

Canadian Railway and Marine World

February, 1918.

The Question of the Increase of Freight and Passenger Rates Before the Board of Railway Commissioners and the Dominion Government.

Canadian Railway and Marine World for January contained a summary of the judgment given by Sir Henry Drayton, Chief Commissioner, on Dec. 26, and concurred in by four other members of the board, authorizing certain increases in freight and passenger rates on steam railways. General order 213, to put the judgment into effect, was issued Dec. 26, as follows:

Re applications of Canadian Northern, Toronto, Hamilton & Buffalo, Grand Trunk, Grand Trunk Pacific, Canadian Pacific, New York Central, Kettle Valley, and Great Northern Railway companies, and the Michigan Central and Pere Marquette Railroad companies, on behalf of themselves and other railway companies operating in Canada, subject to the Board's jurisdiction, for a recommendation to the Governor in council, under the War Measures Act, Statutes of Canada, 1914 (second sessions), chap 2, permitting all such railway companies to make a general advance in their tariffs of tolls of 15% on all class and commodity freight rates, except coal, and on all passenger fares, and a specific increase of 15c a ton on coal. Upon hearing the matter at Victoria, Vancouver, Nelson, Calgary, Edmonton, Saskatoon, Regina, Winnipeg, Fort William, Toronto, and Montreal, on June 5, 6, 16, 18, 19, 20, 21, 22, 25, 12, and 20, 1917, respectively in the presence of counsel for and representatives of the Canadian Pacific, Grand Trunk, Grand Trunk Pacific, Canadian Northern, and New York Central Railway companies, the Michigan Central Co., the boards of trade of Vancouver, Nelson, Calgary, Edmonton, Saskatoon, Regina, Winnipeg, Toronto, Montreal, and Kitchener, the Canadian Manufacturers' Association, Kitchener Manufacturers' Association, British Columbia Lumber & Shingle Manufacturers, Rat Portage Lumber Co., The Adolph Lumber Co., Retail Coal Dealers, Retail Merchants' Association of Canada (Manitoba Branch), Canadian Credit Men's Association, Winnipeg Implement Association, Stone Dealers' Association, St. Catharines Fruit Growers' Association, Willow Point District Fruit Growers' Association, Kootenay Fruit Growers' Association, United Farmers of Ontario, Saskatchewan Grain Growers' Association, Dominion Livestock Record Board, Western Livestock Association, Canadian Council of Agriculture, Department of Public Highways for Ontario, the Council of Trail, City of Winnipeg, Government of Manitoba, Associated Boards of Trade of Eastern British Columbia, Dominion Cannery, and Price Bros., the evidence adduced, and what was alleged; and upon reading the written submissions filed, judgment, dated Dec. 26, 1917, was delivered by the Chief Commissioner and concurred in by the other members of the Board, a certified copy of the said judgment being attached hereto marked "A":

It is ordered that, subject to the provisions of the Crowsnest Pass agreement and to the provisions of the said judgment, the standard tariffs of maximum mileage tolls approved by the board to

be charged between stations on the individual steam railway systems subject to its jurisdiction, may, by new tariffs to be submitted for the board's approval, and publication in The Canada Gazette, as required by the Railway Act, secs. 327 and 331, and following such approval and publication made effective not earlier than Feb. 1, 1918, be increased as follows, viz.:

Standard passenger tariffs applying between stations on railways east of and including Thornton, Alta., and east of and between Edmonton and Athabasca and the Canadian Pacific Ry. lines between Edmonton and Macleod, through Calgary, where the existing standard toll is less than 3½c a mile, by 15%, subject to a maximum toll of 3 45/100c a mile.

Standard freight tariffs in Alberta, west of and including Canmore and Edson, and in British Columbia, excepting between ports of call on the Arrow, Slokan, Kootenay and Okanagan Lakes and the Columbia River, also the Edmonton, Dunvegan & British Columbia Ry. standard freight tariff, by 10%.

Standard freight tariffs of railways east of and including Crowsnest, B.C.; Canmore, Nordegg, and Edson, Alta., also those applying between ports of call on the Arrow, Slokan, Kootenay, and Okanagan Lakes and the Columbia River, by 15%.

And it is further ordered that, in the interest of uniformity, the only fractional rate (if used) in the said standard freight tariffs be the half-cent, to be accounted the equivalent, inclusively, of twenty-five hundredths to seventy-four hundredths of a cent.

Appeals from the Board's Judgment, and Extension of Time on Grain Rates.

On Jan. 10 several applications were made to the Board of Railway Commissioners in connection with its judgment of Dec. 26. F. H. Chrysler, K.C., Ottawa, on behalf of the Manitoba Government and J. H. Ashdown, a Winnipeg shipper, obtained leave to appeal to the Supreme Court of Canada on questions of law arising out of the agreement between the Manitoba Government and the Canadian Northern Ry.

F. H. Phippen, K.C., General Counsel, Canadian Northern, obtained leave to appeal to the Supreme Court against the board's finding in connection with the Crowsnest agreement.

In granting leave for these appeals the board decided that the going into effect of the new tariffs should not be affected thereby.

Mr. Fowler, for the North West Grain Dealers Association, asked that the advanced rates on grain be not put into effect until June 1.

C. C. Baker, for the Winnipeg Wholesale Lumbermen's Committee, asked for delay in putting the new rates on lumber in force.

The Chief Commissioner, on Jan. 15, gave the following judgement, which was concurred in by the Assistant Chief Commissioner, the Deputy Chief Commission-

er, and Commissioners McLean and Good-
eve.

"As a result of protests which were made by live stock shippers associations, lumber shippers' associations, and grain shippers' associations, as well as the application of the Manitoba Government for leave to appeal from the judgment herein, a sitting of the Board was held at Ottawa on Jan. 10, 1918, to consider these protests. It was determined at the sitting to give leave to the Manitoba Government to appeal on the questions of law on which that government desired to appeal to the Supreme Court of Canada. The other protests referred to were not disposed of. The matter that the board considered in connection with these protests was the effective date which should be given to the board's judgment. No appearance was made by any live stock shippers' association, and no representations were, therefore, made on behalf of their interests. Dr. Magill and Frank Fowler appeared for the grain interests and Messrs. Kelly and Bacon for the lumbermen.

"I first deal with the lumber situation. At the hearing it was asked that the effective date should be postponed until April 1 next. Other representations have been made in writing, asking that the effective date of the tariffs should be made Mar. 1, Mar. 15, and April 1. There is no doubt that the desire of the trade to escape the higher rates is general.

"The application in this case was lodged in April, 1917. Sittings of the board, at which the application for an increase of rates was heard, were held as far back as June 5, 1917, and the lumber interests were represented at these hearings. As far back as June 6 last, Mr. Mackin, Chairman of the British Columbia Lumber & Shingle Manufacturers' Association, said: 'We notice one of the railways has stated that it would like to have an emergency declared, and this rate made effective within 30 days. What would be our position with a great deal of business on our books at present sold on the basis of the old rate? Is it not reasonable we should be given sufficient time? We think 30 days is not enough within which to clean up that business.'

"He was asked the question: 'Are your contracts made in that day? In view of the present situation, the changed conditions, are you not making most of your contracts subject to that?'

"His reply was: 'We have for the last ten days been doing that. But most of the lumber is sold on the conditions I have named above.'

"Alex. Wood appeared at the same sitting for the Rat Portage Lumber Co. He thought that three months would be the least time within which orders filed could be got out. Mr. Adolph, of the Adolph Lumber Company, at the sitting held on June 16 in Nelson, B.C., showed according to his quotations, that he had 2,000 orders which would have to be delivered at the present rates, and that he had no right of cancellation. He also stated that he had to deliver his lumber within 30 days if

he could, but that under present conditions it would take two months to deliver it.

"On cross-examination by Mr. Peters on behalf of the railway companies, the record shows—

"MR. PETERS: Have you any lumber contracts taken which you accepted on condition that the rates remain the same as at present? Haven't you got orders now booked where you are protected in case of advance in freight rates?"

"MR. ADOLPH: Yes, as soon as we understood that there was an application."

"MR. PETERS: You did not mention that. I thought you were going to mention it. How long have you had orders like that?"

"MR. ADOLPH: Probably three weeks."

"MR. PETERS: Not longer than that?"

"MR. ADOLPH: I do not think so, and we have not a great many taken under those conditions."

"MR. PETERS: They are all taken that way now?"

"MR. ADOLPH: A man would be a very poor business man to take them any other way."

"What may be said of lumber may be said of every other commodity handled by the railways. The fullest publicity has been given the railways' application for increased rates. The shippers have had notice of it for upwards of eight months. They have certainly had as much notice as they would have had if the railway companies had gone to the unnecessary expense of filing every tariff before the question was considered by the board. Speaking generally, they have been in a position to protect themselves by taking orders at the point of production, subject to the cost of railway haul, whatever that might be. The only notice under the act that the railway companies are obliged to give is 30 days. Shippers, in the present instance, have had notice, as already stated, of over eight months. Doubtless there has always to be more or less inconvenience and perhaps loss suffered every time a rate advance is made, but this trouble is caused just as much by other advances in any necessity whether it be supplies or labor. With the notice that the shippers have had in this instance, this inconvenience should have been reduced to an irreducible minimum if the ordinary precaution, as defined by Mr. Adolph himself, had been adopted. As it is now, there will still be delay before the increases are put in. The whole of the railway demands have not been given effect to. Instead of a blanket rate increase, effect has been given to the position taken by the lumber interests and specific advances are made, resulting in the necessity of having new tariffs provided. In all probability, this will take some time, and until the appropriate tariff is provided the judgment of course cannot be carried into effect. The circumstances and publicity of the application are such that no application for a stay of the judgment ought to be granted.

"This disposes of all requests for suspension of the judgment, except in so far as the movement of wheat is concerned. The position here is entirely different. I would give effect to Mr. Fowler's application. Wheat buyers and country elevators are not permitted to carry on business in the ordinary course, in so far as wheat is concerned. They are compelled by the Board of Grain Supervisors for Canada to purchase wheat at a specific price. They are also compelled by the same board to sell wheat at a specific price. Mr. Fowler's figures, which were not disputed by the railways, show that the Board of Grain Supervisors has held these grain buyers down to a price which will certainly permit of no excessive or unreasonable profit, but will possibly result in some loss, certainly in loss having regard to the activities of the buyers, in so far as wheat itself is concerned.

"In view of the artificial position, therefore, of wheat, brought about by legislation doubtless necessary in view of war conditions, and in view of the position in which wheat purchasers have been placed, I am of opinion that the increases allowed for the carriage of wheat ought not now to be made effective. I would postpone the effective date of rate increases for the transportation of this commodity until June 1 next. This will enable all wheat purchased at the old rate and subject to the old conditions to be hauled to Fort William before the new rates take effect.

"The like conditions do not apply to coarse grains, nor indeed to any grain other than wheat. In my opinion, the effective date of the judgment ought not to be postponed, having regard to these commodities. The board's judgment was issued on Dec. 26, 1917. It was then made public, and the parties to the issue were advised as to the board's action. The judgment was given the fullest publicity by the press. Under the Railway Act, tariffs may be filed by the railway companies of their own motion, or may be directed by the board; and the board in directing tariffs to be filed may designate the date at which any tariff will come into force. In view of all the circumstances, railway companies ought to file the necessary schedules and tariffs to take effect not earlier than Feb. 1, 1918."

The board passed general order 212, Jan. 15. After reciting the applications by the railways, the hearings, written submissions in it referred to the judgments given by the Chief Commissioner on Dec. 26, 1917, and Jan. 15, 1918, and to general order 213, Dec. 26, 1917, it provided as follows: It is ordered that, subject to the provisions of the Crownest Pass agreement and the judgment of Dec. 26, 1917, which is hereby made part of this order, the special freight tariffs issued under the authority of the judgment, except those applying on wheat, in carloads, to Port Arthur and Fort William, be published and filed at least five days previous to the date on which they are to become effective, which date shall not be earlier than Feb. 1, 1918; and it is further ordered that the rates authorized by the judgment to be charged on wheat, in carloads, to Port Arthur and Fort William only, may be made effective not earlier than June 1, 1918.

Approval of Freight Tariffs.

The Board of Railway Commissioners passed general order 215, Jan. 17, as follows: Re application of the undermentioned railway companies for approval of their standard freight tariffs of maximum mileage tolls. The said tariffs having been filed on the basis permitted by the Board in general order 213, Dec. 26, 1917, it is ordered that the following tariffs be approved; their rate scales to be published in at least two consecutive weekly issues of The Canada Gazette, preceded by the following notice: "The undermentioned standard freight tariffs having been filed for the approval of the Board of Railway Commissioners for Canada, and being found by the board to be in accordance with its general order, 213, and having been approved by general order 215, Jan. 17, 1918, the rate scales thereof are hereby published as required by sec. 327 of the Railway Act."

Algoma Central & Hudson Bay, C.R.C. 441; Algoma Eastern, C.R.C. 195; Atlantic, Quebec & Western, C.R.C. 20; Boston & Maine, C.R.C. 1842; Canadian Northern, C.R.C. W-1052, E-1007; Canadian Pacific, C.R.C. W-2300, C.R.C. E-3379; Central Vermont, C.R.C. 1204; Dominion Atlan-

tic, C.R.C. 552; Edmonton, Dunvegan & British Columbia, C.R.C. 65; Esquimalt & Nanaimo, C.R.C. 371; Glengarry & Stormont, C.R.C. 80; Grand Trunk, C.R.C. E-3735; Grand Trunk Pacific, C.R.C. 244; Manitoba Great Northern, C.R.C. 1352; Brandon, Saskatchewan & Hudson Bay, C.R.C. 1353; Crows Nest Southern, C.R.C. 1354; New Westminster Southern, Nelson & Fort Sheppard, Vancouver, Victoria & Eastern Ry. and Navigation Co., C.R.C. 1355; Red Mountain, Kettle Valley, Victoria & Sidney Railway, C.R.C. V-50; Halifax & South Western, C.R.C. F-51; Kettle Valley, C.R.C. 130; Maine Central Railroad, Supplement 2 to C.R.C. C-1184; Michigan Central, C.R.C. 2735; Napierville Junction, C.R.C. 191; New York Central, C.R.C. 1225, C.R.C. 1226; Pere Marquette, C.R.C. 2144; Quebec, Montreal & Southern, C.R.C. 640; Quebec Oriental, C.R.C. 29; Temiscouata, C.R.C. 300; Thousand Islands, C.R.C. 332; Toronto, Hamilton & Buffalo Railway, C.R.C. 1192.

On Jan. 24 the Board passed general order 215a, approving the following freight tariffs:—Moncton & Boutouche Ry., C.R.C. 29; Quebec Ry., Light & Power Co., C.R.C. 103.

Approval of Passenger Tariffs.

The board passed general order 214, Jan. 10, as follows: Re application of the undermentioned railway companies for approval of their standard passenger tariffs of maximum mileage tolls. Standard passenger tariffs having been filed on the basis permitted by the board in general order 213, Dec. 26, 1917. It is ordered that the following standard tariffs of maximum mileage tolls for the carriage of passengers be approved; the said tariffs, together with a reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

Canadian Northern Ry., C.R.C. W1492.
Canadian Pacific Ry., C.R.C. E1064.
Central Vermont Ry., C.R.C. 502.
Dominion Atlantic Ry., C.R.C. 404.
Grand Trunk Ry., C.R.C. no. E-2669.
Grand Trunk Pacific Ry., C.R.C. 660.
Glengarry & Stormont Ry., C.R.C. 2.
Halifax & South Western Ry., C.R.C. no. P-77.
Michigan Central Ry., C.R.C. 2441.
Napierville Junction Ry., C.R.C. 92.
New York Central Rd., C.R.C. no. NYC-191.
Pere Marquette Rd., C.R.C. 580.
Quebec, Montreal & Southern Ry., C.R.C. 262.
Toronto, Hamilton & Buffalo Ry., C.R.C. 1209.

The board passed general order 214a, Jan. 17, approving of the following additional standard passenger tariffs of maximum mileage tolls: Great Northern, C.R.C. 1161; Maine Central, C.R.C. 214; Temiscouata, C.R.C. 66; Wabash, C.R.C. 996. On Jan. 24 the Board passed general order 214b similarly approving the following passenger tariffs: Boston and Maine Rd., C.R.C. 305; and Moncton & Boutouche Ry., C.R.C. 27.

The standard passenger tariffs referred to above provide for a first class rate of 3.45 cents a mile, instead of 3c as heretofore. The new rates also apply to and from Canadian border points and through fares to United States destinations have been advanced accordingly on the Canadian portion of the fares, so as to protect Canadian border points.

The Dominion Government on Appeal Suspends New Rates from going Into Operation.

On Jan. 24, members of the Dominion Government heard at Ottawa, the Manitoba, Saskatchewan and Alberta Government's appeal against the Board of Railway Commissioners' decision authorizing an increase of freight and passenger rates, the argument being presented by H. J. Symington, K.C., of Winnipeg, in an address occupying several hours. At the resumption of the hearing in the af-

ternoon, Sir Robert Borden announced that, in view of the many pressing matters requiring the government's immediate attention, and the probability that considerably more time would be required for hearing arguments, it had been decided to adjourn the further consideration of the matter until March 1. The governments of the three prairie provinces would be given until Feb. 8 to submit their arguments in writing, the railway

companies to be given until Feb. 18 to reply, and to justify the increases ordered, and the prairie provinces governments' would then be given until Feb. 28 to submit further arguments in rebuttal. The question of the leave granted to appeal to the Supreme Court on points of law was discussed, Mr. Symington saying that he could not get ready for an early hearing, as well as preparing the argument to be submitted to the Dominion

Government. Counsel for the Canadian Pacific and Canadian Northern Railways objected to any postponement of the appeals to the Supreme Court, and Sir Robert Borden said the matter would be dealt with by the acting Attorney General, Hon. A. L. Sifton. An order in council was passed subsequently, suspending the going into effect of the increases in freight and passenger rates ordered by the Board, until Mar. 15.

The Board of Railway Commissioners' Rate Judgment of Dec. 26, 1917.

The judgment given by the Chief Commissioner on Dec. 26 occupies 76 foolscap pages of typewritten matter and its conclusions were summarized in Canadian Railway and Marine World for December. Fuller particulars of it are now given as follows: After stating that the first application was filed by the Canadian Northern, on its own behalf and for all other railways operating in Canada, and that very similar applications were afterwards filed by the Canadian Pacific, Grand Trunk, Grand Trunk Pacific, Great Northern, Kettle Valley, Michigan Central, New York Central, and Toronto, Hamilton & Buffalo Railways, the judgment quoted the Canadian Northern's application as follows:

"Nothing is more essential to the welfare of Canada, whether considered in its own interests or as a part of the Empire, than that the railways operating within its borders should be in a position to respond immediately and effectively to the fullest demands made upon them, either by the general commerce of the country or in connection with the defence of the realm. Every industry, whether engaged in war preparation or in the manufacture of commercial commodities, and every individual in Canada is affected, either directly or indirectly, by the efficiency or inefficiency of transportation facilities, and while at present, owing to scarcity of skilled labor and other causes due to the war, it may not be possible to maintain the transportation service in a condition of highest efficiency, it is an imperative duty on the part of every one to see that the service is adequately sustained.

"The applicants claim that under the present revenues and rates applicable to their enterprises it is impossible to adequately sustain their service, to make needed betterments, or to meet the enormous decreases in net operating income attributable to the very substantial increased cost of fuel coal, materials, supplies, equipment of all kinds and wages entering into the maintenance and operation of their railways. The applicants submit herewith a summarized statement showing that upon the Canadian Northern system alone the increase cost to it of fuel coal, materials and equipment for the ensuing year as compared with the prices in the year just closed, and prepared on the assumed basis of the same quantity of business and the same volume of traffic in the two respective years will amount to over \$5,000,000; that these increases are attributable to the horizontal advance in the prices of coal fuel and other commodities purchased by the applicants in the United States and Canada as required, and are also in part attributable to increased duties, war taxes, and increased transportation costs of connecting carriers, both lake and rail, on imported materials. Since the rates of the railway companies are absolutely fixed under the Railway Act, the applicants are powerless to increase their revenue, to

equalize or even to approach equalization of this increased cost in fuel coal and other commodities, and they are faced with a huge deficit in net operating income unless immediate relief is granted.

"Substantial increases in both freight and passenger rates are therefore imperatively necessary, and the emergency requires that the relief granted should be made in the most expeditious manner and with the least possible delay. If advances in rates be proposed and filed with the board in compliance with its present rules governing the publication of tariffs, a long delay must necessarily ensue before such tariff publication can be prepared and made effective, and for these reasons it is deemed expedient that any advances permitted should be made by virtue of the War Measures Act and that the board upon the passage of any order in council as may be recommended by the board should permit the publication of flat percentage advances to existing tariffs by supplementary tariffs filed with the board and that such supplementary tariffs should be published and made effective at the earliest possible moment."

Public hearings of the applications were held at various points from Montreal to Victoria, B.C., from June 5 to 25, 1917, and several pages of the judgment are devoted to submissions by representatives of the Manitoba Government, various boards of trade, the Canadian Manufacturers' Association, and a number of business and farmers' organizations. Mr. Pitblado, who appeared for the Manitoba Government, challenged the board's jurisdiction to make a recommendation to the Governor in council under the War Measures Act. He said: "It is beside your powers for the railway companies to ask you to recommend to the Governor in council what they should do under the War Measures Act, and I submit that the responsibility and power and control is in the Governor in council, and that the railway companies have no right to ask you to do anything."

Mr. Pitblado also submitted that the railways in their application were attempting to override agreements. The first agreement referred to was the Crownsnest Pass agreement, made by the Canadian Pacific with the Dominion Government which provided that in consideration of \$11,000 a mile paid to the Canadian Pacific, not exceeding in the whole \$3,637,000, the rates should be reduced on a large number of commodities.

The other agreement referred to by Mr. Pitblado is the Canadian Northern Railway's agreement with the Manitoba Government, of 1901. Under that agreement, in consideration of guaranteeing the railway company's bonds and giving them a lease of the Northern Pacific and Manitoba Ry. a reduced rate schedule was agreed to by the Canadian Northern.

The Chief Commissioner upheld Mr. Pitblado's objection that the board has not jurisdiction to advise the Governor

in Council as to what action the Dominion Government ought to take under the War Measures Act. In regard to Mr. Pitblado's argument as to the Crownsnest Pass agreement and the Manitoba agreement, the Chief Commissioner quoted the principal provisions of the act under which C.P.R. rates were reduced upon certain articles, from Fort William and all points east of it on the C.P.R., to all points west of Fort William on the C.P.R., and said in part:

"There is no doubt that there is authority for the proposition that the passage of an act giving a new commission, by it formed, full jurisdiction to fix just and reasonable freight and passenger rates and fares, automatically repealed previous maximum rate laws—the basis supporting such proposition, of course, being that the object of the legislature is plainly declared, viz., the fixing of just and reasonable freight and passenger rates, having proper regard, not only to the question of the reasonableness and fairness of the rate itself, but also to the principle of equality as between different districts and shippers, which would be defeated by the continuance of a special act giving special rights to any particular district of the country, or creating rates, which by change of circumstances and conditions could not be described as just or reasonable.

"I am of the opinion, however, that this principle cannot be applied in the present instance. Sec. 3 of the Railway Act specifically provides that, unless expressly provided in the act to the contrary, wherever the provisions of the Railway Act, and of any special act passed by the Parliament of Canada, relate to the same subject matter, the provisions of the special act shall, in so far as it is necessary to give effect to such special act, be taken to override the provisions of the Railway Act. A specific reduction worked by the special act, therefore, limits the board's general jurisdiction, having regard to rates. In my view, no matter how great the shortage may be in railway revenue, the board cannot advance these Canadian Pacific rates, beyond the reduction secured under the special act. Owing to the manner in which our railways are constructed and the territories occupied by them, no useful object whatever would be served by increasing the rates on other lines, as it would simply mean that they would be carrying no business at the higher rate when the lower was available to the public on the Canadian Pacific rails.

