approximately 400 ft. long and 100 ft. high to base of rail; that over the belt line ravine will carry two tracks, and that over the reservoir park ravine three tracks. The first is being built by the Dominion Construction Co., and the second by Wells & Gray, Ltd. Work on both structures is well advanced and it is expected that they will be completed and ready for use by the end of November.

Mainly About Railway People Throughout Canada.

J. J. Kennedy, foreman painter, C.P.R., Lethbridge, Alta., died there Sept. 4, aged 51.

J. J. Hill, of St. Paul, Minn., left an estate which has been appraised recently at about \$60,000,000.

Wm. Watson, at one time Paymaster, Toronto, Grey & Bruce Ry., died in Toronto, Aug. 31, aged 88.

E. W. Tobin, M.P. for Richmond and Wolfe, Que., began life as a railway brakeman and is now a prominent lumberman.

A. W. Smithers, Chairman of the Board, G.T.R., was in Canada during September, and toured the various lines of the system.

G. E. Johnson, who has resigned the general managership of the Cape Breton Ry., at St. Peters, N.S., after 14 years

new headquarters being Magor Car Corporation, 30 Church St.

Sir Henry Drayton, Chief Railway Commissioner, has been appointed a Royal commissioner to investigate the exportation of power generated at Niagara Falls, Ont., to the United States.

G. McL. Brown, European Manager C. P.R., has written the *Tariff Reformer* and *Empire Monthly*, in England, urging a comprehensive scheme by which returned soldiers could be placed on land.

John Harvie, of Toronto, who died at Guelph, Ont., Sept. 5, aged 85, was conductor on the first train which left Toronto on the Northern Ry., and was subsequently Traffic Master of that line.

C. W. W. Field, who has been City Passenger Agent, Grand Trunk and Central Vermont Railways at Boston, Mass.,

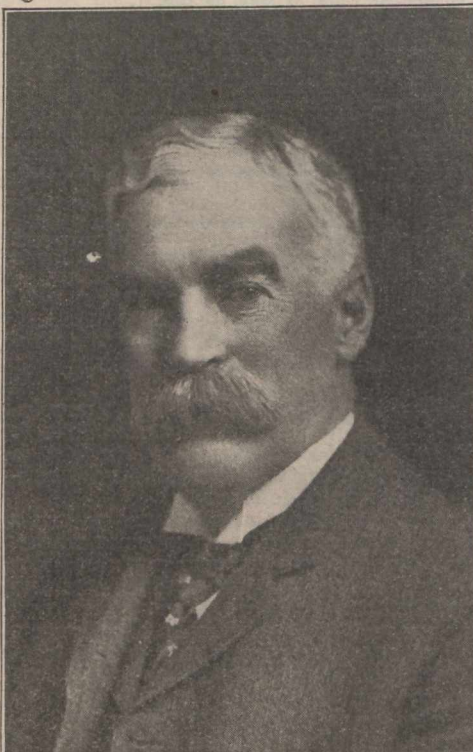
ern train dispatcher, who was arrested in connection with the accident near Edmonton, Alta., July 28, in which five persons were killed, was subsequently released on bail and later under instructions from the Attorney General's Department the proceedings were abandoned.

G. Morgan, who died at Blenheim, Ont., Sept. 21, aged 78, was, some years ago, engaged in railway contracting, and had contracts on the construction of the Lake Erie and Detroit River Ry., between Walkerville and St. Thomas, Ont. He also built the concrete coal docks at Rondeau, Ont., for the Lake Erie Coal Co., and did considerable bridge work on the London and Port Stanley Ry.

N. Cauchon, consulting engineer, Ottawa, who was associated with W. F.



H. G. Kelley
President, Grand Trunk Railway and Grand Trunk Pacific Railway.



W. H. Biggar, K.C.
Vice President and General Counsel, Grand Trunk Railway and Grand Trunk Pacific Railway.



U. E. Gillen
Vice President in Charge of Operation, Grand Trunk Railway.

occupancy of the position, is now in California, on account of ill health.

Joseph Heffernan, for many years City Passenger Agent, C.P.R., and agent, Dominion Express Co., at Guelph, Ont., died there Sept. 12, aged 77.

M. P. Fennell, heretofore Assistant Secretary, Montreal Harbor Commission, is reported to have been appointed Secretary-Treasurer, vice David Seath, resigned owing to ill health.

N. R. DesBrisay, District Passenger Agent, C.P.R., St. John, N.B., was married at Halifax, N.S., Sept. 18, to Miss C. A. Worrell, daughter of the Archbishop of Nova Scotia.

R. C. Barker, agent, C.P.R., Summerland, B.C., was drowned in Okanagan Lake, Sept. 2, whilst bathing. He was formerly at North Bend and Revelstoke, B.C., as chief dispatcher.

Basil Magor, who resigned his position as Vice President and General Manager, National Steel Car Co., Hamilton, Ont., recently, has removed to New York, his

has been appointed First Lieutenant in the United States army and has trained at Plattsburg, N.Y.

H. E. Byram, Vice President in charge of Traffic, Chicago, Burlington & Quincy Rd., Chicago, Ill., is reported to have been appointed President, Chicago, Milwaukee & St. Paul Ry., Chicago, Ill., vice A. J. Earling, appointed Chairman of the Board.

H. K. Wickstead, M.Can.Soc.C.E., who has been Chief Engineer of Surveys, Mackenzie, Mann & Co., Ltd., for a number of years, is at present acting as Manager of the Rosedale Coal and Clay Products Co., at Rosedale, Alta., which is owned by Mackenzie-Mann interests.

T. J. Oakley, who died at Toronto, Sept. 19, aged 68, was at one time dispatcher, G.T.R., Stratford, Ont., and was transferred to St. Marys, Ont., in 1907. He was later appointed station master at Craigville, Ont., and retired from active service a few years ago.

S. J. Harrington, the Canadian North-

Tye, M.Can.Soc.C.E., in the preparation of a report on a combined railway entrance scheme for Hamilton, Ont., has been invited by T. H. Mawson, the English town planning engineer, who has been awarded the commission for the re-planning of Saloniki, by the Greek Government, to assist him in the work.

C. Manning, who has been appointed Assistant to Vice President in charge of motive power, car equipment and machinery, G.T.R., Montreal, has been in the company's service for over 30 years, latterly acting as secretary to W. D. Robb, when the latter was Superintendent of Motive Power. He has lived at Verdun, Que., for several years, and served a term as Mayor of the town.

Neil Marple, who has been appointed Master Car Builder, Canada Southern Division, Michigan Central Rd., St. Thomas, Ont., was born in McKillip Tp., Ont., July 1, 1860, and entered Michigan Central service in Dec. 1886, since when he has been, to July 1, 1888, machinist;

July 1, 1888, to April 1, 1903, Foreman of Machine Shop; April 1, 1903, to Sept. 1, 1904, also in charge of blacksmith shop; Sept. 1, 1904 to Aug. 1, 1917, General Foreman, all at St. Thomas, Ont.

Elias Stewart McMillan, who has been appointed Road Foreman of Locomotives, G.T.R., Montreal, was born there, Dec. 14, 1880, and entered G.T.R. service in July, 1897, since when he has been, to Mar. 1900, clerk; Mar. to Sept. 1900, locomotive dispatcher; Sept. 1900 to Dec. 1903, locomotive fireman; Dec. 1903 to Jan. 1917, locomotive man; Jan. to May 1917, acting travelling locomotive man; May to Sept. 1917, locomotive fireman instructor, all at Montreal.

Edwin Roy Battley, who has been appointed Master Mechanic, Eastern Lines, G.T.R., Montreal, was born at Stratford, Ont., Oct. 21, 1886, and entered G.T.R. service, Dec. 1, 1902, since when he has been, to Dec. 1, 1907, machinist apprentice, Stratford, Ont.; Dec. 1, 1907 to Jan. 1909, machinist, Stratford; Jan. 1909 to Mar. 12, 1910 to July 1, 1914, Locomotive Foreman, Fort Erie, Ont.; July 1, 1914 to Sept. 1, 1917, General Foreman, Deering, Me.

S. N. Parent, of Quebec, formerly Chairman, National Transcontinental Ry. Commissioners, and **A. B. Lowe**, the International Brotherhood of Maintenance of Way Employes' representative at Ottawa, are among the 12 persons nominated by Sir Wilfrid Laurier, as leader of the opposition, to act as members of the board of selection, to be appointed by joint resolution of both Houses of Parliament, to select members of the local appeal tribunals throughout Canada under the Military Service Act.

James E. Giles, who has been appointed Locomotive Foreman, Canadian Northern Ry., Lucerne, B.C., was born at Toronto, Jan. 18, 1882, and entered railway service in Sept. 1902, since when he has been, to 1905, machinist, Union Pacific Rd., Pocatelle, Idaho; 1905 to 1909, machinist, Northern Pacific Ry., Ellensburg, Wash.; 1909 to 1910, Assistant Locomotive House Foreman, same road, Ellensburg, Wash.; 1911 to 1913, machinist, C.P.R., Lethbridge, Alta.; 1913 to 1914, Shop Foreman, C.P.R., Lethbridge, Alta.; 1914 to 1917, acting Master Mechanic, Pacific Great Eastern Ry., Squamish, B.C.

W. D. Robb, whose appointment as Vice President in charge of motive power, car equipment and machinery, G.T.R., Montreal, was announced in our last issue, was born at Longueuil, Que., Sept. 21, 1857, and entered G.T.R. service in 1873, since when he has been, to July 1882, machinist apprentice, Montreal; July 1882 to Jan. 1883; charge hand, Montreal; Jan. to Aug. 1883, night locomotive house foreman, Montreal; Aug. 1883 to Jan. 1897, Locomotive Foreman, Belleville, Ont.; Jan. 1897 to July 1901, Master Mechanic, Toronto; July 1901 to Sept. 1, 1917, Superintendent of Motive Power, Montreal.

W. R. Davidson, who has been appointed General Superintendent, Western Lines, G.T.R., Chicago, Ill., was born at Everton, Mo., Nov. 8, 1871, and entered railway service in Jan., 1890, since when he has been, to July, 1901, operator at various points, Missouri Pacific Ry.; July, 1901, to Mar., 1904, dispatcher, same road, Wichita, Kan.; Mar. to Oct., 1904, Chief Dispatcher, same road, Wichita, Kan.; Oct., 1904, to Mar., 1911, Trainmaster, same road, Wichita, Kan.; Mar., 1911, to Feb., 1913, Trainmaster, G.T.R., London, Ont.; Feb., 1913, to Nov., 1916, Superintendent, same road, London, Ont.; Nov.,

1916, to Sept. 1, 1917, Superintendent, Detroit Division, Western Lines, same road, Detroit, Mich.

Aubrey Cecil Barker, who has been appointed Assistant to General Superinten-



G. C. Jones
Assistant to President, Grand Trunk Railway.



W. D. Robb
Vice President in Charge of Motive Power,
Car Equipment and Machinery, Grand Trunk
Railway.

dent, Eastern Lines, Canadian Government Railways, Moncton, N.B., was born at Lacadie, Que., Aug. 5, 1878, and entered railway service Oct. 1, 1895, since when he has been to April 1900 agent and operator at various points, Eastern

Division, C.P.R.; May 1900 to Oct. 1913, dispatcher, and Chief Dispatcher, consecutively, Lake Superior Division, C.P.R., Chapleau, Ont.; Oct. 1913 to Oct. 1916, Inspector of Stations, Trains and Train Dispatching, Canadian Government Railways, Moncton, N.B. In October, 1916, he was appointed Superintendent of Telegraph and Time Service, which position he continues to fill.

Daniel Francis Coyle, who has resigned as Industrial Commissioner, Canadian Northern Ry., Winnipeg, on taking service with the Home Bank of Canada, was born at Stayner, Ont., June 13, 1875, and entered railway service, Aug. 15, 1892, since when he has been, to Sept. 1896, stenographer, General Superintendent's office, Western Division C.P.R., Winnipeg; Sept. 1896 to Aug. 15, 1901, private secretary to Manager, Western Lines, C.P.R., Winnipeg; Aug. 15, 1901 to Jan. 2, 1917, assistant to R. J. Mackenzie, who was in charge of the construction of all Canadian Northern Ry. lines west of the Great Lakes, for Mackenzie, Mann & Co., the general contractors; Jan. 2 to Sept. 30, 1917, Industrial Commissioner, Canadian Northern Ry. He was presented with a travelling case by C. N. R. officials and employes at Winnipeg recently.

Wilmer Herbert Sample, who has been appointed Superintendent of Motive Power, G.T.R., Montreal, was born at Altona, N.Y., Aug. 20, 1864, and entered railway service Aug. 20, 1882, since when he has been, to 1887, fireman, Central Vermont Ry., St. Albans, Vt.; 1887 to 1890, locomotive man, Atcheson, Topeka and Santa Fe Ry., Albuquerque, N.M.; 1890 to 1901, locomotive man, Central Vermont Ry., St. Albans, Vt.; 1901 to 1906 Road Foreman of Locomotives, Central Vermont Ry., St. Albans, Vt., 1906 to 1911, Superintendent of Motive Power and Car Department, Northern Ry. of Costa Rica (United Fruit Co.), San Jose, Costa Rica; Mar. 15, 1911 to Oct. 1914, Master Mechanic, G.T.R.; Ottawa, Oct. 1914 to Oct. 1916, Master Mechanic, G. T.R., Battle Creek, Mich.; Oct. 1916 to Sept. 1, 1917, Master Mechanic, Eastern Lines, G.T.R., Montreal.

Charles Ketchum Howard, who has been appointed General Agent, Traffic Department, Canadian Government Railways, Boston, Mass., was born at St. Andrews, N.B., Aug. 28, 1877, and entered railway service April 1893, since when he has been, to 1900, operator and agent at various points, Atlantic Division, C. P.R.; 1900 to 1901, agent, C.P.R., Brownville Jct., Me.; 1901 to 1906, agent, C.P.R. McAdam Jct, N.B.; 1906 to 1910, agent, C.P.R., Fredericton, N.B.; 1910 to 1911, Superintendent, Aroostook Valley Rd., Presque Isle, Me.; 1911 to 1912, Travelling Freight Agent, C.P.R., St. John, N.B.; 1912 to 1915, Right of Way Agent, St. John and Quebec Ry., Fredericton, N.B.; 1915 to Mar. 1916, agent, Canadian Government Railways, Woodstock, N.B.; Mar. 1916 to Sept. 1, 1917, Commercial Agent, Canadian Government Railways, Boston, Mass.

H. B. Fleming, who died suddenly at New Glasgow, N.S., Sept. 19, was born at Moncton, N.B., in 1858, and entered Intercolonial Ry. service in 1873, since when he had been, to 1874, in stationery stores; 1874 to 1878, relieving operator and station agent; 1878 to 1879, relieving dispatcher at Truro, N.S., and Moncton and Campbellton, N.B.; 1879 to 1898, dispatcher, Moncton, N.B.; 1898 to Nov. 7, 1912, Chief Dispatcher, Springhill and St. John Division; Nov. 7, 1912, to Aug., 1913, Assistant Superintendent, Division 3,

Moncton, N.B.; Aug., 1913, to Nov., 1914, Assistant Superintendent, Moncton to Edmundston, N.B., National Transcontinental Ry., Edmundston, N.B.; Nov., 1914, to Feb., 1917, Superintendent, District 5, Intercolonial Division, Canadian Government Railways, Edmundston, N.B.; Feb., 1917, he was appointed Chief Dispatcher, Canadian Government Railways, Edmundston, N.B., and latterly acted as Inspector of vision and color tests.

Ulmus E. Gillen, whose appointment as Vice President in charge of operation, G.T.R., Montreal, was announced in our last issue, and whose portrait appears in this issue, was born at Brooklyn, Mo., Feb. 27, 1867. He entered railway service in 1884, and was, to April, 1885, clerk, telegraph operator and relief agent, Chicago, Milwaukee and St. Paul Ry., Canton, S.D.; April 1885 to 1888, telegraph operator, Missouri Pacific Ry., Pacific, Mo.; 1888 to 1892, operator in dispatcher's office, same road, St. Louis, Mo.; 1892 to 1901, dispatcher, and chief dispatcher, same road, St. Louis; 1901 to 1902, Trainmaster, G.T.R. Belleville, Ont.; 1902 to 1904, Assistant Superintendent, same road, Belleville, Ont.; 1904 to 1907, Assistant Superintendent same road, London, Ont.; 1907 to 1912, Superintendent, same road, Montreal; 1913 to Sept. 1, 1917, General Superintendent, Western Lines, same road, Chicago, Ill. He was President of the G.T.R. Maintenance of Way Association for 1916, and in 1917 was elected President of the General Superintendents' Association of Chicago, and he is a member of the American Railway Engineering Association, the St. Louis Railway Club and the Traffic Club of Chicago.

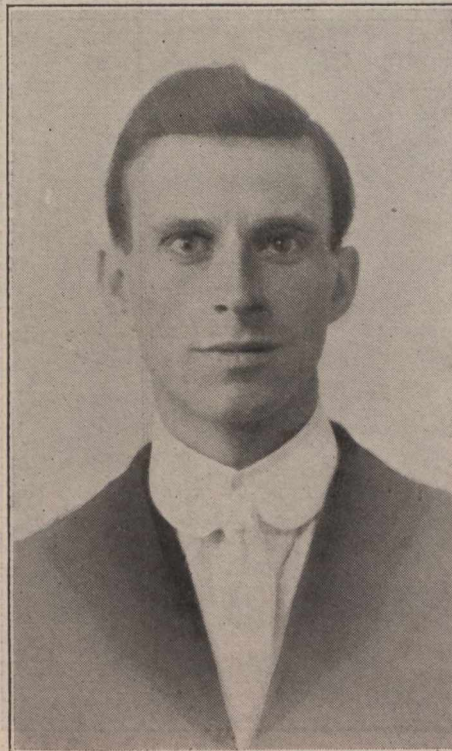
Lt. Col. F. L. Lyndon, who died in Montreal, Sept. 10, aged 81, had been in C.P.R. service continuously from 1882, first in the stores department, then in the general ticket office and latterly in the General Manager's office. Both his grandfathers fought under Wellington in the Peninsular and Napoleonic wars. His father served 26 years in the 30th Regiment. He began his military career in the South Devon Militia in 1854, and later served with the Dorset Militia. In 1861 he came to Canada as a soldier, in 1866 he enlisted in the 4th Battalion of the 60th Regiment of the King's Royal Rifles. He then went to the 28th Battalion of Perth, Ont., as adjutant and instructor and subsequently moved to St. Marys, Ont., and joined the Grand Trunk Brigade. On moving to Montreal he remained with the Grand Trunk Brigade and at the time of its dissolution he assisted in re-organizing the 5th Royal Highlanders, becoming adjutant and major in that regiment. He organized and for a long period commanded the Montreal Highland Cadet Corps. He retired from the Canadian Militia Mar. 21, 1917, retaining rank as Lt. Col. He served in the Fenian raid in 1866 and had the general service medal with one clasp.

W. E. Duperow, who has been appointed General Passenger Agent, Grand Trunk Pacific Ry., and Canadian Government Railways, Winnipeg, was born at Stratford, Ont., Sept. 4, 1872, and entered transportation service Nov. 3, 1893, since when he has been, to Oct. 15, 1894, in G.T.R. service at Seaforth, Ont.; Oct. 15, 1894 to June 1, 1896, ticket clerk, G. T.R., London, Ont.; June 1, 1896, to July 11, 1898, ticket clerk, G.T.R., Toronto; July 11, 1898, to Aug. 1, 1899, theatrical and excursion clerk, General Passenger Agent's office, G.T.R., Toronto; Aug. 1, 1899, to April 19, 1902, chief clerk, same

office; April 19, 1902, to Feb. 15, 1907, General Manager, Secretary and Treasurer, Huntsville, Lake of Bays and Lake Simcoe Navigation Co., Huntsville, Ont.; Feb. 15, 1907 to June 1, 1910, Travelling Passenger Agent, G.T.R., Toronto; June



W. H. Sample
Superintendent of Motive Power, Grand Trunk Railway.



E. R. Battley
Master Mechanic, Eastern Lines, Grand Trunk Railway.

1, 1910 to April 15, 1912, City Passenger Agent, G.T.R., Toronto; June 1, 1910, to April 15, 1912, City Passenger and Ticket Agent, G.T.R. and Grand Trunk Pacific Ry., Victoria, B.C.; Apr. 15, 1912 to Mar. 1, 1914, General Agent, Passenger De-

partment, G.T.R., G.T.P.R., and Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.; Mar. 1, 1914, to Sept. 1, 1917, Assistant General Passenger Agent G.T.P.R., Winnipeg.

Howard G. Kelley, whose appointment as President, G.T.R. and Grand Trunk Pacific Ry., Montreal, was announced in our last issue, was born at Philadelphia, Pa., Jan. 12, 1853, and entered railway service in 1881, since when he has been, to 1884, Assistant Engineer on location, construction and bridge construction, Western and Pacific Divisions, Northern Pacific Ry.; 1884 to 1887, engaged in mining; 1887 to Jan. 1860, Resident Engineer and Superintendent of Bridges and Buildings, St. Louis Southwestern Ry. System, including the St. Louis South Western Ry. of Texas; Jan. 1890 to Mar. 1898, Chief Engineer, same road; Mar. 1898 to July 1907, Chief Engineer, Minneapolis and St. Louis Rd.; July 1900 to July 1907, also Chief Engineer, Iowa Central Ry.; Mar. 1898 to Mar. 1899, also Consulting Engineer, St. Louis South Western Ry.; July 1907 to Oct. 2, 1911, Chief Engineer, G.T.R., Montreal; Oct. 2, 1911, to Sept. 1, 1917, Vice President in charge of construction, transportation and maintenance, G.T.R., Montreal. He is also a director, G.T.R., and director and Chairman of the board of the Central Vermont Ry. He is a member of the Institution of Civil Engineers of Great Britain, of the Canadian Society of Civil Engineers, and has served two terms as President of the American Railway Engineering and Maintenance of Way Association.

James Kerr McNeillie, who has been appointed Superintendent, Susquehanna Division, Delaware and Hudson Co., Oneonta, N.Y., was born at Toronto, Feb. 23, 1874, and entered railway service in May, 1890, since when he has been, to Nov., 1891, call boy and apprentice, G.T.R., Lindsay, Ont.; Nov., 1891, to Sept. 1896, apprentice, locomotive fitter and machinist, G.T.R., Point St. Charles, Que.; Sept. 1, 1896, to Nov., 1899, trainmaster's clerk and chief clerk, Superintendent's office, C.P.R., Farnham, Que.; Nov., 1899, to June, 1902, clerk and chief clerk, General Superintendent's office, C. P.R., Winnipeg; June, 1902, to Feb., 1903, Mar. 1903 to Oct. 1907, Car Service Agent in charge of distribution of passenger equipment, C.P.R., Montreal, Que.; 1907 to July, 1908, Assistant Superintendent of Terminals, C.P.R., Toronto; July 1908, to Feb., 1909, Superintendent, District 1, Ontario Division C.P.R., Toronto; Feb., 1909, to Mar. 1911, Superintendent, District 2, Ontario Division, C.P.R., London; Mar., 1911, to Feb., 1913, Superintendent, District 1, Eastern Division C.P.R., Farnham, Que.; Feb. 1913, to June, 1914, Superintendent, District 2 (Montreal Terminals), Eastern Division, C.P.R., Montreal; June, 1914, to May, 1915, Superintendent, District 3, Eastern Division, C.P.R., Montreal; May, 1915, to Sept. 15, 1917, General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B.

Thomas King, who has been appointed Superintendent, Detroit Division, Western Lines, G.T.R., Detroit, Mich., was born at Dunbarton, Ont., July 18, 1869, and entered G.T.R. service Mar. 28, 1885, since when he has been, to Oct. 7, 1885, switch man Pickering, Ont.; Oct. 8, 1885 to Oct. 1886, operator, Sidney, Ont.; Nov. 1, 1886 to Dec. 1889, operator, York, Ont.; Jan. 1, 1890, to June 1907, operator, Don Station, Toronto; July 1, 1897 to Oct. 1898, ticket clerk, Oshawa, Ont.; Nov.

1898 to Jan. 1899, operator, Belleville, Ont.; Jan. 1899 to Aug. 1902, agent, Whitby, Ont.; Aug. 1902 to May, 1905, agent, Brockville, Ont.; May 1905 to Nov. 1907, agent, Sherbrooke, Que.; Nov. 1907 to May 1909, agent, Lewiston, Me.; May 1909 to Aug. 1910, Travelling Passenger Agent, Montreal; Aug. 1910 to Dec. 1912, agent Pontiac, Mich.; Dec. 1912 to Sept. 1, 1917, agent, Detroit, Mich.

W. H. Biggar, K.C., who has been appointed Vice President and General Counsel, G.T.R., Montreal, was born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852, and was educated at the Trenton Grammar School and Upper Canada College. He began the study of law in 1875, after having for a short time engaged in commercial pursuits, and was called to the bar in 1880. He then became associated with John Bell, Q.C., then General Counsel, G.T.R., in general practice in 1881, was made a Q.C. in 1900, and was appointed Assistant General Counsel, G.T.R., Montreal, Jan. 1903, and General Solicitor, Dec. 1904, and General Counsel, G.T.R., and Grand Trunk Pacific Ry., Montreal, in Jan. 1910. In October, 1914, he was also appointed Vice President, G.T.P.R. He was Mayor of Belleville, Ont., in 1887, and represented West Hastings in the Ontario Legislature from 1890 to 1897.

George C. Jones, whose appointment as Assistant to President, G.T.R., Toronto, was announced in our last issue, was born at Clyde, N.Y., Sept. 24, 1869, and entered railway service in June, 1874, since when he has been, to 1878, messenger, yard clerk and operator, consecutively, Erie Rd.; 1878 to 1887 dispatcher, Cleveland, Cincinnati, Chicago and St. Louis Ry., Erie Rd., and Chicago, Burlington and Quincy Rd., respectively, except for a short service with the Western Union Telegraph Co.; 1887 to 1896, dispatcher, chief dispatcher, and district operator, Wabash Rd.; July 1896 to Mar. 1898, Superintendent, G.T.R., London, Ont.; Mar. 1898 to May 1899, Superintendent, G.T.R. and Wabash Rd., St. Thomas, Ont.; May 1899 to Dec. 31, 1904, Superintendent, Middle Division, G.T.R., Toronto; Jan. 1, 1905 to Sept. 1, 1917, General Manager, and Vice President and General Manager consecutively, Central Vermont Ry., St. Albans, Vt.

R. W. Burnett, who has been appointed Master Car Builder, Delaware and Hudson Co., Albany, N.Y., was born at Farmer City, Ill., in 1868, and entered railway service in 1890, in the Car Department, Union Pacific Rd., Denver, Col., subsequently transferring to Pennsylvania Rd. service, as Car Inspector, Chicago, Ill.; he was from Aug. 1892 to July 1899, foreman and General Foreman, consecutively, Car Department, Lake Shore and Michigan Southern Ry., Chicago, Ill., 1900, General Foreman, Car Department, Long Island Rd.; 1900 to 1904, General Foreman, Car Department, Central Rd. of New Jersey, Elizabethport, N.J.; 1904 to Jan. 1907, Assistant Master Car Builder and Master Car Builder, consecutively, Erie Rd., Meadville, Pa.; Jan. 1907, to July 1909, Assistant Master Car Builder, C.P.R., Montreal; July 1909 to Apr. 1915, General Master Car Builder, C.P.R., Montreal. Since leaving C.P.R. service, he has been Vice President, National Car Equipment Co., Chicago, Ill.

Leonard E. Ayer, who has been appointed General Agent, Canadian Northern Ry., St. Louis, Mo., was born at Henderson, Ia., Jan. 11, 1877 and entered railway service, Apr. 9, 1898, since when he has been, to Sept. 1898, student sta-

tion work, Burlington and Missouri River Rd. in Nebraska, Saronville and Fairmont, Neb.; Sept. 1898 to Nov. 1900, clerk, local freight office, Burlington Route, Sioux City, Ia.; Nov. 1900 to Apr. 1902, station ticket clerk, Chicago

1911, City Ticket Agent, Duluth, Misabe and Northern Ry., Duluth, Minn.; Mar. 1911 to Apr. 1916, chief clerk, Canadian Northern Ry., Chicago, Ill.; Apr. 1916 to Sept. 1917, Commercial Agent, same road, St. Louis, Mo.