"The situation in connection with the Manitoba agreement is entirely different. There, the act is of a provincial legislature, which does not bind the board. In the first instance, the Canadian Northern is a Dominion corporation. In the second instance, assuming that any of the component railways, which are now combined in the Canadian Northern system, were provincial undertakings, the rule obtain-

ing as to special acts passed by the Dominion Parliament, is entirely reversed in the case of all acts of provincial legislatures. Sec. 6 of the Railway Act provides that where any railway, the construction or operation of which is authorized by a special act passed by the legislature of any province, is declared by the Parliament of Canada to be a work for the general advantage of Canada, the Railway Act shall apply to such railway and to the company constructing or operating the same, to the exclusion of such of the provisions of the special act as are inconsistent with the Railway Act."

"The whole tariff situation and railway subject is surrounded with much difficulty, but some things are at least clear. Among them, it is clearly the board's duty to allow fair and just rates to carriers for the service they perform. It is also clear that the board can neither order nor enforce rates which are unremunerative to the carriers without infringing the principle of the Railway Act by denying carriers a fair and just rate. No enforced unremunerative rate can be said to be just to the carriers. The question is one directly affecting shippers and consignees on the one hand, and carriers on the other; but, in arriving at a solution of what a fair rate for the transportation of coal by the Grand Trunk from the frontier to Toronto would be, the fact that the country had relieved the Grand Trunk of a present liability by making a cash advance to the Grand Trunk Pacific, could hardly be a consideration or a reason why a rate otherwise fair and just ought not to be adopted.

"It is equally clear that any losses the Grand Trunk may have made in the Grand Trunk Pacific can afford no ground for increasing the rate, which, apart from such consideration, was fair and reasonable.

"There is no reason why the business of the Canadian Northern should be conducted at a loss, simply because the country owns it. Under the Railway Act, the board certainly cannot deny the people as a whole a rate which would be fair to individuals when owning the transportation system. It appears that a national railway, just as much as any other railway, ought to be operated so as to cover the cost. The interest cost on the Canadian Northern securities certainly cannot be looked upon as negligible and a matter of no moment to the country. Whether there be room for issue on this score or not, at any rate under the Railway Act the board cannot consider rates on the Canadian Northern on a different basis to those on other roads, simply because the country will in future own the stock."

"Undoubtedly the higher the rate the greater the cost to the country; but, it would appear, that the country as a whole could much better afford to pay increased rates than run the risk of transportation failure or embarrassment."

After referring to the automobile industry, and to the prosperity prevailing in Saskatchewan, the Chief Commissioner continued:—"The position is very similar in the other two provinces, Manitoba and Alberta. This condition in an agricultural community can only be expected as a result of the high prices obtaining for grain, live stock, and other farm produce. Some similar objection has been made in the east. There, again, the manufacture of munitions has in part at any rate duplicated the prosperity of the Prairie Provinces. The figures that have been presented in opposition to the application, correctly taken as they have been from the different companies' annual reports and from Government statistics, are

shown by the recent cost developments to be of little value in determining the position of the companies and the burden of today. The added costs are largely the outcome of advances made in the spring and summer of this year. More than that, they do not seem to be final, but rather appear to be growing. The last annual reports do not, therefore, mirror these increases at all, nor are they of the slightest help in arriving at a proper conclusion on this application. The fact is that abnormal increases in costs have developed since the last annual reports were made. The point was taken that costs of themselves were not the sole factor, but that increased gross to the companies might well offset the effect of the advances, and that this increased gross must be considered as well as the cost advances. As a matter of fact, the increased costs have not been met by the increased gross, as the more recent monthly reports show.

"The Canadian Northern figures for July, August, and September of 1917 and of 1916. are as follows:—

	Gross Revenue	Expenses	Net Revenue	Op'ting Ratio
July, 1917	\$3,844,883	\$2,940,026	\$ 904,856	76.46
July, 1916	3,834,191	2,636,812	1,197,379	68.77
Aug., 1917	3,405,200	2,812,000	593,200	82.57
Aug., 1916	3,684,900	2,612,900	1,072,000	70.90
Sept., 1917	3,341,700	2,915,800	425,900	87.26
Sept., 1916	3,187,900	2,455,300	732,600	76.95

"These results cannot be disregarded. They show that while the gross revenue of July had a slight increase, the net revenue decreased 24.43%. August, on the other hand, shows a decrease of \$279,700 in gross, but nevertheless has an increase in expenses of \$199,100, resulting in a reduction in net earnings of \$478,800 or 44.66%. In September, there was again an increase in gross amounting to \$153,800, but again the expenses increased by \$460,500, reducing the net return, notwithstanding the greater gross, by 41.86%. The figures for these three months are taken up in the company's general statement for the quarter ended Sept. 30, 1917. This quarterly statement also includes the results of the like quarter of the preceding year. The quarterly statement gives the company's total revenue for these three months as \$10,591,807.57 against \$10,706,995.89 for the same period of the previous year. The result is a comparatively small decrease of \$115,188.32 in gross receipts, which amounts in percentage to but a little over 1% of decrease. The expenses are shown as \$8,667,867.95 for the three months of 1917, as against \$7,704,982.67 for the same period of the year before. The resultant increase in expenses is \$962,885.28, which exceeds 12.49%. The net income for the 1917 period amounts to \$1,923,939.62 as against \$3,002,013.22 for the 1916 period. A decrease in the net income of \$1,078,073.60, which represents a percentage decrease in net amount to 35.91%. The increases in expenses are, as a matter of fact, greater than the totals I give. Necessary work has been deferred, owing to the state of the company's finances. The Canadian Northern certainly cannot be charged with ever expending more than was necessary for the maintenance of its lines. As a matter of fact, the charge in the past has been to the contrary, and the amounts expended by the company under this head can well be expressed as relatively small. Notwithstanding during the period in review the company only expended for maintenance of right of way and structures \$1,976,869.14 in 1917, as against \$2,279,658.41 in 1916, an apparent economy of \$302,789.27, representing a percentage decrease of 13.28%, as being effected in this connection. As a matter of fact, the expenditure is not

saved—it is merely deferred, and the only real result of deferred maintenance and repairs is that the ultimate expenditure will be greater than if made promptly and maintenance and repairs had been kept up concurrently with the necessity. This decrease of expenses is entirely eaten up by other increases. To merely illustrate: The cost of maintenance of equipment (necessary work and repairs on locomotives and other running stock, and the like) increased from \$1,156,419.05 in 1916 to \$1,502,779.46 in 1917, an increase of all but 30%.

"I also instance the advance in the cost of transportation, for this period in 1917 amounting to \$4,491,149.49 as against \$3,655,746.23 for the same period of 1916.

"The results of October are of particular interest, as in this month a substantial increase in gross revenue is shown. The Oct., 1917, earnings amounted to \$3,941,612.62, against \$3,716,784.77 for October, 1916. The resultant increase in gross is \$224,827.85 or over 6%. The expenses, however, grew at a very much greater ratio. Those of Oct. 1916, were \$2,496,512.78, while for Oct., 1917, they were \$3,350,486.03, the increase here amounting to 34.20%. As a necessary result, there is an alarming drop in net income from \$1,220,271.99 to \$591,126.59, a decrease of \$629,145.40. In short, the company's net revenue, with an increased gross of 6% decreases 51.55%.

"It should, however, be noted, that, in connection with this month the economies of the preceding quarter in connection with the maintenance of way and structures were not practised. On the other hand, no extravagant expenditure was made under this head. The expenditures of 1917 were \$694,653.25 against \$510,141.25. In view of the increased costs which are apparent in other accounts the increased figures cannot sustain any charge either of improvidence or railway extravagances.

"Attention has already been called to the fact that the company spends but relatively little on its right of way. While the necessity of any possible economies cannot be denied, some economies cannot be practised without loss in efficiency and resultant damage, not only to the company itself, but also to that portion of the public that are dependent upon the transportation that it ought to provide. It is sufficient to give but one illustration of insufficient maintenance and repair. The grain movement of the autumn of 1916 to the head of the lakes was light. The October receipts at the lake terminals only amounted to 19,673,341 bush. of wheat, against 52,367,710 bush. for Oct., 1915. The total grain receipts for the month in 1916 only amounted to 27,189,876 bush. against 60,786,715 for Oct. 1915. In Oct. 1917, 27,729,126 bush. of wheat were received and 31,851,584 of all grains an increase of 4,661,708 over the same month of the year before or over 16%. The Canadian Northern, however, only hauled last October to the lake terminals 7,653 cars while it hauled 8,610 cars in Oct. 1916 of the year before. Instead of a proportionate increase in the road's grain business the month results in a car decrease of 957 cars or 11%. A direct reason for this decrease was the physical condition of the line between Winnipeg and Port Arthur. Train schedules could not be kept, and freight wrecks occurred. Efficiency in transportation, including as it does, sufficient terminal facilities, sufficient cars and locomotives for the business offering, and a properly maintained and repaired line of railway, constitutes the chief public necessity in railway transportation. This efficiency can only

be furnished by companies whose business is sufficiently remunerative as to produce the necessary funds to maintain the railway and to meet the ever-increasing demands of transportation. Transportation, if left long enough to the unaided efforts of insolvent or financially embarrassed companies, must, of necessity, break down, to the country's great hurt and injury.

"The question for the board to determine is whether, in the light of the above facts, effect ought to be given to the Manitoba agreement. If effect be given to the Manitoba agreement, practically no rate increases can be made in western territory, where the great bulk of the Canadian Northern's business is carried on. Should the usual practice as between parties to commercial contracts be followed and if it be the board's duty to consider the agreement as a pure matter of law, and having regard only to the contracting parties and not to public convenience and necessity, it well may be that the mere fact that the rate called for by the agreement constitutes an insufficient remuneration for the service rendered and may result in actual insolvency, constitutes of itself no ground for relief. If a builder agrees to do certain work for an inadequate consideration, his loss or its amount is no answer to his contractual liability. Distinctions, however, between the contractor, on the one hand, and railway companies on the other, are readily apparent. The contractor's charges are not subject to government or commission control. The railway company's charges are. The contractor is subject to no duty to the public. The railway company is. Public necessity and service constitute a direct justification for railway construction and railway company incorporation. Moreover, in case the contractor obtains under his agreement an excessive remuneration, that fact of itself is no bar to his enforcing his agreement and collecting the last cent of his consideration. On the other hand, the board is not bound by any contract under which railways may be entitled to an unreasonably large rate, but reduces that rate to whatever it finds just and reasonable. Under any other practice, traffic officers of the companies, could from time to time, in many cases make special contracts with shippers at unfairly high rates, or, on the other hand, give favored shippers unduly low rates. In either instance, the object of the act, which is to secure uniformity just as much as reasonableness in rates, would be defeated. An unduly low rate constitutes an unreasonable rate, just as much as an unduly high one, and the question of whether a rate is unduly low or unduly high can only be established with a knowledge of the cost entitled by the service, which must from time to time vary.

"It has been stated that railway directors are charged with duties and trusts, first, to the public, second, to the company's employes; and third, to the company's shareholders. I would place the duty to the public, involving as it does proper and sufficient transportation, as being the duty of primary importance. The mere fact that an agreement, in the light of changed circumstances, proves improvident and provides rates insufficient to enable the company's property to be properly kept up and to meet the current demands of transportation, also involves loss to the shareholders, is not an answer to the company's primary obligation to properly operate the road. It may well be that an agreement made by the directors elected by the shareholders cannot be set aside on the application of the

shareholders themselves, but, on the other hand, it is clear that no agreement ought to stand in the way of the public as a whole obtaining the full benefit of that measure of transportation, which a properly maintained condition of the company's facilities would permit. Further, an improvident contract made by one company is not merely of injury to itself and that portion of the public using its line—Parliament has so authorized railway construction that the line of one company or another parallels those of others to such an extent that in many instances an unreasonably low rate reserved by contract made by one company must be adopted by the other line. As a result, the other companies are just as much injured as is the company to the contract, and by an act over which they have not the slightest control. It is also apparent that an agreement which reserves an unremunerative rate applicable in the one district, involves a discrimination as against other districts where traffic and operating conditions are similar, and directly infringes on the provisions of the act requiring uniformity in rates. The board does not consider any agreement made by a shipper to pay a given rate any justification for the rate if it be unreasonably high. On the same principle, when rates reserved by contract prove, in the face of changed conditions and increased costs, unreasonably low, the rates must be made reasonable, notwithstanding the contract. In normal times, the contract was entirely free from objection. The discrimination which it caused in one district as against the other, was relieved by the Regina rate and western rate cases. With today's conditions, the contract reserves an unreasonable rate, under which the Canadian Northern is unable to properly maintain its properties; and, with the changed conditions, agreeable to the above principles and practice of the board, higher rates ought to be put in, notwithstanding the provisions of the agreement.

"The effect of increased costs on railway revenues is not peculiar to the Canadian Northern. With its larger field and greater diversity of operations, the Canadian Pacific returns would not as quickly show the effect of different cost advances as those of the Canadian Northern. The C.P.R. returns, however, for September show an increase of \$30,935 in gross on eastern lines, and on western lines of \$64,803. The expenses, however, have greatly increased, the increase in eastern lines amounting to \$732,049, and on western lines to \$839,145. As a result, with a total gross revenue of \$11,476,695, as against \$11,380,939, Sept., 1917, as compared with Sept. 1916, produces a net revenue of but \$3,727,173 as against \$5,202,611. In other words, the drop in net earnings on the system for the month amounts to a reduction of 28.3%.

"Taking the Grand Trunk Railway as the characteristic line in the east—the actual results are very nearly the same as those of the Canadian Northern. The increased traffic which the contestants to the application urged was inevitable to take place has materialized, but the increased gross has entirely failed to make up the losses brought about by increased expenses. The G.T.R.'s total transportation revenue from Jan. 1 to Oct. 31, 1917, was \$43,366,844, against \$39,100,498 for the same period of 1916. The resultant increase was practically 11%. For this same period in 1917, however, the working expenses were \$33,659,532.48, against \$27,479,538.79 for 1916. The increase in expenses is, therefore, 22.59%. The fact that expenses are unfortunately increas-

ing and that transportation in the later months of the year is subject to greater burdens than during the earlier months is emphasized by taking the figures for October out of this 10 months period and contrasting the results obtained in October with the results obtained for the full 10 months. Transportation receipts for Oct. 1917 were \$4,703,643 against \$4,618,000 for 1916. The increase is still present, although to a much smaller percentage, the whole increase amounting to 1.85%. The expenses for Oct. 1917, however, were \$3,876,019.95 against \$3,111,193.36 for Oct. 1916. The resultant increase is 24.58%. The result on the transportation net is that it only amounts to \$708,930.05 for Oct. 1917 against \$1,390,537.64, for Oct., 1916. Therefore, it decreased no less than 49%. The effect of the cost of railway operation over the whole country is beyond question. This loss in net of 49% may well be compared to the October figures of the Canadian Northern, where the net decrease was 51.55%. There can be no question, in view of the actual results, that the railways require greater revenues and must have them if proper efficiency is to be maintained and the demand of the country for transportation at all adequately met. I have already dealt with the difficulty in dealing with the emergency in the west and resulting from the agreements and statutes referred to. Difficulties also exist in the east and are specially attributable to the operation of the Grand Trunk under different tariffs. The rate situation in the east has been largely controlled by water competition and the competition of United States lines.

"Speaking generally, there is no doubt that it is the right of a company to ignore competition should it desire to do so; and there is also no doubt that the advances in water rates have lessened the competition from that source materially. The Grand Trunk situation, however, is aggravated by the fact that it is to quite a large extent a U. S. system. It derives a large portion of its tonnage from U.S. points through its ownership of the Chicago and Grand Trunk Ry. and other subsidiary U.S. systems. Again, speaking generally, these subsidiary U.S. systems (which are not only owned by Grand Trunk shareholders, but are operated by Grand Trunk officials, the whole being operated as one system) are operated under rates upon a lower basis than that obtaining in Eastern Canada. Not only does the Grand Trunk carry through Canadian territory goods of U.S. origin billed through to a U.S. point, but it also carries goods of U.S. origin into Canada which come into direct competition with Canadian producers, wholesalers, and jobbers. The discrimination was in the past greater than it now is. An application was made to the board in 1907, with a view of removing the rate discrepancy, and the disability of the Canadian producer was relieved by the order issued in the international rate case, which reduced rates in Canadian territory to as near the rates in U.S. territory as it was then felt that it was practicable to go. While undoubtedly the Grand Trunk proper has benefited by the traffic produced by its U. S. subsidiaries, unfortunately earnings in U.S. territory, based as they were upon lower rate schedules, resulted in unprofitable operation of these subsidiary lines, with the result that the Grand Trunk from time to time has had to make good, deficits occurring on the U.S. portions of the system, amounting to large sums. This, again, has been the subject of complaint by Canadian shippers, who have urged that the surplus that the company

earned out of their rates was used by the company to enable it to carry on transportation in the U. S. at less than cost. This feature of the rate situation was considered by the board in the eastern rates judgment; and, as a matter of fact, the increases there granted were not so great as they would have been had the tariff basis in the U.S. territory of the system been higher. The details of these deficits given the board by the company were filed in the eastern rates case in 1915, and related to the deficits of 1914. The net deficit then shown by the company, resulting from the operation of its U. S. subsidiaries and deducted from the net of the parent company, amounted to \$1,230,448.89. I understand, however, that, with the heavier traffic brought about by the war and before the present abnormal costs obtained, the earnings of these subsidiary lines greatly improved and the parent company was practically, if not altogether, relieved of the burden of these deficits. The statutory reports so indicate. In view of the necessities of the company and the deficits of the past on the company's U.S. subsidiary lines, the board has hoped that the rate situation would improve in U. S. territory and that the company would take advantage of whatever rate increases were possible under leave of the appropriate commissions.

"The condition brought about by advanced costs would appear to be somewhat similar in the U.S. situation to that in Canada. This has been recognized by the Interstate Commerce Commission in its report to Congress based, as it is, on the financial necessities of the roads, as well as the traffic demands of the nation. The Interstate Commerce Commission has recently granted a substantial increase in connection with the very important iron and steel movement in western territory. The Interstate Commerce Commission also authorized general increases in Central Freight Association territory as far back as June 29 last. For some reason or other these were not with ordinary dispatch fully put into effect by the railway companies. This question Mr. Hardwell has had up with the companies' officials.

"Perhaps one of the most important schedules, having regard to the position of the Canadian shipper, on the one hand, and his U. S. competitor on the other, is the Detroit schedule, covering rates from Detroit to Toronto and Montreal, and the intermediate points. The Grand Trunk rates in Canada of importance in this relation are the rates from Windsor (which, of course, is a station en route) to Toronto and Montreal, and upon which the rates from all intermediate stations are scaled. The basis under which traffic has been carried since the publication of the tariff authorized in the Canadian eastern rates case and prior to the publication of those authorized in the U. S. 15% case, is shown by the following schedule:

	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Toronto	.38	.33	.24	.17	.14
Windsor to Toronto	.38	.33	.29	.24	.19
Windsor differences	0	0	+5	+7	+5
	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Montreal	61.5	53.3	41.0	28.7	24.6
Windsor to Montreal	60.0	53.0	45.0	38.0	30.0
Windsor differences	-1.5	-0.3	+4.0	+9.3	+5.4

"From these schedules it will be observed that a shipper from the intermediate station, Windsor, in connection with the all important 5th class, paid 5c more than the shipper from Detroit in the foreign movement to Toronto, and for the movement to Montreal paid 5.4c more. The disparity was not as high in the past, the board having increased class rates in the eastern rates case by an addition of 2c first, scaling down to 1c, fifth class, other classes scaling proportionately. The Canadian increases were allowed owing to the financial position of the Grand Trunk, the board feeling that, although the apparent difference was great, under war conditions and the demand for all commodities the Canadian shipper would not as a matter of fact suffer. This added disability was cheerfully accepted by eastern shippers. Following the publication of the tariffs authorized in the U.S. 15% case the rate situation was as follows:

	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Montreal	70	61½	47	33	28
Windsor to Montreal	60	53	45	38	30
Windsor differences	-10	-8½	-2	+5	+2

"The rates from Detroit to Toronto were not then advanced, the rates in Central Freight Association territory being still under consideration by the Interstate Commerce Commission. That commission, as previously mentioned, announced its decision on June 29, 1917, granting increases independently of the 15% previously allowed, but the railway companies, whatever the reason may have been, did not take advantage of this decision to advance the rates from Detroit to Toronto until Dec. 1. At the time of the hearing in this case, and indeed until Dec. 1, 1917, if effect were given to the application for a 15% increase, the result would have been that the rate from Detroit to Toronto, 5th class, would have been no less than 5.5 lower than the Windsor rate to Toronto, and the difference in favor of the Detroit shipper on articles moving under the 5th class into the Toronto market, as against the Windsor shipper, would have been no less than 8c. The same disability would apply proportionately to all intermediate points. The company has made it possible for the board to grant the advance without creating this discrimination against the Canadian shipper by filing, effective on Dec. 1, 1917, as already stated, its tariff increasing rates as authorized in the Central Freight Association territory. The following schedule shows the rates as they now will be under the rates from Detroit, as provided for by the company's tariff of Dec. 1, 1917, and with effect given as this judgment does, to the company's application for a 15% advance:

	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Toronto	50	42½	33½	25	17½
Windsor to Toronto	43½	38	33½	27½	22
Windsor differences	-6½	-4½	0	+2½	+4
	Class 1. Cents.	Class 2. Cents.	Class 3. Cents.	Class 4. Cents.	Class 5. Cents.
Detroit to Montreal	70	61½	47	33	28
Windsor to Montreal	69	61	52	43½	34½
Windsor differences	-1	-½	+5	+10½	+6½

"Absolute parity, of course, is not obtained. It was found impossible to obtain it in the international rate case. While

the rate situation is not all that can be desired in view of the necessities of the company and the higher U. S. rate basis made effective on Dec. 1, I would allow the increase of 15% as asked subject to the exceptions herein made. Increases were sought to be made in the all rail movement from the east to the west. The increases which the companies desired were increases entirely in eastern territory. The new all rail tariff became, therefore, a matter directly affecting the eastern situation, although the movement was entirely into western territory.

"On the record these rates should be considered on a different basis. The companies have already obtained a substantial increase, the 1st class all rail basing rate to Fort William being advanced from 75c to 81c, other classes scaling in proportion. The resultant increase of 6c on 5th class makes an average increase of under 6½% in the five classes of general merchandise; 15% on top of that would make an average increase of approximately 21½%. In view of the manner in which the through tariffs from eastern to western Canada are built up on the combination of the rates current from Port Arthur and Fort William west, and certain arbitrary rates from the eastern shipping points to Port Arthur and Fort William produced to a great extent by the summer competition of the lake and rail route; and in view also of the fact that the rates to different points in western territory have been constructed on the whole result thus obtained, it is obvious that an interference of a different percentage as applied to the whole might work changes in the relative rate bases of different distributing centres in western territory. This, of course, ought not to be done. Much trouble has been taken in the past to arrive at a fair basis of rates as between different districts and to maintain a rate situation of justice from different western distributing points. The matter was referred to the board's Chief Traffic Officer, Mr. Hardwell, to work out the effect of any change in percentages upon the whole district. This has necessitated Mr. Hardwell making up a very large number of rates and putting in much labor in comparing the rates in different sections of the country. His report is as follows:

"A close examination of the rate situation as it affects freight traffic between eastern and western Canada has convinced me that whether the proposal to allow an increase of 10% be sufficient or insufficient for railway needs, it is illogical, and would also upset the system that has always existed of basing the through rates on Fort William. The board recently granted increases in the proportionals for Fort William only:

1st class, from 75 cents to 81 cents.
5th class, from 31 cents to 33 cents.

"The proposal to accept an increase of 15% in the local tariffs west of Lake Superior, would include the tariff from Fort William; therefore, the rates from Fort William to Winnipeg, for example, would advance as follows:

1st class, from 85 cents to 98 cents.
5th class, from 38 cents to 43½ cents.

"The suggestion of an increase of 10% from Toronto and Montreal to Winnipeg would result as follows:

1st class, from 1.66 to 1.82½ cents.
5th class, from 0.71 to 0.78 cents.

"Deducting from these proposed through rates the increased rates from Fort William would leave the eastern proportionals as follows:

1st class, 84½c instead of 81c = 104.2%
5th class, 34½c instead of 33c = 104.4%

"Therefore, the proportionals recently

allowed would be increased by less than 4½%. Furthermore, the wholesale centres in the west might be expected to complain if their distributing rates were advanced 15% while the shippers in eastern Canada were asked to pay but 10% on their through rates.

"So far as the basing system is concerned, the existing eastern proportionals might be protected by increasing the rates west from Fort William 10 instead of 15%, but this would not remove the objections to be anticipated from the western jobbers. It might also be expected to arouse the coast cities, who would hardly favor a less increase in the terminal tariff from the Lake Superior ports than in the terminal tariff from Vancouver, etc. While the eastern arbitrary system may, perhaps, be considered theoretical, these trade objections may prove real. In my opinion, the logical solution is to confine the 10% advance to the proportionals east of Fort William. The recent allowance averaged under 6½% in the five classes of general merchandise so that the total now suggested would approximate 16½%. The through rates would then be made by adding the Fort William westbound rates increased by 15%. From Toronto and Montreal to Winnipeg the situation would then be expressed as follows:

	1st Class.	5th Class.
Present rates from Sept. 1, 1917	\$1.66	71c
If present through rates were increased 15%	1.91	81½c
If present through rates were increased 10%	1.82½	78c
If present rates were increased 10% to Fort William and 15% beyond	1.87	79½c
If through rates prior to Sept. 1, 1917, were increased 15%	1.84	79½c

"It will be observed that if the board had included the recent all rail case in the 15% application, and consequently now granted the full 15%, the rates would approximate to Winnipeg those I suggest; in fact, the important 5th class would be the same."

"I would adopt Mr. Hardwell's report. The result is that 15% will be allowed in so far as the territory west of Port Arthur is concerned, but the increase will be held down to 10% on the eastern balance of the through rate."

"There are already difficulties as to the spread of rates on coal. Those spreads would be but further aggravated if percentage increases were allowed on coal. I would allow a flat increase of not exceeding 15c a ton on all coal and coke carried in the eastern and western territories. This flat advance on the long hauls will, of course, be a great deal less than a percentage increase of 15%; but, on the other hand, on the shorter hauls, it will be larger than the 15% increase would be. The flat rate will, however, bear less harmfully on the consumers generally. The necessity of this 15c increase on a commodity of direct and urgent necessity to the public is much to be regretted. It is, however, inevitable. In order to increase railway revenues to an appreciable extent, commodities constituting a large part of the tonnage carried must bear an appreciable share of increased rates. Coal in eastern territory is chiefly carried by the Grand Trunk and in western territory the Canadian Northern coal tonnage is fast increasing. Both these systems require increased revenues very badly."

"Common clay and sand, gravel and crushed stone are commodities which cannot, in my view, stand a 15% increase. I would, however, permit the companies to increase their rates on these commodities both in eastern and western territories, by adding to existing rates not more than 5c a ton."

"In western territory, as already indicated, any relief the board can give the railways is limited by the provisions of the Crowsnest Pass agreement. The chief traffic in the west is grain. The Crowsnest Pass agreement will not permit a general increase of 15% to be made to the Lake Superior ports; but under it a flat increase of 2c a hundred, which will approximate a 10% advance on what is perhaps the average western grain rate, can be obtained on the commodities included in the existing tariffs on grain, flax seed and their products and I would allow it. It is quite true that neither the Canadian Northern nor the Grand Trunk Pacific are bound by the provisions of the Crowsnest Pass agreement or act. On the other hand, while it would be open for the board to permit an increase of 15% in their rates, over a very large part of the territory served by one or other of these systems, grain could undoubtedly be hauled to the Canadian Pacific. The result would be that both these companies, in order to protect their traffic, would reduce their rates at all points where their traffic would suffer from Canadian Pacific competition. The element of unequal rates would be again introduced into the western territory; and I am convinced that this is no better for the railways than it is for the districts."

"The Crowsnest Pass agreement again, does not call for lower rates for the whole territory as now operated. The reductions apply merely to the then existing tariffs, and therefore to operations of the company as carried on at the time that act was passed. I am of the opinion that discrimination should be avoided, and that the effect of the Crowsnest Pass agreement must be extended to the system of the company as today operated. Under present tariffs no distinction is made between stations in the territory covered by the company's tariffs in effect when the agreement was made and those upon its subsequent construction. The board, in my view, ought not to permit any such distinction to be now made. The Crowsnest Pass agreement was considered by the late Chief Commissioner Killam, in British Columbia Coast Cities vs. C. P. R. 7 C.R.C., 125, His judgment reads: 'As a result of this act and the agreement made under it, the company made tariffs of reduced rates upon the classes of merchandise referred to, not only from Fort William and points east thereof westward, but also from Winnipeg westward, without similarly reducing rates on the same classes of merchandise from Pacific points eastward. These reductions cannot be considered as having been forced upon the company, but were the result of an agreement which it chose to enter into for the purpose of obtaining a subsidy in aid of the construction of a line of railway. The agreement and the statute did not even deal with rates from Winnipeg at all. When the statute was passed and when the agreement was made, the law prohibited unjust discrimination between localities, and while parliament did not stipulate for similar reductions over western portions of the company's railway, it should not, in my opinion, be considered as having authorized what would, if done otherwise, have produced unjust discrimination. I think that we are justified in inferring that, in respect of the classes of merchandise to which these tariffs relate, the reductions did result in such discrimination, and that the rates from Vancouver eastward, upon similar traffic carried under similar circumstances, should be proportionately reduced.' In my view full effect should be given to the above principles."

"In so far as concerns carload rates on grain, flax seed and their products in the west, other than the rates to the Lake Superior ports and intermediate points held down by the terminal rates; also on the same commodities from Port Arthur and Fort William eastward, and carload grain and grain products in eastern Canada, I would allow the application for a flat 15% advance, subject to a maximum increase of 2c per 100 lb. in the existing rates."

"The consideration of chief importance underlying the lumber rates in the west is their relation one to the other. The spread is of greater importance to the lumber industry than the amount of the rate itself. A straight percentage increase would improperly accentuate existing spreads from lumber producing territories and dislocate business. It would have a specially detrimental effect upon the British Columbia industry. On the other hand, a general flat increase might bear with undue severity upon short hauls. There are rates as low as 5c a hundred. A flat increase of 3c, which on a rate of 46c would be an increase of only 6½%, would, in the case of a 5c rate, amount to an increase of 60%. The whole western lumber rate situation is full of difficulty and presents a highly technical rate problem. The question as to how increases in lumber rates can be best made without dislocation of traffic by changing the rate relationship now existing between present mills and at the same time result in no undue hardship to the consumer, was referred to Mr. Hardwell for his opinion. His report, in part, is as follows:—

"As regards lumber; so far the British Columbia mills are concerned, the desideratum being the preservation of the existing rate relationship between the various mills, as emphasized at the Calgary hearing and in past proceedings, it is clear that this cannot be attained by means of a percentage of increase, even though held down to a maximum per 100 lb. advance for the longer hauls. The entire situation has been very carefully examined, therefore, with the view of settling on flat increases in cents per 100 lb. which should avoid any possible complaints of preference or discrimination. Working on a tariff that has no uniform basis, it is impossible to arrive at advances accurately representing 15%. I find, however, that the adoption of the following recommendation would not only afford a broad basis, but would nearly approximate 15%, viz.:

"To Alberta destinations, also to C. P.R. main line stations as far east as Mortlach, Sask., the increase to be 3c per 100 lb. To all other destinations in Saskatchewan the increase to be 4c per 100 lb. To destinations in Manitoba, also in New Ontario, east to Port Arthur, the increase to be 5c per 100 lb. To a large number of destinations those suggested increases would equal 15%; to others they would be slightly over or under 15%. From the interior mills to Winnipeg the rate would advance from 33 to 38c, or precisely 15%; from the coast mills from 40 to 45c, or 1c less than 15%. From British Columbia to Eastern Canada I would increase the difference over the rates to Port Arthur to 10% as recommended for the class rates. From the interior and coast mills, respectively, the rates to Toronto points would go up from 60 and 67c to 67 and 74c; 110% of the through rates, as first proposed, would give 66 and 73½c. To Montreal points the result would be similar."

"From the other lumber shipping territories I submit the following recom-

mendations:—From northern Manitoba and Saskatchewan spruce districts, 15%, subject to a maximum of 3c per 100 lb. to destinations in Saskatchewan, also in Manitoba east to Winnipeg, and 4c to those in Alberta and east of Winnipeg to Port Arthur. From the Lake of the Woods and Rainy River districts 15%, subject to a maximum of 3c per 100 lb., to destinations in Manitoba, and 4c to those in Saskatchewan and Alberta. From Port Arthur 15%, subject to a maximum of 3c to Manitoba, 4c to Saskatchewan, and 5c to Alberta. Between points in Eastern Canada 15% flat. As the highest local eastern rate appears to be 20c, this would make the maximum advance 3c.'

"I would adopt Mr. Hardwell's report. Under it the rate differences from the different competing mills would be maintained as they now are. In so far as the bulk of the movement is concerned, Mr. Hardwell's recommendations will result in the 15% increase; in other instances the increase will not amount to 15%; and, in other cases, the percentage will be slightly in excess of 15%. The adoption of Mr. Hardwell's recommendations will put the lumber rate upon a more scientific basis than it has been in the past. The rate situation which Mr. Hardwell's report preserves is the outcome of an agreement between the associated western mills and the railways. Under this arrangement, the rates from the coast mills east to Winnipeg and Port Arthur, are made the basic rates. The rates from the interior mountain mills and from the mills as far east as Calgary and Blairmore are all based on this standard rate and scale, not strictly having regard to mileage, but scaled according to the agreement between the trade and the railways. These mills enter into more or less competition with mills in the northern spruce belt (northern Manitoba and northern Saskatchewan); also with mills in the Lake of the Woods district on the Canadian Pacific, and in the Rainy River district on the Canadian Northern; and to some extent with the mills at Port Arthur. The situation is highly competitive having regard to the lumber business. Mr. Hardwell's report is in my opinion, the best solution available.

"On through movements of these lumber commodities from western shipping points to destinations east of Port Arthur, under Mr. Hardwell's report, the increase permitted is a proper and logical result having regard to the dispositions made of other through movements, and in view of the increases already made in the all rail and lake and rail rates. While increases have not been made in the U. S. transcontinental rates, I would, nevertheless, permit an increase in the transcontinental class rates, as they do not reflect competition to the extent the commodity rates do. The rates, however, are built up on the all rail movement, but in view of the U. S. scale and for the reasons already given I think the increase ought to be reduced to 10%. Transcontinental commodity rates, however, are directly competitive. If unduly increased over the U. S. transcontinental rates, the results well might be that Canadian produce would not move at all in cases where U. S. produce was available, or in some other instances, if it did move, it would move over U. S. lines. I would not at the present advance the transcontinental commodity rates unless these rates are advanced in conformity with advances made by the American lines.

"Generally speaking, the rail freight rates in British Columbia are on a considerably higher basis than in the prairie

territory. In the western rates case, the board found that a higher level of charges was justified by the greater cost of conducting transportation. An advance of 15% would, however, materially increase the spread between the mountain and the prairie tariffs, and having regard to all the circumstances, I am of the opinion that in the Pacific territory an increase of only 10% should be allowed, but, of course, no rates to be lower than the prairie rates as increased. This percentage difference will not apply to the rates between the ports of call on the British Columbia lakes, as being now on the prairie basis must take the prairie increase of 15%.

"Railway tolls covering services incidental to transportation stand on a different footing to those charged for the line movement. The application for a general advance and authority permitting a general advance in freight rates not exceeding 15% would, however, include them unless specifically excepted. Some of these charges, for example, tariffs for and the prairie tariffs, and having recently considered by the board. Other such services in their nature represent entirely a terminal activity and have particular importance at different local points. Strong objection has been taken by boards of trade, particularly those at larger points, to any increase being made on this application and on the general grounds on which it is supported to any increase in these tolls. In my opinion the objections are well taken, and I would refuse on the present record any increase of tolls and tariffs applicable to switching, whether local or inter-switching, weighing, demurrage, refrigeration, heated car service, car diversions, reconsignments, storage, wharfage, sleeping or parlor car accommodation, or other special services.

"The application for an increase covers passenger rates as well as freight rates. I am of opinion that the present maximum rate of 4c in British Columbia is so high that it ought not to be advanced. On the other hand, I would grant the advance in rates in other territory where the present maximum rate is 3c as against the 4c rate in British Columbia. In so far as passenger rates are concerned, it is entirely in the public interest at present that passenger travel should be as light as possible. The usual considerations applying to passenger traffic are today reversed. Public interest today calls for a reduction wherever possible in passenger service, to the end that the country's resources of coal, railway facilities and supplies, as well as man power, should be conserved as much as possible for all essential freight movement. The same considerations do not, of course, apply to the necessary freight movement. On the other hand, it must be realized that the board cannot make rates, having in mind an improved and more economic location and system of railways. The board's duty as I see it, and as I have already pointed out, is to control and adjust rates, having regard to the systems of railways that Parliament has authorized. The Board must take the railway ownership just as it finds it.

"No greater profits will be obtained by the railways under the new rate schedule than in the past. The increased rates allowed will certainly not equal the increase in costs to which the railways are subject. These increased costs are not in any way attributable to the railway managements. They are very largely represented in wage increases, which have had the approval of the public at large. Pub-

lic bodies and public sympathy have been with the men in the increases which they have obtained. No objection whatever has been made by any contestant on the ground that the railways have improvidently increased wages. The other items of cost increases are chiefly the result of today's prices of coal, steel material, and railway supplies. The railways suffer in this regard in common with other users of these necessities. The increased cost can certainly not be said to be the railways' fault. It must be realized that these increased costs can only be met by increase in tariffs. The railways' revenues are derived from transportation.

The increases granted do not work out at the same percentage in both eastern and western territory. While it may be that the increases granted in western territory may not prove sufficient to meet the increasing demands on the companies' exchequers, they are as great as the board can authorize on the present application, in view of the Crownsnest case, with the exception of the increases on coal rates. In the west, the application in one instance called for a 15% increase in coal rates. As the coal haul in western territory is long, a 15% rate increase would, on the whole, have netted more than 15c a ton—much more on some of the long hauls. The haul on coal in the east is certainly short, having regard to the volume moved; and the flat increase of 15c a ton the railways asked in eastern territory produces more revenue than a percentage increase of 15% would. In adopting the flat increase of 15c per ton on coal, I am of opinion that substantial justice is being done.

"While it is true that in so far as western territory is concerned, on the great bulk of traffic, rates would only increase approximately 10% and eastern rates are, speaking generally, raised 15%, it must be borne in mind that, while the rates in the two different sections of the country are much nearer equality since the deductions worked under the western rates case and the increases given under the eastern rates case took effect, again speaking generally, rates in the west are still higher. As a result, subject to the limitations worked by the Crownsnest agreement as extended by this judgment and to the specific directions herein contained, the companies are permitted to raise their general rates 15% and make the specific advances herein allowed."

A good story on E. W. Beatty.—In addressing the Canadian Railway Club in Montreal a short time ago, in connection with the Victory Loan, E. W. Beatty, Vice President and General Counsel, C. P. R., told the following story on himself. "A friend of mine, who represented interests of considerable importance, was required to go to Washington and confer with a high financial authority on a certain matter, and he did not know just how to proceed. His company was involved in combinations which he feared might offend the Sherman anti trust law, and he said to this friend of his, 'I must be very careful and not do anything that will violate the laws of the United States, so I wish you would give me the name of a good lawyer, and I will consult him as to just how far I can go in bringing about these commercial arrangements.' His friend thought for a moment and then said: 'If I were you, I would not consult with a lawyer at all, I would just go to Montreal and talk it over with Beatty, of the C.P.R.'"

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.

General order 211. Dec. 10.—Prescribing car-load minimum weights for lumber, for domestic consumption or for export; and directing that term "full capacity" permit a space of 12 in. between top of load and carlines or rafters of car; schedules to come into force by Jan. 1, 1918.

General order 213. Dec. 26, 1917.—Authorizing railway companies to increase standard tariffs of maximum mileage tolls, passenger and freight.

General order 214. Jan. 10.—Approving standard tariffs of maximum mileage tolls for passengers, on basis permitted in general order 213, Dec. 26, 1917, of C.N.R., C.P.R., Central Vermont Ry., Dominion Atlantic Ry., G.T.R., G.T.P.Ry., Glengarry & Stormont Ry.; Halifax & South Western Ry.; Michigan Central Rd., Napierville Jct. Ry., New York Central Rd., Pere Marquette Ry., Quebec, Montreal & Southern Ry., and Toronto, Hamilton & Buffalo Ry.

26833. Dec. 15.—Apportioning cost of installing and maintaining gates at crossing of Burwell, Adelaide and Rectory Sts., London, Ont., by G.T.R., as required by order 26527, Sept. 11, 1917.

26834. Dec. 17.—Relieving C.P.R. from providing further protection at 4th Range crossing, South Roston, Que.

26835. Dec. 15.—Dismissing application of Town of Oshawa, Ont., for order directing Oshawa Ry. to furnish passenger service to and from portions of town such as it is giving to G.T.R.

26836. Dec. 17.—Relieving G.T.R. from providing further protection at crossing at Wyton, Ont.

26837. Dec. 17.—Authorizing Michigan Central Rd. to build track extensions on Norton Co.'s lands, Chippawa, Ont.

26838. Dec. 17.—Approving Northern Pacific Ry. Standard Passenger Tariff, C.R.C. 303, applying rate of 4c a mile.

26839. Dec. 17.—Approving plan of Deitz award drain, under G.T.R., in Howick Tp., Ont.

26840. Dec. 15.—Extending to Apr. 30, 1918, time within which St. Martins Ry. shall repair bridges over Hanford Brook and Porter Brook as required by order 25865.

26841. Dec. 14.—Ordering C.P.R. to stop train 821, which leaves Toronto at 7 p.m., at Oakville, Ont., until further notice.

26842. Dec. 19.—Relieving G.T.R. from providing further protection at highway near St. Jacobs, Ont.

26843. Dec. 19.—Dismissing application of University Settlement of Montreal's Baby Welfare Committee for order requiring cars used for milk to be equipped with ice or other cooling process.

26844. Dec. 19.—Dismissing application of Town of Montreal East, Que., for crossings at George V. and Champetre Ave., over Canadian Northern Ry. and authorizing town to build highway crossings over C.N.R. at Gamble Ave. and Boulevard, Montreal East.

26845. Dec. 20.—Extending for one year from date time within which Canadian Northern Ry. shall erect gates at crossings at Bay Ridge Road, Belleville, Ont., required by order 25932, Mar. 10, day and night watchmen to be placed at crossings pending installation; wages to be paid by C.N.R. and C.P.R.

26846. Dec. 19.—Approving plan and specifications of Stock drain, under G.T.R., on part lot 33, East Zorra Tp., Ont.

26847. Dec. 19.—Authorizing C.P.R. to build highway over St. Maurice Valley Ry. at mileage 6.95, maintenance to be paid by Three Rivers Parish, Que.

26848. Dec. 19.—Authorizing Crows Nest Southern Ry. to build spur for Baker Lumber Co., Mott, B.C.

26849. Dec. 20.—Ordering Canadian Northern Ry. to erect at least a 4th class station at Sandugo, Alta., by Sept. 1, 1918.

26850. Dec. 21.—Dismissing C.P.R. application for authority to build spur on Souigny Ave., Montreal, and authorizing it to renew its application at any future time, if it so desires.

26851. Dec. 22.—Authorizing Canadian Northern Ry. to build spur for Gem Mining Co. and Midland Collieries, Ltd., Drumheller, Alta.

26852. Dec. 22.—Authorizing C.P.R. to build spur for Weaver Coal Co., Toronto.

26853. Dec. 21.—Authorizing C.P.R. to remove transfer track at Conquest, Sask.

26854. Dec. 24.—Relieving G.T.R. from providing further protection at Con. 1, Sidney Tp., near Belleville, Ont.

26855. Dec. 21.—Approving clearances of loading shed for Ford Motor Co. of Canada, at Winnipeg.

26856. Dec. 24.—Relieving G.T.R. from providing further protection at highway crossing at Pickering, Ont.

26857. Dec. 24.—Ordering C.P.R. within 90 days to install improved type of automatic bell at highway crossing at McAdam yard, McAdam Jct.,

N.B.; 20% of cost to be paid out of railway grade crossing fund.

26858. Dec. 19.—Rescinding order 26476, Aug. 29, in so far as it affects rates from points on Maynooth, Rideau and Tweed Subdivisions, Canadian Northern Ry., and ordering that certain other rates be substituted. This order is given in full under "Traffic Orders by the Board of Railway Commissioners" on another page.

26859. Dec. 26.—Ordering G.T.R. not to exceed 10 miles an hour in operation of trains over crossing of Hyde Park Road, London Tp., Ont.

26860. Dec. 26.—Ordering Grand Trunk Pacific Ry. to appoint caretakers at Peers and Oatley, Alta., to see that stations are heated and lighted for passenger service, freight and express matter properly housed, and make delivery of shipments between 8 a.m. and 6 p.m., from Jan. 1 to Sept. 1, 1918.

26861. Dec. 27.—Authorizing Saskatchewan Government to build highway crossing over east end of Canadian Northern Ry. grounds at Vibank.

26862. Dec. 26.—Authorizing C.P.R. to build spur for Baker & Betcherman, Eastview, Ont.

26863. Dec. 27.—Authorizing C.P.R. to build passing siding at grade across diverted road in W. 1/2 Lot 13, Con. 7, Camden Tp., Ont.

26864. Dec. 26.—Relieving Grand Trunk Pacific Ry. from providing further protection at highway near Allan, Sask.

26865. Dec. 26.—Rescinding orders 25427 and 26768, Sept. 15, 1916, and Nov. 23, 1917, respectively; and approving Canadian Northern Ry. time table showing train leaving Deseronto at 9.15 a.m., arriving at Belleville at 9.45 a.m., daily, except Sunday; and present local train, eastbound, leaving Belleville at 5.45 p.m., arriving Deseronto at 6.15 p.m., in lieu of Toronto-Napanee local running east of Trenton.

26866. Dec. 28.—Ordering Canadian Northern Ry. forthwith to appoint station agent at Junkins, Alta.

26867. Dec. 31.—Authorizing C.P.R. to build spur for Forest Mills of British Columbia, Ltd., mileage 19.6, Boundary Subdivision, B.C.

26868, 26869. Dec. 26.—Authorizing C.P.R. to rebuild bridges 81.4 and 62.8 over Thames River, Ont.

26870. Dec. 26.—Authorizing C.P.R. to build spur for Military Hospitals Commission at mileage 15.5, Winchester Subdivision, Que.

26871. Dec. 26.—Authorizing C.P.R. to alter spur for Canadian-Connecticut Cotton Mills, Ascot Tp., Que.

26872. Dec. 27.—Dismissing complaint of residents of Osgoode, Vernon, Kars and North Gower, Ont., against C.P.R. train service between Prescott and Ottawa; and dismissing C.P.R. application to inaugurate mixed freight and passenger service between these points.

26873. Dec. 29.—Approving revised location of Essex Terminal Ry. between stake 518+60.24 and Reaume Road, near stake 567+14.58, in Sandwich West Tp., Ont.

26874. Dec. 26.—Authorizing C.P.R. to rebuild bridge 68.0 over River Nith, Galt Subdivision, Ont.

26875. Dec. 29.—Approving Northern Pacific Ry. Standard Parlor Car Tariff, C.R.C. S3, showing rate of 1/2c a mile between stations in British Columbia.

26876. Dec. 29.—Authorizing Dominion Atlantic Ry. to withdraw trains 3 and 4 and to run trains 96 and 97 on Mondays, Wednesdays and Saturdays only between Halifax and Kentville, N.S.; effective Jan. 6, 1918.

26877. Jan. 2, 1918.—Authorizing Essex Terminal Ry. to cross Canada Southern Ry. (M.C.R.) near Amherstburg, Ont., E.T.R. to pay cost of providing, maintaining and operating half interlocking plant.

26878. Dec. 19, 1917.—Ordering G.T.R. to install gates at crossings of St. Philippe, Convent, St. Ambroise, St. Ferdinand and Ste. Marguerite streets, Montreal, to be operated by day and night watchmen, and apportioning cost; Ste. Marguerite and St. Ambroise streets to be protected by day and night watchmen, pending installation of gates.