Carl Howe, who has been appointed Traffic Manager, Michigan Central Rd., Chicago, Ill., was born at Berrien Springs, Mich., Jan. 11, 1870, and entered railway service in Oct. 1889, since when he has been, to Oct. 1890 clerk in local freight office, Michigan Central Rd., Michigan City, Ind.; Oct. 1890 to April, 1893, chief clerk and cashier, same office, April 1893 to Sept. 1894, local agent same road, Chicago Heights, Ill.; Sept. 1894 to May 1898, Travelling Freight Agent, same road, Chicago, Ill.; May 1898 to Oct. 1899, assistant chief clerk, Freight Traffic Manager's office, same road, Detroit, Mich.; Oct. 1899 to July 1900, chief clerk, same office; July 1900 to Jan. 1907, Assistant General Freight Agent, same road, Buffalo, N.Y.; Jan. to Oct. 1907, Manager, Merchants Despatch Transportation Co., New York; Oct. 1907 to Sept. 1, 1917, Manager, Merchants' Despatch and other fast freight lines, Buffalo, N.Y., and latterly, Manager, New York Central Fast Freight Lines, Chicago, Ill. He was President, Canadian Freight Association for the year 1905-6.

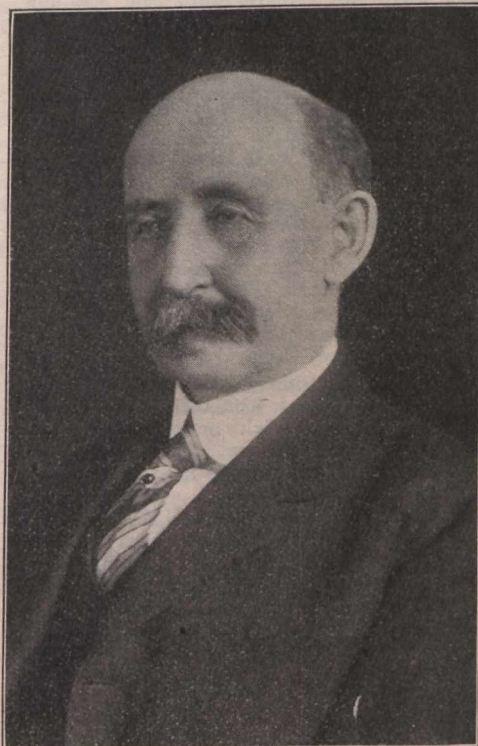
Lafayette S. Brown, who has been appointed General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., was born at Nelson, N.B., Oct. 19, 1864, and entered I.R.C. service, Jan. 15, 1880, since when he has been, to Dec. 20, 1881, cleaning locomotives, and machinist helper, Newcastle, N.B.; Dec. 20, 1881, to Sept. 5, 1882, shunting in Newcastle yard and learning telegraphy; Sept. 5, 1882, to Nov. 25, 1883, assistant agent, Newcastle, N.B.; Nov. 26, 1883, to Oct. 4, 1898, train dispatcher, Moncton and Ste. Flavie District, Campbellton, N.B.; Oct. 4, 1898, to April 30, 1912, Chief Dispatcher, New Glasgow, N.S.; May 1 1912, to July 31, 1913, Assistant Superintendent, Moncton and Ste. Flavie and Fredericton to Loggieville, N.B., Newcastle, N.B.; Aug. 1, 1913, to June 1, 1917, Superintendent, Truro Sydney and Oxford District, Intercolonial Ry., latterly known as District 4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S.; June 1 to Sept. 17, 1917, Assistant General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B.

Wages of C.P.R. Station Agents, etc.—

The board of conciliation appointed to enquire into the wages of the C.P.R. station agents, operators, dispatchers and line-men has recommended an increase of not less than 18% in the case of station agents, operators, relief agents and line-men, and of not less than 12% in the case of the dispatchers. It is recommended that the increases be distributed as requested by the employes, having regard to the reduction in the differential between eastern and western lines, due to the difference in the cost of living. Several of the matters brought forward by the employes have not been dealt with, being left for future negotiation between the parties concerned. The report is signed by the Chairman, Judge Gunn, of Ottawa, and by D. Campbell, Winnipeg, for the men, and it is said that W. N. Tilley, K.C., Toronto, on behalf of the company, though not signing the report, is in accord with the other members.



J. K. McNeillie
Superintendent, Susquehanna Division, Delaware & Hudson Company.



H. A. Woods
Ex-Assistant Chief Engineer, Grand Trunk Pacific Railway.

and North Western Ry., Sioux City, Ia.; April 1902 to Nov. 1903, station ticket clerk, same road, Ashland, Wis.; Nov. 1903 to Nov. 1907, Contracting Agent, Duluth, South Shore and Atlantic Ry., Duluth, Minn.; Nov. 1907 to Aug. 1908, agent, Minnesota and International Ry., Tenstrike, Minn.; Sept. 1908 to Mar.

Railway Finance, Meetings, Etc.

Atlantic, Quebec and Western Ry.—There has been deposited with the Secretary of State at Ottawa an agreement dated June 30, between the Company and E. B. Read, and F. H. Jones, relating to a supplemental trust deed modifying the trust deeds of June 26, 1905 and July 3, 1906.

Canadian Northern Ry.—Further details have been made public of an issue of \$10,000,000 of C.N.R., one year 6% collateral trust notes placed on the market recently by W. A. Read & Co., New York. They are a direct obligation of the company specifically secured by the pledge of \$15,333,334 C.N.R. general mortgage 4% bonds, due Sept., 1934, which have unconditional guarantees both as to principal and interest by the Government of Canada. The proceeds of the \$10,000,000 notes, which are dated Sept. 1, will be used to refund \$11,500,000 5% notes due that date, \$1,500,000 of the maturing issue being paid from other resources. The trust deed provides for the pledge with the trustees of the same amount of collateral as now pledged for the maturing notes. The new notes will be convertible at par and interest into the pledged guaranteed bonds at 79 and interest at the option of the holder on or before June 1, 1918, on 10 days notice. The bonds acquired by this conversion on June 1 will yield more than 6%. Interest on the \$10,000,000 notes is payable Mar. 1 and Sept. 1 in New York or Toronto.

There has been deposited with the Secretary of State at Ottawa duplicate original of an extension agreement, dated Aug. 20, made between the company et al and the Central Trust Co., of New York, as trustees, extending the time for payment of certain one year 5% gold notes.

Pacific Great Eastern Ry.—The annual meeting of shareholders was held at Victoria, Sept. 19, A. H. Sperry, General Manager, presiding in the absence of the President, Brigadier-General J. W. Stewart, C.M.G., on active service. Several other officials and directors were absent for a variety of causes connected with the recent action by the British Columbia Government in relation to the company's affair. The directors' report was received and adopted, and the officers and directors were re-elected. The government was not represented at the meeting, as it holds that the directors are not legally entitled to hold the shares, that they were illegally elected, and that all the proceedings at the meeting were illegal. These claims are made in the writ which the government issued against the company, and upon which proceedings are pending. The report points out that the government decided to have an audit of the company's financial relations with the former government. The investigation, according to the report, led to some of the officials removing themselves from the investigating committee's jurisdiction rather than submit to a prying enquiry into their personal affairs. The report also states that, "paralyzed by the effects of the war and further embarrassed by the ill timed action of the government in bringing suit against your sponsors and directors for their failure to complete this contract, of which the cataclysm of war is the cause, but one course is open, which is the policy being pursued, viz., to mark time until the advent of normal conditions and the settlement of all litigious disputes."

St. Martins Ry.—The financial position of this railway is reported to be precarious. A press dispatch states that at a recent meeting an intimation was given that the Dominion Government had declined to take it over as a branch of the Intercolonial. As the line has been operated at a loss for several years, it is thought likely that the rails and other fixtures will be sold and removed and the line abandoned.

The railway was originally known as the Hampton & St. Martins Ry., and was built about 30 years ago under a charter granted by the New Brunswick Legislature. The line extends from Hampton, on the Intercolonial, to St. Martins, 30 miles, via Hammond, Titusville, Glen Titus, Upham, Hanford Road, Porter Road, Henry Lake and Quaco. Three trains a day have been operated in either direction, the principal freight being lumber. For the year ended June 30, 1916, the gross earnings were \$21,506, and the net earnings, after paying operating expenses, were \$918. The capital of the company is reported to be \$189,000, on which no dividends have been paid for years. The President is Hon. W. E. Foster, Premier of New Brunswick.

Timiskaming & Northern Ontario Ry.—Passenger earnings for June, \$58,782; freight earnings \$119,131; total earnings \$177,913, against \$64,550 passenger earnings; \$94,029 freight earnings; \$159,579 total earnings, for June 1916.

Toronto, Hamilton & Buffalo Ry.—The Dominion Parliament authorized the company to enter into agreements with the Michigan Central Rd., the Canada Southern Ry. and the G.T.R., or with any one or more of them, under sec. 364 of the Railway Act, for terms exceeding 21 years, and authorizing it to take and hold stock in any navigation or steamboat company. (Aug., pg. 306.)

Toronto Terminals Ry.—The annual meeting was held in Montreal, Sept. 11. Following are the directors for the current year: H. G. Kelley, President; Sir George Bury, Vice President; E. W. Beatty, K.C., J. E. Dalrymple, U. E. Gillen, and I. G. Ogden. The other officers are Henry Phillips, Secretary; H. E. Suckling, Treasurer; W. H. Ardley, Auditor; J. W. Leonard, General Manager.

Victoria & Sidney Ry.—A press dispatch states that \$200,000 of the company's bonds, which matured Sept. 1, have not been taken up. The railway, extending from Victoria to Sidney, Vancouver Island, 17 miles, is owned by the Great Northern Ry. Co. (U.S.), and has been losing money at the rate of about \$15,000 a year for several years past. The opening of the British Columbia Electric Ry.'s Saanich Peninsula branch two or three years ago, and the recent opening of the Canadian Northern Pacific Ry. from Victoria to Patricia Bay, both parallel lines, have considerably affected the company's local business. If the G.N.R. does not come to the rescue the company will pass into the hands of a receiver and its property will be sold.

R. W. Burnett, who was appointed Master Car Builder, Delaware & Hudson Co., recently, in writing to have his address changed from Chicago to Albany, says: "I always take great interest and pleasure in reading Canadian Railway and Marine World, which you always keep up to the high standard you established several years ago."

Railway Rolling Stock Notes.

Canadian Government Railways have ordered a ditcher from F. H. Hopkins & Co.

The Toronto Hamilton and Buffalo Ry. has received 2 six wheel switching locomotives from Canadian Locomotive Co.

The Grand Trunk Pacific Ry. is reported to be asking prices for 50 or 100 refrigerator cars for passenger train service.

Canadian Car and Foundry Co. has delivered to the French State Railways, 1,000 high sided gondola cars, type L.F.C., the order for which was received in Mar. 1916.

The Canadian Locomotive Co. has delivered 2 consolidation locomotives to the British Government, the order for which was received through the Imperial Munitions Board.

The C.P.R., between Aug. 20 and Sept. 15, received the following additions to rolling stock: 16 steel underframe coal cars and 2 decapod locomotives, from Angus shops, and 3 vans from Winnipeg shops.

The Eastern Car Co., between Aug. 16 and Sept. 14, shipped 58 box cars, 50 tons capacity, completing order for 500 cars, for Canadian Government Railways; and 200 gondola cars, the first shipment of a second order for 1,000 similar cars, for the French State Railways.

Canadian Government Railways have received 6 refrigerator cars from Canadian Car and Foundry Co.; and the following second hand rolling stock from General Equipment Co.: 2 locomotives, 10 coal cars, 35 tons capacity; 6 coal cars, 30 tons capacity, and 11 box cars, 30 tons capacity.

The C.P.R., between Aug. 20 and Sept. 15, ordered the following rolling stock from its own shops: 10 flat cars, 6 freight refrigerator cars, from Angus shops; 7 vans, 3 single track wooden snow ploughs, 2 double track wooden snow ploughs, and 2 single track wooden flangers, from Winnipeg shops.

Fortnightly Pay Day for Railway Employees.—The Dominion Parliament has passed an act providing for the payment of salaries or wages of railway employees fortnightly instead of monthly as at present. A measure for this purpose, the Premier explained, when the bill was laid before the House of Commons, Sept. 18, had been passed by the House of Commons on a previous occasion, but had been rejected by the Senate. A bill to effect this purpose was introduced this year into the Senate, where it had been passed. On the other hand a provision to provide for payment of wages to railway men every two weeks had been incorporated in the Consolidated Railway Act, which had passed the House of Commons and was before the Senate. There was some controversy as to some of the clauses of that measure and it was therefore desirable that a special bill should be passed. The measure was passed through the committee stage, Sept. 18, and finally passed on the following day, and was assented to, Sept. 20.

Argentine Freight Rate Advances.—The privately owned railways of the Rosario district in conjunction with other lines have given notice to the Argentine Federal Railway Commission of a contemplated increase of 22% in all their tariffs to take effect Dec. 15. An increase of 10% went into effect Oct. 1, 1915. It is said that freight rates in the district average between 1.4 and 1.8c (Canadian currency) per ton mile.

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

Alaska Rd.—J. F. Baird, a mining engineer, who returned recently to Vancouver from Alaska, stated that 100 miles of rails were laid and that work was going right ahead. Seventy-one miles of the old Alaska Central Rd. were purchased from receivers for \$1,100,000, and recently the old Tanana Valley Rd. was also acquired for purposes of connection. The government railway when completed will tap great coal beds on the Kinik Arm, Matinuska River, and will provide transportation facilities for wonderful agricultural possibilities throughout the northern regions. Efforts were being made to dredge a suitable harbor at Anchorage harbor, one of the terminals of the line at tidewater, near Seward. The railway is being built by a special commission appointed by the United States Government. (Oct., 1916, pg. 400.)

Burrard Inlet Tunnel & Bridge Co.—The annual meeting of shareholders, the majority of whom are representatives of the manufacturers surrounding the inlet, was held at North Vancouver, B.C., Sept. 13. The report of the auditors showed that since the company was incorporated \$115,685.44 has been expended. The company in the first instance was capitalized at \$3,000,000 and of the \$764,500 in shares issued, \$118,000 was paid up. There is \$3,025.40 remaining in the bank. The following were elected directors: Alderman Woodside, Vancouver; Alderman McBain, North Vancouver City; Councillor Maclurg, Councillor Loutet, North Vancouver district, and Carter Cotton. The official directors by virtue of office are the mayors of Vancouver and North Vancouver, the reeve of North Vancouver district and the reeve of West Vancouver. At a subsequent meeting of directors, Reeve Bridgman, North Vancouver district, was elected president; Mayor Vance, North Vancouver city, vice president. R. F. Archibald was appointed secretary. The company's charter expires in Feb., 1918, and it was decided to notify the shareholders of this fact and ask them for a definite expression of opinion as to the desirability of taking steps to have it renewed.

Cascade Scenic Ry.—The Dominion Parliament has incorporated a company with this title to acquire the rights and privileges of T. R. Deacon, Winnipeg, for the construction and operation of an incline railway up the face of Cascade Mountain, Rocky Mountain Park, Banff, Alta. The provisional directors are: T. R. Deacon, H. B. Lyall, E. J. Burleigh, J. A. McCulloch and E. Anderson, Winnipeg. (Aug., pg. 306.)

Edmonton, Dunvegan & British Columbia Ry.—The Dominion Parliament has revoked \$258,797.16 as a subsidy for building a branch line from near Spirit River to and through the Grand Prairie land district, Alta., for 60 miles. The Minister of Railways stated that the revoting of this subsidy was necessary because the contractors had not fully completed the line in time for it to be inspected and paid for during the last financial year.

J. D. McArthur, President, who returned to Edmonton, Sept. 12, after a trip of inspection over the line, is reported to have said that satisfactory progress had been made during the season with the construction of the bridge over the Peace River, and that there was every prospect of its being ready for traffic by the autumn of 1918. (Mar., pg. 101.)

English Valley & Hudson Bay Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from near Brereton, Man., on the National Transcontinental Ry., to English River, Ont., between the eastern boundary of Manitoba and longitude 94, thence northerly to Hudson Bay, between the mouths of the Albany and the Nelson Rivers. The provisional directors are: J. G. G. Kerry, Toronto; H. A. Stewart, K.C., W. H. Kyle, H. A. Clark, E. L. Weatherhead, Brockville, Ont. The applicants asked to be incorporated as the English Falls & Hudson Bay Ry., but "Valley" was substituted for "Falls" in committee. (Aug., pg. 306.)

Grand Trunk Ry.—On account of the construction of the Trent Canal at Campbellford, Ont., the G.T.R. is building a new single track bridge, together with the necessary approaches, to give the clearance required for shipping. The new structure is 25 ft. south of the present bridge, with 29 ft. clearance above high water level, and consists of seven spans as follows: 4 deck plate girders, 35 ft. 4 in. each; 1 through plate girder, 98 ft. 11 in.; 2 deck plate girders, 99 ft. 8 in. each; 1 deck plate girder, 35 ft. 10 in.; total length 269 ft. 9 in. The approaches to the bridge make it necessary to raise the present embankments from 5 to 20 ft. above the present level. The abutments and piers are of concrete. The new bridge tangent will connect at the east end with the present main line by a 1° curve, and the west end will intersect the present tangent at the west end of the Campbellford yard. The approach grades to the bridge will be 0.76% and 1.5% westbound. The material for raising the embankments is being taken from the cut at the west end of the work, about half a mile from the bridge. This permits of the alignment through the cut being reduced from an 8° curve to a 1° curve. The contractors for the substructure of the bridge is the Foundation Co. of Canada. The superstructure will be built and erected by the Hamilton Bridge Co. The removal of two single track viaducts, and track changes with company forces, under the direction of H. R. Safford, Chief Engineer, and A. S. Going, Engineer of Construction. W. G. Swartz is Resident Engineer in charge at Campbellford.

The Board of Railway Commissioners has ordered the company to put up gates, to be operated day and night, at the crossings of Burwell, Adelaide and Rectory Sts., London, Ont. (Sept., pg. 350.)

Hudson Bay Ry.—\$3,000,000 chargeable to capital was voted in the House of Commons, Aug. 29, on account of construction of line, terminals and elevator on this railway. Hon. W. Pugsley raised the question whether under existing financial conditions parliament was warranted in voting such a large sum for this work. There was, he said, no immediate necessity for rushing the work to completion, especially when it was considered that before it would be used to carry on the shipment of grain, etc., there would have to be very large expenditures on terminals and for the provision of steamship lines. The Minister of Railways stated that a contract was let in the autumn of 1916 for the bridge over the Nelson River, for which \$350,000 was required this year, and money was also required to complete the work already in hand. It was not proposed to go on with the terminal works at Nelson any further

at present. Although the \$3,000,000 was asked for, it might not be necessary to spend it all during the current financial year. (Aug., pg. 306.)

Intercolonial Ry.—Tenders are under consideration for the erection of 40,000 gal. wooden tanks at Hampton, N.B., West Bay Road, N.S., and Pugwash, N.S.

Tenders are under consideration for the construction of the substructure of a subway under three tracks at Trenton, N.S.

An agreement was reached with the Moncton City Council, Sept. 12, for the exchange of certain pieces of land in the city owned by the railway for others owned by the city. The city at the same time arranged for the construction of a spur line into the city property near the Massey-Harris building. (Aug., pg. 306.)

Lachine, Jacques Cartier and Maisonneuve Ry.—Judgment was given in a Quebec Court, Sept. 17, on the company's appeal against an award of \$94,000 for land expropriated and \$60,000 for damages given in the case of the Molson's Park property. The court held that as the company had offered \$90,000 for the land, the award of \$4,000 over that amount was not an exaggerated value. As to damages, it was held that the arbitrators had exceeded their jurisdiction, and this part of the award was quashed.

Lacombe and Blindman Valley Electric Ry.—A special meeting of shareholders was called to be held at Lacombe, Alta., Oct. 1, to authorize any modification of the existing contracts for the construction of the line; to enter into any new contracts in addition to or substitution for existing contracts; to confirm arrangements entered into with respect to financial matters; to elect directors to fill vacancies, and for other general business. J. B. McBride, Lacombe, Alta., is Secretary. Although the word "electric" is used in the title the line is to be operated by steam.

Montreal Central Terminal Co.—The Dominion Parliament has extended for five years the time within which the company may build its roadways, bridges, tunnel and terminals in Montreal and vicinity. (June, pg. 225.)

Mount McKay & Kakabeka Falls Ry.—We are officially advised that this railway extends westerly from the boundary of Fort William, Ont., for five miles, and is operated by steam. The city council has built an industrial spur line, about half a mile long, at the west end of the city to serve three elevators and some other industries. The C.P.R., the Canadian Northern Ry., the Canadian Government Rys., and the M.McK. & K.F.R. have the right to switch over this track. A proposition is under consideration to extend this spur track so as to serve various other industries and to put the whole of the interswitching work under the charge of the M.McK. & K.F.R. Sept., pg. 351.)

National Transcontinental Ry.—Sir Jas. Loughheed stated in the Senate, Sept. 4, that the cost of the N.T.R. shops at St. Malo, Que., up to Mar. 31, was \$1,872,780.32. They were not being put to any use. An enquiry had been received from the military authorities asking what it would cost to install heating and lighting systems in the shops so that they could be used to house returned soldiers, but no terms were discussed. (Mar., pg. 101.)

New Brunswick & Prince Edward Island Ry.—A press report states that 80

lb. steel rails have been laid from the car ferry terminal at Cape Tormentine, along this line to within five miles of Sackville, N.B., the point at which the line connects with the Intercolonial Ry. The report adds that all the rails available have been utilized and that it will be possible to replace the present light rails now remaining this season. (See Intercolonial Ry. Betterments, etc., June, 1916, pg. 231.)

Pacific Great Eastern Ry.—The British Columbia Minister of Finance informed the Legislature recently that \$1,085,290.-35 had been paid by the government on account of its guarantee of the company's bonds, viz., on account of interest, Jan. 15, \$422,443.08; July 15, 423,175.01; and on account of construction, Jan. 12, \$67,116.57; Jan. 22, \$74,145.34; Feb. 9, \$64,558.14, and Mar. 7, \$33,852.21. (Sept., pg. 351.)

Prince Edward Island Ry.—The Roger Miller Co., contractors, entertained a number of Maritime Provinces business men for an inspection of the practically completed car ferry terminals at Cape Tormentine, N.B., and Port Borden, P.E.I. Sept. 7.

The car ferry reached the ferry terminal at Cape Tormentine, N.B., Sept. 17. No announcement had been made to Sept. 22 as to when the ferry service to Port Borden, P.E.I., would be started.

C. A. Hayes, General Manager, and other officials of the Canadian Government Railways, have been visiting the terminals, and arranging for the operation of the car ferry, which is undergoing an inspection at Montreal. It is expected the ferry will be put in operation Oct. 10 and that two round trips will be made every 24 hours. Freight will be transferred from the standard to the narrow gauge cars and vice versa at Port Borden. The transfer sheds for this purpose are in course of erection. (Sept., pg. 351.)

Quebec and Saguenay Ry.—The House of Commons in committee of supply on Sept. 6, passed a vote of \$3,667,745.07 to provide amount required to be paid for the Quebec, Montmorency and Charlevoix Ry., the Quebec and Saguenay Ry. and the Lotbiniere and Megantic Ry., and for the equipment, appurtenances and properties used in connection with such railways, to be acquired under the authority of a statute passed at the last session; and to provide for the cost of completing, equipping and operating the said railways—the operating expenses to be chargeable to revenue.

The Minister of Railways explained that this was a revote of the unexpended portion of the \$4,000,000 voted for the same purpose in 1916. The amount of money represented by the difference between the two figures had been expended upon construction work. Hon. J. D. Reid, who was Acting Minister of Railways in 1916, stated that the whole matter was thoroughly explained when the \$4,000,000 vote was passed last session. The value of the three lines was left entirely to the Judge of the Exchequer Court. It was still before the judge, and upon his judgment the government must settle the matter. After the vote had been obtained the government started to finish up construction on the Quebec and Saguenay Ry. in order to prevent the work done deteriorating further. The work was put in hand and some \$300,000 odd had been expended in building bridges, grading and getting the roadbed ready for laying the rails. The work of completing the line would be gone on with, and as much as is possible put in operation so as to bring

in some revenue. No payments on capital cost would be made to the owners of the lines until the Exchequer Court had given final judgment. At the time of the vote in 1916, it was reported that about 80% of the grading had been completed on the Quebec and Saguenay Ry. The grading was completed practically through to Murray Bay about three months ago, but there were a few bridges to be completed. If it was possible to get rails the line would be completed this year. (June, pg. 225.)

St. John & Quebec Ry.—The Dominion Parliament has extended to Dec. 31, 1918, the time within which this company, which is owned by the New Brunswick Government, may complete the railway from Gagetown to the C.P.R., near Westfield, N.B. The subsidy agreement and the agreement for the operation of the line as a part of the Intercolonial Ry. are also similarly extended. The last mentioned agreement is to be extended only after the New Brunswick Government has assented to it. (July, pg. 274.)

Toronto Union Station.—At the Toronto Terminals Ry.'s annual meeting in Montreal recently good progress was reported on the construction of the new union station building in Toronto, which has proceeded as rapidly as supplies of construction material will permit.

Freight and Passenger Traffic Notes.

Cartage rates on competitive car load traffic in Vancouver, B.C., were cancelled Sept. 1.

Steamship fares between Vancouver and Victoria, B.C., have been increased from \$2 to \$2.50 single, and from \$3.50 to \$4.20 for the round trip.

J. Williams, of the Pacific Great Eastern Ry. passenger department, is reported to have stated in a recent interview that there had been a larger tourist traffic over the line during the summer.

A Vancouver press dispatch states that owing to a shortage of fuel oil some curtailment of train service has been made on the C.P.R. in British Columbia, and that a further reduction is under consideration.

It is reported that arrangements are being completed under which additional coal shipments will be made to Port Stanley, from U. S. points, and thence distributed over the London and Port Stanley Ry.

The Great Lakes Express, running on the National Transcontinental Ry. between Winnipeg, Man., and Fort William, Ont., and vice versa, was taken off for the winter, east bound Sept. 13, and west bound, Sept. 14.

The gasoline car which has been operated on the Victoria and Sidney Ry., on Vancouver Island, has been sent to the United States, and a steam locomotive is being used to operate what traffic offers. The future of the line as an operating road is at present doubtful.

The Maine Central Rd. put in operation Sept. 1, an increased schedule of fares on its lines in Vermont, and New Hampshire, and on its extensions into Canada. The new rate is 2½c a mile for mileage books and 2¾c a mile for tickets, the old rates being 2¼c and 2½c respectively.

Train service in the Hudson Bay Ry. from Pas, Man., to the Nelson River, which is being given by the contractors, will, it is said, be discontinued as soon as the construction work is done for the year. Residents along the line are taking steps to have the government arrange for

some service to be given during the winter.

The conference of C.P.R. Western Lines passenger officials, on winter train arrangements was held at Winnipeg, Sept. 5 to 8. Representatives of the Canadian Northern and the Grand Trunk Pacific Railways attended the meeting on the first day, to discuss matters of joint interest to the three railways.

F. W. Peters, General Superintendent, C.P.R., Vancouver, is reported to have said in an interview Sept. 15, that it was absurd to suppose that the company was opposed to the carrying of grain to Vancouver for shipment. The question of handling wheat through Vancouver was purely a matter of securing tonnage, and a reasonable ocean tariff.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from Jan. 1, 1917:

	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	x177,300
Oct.	3,716,800	2,496,500	1,220,300	x36,700
Nov.	3,722,300	2,472,300	1,250,000	38,600
Dec.	3,485,400	2,661,600	823,800	x378,300
Jan.	2,832,600	2,350,500	482,100	226,700
Feb.	2,358,600	2,250,400	108,200	x21,200
Mar.	3,273,200	2,655,100	618,100	57200,0
Apr.	3,315,500	2,557,600	757,900	208,000
May.	3,784,700	2,730,300	1,054,400	377,290
June	4,048,600	2,961,000	1,087,600	102,600

\$41,244,700 \$30,840,300 \$10,404,400 \$1,866,600

Incr \$7,819,700 \$5,953,100 \$1,866,600

July \$3,844,600 \$2,940,000 \$904,600 x\$ 292,500

Incr \$ 10,700 \$ 303,200

Decr

x Decrease.
Approximate earnings for August, \$3,405,000, and for three weeks ended Sept. 21, \$2,237,300, against \$3,684,900, and \$2,102,900 for same periods 1916.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,153,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084,276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541.98	4,174,977.62	441,241.66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,073.49	3,915,906.20	226,273.09
July	13,377,850.55	9,617,853.33	3,760,007.22	x267,084.51

\$84,734,637.07 \$59,977,181.15 \$24,757,455.95 \$1,138,630.90

Incr. \$ 9,475,474.78 \$ 8,386,843.88 \$1,138,630.90

x Decrease.

Approximate earnings for August, \$12,023,000 and for three weeks ended Sept. 21, \$8,321,000, against \$12,880,000 and \$8,186,000 for same periods 1916.

Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Aug. 31—

	1917	1916	Increase
G. T. R.	\$33,936,381	\$29,885,953	\$4,050,428
G. T. W. R. . .	6,392,338	6,269,093	123,245
D.G.H. & M.R.	2,224,632	2,210,735	13,897

Totals . . . \$42,553,351 \$38,365,781 \$4,187,570

Approximate earnings for three weeks ended Sept. 21, \$3,955,037 against \$3,840,360 for same period 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, from July 1 to Aug. 31, were \$976,829 against \$693,756 for same period 1916.

Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

Arrivals in England.—Cables announce the safe arrival in England of a number of different classes of troops, including nos. 12 and 10 reinforcing draft railway troops from Prince Edward Island and Regina, Sask., respectively; forestry and railway construction draft, Camp Borden, Ont., and railway construction draft, Ottawa.

The C. P. R. and Dominion Express staffs in Great Britain before the war numbered 213, of whom 179 were of military age, and of those 158 have joined the colors.

Railway Construction.—Sir George Perley, High Commissioner for Canada in England, and Overseas Minister of Militia, on returning to London, early in September, after visiting the Canadian Army Corps in France and Belgium, stated that the railway construction and forestry corps were doing most valuable work at the front.

PERSONAL NOTES.

Eric Bate, formerly of the Canada Steamship Lines service, is reported to have been given the Military Cross in connection with the capture of Vimy Ridge.

Lieut. E. F. Ellis, Royal Field Artillery, who has been given the Military Cross, was formerly on the C.P.R. registry department's staff in London, Eng.

Capt. W. B. Hanna, son of D. B. Hanna, Third Vice President, Canadian Northern Ry., who went to England as a lieutenant in the 92nd Highland Battalion and has been in charge of the C.E.F., stationery department, in England, has returned to Canada on sick leave, accompanied by his wife and child.

Lieut. W. G. Hazlett, formerly of the Canada Steamship Lines service, is reported to have been given the Military Cross. After being wounded in the right arm and head, he collected his men and captured an enemy machine gun.

Lieut. C. S. L. Hertzberg, A.M.Can.Soc. C.E., of the Canadian Engineers, second son of A. L. Hertzberg, Engineer, Ontario District, C.P.R., who was seriously wounded on Jan. 21 last, when he was shot in the chest, and who was given the Military Cross, has been appointed acting assistant adjutant at Spadina Military Convalescent Hospital, Toronto.

Engineer Sub-Lieutenant C. L. Pestell, whose death while on active service in the North Sea, was mentioned in our last issue, was born in England, June 17, 1888. He served his apprenticeship at the engineering works of Ruston, Proctor & Co. Lincoln, and was later engaged at the London & South Western Ry. works at Eastleigh, Eng. He subsequently came to Canada, and was engaged for some time in the G.T.R. shops at Stratford, Ont., and later transferred to C.P.R. service, eventually settling in Victoria, B.C. Soon after the outbreak of war, he returned to England and enlisted with the Army Service Corps, mechanical transport sec-

tion. He was in France until June of this year, when he transferred to the Navy.

Capt. A. C. Lewis, formerly Secretary, Toronto Harbor Commission, was slightly wounded in his right hip during the fighting at Hill 70 recently.

Quartermaster General A. D. McRae, of the Canadian Expeditionary Forces, in England, formerly of Davidson & McRae, land agents, etc., Canadian Northern Ry., has come to Canada on two months leave.

Douglas Millar, of the General Baggage Agent's office, Grand Trunk Pacific Ry., was presented by the staff with a wrist watch, on his leaving Winnipeg, for Toronto, where he has enlisted with the Royal Canadian Dragoons.

Lieut. A. E. Voysey, Chief Assistant to European Manager, C.P.R., who, as mentioned in Canadian Railway and Marine World for September, was killed in action on July 29, entered C.P.R. service as

services to his headquarters, crossing a ridge three times in daylight through heavy machine gun and rifle fire to obtain exact information as to the situation and dispositions of his battalion. He successfully accomplished his task under very difficult circumstances." He is only 21 years of age.

Canadian Railway Troops' Work at the Front.

Roland Hill, a war correspondent, wrote from the British western front, Sept. 4: "The Huns, almost up to the present battle, used to ignore the tremendous network of light railways which British and Canadian engineers have been building behind our offensive. When the big attack at Ypres commenced and thousands, perhaps millions, of shells rained over on him in one night, he began to sit up and take notice. Now every day



Light railway laid over captured ground on the British Western Front
Official photograph issued on behalf of The Press Bureau. Crown copyright reserved. Loaned by C.P.R.

junior clerk in 1900, received several promotions, and in Mar., 1910, was appointed private secretary, and in Nov., 1913, Chief Assistant to European Manager at London. Although he held an exemption from military service, he volunteered, joining the Royal Horse Artillery as a private. In Dec., 1916, he was given a commission in the Royal Garrison Artillery, and three months later was at the front.

Capt. D. B. Watson, of the Middlesex Regiment (England), who was awarded the Military Cross recently was, prior to the outbreak of war, in the C.P.R. Freight Department at Charing Cross, London, and enlisted as a private. He was gazetted second lieutenant in Sept. 1914, and was mentioned in dispatches for services in the Egyptian Expeditionary Force, and promoted to acting Captain whilst in charge of a company, and latterly acted as Major whilst at battalion headquarters. The London Gazette, in recording his services, says: "When acting Adjutant he performed most valuable

and every night he pounds away with large calibre shells at everything that seems like a railway. It is the work of the Canadian railway troops, of which there are several companies in this Ypres area, to keep these lines working, and advance them as the victorious infantry gain new ground. As a consequence, these construction battalions are always under fire, yet day and night they are out in the land behind the front line, sometimes in and out around the very advanced British batteries laying new tracks or repairing old ones. Emergency gangs are always ready to be rushed to any part where Fritz has been paying impolite attention. Sometimes it is only a few yards torn up and only a few minutes work for these trained crews. But always before a few hours have passed the line is repaired and the signal has gone back to the ammunition dumps that the line is clear, and the limitless lines of little puffing engines and bogie trucks, loaded with everything explosive, are flowing steadily to the guns. Sometimes

things get out of gear. Then the telephone in the Canadian colonel's hut rings an S.O.S. from the battery commander. Twelve-inch howitzer shells are badly needed at a certain battery. Eight cars have been ditched at Clapham Junction or Timbuctoo. Will the colonel send out a gang to the rescue. Out it goes, and with luck the track is repaired and the trucks replaced by an hour's hard work. In case it should occur again farther ahead, a wrecking crew goes with it right up to the guns, no matter how hard the Huns are shelling. That is the work of railway troops.

"Today in a large yard, crowded with everything that is needed to build and maintain a railway, I witnessed one of the rewards. There was a big mogul that came from Canada only a few months ago, standing on the standard gauge, and from the cab window leaned a locomotive man in brown jumpers. I asked him whether I could use his cab as a grand stand, and when he replied, 'Sure, Mike!' I felt I was at home. Six months ago he was running a C.P.R. locomotive out of Toronto. These Canadians, almost in the mighty army which Britain was attacking, were being presented with the Military Medal for episodes which have happened in the preparation for the great attack. In a little cleared space in the yard seven Canadians from Lt.-Col. Martin's company were lined up, and before them was the British Corps Commander. In a very sincere speech he told them how the work of their railway battalions was appreciated, and how happy he was to present them with the decorations they had won as bravely as their comrades in the fighting line with bayonet and bomb. These are the men, and this the bald, official tale:

"Sergt. Del Plain, who comes from Washington State. He ran levels over a projected light railway line under heavy enemy barrage, and when it was completed went over the line again, marking his stakes.

"Sergt. K. Armstrong, from Prince Albert, under heavy shell fire drove a motor engine and box car to a battery and removed three badly wounded gunners to a dressing station.

"Sergt. J. Manahan, from Moose Jaw, assisted, under heavy shell fire a wounded n.c.o. to a place of safety and also conducted his section from a badly shelled area into artillery dugouts.

"Corp. R. Webster, from Montego Bay, Jamaica. While the enemy had a heavy barrage on the area he ran a transit over a projected light railway for a distance of a mile.

"Sapper W. Jacobs, of Toronto, carried a badly wounded soldier from a wrecked railway line to a shell crater and then went for stretcher bearers and assisted in bringing him to the dressing station, all under machine gun and shell fire. He also carried a wounded soldier from an exposed position to a dugout and gave him first aid.

"Sapper R. H. Clark, a Kentish man, who joined in Canada, when the locomotive man of a ballast train was severely wounded, took charge of the locomotive, refilled the tank while under fire, and ran the train out of the danger zone.

"These are incidents all in the day's or night's work of the Canadian railway troops, and they never seem to rest. Infantry have their turn in the trenches and some out to refresh. The railway troops must always be on the job, because the railway must always be there and working."

In another letter, Roland Hill said: "Building a military railway is not like

constructing a transcontinental. You don't quite know what the route will be, and your right of way has to be purchased with blood and shells. But you have to make a roadbed and string rails just as swiftly, perhaps more so, for the penalty clause in the contract is defeat. I couldn't find the colonel of the Canadian railway battalion I visited. He was somewhere out in front among the field ambulances where disgruntled German shells were still bursting, locating the grade for his next section, through the quagmire of a much fought over no man's land. But the adjutant was there, in a battered estaminet which had been, until yesterday, an advanced dressing station. His painter—they carry painters and divers, too,—had changed the Red Cross symbol into the sign that means Canadian Railway Construction Corps, and which has a Canadian brigadier, whose name is a text book in railway construction, at its head. The adjutant had his ear glued to the telephone and he was asking how his trains of material were coming along.

"When you at home read that 'the guns were being brought up satisfactorily,' and that there 'have been heavy rains all day,' you picture struggling teams of horses dragging batteries into advanced positions.

"I'll want 200 12-in. shells at Ottawa dump tomorrow night," said the gunner captain. 'Mind you, the line isn't built yet, and the gun is somewhere back at Vancouver, which is an old, before-the-push station.' 'All serene,' answered the Canadian adjutant. 'I can pick them up at Halifax dump and bring them with the train taking the 8-in. to Oshawa.' (Dominion geography is a bit mixed up here.)

"It is swift travelling for a newly constructed line, but then when the combination of railway and artillery experts gets going, things do travel with celerity. If Hindenburg wants to keep away from the big guns he will have to fall back more than 5,000 yards in two days. Thanks to sacrifices by British and Canadian railways, we have plenty of material, and we have the blended brains and labor, too, in these men of modern war, who pave the way for the huge guns and clear the way for the fighting men who 'go over.' And when the guns are satiated, among the same lines will come anything from tin huts to house those men in the line, to tin hats to shelter them from shrapnel and tinned bully beef to feed them. There's never any want for traffic on the military railway.

"There are some of the old pictures of war left, but they are few and far between. Sometimes the gun and ammunition have to take the muddy streaks, but if luck is the least with us now they go over well planked roads where hauling is fairly light, and by the time the roads are getting wearily worn of the traffic the railway is there. We learned the value of lumber and railways at the Somme. On a huge stand, such as you might see at the draftsman's office at railhead on construction at home, there was a large scale map of what was yesterday 'Germany in Flanders.' There are blue and red lines which begin behind our old trenches and end nowhere—perhaps on the Rhine. There are the standard gauge and the light railways, and they are wanted quickly. Already this particular 2,000 yards of advance had been platted out with little stakes and tapes and the red-tabbed, keen staff captain of heavy artillery was putting the finishing touches to the plan. He had worked with the Canadian adjutant before they both

knew what speed meant.

"If it was easier to build a spur for a 12-in. howitzer a few yards farther east, the gunner gave the builder the concession and phoned back to get his ranges corrected accordingly. If the gun had to go to that particular spot this Toronto captain would put on another hundred men for the job and build through the crater. There was no argument. Each knew the other knew his job. Some of the material was already up. British labor parties under the direction of a Canadian major who had worked gangs on the prairies and in the western mountains were out in the shell-pocked area making the first 1,000-yard grade. The new railway which had been advanced from yesterday was fact filling up with metals, fish plates, spikes and ties. There were just enough for the length to be built. Right and left hand switches were labelled off for the stations and gun spurs where they would be laid. The junctions and stations were sympathetically named after the places, big and little, in the Dominion, where they were torn up months ago and cast into this melting pot of the Empire's war. I am not giving the names that are on the map, but don't be surprised if tomorrow or this week you hear that new Regina or Le Pas, or even Ottawa has been shelled. There will be a good 8 or 12, perhaps 15-in., howitzer to give an account of itself there."

United States War Notes.

Three brigades of volunteer engineer regiments, composed almost entirely of railway men, from high railway officers to track layers, have been organized for service in France.

The U.S. Government has bought 150,000 tons of 80 lb. steel rails, to use in building a double track railway from its French port to its battle front in France, paying \$38 a gross ton for Bessemer rails and \$40 for open hearth rails. For angle bars \$3.25 was paid and for track bolts and nuts \$5.50. Deliveries were to be made by Oct. 1. Three hundred locomotives have been ordered for this railway, and 17,000 cars are being negotiated for. About 100,000 kegs of spikes are wanted. The U.S. Government will also build a considerable mileage of light railways in France.

C.P.R. Inspection Trip.—Sir George Bury, Vice President, C.P.R., arrived in Winnipeg, Sept. 18, on a trip over the company's Western Lines. Grant Hall, Vice President and General Manager, Western Lines, arrived in Winnipeg the same day from Vancouver, and after a conference the two vice presidents started west from Winnipeg on Sept. 20. They travelled first to Arcola, and then to Weyburn, from which point they went over the line to Alsask, travelling back via Moose Jaw to Regina and then on to the Pacific coast via Calgary. It was expected that the return trip would be made by the Kettle Valley Line and the Crowsnest Pass Line to Calgary, then on to Edmonton, returning to Winnipeg by other branch lines.

Operation of Government Railways Bridge at Fort William.—An electric switch, installed in the signal tower of the Canadian Government Railways draw bridge over the Kaministikwia River, at Fort William, Ont., will be used to signal masters of vessels which desire to pass. Whenever a vessel whistles to have the bridge opened, the operator, if in position to open it, will immediately flash all lights in the tower three distinct times.

Transportation Appointments Throughout Canada.

Algoma Central & Hudson Bay Ry.—E. B. BARBER, heretofore Treasurer, has been appointed Comptroller, vice I. L. Godfrey, resigned. Office, Sault Ste. Marie, Ont.

J. M. ALTON has been appointed Treasurer, vice E. B. Barber, promoted. Office, Sault Ste. Marie, Ont.

R. E. KING has been appointed Assistant Comptroller, Sault Ste. Marie, Ont.

H. HOODLESS has been appointed Auditor of Traffic Accounts, Sault Ste. Marie, Ont.

Canadian Government Railways.—L. S. BROWN, heretofore Assistant General Superintendent, Eastern Lines, has been appointed General Superintendent, Eastern Lines, vice J. K. McNeillie, resigned to enter Delaware & Hudson Co.'s service, and his former position has been abolished. Office, Moncton, N.B.

A. C. BARKER, Superintendent of Telegraph and Time Service, has also been appointed Assistant to General Superintendent, Eastern Lines.

R. W. SIMPSON, heretofore General Fuel and Tie Agent, has been appointed Assistant to General Manager, Eastern Lines, Moncton, N.B., and his former position has been abolished.

LOUIS LAVOIE, Purchasing Agent, Railways Department, Ottawa, now purchases fuel and ties for the Eastern Lines, C.G.R. also, the position of General Fuel and Tie Agent having been abolished.

D. H. WILLIAMS, heretofore Assistant to General Manager, at Moncton, has been appointed Special Representative, reporting to General Manager's office, Eastern Lines, Moncton.

W. E. DUPEROW, who has been appointed General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, has also been appointed General Passenger Agent, Canadian Government Railways, with jurisdiction, Armstrong and Fort William, Ont., and west. Office, Winnipeg.

C. K. HOWARD, heretofore Commercial Agent, Boston, Mass., has been appointed General Agent, Traffic Department, there, and his former position has been abolished. Office, Old South Building, 294 Washington St.

Canadian Northern Ry.—D. F. COYLE, Industrial Commissioner, Winnipeg, has resigned, having been appointed Superintendent of Western Offices, Home Bank Canada. We are advised that it is not the immediate intention to appoint a successor.

S. G. KATHAN, heretofore in Canadian Bank of Commerce service, is reported to have been appointed City Ticket Agent, C.N.R., Regina, Sask., vice — Watson, enlisted for military service.

S. PATTERSON is reported to have been appointed Travelling Freight Agent, Vancouver, B.C.

Canadian Pacific Ry.—H. HEFFERNAN has been appointed acting City Passenger Agent, C.P.R., and acting agent, Dominion Express Co., Guelph, Ont., in place of his late father, J. Heffernan.

F. TURNER, station master, Moose Jaw, Sask., is reported to have been appointed Trainmaster there. This is stated to be an additional appointment, making two Trainmasters at Moose Jaw.

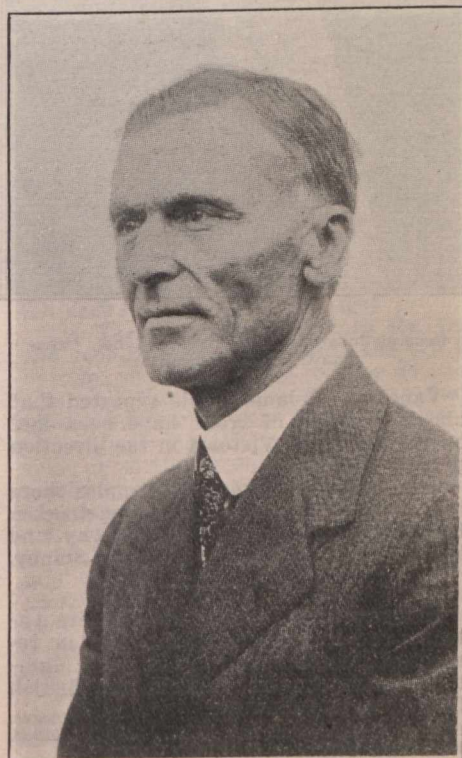
C. E. CALZA, formerly of the Waldorf Astoria Hotel, New York, has been appointed Manager, Empress Hotel, Victoria, B.C.

Cape Breton Ry.—J. W. DOYLE, heretofore Auditor, has been appointed Gen-

eral Manager, vice G. E. Johnson, who retired on account of ill health, after 14 years occupancy of the position.



W. E. Duperow
General Passenger Agent, Grand Trunk Pacific Railway, and Western Lines, Canadian Government Railways.



Neil Marple
Master Mechanic, Canada Southern Division, Michigan Central Railroad.

Central Vermont Ry.—G. C. JONES, Vice President, having resigned, on his appointment as Assistant to President, G.T.R., Toronto, as announced in our last

issue, all reports formerly made to him are now made to the President, E. C. SMITH, St. Albans, Vt.

H. G. KELLEY, President, G.T.R. and Grand Trunk Pacific Ry., Montreal, has been elected a director, vice C. R. Batt, deceased, and also Chairman of the Board and member of the Executive Committee, vice E. J. Chamberlin, resigned.

Chicago, Milwaukee & Puget Sound Ry.—A. W. NASE, Agent, Vancouver, B.C., has been appointed Commercial Agent, Bellingham, Wash.

J. W. STEVENSON has been appointed Commercial Agent, Vancouver, B.C., vice A. W. Nase transferred.

Delaware & Hudson Co.—F. P. GUTELIUS, Vice President, has also been appointed General Manager, Operating Department, during the absence of J. T. LOREE, who entered U.S. military service July 31. Office, Albany, N.Y.

R. W. BURNETT, formerly General Master Car Builder, C.P.R., Montreal, and latterly Vice President, National Car Equipment Co., Chicago, Ill., has been appointed Master Car Builder, D. & H. Co., reporting the General Manager, and with charge of the construction, design, maintenance, repair and cleaning of all cars, and in charge of all car shops. He is responsible for the proper maintenance of cars and the efficient and economical operation of the shops under his charge, and performs such other duties as the General Manager may direct. Office, Albany, N.Y.

J. K. McNEILLIE, heretofore General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., has been appointed Superintendent, Susquehanna Division, D. & H. Co., vice R. J. McCarty, Jr., appointed Assistant to General Superintendent of Transportation, Albany, N.Y. Office, Oneonta, N.Y.

Grand Trunk Ry.—W. H. BIGGAR, K.C., General Counsel, G.T.R., and Vice President and General Counsel, Grand Trunk Pacific Ry., has been appointed Vice President and General Counsel, G.T.R., in charge of all legal matters pertaining to the system. Office, Montreal.

C. MANNING, heretofore secretary to Superintendent of Motive Power, has been appointed Assistant to Vice President in charge of motive power, car equipment and machinery (W. D. Robb). Office, Montreal.

W. H. SAMPLE, heretofore Master Mechanic, Eastern Lines, Montreal, has been appointed Superintendent of Motive Power, vice W. D. Robb, promoted. Office, Montreal.

E. R. BATTLE, heretofore General Foreman, Motive Power Department, Deering, Me., has been appointed Master Mechanic, Eastern Lines, vice W. H. Sample, promoted. Office, Montreal.

G. H. WILSON, heretofore Assistant Master Mechanic, has been appointed Master Mechanic, Montreal shops, vice A. A. Maver, resigned.

A. McDONALD, heretofore Foreman of Erecting Shop, Stratford, Ont., has been appointed Assistant Master Mechanic, Montreal Shops, vice, G. H. Wilson, promoted.

E. S. McMILLAN has been appointed Road Foreman of Locomotives, Montreal Terminals, vice F. H. Holland, assigned to other duties.

M. A. HUMBER, heretofore Instructor of Apprentices, Stratford, Ont., is reported to have been appointed Examiner of

Apprentices for the system. Office, Stratford, Ont.

A. B. OGILVIE has been appointed Road Foreman of Locomotives, Districts 31 and 32 including Ottawa Terminal, vice W. M. Cooper, assigned to other duties.

T. KING, heretofore Agent, Detroit, Mich., has been appointed Superintendent, Detroit Division, Western Lines. Office, Detroit, Mich.

W. R. DAVIDSON, heretofore Superintendent, Detroit Division, Western Lines, Detroit, Mich., has been appointed General Superintendent, Western Lines, vice U. E. Gillen, promoted. Office, Chicago, Ill.

Grand Trunk Pacific Ry.—H. A. WOODS, Assistant Chief Engineer, having resigned, all correspondence and other matters relating to the Engineering Department are dealt with by J. A. HEAMAN, Assistant to Chief Engineer, Winnipeg.

W. E. DUPEROW, heretofore Assistant General Passenger Agent, has been appointed General Passenger Agent. Office, Winnipeg.

Michigan Central Rd.—CARL HOWE, heretofore Manager, New York Central Fast Freight Lines, Chicago, Ill., has been appointed Traffic Manager, M.C.R. Office, Chicago. This is a new position.

NEIL MARPLE, heretofore General Foreman, St. Thomas, Ont., has been appointed Master Mechanic, Canada Southern Division, reporting to Superintendent of Rolling Stock, Detroit, Mich. Office, St. Thomas, Ont.

J. A. MICHENER, heretofore Assistant General Foreman, St. Thomas, Ont., has been appointed General Foreman there, vice Neil Marple, promoted, and his previous position has been abolished.

Pere Marquette Ry.—T. EUSEL has been appointed General Storekeeper, vice W. R. Culver. Office, Saginaw, Mich.

Quebec, Montreal & Southern Ry.—J. B. DICKSON has been appointed General Superintendent of Transportation, vice C. E. Burr. Office, Albany, N.Y.

Canadian Northern Railway Construction, Betterments, Etc.

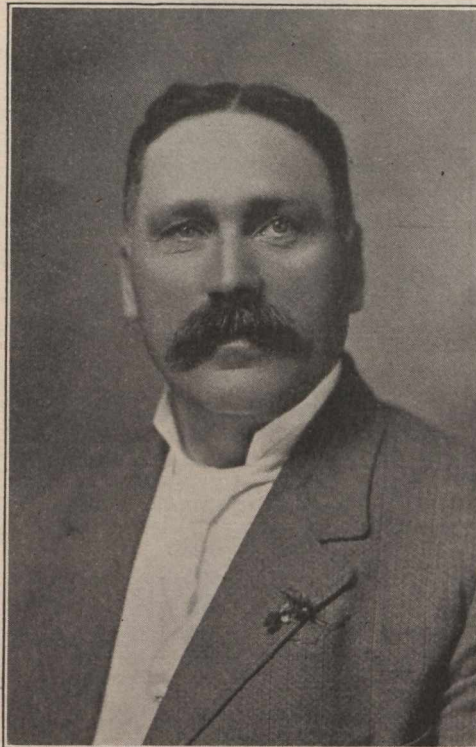
Central District.—M. H. MacLeod, General Manager and Chief Engineer, was in Port Arthur, Ont., Sept. 12, with other officials, looking over the ground with a view of laying spur tracks from the main line to some new elevators now under construction, and to working other track-
age improvements necessary to meet the increasing traffic.

Western District.—The C.N.R. enters Moose Jaw, Sask., by a branch line from Radville, which at present terminates at South Hill, the station being located on Howe St. As originally laid out the branch was to extend through Moose Jaw to connect up with Saskatoon, either directly, or by joining up with another of the company's lines. Provision has been made for the laying out of terminals in the centre of the city, with a station on Athabasca St. In April last work was started at Athabasca St., on the construction of a timber trestle across the river to connect with the existing line at South Hill. The trestle work is about three-quarters of a mile long. Eighty car loads of lumber have been used, and the only part at present unfinished is a short piece at the crossing of the river, where two 30 ft. Howe truss spans have to be placed. It is expected that the work will be completed by Oct. 31. A temporary station will be built on Athabasca St.,

pending the laying out of the terminals. The trestle has been built by the company's own forces under the charge of W. J. Hopewell of the Bridge and Building department.

Vancouver Terminals.—It is reported that construction on the station building at the False Creek terminal is about 70% complete, and that the freight sheds are finished and ready to be taken over by the company. It is reported that orders to commence the train sheds are expected. Everything is said to be in readiness for this work which will take about four months. Tracklaying will be started as soon as the filling is all in. Apart from this work on the terminal itself there is the seawall construction at False Creek, near the station site. The piles have all been driven and the concrete pillars are all in. The wall itself is about half completed.

The work now progressing at Port Mann is the establishment of yards, and track is being laid as rapidly as possible.



L. S. Brown
General Superintendent, Eastern Lines, Canadian Government Railways.

Vancouver Island.—It is reported that about 10 miles of track have been laid on the line from Victoria in the direction of Port Alberni.

The Board of Railway Commissioners has directed the company to construct a transfer track between its railway and the Victoria and Sidney Ry. near Sidney.

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

	Acres.
Calgary & Edmonton Ry.	629.00
Edmonton, Dunvegan & British Columbia Ry.	40.03
Grand Trunk Pacific Ry.	2.34
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	2,865.98
Total	3,537.38

Hudson Bay Ry.—Notice was given at Pas, Man., Sept. 13, that after construction work ceases this autumn train service on the line will be discontinued.

Box and Stock Cars for Canadian Government Railways.

Following are the general dimensions, etc., of the 5,000 40-ton, steel underframe, single sheathed box cars which the Canadian Government Railways ordered recently from Canadian Car & Foundry Co.:

Capacity	80,000 lb.
Length, inside	36 ft.
Width, inside	8 ft. 6 1/2 in.
Height, floor to bottom of carline	8 ft. 0 1/2 in.
Width of side door opening	5 ft.
Height of side door opening	7 ft. 8 7/16 in.
Length, between end sills	37 ft. 1 1/2 in.
Width, over side sills	8 ft. 9 1/2 in.
Height, rail to top of brake mast	13 ft. 10 in.
Height, rail to top of running board	13 ft. 4 1/2 in.
Height, rail to centre of coupler	2 ft. 10 1/2 in.
Height, sill to bottom of side plate	7 ft. 10 3/16 in.
Height, top of rail to eaves	12 ft. 7 13/16 in.
Width, over eaves	9 ft. 3 1/2 in.
Centre to centre of body bolsters	26 ft. 10 in.

These cars will be of the same design as some built two years ago for the C.G.R., but in a number of cases details will be altered slightly to conform to the requirements. One feature will consist in strengthening the end framing. The new cars will have 2 centre 5 in. Z bar end posts and in addition 2 intermediate 3 in. Z bar end posts, which will make a much stronger construction than used on the last cars of this type. The cars will have 15 in. 33 lb. per ft. channel centre sills; 10 in. 15 lb. per ft. channel end sill and 8 in. 11.25 lb. per ft. channel side sills, with the usual Z bar posts and braces common to this type of car.

The 1,000 all wood 30-ton stock cars also ordered from Canadian Car & Foundry Co., will have the following general dimensions:

Length, over side sills	36 ft. 10 1/2 in.
Width, over side sills	9 ft.
Length, inside	36 ft.
Width, inside	4 ft. 4 1/4 in.
Height, top of floor to underside of carline	8 ft.
Height, top of sills to underside of plate	7 ft. 11 1/8 in.
Height, top of sill to underside of girth	3 ft. 10 in.
Outside of end sill to centre of body bolster	5 ft.
Centre to centre of cross-tie timbers	7 ft. 8 in.
Centre to centre of body bolsters	26 ft. 10 1/2 in.
Door opening	5 ft.
Height, top of rail to centre of drawbar	2 ft. 10 1/2 in.