26879. Dec. 31.—Approving clearances of proposed coal chute and loader for Saskatchewan Coal, Brick & Power Co., at Shand, Sask.

26880. Dec. 24.—Authorizing Canadian Northern Quebec Ry. to build highway over its track at Orleans St., Maisonneuve, Que.; crossing to be protected by gates, operated by day and night watchmen; 20% of cost to be paid out of railway grade crossing fund, remainder by Town of Maisonneuve; maintenance to be paid by town.

26881. Jan. 3, 1918. Ordering that 20% of removing obstructions to view at Humber Summit crossing, 1 1/2 miles east of Woodbridge, Ont., be paid out of railway grade crossing fund.

26882. Jan. 3.—Authorizing Grand Trunk Pacific Ry. to build highway crossing and road diversion in South 1/2 Sec. 3, Tp. 37, Range 16, west 3rd meridian, mileage 538.3, Rosemount Rural Municipality 378, Saskatoon District, Sask.; and to close crossing at mileage 538; and rescinding order 4022, Nov. 16, 1907, authorizing said crossing.

26883. Jan. 3.—Approving agreement between Bell Telephone Co. and Mayo & Blanche Rural Telephone Co., Labelle County, Que., Dec. 14, 1917.

26884. Jan. 3.—Authorizing G.T.R. to build spur for Midland Engine Works Co., Midland, Ont.

26885. Jan. 4.—Authorizing Vancouver, Victoria & Eastern Ry. & Nav. Co. to build extension to Northern Pacific Ry. freight house at New Westminster, B.C.

26886. Jan. 4.—Relieving C.P.R. from providing further protection at crossing near St. Cuthbert, Que.

26887. Jan. 3.—Amending order 26400, Aug. 1, 1917, re G.T.R. interchange tracks at Port Hope, Ont.

26888. Dec. 22, 1917.—Ordering G.T.R. to build undercrossing between farms of H. Ancil and A. Cayer, near Walkers cutting, Bulstrode Tp., Que.; and an undercrossing or grade crossing on Jos. Proulx's property if he so desires, and at his expense; work to be completed by June 30, 1918.

26889. Jan. 5, 1918.—Amending order 26850, Dec. 21, 1918, re C.P.R. application to build spur on Souigny Ave., Montreal.

26890. Jan. 4.—Ordering G.T.R. to lower roadway at subway at Komoka, Ont., 1 ft. and to raise track 1 1/2 ft., to be completed by May 31.

26891. Jan. 4.—Ordering G.T.R. not to exceed 10 miles an hour over Paquette's crossing, Hawkesbury Tp., Ont.

26892. Jan. 4.—Authorizing Canadian Northern Ry. to cross and divert highway between s. w. 1/4 Sec. 4, Tp. 43, Range 13, and n. e. 1/4 Sec. 32, Tp. 42, Range 13, west 3rd meridian, Sask.

26893. Jan. 7.—Authorizing Hydro-Electric Power Commission of Ontario to build, subject to agreement with Michigan Central Rd., Dec. 17, 1917, a power development canal and construction railway under M.C.R. in Lot 57 Stamford Tp., Ont., and to divert railway temporarily.

26894. Jan. 8.—Authorizing Dominion Atlantic Ry. to build spur for Killam Bros., Yarmouth, N.S.

26895. Jan. 9.—Authorizing Canadian Northern Ontario Ry. to build spur for Imperial Oil Co. at North Bay, Ont.

26896. Jan. 9.—Authorizing C.P.R. to build fender round centre pier of bridge over St. Maurice River, mileage 1.8, Cap de la Madeleine Subdivision, Que.

26897. Jan. 11.—Amending order 26890, Jan. 4, re G.T.R. subway at Komoka, Ont.

26898. Jan. 7.—Ordering that tolls of Canadian Northern Express Co. shall include collection and delivery in portion of Pas, Man., bounded continuously by further side of 7th St., Hudson Bay Ry. and Saskatchewan and Pas Rivers.

26899. Jan. 11.—Approving Northern Pacific Ry. standard freight tariff of maximum tolls, C. R.C. 375, between its stations in British Columbia.

26900. Jan. 12.—Relieving C.P.R. from providing further protection at east public crossing, Vandreuil, Que.

26901. Jan. 14.—Authorizing C.P.R. to file tariff to provide for special toll of \$1 a car per day for detention of cars containing western grain and grain products at Cartier, Ont., for more than 72 hours while awaiting furtherance orders from consignees; tariff effective Feb. 1.

26902. Jan. 14.—Ordering C.P.R. to place cars for loading of grain at Birnie Milling Co.'s elevator, Medicine Hat, Alta.

26903. Jan. 14.—Ordering G.T.R. not to exceed 10 miles an hour in crossing of highway immediately south of station at Holland Landing, Ont.

Warning Signs for Grade Crossings.—The Board of Railway Commissioners' secretary issued the following circular to railway companies on Jan. 15: "The board's enquiry into a recent accident at a highway crossing, protected by a watchman, brought out the fact that the occupants of the automobile evidently became confused in the signals given by the watchman. The board is impressed with the necessity of railway companies adopting some standard signal other than the style of flag now in use by crossing watchmen. Railway companies are, therefore directed to consider the adoption of a metal disc, 16 in. in diameter, having a white ground, with the word "Stop" in large letters in black thereon, filing their comments with the board within 30 days of the date of this circular."

Engineering and Technical Institute of British Columbia.—Civil engineers and land surveyors of British Columbia are applying to the legislature for incorporation under this title. The institute will also admit to membership architects and others engaged in purely technical occupations.

The Restoration of the Canadian Government Railways Property at Halifax.

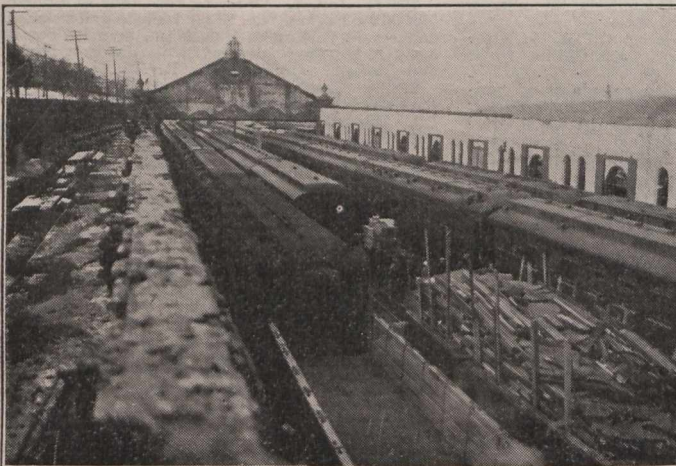
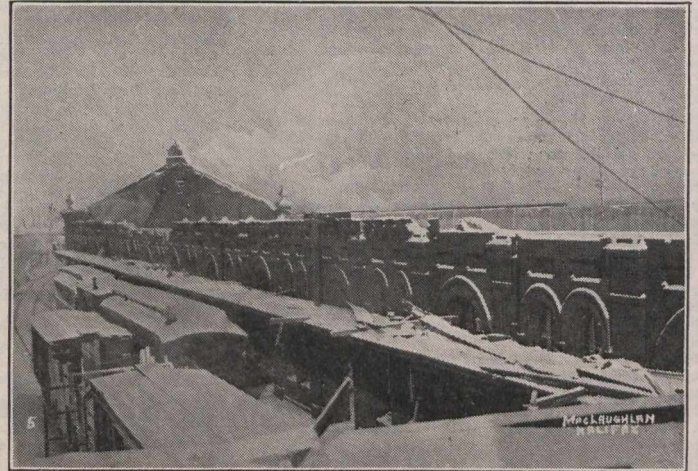
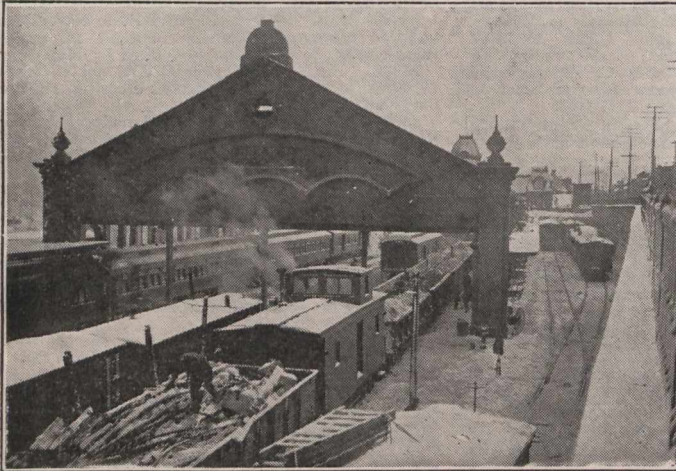
The restoration work at Halifax is being carried on under the general direction of C. B. Brown, Assistant General Manager, and Chief Engineer, Canadian Government Railways, at Moncton; W. A. Duff, Assistant Chief Engineer, and Engineer of Bridges, being in direct charge at Halifax, with office at 137 Barrington Street, C. H. Edgett, being Purchasing Agent and F. M. MacLennan, Auditor. Mr. Duff was at Halifax when the explosion occurred and acted most promptly. Telegraph connection being destroyed, he motored to the nearest station from which he could telegraph, and made a most gra-

completed. The North St. power house roof has been completed, and a boiler put in place and bricked in.

New pier 2: The repairs are about 85% complete. All doors upstairs are in place and glazed. All doors on the south side downstairs are in place and being glazed. Sixteen pairs of doors are in place on the north side. Practically all the branch return pipes have been installed, and the work is still proceeding. All mains, returns, connections and traps will be installed as soon as received. Doors for the north side are being straightened and repaired. The pier and shed have been

The deepwater local freight shed has been repaired.

Grain Elevator. — Temporary repairs are finished. The elevator has been boarded in on the north side and covered with rubberoid finished, and repairs are now being made to the roof on the east side of the building. It has been in use since Dec. 24 and the permanent repairs are about 60% completed. The boiler house building is completed and the boiler put in place and bricked in. The carpenter shop building is boarded in and roof covered with rubberoid, and work is proceeding on the interior of the building.



Halifax Disaster—North Street Station, Canadian Government Railways.

The graphic description of the damage done to the Canadian Government Railways property at Halifax by the explosion on Dec. 6, by F. B. Tapley, Assistant Engineer of Maintenance, C.G.R., published in Canadian Railway and Marine World for January, has evoked considerable favourable comment. We were then only able to show the exterior of the station before the explosion. The views given above were taken some time after the train shed roof had collapsed and when traffic had been resumed. The upper left hand one is looking into the train shed from the track entrance. The upper right hand one shows the train shed minus the roof, from the outside. The two lower views show the interior of the shed.

phic and correct report of the extent of the damage to General Manager Hayes at Moncton, detailing relief, etc., required and enabling prompt action to be taken to rush special trains with doctors, nurses, supplies, etc. Very full particulars as to the railway property were given in Canadian Railway and Marine World for January. We have since been favored with the following particulars of the reconstruction work done up to Jan. 18:—

At North St. station temporary repairs have been carried on both inside and outside of building. The stairs leading to the station have been repaired and are in service. The linen room and express offices have been made water tight. An awning for the concourse has been erected, and will be covered with rubberoid as soon as work in front of building is

in service since Dec. 26.

Pier 3.—Seventeen trusses on the north side have been repaired and repairs were made to side of shed, where necessary. About 200 ft. of track for doors on the north side have been removed, straightened, and replaced. The work is about 75% complete.

Pier 4.—The wreckage from roof and sides of shed has been cleared away. The floor of the annex has been taken up, so that piles can be driven. Stringers and a plank on north side of pier are being finished so that track can be used. The shed is being rebuilt and is about 25% complete.

Pier 9, Richmond.—The debris has been cleared away and also debris on tracks leading to the pier and the pier is now in shape to be used as an open pier.

At Richmond the debris has been cleared away from about 85% of the tracks in the yard and they are being put into service as fast as repairs can be made to them. The water tank at Richmond has been temporarily repaired and has been in service since Dec. 9. All Hudson Bay timber has been loaded and shipped to the south terminals. Pier 9 and three tracks in connection with it have been cleared, and can be used at any time for handling deals, or any other cargo which does not require shed space. The water tank has been temporarily repaired and is giving good service. The sugar refinery site is being cleared.

At Willow Park temporary repairs have been made to 18 stalls in the locomotive house and temporary repairs are being made to 6 additional stalls. The

dangerous portions of the roof of sections 5 and 6 have been removed. Section 4 is being repaired. The "T" beams and columns of this section are straightened, and joists and sheathing are being put in place. The machine shop lower windows are being put in place. Windows are being obtained by salvaging from machine shop and from sections 5 and 6 of locomotive house. The work is about 75% completed. At the bunk house the carpenter work is completed, and the plumbing work is about 75% completed. Sashes are being placed in the office building. Temporary repairs to the stores building are complete and the permanent repairs are now finished. Two bad leaks were discovered in the mains and were repaired and a better supply obtained at the stand pipe.

At the ocean terminals two freight sheds, 600 x 90 ft. each, are being constructed to take the place of sheds which were destroyed by the explosion. They are known as sheds 25 and 28. Grading for tracks near the sheds is finished. Grading for roadway between sheds is finished. Pile driving for shed 28 is completed. Twenty-five per cent. of the floor decking has been placed on the north half of shed 28; 90% of floor grillage has been

has been completed; 125 men are employed on this work. The excavation for foundations of the new garage are complete, and forms for concrete foundation in place; 14 men are employed in this building. At the police office and residence the repairs are well advanced and the building should be shortly completed.

At the torpedo shop a gang is at work taking down trusses and dismantling them, and straightening them to be re-erected; 8 men are employed on the work. Repairs are proceeding on houses 8, 7 and 6. At the small boat slip and shed a small gang is at work dismantling. About one-quarter of the work is completed. At the gymnasium building the brick work is repaired, and half of roof repaired and covered with rubberoid roofing.

Halifax Disaster Special Train Service on the Canadian Government Railways.

Following are particulars of the special trains run on the Canadian Government Railways between Dec. 6 and 11 in connection with the explosion at Halifax, N.S.:

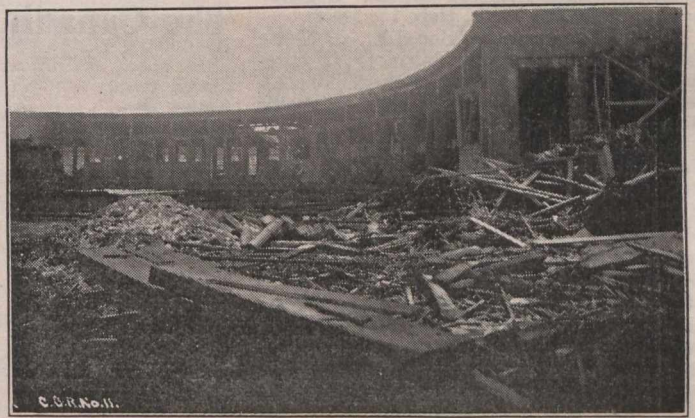
Dec. 6. From College Bridge, 164 miles, 10 cars Amherst fire brigade, 1 car food

Dec. 8. From St. John, 274 miles, 13 cars. Massachusetts and Maine Relief; 6 baggage cars, 1 1st class and 6 sleepers. From Maine 13 doctors, 4 nurses, 6 Maine Government staff and 2 orderlies, 7,100 blankets, 750 cots. From Massachusetts, 25 doctors, 65 nurses, 8 orderlies. This train had also hospital supplies, cots, and blankets for 500 cots complete.

Dec. 8. From St. John, 274 miles, 5 cars. City of New York. 1 doctor, representing medical department U. S. Government; 1 nurse representing civilian relief U. S. Red Cross; 1 representative Quartermaster Store Department, U. S. Government; 1 Red Cross representative in charge of train; 6 U.S. press men; 10,000 blankets, 10,000 sweaters, 7,000 pairs socks, 1 car food, 100 cases civilian clothing, for men, women and children; 40 cases surgical bandages, 100 gals. liquid disinfectant, 10 bales absorbent cotton.

Dec. 9. From St. John, 274 miles, 14 cars. Montreal relief. Food supplies and private car. Picked up cars of food, also coffins.

Dec. 9. From St. John, 274 miles, 8 cars. Providence, R.I., relief. Baggage car, condensed milk and doctor's outfit; baggage car with bread, window sashes,



Interior and Exterior of Canadian Government Railways Locomotive House at Willow Park, after the Halifax Explosion.

completed on south half of shed 28, with the exception of platform grillage which has not been started yet; 75% of floor girders have been placed on the south half of shed 28; all the columns for shed 28 have been cut to length, and 50% of the brace blocks have been nailed in place and 25% bored for lag screws. Six bents for the north side of shed 28 have been laid out. Good progress is being made and the framing of the superstructure will be well under way this week.

The repairs to the transmission line are over 60% complete. The telephone dispatching line between North St. station and Rockingham has been put back into service.

The Canadian Government Railways officials are also attending to the repairing of the Naval Service Department property; the damage to which is described in this issue. At the Naval Hospital the lathing has been replaced on the attic and second floor. The concealed electric wiring has been installed in the second floor and attic. Eight out of 12 hot water heating returns have been repaired and put into service. Plastering is proceeding on the second floor. About 56 men are employed on this hospital. At the Naval Dockyard store A has the floor and all the main posts set, with the exception of 4. Store B has the foundation in and half the floor in position. At store D, 50% of the excavation for the grillage

supplies and 8 boarding cars.

Dec. 6. From Moncton, 185 miles, 8 cars, 1 baggage car, 1 hospital commissary, 2 hospital tourists, 1 first class, 2 standard sleepers and general managers' car. This train had railway officials, doctors, nurses and hospital supplies.

Dec. 6. From Moncton, 185 miles, 9 cars Moncton fire brigade, 2 cars, wrecking crane and outfit, 3 hospital and 1 colonist cars.

Dec. 6. From Moncton, 185 miles, 13 cars, 3 box cars, food supplies from Moncton, 7 first class, 1 sleeper, 1 official with doctors and nurses, 1 car food supplies from Sackville.

Dec. 6. From Moncton, 185 miles, 24 cars; steam shovel, small crane, 1 car track spikes, 1 car stores, lanterns, etc., and other cars with food supplies. With this train were 3 gargs workmen consisting of 3 foremen and 15 men.

Dec. 6. From Sydney and New Glasgow, 5 cars. General Superintendent, doctors and nurses.

Dec. 7. From Pictou, 115 miles, 4 cars. Premier Borden and party of doctors and nurses from Charlottetown. In connection with the Premier's special a special trip of the s.s. Aranmore was made from Charlottetown to Pictou.

Dec. 7. From St. John, 274 miles, 5 cars. Massachusetts State Relief; 2 baggage cars, 1 diner, 2 sleepers, with 16 doctors, 15 to 20 nurses, and hospital supplies.

glass and clothing; 1 diner, 5 sleepers; 50 doctors, 50 nurses, 1 chauffeur, 1 druggist, 3 lady secretaries, 2 social workers. Dr. Hough in charge. Dr. Marshall in charge of supplies; Miss Baldwin, head of Red Cross.

Dec. 9. From St. John, 274 miles, 6 cars. Bangor, Me., relief. 2 baggage cars, 2 1st class, 2 sleepers, Christian Science Monitor, doctors and nurses, 35 in party, clothing, blankets and other supplies.

Dec. 14. From St. John, 274 miles, 9 cars. Montreal relief. 4 cars window glass, 2 cars beaver board, 2 cars roofing 1 car lumber.

Dec. 10. From Montreal. 830 miles, 11 cars food supplies.

Dec. 10. From Montreal. 830 miles, 24 cars food supplies.

Dec. 10. From Montreal, 830 miles. 5 cars. 3 cars with clothing and provisions, 2 private cars with doctors, nurses and officials of the T. Eaton Co., Toronto. Sir John Eaton was with this train.

Dec. 10. From Montreal. 830 miles. 11 cars. Toronto relief. 1 car building supplies, 3 baggage cars, 6 colonists, 1 sleeper. This train had carpenters, plumbers and machinists with tools, etc., 8 officers and 337 men.

Dec. 10. From Montreal, 830 miles. 20 cars auto trucks and supplies from Ottawa.

Dec. 11. From Montreal, 830 miles. 25 cars supplies, meat, etc., from Ottawa.

Birthdays of Transportation Men in February.

Many happy returns of the day to:—

B. H. Bennett, General Agent, Chicago & North Western Ry., Toronto, born at Cobourg, Ont., Feb. 6, 1858.

T. Britt, General Fuel Agent, C.P.R., Montreal, born there Feb. 3, 1871.

J. S. Byrom, General Superintendent, Sleeping, Dining and Parlor Cars, and News Service, Eastern Lines, C.P.R., Montreal, born at Jersey City, N.Y., Feb. 10, 1872.

J. J. Callahan, Superintendent, Oshawa Ry., Oshawa, Ont., born at New Glasgow, Que., Feb. 25, 1875.

H. R. Charlton, General Advertising Agent, G.T.R. and G.T.P.R., Montreal, born at St. Johns, Que., Feb. 9, 1866.

R. Colclough, Superintendent, District 1, Transcontinental Division Canadian Government Railways, Quebec, Que., born at Bic, Que., Feb. 24, 1871.

R. Crawford, Northwest Agent, Northern Navigation Co., Winnipeg, Man., born at Kingston, Ont., Feb. 21, 1870.

A. J. Donegan, ex-Superintendent, Algoma Eastern Ry., now at Nickelton, Ont., born at Perth, Ont., Feb. 17, 1872.

R. W. Drew, Division Freight Agent, Saskatchewan District, C.P.R., Regina, born at Kingston, Ont., Feb. 17, 1874.

E. A. Evans, M.Can.Soc.C.E., ex-General Manager and Chief Engineer, Quebec Ry., Light & Power Co., Quebec, born at Kensington, London, England, Feb. 26, 1855.

Goodwin Ford, General Superintendent, Western Lines, Dominion Express Co., Winnipeg, born at Bordentown, N.J., Feb. 23, 1859.

U. E. Gillen, Vice President (Operating), G.T.R., Montreal, born at Brooklyn, Mo., Feb. 27, 1867.

T. C. Hudson, Division Master Mechanic, Quebec Division, Canadian Northern Ry., Joliette, Que., born at Brockville, Ont., Feb. 20, 1873.

H. Hulatt, Manager of Telegraphs, G.T.R. and G.T.P.R., Montreal, born at London, England, Feb. 15, 1883.

C. Gardner Johnson, Lloyd's Agent for British Columbia, Vancouver, B.C., born at Dunblane, Scotland, Feb. 8, 1857.

F. C. Johnson, General Foreman of Shops, C.P.R., Moose Jaw, Sask., born at Montreal, Feb. 26, 1885.

A. H. Jones, Assistant Engineer, Canadian Government Railways, Moncton, N. B., born at Liverpool, Eng., Feb. 16, 1884.

John McCraw, General Agent, Central Vermont Ry., New London, Conn., born at Craigvale, Ont., Feb. 6, 1868.

G. L. McCrea, Local Freight Agent, C.P.R., Vancouver, B.C., born at Springtown, Ont., Feb. 9, 1876.

T. McNab, ex-Master Mechanic, Alberta Ry. & Irrigation Co., now of Picture Butte, Alta., born in Scotland, Feb. 16, 1849.

J. K. McNellie, Superintendent, Susquehanna Division, Delaware & Hudson Co., Oneonta, N.Y., born at Toronto, Feb. 23, 1874.

J. D. McNutt, Inspector of Train Dispatching, Canadian Government Railways, Moncton, N.B., born at Stewiacke, N.S., Feb. 8, 1873.

D. C. Macdonald, Assistant General Claims Agent, C.P.R., Winnipeg, born at Elmsdale, N.S., Feb. 9, 1874.

C. S. Maharg, Superintendent, Brandon Division, Manitoba District, C.P.R., Brandon, born in Dufferin County, Ont., Feb. 4, 1867.

V. J. Melsted, ex-Engineer of Water Service, C.P.R., Winnipeg, born at Gardar, N.D., Feb. 20, 1887.

G. A. Montgomery, Vice President and General Manager, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., born at Bradford, Ont., Feb. 11, 1871.