These cars will be similar to some now in service on the C.G.R., which were built by Canadian Car & Foundry Co. about two years ago, but the new cars will be equipped with the economy cast steel draft arm and will have the following body specialties:

Couplers	Simplex 5 x 7 in. shank
Air brakes	Westinghouse KC-8-12
Body bolsters	Simplex
Draft springs	Class G
Door fixtures	Camel type

The roof will be built up of 2 courses of 13/16 in. pine; one course will be laid longitudinally and the other crosswise on car, with a layer of insulation paper between. Trucks will be of the standard 30-ton arch bar type, 4 1/4 x 8 in. journal, with McCord malleable iron journal boxes, simplex truck bolsters, simplex no. 2 trussed brake beams and Laughlin roller side bearings.

The Minister of Railways is reported to have stated in the House of Commons, Aug. 25, in connection with the vote of \$25,000,000 for rolling stock for the Canadian Government Railways, that the orders included 6,000 cars, 4,000 of which would be required for the government system, the balance being needed for the Canadian Northern Ry., the G.T.R., and other railways; and that 4,000 of the cars would be supplied by the Canadian Car & Foundry Co., 1,000 by the Eastern Car Co., and 1,000 by the National Steel Car Co., deliveries to be made between Oct. 1 and Feb. 1.

Canadian Railway AND Marine World

ESTABLISHED 1898

Devoted to Steam and Electric Railway, Marine, Express, and Telegraph, also Railway and Canal Contractors' Interests.

Official Organ of various Canadian Transportation Associations.

Published on the first of each month.

ACTON BURROWS, LIMITED - Proprietors,
70 Bond Street, Toronto, Canada.

ACTON BURROWS, A. Can. Soc. C. E.
Managing Director and Editor-in-Chief.

AUBREY ACTON BURROWS - Secretary and
Business Manager.

Associate Editors

JOHN KEIR AND DONALD F. KEIR

United States Business Representative,
A. FENTON WALKER, 143 Liberty St., New York

Member of
Canadian Press Association,
Associated Business Papers,
Audit Bureau of Circulation.

Authorized by the Postmaster General for Canada,
for transmission as second class matter.

Entered as second class matter, July 25, 1913, at the
Postoffice at Buffalo, N. Y., under the Act of Congress
of March 3, 1879.

SUBSCRIPTION PRICE, including postage any-
where, \$2 a year.

SINGLE COPIES, 20 cents each, including postage.

The best and safest way to remit is by express money
order. Where one cannot be obtained, a post office
money order, or bank draft, payable at par in Toronto,
may be sent. Cheques or drafts not payable at par in
Toronto cannot be accepted. Remittances should be
made payable to Canadian Railway and Marine World.

NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.

ADVERTISING COPY must reach the publishers by
the 10th of the month preceding the date of publication.

TORONTO, CANADA, OCTOBER, 1917.

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Act for the Acquisition of the Canadian Northern Railway.

Following is the full text of the act passed by the Dominion Parliament at its recent session to acquire the C.N.R. Co.'s capital stock:

1. His Majesty may acquire the 600,000 shares of capital stock of the Canadian Northern Ry. Co. (par value \$60,000,000) not now held by the Minister of Finance in trust for His Majesty, on such terms and conditions satisfactory to the Governor in Council as may be set out in an agreement to be made between His Majesty and the owners and pledgees of not less than five-sixths thereof, and for a price to be determined by arbitration as hereinafter provided.

2. (1) Upon the making of said agreement, at least five-sixths of the said 600,000 shares shall be transferred to the Minister of Finance in trust for His Majesty, and if there be any of the said 600,000 shares not transferred as aforesaid, the Governor in Council may declare the said shares to be the property of the Minister of Finance in trust for His Majesty, and the same shall thereupon become the property of His Majesty and shall be paid for pro rata with the shares so transferred.

(2) The necessary qualification shares the entrance to Pictou harbor, N.S., Aug. for directors may be transferred to or allowed to remain in their names by the Minister of Finance on such conditions as he may determine.

3. (1) So soon as the said five-sixths of the said shares have been transferred as aforesaid, the Governor in Council may assist the Canadian Northern Ry. Co., or any company included in the C.N.R. System, in paying and settling any indebtedness of such company or postponing the payment thereof on such terms as may be agreed upon, and for such purposes may make advances out of the Consolidated Revenue Fund: provided, however, that until authorized by parliament, the total of such advances shall not exceed \$25,000,000. A statement of any such advances, showing in detail the purposes for which they were applied, shall be presented to Parliament by the Minister of Finance within 20 days after the opening of the next ensuing session thereof.

(2) The Canadian Northern Ry. Co., and each company included in the C.N.R. System, shall from time to time do such acts and things, make and issue such agreements, obligations and securities in connection with the payment or settlement or postponement of payment of the said indebtedness, as the Minister of Finance may require.

4. (1) The Governor in Council shall appoint one arbitrator, a majority of the said owners and pledgees shall appoint another and the two so appointed shall appoint a third, or failing agreement as to such appointment, the third arbitrator shall be appointed by the Judge of the Exchequer Court of Canada.

(2) The said arbitrators shall determine the value of the said 600,000 shares as of the date of the said agreement, and the said arbitrators shall proceed in a summary way, and may receive with respect thereto such reports and statements authenticated in such way as they may decide and such evidence as they may deem necessary or helpful, examine witnesses under oath and hear parties by counsel or representatives, and the unanimous determination of the arbitrators shall be final but should the determina-

tion not be unanimous, an appeal from such determination shall lie to the Supreme Court of Canada on behalf of His Majesty, or of the owners or pledgees, upon any question of law or fact, but no such appeal shall lie unless notice of appeal is given within thirty days from the rendering of the determination. In determining the value of the said six hundred thousand shares the arbitrators, should they regard it as expedient to take into consideration the reproduction cost of the C.N.R. System, shall not include therein the increase in value, due to the war, of labor, materials, equipment or of any property.

(3) The amount of the value so determined shall be paid out of the Consolidated Revenue Fund.

The Railway Situation in Hamilton.

The Hamilton, Ont., City Council passed the following resolution, Sept. 11: "That the report of W. F. Tye and N. Cauchon on the railway situation in Hamilton, as embodied in proposal C, be approved, that it be sent on to the Board of Railway Commissioners for Canada, as representing the views of the City of Hamilton, and that the board be petitioned to permit no new railway entrance into Hamilton and no new extensions, additions or changes in existing railway works in Hamilton or its vicinity unless same are in accordance with said proposal, and to so notify the railway companies concerned; and that for the purpose of relieving congestion and freight traffic through the city the railways be asked to adopt the measures proposed."

A suggestion was made that the council should endeavor to get officers of the railways together to discuss the project with a view of reaching some agreement, and this was passed on to the railway committee for action. Full details of proposal C, which has been endorsed by the council, and of the other two proposals made by the engineers, with a plan showing all of them, was given in Canadian Railway and Marine World for September, pg. 342.

Railway Crossings and the Public. —

During the past few weeks there have been quite a number of fatalities at points where railways cross public highways, with the customary demand by the public for the elimination of level crossings. It goes without saying that level crossings are dangerous. So also are street crossings, and it will take time to eliminate them. In the meantime why not eliminate the fool motorist? Signs, signals, crossing bells, red lights, etc., seem to have no effect on this class of individual, who is always ready to rush a crossing and "take a chance." When a man states that he cannot hear a freight train of about 3,000 tons, travelling about 30 miles an hour, approaching a crossing, until it hits his car in the centre, one is apt to question his sanity.

Motor Freight Service—It was announced at Victoria, B.C., Sept. 15, that a motor freight service would be put in operation on Oct. 1 between that city and Sidney, on the east coast of Vancouver Island, a distance of about 18 miles. It is said that a 5-ton motor truck will be used, making one round trip a day.

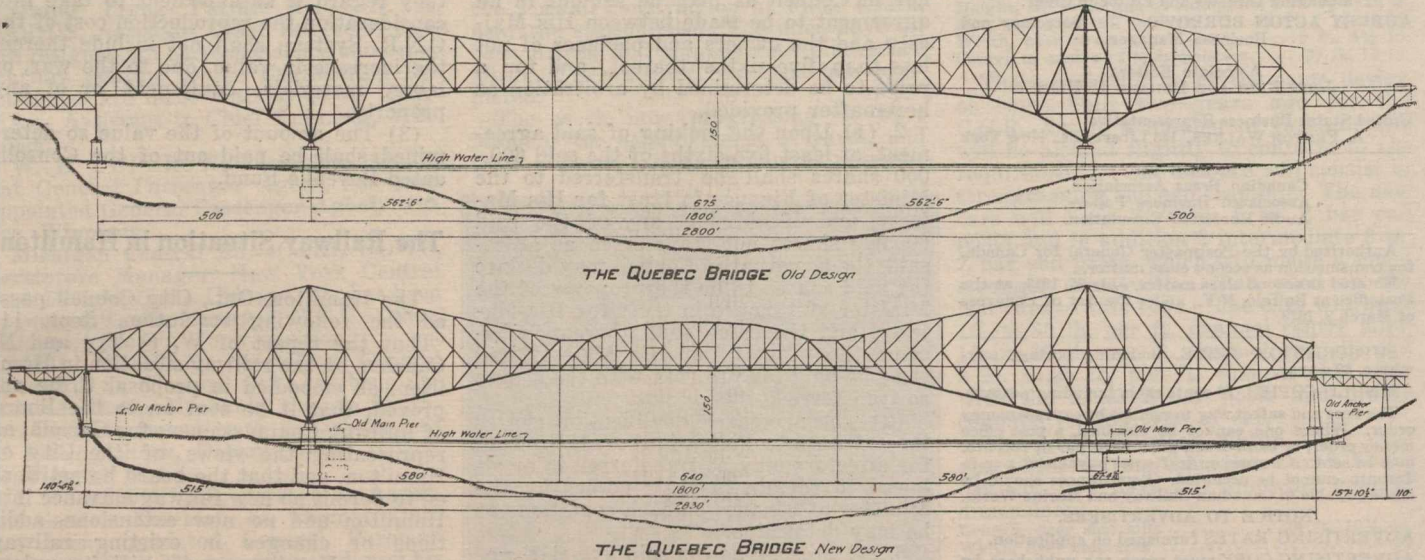
The Quebec Bridge from its Inception to the Placing of the Suspended Span.

The bridge across the St. Lawrence River, near Quebec, is an accomplished fact. The project was first discussed in 1853, but for one reason or another it was not until 1897 that a really serious endeavor was made. It took four years from the reorganization of the old company to the letting of the contracts, and six years later the bridge, when nearly half completed, collapsed. The Dominion Government then took the matter in hand and after nearly three years of investiga-

of the engineers of the then newly completed Forth bridge in the undertaking. The idea then advanced was to erect a bridge on the cantilever plan, which the erection of the Forth bridge had demonstrated to be the last word in big bridge designing. This second proposal also failed to get beyond the project stage.

The third attempt was made in 1887, when the Dominion Parliament incorporated the Quebec Bridge Co., with an authorized capital of \$1,000,000, to build a

railway, and 2 ordinary roads for vehicles and foot passengers. In 1899 the Dominion Parliament granted a subsidy of \$1,000,000 towards the erection of the bridge, and in the following year one-third of this amount was allocated to the substructure and approaches, and two-thirds to the superstructure. On Nov. 12, 1900, a contract under this legislation was signed between the company and the Railways Department. Three tenders were received early in 1900 for the build-



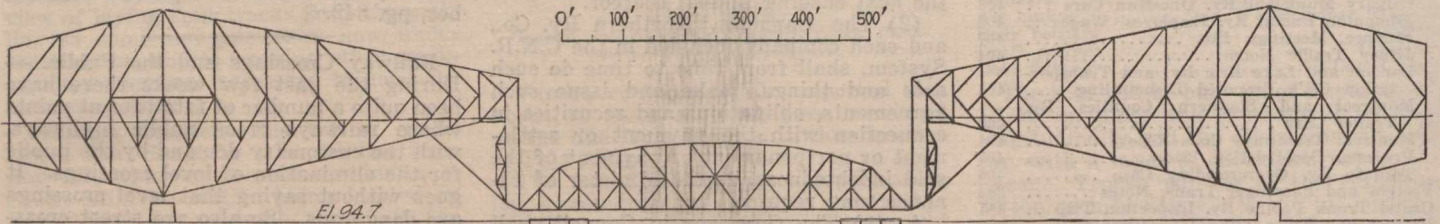
Designs for the Quebec Bridge, for the first one which failed in 1907, and for the second one now erected.

tion, over six years of construction work, and the expenditure of about \$12,000,000, the structure is now in the last stages of completion.

As before stated, the project dates back to 1853, at which date there was no other bridge across the river at any point. A New York engineer, named Serrell, made surveys and prepared plans for a railway bridge, on the suspension principle, to be located somewhere near the site of the present bridge. The estimated cost was \$3,000,000. Whether the cost was considered too great an obstacle, or whether it was a lack of courage on the part of en-

bridge across the St. Lawrence at or near Quebec, to build one or more lines of railway to connect with the bridge, to connect it with existing or future lines of railway, and provide for vehicle and foot passengers crossing the bridge. The provisional directors were: Hon. J. G. Ross, Lieut.-Col. Rhodes, R. R. Dobell, Thos. McGreevy, Lieut.-Col. J. B. Forsyth, G. Lemoine, E. Chimic, H. M. Price, J. I. Tarte and C. Duquet. The company's powers were extended in 1891, and in 1897 they were revived and confirmed, new interests led by S. N. Parent, then Mayor of Quebec, and afterwards Premier of the Pro-

ing of the bridge, that recommended for adoption being for \$3,600,000, exclusive of approaches, which were estimated to cost an additional \$400,000. The contract for the erection of the piers and abutments was let in April, 1900, to W. Davis & Son, Cardinal, Ont., at an estimated cost of \$1,000,000, the work to be completed within two years. Work was started on the substructure in Aug., 1900, the estimated quantity of masonry required to be put in place being 50,000 cubic yards. The preliminary work took up the whole of the summer and the autumn, and it was not until the spring of 1901 that the first



General Scheme for hauling the Suspended Span for the Quebec Bridge.

gineers, nothing further was done, and the first bridge erected across the St. Lawrence was built at Montreal by the Grand Trunk Ry. This was the Victoria tubular bridge, opened for traffic in 1860, and built by Robert Stephenson on the model of one he had previously erected over the Menai Straits, on the line to Holyhead, Wales, and a few years earlier the suspension bridge was built across the Niagara River, also for railway purposes. The project for building a bridge at Quebec to connect that city with the south shore of the St. Lawrence lay dormant until 1882, when M. W. Baby obtained a charter to erect a bridge. He had associated with him A. L. Light, a well known engineer, who interested some

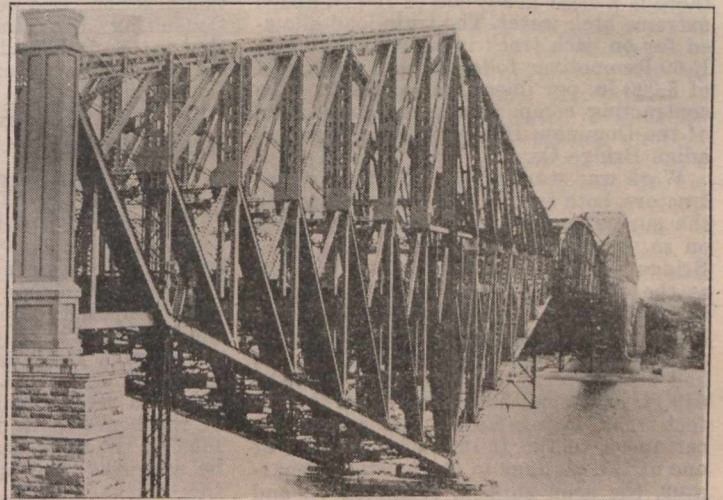
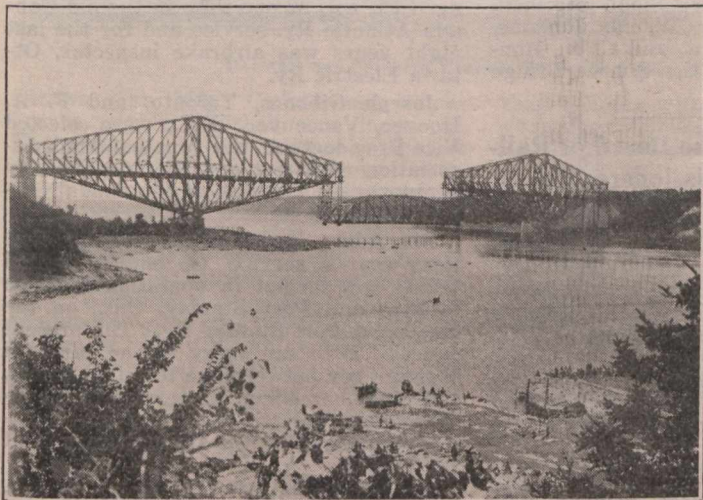
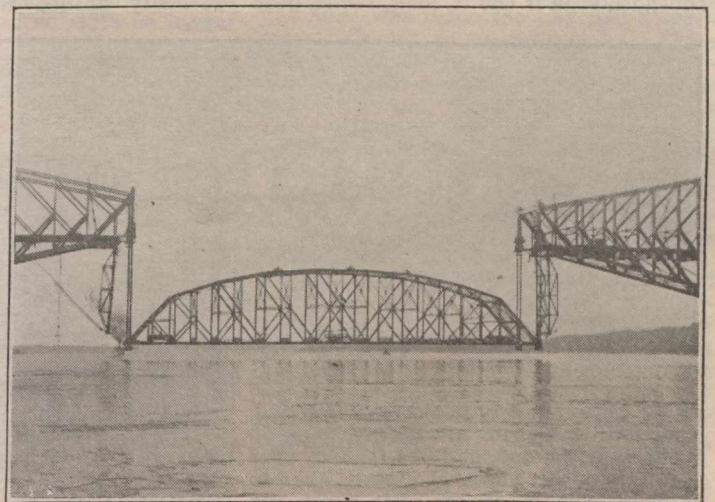
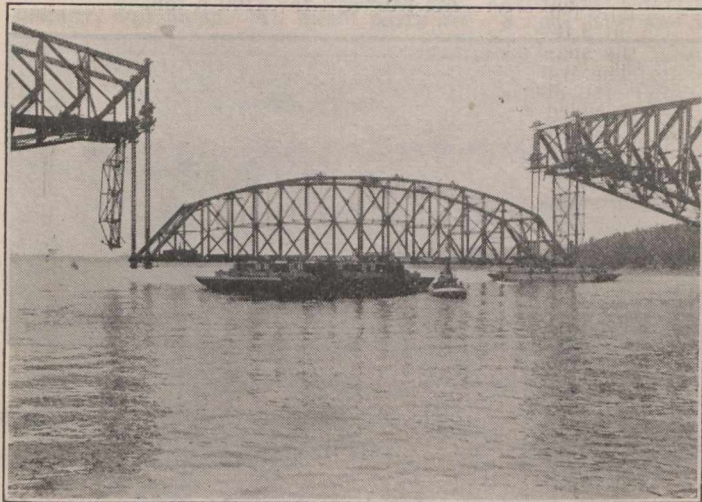
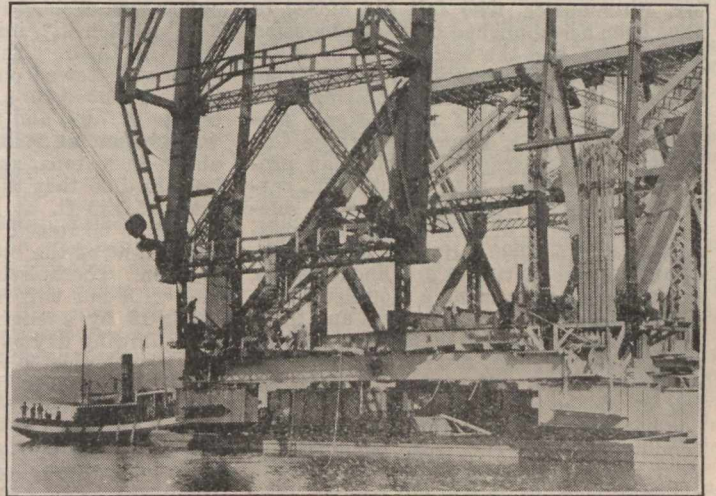
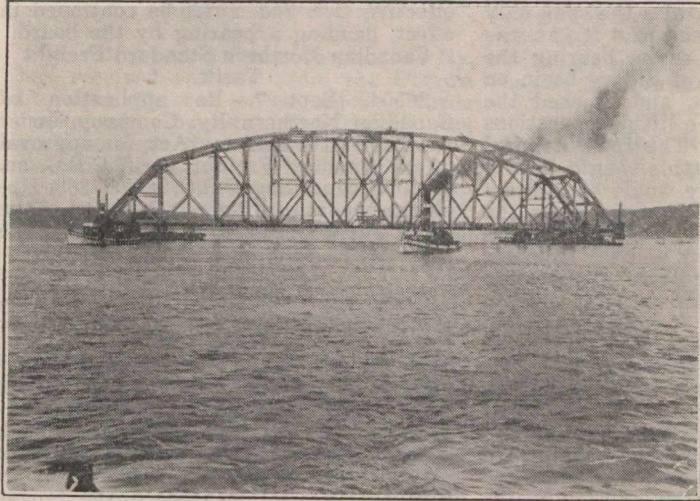
vince, having obtained control of the company. U. Barthe became Secretary of the company, and United States capitalists were interested. A New York engineer undertook the designing of the bridge, and E. A. Hoare was Chief Engineer in charge of all local work. The same site as the present bridge is built on was selected and together with the plans were approved by order in council on May 16, 1898. The plans provided for a cantilever structure, composed of 2 approach spans of 220 ft. each, 2 anchor spans of 500 ft. each, and a centre span of 1,800 ft. from centre to centre of the piers, the under side of the bridge to be 150 ft. above highwater. The bridge was to provide a double track railway, 2 lines of electric

caisson for the erection of the north pier was got into position. The contractors for the superstructure organized the Phoenix Bridge Co., of Phoenixville, Pa., to fabricate the steel work and to erect it. In 1901 that company began operations at the mills in rolling the steel and at the bridge in doing other preliminary work, and the actual construction work was started on the north side of the river in the summer of 1902. During the summer shifting sand was struck at the corner of the caisson for the south pier, resulting in delay to the work owing to the fact that the foundations had to be carried to a greater depth than anticipated in order to secure stability. The substructure work was completed at the end

of 1902, and from that time forward the erection of the steel work went on apace, and was carried on without interruption until Aug. 29, 1907, when over 1,300 ft. of the steel work had been erected from the south end. This comprised the an-

gate the cause of the collapse, and after a lengthened hearing of expert evidence, and the consideration of plans, etc., the commissioners came to the conclusion that the accident was caused by a defect in one of the chords.

Engineer of the London, Eng., County Council, and one of the construction engineers of the Forth bridge; and R. Mojeski, Chicago, Ill. They prepared plans which were made public in Feb., 1910, and which provided for the reduction of the



Quebec Bridge. The placing of the suspended span

First row: Span being towed up the river. 2, Pinning south end of span to hoisting chain.
 Middle row: 3, Pontoons floating from under span, during its third lift. 4, Span as suspended at luncheon time, Sept. 17.
 Lower row: 5, Entire bridge, showing main span as suspended early on Sept. 18. 6, Entire bridge, with span in position, Sept. 20, 3 p.m.

chor span, and practically one-half of the central span, reaching out to within about 100 ft. of what would have been the centre of the completed bridge. The whole of the completed structure collapsed, occasioning the death of 65 men who were working on it. The Dominion Government appointed a commission to investi-

The next stage in the history of the matter was the determination to take over the bridge undertaking and to carry it to a completion as a Dominion Government work. The design of the bridge was placed in the hands of a commission consisting of H. E. Vautelet, a former C.P.R. Chief Engineer; M. Fitzmaurice, Chief

main span from 1,800 to 1,758 ft., with the necessary readjustment of the anchor and shore spans. The new plans necessitated the rearrangement of the substructure, and a contract was let to M. P. and J. T. Davis, details of which were given in Canadian Railway and Marine World for Mar., 1910, pg. 189. Bridge builders

were asked to tender on the engineers' design, but were given permission to submit designs of their own if they so desired. Several alternative designs were submitted, and after some time—the composition of the engineers' commission having been changed by the retirement of Mr. Fitzmaurice, who felt his duties to have been accomplished by the submission of the plan, and the resignation of H. E. Vautelet, who was succeeded as chairman by C. N. Monsarratt, formerly Bridge Engineer, C.P.R.—one of the designs submitted by the St. Lawrence Bridge Co., Montreal, was accepted. This plan provided for a central span of 1,800 ft., carrying a railway track and two 4 ft. side-walks. The cost of this bridge was estimated at \$8,650,000. It is of the K web-system in the cantilever and anchor arms, the suspended span being a modified Pratt. All members in the anchor arm and those immediately over the main pier, as well as the floor system, are carbon steel, the cantilever arms and suspended span being of nickel steel. The top chords are composed of built up riveted members extending over one full truss panel or two floor panels. The design has an 1,800 ft. channel span, as in the old bridge. The suspended span is 640 ft. long, 110 ft. deep

at the centre, and 70 ft. deep at each end. The cantilever arms are 580 ft. long, 70 ft. deep at the end, and 310 ft. high over the main post. The anchor arms are 515 ft. long. The trusses are 88 ft. apart, and there is a clear headroom of 150 ft. above extreme high water. The train load allowed for on each track is equivalent to two E-60 locomotives followed by a train load of 5,000 lb. per lineal foot of track. The contracting company was a combination of the Dominion Bridge Co. and the Canadian Bridge Co.

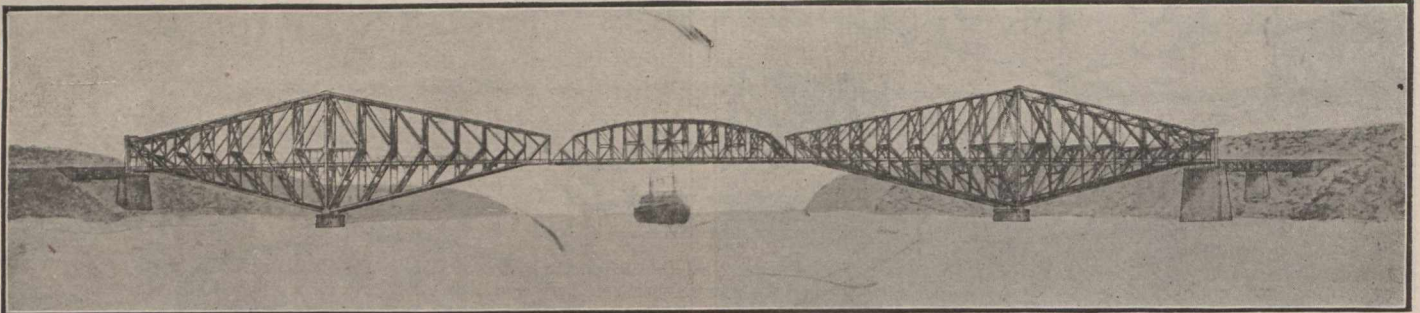
Work was started promptly by the contractors, both for the substructure and for the superstructure, and everything went on so successfully that the St. Lawrence Bridge Co. expected to complete its work at the end of 1916—earlier than was estimated. Sept. 11, 1916, was set for floating out the suspended member of the central span. The first part of this work had been successfully completed, and the 640 ft. long span had been raised several feet when, owing, as was afterwards ascertained, to the failure of a portion of one of the castings in the hoisting apparatus, the span slipped, crumpled up and fell to the bottom of the river. The fullest investigation was made into the matter, and it was found that there was no defect in the span, or in the plan, and that the other sections of the bridge had received no damage from the accident. The company immediately put in hand the fabrication of the steel for a new span and to prepare for its being got into position. This was done and the new span was ready for erection at the time of the September high tides this year. The method of erection, described in Canadian Railway and Marine World, Oct., 1916, pg. 417, was not changed except that extra precautions were taken in connection with the manufacture and getting in place of the hoisting apparatus, etc. A larger number of men were arranged for at the lifting jacks and at other points, and it was decided to raise the span only 2 ft. at each lift, instead of 4 ft., as was done in 1916. The scows bearing the span were towed out of Sillery basin on Sept. 17 at 5.10 a.m. and reached the bridge at 7.03, and the lifting operations were begun at 9.45. The span weighed about 5,000 tons, and this weight had to be raised so that there would be a clearance of 150 ft. at high water, thus the height to be raised would be 150 ft., less the height of the scows and the supports thereon. The hoisting proceeded steadily and with but two interruptions, once on Sept. 18 by a slight fog, and again on the following day by high wind. The final lift was completed Sept. 20, at 2.19 p.m., after which the bolting of the span into place was taken in hand. The work of laying the floor of the span and placing the rails for traffic will be proceeded with at once, and it is expected that it will be completed in two months, and the bridge formally opened for traffic about the

to C.N.R. Tariff C.R.C. no. E-860, to become effective Sept. 1st, 1917, be suspended; that cancellation Supplement 1 to C. N. R. Tariff C.R.C. no. E-156, to become effective Sept. 1, 1917, be suspended, and that the rates on pulpwood as published in C.N.R. tariff C.R.C. no. E-156, effective Oct. 2nd, 1912, be continued in effect, pending a hearing by the board.

Canadian Northern Standard Freight Tariff.

26504. Sept. 7.—Re application of Canadian Northern Ry. Company, under sec. 327 of the Railway Act, for approval of its Standard Freight Tariff C.R.C. no. W-1025, cancelling C.R.C. no. W-862. Upon the report and recommendation of the Chief Tariff Officer, it is ordered that the said tariff be approved.

Japan Buys Old Rails. Seattle, Wash., press dispatch, Sept. 19.—Large quantities of old steel rails have been bought in the northwest by Japanese brokers and shipped to Japan. In the last few weeks 2,300 tons have been shipped and additional shipments are being assembled. The brokers are paying \$70 a ton for the rails, which originally cost \$24 a ton. In turn, they are selling them to the Japanese railways for \$100 a ton.



The Quebec Bridge as completed, from the Contractors' Sketch.

at the centre, and 70 ft. deep at each end. The cantilever arms are 580 ft. long, 70 ft. deep at the end, and 310 ft. high over the main post. The anchor arms are 515 ft. long. The trusses are 88 ft. apart, and there is a clear headroom of 150 ft. above extreme high water. The train load allowed for on each track is equivalent to two E-60 locomotives followed by a train load of 5,000 lb. per lineal foot of track. The contracting company was a combination of the Dominion Bridge Co. and the Canadian Bridge Co.

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middle of November.

The work of raising the span into position was supervised by Phelps Johnson, President, St. Lawrence Bridge Co.; G. H. Duggan, Chief Engineer; G. F. Porter, Construction Engineer; S. P. Mitchell, Consulting Engineer; W. B. Fortune, General Superintendent, and C. N. Monsarratt, Chairman of the Quebec Bridge Commission.

Traffic Orders by the Board of Railway Commissioners.

Interchange Track at Thorold, Ont.

26465. Aug. 24.—Re application of Niagara, St. Catharines and Toronto Ry., for approval of plan showing interchange track proposed to be constructed between the applicant's railway and the G.T.R. at Thorold, Ont., as required under the order 26186, June 5, 1917. Upon the report and recommendation of an engineer of the board, it is ordered that the plan filed by the applicant, dated July 4, 1917, be approved; the applicant to construct the tracks within three months from date of this order; and the question of the apportionment of the cost of the work to be reserved for further order.

C.N.R. Pulpwood Rates to Campbellford.

26476. Aug. 29.—Re application of Hydro-Electric Power Commission for suspension of proposed increased rates on pulpwood from stations on the Canadian Northern Ry. to Campbellford, Ont. Upon reading what has been submitted in support of the application, it is ordered that the advanced rates on pulpwood, as published on page 3 of Supplement 20

Electric Railway Department Items too Late for Classification.

A Usher, who died in Ottawa, Sept. 19, aged 59, was at one time in the old Canada Atlantic Ry. service and for the last eight years was airbrake inspector, Ottawa Electric Ry.

Joseph Gibbons, Toronto, and F. A. Hoover, Vancouver, B.C., were elected Vice Presidents of the Amalgamated Association of Street and Electric Railway Employees of America, at the annual convention at Providence, R.I., recently.

Sir Adam Beck stated recently that next year a service of hourly limited trains will be put in operation between London and Port Stanley, Ont., on the London & Port Stanley Ry. The present practice is to run every second car as a through car between the terminal points, the other car being for service to all intermediate points. The only intermediate stop made by the through cars is at St. Thomas.

Guelph Radial Ry.—In order to provide accommodation for traffic to the Military Convalescent Hospital at Guelph, an arrangement is reported to have been made with the Toronto Suburban Ry. for running rights over a portion of its line. This will necessitate the making of a connection between the G.R.R. and the T.S.R. and between the latter railway and the hospital grounds. It is proposed to provide a 20 minute service between the city and the hospital. The cost of operating the service is estimated at \$8,000 a year. (Feb., pg. 73.)

Electric Railway Department

Montreal and Southern Counties Railway Cars.

The Montreal & Southern Counties Ry. has received recently from the Ottawa Car Mfg. Co. two of an order of three trailer cars for interurban service, the main features of which are as follows:

Length over vestibules 53 ft. 8 in.
 Length of car over buffers 55 ft.
 Length over corner posts 43 ft. 4 in.
 Distance between bolsters 30 ft. 8 in.
 Width over all at eaves 8 ft. 6 in.
 Width over side sills 8 ft. 1/4 in.
 Height, top of rail to top of roof 12 ft. 8 1/2 in.
 Normal seating capacity 60 persons.

The car's sides are straight and sheeted with poplar sheathing. The roof is of monitor type, with ventilating deck sash, operated by M. & S.C.R. standard deck sash fixtures, and glazed with opalescent glass. The side sash are of mahogany; top sash glazed with opalescent glass set in lead, cathedral design. All body side windows are equipped with wire screens. The interior is finished in Mexican mahogany, dull finish. All metal parts are

5 gallon water cooler. The curtains have spring plug rollers. The sash locks are of single cam type, with a heavy rack on the stop. The sash are also equipped with anti-rattler and improved drop handle hand brakes.

Edmonton Railway Employes' Wages.

The Edmonton, Alta., Radial Ry. employes applied to the city council, July 30, for an increase of wages, under the terms of the agreement which was due to expire Aug. 31. The men asked for renewal of the agreement for a further 12 months in all its details, with the exception of the following: "All employes under the agreement to be increased 20% over and above the rate received at present, and further, that owing to the extra responsibilities placed upon the operators of one-man cars the operators of same shall receive 55c an hour, with an 8 hour day, and that no shift be longer

The men at a mass meeting, Sept. 1, refused the offer and decided to stand by their resolution of going out. They then went out and the car service was suspended. On Sept. 2 the council offered to pay 30c an hour for new men, with a 2 1/2% increase annually until a maximum of 40c an hour was reached, with a rate of 45c an hour for one-man car operators. The superintendent was empowered to engage motormen and conductors on the above terms, men of experience to be given standing according to superintendent's decision. All late employes to deliver up uniforms and other street railway property by noon, Sept. 4.

The Dominion Fair Wage Officer was in the city, Sept. 3, but failed to get the parties to come together. After several days of fruitless discussion the council, on Sept. 10, as a final offer to the men, promised to restore them to their standing as of Aug. 31, if they returned to work by the following day. On the day the offer was made the city had secured men sufficient to operate cars. There was some little rough conduct in connection with the running of the cars, but no actual violence. Sept. 11, at 10 a.m., the new agreement—on the city's terms—had been signed by 125 men, and others subsequently came in, so that it was possible to put on the full service, Sept. 13.

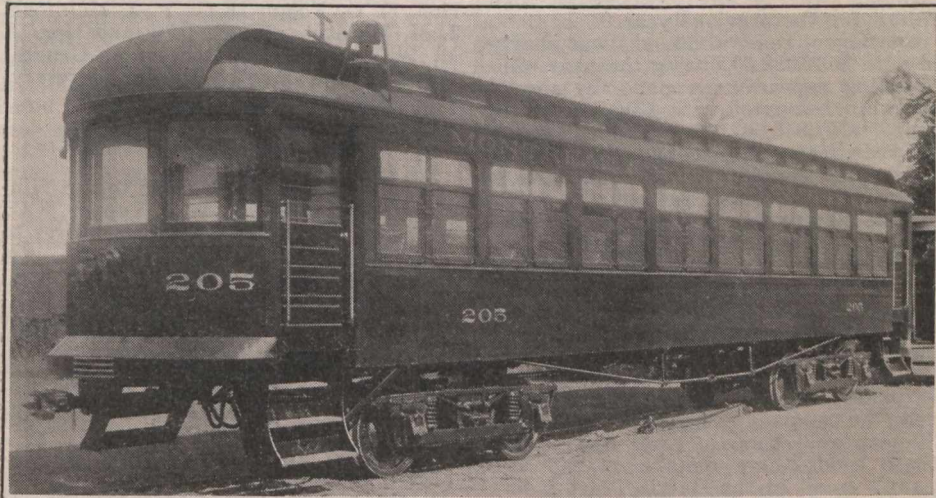
It is estimated that the strike cost the city \$2,500 in cash, and a loss in wages to the men of between \$400 and \$500.

The employes' representatives served notice on the Mayor, Sept. 14, of an application to the Minister of Labor, under the Industrial Disputes Investigation Act, making the following demands: The renewal of the agreement with the city and as provided for in the said agreement. Increase in wages in all cases, and more particularly as follows: A 20% increase over and above the rate paid on Aug. 31, 1917, pursuant to said agreement. That all men be taken back in seniority, and as they vacated work on Sept. 1. That no man be discriminated against for taking any part in this vacation. That all men, irrespective of their position, be reinstated to their former position prior to vacation on Sept. 1. And generally, all matters relative to those contained in said agreement, and the welfare of the men and their condition, having regard to the economies of the times. A press dispatch of Sept. 19 stated that the application had been granted and that the men had appointed H. A. MacKay, of Edmonton, as their representative on the arbitration board.

One-Man Cars on Calgary Municipal Railway.

The committee appointed by the Calgary, Alta., City Council to investigate the cost of operating one-man cars on the Calgary Municipal Ry., in comparison with the two-man system, concluded its work Sept. 13, and reported to the City Council as follows: We are of the opinion that there is very little saving between the operation of 2 and 4 motors in a double truck car at the present low price of power, and therefore approve of the use of 4 motors in all double truck cars. Alderman Arnold opposed the last part of the recommendation.

We approve of the operation of the



Montreal and Southern Counties Railways' Trailer Car.

Ottawa Car Mfg. Co.'s standard car bronze, highly polished and lacquered. The seats are of the railway company's standard reversible type, upholstered in green imitation leather. The car is built on a steel underframe of specially light and strong construction, and is of through platform type. The cars are equipped with heaters, automatic couplers, Westinghouse a.m.m. air brake equipment with synchronizing governor equipment and Westinghouse electro-pneumatic signal equipment, also control train line for h.l. control. The basket racks are of M. & S.C.R. standard design. The lighting consists of clusters on the ceiling, also individual lights along the lower deck rail moulding. The cars are mounted on trucks with 33 in. cast iron wheels. A special feature of the underframe is a specially constructed anti-climbing spring buffer, built to take all ordinary buffing shocks and minor collisions. The car is equipped with marker brackets, also steel trap doors at the side openings. These trap doors are hinged to the vestibule doors with heavy bronze hinges, bolted on in such a way that when the door is open the trap is folded up behind the door. The car is also equipped with a lavatory on one side, with a standard improved dry hopper closet, also a

than 6 hours without relief, and further we desire this change to take effect from Aug. 31, and remain in force until Aug. 31, 1918."

The council referred the application to the utilities committee for consideration, and on Aug. 20 the men's representatives met the committee. The matter was discussed, but no decision was reached, and there was no further meeting with the committee. On the morning of Aug. 31 the men met and passed the following resolution: "Resolved, that our executive committee meet the city officials today and inform them that we want a meeting immediately, that unless our agreement is signed, sealed and delivered with the 20% increase included in the agreement, by 12.30 p.m., Aug. 31, our president be instructed that we take a vacation on Saturday morning."

This ultimatum was delivered to the mayor, and a meeting was held with the council in the afternoon. After discussion the council made the following offer: "That all motormen and conductors under 35c an hour be raised to 35c; second six months, 35c; third six months, 35c; fourth six months, 35c; fifth six months, 38c; sixth six months, 38c; seventh six months, 38c; eighth six months, 38c; ninth six months, 40c."

one-man cars on the system, under the conditions of the period in which they have been operating, on the ground only that they have led to an economy in operation. Aldermen Broatch and Adshad opposed.

That the present one-man and two-man car routes be kept as they are, and that accurate records for one month of the cash and ticket fares on the whole system, route by route, be kept, and report made to this committee.

We recommend that consideration be given to the safety of the front entrance, and that the reflection of the light in the motorman's face be drawn to the Superintendent's attention.

That the rule that no car be in motion unless the motorman-conductor can give his whole attention to the running of the car be strictly enforced.

A Calgary press dispatch Sept. 26 says that the Calgary City Council adopted the Committee's majority report and that this means that the use of one-man cars on the municipal railways will be made permanent.

Dismantling of London & Lake Erie Railway & Transportation Co's Line Probable.

The London & Lake Erie Ry. & Transportation Co.'s electric railway which runs between London and Port Stanley, Ont., 28 miles, has not paid any interest on its bonds for the past 2½ years and since the London & Port Stanley Ry. was taken over by the city of London and electrified, the L. & L. E. R. & T. Co.'s position has steadily grown worse. There is not sufficient business for two electric railways between London and Port Stanley and as the L. & P. S. Ry. is the shorter route, has the better roadbed, and makes quicker time, it gets the greater portion of the through traffic between London, St. Thomas and Port Stanley.

The L. & L. E. R. & T. Co.'s bondholders decided, at a meeting on Sept. 18, that if the municipalities through which the line runs will not come to its assistance financially, the franchise and property will be sold, either in block or in parcels. The President, G. B. Woods, of Toronto, John Purdom, of London, and Sidney Jones, of Toronto, were appointed a committee to negotiate with the municipalities and if the negotiations prove futile to dispose of the line without delay. It is believed that the line could be dismantled and the rails, wire, rolling stock, etc., sold for a higher price than the Hydro Electric Power Commission of Ontario was disposed to offer for the whole property a little while ago.

G. B. Woods is reported to have informed the London City Council, Sept. 26, that the company is willing to accept 60c on the dollar of its bonded indebtedness, or \$505,000, for the roadway. Failing this, he stated, the road would be scrapped immediately, and its equipment disposed of. The offer has been referred to the London Railway Commission for a report, and if this is favorable, it is stated the matter will be submitted to a vote of the ratepayers in January.

The L. & L. E. R. & T. Co.'s line was opened for traffic about 12 years ago. The original company, the Southwestern Traction Co. went into liquidation in 1909, the present company taking over the property Dec. 15, 1909.

A large jitney bus, with seating capacity for 18, operated in Ottawa during the exhibition recently.

Montreal Tramways Co's Annual Report and Meeting.

Following are extracts from the report for the year ended June 30. The financial statements show the following results:

Gross earnings	\$7,725,498.88
Operating expenses	4,601,771.84
Net earnings	\$3,123,727.04
From which deduct:	
City percentage on earnings	\$491,430.95
Interest on bonds and loans	858,542.38
Interest on debenture stock	800,000.00
Taxes	98,400.00
	2,248,373.33
Net income	\$875,353.71
Dividends	337,880.50
Surplus	\$537,473.21
Less:	
Transferred to contingent renewal account.	\$350,000.00
War tax (estimated)	110,000.00
	460,000.00

Transferred to general surplus \$77,473.21

The gross passenger earnings were \$7,374,295.79, compared with \$6,443,309.66 for the previous year, an increase of 14.45%, while the operating expenses increased \$894,718.80, or 24.14%. The ratio of operating expenses to passenger earnings was 62.40%, compared with 57.53% for the previous year.

Contingent renewal account was charged with \$567,082.66 during the year, representing expenditures made for special renewals, compared with \$313,575.99 last year. \$792,848.06 was expended during the year in the maintenance of properties, plant and equipment, and charged to operating expenses, compared with \$583,894.20 the previous year. This amount, together with \$567,082.66 charged to renewal account, makes a total expenditure during the year on the upkeep of the properties of \$1,359,930.72, compared with \$897,470.19 the previous year. During the year there was expended on capital account \$1,509,488.90, compared with \$320,872.17 the previous year. During the year the company issued \$3,000,000 of 5% 30-year gold bonds. From the sale of these bonds there remains at the company's credit at the Harris Trust & Savings Bank, Chicago, \$1,063,985.22, which is at the company's disposal for extensions and improvements.

While the gross passenger earnings show a satisfactory increase over last year, the operating expenses have increased in greater proportion, the ratio of operating expenses to passenger earnings being 62.40%, against 57.33% for the previous year.

The company has continued the work of placing its overhead feeder wires in the municipal conduit and has completed during the year the work commenced in the previous year on Bleury St. and Park Ave.

With reference to the rearrangement of system of power distribution referred to in the last annual report, the installation of the first unit of 17,000 h.p. is practically completed, and it is expected will be in operation in August. Work has commenced on the installation of an additional unit of 17,000 h.p.

The work on the contract for machining shells, referred to in the last annual report, is practically completed, but there still remains some final adjustments to be made. An estimated amount has been provided for the war tax on the results of the whole operations of the company, the present accounting period being the third and final period for this company under the Business Profits War Tax Act, 1916.

During the year the company placed an order for 100 motor and trailer cars, with the necessary equipment. These cars are of the very latest type, and contain every known device and improvement to assure comfort and safety to the travelling public. The first deliveries are expected shortly.

At the last session of the Quebec Legislature the government appointed a commission of five members, with power to make a new contract between the City of Montreal and the company, and the directors trust that this matter will be settled shortly, and result in enabling the company to develop and maintain its system to the best interest of the public and your company.

The property has been maintained in a high state of efficiency and is in excellent condition. **Statistical Statement.**

New construction during year	\$1,509,488.90
Expenses % of passenger earnings	62.40
Passengers carried	179,974,549
Car earnings per passenger	4.10c
Transfers	63,451,272
Total passengers carried	243,425,821
Car earnings per passenger, total carried	3.03c

At the annual meeting, Aug. 31, the directors were all re-elected. They are as follows: E. A. Robert, President; J. W. McConnell, Vice President; F. Howard Wilson, Vice President; W. C. Finley, Hon. G. G. Foster, K.C., P. J. McIntosh, J. M. McIntyre, W. G. Ross and Hon. J. M. Wilson. J. E. Hutcheson is General Manager and Patrick Dubee, Secretary-Treasurer.

Jitney Traffic Notes.

Application has been made to the Winnipeg City Council by W. J. Tupper, K.C., on behalf of a company which desires to operate a motor bus service in the city. The company asks for a 10 year franchise, the right to fix tariffs, to use tickets and to operate a fast line and a slow line. The matter is under the consideration of the market and license committee, which, it was stated, Sept. 6, was preparing a bylaw for submission to the council.

Winnipeg jitney men, who, it was reported on Sept. 4, numbered 475, will under the bylaw adopted that day have to furnish a bond to the city to provide against damage to persons and property by accident. The amount of the bond is fixed at \$1,000 against personal damage to any one person, \$5,000 against personal damages in any one accident, and \$200 against damage to property. This bond will cost each jitney driver \$150 a year under an insurance policy. The new regulation became effective Sept. 20.

Judgment was given, Sept. 6, by Justice Murray in the application of J. L. Mackay for an order to compel the Vancouver City Council to restore his jitney license, which had been cancelled under a city bylaw. Mackay refused to conform to the regulation requiring him to select a route and to operate his jitney thereon only. The legal point reserved was whether the city's charter and powers under the act covering motor vehicles gave power to confine cars to particular routes. The judge held that such power had been expressly given in the amendments made in the act recently and refused the application.

The Winnipeg Electric Ry. in its current advertising is directing attention to points of interest reached by its suburban lines. The trip most recently described and illustrated is that to Lockport, for St. Andrews Rapids and the Indian mounds.

Supreme Court Judgments re Contributory Negligence in Accident Case.

Canadian Railway and Marine World some little time ago gave particulars of a decision given by the Supreme Court in the case of *Mrs. J. P. Hayes vs. Ottawa Electric Ry. Co.* The judgments given by the various judges are of such importance to electric railway companies generally that they are given in full as follows:

DAVIES, J. I am to allow this appeal and dismiss the action on the ground that no negligence on the part of the motorman was proved or could be properly inferred from the evidence. The car was only 35 ft. away from the unfortunate man at the time the motorman could have appreciated or believed from the man's conduct and actions that he intended crossing the track. From that moment the motorman did everything in his power to prevent the accident and I fail to find from the evidence anything that he omitted to do that he should have done or that from the moment he did anything he should have refrained from doing. Even if it was possible to conclude that he then committed an error of judgment it was clearly in the "agony of collision," for which the company could not be held liable.

ANGLIN, J. If the question in this case were whether on the findings of the jury the judgment for the plaintiffs should be upheld, it may be that the cases of *Long v. Toronto Ry.*, 50 S.C.R., p. 224, cited in the judgment a quo, would have some bearing upon it. But the grounds of appeal in this court are, as they appear to have been in the Appellate Division, that there is no evidence to sustain the findings of negligence against the defendant's motorman, and that the finding that the contributory negligence of the deceased did not continue up to the moment of the accident is contrary to the evidence. In so far as the result must depend upon a consideration of the evidence for the purpose of ascertaining how far it justifies these impeached findings, the *Long* case affords no assistance. So rarely are the circumstances of two cases identical in all material particulars that a decision upon a question of fact is scarcely ever of value as a precedent. The circumstances under which the motorman was found to have been negligent in the *Long* case differ widely from those with which we now have to deal. In the *Long* case, the unfortunate man who left the sidewalk was visible to the motorman at a much greater distance; a longer interval of time elapsed and the motorman had much greater opportunity for appreciating that *Long* was in a state of absent-mindedness. Moreover, the victim himself became aware of his plight a moment or two before he was struck though too late to save himself, while the unfortunate *Hayes* appears never to have been conscious of the oncoming car.

I have reached the conclusion that in the case at bar there was no evidence to support the findings of negligence against the defendant. It is conceded that the finding of defective equipment cannot be sustained. The other finding of negligence is "that the motorman should have stopped when he realized the danger." The jury subsequently added to this latter finding the following explanatory rider: "According to evidence submitted, the motorman first realized the danger of an accident when at a distance of 45 or 50 ft. Instead of taking up the

slack, as stated, had he applied the brakes immediately, we think the accident would have been avoided. The motorman in his evidence admitted that he realized the man was going to cross the street, that he had in his hands the power to stop the car either by brake or reverse. We find that had the motorman acted more promptly, the accident would have been avoided."

The first observation to be made on this part of the verdict is that the jury was manifestly under a misapprehension in regard to the taking up of the slack. The only evidence on that point, given by the motorman himself, is that he had taken up the slack and had his brakes partially tightened before he reached Bronson Ave., i.e., while the deceased was still on the sidewalk and before the motorman had seen him. Upon all the evidence, it is well established that when the deceased stepped off the kerb to cross Somerset St., the front of the car, travelling at about 10 miles an hour, or 14½ ft. a second, was about midway on Bronson Ave., and some 45 to 50 ft. from the point of contact. To reach that point, the deceased had to move slightly less than 10 ft. The motorman's statement is that he first saw the deceased as he stepped from the kerb; that because he than apprehended that an accident might happen he immediately rang the gong to warn him; that at 30 ft., or about one second later, he realized that the deceased was not going to stop, became seriously apprehensive and at once applied the brakes as vigorously as he could, still gonging, and also shouting to the deceased, who continued to walk on with his head down, apparently oblivious of danger. That the motorman did all in his power and exercised his best judgment from the moment when he was 30 or 35 ft. from the point of contact, is not, and, upon the evidence, could not be contested. If he was at fault at all, it must have been in not applying his brakes or reverses the moment he saw the deceased step from the kerb at a distance of 45 or 50 ft. from him. That would imply that he should instantly have anticipated, merely because he saw the man step on to the roadway, that he was in a brown study, or otherwise so abstracted that the gong might fail to arouse him and that he might walk into the car without having become aware of its approach. It must be remembered that realization of these possibilities—they cannot be deemed probabilities—and action upon them to be effective must have been instantaneous. In a single second the car had travelled to within 30 or 35 ft. of the point of contact. No doubt a motorman driving a street car must always be alert. But, having regard to the practical necessities of street car operation, I am not prepared to hold that it was open to a jury to find, under the circumstances of this case, that in failing to apply his brakes instantaneously upon the deceased stepping off the kerb and before he had seen, or had any reason to think, that the sharp clanging of the gong would be ineffective, the motorman was guilty of negligence.

Every case of this kind must depend upon its own facts. A very slight difference in the circumstances may render conduct, which is justifiable and not improper in one case, negligent and indefensible in another. It would be quite wrong, and probably entirely futile, to

attempt to define any standard of general application. I can only say that I fail to discover in the facts before us anything to warrant a finding of fault or negligence on the part of the motorman. If he made any mistake at all it was at most an error of judgment in a sudden emergency (*The Khedive*, 5 A.C. 876, 891), but even that is not established.

Moreover, although there is no finding of excessive speed, and the company therefore cannot be held liable on that ground, the distance travelled by the car after the motorman had applied the brakes with all his strength—about 150 ft. according to the weight of evidence—would rather indicate that no effort on his part made at 45 or 50 ft. from the point of contact would have prevented the accident.

In the view I have taken, it is unnecessary to dwell upon the finding that the contributory negligence of the deceased did not continue up to the moment of the accident. If, as the jury found, the deceased was negligent "by not using proper precautions crossing the street," there is nothing in the evidence to indicate any change in that respect before the accident. On the contrary, it would seem that *Hayes* remained oblivious of any danger, and proceeded with his head down towards the point of contact, until he was actually struck by the car. The learned trial judge, having had his attention called to the *Long* case, explained to the jury that by the 9th question—"Was the negligence, if any, of the deceased a continuing act of negligence up to the very moment of the accident?"—he meant, "did he become aware that the car was approaching and was he oblivious of the danger, that is the sense in which that question is put." The jury answered "No." There was no evidence that the car was approaching. The evidence was all to the contrary. If it was essential to his being negligent in the last moment before the accident that he should have been aware of the approach of the car, this answer of the jury may be intelligible. But it is, from any point of view, very difficult to reconcile it with their finding that there was contributory negligence, in view of the evidence that there had been no change from the moment he left the sidewalk either in regard to his knowledge of the oncoming car, or in his attitude in, or manner of, approaching the danger point. But it is not necessary further to consider this aspect of the case.

Notwithstanding my reluctance to set aside the verdict of a jury upon a question of negligence, and my sympathy for the plaintiffs in their misfortune, I am for the foregoing reasons constrained to allow this appeal. The defendants are entitled to their costs throughout, if they should see fit to exact them.

BRODEUR, J. This is another of those too numerous street railway accidents. The victim, *J. P. Hayes*, was crossing Somerset St., in Ottawa, at the corner of Bronson Ave., when he collided with a street car and was killed. The verdict of the jury at the trial is a very unsatisfactory one. At first, it is found that the victim, by not using proper precautions in crossing the street, was guilty of negligence. It is common ground that the deceased stepped off the kerb and reached the track without looking if there was any danger. His negli-

gence had been evidently a continuous one up to the very moment of the accident, however differently the jury may have reported. Such a finding is certainly unjustified by the evidence. If, as the jury found, the deceased was negligent in starting to cross the street without taking the necessary precautions, he was equally negligent in continuing to cross without seeing whether there was danger or not. Their answer to question 9 seems to me then conflicting with their answers to questions 1 and 2.

They found also that the death of the victim was caused by the negligence of the defendants, and that if the latter had exercised reasonable care the accident would have been prevented notwithstanding the negligence of the deceased. But the reasons they have given at different times for such a finding are not sustained by the evidence. At first, they came back with the answer that the company was negligent for not having their car equipped with up to date appliances and that the motorman should have stopped when he realized the danger. The trial judge then observed that there was no evidence as to any defective equipment, and suggested to the jury that their verdict of negligence on the part of the company should be connected with the conduct of the motorman. They returned with the same answer as to defective equipment and added the following: "According to the evidence submitted, the motorman first realized the danger of an accident when at a distance of 45 or 50 ft. Instead of taking up the slack as stated, had he applied the brakes immediately, we think the accident would have been avoided." The learned trial judge was not satisfied with that answer and asked them to suggest whether the use of the reverse, instead of the brakes, would not have been more effective. And the jury subsequently added the following to their previous answers: "The motorman in his evidence admitted that he realized the man was going to cross the street, that he had in his hands the power to stop the car either by brake or reverse. We find, had the motorman acted more promptly, the accident would have been avoided."