A. Z. Mullins, Commercial Agent, G.T.R., Grand Rapids, Mich., born at Appin, Ont., Feb. 14, 1862.

M. G. Murphy, General Agent, Passenger Department, C.P.R., Detroit, Mich., born at Halifax, N.S., Feb. 26, 1878.

J. E. Proctor, District Passenger Agent, C.P.R., Regina, Sask., born at Sarnia, Ont., Feb. 17, 1878.

C. T. Ridalls, Car Foreman, C.P.R., London, Ont., born at St. Heliers, Jersey, Channel Islands, Feb. 8, 1864.

A. E. Rosevear, General Freight Agent, G.T.P.R. and Grand Trunk Pacific Coast Steamship Co., Winnipeg, born at Montreal, Feb. 20, 1863.

J. G. Scott, ex-General Manager, Quebec & Lake St. John Ry., Quebec, born there Feb. 13, 1847.

J. J. Scully, General Superintendent, Algoma District, C.P.R., North Bay, Ont., born at Montreal, Feb. 3, 1872.

G. Spencer, Chief Operating Officer,

Board of Railway Commissioners, Ottawa, born in London, Eng., Feb. 21, 1865.

R. H. Sperling, Advisor to the Board, British Columbia Electric Ry., London, Eng., born there, Feb. 9, 1876.

H. E. Suckling, Treasurer, C.P.R., Montreal, born at Gibraltar, Feb. 27, 1851.

Hugh Sutherland, Executive Agent, Canadian Northern Ry., Winnipeg, Man., born at New London, P.E.I., Feb. 22, 1845.

F. L. Wanklyn, M.Can.Soc.C.E., General Executive Assistant, C.P.R., Montreal, born at Buenos Ayres, Feb. 25, 1860.

J. R. Watson, Assistant Superintendent, Sleeping, Dining and Parlor Cars, and News Service, Eastern Lines, C.P.R., Montreal, born at Morpeth, Eng., Feb. 8, 1873.

A. Williams, Superintendent, London Division, Ontario District, C.P.R., London, born at Mono Road, Ont., Feb. 22, 1872.

The Winnipeg Jitney Owners and Drivers' Association at a meeting held Jan. 20, made arrangements to fight all attempts to put them out of existence. There are about 250 jitneys operating in the city according to a statement made at the Board of Control, Jan. 7.

The Canadian Pacific Railway's Honor Roll No. 29

Abbott, David	Checker	Toronto	Killed in action
Adams, Jas.	Switchman	Calgary	Presumed dead
Bagnell, Alex.	Shedman	Bowmanville	Wounded
Beamish, Wm. Richard	Car repairer	Moose Jaw	Wounded
Bossley, Jas.	Locomotive fireman	British Columbia Dist.	Wounded
Burton, Leslie Wm.	Asst. steward	Winnipeg	Wounded
Cameron Adam R.	Clerk	Montreal	Killed in action
Cannon, Kenneth E.	Wiper	Winnipeg	Presumed dead
Chandler, Reginald R.	Cook	Montreal	Killed in action
Christie, Andrew F.	Clerk	Winnipeg	Wounded
Clarke, E. Vincent	Timekeeper	Medicine Hat	Wounded
Clarke, Wm. B.	Clerk	Toronto	Died of wounds
Colebrook, William	Stower	St. John, N.B.	Killed in action
Crane, Horace F.	Stower	Calgary	Killed in action
Dillon Ernest H.	Sectionman	Douglas	Wounded
Dudley, John	Shipper	Winnipeg	Wounded
Ewen, John Douglas	Clerk	Toronto	Wounded
Gillies, Wm. John	Fireman	Winnipeg	Wounded
Green, Arthur	Asst. agent	Foam Lake	Killed in action
Hack, Cyril	Fitter's helper	Field	Wounded
Haldane, Ewen McG.	Clerk	Sudbury	Died of wounds
Hamilton, William	Sectionman	Estevan	Wounded
Hancock, Albert P.	Foreman and checker	Winnipeg	Wounded
Harrison, George R.	Draftsman	Winnipeg	Wounded
Hiam, Gerald	Dist. Freight Agent	Fort William	Wounded
Hobson, Andrew J. H.	Operator	Douglas Pit	Killed in action
Hooper, Henry S.	Operator	Portage la Prairie	Wounded
Hendry, Frank G.	Locomotive man	British Columbia Dist.	Died of wounds
Hughes, Wm. G.	Clerk	Montreal	Wounded
Jacobs, William	Machinist's helper	Ogden Shops	Wounded
Jobling, Richard	Bridgeman	Lethbridge	Died of wounds
Joyce, Alfred W.	Clerk	Winnipeg	Wounded
Kemp, John Herbert	Clerk and operator	Peterborough	Wounded
Large, Wm. Chas.	Checker	Port McNicoll	Wounded
McCauley, Jeremiah	Conductor	North Bay	Gassed
MacDonald, Daniel J.	Clerk	Halifax, N.S.	Died of wounds
McDonnell, Roderick	Locomotive man	North Bay	Killed in action
McInnes, Christopher	Asst. Checker	Kamloops	Gassed
Mackinson, Wilfred	Machinist's helper	Calgary	Wounded
Mason, George	Yardman & switchman	Montreal	Wounded
Meeson, Oscar D.	Billie	Winnipeg	Presumed dead
Moyle, Jas. Henry	Brakeman	Chapleau	Wounded
Newbold, Alfred H.	Head storeman	Winnipeg	Died of wounds
Orehard, Larnach	Steward	B.C. Coast Steamers	Wounded
Overy, Albert	Car cleaner	Moose Jaw	Gassed
Parfitt, Reginald J.	Clerk	Montreal	Wounded
Phillips, Mark V.	Steward	B.C. Lake & River Strs.	Wounded
Porter, Clarence R.	Car checker & biller	Owen Sound	Presumed dead
Prince, Lionel	Boilermaker	Winnipeg	Killed in action
Reid, John Moir	Steward	B.C. Coast Strs.	Killed in action
Richards, Francis P.	Accountant	Winnipeg	Wounded
Rose, Thomas	Loader	Vancouver	Wounded
Scales, A.	Miner	Calgary	Wounded
Sharples, John	Fireman	Sutherland	Wounded and gassed
Sly, George W.	Foreman	Farnham	Wounded
Smith, Hubert	Triple tester	Winnipeg	Gassed
Smyth, William	Clerk	Winnipeg	Wounded
Strucress, Samuel	Truck repairer	Winnipeg	Killed in action
Surridge, John B.	Painter's cleaner	Winnipeg	Wounded
Turnbull, Alexander	Baggage porter	Calgary	Wounded
Turner, Alfred	Car cleaner	Brandon	Killed in action
Type, Augustus	Sneak list	Montreal	Wounded
Van Loo, Emile	Check boy	Calgary	Killed in action
Vidal, Maurice H.	Clerk	Sudbury	Killed in action
Warner, Harry	Locomotive fireman	Kenora	Shell shock
Whetlaw, George J.	Clerk	Montreal	Wounded
Wilson, James	Machinist	Winnipeg	Died of wounds
Woodwards, George	Checker	North Bay	Killed in action
Young, Rainsford	Clerk	Winnipeg	Wounded

Shown on Honor Lists to Dec. 1, 1917: Killed, 541; wounded, 1,154; total, 1,695.

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

Alberta-Hudson Bay Ry.—Surveys are reported to be in progress for a railway from Medicine Hat, southerly through Coutts, Alta., at the International boundary, with an extension in the United States, to connect with the Great Northern main line at Great Falls, Mont. C. B. Miles is said to be in charge of surveys.

This is the project originally initiated in Alberta under the title of the High River and Hudson Bay Ry., and in Saskatchewan as the Saskatchewan and Hudson Bay Ry., and under the Dominion Charters of the High River, Saskatchewan and Hudson Bay Ry., and the Calgary and Fernie Ry. The A. H. B. Ry. is the new title of the Alberta section of the undertaking, and the surveys reported to be under way cover the portion of new mileage authorized by the Alberta Legislature in 1917. (May, 1917, pg. 194; June, 1917, pg. 224).

Alma & Jonquiere Ry.—The Quebec Legislature has extended the time for the building of this projected railway from LaBarre or St. Gedeon, on the Quebec & Lake St. John Ry., to Little Discharge, to Alma Island, and through Signal, La Barre, Kenogami and Jonquiere Tps., to Jonquiere station on the Q. & St. J. Ry. (Dec., 1917, pg. 470.)

Calgary and Coal Range Ry.—The Alberta Legislature is being asked to incorporate a company to build a railway from Calgary south westerly to a point in either Tp. 19 or 20, in Ranges 2, 3 or 4 west 5th Meridian, thence south and south easterly to Tp. 16, Range 1, west 5th Meridian and thence southwesterly to the headquarters of Johnstone Creek. Short & Cross, Edmonton, Alta., are solicitors for the applicants.

The Canadian Northern Ry.'s locomotive house at Portage la Prairie, Man., was destroyed by fire, Jan. 16.

A transfer track is reported to be under construction at Stebbler, Alta., to connect the Canadian Pacific and Canadian Northern Railways. It was expected to have the connection made by Jan. 31. Stettler is on the C. N. Ry.'s Vegreville-Calgary line, and on the C. P. R.'s Kerrobert-Lacombe line. (Jan. pg. 12).

Grand Trunk Pacific Ry.—It is reported that negotiations are practically completed under which the G. T. P. R. will utilize certain of the C. P. R. tracks in Saskatoon, Sask. At present the company runs outside Saskatoon, and in order that its trains may run through the C. P. R. station, connections will have to be made with that company's tracks near Floral on the east and Cory on the west. (Jan. pg. 12).

Grand Trunk Ry.—Brantford, Ont., ratepayers voted Jan. 7, by a majority of 272, in favor of a bylaw to raise \$40,000 by debentures towards the cost of constructing a subway under the G.T.R. tracks at St. Paul Ave.

In connection with the reduction of train service on the old London, Huron & Bruce Ry. between London and Wingham, Ont., a proposition is being discussed in the municipalities through which it runs in favor of the electrification of the line. (Jan., pg. 12).

Great Northern Ry.—The old frame building on Pender St., Vancouver, B.C., formerly used by the G. N. R. as a passenger station, and which has been closed since the opening of the new building on False Creek, is to be renovated and refitted for a stores building.

The new concrete and steel bridge which opens the North Road at Coquitlam, built through the G. N. R. in straightening its tracks along the Brunette Creek, has been opened for public traffic. Track laying along the new cut-off has been practically completed. The cut-off will reduce the distance between New Westminster and Vancouver by about half a mile, and eliminates the level crossing at the Brunette bridge. On Jan. 2, there was a big landslide adjoining the new bridge, which buried the new track for several hundred feet. The clearing of this away will, it is estimated, cause a delay of about a month in the completion of the cut-off (Nov. 1917, pg. 433.)

Kettle Valley Ry.—We are officially advised that tenders have been asked for the grading of the projected branch from Penticton southerly to Copper Mountain, and for the building of the bridges thereon. A. McCullough, Penticton, B.C., is Chief Engineer. (Dec. 1917, pg. 471).

Michigan Central Rd.—The Essex County Council is applying to the Ontario Legislature for the confirmation of an agreement respecting the use of a spur owned by the M.C.R. to convey sand and gravel for use under the Highway Improvement Act, from lands purchased by the county to the M.C.R. main line. (Aug., 1917, pg. 306.)

Pacific Great Eastern Ry.—A. F. Proctor, Chief Engineer of the British Columbia Department of Railways, has completed an inspection of the line and of the rolling stock. The inspection was made with a view of ascertaining how far the line has been damaged by the recent land slides. (Nov., 1917, pg. 433.)

Quebec Bridge.—A passenger train service was inaugurated over the bridge Jan. 6.

In connection with wild press reports as to contraction of the bridge during the winter, one being that there was a contraction of 9 ft., C. N. Monsarratt, chairman of the commission, is reported to have said that provision had been made in the structure for expansion and contraction of 36 in., which is sufficient to take care of a variation in temperature of 180 degrees. Between Dec. 18 and 30, when the greatest variation of temperature was 35 degrees, the contraction was only 4½ in. which was in accordance with expectations. (Jan., pg. 12).

Red Deer Valley Coal Co.—The Dominion Government has leased to the company land in the S. E. ¼ Sec. of Sec. 9, Tp. 29, Range 20, west of the 4th Meridian, for the construction of a spur line from the Canadian Northern Ry.'s Vegreville-Calgary line, to the company's collieries.

Toronto, Hamilton and Buffalo Ry.—The City Solicitor of Hamilton has prepared a draft lease covering the taking over of Mountain face property by the T. H. & B. R. It provides for the payment of taxes and rents by the company, the prohibition of shunting on Sundays and week nights, between 10 p.m. and 6 a.m., and the removal of all ties, rails and equipment at the expiration of five years. The Council's railway committee was called together on Jan. 15 to pass on the lease before it was forwarded to the Board of Railway Commissioners for approval.

At a meeting of residents of the district on Jan. 18, a committee was formed to look after the interests of citizens and

to continue the fight against the company being given authority to expropriate the land covered by the proposed lease for railway yard purposes. A suggestion was made that a general organization of citizens should be formed for the purpose of forming public opinion in favor of the carrying out of the recommendations of the Tye-Cauchon report in their entirety. (See "The Railway Situation in Hamilton," Jan., pg. 17.)

Western Power Co. of Canada and Western Canada Power Co.—The W. P. Co. of Canada is applying to the Dominion Parliament to authorize it to operate the railway built by the W. C. P. Co. and described in sec. 1, chap. 175 of the statutes of 1910 as, from a point at or near the company's works at Stave River, B.C., southerly and westerly to a point on the main line of the C.P.R. between Ruskin and Hammond. This line was built in 1910 and has been used as a logging railway, an electric locomotive being used for hauling the cars. (Feb., 1914, pg. 70, Oct., 1910, pg. 833.)

Canadian Pacific Railway's Victory Loan Float.

Following are some additional particulars of the C.P.R.'s float which was used in the Victory Loan parades in Montreal and Toronto in November, and which was illustrated and briefly described in Canadian Railway and Marine World for December: The float was built at the company's Angus shops, Montreal, under the direction of W. E. Woodhouse, Chief Mechanical Engineer, and was completed in 48 hours from the time instructions were issued to build it. This model was half the size of the company's standard D-10 freight and passenger locomotive, being 36 ft. over all.

It was constructed as follows: The propelling gear was two Little Giant one-ton trucks, operated independently by two operators. The float was supported on these trucks by centre pins, located centrally between front and back drivers of each truck, and side bearings were provided to steady the load. The frame proper, which supported the locomotive and tender was of rigid construction, having two centre pins which engaged with centre pins on the trucks as above mentioned. The boiler, cab and tender were built up of a wooden frame work, which was fastened rigidly to the main frame, after which boiler jacket steel, 22 gauge, was wrapped around the wooden framework, producing an effect identical with an actual locomotive. The air to blow the whistle was provided from two oxygen bottles, which were located in the tender. Smoke was made as follows: A pan of water was located in the stack, with about 1 in. clearance between the pan and the stack and a fusee was lit and placed below the water pot, the heat of the fusee boiling the water, and the steam and smoke from the fusee escaping through the stack, giving the appearance of a locomotive under steam. The hand-rails, grab irons, etc., were actual duplicates of the real things, the whole make-up being an excellent duplicate (from outside appearances) of a D-10 locomotive.

New Brunswick received \$57,197 from railways taxes for the year ended Oct. 31, 1917.

Mainly About Railway People Throughout Canada.

E. V. Bodwell, K.C., who died at New Westminster, B.C., Jan. 14, was Solicitor for the Great Northern Ry. at Vancouver.

G. McL. Brown, European Manager C. P.R., London, Eng., has been elected a member of the Pilgrims' Club.

E. M. Goodman, agent, Timiskaming & Northern Ontario Ry., Liskeard, Ont., has been elected mayor of the town for the current year.

C. W. Price, station agent, Canadian Government Railways, Moncton, N.B., has resumed his duties after a short absence through illness.

H. R. Safford, M.Can.Soc.C.E., Chief Engineer, G.T.R., Montreal, has been nominated as Vice President, American Railway Engineering Association for 1918.

Alex. Campbell, who resigned his position as Traffic Manager, Edmonton, Dunvegan & British Columbia Ry. in Sept., 1917, has returned to the United States and is operating a ranch in Idaho.

J. M. R. Fairbairn, M.Can.C.E., Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal, has been nominated as a director of the American Railway Engineering Association for 1918.

J. G. Scott, formerly General Manager, Quebec & Lake St. John Ry., and now President, Quebec Board of Trade, has been elected President of the British Columbia Skeena Coal Co., Ltd.

Bion J. Arnold, of the Arnold Co., Engineers, Chicago, Ill., has been appointed a lieutenant-colonel in the aviation section of the Signal Corps of the U. S. Army, and assigned to foreign service.

C. E. Horning, District Passenger Agent, G.T.R., Toronto, has been elected a member of the Toronto Transportation Club's executive committee, to succeed E. Boland, Manager, Robert Reford Co., resigned.

W. F. Tye, M.Can.Soc.C.E., Montreal, formerly Chief Engineer, C.P.R., is reported to have been named as a member of the Dominion Commission on Conservation, in place of the late Sir Sandford Fleming.

F. P. Brady, General Manager, Western Lines, Canadian Government Railways, Winnipeg, who was in Ottawa on business with the Railways Department, left there towards the end of January for treatment in the Royal Victoria Hospital, Montreal.

E. R. Bremner, who has been re-elected President of the Ottawa Board of Trade, was formerly Assistant General Freight Agent, Canada Atlantic Ry., subsequently District Freight Agent, G.T.R., and since then Canadian Manager, Watson & Todd, Ltd., lumber merchants, Ottawa.

Sir Collingwood Schreiber, K.C.M.G., Hon.M.Can.Soc.C.E., General Consulting Engineer of the Dominion Government, who was confined to his house by illness for some little time, was able to be at his office in Ottawa again towards the end of January.

D'Arcy Scott, Assistant Chief Commissioner, Board of Railway Commissioners, and **S. J. McLean**, Commissioner, were appointed Sept. 17, 1908, so that their 10 years terms of office will expire Sept. 17, 1918. They are both eligible for re-appointment.

Henry Fleming, who died at Collingwood, Ont., Dec. 25, aged 86, after spending most of his life farming in that dis-

trict, was a brother of the late Sir Sandford Fleming, sometime Chief Engineer of the Intercolonial and Canadian Pacific Railways and afterwards a C.P.R. director.

A. F. Mitchell, who has been elected an associate member of the Canadian Society of Civil Engineers, is acting District Engineer in charge of harbor improvements at Victoria and Nanaimo, the construction and maintenance of government wharves, the graving dock at Esquimalt and other public works in British Columbia.

Major-General Sir Percy Girouard, Managing Director, Sir W. G. Armstrong, Whitworth & Co., Ltd., of England, at one time on the C.P.R. engineering staff, and subsequently associated with various rail-



H. H. Vaughan
President, Canadian Society of Civil Engineers

way works under the British War Office, in England, Egypt, and South, East and West Africa, has been elected a member of the Pilgrims' Club, London, Eng.

E. B. Tilt, who has been elected an associate member of the Canadian Society of Civil Engineers, was formerly Engineer of Tests, Angus Shops, C.P.R., Montreal, and in 1915-16 he was Chief Inspector of steel for the Imperial Munitions Board, and subsequently went to Madrid, Spain, as President and General Manager, Sociedad Hispano-Americano Gaston Williams of Wigmore, C.A. He is at present in Canada.

Daniel Todd Main, Works Manager, C. P.R., Winnipeg, who has been elected an associate member of the Canadian Society of Civil Engineers, was born at Kirkintilloch, Scotland, June 18, 1878, and educated in the Isle of Man and Glasgow Technical College (Applied Science). He came to Canada in 1903, and entered Mackenzie, Mann & Co.'s service as draftsman, transferring to C. P. R. service in 1904, since when he has been, to 1907, draftsman; 1907 to Mar., 1908, Locomotive Foreman, Minnedosa, Man.; Mar., 1908, to Mar., 1910, Locomotive Foreman,

Cranbrook, B.C.; Mar., 1910 to Jan. 1912, District Master Mechanic, District 1, British Columbia Division, Nelson; Jan., 1912, to June 30, 1913, Master Mechanic, Saskatchewan Division, Moose Jaw; June, 1913, to Apr. 15, 1915, Master Mechanic, British Columbia Division, Vancouver; Apr. 15 to Apr. 20, 1915, Master Mechanic, Ontario Division, Toronto; Apr. 20, 1915, to Sept. 1916, Superintendent of Motive Power and Car Department, Eastern Lines, Montreal, and since Sept. 1916, Works Manager, Winnipeg.

Henry Hague Vaughan, who has been elected President, Canadian Society of Civil Engineers, was born at Forest Hill, Essex, Eng., Dec. 26, 1868, and educated at King's College, London. He served an apprenticeship with Nasmith, Wilson & Co., Patricroft, Manchester, Eng., and went to the U. S. in 1891. He was engaged with various companies as machinist, draftsman, assistant engineer of tests, and mechanical engineer, including the Great Northern Ry., Philadelphia & Reading Ry., and the Queen and Crescent Route, and after a period of service with a supply house, was appointed Assistant Superintendent of Motive Power, Lake Shore & Michigan Southern Ry., Mar., 1902, remaining until Feb., 1904, when he was appointed Superintendent of Motive Power, C.P.R., which position he held until his appointment as Assistant to the Vice President, Dec., 1906, from which position he retired in Apr., 1915, acting afterward as Consulting Engineer. He has been a member of the Canadian Society of Civil Engineers since 1906, a member of the council since 1910, and was elected Vice President in 1912. He is Vice President, Dominion Bridge Co., Vice President and General Manager, Dominion Copper Products Co., and President, Montreal Ammunition Co.

Arthur H. Harris, who has been made a Knight Commander of the British Empire, for his services in Canada as Director of Overseas Transport, was born at Devonport, Devonshire, Eng., Oct. 15, 1855. He came to Canada in 1874, and entered railway service that year, since when he has been, to 1887, secretary to Traffic Manager, G.T.R.; June, 1887, to Sept., 1889, Assistant General Freight Agent, Through Traffic, same road, Buffalo, N.Y.; Sept., 1889, to Jan. 1891, General Freight Agent, Through Traffic, same road, Detroit, Mich.; Jan., 1891, to May, 1892, District General Freight Agent, in charge of Southern Division, same road, Hamilton, Ont.; May 1, 1892, to Dec. 1, 1897, District General Freight Agent in charge of all lines east of Belleville, Ont., to the coast, same road; Dec. 1, 1897, to Aug. 1, 1898, General Traffic Manager, Intercolonial and Prince Edward Island Railways; Aug. 1, 1898, to Aug. 1, 1900, General Canadian Traffic Agent, Fitchburg Rd., Montreal; Aug. 1, 1900 to 1902, General Traffic Manager, Quebec Southern Ry., and also General Canadian Traffic Agent, Rutland Rd., Montreal. In 1902 he entered C.P.R. service as Special Traffic Representative, under Vice President Bosworth, and remained in that position until Aug., 1914, when he was loaned to the Imperial and Dominion Governments to organize and direct an overseas transport department, being given the title of Director of Overseas Transport.

William Zobbieski Earle, M.Can.Soc.C.E. who died at Rothesay, N.B., Jan. 5, after a short illness, was born at Hamilton, N.B., July 23, 1854, and entered railway

service in 1871, as rodman, Intercolonial Ry. In 1872 he served as chainman on government surveys in Manitoba; 1873 to 1874, assistant in charge of party on land surveys; May to Dec. 1874, transit man, on city work and survey of St. John River, Public Works Department; 1875 to 1876, Assistant Engineer on location and construction, St. Martins and Aphan Ry.; 1877, on survey on line from Bras d'Or to Broad Cove, N.S., and remeasurement of Albert Rd.; 1878 to 1880, private practice at St. John, N.B.; 1880 to 1881, Assistant Engineer on location on the second 100 miles of the C.P.R. west of Winnipeg, for the Dominion Government; Mar. 1881 to Apr. 1883, Assistant Engineer, C. P. R.; Apr. 1883 to Oct. 1886, Division Engineer on construction through the Rocky Mountains, C.P.R.; May to Aug. 1887, Division Engineer on extension, Sherbrooke, Que., easterly, C.P.R.; Aug. 1887 to Mar. 1891, Resident Engineer, Oregon Pacific Ry.; Apr. 1891 to July 1892, Chief Engineer, Peninsular Ry. of Lower California; Sept. 1892 to Mar. 1893, Chief Engineer, Coor Bay Roseburg and Eastern Ry., Oregon; Mar. 1893 to Jan. 1896, Principal Assistant Engineer, Bangor and Aroostook Ry., Maine. He was subsequently, Engineer in charge of harbor improvements, St. John, N.B.; Resident Engineer, Public Works Department, Sault Ste. Marie, Ont.; and Manager, St. John Ry., St. John, N.B.; resigning the last named position in 1910 on his appointment as District Engineer, Public Works Department, Winnipeg, and later at Prince Albert, Sask. He left the west for Rothesay, N.B., toward the end of 1917, on account of his health.