It has been admitted at bar by counsel for respondent that the evidence does not justify the verdict as to the defective equipment. As to the conduct of the motorman, the evidence does not disclose any negligence on his part. Before reaching the corner of Bronson and Somerset Sts., the motorman started to ring his bell according to the rules of the company and to take up the slack of the brakes. When at about 45 ft. he saw the deceased stepping off the kerb, he began to apply the brakes and continued to ring the bell and at 30 ft he became apprehensive of danger and tightened his brakes the best he could. He could certainly not, even at 45 ft., change the braking operation for the reverse. The loss of time which such a change would have occasioned would not have been of any advantage. There is no excessive speed charged against the motorman and no lack of control on his car. He fulfilled his duty as promptly as he could when the serious apprehension of the danger came. But it was then too late to avoid the accident.

There is no evidence on which a case of negligence has been made against the company. The proximate cause of the injury was the negligence of the victim. The latter was injured by his own fault with no fault on the part of the com-

pany. The action should have been dismissed, as the judgment a quo maintained the action. The appeal should be allowed with costs.

THE CHIEF JUSTICE: I was at first disposed to dismiss this appeal on the ground that there was evidence to support the judgment at the trial which has the approval of the Court of Appeal. At the time of the accident the deceased was not casually crossing from one side of the street to the other, but continuing his way along Bronson Ave. at the point where it is crossed by Somerset St. It was the duty of the driver of the car to exercise great care and vigilance, when coming to the point of intersection of those two busy thoroughfares, so as not to violate the rights of foot passengers proceeding along either.

The jury found that the car was imperfectly equipped, that the brakeman was not diligent and some of the witnesses said that the car was going at a speed of 20 miles an hour, but there is no specific finding as to this. It is said that in the absence of that finding there is not sufficient evidence to justify the judgment of the court below, but assuming that to be the case, I am of the

opinion that we might on the evidence supply what the jury has omitted as to the speed. The evidence of the witnesses is to the effect that the car ran several lengths beyond the place of the accident before it was stopped. It was about 28-30 ft. long and could, going at 10 miles an hour, be stopped in less than 60 ft.

Assuming that there was some evidence of negligence on the part of the deceased, that negligence would not disentitle him to recover, because the motorman if he had been alert and vigilant, and kept his car in proper control, might have, in my opinion, averted the consequences of the deceased's negligence. I do not, however, wish to enter a formal dissent, because it may reasonably be said that the negligence found by the jury is not conclusively proved to be the proximate cause of the accident. Vide: 14 Gray Mass, 69, 75. 159 Mass, 142-146. 7 Revue Trimestrielle, p. 22, No. 24. N.Y.C. Appeals, 6th Jan. 1909. B.C. Electric v. Loach in P. C. 1914 (8 Western Weekly Reporter, p. 1263).

DUFF, J. I concur in the judgment, allowing the appeal and dismissing the action with costs.

The Toronto Railway Overcrowding Case.

The main points of the judgment of the Judicial Committee of the Imperial Privy Council on the Toronto Ry.'s appeal against a conviction for maintaining a public nuisance by overcrowding its cars, was given in Canadian Railway and Marine World for September, since when the full text of the judgment outlining the argument leading to the setting aside of the judgment of the Appellate Division of the Supreme Court of Ontario and the remitting of the case to the Supreme Court for the granting of an acquittal, has been received. This contains matter of considerable interest to street railways, similarly situated, in their relations with municipalities, and an extended summary of the arguments therefore follows:

The appeal, for which special leave was given, was from a judgment of the Ontario Court of Appeal. The question is whether the appellant was properly found guilty on an indictment for having failed in breach of an alleged legal duty to take reasonable precautions to avoid undue, dangerous and illegal overcrowding of passengers in its cars, whereby the property and comfort of the public, as passengers in these cars, were endangered. The indictment was brought under the Criminal Code, which enacts that the criminal law of England, existing at a certain date, is to be the criminal law of Ontario, except as modified by the code itself, or other statutes. It defines a common nuisance to be an unlawful act or omission to discharge a legal duty, which would endanger the lives, safety, health, property or comfort of the public, or by which the public is obstructed in the exercise or enjoyment of any right common to all of His Majesty's subjects. Such nuisances are divided into two categories. In one, a person is guilty of an indictable offence and liable to one year imprisonment who commits a common nuisance which endangers the life, safety or health of the public, or which occasions injury to an individual. In the other, anyone convicted on indictment, or information, for any common nuisance other than those covered in the previous

item, shall not be deemed to have committed a criminal offence, but all such proceedings or judgments may be taken and had as heretofore to abate or remedy the mischief done by such nuisance to the public right. The effect of this, in the committee's opinion, leaves the indictment as a method of procedure for trying the general question, regarding a common nuisance, but it deprives a conviction of its criminal character. Another section enacts that an appeal from a conviction will lie to the Court of Appeal, and when the judges are unanimous, their decision shall be final, but if a judge dissents, an appeal will lie to the Supreme Court of Canada. Another section enacts that notwithstanding any Royal prerogative, or anything contained in the Supreme Court Act, or in the Interpretation Act, no appeal shall be brought in any criminal case from any judgment or order of any court in Canada to any Court of Appeal or authority by which in the United Kingdom appeals to His Majesty in Council may be heard.

The appellant is a street railway company incorporated by statute, and operating a street railway under an agreement ceived \$500 from the Dominion Naval in the conditions of the agreement that cars are not to be overcrowded, a comfortable number of passengers for each class of car to be determined by the City Engineer and approved by the City Council. It does not appear that the obligation thus imposed on the appellant was invested by the statute with anything further than the contractual character which it originally possessed. The indictment contained a number of counts, some of them for criminal common nuisances, based on a section of the code which deals with the life, safety or health of the public. The only count, however, on which the jury found a verdict of guilty at the trial was one based on danger to the property and comfort of the public, under another section. The appellant demurred to the indictment, but the demurrer being overruled, the appellant pleaded over, and on request, the judge stated a case for the Ontario Ap-

peal Court, which raised, among other questions, whether the demurrer should have been allowed. The Appeal Court found that the appellant was guilty on the finding of the jury, that the demurrer was properly overruled, that there had been no misdirection and that the conviction should be affirmed. The Appeal Court thought that the code intended to leave untouched the common law right to proceed by indictment for a public nuisance, and merely to alter the punishment for what remained a criminal offence, and said that, just as in the case of a nuisance on a public highway, the nuisance was a public one, although it was only those members of the public who had occasion to use the highway who were prejudicially affected, and so, all those members of the public for whom there was room in the cars had the right to travel in them.

The special leave to appeal was granted the company, subject to a reservation of liberty to the respondents to raise the question whether leave should have been granted, having regard to the fact that the matters in dispute formed the subject of a criminal charge. It was arranged that, as a question had been raised as to whether the Dominion statutes had effectually abrogated the prerogative right to hear the appeal, the English and Canadian Attorneys General should be notified, and both of them were represented during the argument. The committee, however, decided that it had become unnecessary for it to express an opinion on the question of prerogative, as the conclusion had been arrived at that this is not a criminal case within the meaning of section 1025 of the Criminal Code, which purports to limit the prerogative, but is in reality a question of civil right which may properly be made the subject of appeal to the King in Council, and as to which the prerogative is not affected. The point turns on sec. 223, which provides that anyone convicted under it is not deemed to have committed a criminal offence, and goes on to preserve the possibility of consequential proceedings, not for the punishment of the person convicted, but for the abatement or remedy of the mischief done. The wrong done, therefore, in this case, is, in the committee's opinion, only a civil wrong.

The foregoing arguments led to the disposition of the appeal, as dealt with in our last issue.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry.—A United States press report, on Sept. 4, stated that the Chicago, Milwaukee & St. Paul Ry. interests have secured control of the B.C.E.R. There is a traffic agreement between the two companies, under which the C.M. & St.P.R. carries freight into Vancouver. B.C.E.R. officials in Vancouver state that there is not even the prospect of negotiations with the C.M. & St.P.R. in the way of a sale of the company's interests.

British Columbia Electric Ry. and allied companies:

	July, 1917.	July, 1916.
Gross earnings	\$438,378	\$411,847
Expenses	380,054	348,647
Net earnings	58,324	63,200

Calgary Municipal Ry.—

Earnings for July	\$50,320.73
Operating expenses	47,126.29
Net earnings	\$3,194.44

Total earnings for July, 1916 \$65,314.40

The decrease in earnings is accounted for by the fact that the military camp at the Sarcee Reserve was open in 1916, the earnings of the Sarcee line in July of that year being \$17,547.31, while in July of this year the earnings on that line were only \$1,543.53. The cost of operation has been reduced to 13.024c a car mile, against 14.264c in July, 1916. This is attributed to the increased use of one-man cars.

Cape Breton Electric Co.:

	July, 1917.	July, 1916.
Gross	\$40,500.71	\$32,858.91
Expenses	25,293.27	19,171.30
Net	15,207.44	13,687.61

Dominion Power & Transmission Co.—

The directors declared a dividend of 1% recently for the three months ended Aug. 31, payable Sept. 15. For the past three years the company has been declaring only half-yearly dividends.

London and Port Stanley Ry.—At a meeting of the London, Ont., Railways Commission, Sept. 18, the chairman, Sir Adam Beck, reported that the net surplus for the year ended June 30, 1917, was \$26,581.48, an increase of \$8,107.34 over the previous year.

Regina Municipal Ry.:

	Aug. 1917	Aug. 1916	8 months to Aug. 31, '17
Revenue	\$16,470.94	\$14,679.13	\$152,021.19
Operating	15,004.77	13,600.87	130,783.08
Fixed charges	8,005.56	8,022.96	64,044.46
Deficit	6,539.39	6,944.70	42,806.35

Toronto Civic Ry.—Receipts for August, \$23,636.74; passengers carried, 1,419,371, against \$19,475.12 receipts and 1,140,466 passengers carried in Aug., 1916.

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

	July, '17	July, '16	Jan.1 to July31, '17	Jan.1 to July31, '16
Gross	\$954,192	\$867,789	\$6,827,776	\$6,202,988
Expenses	527,288	436,735	3,571,702	3,172,495
Net	426,904	431,054	3,246,074	3,030,493

Winnipeg Electric Ry.—Gross earnings for July, \$242,797.07; net after operation, \$31,346.51. There was a deficit for the month, after deducting fixed charges, of \$29,879.20.

	July, '17	July, '16	Jan.1 to July31, '17	Jan.1 to July31, '16
Gross	\$242,797	\$242,688	\$1,916,167	\$1,994,162
Expenses	211,450	168,101	1,488,923	1,239,067
Net	31,347	74,587	467,244	705,095

Electric Railway Projects, Construction, Betterments, Etc.

Brandon Municipal Ry.—The Brandon, Man., City Council is considering the acquiring Lake Percy Park from the Dominion Government as an amusement park. Alderman Curran is chairman of the street railway committee, which is considering this among other probable means of making the municipal railway a paying undertaking. (Sept., pg. 368.)

Calgary Municipal Ry.—In connection with the city's project to secure gravel from Princes Island by building a temporary bridge across the Bow River at Fourth St., and running a street car line over it, an alternative suggestion was made to the city commissioners, Sept. 12, by the president of the Eau Claire Lumber Co., viz., that the bridge to the island be built from the south side of the river, which would enable the railway to haul lumber from the mills to the various steam railways. The City Engineer and Superintendent McAuley were directed to interview the company's officers and report. (Sept., pg. 368.)

The Cape Breton Electric Co. is being asked to extend its line from Charlotte St., via Dorchester, George and Ferry

Streets, to the Dominion Iron and Steel Co.'s plant, Sydney, N.S.

London St. Ry.—A new diamond for the crossing of the G.T.R. at Tecumseh St., London, Ont., is expected to be installed in the autumn. The temporary derailer and trackwork at the crossing is causing some inconvenience to traffic. On Sept. 7, the temporary track gave way, and for several hours passengers had to transfer and walk over the crossing. (Aug., pg. 286.)

Ottawa Electric Ry.—Paving work was started on Sussex St., between George and Rideau Sts., Sept. 30, and pending completion the Rockcliffe and the Preston car services have been re routed. (Aug., pg. 324.)

Port Arthur Civic Ry.—We are officially advised that there is being laid approximately 2,500 track feet of concrete reinforcing liner adjacent to rails on Cumberland St. between Arthur St. and Bay St., Port Arthur, Ont. The work was reported on Sept. 7 to be practically completed. (Sept., pg. 324.)

Sandwich, Windsor and Amherstburg Ry.—The ratepayers of Walkerville, Ont. have granted the company a renewal of its franchise on part of the belt line in the town, giving it the right to build a spur line across Ottawa St. One of the conditions is that all the company's rights in the town will expire in 1922, when the other franchise held in the town and the company's Windsor franchise will expire. (Sept., pg. 364.)

Windsor, Essex & Lake Shore Rapid Ry.—We are officially advised that about 1,500 ft. of track on Arthur St., Windsor, Ont., is to be paved this season, and that it was expected that the work would be started by Sept. 30. C. P. Cooper, Windsor, Ont., is Superintendent. (Mar., pg. 113.)

Electric Railway Notes.

The Three Rivers Traction Co. is going to dispose of two one-man cars which have been replaced in operation by new equipment.

The Edmonton, Alta., City Council has decided to apply to the Alberta Legislature next session for authority to use a zone system of fares.

The Toronto City Works Commissioner has recommended that the civic railway employes be paid the same rates of wages as were granted Toronto Ry. employes recently by arbitration.

Adam Shortt, of Ottawa, who was appointed to investigate transportation conditions as affecting the British Columbia Electric Ry., is expected to report early in October.

The Levis County Ry. has extended its freight service and is now delivering freight to any part of Levis, Que., at 10c per 100 lb., with a minimum charge of 10c for each consignment.

The Regina, Sask., Municipal Ry. is considering the adoption of one-man cars and will raise its fare to a straight 5c if the city council consents. The matter was discussed in a preliminary manner, Sept. 1.

The Calgary, Alta., City Commissioners, on Sept. 17, recommended the council to authorize the expenditure of \$2,537.50 on the purchase of 50 new manganese steel car wheels. The Commissioners had a tender for them from the United States.

The London St. Ry., in order to release men for harvest work, took off five cars recently, and by a little speeding up gave

practically the same service. The move, however, was not popular, and it has been questioned whether the men released did actually go to the harvest fields.

The Calgary, Alta., Board of Trade is advocating the elimination of noises on the city's streets as far as possible, and suggests that among other things the "shrieking" of the whistles and the "clanging" of the bells of the street cars could be modified.

The Ontario Railway and Municipal Board has ordered the Toronto Suburban Ry. to protect several of the crossings along its route between Lambton and Guelph, by means of red lights at night, and positive stops during the day, as well as limiting the speed of cars at all crossings.

During the summer bathing season, from July 3 to Sept. 1, the Toronto Ry. carried free on its cars, from various points in the city, to the free bathing stations under municipal control, 43,827

children, about 3,500 less than in 1916. The free cars were run on 53 days, with an average of 827 children a day.

A Goderich, Ont., report states that it is expected the sale of the old Ontario West Shore Ry.'s property and effects will realize about \$200,000, or 50% of the amount of the bonds guaranteed by the municipalities. The clearing up of the property is being carried out by the Hydro Electric Power Commission of Ontario.

The Moose Jaw, Sask., Electric Ry. is considering one-man car operation. An opinion favorable to its adoption already exists in Regina, but the Saskatchewan law, which prohibits the operation of electric cars with a smaller crew than two men, stands in the way of anything being done. In the event of the matter being considered favorably by the Moose Jaw City Council, an application will be made to amend the law at the next session of the legislature.

Mainly About Electric Railway People.

M. W. Kirkwood, heretofore Superintendent, Galt, Preston & Hespeler St. Ry., and Lake Erie & Northern Ry., Galt, Ont., has been appointed General Manager of both companies, succeeding the late Martin N. Todd in the latter company. Office, Galt, Ont.

M. Milne Todd, heretofore Assistant to Superintendent, Galt, Preston & Hespeler St. Ry., and Lake Erie & Northern Ry., Galt, Ont., has been elected President, Galt, Preston & Hespeler St. Ry., succeeding his father, the late Martin N. Todd, and also Vice President, Lake Erie & Northern Ry.

M. M. Inglis, Manager, Port Arthur, Ont., Public Utilities Commission, which operates the Port Arthur Civic Ry., has also been appointed Secretary, pro tem, in place of G. H. Rapsey, who has resigned to take charge of the Ontario Government's fishing operations in Lake Nepigon. Mr. Rapsey, who is the commission's chairman of finance retains his position as a commissioner. His term of office will expire on Dec. 31, unless he should be re-elected.

A. W. McLimont has been appointed General Manager, Winnipeg Electric Ry., Winnipeg, vice Wilford Phillips, resigned on account of ill health. He was born at Quebec, Que., and has held some important positions in connection with electric railways in the United States. He was for some time electrical engineer under the New York Public Service Commission, and when rehabilitation of the Chicago & Milwaukee Electric Ry. was undertaken a few years ago, he was retained as engineer. He has latterly been engaged on the Michigan United Ry. System.

Lt. Col. G. C. Royce, who went to England, in command of the 255th Battalion, a few months ago, has returned to Toronto, the battalion having been absorbed into the 12th Reserve Battalion, at East Sandling, Kent. He has resumed his duties as General Manager and Secretary-Treasurer, Toronto Suburban Ry., and is devoting much of his attention at present to the operation of the Lambton-Guelph extension, which has been taken over from the construction department, it having been operated heretofore under the charge of the Chief Engineer, H. T. Hazen.

Wilford Phillips, who has retired from the position of General Manager, Winnipeg Electric Ry., on account of ill health,

was born in Prince Edward County, Ont., Oct. 8, 1858, and commenced electric railway work on the Metropolitan Ry., North



The Late Martin N. Todd
President, Galt, Preston & Hespeler St. Ry., and
General Manager, Lake Erie & Northern Ry.

Toronto, Ont., now the Metropolitan Division, Toronto & York Radial Ry., in Mar., 1890, in which service he remained until July, 1892, since when he has been, to Mar., 1893, Engineer and Superintendent, North Toronto Water Works and Electric Light; Mar., 1893, to 1896, Mechanical and Electrical Engineer, Niagara Falls Park & River Ry.; 1896 to June, 1900, Manager, same company; Aug., 1900, to Oct. 1, 1917 General Manager, Winnipeg Electric Ry., Winnipeg.

Martin N. Todd, President, Galt, Preston & Hespeler St. Ry., and General Manager, Lake Erie & Northern Ry., who died somewhat suddenly at his house, Caverhill, Galt, Ont., Aug. 29, aged 59, had been in failing health for two or

three years and spent several months in the south last winter, but after returning continued to attend to business more or less until a few days before his death. He was born in Galt, July 27, 1858, was educated at the Collegiate Institute there under the late Dr. Tassie and in 1875 entered the old Great Western Ry.'s service at Hamilton. On returning to Galt a few years later, he was appointed town ticket agent, G.T.R., and subsequently joined his father, the late Thos. Todd, in the milling, malting and commission business, and assisted him during the promotion and construction of the Galt, Preston, & Hespeler St. Ry. After his father's death in 1899, he was appointed President and General Manager of that line and in April, 1915, he was also appointed General Manager, Lake Erie & Northern Ry., which was then in process of construction and was completed and put in operation under his management. He had a large farm near Galt, where he specialized in raising horned Dorset sheep, and he was an enthusiastic fisherman and small game hunter, and was widely known throughout Canada, especially in transportation circles, enjoying great popularity. His funeral was largely attended, including many prominent transportation officials from Montreal, Toronto, etc.

Earle L. Milliken, heretofore Manager, Cape Breton Electric Co., Sydney, N.S., has been appointed Manager, Houghton County Traction Co. and Houghton County Electric Light Co., Houghton, Mich. He was born at Bideford, Me., May 15, 1888, and was educated at Springfield Technical High School and the University of Maine, whence he graduated in 1908 with the degree of B.S. in electrical engineering. During the summers from 1903 to 1908, he engaged in various work, respectively as follows: General electric work, Westbrook Electric Light & Power Co., Westbrook, Me.; in the brass department, Coffin Valve Co., Mepouset, Me.; in tool making department, Chapman Valve Co., Indian Orchard, Mass.; rodman, Maintenance of Way, Bangor & Aroostook Rd.; in machine shop, Portland Co., Portland, Me., and on inventory work, South Massachusetts Telegraph & Telephone Co. From Sept. to Nov., 1908, he was engaged in Stone & Webster's statistics department, Boston, Mass., and entered the service of the Cape Breton Electric Co., which is managed by Stone & Webster, Nov., 1908, since when he has been, to Oct., 1909, clerk to Manager; Oct., 1909, to Feb., 1911, Superintendent of Distribution and Electrical Engineer; Feb., 1911, to May, 1912, Superintendent, Light and Power and Electrical Engineer; and from May, 1912, to Sept., 1917, Manager. He is a member of the Canadian Electric Railway Association's executive committee, having been elected at the annual meeting in June.

The St. John's (Nfld.) Ry. is applying to the City Council for authority to extend its car lines in several directions. The council appointed a special committee to confer with the company upon the following and any other matters which may arise, viz.: easy and cheap access to all outlying points of the city; cheap fares east and west to Quidi Vidi Lake and Bowring Park; access to cheap sites suitable for erection of workingmen's homes; cheap special rates for workingmen's tickets; reduced rates and further extension of the city lighting system; possible reduction in private lighting if the operation of the street railways proves as successful as anticipated.

Marine Department

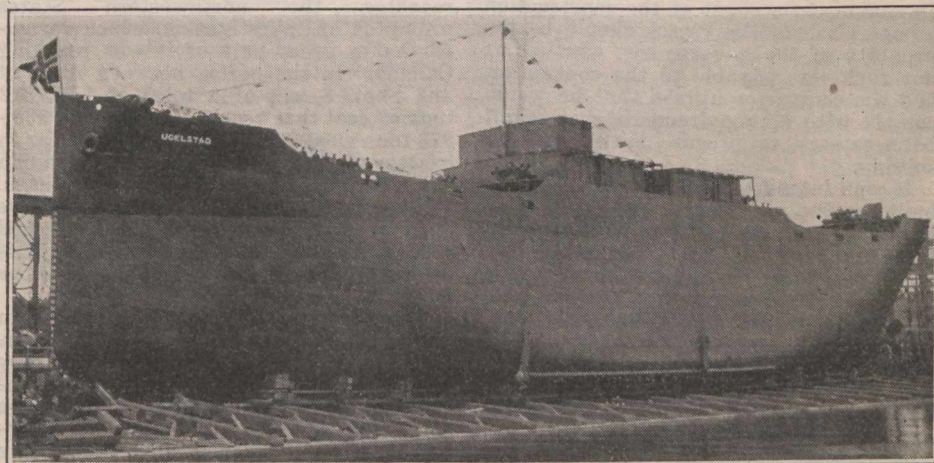
Freight Steamship Building at Port Arthur.

As previously stated in Canadian Railway and Marine World the s.s. Ugelstad was launched at the Port Arthur Shipbuilding Co.'s yards at Port Arthur, Ont., on June 23 and the s.s. War Fish on Aug. 4. Both vessels were ordered by Jas. Playfair, of Midland, Ont., and the War Fish is being taken over for the British Government by the Imperial Munitions Board. Following is a description of the vessels:

The hull is of the following principal dimensions: Length over all, 261 ft.; length between perpendiculars, 251 ft.; breadth moulded, 43½ ft.; depth moulded, 28 ft. 2 in. It is of the single deck type, with poop bridge and forecastle, steel deck house on bridge, and deck and chart room on top of deck houses, with navigat-

alternately on the port and starboard side. The hull is divided by 4 watertight bulkheads, and a watertight sliding door is fitted in the engine room bulkhead, to give access to the tunnel. There is a screen bulkhead between the boiler and engine rooms, with door and portable plate for drawing the condenser tubes.

The engine foundation is built up of plate and angles, with girders under the foundation, to line up with the fore and aft girders on the water bottom. The boiler foundations are of longitudinal plate girders, with large double angles on top edge, and connected to tank top with double angles at bottom. The deck house on the bridge is of steel, 7 ft. high, of plating 12.2, stiffened with 3 x 3 x 6.1 angles, as are also the engine and boiler



The Steamship Ugelstad prior to launching.

ing bridge. The hull is built on the transverse system, with the propelling machinery amidships, with the coal bunkers in wings. There are 2 cargo holds, with 2 hatches to each, one hold extending from the collision bulkhead to the boiler room bulkhead, and the other from the engine room bulkhead to the after peak bulkhead and there is a water bottom, 2 ft. 9 in. deep, from the collision bulkhead to the after peak bulkhead. The construction is for the highest class of British Lloyd's ocean service, and in accordance with the British Board of Trade's requirements. The size of the machinery space has been arranged to approximate 13% of the gross tonnage, thus attaining a reduction of 32% from capacity tonnage.

The hull is built with flat plate keel and bilge keels, the latter extending for about 100 ft, amidships, and are of plate 9 in. deep, connected to the shell with angle bars fitted on short lengths, extending from butt to button shell, the plate being continuous. The hull has a straight stem and elliptic stern. Channel frames are fitted, and extend from tank margin to main deck, and alternately to bridge deck, without hold stringers or 'tween deck beams. Plate floors are fitted on every third frame, except in engine and boiler space and forward, of 3/5s length, which are 24 in. centres. The propeller frame is according to Lloyd's requirements, with rudder post extending to main deck, to which it is attached by angles and deep transom plates. The rudder is of the single plate type, with arms

castings. The flying bridge is built from the roof of the chart house to the ship's sides, and is 4 ft. wide, carried on angle iron framing supported on angle iron stanchions. Steam windlass is 8 x 8 in., fitted with hand attachment and friction brakes. The steam steering engine, 6 x 6 in., is placed in the after end of the engine casings, with the horizontal shaft protruding through the after side, with the bracket and chain drum on deck. Two 22 ft. lifeboats, and one 18 ft. working boat, are to be provided, together with life belts and life buoys as required by law. The bridge deck will provide accommodation for the captain's, and first and second officers' quarters, which, with the accommodation for the crew, are to be complete with every modern convenience. The electrical installation will include one 7½ k.w. generator, with equipment for lighting the whole vessel, the sidelights to be fitted for electric light as well as for oil.

The propelling machinery, also built by Port Arthur Shipbuilding Co., will consist of engines of the single screw, 3 cylinder, 3 crank type, with cylinders 20, 33½, and 55 in. diam., by 40 in. stroke, developing about 1,400 i.h.p. at 80 r.p.m. Steam will be supplied by 2 boilers, each 14 ft. diam. by 12 ft. long, built for natural draught, at 185 lb. pressure. The boilers will be equipped with corrugated furnaces, 42 in. inside diam., with separate combustion chamber for each furnace.

The Port Arthur Shipbuilding Co. is

also building a number of other full canal size, ocean going steamships similar to the Ugelstad and War Fish and has also considerable government work on hand.

Regulations Respecting Desertion from Merchant Vessels.

Whereas a large amount of trouble and delay has been caused by the prevalence of desertion and improper absence among the crews of merchant vessels lying in Canadian ports, whereby the carriage of urgently required munitions, provisions and other essential stores for the British and allied governments has been seriously hindered, and evidence has been produced to the Minister of Naval Service both of the existence of this state of affairs and the gravity of its consequences, in written reports from responsible officers concerned, an order in council has been passed amending par. 28 of the Defence of Canada Order, 1917, to include all ships or vessels carrying government cargo or passengers, and to provide for keeping in custody deserters apprehended. A new paragraph is also added, numbered 28A, providing that no seaman lawfully engaged to serve on board any ship belonging to, or chartered, or requisitioned by the Admiralty, or by the Dominion Government, or upon any ship which has embarked, or is about to embark cargo belonging to any British or allied government, or which has on board any British or allied government passengers, shall be absent from his ship, whether upon duty or otherwise, without a written pass which shall state the period of his authorized absence, signed by the master, mate, purser or first engineer, and any such seaman so being absent without such a pass, or being found without the same in his possession, shall be guilty of an offence against this order and subject to the exercise of the authority conferred by sec. 28, as if absent from his ship or duty without leave.

Arrangements for Moving Northwestern Grain Crop.

Cleveland, Ohio, press dispatch, Sept. 11.—“All uncertainty regarding the ability of the government to move the grain crops from the northwest to lower lake ports was removed today after a meeting here of the Lake Carriers' Association, representatives of the Canadian and United States Grain Commissions, and J. H. Barnes, director of the U.S. Government's Food Commission's grain division. The vessel owners not only assured the government of plenty of tonnage, but accepted a rate that was named by Mr. Barnes. The rate from ports at the head of Lake Superior to Buffalo was fixed at 4½c a bushel for the regular season of navigation, viz., up to midnight, Nov. 30. The rate for December loading and storage will be fixed at a later meeting. The action taken at the meeting means that all vessel owners will have to do their share and that boats that have been operated exclusively in the ore trade will have to carry grain if they are needed. The business will be pooled and handled by the Duluth Grain Chartering Co.”

The Dominion Department of Public works has cancelled its call for tenders for dredging at Port Maitland.

Government Vessels for Pacific-Atlantic Service.

As previously stated in Canadian Railway and Marine World, the Dominion Government some months ago awarded two contracts for the construction of wooden auxiliary power schooners, for operation between Pacific coast ports and Atlantic coast ports, via the Panama Canal, one to Wallace Shipyards, Ltd., North Vancouver, and the other to Lamond & Harrison, Vancouver. When this matter came before the House of Commons, Sept. 6, on a vote for \$600,000 for the building of these vessels, the Minister of Railways stated that the tenders had been accepted and the contracts let, but the contractors had not put up the required bonds and had asked to be released on the ground that the Imperial Munitions Board had taken over six wooden shipyards in British Columbia and had contracted for the whole output of the British Columbia lumber mills for the next nine months. They therefore claimed that it was impossible to obtain the necessary lumber to build these vessels, and that materials and labor had so largely advanced that they could not carry out their tenders, but they offered to build the vessels on a basis of cost, plus 10%. The Minister added that the contracts had been cancelled and no other contracts had been entered into.

Copies of the contracts submitted to Parliament show that the vessels were to cost approximately \$230,000 each. The contracts were entered into by the Minister of Railways, under authorizing orders in council of Nov. 24, 1916, and Jan. 30, 1917, the one with the Wallace Shipyards, Ltd., on Mar. 8, and the other with Lamond & Harrison, June 1. It was the intention of the two contractors in the latter case to turn the contract over to the Harrison & Lamond Shipbuilding Co., formed at Vancouver recently. Each contract provided for the construction and delivery of one wooden auxiliary sailing ship. Delivery on the first named contract was to be made by Feb. 28, 1918, and on the second contract by June 1, 1918. The dimensions of the vessels were to be: Length of keel, 225 ft.; breadth, 44 ft.; depth of hold, 19 ft. In case of failure to deliver the vessels by the dates named, or by dates otherwise authorized, a penalty of \$50 a day was fixed, and \$50 premium was to be paid for each day gained in delivery. It was provided that the contractor was to provide and install all propelling machinery, such machinery to be similar to that installed in vessels built for the Canada West Coast Navigation Co., or of similar Diesel type, or of a type satisfactory to the government's architect, and of equivalent horse power, and to comply with Lloyd's standard for seagoing oil fuel, internal combustion engines.

The price to be paid for each vessel was based on \$48 per ton of 2,240 lb. deadweight cargo capacity, which was to be estimated on the usual allowance for cargo, fuel, fresh water and stores, and \$110,000 was to be paid for machinery and plans. Payments were to be made as follows: Upon the execution of the agreement and furnishing of bond, \$5,000; when square frames set up, \$20,000; when ceiling and deck frames in and deck laid, \$15,000; when ship successfully launched, \$15,000, or such portion thereof as was justified by the value of the work done. In respect of the propelling machinery and various additions and improvements, and necessary additions to

the hull to produce a complete vessel fully equipped and launched and ready for sea the \$110,000 was to be paid as follows: Upon certificate of the architect that satisfactory evidence had been produced to him showing actual amounts paid by the contractor for the propelling machinery and other equipment were to pay from time to time such amounts as had been certified to have been paid, and to have a lien upon such machinery, etc., for such payments, which should not exceed in any event \$90,000. Progress payments upon the cost of installation of the machinery and other equipment were to be made from time to time upon the architect's certificate as to the amount of work done. The balance of the total price, if any, respecting both hull and machinery, was to be paid on delivery of the ship and the acceptance of same. A further clause of the contract provided that any bonus or subsidy that might be granted by British Columbia, or by the Dominion, on account of the construction or operation of the vessel, should be the property of the government, whether or not such was payable to the contractor, and the contractor agreed that he would comply with all requirements that might be necessary to procure such bonus or subsidy.

It was intended that the vessels to be built for the government should be similar in all respects to those built recently for Canada West Coast Navigation Co. In case of those vessels, the construction price was based as follows: Wooden hull, 2,500 tons at \$48, \$120,000. Additional work found necessary after contracts were signed, in order to meet Classification Society's and Canadian Steamboat Inspector's requirements:

Additional anchors, increased thickness of cable, increased equipment of wire rope, towing lines both steel and manilla . . .	\$1,264
Increased thickness of wales and bilge fastenings	3,000
Additional knees at mast beams	3,200
Cost of carbolineum at butts and edges in way of frames	800
Increased height of hatch coamings	400
250 tons salt, cost in place of \$15 a ton . .	5,750
Additional strong backs at all hatches . .	2,000
Increased size of lifeboats, boat davits, and additional lifebuoys, lifesaving equipment, sea anchors, buoyant tanks, etc. . .	1,000
Additional fittings in cabins	1,000
Increased size and weight of windlass to take care of increased size of anchors and chains	365
Additional stiffening in fuel oil tanks . .	4,600
Additional diameter of rigging wire, and rearrangement	500
2 water tanks	2,500
2 fuel tanks	3,000
Increased size of donkey boiler	1,500
Additional piping of fuel and water tanks .	1,650
Changes in style of pumps	350
Day tanks, air tanks and lubricating tanks .	1,000
Changes in design and construction of winches and fittings, all cut gears, 4 winches at \$150	600
Copper expansion bends in steam lines to winches and windlasses	565
	\$35,044

Propelling Machinery, etc.

2 165-h.p. Diesel engines, including air compressor, electric generating, f.o.b. Vancouver, including freight and insurance	\$50,000
Built to comply with Classification Society's standards for seagoing engines.	
2 sets shafting and propellers	5,300
Cast steel stuffing boxes, stern glands, etc., with lignum vitae bushings and fittings in place	850
Installation of propeller shafting struts and intermediate shafting	2,500
Additional diameter of shafting	400
Fitting continuous bronze liner to shafts. .	1,200
2 cast steel propeller struts	700
Installation of engine	5,000
	\$73,950
Total	\$228,994

United States Restriction on Coal Exports.

Washington, D.C., press dispatch, Sept. 14.—“Continued export of coal to Canada in large amounts through Great Lakes ports at the expense of the Northwestern United States will be checked immediately by the Fuel Administration: H. A. Garfield, the Fuel Administrator, has requested the Export Administration Board to permit no more coal to be shipped from the country except under license restrictions, and asked that no licenses be granted unless they are approved by the Fuel Administration. Coal heretofore, along with other U.S. products, has gone to Canada under blanket licenses issued by Collectors of Customs.

“The Fuel Administration,” said Mr. Garfield, “does not intend to cut off Canadian exports, but with this supervision it will be able to equalize the distribution of coal and see that the U.S. northwest and Canada both get their fair shares.” Complaints coming to Mr. Garfield that much of the coal going to the lakes was not reaching the northwestern States prompted an investigation, which revealed that a great part of it was reaching Canada. In the period between Aug. 24 and Sept. 8, out of a total of 1,755,812 tons of coal that reached lake ports, 530,973 tons went into Canada. This is far in excess of the proportion of Canadian shipments by lake boats in normal times. While Canada has been piling a reserve store of coal, the northwest is threatened with a shortage this winter, which, it is declared, may force industries to close down.”

Ottawa press dispatch, Sept. 21.—An arrangement has been made with Dr. Garfield, U.S. Fuel Controller, whereby no general licensing system will be instituted as far as Canadian imports are concerned, but the authorities at Washington will call for periodical statements from U.S. exporters showing the daily movement of coal to Canada. No serious inconvenience is anticipated as the result of these arrangements.

British Standardized Ships.—London, Eng., press dispatch, Sept. 17: “Complete success has attended the trial of the first standardized ship built to the British Government's order. It was of a most exhaustive nature, and experts are unanimous in their praise of the vessel which, with its sisters, will now be taking to the water in quick time, and is destined to play an important part in the campaign against submarines. The standardized ship has been designed to provide a good style of cargo carrier in the shortest possible time, with the minimum expenditure of material. The keel was laid last February, and in less than six months the vessel was fully loaded and ready to go to sea. During the trial trip, Sir Joseph Maclay, the Shipping Controller, made a statement with regard to the new ships, for the construction of which he and his advisers are responsible.”

English Channel Car Ferry Service.—The British Government is credited with the intention of inaugurating a car ferry service across the English Channel in the neighborhood of Dover Strait. I. W. Watts, Windsor, Ont., J. McCarthy, Sandwich, Ont., and G. Plant, London, Ont., are stated to have been engaged by the British Admiralty for this purpose, each of them having had considerable experience in car ferry operation on Lake Michigan.

United States Government Shipbuilding, Commandeering and Purchasing.

The U.S. Shipping Board sent the following statement relative to the shipbuilding programme to the Secretary of the Treasury recently for transmission to Congress:

SHIPBUILDING PROGRAMME.			
	No.	Tonnage.	Estimated cost.
Ships contracted for.	433	1,919,200	\$285,000,000
Ships ready to be contracted for when funds are available	452	2,968,000	455,500,000
Ships under negotiations	237	1,281,400	194,000,000
			\$934,500,000
Miscellaneous vessels	150	1,800,000	300,000,000
Organization and other miscellaneous expenses			35,000,000
Amount authorized by Congress, June 6, 1917, (\$300,000,000 appropriated)			550,000,000
Amount to be authorized for building programme immediately in sight, making no allowance for changes in cost of labor or material			719,500,000
COMMANDEERING PROGRAMME.			
For commandeered ships, amount required			\$515,000,000
For commandeered ships, amount authorized by Congress, June 6, 1917			250,000,000
Balance requiring authorization by Congress			\$265,000,000
PURCHASE PROGRAMME.			
For vessels to be purchased other than under construction or commandeered			\$150,000,000
SUMMARY.			
Total amount, in round figures, to be purchased in addition to amounts already authorized			\$265,000,000
For construction of new vessels			719,500,000
For purchase of new vessels			150,000,000
Grand total			\$1,134,500,000
Amounts desired to be appropriated for remainder of fiscal year 1918:			
For commandeered vessels			\$365,000,000
For building programme			400,000,000
For purchase of vessels			150,000,000
Total			\$915,000,000

Details of the Programme.

Washington, D.C., press dispatch, Sept. 7.—“The U.S. Government will build a great fleet of merchant vessels of from 10,000 to 12,000 tons, capable of attaining a speed of 16 knots or better, in its effort to defeat the German submarines, supply its troops in Europe and carry foodstuffs and munitions to the allies. Contracts already entered into for ships of smaller capacity and lower speed will be carried out, but practically all of the millions which Congress has been asked for, in addition to the original appropriation of \$500,000,000 for construction, will be devoted to the fast ships, unless plans now in the hands of the Shipping Board go awry. Delay in the letting of contracts for fabricating yards to be owned by the Government, it is stated, was caused in part by the fact that, under the new plans, changes would have to be made. It is possible also that additional yards will be constructed in order to turn out the new fleet in the shortest possible time. Not less than 150 cargo ships, aggregating from 1,500,000 to 2,000,000 tons, will be built under the Shipping Board's new plan, and not one of them will make less than 16 knots an hour, while many of them will be capable of 18 knots or more.

“Diesel engines and engines of that type will be used as far as is possible. It is said that a number of the Diesel engines have been brought to this country, and that certain manufacturers have been hard at work for some time developing a standard engine along the same lines. They permit of greater speed and a tremendous saving in fuel. The original contracts were for ships of from 5,000 to

7,000 tons, which would be capable of considerably less than 16 knots an hour, and which, with the development of the German submarines, might well have been helpless unless guarded by large fleets of fast cruisers and destroyers. Careful investigations made by Chairman Edward N. Hurley, of the U.S. Shipping Board, and Secretary Redfield, of the Department of Commerce, however, showed that vessels capable of 16 knots an hour or more were practically free from successful submarine attack, and that none had been sunk since the latest inventions to cloud, by smoke bombs or otherwise, the ‘eye’ of the submarine, had been used. A comprehensive report of this situation was prepared, and, as a result of that report, the new plan of construction was formulated.”

Government Shipbuilding Yards.

Washington, D.C., press dispatch, Sept. 13.—“Contracts for construction of a government-owned shipbuilding yard at Hog Island, Pa., and for the construction therein of 50 fabricated steel merchant vessels, were let by the Emergency Fleet Corporation today to the American International Corporation. These contracts are the first actually signed for the three new plants in which the government will have built a large number of fabricated ships. The Hog Island plant will cost slightly less than \$20,000,000. The other contracts will go to the Submarine Boat Corporation for a plant at Newark, N.J., and to the Merchants' Shipbuilding Co. for one at Chester, Pa. The first of the 50 ships will be completed by the American International Corporation within 10 or 11 months, and the entire number will be finished probably within 15 or 16 months. Long before they are finished, however, the Shipping Board, in all likelihood, will have asked for additional money to build more ships.”

New York press dispatch, Sept. 16.—“The Submarine Boat Corporation announces that it has entered into a contract with the Emergency Fleet Corporation for the immediate construction of 50 steel cargo ships, which will be supplemented later by another contract for 150 more of the same type. The ships will be built in the metropolitan district in a plant which will be among the largest in the country. The first keels will be laid in December, it is said, and the first launching will be in February. Under the corporation's plans, when the plant is in full operation, deliveries will be at the rate of one vessel every two days.”

White Oak for Ship Construction.

Shipyards building wooden ships for the U.S. Government are in the market for extra large white oak construction timber or logs of good quality. The 2,000-ton ships now building each require 2 rudderposts of this species, 14 x 24 in., 40 ft. long. Logs measuring 28 in. in diameter at the small end will cut out such timbers and are worth from \$50 to \$60 per thousand board feet measured in the log. Sticks hewed or sawed to this size will bring \$70 to \$80 per thousand board feet loaded on the cars within 100 to 200 miles of the shipyards. Sticks squared to the size mentioned above contain 1,120 board feet, and would, therefore, bring from \$78 to \$90 each, f.o.b. cars at loading point. Though these prices apply to the south Atlantic and gulf shipyards, it is probable that they would also hold good for those located in the north. The yards are also in need of other white oak structural timbers for

shaft logs, horn timbers, deck and chock rails, and keel shoes. These range in size from 6 x 8 in., x 20 to 30 ft. long, to 14 x 14 in., 18 ft. long. Farmers having white oak trees that will produce timbers of these sizes are urged to take advantage of the demand for such material and get in touch with shipbuilding concerns.

Customs Drawback for Shipbuilding in Canada.

An order in council was passed, Oct. 21, 1916, providing for the granting of a drawback of customs duty on articles used in the construction of vessels built in Canada, dating from Nov. 1, 1916, not exceeding 99% of the customs duty paid. The material concerned is to be used in the original construction in Canada of ships and vessels measuring over 500 tons gross tonnage, and when such ships or vessels are authorized by order in council to be exported for registry outside Canada, or are British registered in Canada, and built to obtain a class in Lloyd's, Bureau Veritas, British Corporation, or other recognized classification satisfactory to the Minister of Customs. Such drawback is in lieu of any drawback based on a specific rate per registered ton, and the claimant must be the builder of the vessel, and the drawback is paid only on ships or vessels which have within themselves the power of independent navigation, either by means of sails, steam or other motive power.

A further order in council was passed, Sept. 11, 1917, amending the order of Oct. 21, 1916, by providing that it shall apply to drawback on imported materials used in the original construction of ships and vessels over 80 tons gross tonnage, built in Canada, on and after Sept. 1, 1917.

The s.s. *Turret Crown*, owned by the Coastwise Steamship and Barge Co., is reported to have been sold to the Clinchfield Navigation Co., of New York, representing the Oriental Navigation Co., Nantes, France. She was built at Sunderland, Eng., in 1895, of steel with double bottom for winter ballast. Her dimensions are, length 253 ft., breadth 44 ft. 4 ins., depth 19 ft. 4 ins.; tonnage, 1827 gross, 1,142 register. She is equipped with triple expansion engines with cylinders 22, 36 and 59 ins. diam. by 39 ins. stroke, 1,100 i.h.p. at 70 r.p.m. and supplied with steam by 2 Scotch boilers 14 by 11 ft. at 180 lbs. She was equipped with new boilers in 1912 by the Western Dry Dock and Shipbuilding Co., and was purchased by the Coastwise Steamship & Barge Co., from Turret Crown Ltd., Toronto, one of the Mackenzie, Mann & Co.'s interests. For a number of years she was operated on the Great Lakes, and latterly was run between British Columbia and Puget Sound ports. She is being taken to New York and thence to Europe, where she will be handed over to her new owners.

Grain Rates for U. S. Lakes Service.—

A Cleveland press dispatch states that J. H. Barnes, director of the U. S. Food Commission's grain division, has named 4½c a bush. as the grain rate from the head of Lake Superior to Buffalo, for the regular season to midnight Nov. 30, and that this has been accepted by vessel owners. The rate for December loading and storage is to be fixed later.

Atlantic and Pacific Ocean Marine.

The s.s. Grampian Range, owned by Furness, Withy & Co., is reported to have been sunk a few weeks ago by a German raider.

The Nippon Yusen Kaisha, it is reported, has announced that a line of steamships will be put in operation shortly between Japan and Vancouver.

The s.s. War Viceroy, built in Japan recently for the British Government, was expected to arrive at Vancouver towards the end of September, where, it is stated, she will load Alberta wheat for Europe by way of the Panama Canal.

Holt & Co. have announced the resumption of sailings of the Blue Funnel Line vessels to Pacific coast ports, the first vessel arriving from the Orient about Nov. 19. These sailings were interrupted for a time owing to the demands of the war.

The schooner Minas Queen, owned by W. S. Job & Co., and registered at Parrsboro, N.S., was reported, Sept. 10, to have been sunk by a German submarine, while en route from a U.S. port to France in ballast. Only one member of the crew was saved. She was built at Parrsboro, N.S., in 1916, and was on her first ocean voyage.

The s.s. Bowlar, which has been anchored at Vancouver for several years, is reported to have been sold, by local owners said to be Japanese, to the French Government for \$800,000. The vessel was originally a British one, and was purchased from British interests by Admiral Dewey at Manila, during the American-Spanish war, and used as a collier. She has been at Vancouver, and as a steamship shewas considered worthless, having been stripped of all fittings. Latterly she has been thoroughly overhauled and repaired, and is still at the Wallace shipyards.

Maritime Provinces and Newfoundland.

The Dominion Department of Public Works received tenders, Sept. 25, for dredging at West St. John, N.B.

The s.s. Keith Cann was launched at Shelburne, N.S., Sept. 18, for Hugh Cann & Sons, Yarmouth. On completion she will be placed on the route between Yarmouth and St. John.

The Newfoundland Government has entered into a contract with E. Barry, Summerside, Bay of Islands, for a steamship service for the Bay of Islands route for a payment of \$200 a week.

The Board of Pilot Commissioners for the pilotage district of Buctouche, N.B., is constituted as follows: M. McLaughlin, F. T. Richard, H. Berthe, H. Irving and W. Robichaud, the last mentioned acting as Secretary-Treasurer.

The Tow Boat Owners' Association of British Columbia is being incorporated under the B. C. Benevolent Societies Act, to further the interests of tug boat owners in the province and to assist in the promotion of commerce in British Columbia. The first directors are to be: C. A. Prowse, Vancouver, President; G. McGregor, Victoria, First Vice President; E. Gilley, New Westminster, Second Vice President; E. J. Coyle, J. Walters, Vancouver, directors, and P. A. Jones, New Westminster, Honorary Secretary-Treasurer. The head office is to be at Vancouver, and the annual meetings are fixed for Aug. 17.

Province of Quebec Marine.

The last of the wrecked Allan Line s.s. Bavarian is to be removed from the beach at Indian Cove, Quebec, where it has been lying for about 12 years. The forward part of the wreck was sold last year, and the stern part has now been sold. The purchaser, in both cases, was J. G. Mayer, Vice President, Dominion Iron & Wrecking Co., Montreal.

The addition to the Quebec Harbor Commissioners' grain elevator on the Louise Embankment, Quebec, will double its capacity, making it available for 2,000,000 bush. There are 62 bins, each 18 ft. diam., and 93 ft. high, and grain will be delivered from the shed to vessels at the rate of about 60,000 bush. an hour. The new portion will be ready for operation in January.

The Dominion Public Works Department will receive tenders to Oct. 12 for the purchase of the Steam tug Montmorency. She was built at Sorel, Que., in 1894 and named Nile. She is screw driven by engine of 22 n.h.p., and her dimensions are, length 71.1 ft., breadth 11.1 ft., depth 4 ft.; tonnage, 28 gross, 19 rregister. The engine is triple expansion of the Robert type, with pipe boiler.

Ontario and the Great Lakes.

The C.P.R. s.s. Prince Charlotte is stated to have been withdrawn from the Gulf service for overhaul and repairs, having stripped a propeller blade, Sept. 16.

The s.s. Saxona, owned by G. A. Tomlinson, Duluth, Minn., which was sunk in collision at Detour in the spring, has been raised.

It is reported from Sarnia that the s.s. Western Star, which was wrecked a few years ago in Georgian Bay, has been raised and taken to Little Current, Manitoulin Island.

The Governor General in council has approved a revised code of bylaws submitted by the Toronto Harbor Commissioners, for the regulation and control of

navigation in Toronto Harbor, and also providing a tariff of wharfage on goods landed and shipped over the wharves.

The Northern Navigation Co.'s steamships Noronic and Waubic, and the s.s. Rochester, chartered from the American Interlake Line, were docked at Sarnia for the winter at the end of September.

The name of the s.s. Byron Whitaker, formerly owned by F. E. Hall & Co., Montreal, and now owned by Steamer Marian W., Ltd., a subsidiary of Canada Shipping Co., Montreal, has been changed to Marian W. She was built at Mount Clemens, Mich., in 1890.

The Northern Navigation Co.'s s.s. Noronic arrived at Sarnia, Sept. 15, completing her last trip for the year, after which she went to Port Huron, where, it is stated, she is to be used during the first few days of October as an hotel for a female convention.

The shipping tonnage handled at Vancouver during August was as follows: Coasting, inward, 236,071; outward, 383,159; ocean, inward, 174,953; outward, 159,221. There weer increases over the figures for Aug., 1916, in each case, except in coastwise tonnage inbound.

The Montreal Transportation Co.'s barge Hiawatha foundered near Gallop Island, Lake Ontario, Sept. 20, during a gale, while loaded with coal, in tow from Oswego, N.Y. for Montreal. The captain of the barge was saved, and six persons, including two women and a child, were drowned.

The Nanaimo Cannery & Packers Co., Nanaimo, B.C., is reported to have purchased five fishing vessels, named Dreadnaught, Esther, Wadena, Wamega and Wauneta, from U.S. owners. It is stated that the sale an dtransfer from the U.S. to Canadian register has been authorized by the U.S. Shipping Board.

The s.s. Midland Prince, owned by Canada Steamship Lines, Ltd., which arrived at Duluth, Minn., Sept. 5, with coal, is said to have been the first Canadian vessel to carry a cargo of coal from Buffalo to Duluth, since the new arrangement respecting the operation of Canadian ves-

Comparative Grain Shipments from the Head of the Lakes.

The following table shows the total grain shipments from Port Arthur and Fort William, Ont., for the last four crop years, classified, and the number of cargoes shipped in Canadian and U.S. bottoms respectively.

	Wheat. Bush.	Oats. Bush.	Barley. Bush.	Flax. Bush.	Sample Mixed Grain. Lbs.	Elevator Screenings. Tons. Lbs.
1913-14—						
788 cargoes in Canadian vessels	64,121,076-43	25,276,164-16	5,942,638-35	2,218,179-14	26,076,624	16,854-1,808
350 cargoes in U.S. vessels	62,105,746-	14,351,323-22	4,031,185-25	9,927,058-05	48,942-1,025
1,138 cargoes	126,226,822-43	39,627,488-04	9,973,824-12	12,145,237-19	26,076,624	65,797- 833
1914-15—						
617 cargoes in Canadian vessels	58,732,476-50	15,505,597-22	1,837,021-32	1,448,747-42	7,292,247	14,321-1,305
95 cargoes in U.S. vessels	18,813,926-40	1,130,202-21	690,854-07	3,035,977-01	17,246-1,750
712 cargoes	77,546,403-30	16,635,800-09	2,527,875-39	4,484,724-43	7,292,247	31,568-1,055
1915-16—						
1,019 cargoes in Canadian vessels	109,516,553-..	42,622,650-33	5,852,179-18	1,033,99-34	12,458,833	6,991-1,885
830 cargoes in U.S. vessels	147,613,154-30	17,171,859-08	3,102,635-44	3,650,649-20	67,233- 258
1,849 cargoes	257,129,687-30	59,794,510-07	8,954,815-14	4,684,648-54	12,458,833	74,225- 143
1916-17—						
683 cargoes in Canadian vessels	76,749,071-10	32,342,495-12	4,000,267-42	1,698,326-04	11,167,307	5,007-1,240
451 cargoes in U.S. vessels	61,824,965-40	15,344,189-30	2,810,565-30	4,659,769-45	9,967,119	20,256- 50
1,134 cargoes	138,574,036-50	47,686,685-08	6,810,833-30	6,358,095-49	21,134,426	25,263-1,290

sels in the U. S. coasting trade on the Great Lakes, came into effect.

The Canada Steamship Lines is reported to have notified the Mayor of Toronto that by an expenditure of \$35,000 it has completed arrangements for handling coal during the winter, that a channel will be kept open in the harbor, and an effort made to bring in 40,000 tons for sale to the public, providing it can be secured.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level for August, as follows: Superior, 602.69; Michigan and Huron, 581.90; St. Clair, 576.62; Erie, 573.57; Ontario, 247.35. Compared with the average August levels for the past ten years, Superior was 0.05 ft. above; Michigan and Huron 1.10 ft. above; Erie 0.95 ft. above, and Ontario 0.75 ft. above.

The Reid Towing & Wrecking Co.'s steam tug James Reid, which foundered in Georgian Bay recently, will remain where she sank during the winter. Some reports state that as she sank in about 225 ft. of water, it is impossible to raise her. She was built at Wilmington, Del., in 1875, and named Protector. She was screw driven by engine of 94 n.h.p., and her dimensions were: Length, 117 ft.; breadth, 23 ft.; depth, 12 ft.; tonnage, 181 gross, 123 register.

A Trenton, Ont., press dispatch, says it is reported that another steamboat will operate out of Rochester another season, making the run to the Thousand Islands through the Bay of Quinte. The last boats to be on the service out of Rochester were the Captain and North King. Neither of these is now in use as a passenger boat. The scarcity of boats, as a result of the war, led to the abandonment of the route at the end of the 1915 season.

The name of the s.s. Stanstead, owned by Steamer Colin W., Ltd., a subsidiary of Canada Shipping Co., Montreal, has been changed to Colin W. This vessel was formerly owned by F. E. Hall & Co., Montreal, and was built at West Bay City, Mich., in 1881, and then named Clyde. She was caught in a storm on Lake Ontario, Sept. 11, and had her rudder damaged, and when making Kingston for repairs, she ran ashore there near the foot of Johnston St.

The Reid Towing & Wrecking Co.'s steam tug S. M. Fischer is reported to have been sold to the French Government and to have left Sarnia for Montreal, where she is to be fitted for ocean service. The price paid is said to be \$265,000. The tug was built at Toledo, Ohio, in 1896, of steel, with spar deck, double bottom for watertight ballast and three watertight bulkheads. She is 140 ft. long, 31 ft. beam and 22 ft. deep, and equipped with triple expansion engines with cylinders 18, 30 and 50 in. diam. by 36 in. stroke, supplied with steam by 2 Scotch boilers, 11½ by 11½ ft., at 170 lbs.

The Farrar Transportation Co. has received \$500 from the Dominion Naval Service Department, for distribution amo Service Department, for distribution among the crew of the s.s. Meaford for sinking a German submarine in the Mediterranean Sea, June 12. The s.s. Meaford has been under charter to the French Government for Mediterranean service for some time. She was en route from Swansea to a Mediterranean port, when she encountered a German submarine near Sicily, and sank her with the third shell. Prior to entering this charter service, the eMaFord had been engaged in the Great Lakes trade for the Farrar Transporta-

tion Co., since 1903, when she was built at Newcastle upon Tyne, Eng.

Little Current, Ont., press dispatch, Sept. 17.—The steel steamer Western Star of Buffalo, sunk in the autumn of 1915, with a cargo of coal, was raised and towed to a sheltered bay yesterday. The vessel lay in 80 ft. of water at the stern. Capt. Alex. Cummings, Superintendent for the Great Lakes Wrecking Company, built a timber cofferdam from the deck of the boat to the surface of the water and then pumped it out. As soon as the ship cleared from the bottom large tugs towed her into good bottom, and as she was raised she was pushed farther ashore to avoid accident. She was valued at \$400,000 and was insured for \$250,000.