Salisbury and Albert Railway Operation.

This S. & A. Ry. line extends from Salisbury, N.B., on the Intercolonial Ry. near Hillsboro, to Albert, 45 miles, entirely in Hillsboro County. It is one of the lines which it was proposed that the Dominion Government should take over and operate as an Intercolonial branch. One train a day, in either direction, has been operated over the line, but for a considerable time past there has been a good deal of complaint made as to the service given. Since the beginning of the present year there has not been any service between Hillsboro and Albert. As the result of a petition from the district the Minister of Railways, on Jan. 11, authorized the Intercolonial officials to operate the line immediately. Whether this will be only a temporary expedient, or whether it is preliminary to the taking over of the line as a regular branch line, has not been announced.

Pere Marquette Ry. Track Awards.—Results of the awards of prizes in connection with the annual track inspection, conducted by the President, were announced recently. A prize of \$100 for the district showing the greatest improvement during the year, was awarded to H. Morris, Roadmaster, Canadian Division, Walkerville, Ont., and another prize of \$100 for shop grounds and buildings, was awarded to Charles Montgomery, Division Master Mechanic, Canadian Division, St. Thomas, Ont.

Timiskaming & Northern Ontario Ry. Passenger earnings for Nov., \$55,625.49; freight earnings \$116,033.01; total earnings \$171,658.50, against \$55,039.83 passenger earnings; \$105,798.45 freight earnings; \$160,838.28 total earnings for Nov., 1916.

Meritorious Services by Canadian Pacific Railway Employes.

The educational bulletins issued by the general superintendents of the company's various districts record the following meritorious services performed by employes recently:—

Chas. Henderson, conductor, New Brunswick District, while in charge of a passenger train detected an unusual jar. He immediately stopped his train, and on investigation found a piece of 18 in. broken out of one of the rails. His commendable alertness undoubtedly prevented an accident.

Edgar G. Beal, conductor, Brandon Division, while in charge of train, noticed that it had passed over a rough spot in the track. He immediately stopped the train and went back and found a broken rail. His vigilance and action are commendable.

The locomotive man on an outgoing passenger train, the rear of which was close to the entrance to the station, backed his train up in order to avoid being struck by an incoming passenger train. He did this without receiving any signal. The prompt action of a trainman in applying the brake no doubt averted an accident.

A locomotive man, assisted by his fireman, replaced broken bolts in tender drawbar strap on wayfreight locomotive on a branch line, completed the trip, and returned to the terminal the following day with repairs made. This avoided considerable delay to the train and also light movement of power.

Trainman G. Gill, while examining train at Streetsville Jct., Ont., discovered broken wheel on car. This emphasizes the importance of close inspection being given by trainmen to their trains when standing at stations or in sidings.

Conductor Orndorff, after passing switch at Galt grade reduction, noticed marks on the track and immediately applied the brakes. On examination of the train one pair of trucks of snow plow were found to be derailed.

Disposition of Cars Containing Food or Food Products.

A Dominion order in council, under the War Measures Act, 1914, was passed Dec. 24, 1917, providing regulations regarding the loading, detention and disposition of cars containing food and food products, as follows:—

1. A freight car containing food or food products shall not be allowed to remain under load at its destination on any railway in Canada for a longer period than four days after notice of its arrival has been given by the railway company to the consignee of such food or food products.

2. When any freight car containing food or food products remains under load at its destination for a longer period than four days after such notice has been given as aforesaid, the railway company holding such freight car shall notify the Food Controller thereof.

3. When any freight car containing food or food products is held at any railway point in Canada for a furtherance order and such order is not given by the consignee of the said goods within one day of the time of the arrival of the car at such point, the railway company holding such freight car shall notify the Food Controller thereof.

4. Whenever, by reason of such notice or otherwise, it comes to the knowledge

of the Food Controller that any freight car containing food or food products has remained under load at its destination for a longer period than four days, or has been held at any point for furtherance order for a longer period than one day after notice of its arrival has been given to the consignee as aforesaid, the Food Controller may send a written notice by registered mail or by telegram to the consignee that unless the freight car is unloaded or a furtherance order given, as the case may be, within two days from the date of such notice, the food or food products contained in such freight car will be seized by the Food Controller and sold, and if such freight car is not unloaded or a furtherance order given, as the case may be, within the said two days, the Food Controller may thereupon seize the contents of the said car and sell them in such manner as he may deem best, and, after paying all charges for freight and for the expenses connected with the seizure and sale, the Food Controller shall pay the balance, if any, of the proceeds of the sale to the said consignee.

5. The officers of any railway company by which a car or cars is or are being held for unloading or for furtherance orders shall furnish the Food Controller, or any person thereto authorized by the Food Controller, with all information that the Food Controller or such person may require with respect to the date of the arrival and the nature of the contents of any freight car under load held by the railway company at the point or points with respect to which any inquiry is made.

6. The Food Controller may forbid any railway company from accepting any food or food products for transportation from any shipper whose goods have been seized and sold under the provisions of these regulations, without the written permission of the Food Controller.

7. Any person neglecting or refusing to send any notice or give any information required or authorized by these regulations, or accepting any goods for shipment contrary to the provisions of section six of these regulations, shall be guilty of an offence and liable on summary conviction to a fine not exceeding \$500, or to imprisonment for a term not exceeding six months, or to both fine and imprisonment.

Union Collieries, Limited, is the title of a company incorporated under the Dominion Companies Act with an authorized capital of \$1,000,000, and office at Montreal. The primary purpose of the company is to acquire the lands and property in Alberta of the Diamond Coal Co., which is in liquidation. This company owned a short line of railway, extending from Kipp, on the C.P.R., to Diamond City. The new company has power to operate steam and other vessels, docks, wharves, elevators, warehouses, freight sheds, etc.; and to lay tramways, switches, sidings, etc., on its own lands.

Sir William Reid charged with libel.—Hon. W. F. Coaker, a member of the Newfoundland Government, laid information early in January against Sir William D. Reid, ex President, Reid Newfoundland Co., charging him with criminal libel, in a letter to Lord Shaughnessy, in which references were made to a visit to Ottawa by Mr. Coaker, during which he was to be "educated" as to the advisability of Newfoundland confederating with Canada. Sir William was released on \$40,000 bail, giving his personal bond of \$20,000 and two bondsmen of \$10,000 each.

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 would be glad to be favored in this respect.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Sept. 30, 1917, had contributed \$64,616.96 to the Canadian Patriotic and Red Cross funds.

The Grand Trunk Railwaymen's Patriotic Association, Toronto, has contributed \$5,000 to the Canadian Patriotic and Red Cross Funds, making a contribution to date, of about \$30,000.

Canadian Officers Honored. The following were included in the honors announced in England on New Year's Day. Companions of St. Michael and St.

commanding the 2nd Signal Co. at the front.

Lieut. W. W. Cranston, Royal Engineers, who is reported as killed in action, was in the Canadian Northern Ry.'s engineering department, on the Boston Bar subdivision in British Columbia, under Division Engineer J. D. Black, as follows: From Sept. 24, 1913, until May, 17, 1914, as draftsman; from May 18, 1914, until Oct. 20, 1914, as Resident Engineer.

G. W. Curtis, formerly Industrial Agent, C. P. R., Montreal, who joined the Royal Flying Corps, Nov. 15, 1916, is now an acting flight commander in England. His commanding officer is reported to have recommended him for a first lieutenancy, and he expects to be sent to France at any time.

Capt. F. H. Moody, B.A.Sc., Jr., M. Can. Soc. C.E., formerly Mechanical Editor, Canadian Railway and Marine World, has been seconded for duty under the Ministry of Munitions (Air Board). He went overseas as a major with the 116th Battalion, C.E.F., but reverted to a captaincy

Hospital at Bromley, Kent. He is a brother of Allan Royce, Vice President, and Lt. Col. Geo. C. Royce, Secretary-Treasurer and General Manager, Toronto Suburban Ry.

Captain Robert Shore, and Lieutenants Duncan, McCaimon and Alfred White, of the Canadian Railway Troops, have been awarded the Military Cross.

Canadian Railway Troops in the Cambrai Fighting.

Roland Hill, writing from the war correspondent's headquarters in France recently, said: "Against the furious counter-attacks which the Huns have made in the Cambrai sector, some Canadian railwaymen have played a minor, but very heroic part. In the scramble at Gouzeaucourt, when Germans actually occupied the village for a few hours, there were hand to hand combats with picks and shovels against rifles and machine guns, and for a time the Canadian shovel brigade held its own. One of the railwaymen grading a level crossing of a line on the morning of the attack, casually looked up from his work to find four Germans with rifles bearing down on his party. He gave one yell to his comrades, and, dashing for the Huns armed only with his pick, killed the first man after parrying a bayonet thrust, and was belaboring the others when his friends came up and wiped out the party. Further up the road the Canadians espied the Germans coming on in force, so the railway builders fell back in good order, the Huns hesitating, thinking they had a fighting unit to deal with—which was literally true. Most of the Canadians got safely away, although the shelling was extremely heavy. A few, who took shelter in an old German dugout, fell into the enemy's hands. But for the fine stand of the practically unarmed railway troops and a famous British fighting battalion—who were working with them, but whose rifles were stacked some distance away—the whole group would have fallen into enemy hands.

"These railwaymen, and with them were a number from the United States, fell back to where the new line was being formed, and that night came into the limelight again. In the meantime, approaching Gouzeaucourt from another direction, came one of the Canadian railwaymen's lorries laden down with material. The heavy shelling it ran through the driver regarded as part of the work. It rounded the corner into the village suddenly, and found half a dozen Huns with a machine gun, sitting at the main crossroads. The driver had no room to turn, no time to stop, so he decided to charge. Before the surprised Huns could open fire the lorry went over the gun like a juggernaut, and its crew scattered into the brick wilderness of the village. Then the truck turned on to the crossroads, lumbered back on top gear through more Huns who were collecting, and came, riddled with bullets, to safety.

"Yet another party of railwaymen and their friends of the British battalion were completely surrounded and taken prisoner. Their escort consisted of a full score of Germans under a very snappy little officer. They were hurried up the Cambrai road toward the newly-captured British line, and just as they had given up hope, part of an Imperial battalion espied them. Their captors tried to drive them towards Lavacquerie, but Scotsmen and Canadians, although unarmed, grappled with their guards until rescued by



On the Railway in No Man's Land.

From official photograph taken on British western front. Issued on behalf of the Press Bureau. Crown copyright reserved. Photograph loaned by C.P.R.

George: Col. G. S. Rennie, C.A.M.C., formerly Chief Surgeon, Dominion Power & Transmission Co., and Toronto, Hamilton & Buffalo Railway.; Col. B. R. Hepburn, M.P., Forestry Corps, formerly President, Ontario & Quebec Navigation Co. Distinguished Service Order: Lieut. Cols. Frederick Clarke, formerly Right of Way Engineer, Canadian Northern Ry.; Jas. Cornwall, Atholl Griffin, Chillion L. Hervev, M. Can. Soc. C.E., Jas. McDonald, Lawrence Martin, Walter Moodie, Kenneth Ramsey and Blair Ripley, all of the Canadian Railway Troops, Majors H. F. H. Hertzberg, M.C., and Harold Trotter, of the Canadian Engineers.

PERSONAL NOTES.

Lieutenant Alex. Allan, R.N.R., who is reported to have been lost at sea Nov. 19, 1917, was the eldest son of J. A. Allan, Glasgow, Scotland, and grandson of the late Alexander Allan, one of the founders of the Allan Line.

Lt. Col. W. P. Anderson, C.M.G., M. Can. Soc. C.E., Chief Engineer, Marine & Fisheries Department, Ottawa, who served in the Fenian raids in 1866 and 1870, and has the general service medal with two clasps, has three sons who have been made members of the Distinguished Service Order. They are Col. W. B. Anderson, of the Canadian Army Corps headquarters staff in London; Lt. Col. T. V. Anderson, who lost an arm at Vimy Ridge and who has an engineering command overseas; and Major Alex. Anderson,

on going to France and was wounded May 26, 1917, and transferred to a London hospital in June. Subsequent to his convalescence he was attached to the 2nd Reserve Battalion, C.E.F., stationed at Shorncliffe, Eng., and was appointed Adjutant, effective Dec. 12, 1917. Towards the end of the year, all Canadian casualty officers, who were engineers, were selected for service under the Air Board, to supervise the manufacture of airplane engines in various parts of the United Kingdom.

Engineer Lt.-Commander John Quine, R.N.R., who has been awarded the Distinguished Service Order, was, prior to the war, chief engineer of the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Albert.

Corp. D. Stanton Hudson, formerly of Perth, Ont., who was killed in action in France recently, graduated in civil engineering in Montreal in 1914. He was in the C.P.R. engineering department for a year, then in the National Transcontinental engineering department, and was still in the employ of that line when he enlisted in the Grenadier Guards at Montreal in Sept. 1915.

Major Gilbert Royce, of Toronto, of the Canadian Army Medical Corps, who was in charge of the eye, ear, nose, and throat department of No. 4 Canadian General Hospital at Salonika, for some two years, until he removed with it to Basingstoke, Eng., in Oct. 1917, has been appointed Commandant of the Canadian

the British party. Then they picked up what rifles they could and joined fortunes with the battalion that rescued them. All that night—they volunteered for the job—the railwaymen took their turn in the trenches, and at dawn were in the thick of another great Hun attack. When the roll was called later in the day 20 men were missing. That evening they came back to their officer, weary, but smilingly happy. They had had the time of their lives, they explained. They had volunteered to join an English battalion in the attack that gave us back Lavacquerie.

"In another part of the hard pressed line some overseas construction men completed a line of railway into a village that has figured largely in the present operations, and each night not only mended scores of breaks under cover of darkness, but all night long loaded wounded on their work train and brought them around to the ambulance railhead. It meant about an hour's trip on a fairly smooth roadbed for the casualties instead of two or three hours' jolting in motor ambulances over rough roads. In addition to running his locomotive, the locomotive man kept a huge cauldron of tea boiling on his tender. Not until after the great rush was over did an unlucky shell put the train out of business.

"These Canadian railwaymen showed they could fight as well as they could build, and special congratulations have been given them from headquarters."

The Arbitration on the Value of Canadian Northern Railway Stock.

The arbitration board to determine the value of 600,000 shares of C.N.R. stock (par value \$60,000,000), 510,000 shares of which are owned by Mackenzie, Mann & Co., Ltd., and pledged to the Canadian Bank of Commerce as collateral, opened in Toronto, Jan. 28, the arbitrators being Sir Wm. Meredith, Chief Justice of Ontario, representing the Dominion Government; Wallace Nesbitt, K.C., of Toronto, representing Mackenzie, Mann & Co., and the Canadian Bank of Commerce; and Mr. Justice R. E. Harris, of Halifax, formerly President, Nova Scotia Steel & Coal Co., who was selected by the other two arbitrators to be the third arbitrator. The following counsel appeared: For the Dominion Government, W. N. Tilley, K.C., Toronto; Gerard Ruell, Chief Solicitor, C.N.R.; and E. E. Fairweather, Solicitor, Railways Department, Ottawa. For the Canadian Northern Ry., F. H. Phippen, K.C., General Counsel, Toronto; and O. H. Clarke, Western Counsel, Winnipeg. For Mackenzie, Mann Co., McGregor Young, K.C., Toronto; and Pearce Butler, Minneapolis. For the Canadian Bank of Commerce, I. F. Hellmuth, K.C., Toronto, and A. M. Stewart. It was announced that regular sittings would commence in Toronto on Feb. 4.

The agreement, under which the arbitration is proceeding, was entered into Oct. 1, 1917, between the King, represented by the Ministers of Finance and of Railways and Canals, Mackenzie, Mann & Co., Ltd., and the Canadian Bank of Commerce. Under authority of the act passed at the Dominion Parliament's last session providing for the acquisition of the C.N.R.'s capital stock, the arbitrators are to determine the value of the 600,000 shares as at Oct. 1, 1917, and may consider the reproduction cost of the C.N.R. system, but shall not include therein any increase in value, due to the war, of labor,

material, or of property. Should the value of the 600,000 shares be determined as \$10,000,000 or more, the price to be paid therefor shall be \$10,000,000, but if the value determined shall be less than \$10,000,000 the value so determined is to be the price to be paid. The arbitrators' decision is to be final, if unanimous, but if not unanimous is to be subject to appeal as provided in the act. The award is to be made by Mar. 1, or within such further period as the parties to the agreement may agree upon. The price determined is to be paid by the government within three months from the receipt of the award, less its proportionate share of the amount of any liabilities ascertained by the government to be outstanding against the C.N.R. system or any of its constituent companies, and undisclosed to, or in excess of the liabilities disclosed to, the arbitrators, apart from liabilities which will be properly chargeable to capital account, unless the corresponding value produced thereby has been taken into consideration as an asset of the company.

The agreement provided that immediately after its execution, at least five-sixths of the 600,000 shares be transferred to the Finance Minister, free of all encumbrances. Sixteen thousand shares, par value \$1,000,000, deposited with the British Columbia Government as security for contracts made by the Canadian Northern Pacific Ry. with that government were to be transferred to the Finance Minister on an order from the owners. Unless the whole 600,000 shares are transferred to the Finance Minister, the Governor in council may declare any shares not transferred to be so transferred, and until all the shares are transferred the Dominion Government may retain, out of the purchase price decided by the arbitrators, the pro rata value of such shares, to be paid over as they are transferred.

The arbitrators have power to employ such legal, engineering or other professional or expert assistance as they may require, the cost thereof to be part of the arbitration costs.

Freight and Passenger Traffic Notes.

Observation cars have been discontinued on transcontinental trains.

The Canadian Northern Ry. gave notice in Winnipeg, Jan. 23, that the excursions announced to be run during February to the Pacific Coast had been cancelled.

Owing to the entrance of the Northern Pacific Ry. into the Great Northern Ry. station at Vancouver, exchange of traffic between the N. P. R. and the C. P. R. is now made there, instead of at Sumas, B.C., as prior to Jan. 1.

A. H. Sperry, General Manager, Pacific Great Eastern Ry., Vancouver, was reported to have said Jan. 17, that there was no foundation for the report that it was proposed to suspend the operation of trains on this railway permanently.

The Grand Trunk Pacific Ry. started recently operating two fast freight trains a week between Prince Rupert, B.C., and Edmonton, Alta. A daily fast freight train service is maintained between Edmonton and Winnipeg.

The Great Northern Ry. put in operation a reduced train service between Vancouver, B.C., and Seattle, Wash., Jan. 1, only one train a day being run in each direction as against two a day each way previously.

The Canadian Government Railways steamboat Champlain has resumed ser-

vice between Riviere Ouelle wharf and Murray Bay, and will make one trip a day in each direction during the winter, weather conditions permitting.

The Pacific Great Eastern Ry., owing to a number of land slides, has practically suspended train service between Squamish and Lillooet, B.C., and it is expected that it will be several weeks before the line is reopened for traffic.

Under the Intercolonial Ry. timetable, which went into effect Jan. 6, the Ocean Limited does not run on Sundays, being replaced by the Maritine Express, which thus becomes a daily train. A Moncton dispatch of Jan. 22, stated that a number of changes from this timetable would be made Jan. 25, 26, and 27.

H. E. Beasley, General Superintendent, Esquimalt & Nanaimo Ry., Victoria, B.C., is reported as saying on Jan. 11, that at a conference of railway officers recently it was decided that there would be no change of the existing double daily train service over the company's tracks out of Victoria.

The Burlington, Ont., Town Council on Jan. 15, passed a resolution inviting the Hamilton City Council's co-operation in a proposal to compel the G.T.R. to operate a passenger train service over the Burlington Beach section of its line. This service was abandoned some years ago, when the Hamilton Radial Ry. began operations.

The C.P.R., beginning Jan. 6, reduced its service in the Okanagan valley, from Penticton to Sicamous, by lake and rail route from daily to tri-weekly. The people of the valley, however, are able to leave for the coast daily, as on the other three days a week the steamboat makes connections at Penticton with Kettle Valley Ry.

In connection with the reduction of passenger train service it was reported Jan. 15, that arrangements had been made for the abandonment for the present of the Kettle Valley Ry.'s Coquihalla Valley route. Special coast Kootenay cars will be attached to the express leaving Vancouver each morning. From Spences Bridge they will be taken by K. V. R. train to Nelson, reaching Penticton presumably late at night. Westbound service will be given the same connection. Trains from the coast will reach Penticton at 1 a.m.

Standard Clearances.—The Board of Railway Commissioners issued the following circular Jan. 21: "The board is considering the advisability of establishing a standard distance between track centres, for the construction of divisional points, terminal sorting yards, and sidings, which will provide a safe and satisfactory clearance for the movements of trainmen and yardmen in the performance of their duties. Railway companies are requested to file their views upon the matter within 30 days from this date, stating what clearance, in their opinion, would provide the necessary room between moving cars for the men referred to while carrying on their work.

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

	Acres.
Calgary and Edmonton Ry.	2,799.65
Canadian Northern Ry.	1,276.00
General Canada Ry.	39.27
Grand Trunk Pacific Ry.	1.96
Kootenay Central Ry.65
Qu'Appelle Long Lake and Saskatchewan Rd. and Steamboat Co.	3,426.82
Total	7,544.35

Canadian Northern Train Sheds and Concourse at Vancouver.

Among other works being carried out at False Creek, Vancouver, by the Canadian Northern Pacific Ry. in connection with its new station building, are a concourse and train sheds. The concourse at the rear of, and adjoining, the station building, is 337 ft. long and 40 ft. 8 in. wide, the floor being of reinforced concrete slab construction, carried on piles. The roof, which is about 19½ ft. above the concourse floor, covers an area 307 ft. x 40 ft. 8 in., and is supported by the rear wall of the station, and columns at outside edge of concourse, respectively, a slight fall towards the columns having been given, to take care of surface water, which will be carried to drains, through the down spouts at the columns. These columns are carried on pile foundations,

to the down spouts at the various columns.

One advantageous point which may be claimed for this construction of train sheds, is that of placing the columns supporting the roof covering, between the tracks, thus permitting a clear platform, with no obstacles to prevent the easy and swift manipulation of baggage and express trucks, and thus affording freedom of movement by passengers.