It was stated in our August issue that the s.s. Collingwood, owned by the Farrar Transportation Co., Toronto, had carried 7,000 tons of ore between two U.S. ports in July, being the first vessel to run under the revised coasting regulations permitting reciprocal coasting privileges for Canadian and U.S. vessels. By an unfortunate error in "making up" the matter, it appeared under "Atlantic and Pacific Ocean Marine," instead of under "Ontario and the Great Lakes." We are now advised that the cargo contained 8,000 tons, that it was carried between Allones, Wis., and Ashtabula, Ohio, and that the s.s. Collingwood was the first Canadian vessel to carry a cargo of U.S. ore between two U.S. ports.

British Columbia and Pacific Coast.

The Pacific Steamship Co. is reported to have signed an agreement with the Canadian Northern Ry., whereby passengers can book from San Francisco to all points east at the regular transcontinental rates.

The Grand Trunk Pacific Ry. has deposited with the Dominion Public Works Department plan and description of site of wharf and plant it proposes to build in front of water front block G in Prince Rupert harbor.

The Union Steamship Co.'s s.s. Cassiar, which was wrecked at Ingcombe Inlet, at

the end of August, has been taken to the Wallace Shipyards, North Vancouver, for overhaul and repairs. The damage is estimated at \$30,000. Temporary repairs were made at the scene of the casualty by the British Columbia Salvage Co.

The s.s. Coosa, which is being operated by the Pacific Steamship Co., between Seattle, Wash., and British Columbia ports, was formerly the German s.s. Loongmoon, and at the commencement of the war was interned by the United States at Honolulu, and taken over by the U. S. when that country declared war against Germany.

The Union Steamship Co.'s s.s. Cassiar was docked at the Wallace Shipyards, North Vancouver, Sept. 17, for examination after having struck a reef. The bottom of the hull was considerably damaged from stem to stern, the forefoot being crushed, and the keel for about 25 ft. was stove in, damaging the plates for some distance up on either side. The stern was knocked forward about 12 in., and the rudder was broken.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince George left Victoria, Sept. 12, on her 301st trip. Since being built, she has been operated regularly on the route between Seattle, Vancouver, Victoria and Prince Rupert, with the exception of a few weeks when she was under Admiralty orders at the commencement of the war. The s.s. Prince Rupert, a sister vessel, has recently completed her 250th trip, the continuity of her service having been broken by an unfortunate accident in the early part of the year, which necessitated her withdrawal for about three months.

The Grand Trunk Pacific Coast Steamship Co.'s steamships Prince Rupert and Prince George commenced their autumn schedule Sept. 23, the former leaving Victoria and Vancouver on Mondays, and Prince Rupert on Wednesdays, and the latter leaving Victoria and Vancouver on Thursdays and Prince Rupert on Mondays. The s.s. Prince John is operating on alternate Alaskan routes, and the s.s. Prince Albert is operating a freight and passenger service out of Vancouver approximately fortnightly.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during August

ARTICLES	CANADIAN CANAL	U. S. CANAL	TOTAL
Eastbound			
Flour	489,170	476,321	965,491
Wheat	3,689,144	5,160,162	8,849,306
Grain	1,098,395	3,011,899	4,105,294
Copper	2,305	20,519	22,824
Iron ore	1,960,891	8,252,065	10,212,956
Pig iron		2,800	2,800
Lumber	3,081	66,023	69,104
Stone			
General merchandise	11,284	32,111	43,395
Passengers	4,242	3,427	7,669
Westbound			
Flour			
Grain		725	725
Coal, hard	19,350	352,533	371,883
Coal, soft	162,442	2,385,527	2,547,969
Iron ore		1,020	1,020
Manufactured iron	1,758	17,102	18,860
Salt		53,667	53,667
Oil			
Stone			
General merchandise	37,195	141,325	178,521
Passengers	5,356	3,037	8,393
SUMMARY			
Vessel passages	852	2,692	3,544
Registered tonnage	1,766,089	8,074,706	9,840,795
Freight			
—Eastbound	2,158,683	8,682,110	10,840,793
—Westbound	220,745	2,905,570	3,126,315
Total freight	2,379,428	11,587,680	13,967,108

Shipbuilding Activities Throughout Canada.

Steamship Building for British Government.

Cameron-Genoa Shipbuilders, Ltd., has completed the framing of the second of the four wooden steamships being built for the Imperial Munitions Board. The ceiling and planking of the first hull is well under way. It is anticipated that the first vessel will be ready for launching early in December. The company only undertakes the construction of the hulls, and as soon as these are ready they will be taken to a central assembling plant which is to be located at the Ogden Point piers.

J. J. Coughlan & Sons, Vancouver, B.C., expect, it is stated, to launch the second steel steamship to be built on the Pacific Coast for the British Government, early in November. The first one, the s.s. *War Dog*, was built by Wallace Shipyards, Ltd., and has already been described and illustrated. The second will be named *War Champ*.

The **Foundation Co.** has the framing of its first wooden steamship placed and the framing of the second practically so.

The **Three Rivers Shipyards, Ltd.**, which was incorporated under the Dominion Companies Act, Aug. 15, 1917, with authorized capital of \$49,000, and office at Three Rivers, Que., is establishing a shipbuilding yard there. It is said that that city is guaranteeing the company's bonds for \$100,000, taking a mortgage on the plant, and that the bonds will be underwritten by the *Credit Canadien, Inc.*, Montreal. The company is said to have a contract from the Imperial Munitions Board for hulls for two wooden ships, and is also said to be likely to receive further contracts. T. M. Kirkwood, Toronto, is President; J. E. Kirkwood, Treasurer, and T. M. Donnelly, Manager.

Western Canada Shipyards, Ltd., Vancouver, which has an order for six wooden steamships for the Imperial Munitions Board, have completed erecting the frames for the first hull, those for the second and third being well advanced. Night and day shifts are being worked.

The **William Lyall Shipbuilding Co.**, is reported to be making good progress with the construction of the 10 wooden steamships on order for the Imperial Munitions Board. The framing of the first vessel was placed early in September, and the framing of the second was erected during the month. Keels for the second pair were expected to be laid before the end of the month, and considerable of the framing placed.

General Shipbuilding Notes.

The **Annapolis Shipbuilding Co.** launched a tern schooner at Annapolis Royal, N.S., Sept. 1, for Montreal parties. The dimensions are: Length, 145 ft.; beam, 35 ft.; depth, 12.9 ft.; tonnage, 500 gross, 430 register. The company has two other schooners under way.

British Columbia Shipbuilding.—A Vancouver press dispatch, Sept. 15.—British Columbia's shipbuilding programme provides for the construction of some 17,000 gross tons of commercial shipping, to have a total carrying capacity of nearly 185,000 tons. The value of these ships, about 50 in all, is in the neighborhood of \$25,000,000.

H. Elderkin & Co. are reported to have launched the schooner *Adam B. Mackay*,

of 370 tons register, at Port Greville, N.S., Sept. 3, for the *A. B. Mackay Steamship Co.*, Hamilton, Ont.

Foley Bros., Halifax, N.S., have purchased North's shipyard at Hantsport, N.S., and are reorganizing and enlarging the plant. Two vessels are reported to be under construction there.

The **Gardner Co.** have built an auxiliary schooner, named *Bianca*, at Liverpool, N.S., for Bowring Bros., St. John's, Nfld. She is 129 ft. long, 33 ft. beam, and 408 gross tons, and is equipped with a 100 h.p. crude oil burning engine, for a speed of about 6 knots an hour.

Government Shipbuilding in Maritime Provinces.—Sir James Loughheed stated in the Senate, Sept. 5, that the government had under consideration the building of ships in Prince Edward Island, Nova Scotia and New Brunswick, for commercial use or government purposes, but that no contracts had been concluded.

The **International Shipbuilding Co.**, which purchased property recently at Rosebank, N.B., on the bank of the Miramichi River, for the establishment of a wooden shipbuilding plant, is pushing matters ahead, and is reported to be receiving stocks of vessel timbers for early construction.

Leander Graham is building a schooner, *Khaki Lad*, of about 325 tons, at Port Greville, N.S., for J. W. Kirkpatrick and others. She will be launched early in October, and is reported to have been sold to Newfoundland parties.

J. Lewis & Son, East River, Sheet Harbor, N.S., launched a four masted schooner, 215 ft. long over all, 680 tons register, Sept. 1. She is fully equipped with steam winches, and is intended for southern trade. The company has a larger schooner under way.

The **Midland Shipbuilding Co. Ltd.**, has been incorporated under the Dominion Companies Act, with \$1,000,000 capital and office at Midland, Ont., to carry on the business of shipbuilders in all its branches. It is said that it will take over the *Midland Dry Dock Co.*, Ltd.

Port Arthur Shipbuilding Co.—The steam trawlers under construction at the company's yards at Port Arthur, Ont., are progressing rapidly. The second one was launched Sept. 10, and it was anticipated that two more would be launched by Sept. 30 and another two early in October, and then at the rate of about one a week for the balance of the order.

Wallace Shipyards, Ltd., is reported to have leased a site on Granville Island, in False Creek, from the Vancouver Harbor Commissioners, for the construction of a foundry for the supply of castings for its own and other shipbuilding plants.

Wallace Shipyards, Ltd., expected to launch the last of the auxiliary powered schooners built for Canada West Coast Navigation Co., about the end of September. She is to be named *Marie Barnard*. She was built at the no. 2 yards, which have been sold to Wm. Lyall Shipbuilding Co., and as soon as she is launched she is to be moved to the no. 1 yards for completion.

British Shipbuilding in United States.—A press dispatch says that the s.s. *War Banner*, which is being built for British registry, was launched at Chicago, Sept. 16, by the *Chicago Shipbuilding Co.*, for the *Cunard Line*, the approximate cost being \$800,000.

Lake Vessels for Overseas Service.

A Kingston, Ont., press dispatch of Sept. 13, stated that the *Canada Steamship Lines* had sold six steamships, viz., *H. M. Pellatt*, *J. H. Plummer*, *Beaverton*, *A. E. Ames*, *Mapleton* and *Saskatoon*, to the British and Canadian Governments jointly, to replace losses caused by the German submarine campaign. The vessels mentioned are not owned by *Canada Steamship Lines*, but by *Canadian Northern Steamships, Ltd.*, as stated in *Canadian Railway and Marine World* for June. They are operated, for the owners, by *Canada Steamship Lines*, as the *Merchants Mutual Lake Line*. We are officially advised that they have not been sold, and while no further information in regard to them is available, there appears to be little doubt that at least four of them, viz., *A. E. Ames*, *Beaverton*, *H. M. Pellatt*, and *J. H. Plummer*, have been chartered for overseas service for the ensuing winter, if not for the duration of the war. The *H. M. Pellatt* went into dry dock at Kingston early in September to be overhauled and re-painted, and have some slight changes made to fit her for ocean service and the other three will probably be drydocked at early dates. The *Mapleton* and the *Saskatoon* have been in the coal trade this year, running between *Sydney, N.S.*, and *St. John, N.B.*, and between *Sydney* and *Montreal*, most of the time. The *Mapleton* was brought west a little while ago, to carry coal between *Lake Erie* ports and *Montreal*.

Reciprocal Coasting Arrangement with the United States on the Great Lakes.—Some little misunderstanding seems to exist as to the arrangements made between Canada and the U. S. as to the coasting laws appertaining to the Great Lakes. So far as Canada is concerned, the coasting laws have been changed to permit U. S. vessels to engage in the Canadian coasting trade of Canada on the inland waters between *Lake Superior* ports and *Montreal* without penalties for the balance of the season, the change to remain in force so long as similar privileges are in effect granted to Canadian vessels by the U. S. The U. S. regulations were settled by an act of Congress, and the administration there has not the authority to abrogate or suspend such regulations, as the Dominion cabinet has. Accordingly, pending action by Congress, the administration acted, not by suspending the regulations or the law, but by suspending the penalties, and Canadian vessels are therefore free to engage in the trade on this basis, and inspectors and collectors, acting on instructions from Washington, are not interfering.

The **Henderson Transfer and Lighterage Co., Ltd.**, has been incorporated under the Ontario Companies Act, with \$100,000 authorized capital and office at *Fort William*, to carry on a general lightering, towing and wrecking business, and in connection therewith to own and operate steam and other vessels, and to engage in foreign and domestic commerce by water. *R. J. Henderson* and *J. R. Smith*, grain merchants, *Fort William*, are chiefly interested.

Lumbergrass Shipbuilding Co., Ltd.—At an extraordinary general meeting, at *St. John's, Nfld.*, Aug. 27, it was resolved that it having been proved to the shareholders' satisfaction that the company cannot, by reason of its liabilities, continue business, it is advisable to wind up the company voluntarily. *P. J. Shea*, *St. John's, Nfld.*, was appointed liquidator.

Changed Subsidies for Dry Docks.

The following act was passed by the House of Commons Sept. 17.

1. This Act may be cited as The Dry Docks Amendment Act, 1917.

2. Paragraph 1 of section 7 of The Dry Docks Subsidies Act, 1910, as enacted by chapter 20 of the statutes of 1912, is repealed and the following is substituted therefor:—

“(1) Dry docks of the first class for naval and general purposes costing, for the purposes of the subsidy calculation, not more than \$5,000,000 in the case of dry docks specified in sub-paragraph (a), and not more than \$4,000,000 in the case of dry docks specified in sub-paragraph (b) hereunder, being—

“(a) dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollowquoin to head, 1,150 ft., clear width of entrance 125 ft., depth of water over sill at high water ordinary spring tides, 38 ft; and

“(b) floating dry docks of a lifting capacity of at least 25,000 tons, in which vessels can with ease and safety be received and repaired:

Provided, however, that any such dry dock shall not, for the purposes of this act, be deemed to be a dry dock of the first class unless there can be received and repaired therein with ease and safety the largest ships or vessels of the British Navy existing at the time at which the contract is entered into.”

3. Paragraph (a) of subsection 1 of section 8 of the said act (as enacted by chapter 29 of the statutes of 1914, is repealed and the following is substituted therefor:—

“(a) if of the first class, a sum not exceeding 4½% per annum of the cost of the work as fixed and determined under subsection 2 of this section, half yearly during a period not exceeding 35 years from the time the Governor in Council has determined under this act that the work has been completed.

No bonds, debentures, or other securities shall be issued with respect to and as a charge upon any dock until it has been established to the satisfaction of the Minister that not less than \$1,000,000 have been spent on the work and the material upon or for such dock, and that there are no outstanding and unsettled liens, encumbrances or claims upon or in respect of such dock, but thereafter the Minister may permit the issue of bonds, debentures, or other securities, and any subsidy mentioned by this section may, with the approval of the Minister, be assigned to a trustee for the holder of such bonds, debentures, or other securities, and the subsidy shall, in that event, be payable directly to such trustee, but, until the dock has been completed to the satisfaction of the Minister, the total amount of the bonds, debentures, or other securities issued shall not at any time exceed 75% of the amount actually expended for the work and the materials upon or for the dock and in no case shall any bonds, debentures, or other securities, be issued without the consent in writing of the Minister.

Provided, however, that half yearly payments on account of the subsidy at the rate of 4½% per annum on 75% of the cost of all work done and material provided at the time of such payment may be made during the construc-

tion of the said dock and for such period as may be determined by the Governor in Council, not exceeding 35 years from (and including) the first payment thereof, the amount of such cost to be determined by the Chief Engineer of the Department of Public Works, but no such payment on account shall be made until the work done and materials provided shall have cost the sum of at least \$1,000,000. No such payments on account shall be made unless the said chief engineer reports that the work of construction of the dry dock with respect to which the payment is to be made has been done to his satisfaction, and no subsidy shall be paid except payments on account as aforesaid unless the Governor in Council, in the manner prescribed in section 10 of this act, has determined that the work required by the agreement is completed. The total subsidy, including such payments on account during construction shall not, however, in any case, exceed the amount of subsidy hereinbefore authorized.”

4. The provisions of section 3 of this act shall not apply or extend to any agreement heretofore made for the construction of any dry dock.

5. The Dry Docks Amendment Act, 1912, chapter 20, of the statutes of 1912, and The Dry Docks Subsidies Act, 1914, chapter 29 of the statutes of 1914, are repealed.

Canadian Pacific Ocean Services and the War.

The services performed by the vessels owned by Canadian Pacific Ocean Services, Ltd., comprising those of the C.P.R. and Allan Lines, have been of inestimable value to Great Britain, and to the allied countries generally. The tonnage owned has, since the commencement of the war, increased by nearly 30%, and the company employs about 15,000 men. At the outbreak of war, the C.P.R. and Allan Lines had in service 35 vessels with a gross tonnage of 313,000 tons, and a large proportion of these was requisitioned by the Admiralty, including all the larger and newer vessels of both fleets. Two of the Allan Line vessels were commissioned as armed cruisers, and the four “Empresses” of the C.P.R. Pacific fleet were also fitted out as armed cruisers. A number of other vessels of both companies were taken for trooping service, or for transporting supplies and munitions, not only across the Atlantic, but over all waters from the far west to the far east. Notwithstanding this exceptional call on the companies' resources, they were able to carry on a regular passenger and freight business, maintaining an uninterrupted mail service and passenger and freight traffic westbound, as well as carrying eastbound large numbers of troops and stores and munitions of war. From the commencement of the war, the two companies transported 700,000 troops and passengers from and to Canada, the Mediterranean, India, China, Egypt, Gallipoli, Mesopotamia, across the English Channel, and the Pacific Ocean. During the same period the vessels steamed over 1,230,000 miles, and carried eastbound and westbound, over 3,000,000 tons of cargo, munitions, supplies, etc. The combined fleets, though suffering some slight diminution of tonnage by reason of war, have been gradually increased by purchase and building, so that today the number of vessels owned is 40, with a gross tonnage of 411,000 tons,

while orders have been placed for four additional vessels of large tonnage. Services are being maintained in carrying mails for the different parts of the Dominions and the outer European ports of the allied countries.

Mainly About Marine People.

C. O. Weldon has been appointed Superintendent, International Transit Co., Sault Ste. Marie, Ont., succeeding J. Summerhayes, resigned.

W. G. Ross, President, Montreal Harbor Commissioners, was re-elected President of the American Port Authorities at the recent annual meetings at Cleveland.

W. J. Vigers, Steamboat Inspector, Port Arthur, has been appointed Examiner of Masters and Mates, to examine candidates for temporary masters' certificates.

Capt. H. Oldenburg, master of the G.T.R. car ferry Lansdowne, operating on the Detroit River, died at Windsor, Ont., Sept. 4, aged 68. He had been in the service for 45 years.

Mrs. Stevenson, wife of the captain of the Canada Steamship Lines s.s. Rapids Prince, died at Cornwall, Ont., Sept. 21, from being run over by an automobile at Avonmore.

Capt. J. D. Warren, a pioneer sealing captain on the Pacific coast, and one time owner of the s.s. Beaver, said to be the first steamship plying along that coast, died at Victoria, B.C., Sept. 10, aged 80.

John W. Nutt, formerly Manager for British Columbia for the Allan Line Steamship Co., was presented with a purse of money and an address by a number of his transportation associates, at the Transportation Club, Vancouver, B.C., recently, on leaving for Winnipeg.

Jas. W. Crosby, who was in the Halifax Electric Tramway Co.'s service for some 19 years, his last position being General Manager and Purchasing Agent, and who, since the taking over of the company's business by the Nova Scotia Tramways & Power Co., has been in the latter company's service, is leaving it.

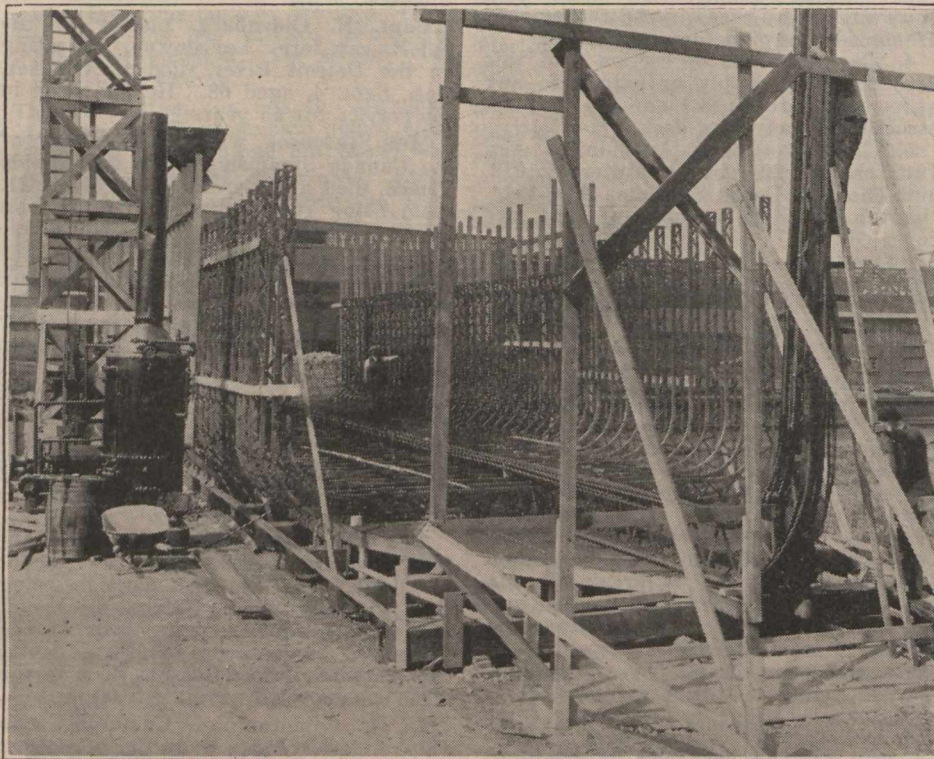
J. O. Cameron, of Cameron-Genoa Shipbuilders, Ltd., and the Cameron Lumber Co., Victoria, B.C., was elected a Vice President of the Association of Pacific Coast Port Authorities, at its annual meeting at Los Angeles, Cal., recently. It is probable that the association will meet in Victoria in 1918.

Alfred Erwin McMaster, who was appointed Secretary and Treasurer, Port Arthur Shipbuilding Co., Port Arthur, Ont., recently, was born at Perth, Ont., Oct. 22, 1885. He entered transportation service in 1902, since when he has been, to May, 1903, clerk in Freight Department, C.P.R., Keewatin, Ont.; May, 1903, to 1905, clerk, C.P.R., Port Arthur, Ont.; 1905 to Aug., 1907, chief clerk, C.P.R., Port Arthur, Ont.; Aug., 1907, to Aug., 1908, agent and chief clerk to Superintendent, Grand Trunk Pacific Ry., Fort William, Ont.; Aug., 1908, to July 15, 1913, agent and General Agent, G.T.R., G.T.P.R. and G.T.P. Coast Steamship Co., Prince Rupert, B.C.; July 15, 1913, to Sept. 30, 1916, Commercial Agent, G.T.P.R., Regina, Sask.; Sept. 30 to Dec. 21, 1916, Division Freight Agent, G.T.P.R., Edmonton, Alta.; on Dec. 21, 1916, he was appointed Assistant Secretary for British Columbia, Canadian Manufacturers' Association, with office at Vancouver.

Reinforced Concrete Vessel Building in Montreal.

The Atlas Concrete Shipbuilding Co. has been organized in Montreal, to build a self propelling, reinforced concrete vessel for demonstrating purposes. The shell of the hull will be: length, 125 ft.; width, 22 ft.; depth, 13 ft. The vessel will be of the single screw type, capable of making about 8 miles an hour, and will first be tried on the lakes, and will perhaps later be used for ocean service. In the accompanying illustration the concrete hoist is shown in place ready to pour concrete as soon as the formwork is completed. The structural steel ribs shown are 5 in. at the top, and 14 in. at the base and are set at 27 in. centre to centre. Before plans were prepared by C. M. Morssen, M.Can.Soc.C.E., and E. Brown, Professor of Applied Mechanics

machinery has been added, but no actual details of the resulting operation of the vessels are available, although it is said that a completed vessel, with reinforced concrete hull, and equipped with propelling machinery, has been, or is very shortly being, placed in operation. The chief building of this type of vessel is taking place in Norway, where the hull of a 200 ton vessel was reported to have been launched Aug. 23. That hull was built bottom upward, and launched in that manner, eventually righting itself in the water. The frame used for the concrete is immediately available for another hull of similar size. Concrete barges, or lighters, have been in use also for several years, on the Manchester Ship Canal, Manchester, Eng., the Welland



Framework, Etc., for Concrete Vessel Building in Montreal.

and Hydraulics at McGill University, tests were made on small ship beams to ascertain the resistance of concrete to the effects of hogging and sagging. The hull is expected to be ready for launching by Oct. 15.

The building of vessel hulls of concrete reinforced with steel, has, to a minor extent, been going on spasmodically since 1849, when a small vessel was built in France, and which is stated to be still in use. About 20 years ago a number of vessels were built of reinforced concrete in Italy, and in 1898 a schooner was built and operated for a few years in the North Atlantic trade. It is said that this vessel was injured after having been driven on the rocks near Cape Charles.

A few years later a concrete barge, 50 ft. long by 13 ft. wide and 3 ft. 4 ins. deep, was built in France, and operated for dredging purposes on the River Lozere, where it has been at work continuously ever since. Until quite recently this type of hull construction was confined solely to barges, lighters, etc., but latterly the construction of larger vessels has been undertaken, and propelling

Canal, Ontario, and on the Chesapeake Bay, U.S., and the Panama Canal.

It is claimed that there is considerable advantage to be gained, by the use of concrete for barge construction and vessels of similar type, and that for machinery propelled vessels for ocean transportation, it is perfectly safe, and of equal, or superior advantage, but some doubts are expressed as to the possible disintegration of the mixture by the action of salt water, and as to the effects of a lack of resiliency in ocean service. After a rather serious collision between the C.P.R. s.s. *Empress of Britain*, and the collier s.s. *Helvetia*, in the St. Lawrence, July 27, 1912, some rather extensive damage to the former vessel was repaired with concrete, and similar material was used for temporarily repairing the Canadian Northern Steamships s.s. *Royal George*, after she grounded at the Isle of Orleans, in the St. Lawrence, Nov. 5, 1912. Both vessels crossed the ocean under these repairs in perfect safety.

A British Columbia press report indicates that there is a possibility of con-

crete vessel construction being undertaken there in the near future, and it is announced that the Torcrete Shipbuilding Co. has been organized in Chicago, to build similar vessels for operation on the Great Lakes.

Lake Sailors' Wages.

Detroit, Mich., press dispatch, Sept. 12.—Following the custom of previous years the United States Lake Carriers Association has adopted a scale of wages effective Oct. 1, for men employed on its members' boats, which represents a substantial increase for each class of workers over scale now in effect. Increases represent an addition of from \$5 to \$13 a month to members of crews ranging from a little more than 4% to more than 21% over summer schedule for different classes of labor. The classes of workers benefitted, their present monthly rates of wages, and monthly rate effective Oct. 1 are as follows:—

Classification.	Present wages.	After Oct. 1.
Boatswain	\$ 85.00	\$ 95.00
Cooks, vessels over 4,000 tons	120.00	125.00
Cooks, vessels under 4,000 tons	105.00	110.00
Second cooks	60.00	65.00
Porters	47.50	57.50
Firemen, oilers, water tenders	72.00	85.00
Wheelsmen, lookout men	72.00	85.00
Ordinary seamen	47.50	57.50
Coal passers	45.00	50.00

While no fixed amount of increase in salaries of licensed officers is announced, the provisions of the wage card in effect last season with reference to bonus payments will again be operative. Under this plan all licensed officers who have served all season on a single vessel or in a single employ, and have laid their vessels up at the end of the season, will receive a full month's extra pay.

U. S. Lake Vessels for Ocean Service.—

With reference to some information in our last issue as to the transfer of some 80 U.S. steamships from the Great Lakes to the Atlantic coast for winter service, it is now reported that the proposals may be abandoned owing to the alleged lack of docking facilities in the St. Lawrence. As most of the vessels which it was intended to transfer, would have to be cut in two to allow of their passage through the Welland Canal, arrangements would have to be made with Canadian yards on the St. Lawrence for refitting them, which, owing to the pressure under which these yards are working, is considered impossible. The U. S. Shipping Board is reported to be endeavoring to make arrangements with Canadian yards, and if this cannot be done, it is stated that only some 20 steam tugs will be taken to the coast.

S.S. Leebro's Work on Pacific Coast.—

Sir Jas. Loughheed stated that the s.s. *Leebro* is owned by the Crescent Shipping Co., Ltd., Victoria, and is under charter to the Marine Department at \$150 a day so long as the Department shall require her services. She has been chartered by the Department from time to time since June 3, 1908, the rate being \$135 a day until Dec. 16, 1911, when the rate was reduced by \$10 a day. From that date until Aug. 1, 1917, she was in service at \$125 a day, since when, owing to the increased cost of coal, supplies and wages, the rate has been \$150 a day. The rates referred to are for the vessel found in supplies of all kinds and cover wages of all necessary officers and crew for navigating the boat, also for fuel and provisions, and the owning company has to keep the vessel in repair.