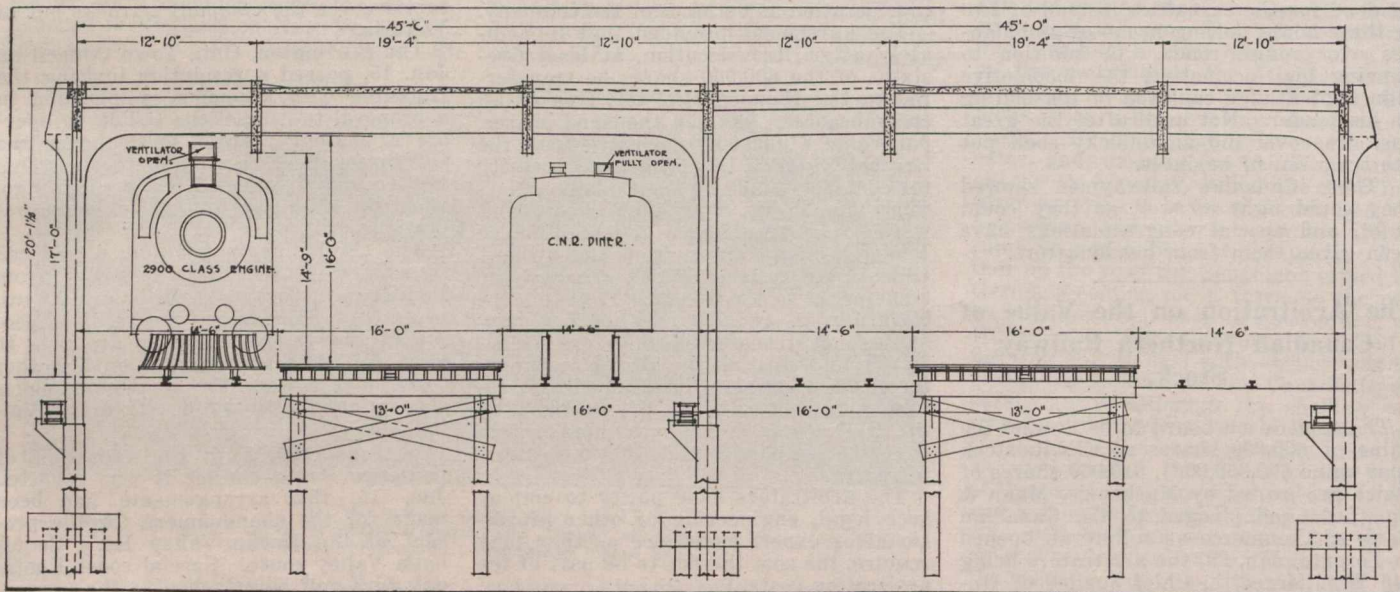
A complete system of electric lighting will be installed on both concourse and platforms, controlled from the concourse, with separate switches to the different portions of the concourse and platforms, allowing of the illumination of all portions as may be required. A telephone system will also be installed, with outlets

Canadian Society of Civil Engineers' Annual Meeting.

The annual meeting of this society, the last under this name, was held at Montreal, Jan. 22-24. For some time past it has been contended that the scope of the society should be enlarged by embracing other branches of the engineering profession, and this is being carried out. In view of this, a change of name was considered desirable, and it was decided to adopt the title of the Engineering Institute of Canada.

An honor roll, consisting of 862 members, etc., who have gone overseas during the war, was unveiled. It was announced that 65 members, etc., have received decorations for gallantry in action, and that 58 members, etc., have been killed in action, or died as the result of wounds.

H. H. Vaughan, Vice President and General Manager, Dominion Bridge Co., Vice President and Managing Director,



Transverse Section of Train Shed, Canadian Northern Railway, Vancouver, B.C.

are placed at intervals of 46 ft. 1¾ in. along the concourse, and are of reinforced concrete construction, as is also the concourse roof slab. Natural light to the concourse is obtained by a roof light 21 x 21 ft., placed in each bay, between the column centre lines. A ventilator is placed in each of these roof lights.

Two wooden train platforms, in course of construction, are 16 ft. wide and 900 ft. long, starting from the edge of the concourse. They are carried on piles, and are placed at 45 ft. centres, with two sets of rails between them. Between these two sets of rails are placed the columns supporting the beams carrying the roof slab over the train platforms. These columns are on 30 ft. centres the whole length of the sheds, and 45 ft. centres, crosswise, with beams longitudinally and crosswise at the roof level. At a height of 19 ft. and directly over the train platforms, is a slab 20 ft. wide and 900 ft. long, forming the roof covering for the platforms, the remainder, viz., above the rails, being left entirely open, with the exception of the cross beams, which, supported by the columns, are 30 ft. apart, which construction permits the escape of steam and smoke from the locomotives. The entire construction of the train shed columns, beams, and slabs over platforms, is of reinforced concrete design, the roof slabs and beams being properly graded, to ensure the surface water being carried

at various points along the platform, for the convenience of passengers and the railway officials.

Steam feeders will be carried the full length of the platforms, for the easy supply of steam to the cars, while standing on the platform tracks.

The estimated cost of the work is approximately \$163,000. It is being carried out under the direction of M. H. MacLeod, General Manager and Chief Engineer; Pratt and Ross, of Vancouver and Winnipeg, being the architects and engineers.

June Mechanical Conventions. — The executive committees of the American Railway Master Mechanics' Association, and the Master Car Builders' Association, at a joint meeting in New York recently, decided that in view of the present state of affairs, no convention be held in June, but that if conditions warrant it, a business meeting be arranged for sometime during the year, probably in Chicago.

The Vancouver City Council's by-law for the elimination of the jitney traffic in the city will have the effect of putting them out of business entirely by April 1. This date was fixed so that the necessary power could be obtained from the legislature. There are about 200 jitneys at present operating, 85 of which the license inspector reported Jan. 16, had failed to take out the licenses.

Dominion Products Co., and Consulting Engineer, C.P.R., Montreal, was elected President; and Prof. H. E. T. Haultain, University of Toronto, and R. F. Hayward, Managing Director, Western Canada Power Co., Vancouver, B.C., were elected Vice Presidents. The following councillors were elected: District 1, Prof. Ernest Brown, McGill University, and J. M. Robertson, Montreal. District 2, F. H. McDougall, General Manager, Dominion Iron and Steel Co., Sydney, N.S. District 3, N. E. Brooks, Sherbrooke, Que., formerly Engineer, Maintenance of Way, Western Lines, C.P.R. District 4, John Murphy, Electrical Engineer, Railways Department, and Board of Railway Commissioners, Ottawa. District 5, Prof. Peter Gillespie, Toronto University. District 6, L. A. Thornton, Public Utilities Commissioner, Regina, Sask. District 7, Prof. E. G. Mathewson, British Columbia, University.

Canadian Northern Realities Ltd. has been incorporated under the Dominion Companies Act, with \$40,000 capital and office at Toronto, to own, lease and exchange and otherwise deal in lands and general real estate and for other purposes. The incorporators are D. B. Hanna, Third Vice President; G. Ruel, General Solicitor; R. H. M. Temple of the legal department, and G. N. Limpricht and W. Bowler, all in the C.N.R. service.

The Work of Canadian Railway Association for National Defence.

Return of Cars from United States.

The association has asked the Dominion Government to back it up in its efforts to get back from the United States the 22,000 freight cars overdue from U.S. roads. While the association's efforts have been successful in increasing the daily returns of Canadian freight cars, the numbers held in the U. S. continue to increase. The Minister of Railways has been asked to bring direct pressure upon Secretary McAdoo in his capacity as Director-General of U.S. railroads.

Exemptions from Military Service.

A number of men in train, yard and shop service in Canadian railways secured exemption under the Military Service Act, due to the fact that they were required in the interests of the country to help to move the traffic and the association having learned that a number of these men are not working regularly, the railways have been instructed to keep a record of the days worked by men who secured exemption and report the same to the association. It is the intention to advise the government of any such men who do not work regularly so that they may be conscripted.

Better Coal for Railways.

The association has asked the Dominion Government's co-operation in regard to the fuel situation as affecting the railways by requesting the Dominion Fuel Controller to take steps to ensure the U. S. mines supplying a better quality. Not only have the prices on coal for Canadian railways risen enormously, but the number of heat units per ton has dropped. The coal bill of Canadian railways, which was, in 1907, \$15,137,504, was more than doubled in 1917, although the volume of traffic handled had not increased at nearly so high a rate.

Proposed Closing of Outside Ticket Offices.

Early in January it was stated in daily press reports that as the result of action by the association the various railways would close their city and town outside ticket offices and that all tickets would have to be bought at station ticket offices. So far nothing has developed in regard to this. Enquiry of the Eastern Canadian Passenger Association has elicited the information that the matter has not been finally disposed of and passenger officials of several roads have informed Canadian Railway and Marine World either that no decision has been arrived at, or that they have no intention of closing their outside offices. In view of the unusual situation prevailing in Winnipeg, Regina, Saskatoon, Edmonton, Calgary and Vancouver, where city ticket offices are maintained, western railway officials do not consider it practical to eliminate them. In most cases the ticket offices are located in the same place with freight traffic officials, and either telegraph or express offices, or both, thereby reducing the expense to a minimum. In the majority of cases, the city ticket office staff is not larger than it would be necessary to increase the station office staff to, if city ticket offices were abolished. In some cases railways own the office buildings and in such cases the question of rental does not enter into the proposition and in other cases the office premises are used for joint departmental purposes and are held on a lease. The stations of some of the interested lines are so located as to make it absolutely

necessary to maintain city ticket offices to meet competition and satisfactorily protect and accommodate traffic. At certain points, U.S. lines maintain an organization for the purpose of securing passenger traffic as against Canadian lines. A comparison of expense of city ticket offices as against earnings would indicate that they are operated at considerably less than 5% of earnings. The elimination of city ticket offices would mean the transfer of expense from city to station offices and would not it is said represent a saving of 5%.

Proposal to Take Up Railway Tracks.

A Montreal press dispatch of Jan. 8 stated that the association had decided to petition the Dominion Government to order the taking up of from 1,500 to 2,000 miles of railway track, from lines that were not considered of vital importance, so that the rails might be used for relaying on other lines. No official information is available in regard to this, but it is said that the proposal was to lift the rails on the Canadian Northern, from Toronto to Sudbury and from Edmonton to Vancouver; on the Hudson Bay Ry., from Pas, north to the end of track; and on the National Transcontinental from La Tuque, Que., to Cochrane, Ont. It appears that some of the members of the administrative committee were not present when the decision was arrived at, and that when it came before members of the Government at Ottawa for consideration, at least one of the roads which would be affected protested very strongly. In fact, it is said that the discussion before the ministers was a pretty heated one and that no final decision was arrived at, the matter being still status quo ante bellum.

Niagara Frontier Traffic.

F. F. Backus, General Manager, Toronto, Hamilton & Buffalo Ry., has been appointed by the association to control traffic at the Niagara Frontier, by supervising and expediting the movement of coal and other traffic, so that the freight is divided up each day among the various Canadian railways, irrespective of how it may have been routed. This is a precautionary step, to make absolutely certain that the Canadian roads be used to their full capacity, so as to prevent any possible congestion. He has been given full power to act for the best general good, and since early in January has been routing freight by the most available routes for prompt movement, irrespective of how it was consigned. Coal and coke are being given preference over anything else, but Mr. Backus does not undertake to trace freight or to give special movement to one lot of coal, etc., as against another.

Hay Shipments to United States.

Instructions existing on Jan. 5 calling upon railways to give preference to hay in highly compressed bales in the furnishing of cars for shipments of hay destined to the U. S. have been cancelled, and cars may be furnished for shipments of hay in loose bales for U. S. points. As U. S. railways have 22,219 Canadian cars in excess of the number of U. S. owned cars in Canada and there being a serious shortage of cars for the movement of freight between Canadian points, U. S. owned cars only are to be supplied at points on railways operating in Canada for shipments of hay destined for points in the U. S., other than such points as may be located on Canadian railways.

Interline Billing of Freight.

The association's committee on tariff and statistics considers that the amount of delay to freight and cars involved in the existing arrangement for rebilling of shipments at junction points between railways, the clerical man power engaged in the work resulting from this arrangement, and the expense it brings upon the railways are defects in the general freight handling scheme which it is felt can be remedied by the adoption on all member lines of the practice of interline billing of freight. The committee's discussion on the subject indicates that so far as the freight traffic departments of the railways are concerned, general interline billing should be adopted, that as a result of its adoption car efficiency would be considerably increased and that heavy expenditure of labor and money now involved in rebilling at junction points would be eliminated. The junction reports at present required by the majority of railways on the movement of through traffic received full consideration. The opinion was expressed that arrangements might be made by the respective lines whereby these reports might be eliminated and that information, if actually necessary be obtained in some other manner. After considerable discussion the following resolution was adopted: "That this committee is in favor of general through interline waybilling with audit office settlements where there are through rates. Where rates are a combination of locals, or of a local and interline rate, shipments should be billed through, showing the rate factors, settlement to be made through the audit office. The audit offices should arrange so that intermediate carriers will be protected in the matter of undercharges, etc." It was also resolved: "That where rates now divided on arbitrary basis the same be simplified, where possible, by converting into a percentage basis." The various railways have been asked to submit reasons, if any, why the suggestions embodied in these resolutions should not be adopted and whether they are prepared to make arrangements so that any delay to cars and freight at present incidental to the taking of passing or junction records will be avoided."

Incomplete Billing of Freight Cars.

It has come to the association's attention that at many points it is the practice for loaded cars to be forwarded without proper and complete billing, thereby rendering liable delays to such cars before delivery can be effected, and improper handling, through absence of complete routing instructions and other necessary information. The demand for maximum car efficiency is so great that the above practice should be discontinued, and with this end in view it is directed that all member lines place instructions in effect at once, that hereafter no loaded cars are to be started from originating point until properly made out bill of lading has been furnished by shipper and complete railway revenue waybill is available to accompany car.

Stop Off Privileges for Freight.

The demands at present made on Canadian railways in the handling of an abnormal volume of traffic call for the minimizing or elimination of arrangements which may have been made at a time when conditions warranted them, but which now have the effect of reducing car efficiency and retarding the gen-

eral flow of traffic. Amongst the arrangements referred to is what is known as the "stop-off privilege," for completion of loading of cars of lumber, live-stock, canned goods, etc. A factor in bringing about undesirable transportation conditions is the billing of cars to certain points "for orders" or "for reconsignment." In order that an arrangement, applicable to all member lines may be reached the railways were asked to send to the association by Jan. 15, particulars of all arrangements in effect on their respective lines whereby shipments are stopped off for completion of load or other purpose or billed to certain point or points to be held for orders, inspection, reconsignment or other such purpose.

Rules for Tracing Freight.

The work involved in the tracing of freight and furnishing information to the public as well as to the departments of the railways has grown to an enormous degree, involving the employment of a very large number of clerks in railway offices and interfering with the proper discharge of necessary duties. It is generally known that a very large percentage of the information furnished in response to freight tracing requests does not serve any good purpose and is asked for and supplied, more or less, as a matter of form. In view of the urgent necessity at this time for eliminating all unnecessary work, so that maximum returns may be obtained from the efforts expended it is felt that railways should immediately reduce freight tracing to what may be imperative. The following regulations governing the tracing of freight have been formulated and member lines are directed to adopt them:

1. With a view to eliminating unnecessary handling of tracers between railway offices, tracing of freight should be delegated to the car service department or such other department of the railway as maintains car records, except in the case of local or short haul shipments, where time and labor may be saved by dealing direct with superintendent, yardmaster, or agent.

2. Car movement reports and tracers should be handled by mail when such can be done without seriously interfering with the efficiency of the service.

3. Shipments should not be traced except at request of shipper or consignee, and then only when a reasonable time has elapsed for the shipment to have reached its destination. The existing general practice of furnishing one or more "passing records" of shipments en route should be discontinued.

4. Each tracer should show initials and number of car, commodity, point of origin, date of forwarding, route, consignee and destination or as much of such information as the case may demand.

5. A railway should not be requested to trace freight beyond its own rails, except where absolutely necessary.

6. The practice of requesting "report of delivery of shipment to consignee," involving, as it does, the expenditure of much extra time and labor, should be discontinued, and record of arrival at destination only, be made to suffice. The attention of outside freight traffic department officials is particularly directed to this clause, they having been the principal source of such requests in the past.

7. Where two or more offices or departments of a railway are receiving different forms of passing or junction reports from the same point or points, arrangements should be made to have carbon copies of one report serve.

8. It is suggested to the railways that where the practice is not already in vogue, they arrange for close and systematic checking of station and yard reports showing transit cars and cars awaiting placement, with a view to minimizing delay to cars, thereby removing in many instances the cause for tracing of freight.

In connection with the foregoing the commission on car service adopted a resolution, calling on member lines to reduce their tracing staffs not less than 25%.

Commission on car service: Report of loading of cars, i.e. freight for Nov., 1917.

Railway.	Cars loaded during Month		
	No.	lbs.	Aver. lbs. per car
Canadian Pacific (West Lines)	7229	88,654,769	12,264
Canadian Government (West Lines) ..	646	9,295,707	13,390
Canadian Government (East Lines) ..	3568	42,411,672	11,887
Canadian Northern (West Lines)	*4279	53,197,760	12,432
Canadian Northern (East Lines)	2081	28,452,975	13,672
Dominion Atlantic	311	2,774,660	8,922
Grand Trunk	13653	152,348,536	11,085
Grand Trunk Pacific	1734	13,659,480	7,877
Michigan Central	751	6,992,676	9,311
Timiskaming & Northern Ontario	448	5,555,637	12,400
Total	34700	403,343,872	11,624

*October.
All stations loading five or more cars of less than carload freight per day included.

Filling Up Sleeping Cars.

On the majority of railways where sleeping cars are operated it has been the practice to add extra sleeping cars to trains before a reasonable number of the berths in regular cars have been sold or reserved, due it is claimed to aversion on the part of the travelling public to occupy upper berths. Among the results of this practice are increased consumption of fuel and in many cases unnecessary use of motive power and man power where, owing to the extra cars, trains have to be double headed or run in sections. Enquiries have led to the opinion that at this time, particularly when the saving of coal is of great importance, and when the maximum number of locomotives must be held for the handling of freight consisting mainly of war supplies, the public will readily agree to the use of upper berths to a greater extent than has been the practice heretofore. It is the sense of the association that member lines should arrange so that extra sleeping car or cars will not be added to trains until 75% of all berths in regular car or cars have been sold or reserved.

Vestibule Doors, Guard Rails, etc.

The association is considering the formulation of standard regulations governing the handling of vestibule doors, guard rails, etc., on passenger trains, and has asked all railways to submit copies of their respective regulations relating thereto.

Quebec Bridge Construction. — The fourth of a series of addresses on the recently opened Quebec bridge was delivered before the Canadian Society of Civil Engineers in Montreal, Jan. 10, by G. H. Duggan, Chief Engineer, St. Lawrence Bridge Co., under the title: "Notes on the tendered design for the Quebec bridge of the St. Lawrence Bridge Co." Mr. Duggan also addressed the Royal Canadian Institute in Toronto on Dec. 12 on the same subject.

Railway Rolling Stock Notes.

Canadian Government Railways is reported to be in the market for 250 general service cars.

The C.P.R., between Dec. 14 and Jan. 15, received 1 steel baggage and express car, 222 steel underframe coal cars and 1 decapod type 275% locomotive, from its Angus shops; and 3 snow ploughs from its Winnipeg shops.

A recent press dispatch stated that the C.P.R., during 1917, built over 10,000 box cars in addition to ordering many from outside sources. Canadian Railway and Marine World is supplied with official information as to rolling stock ordered and built, monthly, and this is published in due course. The figures quoted in the press dispatch are erroneous.

The Canadian Car & Foundry Co. has completed the organization of its car shops at Fort William, Ont., and has started work on the order for 2,000 steel underframe box cars for the Canadian Government Railways, which was placed some time ago. It is expected to make the initial delivery in February and the contract will keep the plant in continuous operation until June. The officials at Fort William are:—A. J. Canfield, Works Manager; G. G. Elster, Superintendent; W. Boyle, Assistant Superintendent.

Canadian Government Railways received the following rolling stock, between Dec. 19 and Jan. 19:—189 stock cars, 30 tons capacity, and 333 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co.; 49 steel frame box cars, 40 tons capacity, from National Steel Car Co.; 6 mikado and 2 Pacific locomotives from Montreal Locomotive Works; 12 mikado locomotives from Canadian Locomotive Co.; and 84 second hand coal cars, 35 tons capacity, 386 second hand coal cars, 30 tons capacity, and 91 second hand box cars, 30 tons capacity, from General Equipment Co.

The Canadian Northern Ry. has received 4 consolidation locomotives from Canadian Allis-Chalmers Co. Six more are on order, and delivery is expected to be made shortly. Following are the chief details:—

Weight in working order on front truck,	24,500 lbs.
Weight in working order on drivers	208,500 lbs.
Weight on engine, total	233,000 lbs.
Weight of engine and tender	380,000 lbs.
Weight of tender, light	62,000 lbs.
Maximum tractive effort	50,000 lbs.
Boiler, type	Extended wagon top
Boiler, pressure	200 lbs.
Firebox	64 1/4 by 110 13-16 in.
Grate area	49 sq. ft.
Tubes, no. and diam.	262-2 in.; 26-5 1/2 in.
Tubes, length	15 ft. 3 in.
Heating surface, firebox	180 sq. ft.
Heating surface, tubes	2,946 sq. ft.
Superheater, type	Locomotive Superheater Co.'s top header
Driving wheel base	16 ft. 6 in.
Wheel base, engine and tender total	60 ft. 2 1/2 in.
Length, engine and tender, overall	68 ft. 7 1/2 in.
Cylinder, diam. and stroke	24 by 32 in.
Driving wheels, diam.	63 in.
Journals, main	10 by 14 in.
Journals, others	5 1/2 by 10 in.
Coal capacity	10 tons
Water capacity	6,500 imp. gals.

The Grand Trunk Literary and Scientific Institute celebrated its 60th anniversary recently. It was organized by F. H. Trevithick in 1857, when he was Locomotive Superintendent of the G.T.R., and led to the establishment of G.T.R. libraries at London, Stratford, Belleville and Lindsay, Ont., and Battle Creek, Mich.

Railway Assessment in Toronto. — Property of the various steam railways in Toronto, has been assessed for this year as follows: G.T.R., \$11,178,724; C.P.R., \$3,421,160; Canadian Northern, \$1,341,427.

Transportation Appointments Throughout Canada.

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

Buffalo, Rochester and Pittsburgh Ry.—R. R. WILLIAMS, who has been acting Canadian Agent, Toronto, for some time, has been appointed Canadian Agent there vice P. A. Bolopue resigned.

Canadian Government Railways.—G. R. JOUGHINS, Superintendent of Motive Power, who returned to Moncton, N.B., recently, after some months absence on account of illness, is reported as about to retire under the provisions of the Provident Fund. During his absence W. U. Appleton, General Master Mechanic, has been acting Superintendent of Motive Power, and W. E. Barnes, Master Mechanic, has been acting General Master Mechanic.

C. B. CLARK, conductor, Cape Tormentine Branch, is reported to have been appointed Yardmaster at Sackville, N.B.

Canadian Northern Ry.—H. J. WHITE, heretofore General Car Foreman, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., has been appointed Car Foreman, C.N.R., Trenton, Ont.

W. WALKER, heretofore Day Foreman, Winnipeg locomotive house, has been appointed Locomotive Foreman, Dauphin, Man., vice A. Mallinson, transferred.

A. MALLINSON, heretofore Locomotive Foreman, Dauphin, Man., has been appointed Locomotive Foreman, Saskatoon, Sask.

W. B. STEEVES, heretofore Locomotive Foreman, Saskatoon, Sask., has been appointed Assistant Master Mechanic, Western District Office, Edmonton, Alta.

C. J. PIPER is reported to have been appointed Commercial Agent, Minneapolis, Minn., vice J. T. Whitlaw, resigned.

Canadian Pacific Ry.—W. GARLAND, heretofore Assistant Superintendent, Toronto Terminals Division, Ontario District, Toronto, has been appointed Assistant Superintendent, Brownville Division, Quebec District, Brownville Jct., Me. This is an appointment of an additional assistant superintendent for this division.

G. H. DAVIS has been appointed acting Resident Engineer, Toronto Terminals, vice H. R. Silcox assigned to other duties.

W. F. ANDERSON is reported to have been appointed Local Freight Agent, Fort William, Ont., vice C. A. Taylor, resigned to enter private business.

S. A. SIMPSON, heretofore Superintendent, Sleeping, Dining and Parlor Cars and News Service, Winnipeg, has been appointed Superintendent, same department, Moose Jaw, Sask.

J. M. WILLARD, heretofore Chief Travelling Inspector, Sleeping, Dining and Parlor Cars and News Service, Western Lines, has been appointed Assistant Superintendent, same department, Moose Jaw, Sask.

Caraquet and Gulf Shore Ry.—W. B. CRONK, Vice President and Manager, Kent Northern Ry., Richibucto, N.B., is reported to have been also appointed Vice President and General Manager, C. & G. S. R., Bathurst, N.B.

Central Vermont Ry.—H. M. DEWART has been appointed Assistant Purchasing Agent, St. Albans, Vt.

Chicago, Milwaukee and St. Paul Ry.—C. E. HILLIKER, heretofore Canadian Freight and Passenger Agent, Toronto,

has been appointed Division Freight and Passenger Agent, Des Moines, Iowa, the Toronto office having been closed.

Grand Trunk Ry.—O. MASSE has been appointed acting Assistant Trainmaster, Districts 1 and 2, Montreal Division, Eastern Lines, vice C. M. Walton assigned to other duties. Office, Island Pond, Vt.

The following station agents have been appointed: St. Cyr, Que., J. A. Poirier; Rouses Point, N.Y. (yard) C. P. Maloy; Port Huron Tunnel, Mich., P. N. Moore; Port Huron, Mich., H. B. Wilson.

Grand Trunk Pacific Ry.—L. CARTIER has been appointed Roadmaster, Biggar, Sask., vice W. R. Whitty.

R. M. HALPENNY, heretofore Superintendent, Alberta and Great Waterways Ry., Edmonton, Dunvegan and British Columbia Ry., and Central Canada Ry., Edmonton, Alta., has been appointed Assistant Superintendent, G.T.P.R., Jasper, Alta.

The following station agents have been appointed: Quinter, Sask., D. McKay; Young, Sask., W. R. Carnal; Balcarres, Sask., E. Briggs; Riceton, Sask., R. E. Chapman; Mawer, Sask., R. J. McCammond; Gilroy, Sask., F. A. Theberge.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—H. T. DUFFY, heretofore General Agent, Toronto, has been appointed District Passenger Agent, Duluth, Minn., the Toronto office having been closed.

Pennsylvania Rd.—J. E. LITTLE, heretofore Canadian Passenger Agent, Toronto, has been transferred to the Division Passenger Agent's office, New York, the Toronto office having been closed.

Quebec Central Ry.—G. D. WADSWORTH, heretofore Assistant General Freight and Passenger Agent, has been appointed General Freight and Passenger Agent, vice E. O. Grundy retired, and his former position has been abolished. Office, Sherbrooke, Que.

Railways Department.—The services of A. E. Warren, Assistant General Manager, Western Lines, Canadian Northern Ry., Winnipeg, have been loaned to the Dominion Government, and he has been appointed Chief Operating Officer for the Railways Department, to advise the department upon railway matters generally. Office, Western Departmental Block, Ottawa.

GORDON GRANT, heretofore Chief Engineer, Quebec and Saguenay Ry., and formerly Chief Engineer, National Transcontinental Ry., is reported, by an Ottawa press dispatch, to have been appointed an expert adviser to the Railways Department.

Reid Newfoundland Co.—A complete list of officials is given on another page, under the company's heading.

Canadians Appointed to the Order of the British Empire.—A London cablegram of Jan. 9 stated that over 2,000 appointments had been made to this new order, the list ranging from commercial magnates to head typists. Among the Canadians appointed are: Knight Commander, Arthur H. Harris, formerly Special Traffic Representative, C.P.R., now Director of Overseas Transport; Commander, Edward Fitzgerald, formerly Assistant General Purchasing Agent, C.P.R., now Assistant to Chairman, Imperial Munitions Board; Officer, Arthur Philip, C.P.R.

Canadian Northern Railway Earnings, Etc.

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

	Gross		Net	
	Earnings	Expenses	Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
	\$18,583,600	\$15,313,800	\$3,269,800	\$2,202,500
Incr	\$ 437,500	\$ 962,800		
Decr			\$2,202,500	

Approximate earnings for Dec., \$3,273,200, and for three weeks ended Jan. 21, \$1,767,100, against \$3,485,400 and \$1,903,000 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		Net		Increase
	Earnings	Expenses	Earnings	or Decrease	
Jan.	10,158,807.86	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	4,174,979.62	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	x257,084.51	
Aug.	12,414,537.25	8,596,998.76	3,817,538.49	x1,650,248.36	
Sept.	12,244,341.69	8,497,190.83	3,747,150.86	x1,382,608.30	
Oct.	14,733,774.02	9,679,072.25	5,054,601.77	x 620,037.60	
Nov.	15,191,162.91	9,933,270.27	5,257,892.64	x 306,067.60	
	\$139,318,452.94	\$96,683,713.23	\$42,634,739.71	x\$2,820,330.86	
Inc.	\$12,015,633.12	\$14,835,963.98			
Dec.			\$ 2,820,330.86		

x Decrease.
Approximate earnings for Dec., \$12,927,000, and for three weeks ended Jan. 21, \$7,055,000, against \$12,289,000 and \$6,870,000 for same periods 1916.

Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Dec. 31:

	1917	1916	Increase.
G.T.R.	\$52,205,158	\$47,826,799	\$4,378,359
G.T.W.R.	9,795,440	9,191,107	604,333
D.G.H. & M.R.	3,400,551	3,283,992	116,559

Totals \$65,401,149 \$60,301,898 \$5,099,251
Approximate earnings for Dec., \$5,654,558, and for three weeks ended Jan. 21, \$2,780,717, against \$5,280,245 and \$3,112,728 for same periods 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, for December, were \$587,712, against \$608,136 for Dec., 1916. The aggregate earnings for six months ended Dec. 31, were \$3,711,797, against \$2,903,289 for Dec., 1916.

Toronto Terminal Transportation Association.—An association has been organized, with the above title, by railway officials in Toronto, its aims and objects being to attain a higher degree of efficiency in all branches of transportation work and not to allow it to recede in any way owing to the war. The association meets from time to time, to deal with matters relating to transportation questions in the Toronto district and to take steps to bring about a greater state of proficiency. Its organization is as follows:—Advisory Board, J. T. Arundel, General Superintendent, C.P.R.; D. Crombie, General Superintendent, Canadian Northern; H. E. Whittenberger, General Superintendent, Grand Trunk. Executive Committee, W. H. Farrell, Superintendent, G.T.R., chairman; T. Collins, Superintendent, C.P.R.; L. Harris, Superintendent, Canadian Northern; Jno. Gray, General Agent, G.T.R. (since deceased); J. C. Brown, General Agent, C.P.R.; and L. Buller, General Agent, Canadian Northern. Ross MacBean is Secretary.

The C.P.R. is reported to be in the market for 85,000 tons of steel rails. The order for which, it is said, will be divided between Canada and the U.S.

White Pass and Yukon Railway Co's Annual Report.

At the annual meeting in London, Eng., Dec. 17, the report for the year ended June 30, 1917, which was presented, included the results of the operation of the local companies, all of which capital is owned by the W. P. & Y. R. Co. for their financial year, which ended Dec. 31, 1916. The profit and loss account, after charging interest on debenture stock and debentures, payable in income debenture stock, and all expenses, shows a loss for the year of £11,804 19s. 9d. Adding thereto £24,674 14s. 11d. balance of loss carried forward from the preceding year, there is a balance at the debit of profit and loss in the balance sheet of £36,479 14s. 8d.

Following are extracts from President F. E. Elliott's report:—We carried on the railway 12,900 passengers, and 69,691 tons of revenue freight, of which ore shipments from rail points and Atlin District accounted for 45,478 tons. The average haul was 70.91 miles per passenger, and 106.76 per ton of freight, and the average load per car was 8.94 tons northbound and 12.54 southbound.

During the year 20,406 ties were laid, and all necessary repairs were made to keep the rolling stock in serviceable condition. An extension of the branch line was constructed at the Pueblo Mine to facilitate the loading of ore, and the spur track at Carr Glyn was converted into a siding to expedite switching. Extensive repairs were made to the Minto bridge, and the rest of the bridges were overhauled for safety. Considerable work was done during the year in the reconstruction of the ore bunker plant, including the incline leading directly to the bunkers, so as to handle ores shipped from the White Horse district.

January was a very severe month. A blizzard occurred, and the railway was blocked by snow from Jan. 21 to 31. On Jan. 27 a bad washout occurred at the second crossing of the Skaguay River, which took out 130 ft. of the bridge and delayed traffic for eight days. However, we transferred passengers, baggage, mail and some perishable freight for several days before through traffic was again resumed. On the night of Nov. 20 a slide of several hundred tons of rock took out two steel spans of bridge 7c, seven miles from Skaguay. These were temporarily replaced by a wooden trestle, but traffic was stopped for eight days. The operating expenses of the Rail Division show an increase of \$73,287.91 as compared with 1915. This is due to the snow blockade, washout and slide already mentioned, and the handling of increased tonnage.

The tourist traffic during 1916 assumed proportions making it worthy of special note. The total revenue amounted to approximately \$102,000, which is about double that of 1915, and the latter up to that time was the best tourist year we had had. To meet this increased tourist business we purchased two second hand cars to be converted into parlor cars, thus giving us four parlor cars, and various changes were made in the accommodation on the steamboats Gleaner, White Horse and Casca. At Lake Atlin we were confronted with the utterly inadequate facilities for the accommodation of the tourists. Consequently, we proceeded to construct a hotel. The plans were designed, materials purchased and shipped north, but owing to the late opening of navigation and low water, the ground

was not broken for the hotel until June 10. However, it was completed ready for guests on July 15. The hotel and its management have been commended by everyone, and some have stayed longer than planned, and have declared their intention of returning for a whole summer's sojourn.

The winter service for mail, passengers, parcels, etc., was carried on as usual between Whitehorse and Dawson, by means of 4-horsed sleighs and 4-horsed coaches, with the help, on a few trips, of course, of canoes, launches and steamers. During the year 155 trips (equivalent to 51,150 miles) were made, and 175,158 lb. of mail, 388 passengers, 10,231 lb. of parcels, and 641,144 lb. of ordinary freight were carried.

C.P.R. Dismissal Suit.—P. F. Patterson, formerly accountant in the C.P.R. Natural Resources Department, at Calgary, Alta., entered suit in an Alberta court some time ago against the C.P.R. and several of its officials, viz., I. G. Ogdone, Vice President in charge of Finance and Accounting Department; J. S. Dennis, Chief Commissioner of Colonization and Development; J. E. Lethbridge and Phillip Mileson, claiming \$50,000 damages for conspiracy, alleging that the defendants had conspired among themselves and with the company to induce the company to ruin plaintiff's reputation and to secure his dismissal from the company's service. The case finally reached the Appellate Division, where it was decided that no cause of action for conspiracy had been disclosed against the company, but that there was a cause of action against the individual defendants. The company's appeal was therefore sustained, the plaintiff to pay the costs, but the individual defendants' appeal was dismissed, they to pay the costs. As the case now stands, the plaintiff may proceed against the company for wrongful dismissal and against the individual defendants for conspiracy, but these issues must be tried separately.

C.P.R. Sleeping Car Heating.—The C. P.R. is introducing into its sleeping cars a system whereby the heat can be controlled in each berth, compartment and drawing room by the occupants of such accommodation, the plan being similar to the control of heat in private houses. This system is being installed when cars are put into the shops for their annual renovation, but, on account of the prevailing war conditions affecting materials and labor, it will be necessary, of course, to subordinate the installation of the new system to the more important matters of new equipment and repairs, which will be proceeded with first.

The C.P.R. shops at Weston, Winnipeg, went on reduced time Jan. 14, the working hours now being from 8 a.m. to 5 p.m., instead of from 7 a.m. to 5 p.m., as formerly. Officials stated that there was now ample rolling stock to take care of the traffic, and that there was no necessity for extra effort to keep the cars in repair.

Passenger Committee Meetings Postponed.—Owing to existing conditions, the annual meetings of the Great Lakes & St. Lawrence River Rate Committee, and the Niagara Frontier Summer Rate Committee, which were to have been held at Buffalo, N.Y., Jan. 29, 30 and 31, were postponed until further notice.

The Alberta Federation of Labor at a meeting in Lethbridge, Alta., Jan. 9, passed a resolution condemning the use of one-man cars on electric railways.

Changes in Reid Newfoundland Co's Management.

At the annual meeting at St. John's, Nfld., recently, the following directors were elected for the current year: Lord Shaughnessy, Sir William Reid, H. D. Reid, R. G. Reid, F. J. Hunter, J. P. Powell, and C. O'Neill Conroy, K.C.

H. D. Reid, heretofore Vice President, was elected President, vice Sir William Reid, and consequent on this change, therewas some rearrangement of officials. Following is a list of positions with the present holders: Vice President, R. G. Reid; Treasurer, F. J. Hunter; General Superintendent, J. P. Powell; Secretary, W. A. Reid; Comptroller, H. McNeil; Purchasing Agent, H. Crawford; General Passenger and Ticket Agent, J. W. N. Johnstone; General Freight Agent and Traffic Manager, E. W. Taylor; Assistants to General Superintendent, G. Cobb and E. J. Hoskins; Superintendent of Dry Dock and Motive Power, W. E. Ladley; Master Car Builder, H. Ross; Superintendent, H. J. Russell; Eastern Traffic Agent, J. M. Lyons; Assistant Comptroller, C. U. Henderson; Assistant Treasurer; F. E. Pittman; Assistant to General Passenger Agent, J. Baxter; Assistant to General Freight Agent, T. J. Rolls; Assistant Superintendent, W. Fitzpatrick; Chief Dispatcher, W. Dwyer. The head office is at St. John's, Nfld.

Australian Transcontinental Railway.—By the recent completion and opening for traffic of the railway between Port Augusta and Kalgoorlie, 1,053 miles, a connection between east and west has been made, thus forming the first transcontinental railway in Australia. The official trip on the formal opening of the line occupied five days, travelling being done by daylight only. It is not expected that the line will be completely ballasted and brought up to full standard for some time. It is also stated that, owing to the difficulty of obtaining deliveries of suitable rolling stock during the war, the cars for some time will be of wood bodies erected on such steel underframes and trucks as are available locally.

Michigan Passenger Rates.—The Michigan State Legislature in 1911 passed a law enacting that the railways in the State should charge a rate of 2c a mile. The Duluth, South Shore and Atlantic Ry., continued to charge 3c a mile, but gave refund coupons to passengers to be redeemed later. The State instituted proceedings to enforce the law and a decision was rendered recently by U. S. District Judge Sessions at Grand Rapids, Mich., against the State. The judge held that the law should not be enforced against the company on the ground that the railway was practically confined to the upper peninsula, and that it operated under adverse conditions. The railway does not object to a 2½c rate.

Dominion Government Committee on Railway Questions.—Early in January an order in council was passed at Ottawa appointing Hon. J. D. Reid, Minister of Railways; Sir Thomas White, Minister of Finance; Hon. A. Meighen, Minister of Interior; Hon. F. B. Carvell, Minister of Public Works; Hon. J. A. Calder, Minister of Immigration and Colonization; and Hon. G. D. Robertson, minister without portfolio, as a committee of the cabinet to consider the whole railway situation in Canada. The committee has held a number of meetings and an announcement of its conclusions is expected at an early date.

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Eastern Canadian Passenger Association's Officers.

The following have been elected to serve during this year:
Chairman—A. I. Miller.
Executive Committee—W. S. Cookson (chairman), R. L. Fairbairn, W. H. Snell, J. F. Pierce.
Rules Committee—C. W. Johnston (chairman), W. Maughan, J. Morrison, J. W. Hanley, G. C. Martin, A. L. Miller, I. W. Landman, H. H. Melanson, F. T. Grant.
General Baggage Agents' Committee—J. O. Apps (chairman), G. C. Allen, F. L. Fairbairn, C. C. Bonter, J. E. Quick, H. P. Dearing, W. M. Skinner, A. E. Plummer.
Secretary—G. H. Webster.

Storms Delay Traffic in British Columbia and Ontario.

During the last few days of December and the early days of January, railway communication in British Columbia was held up by storm conditions. Owing to heavy rains freshets inundated the tracks, land slides blocked them, and the damage to telegraph and telephone lines interfered with the task of operating them. The centre of the storm was in the Fraser Valley, and it was not until Jan. 10 that the train service was anything like normal. The British Columbia Electric Ry. suffered severely, particularly on its line to Chilliwack, the estimated amount of the damage done being about \$150,000. Traffic in Ontario was seriously interfered with from Jan. 13 to 18 by a blizzard which started on the first mentioned date and continued until well on into the night of Jan. 14. Every railway line centring on Toronto was more or less blocked, there being practically no main line traffic until the afternoon of Jan. 15. Most of the branch lines were opened by the evening of Jan. 16, and the remainder a couple of days later. The G. T. R. branch line from Lindsay to Haliburton was one of the last to be opened, mail posted at points on that branch Jan. 12 not being delivered in Toronto until Jan. 19.

Carriage of Explosives on Passen- ger Trains.

The Defence of Canada Order 1917 has been amended by order in council, by the addition of regulation 21A, as follows:—"If the Minister of the Naval Service, the Deputy Minister of the Naval Service, or any other officer thereto empowered by the Minister of the Naval Service, considers the circumstances of the case sufficiently urgent to require the same, such Minister, Deputy Minister, or other officer may order that explosives be carried on any passenger train, and the respective officers and employes of all railways in Canada, including the Canadian Government Railways and any other railway owned or controlled by His Majesty, shall receive, transport and deliver any explosives delivered to them for carriage under such order. Provided, however, that no such order shall be given with respect to any explosive the carriage of which is forbidden by General Order 100 of the Board of Railway Commissioners of Canada, and that the quantity of explosives carried on any one passenger train shall not exceed in quantity 500 lbs. weight."

Canadian Society of Civil Engineers, Toronto Branch.—The annual meeting was held Jan. 15, when the committee's report for 1917 was received and general business transacted. The executive for the current year was elected as follows: P. Gillespie, Chairman; G. Hogarth, Secretary-Treasurer; Committee, J. R. W. Ambrose, W. Chipman, E. L. Cousins, H. E. T. Haultain, E. G. Hewson and R. O. Wynne-Roberts.

Canadian Society of Civil Engineers, Ottawa Branch.—The chairman elected for the year is G. Gordon Gale, Vice President and General Manager, Hull Electric Co., and the secretary is J. B. Challes, Superintendent, Dominion Water Power Branch. Among the members of the managing committee is E. B. Jost, Hydraulic Engineer, Railways Department.

C. P. R. Officials' Christmas Greetings.—G. M. Bosworth, Vice President in Charge of Traffic; C. E. E. Ussher, Passenger Traffic Manager; C. E. McPherson, Assistant Passenger Traffic Manager; C. E. McPherson, Assistant Passenger Traffic Manager, Western Lines; and C. B. Foster, Assistant Passenger Traffic Manager, Eastern Lines, sent their friends at Christmas an illustrated booklet "Fightin' Sons of Guns," containing a reprint of an article by George Patullo, a Canadian by birth, now in France as a member of the American Expeditionary Force. The article was first published in a United States periodical.

Strange Death of a G.T.R. Paymaster. It was reported, Jan. 17, that the body of a paymaster named Robillard of the construction gang working on the bridge over the Godefroi River, between Doucets Landing and St. Gregoire, Que., on the G.T.R., was found hanging outside a freight car at Doucets Landing. It is said that he had been murdered and the body placed there after death.

The Great West Coal Co. has been incorporated under the Dominion Companies Act to carry on coal mining and allied businesses in Canada. The authorized capital is \$2,000,000; the office is at Brandon, Man., and the provisional directors are: E. Spice, H. E. Swift, R. W. Campbell, C. J. Macleod, and H. V. Hudson, Winnipeg, Man. Among the businesses which it may carry on are, general carriers, forwarding agents and warehousemen.

A club has been formed at the C.P.R. Windsor St. station, Montreal, for boys between 12 and 18 years of age employed there. The club elects its own officers, but its affairs are overseen by a committee of the station officials.

Canadian Northern Ry.—One year gold notes for \$1,250,000, originally issued by W. A. Read & Co., New York, at 6%, were paid at maturity, Jan. 10. During 1917 the company's outstanding obligations were reduced by \$6,000,000.

Rails for British Western Front.—In reference to press statements that more rails were about to be taken up from Canadian railways and shipped to Belgium and France, we are advised that all the rails that the British authorities asked for have been shipped and that no further shipment is contemplated at present.

The first railway excursion in Manitoba was held Dec. 20, 1877, when, on the invitation of Contractor Joseph Whitehead and District Engineer J. H. Rowan, a trip was made on the C.P.R. from St. Boniface to a point east of Selkirk.

The Transportation Club of Vancouver had its annual New Year's party, as usual. The proceedings opened late at night on Dec. 31 and were carried on for several hours into Jan. 1.

Traffic Orders by the Board of Railway Commissioners.

A number of orders issued in connection with the "Fifteen per cent. rate case" are given on page 45 and subsequent pages of this issue.

Canadian Northern Rates to West of Port Arthur.

26831. Dec. 14, 1917. The order 26008, April 12, 1917, directing the Canadian Northern Ry. to file a tariff showing rate from Toronto, by lake and rail, to its stations west of Port Arthur, which shall not exceed its published rates from points east of Toronto to the same destinations, via rail to Toronto, and lake and rail to destination. Upon hearing the matter at Toronto, Oct. 23, 1917, in the presence of counsel for the Canadian Northern Ry. and a representative of the freight and express underwriters, and upon its appearing that the Canadian Northern Steamships Ltd. now own no vessels on the lake route from Toronto to Port Arthur, and that the Canadian Northern Ry. does not "own, charter, or use" any vessel on this route within the provisions of sub-sects. 3 of sec. 333 of the Railway Act, it is ordered that order 26008 be rescinded.

Transportation of Milk in Refrigerator Cars.

26843. Dec. 19, 1917. Re the question of requiring railway companies to provide refrigerator cars for the transportation of milk where a special milk car is used for the purpose; and the complaint of the University Settlement of Montreal, Baby Welfare Committee, against the lack of proper depot protection at Montreal and points of shipment for milk going to Montreal; and applying for an order requiring cars used for the transportation of milk to be equipped with ice or other cooling process: Upon hearing the matter at Montreal, Nov. 8, 1917, in the presence of counsel for the City of Montreal and the Canadian Pacific and Grand Trunk Railways, it is ordered that the application be refused.

Transfer Tracks at Conquest and Rosetown.

26853. Dec. 21, 1917. Re order 18682, Feb. 14, 1913, requiring the transfer track between the Canadian Pacific and Canadian Northern Railways, to be constructed by agreement by the C.P.R. at Conquest, Sask., to be completed by May 1, 1913; and order 26386, July 31, 1917, directing the Canadian Northern Ry. to construct a transfer track between its railway and the C. P. R. at Rosetown, Sask. And re the application for authority to remove the transfer track at Conquest. Upon hearing the matter at Saskatoon, Oct. 17, 1917, and at Regina, Oct. 18, 1917, in the presence of counsel for the Canadian Pacific and Canadian Northern Railways, and the Saskatoon and Moose Jaw boards of trade, no objection being offered by the Moose Jaw Board of Trade, provided the said transfer track was not removed before the transfer track at Rosetown was installed, and upon its being now represented to the Board that the transfer track at Rosetown was completed on Nov. 29, 1917 it is ordered that the C.P.R. be authorized to remove the transfer track at Conquest.

Pulpwood Rates to Campbellford.

26858. Dec. 19, 1917. Re order 26476, Aug. 29, 1917, made upon the application of the Hydro-Electric Power Commission, of Ontario, suspending the advanced rates on pulpwood, in carloads, from certain

stations on the Canadian Northern Ry. to Campbellford, Ont., as published on page 3 of Supplement 20, to the C. N. R. Tariff, C.R.C. no. B-860; also suspending cancellation Supplement 1 to Canadian Northern Ry. Tariff C.R.C. no. E.156. Upon hearing the application at Ottawa, Sept. 18, 1917, the Hydro-Electric Power Commission and the Canadian Northern and Grand Trunk Railways being represented, upon the report of the board's Chief Traffic Officer, it is ordered that the order 26476 be rescinded, in so far as it affects rates from points on the Maynooth, Rideau, and Tweed Subdivisions. And it is further ordered that the following rates be simultaneously filed in lieu of those shown in Supplement 20 to Canadian Northern Ry. Tariff C.R.C. no. N-860, from points on the Irondale Subdivision, viz.: From Baptiste, Highland Grove, and Rumfords, 6¼c per 100 lb.; from Wilberforce, Monmouth Road, and Tory Hill, 6½c per 100 lb; from Gooderham, Maxwells, Irondale, Furnace Falls and Conways, 7c per 100 lb.

Northern Pacific Parlor Car Tariff.

26875. Dec. 27, 1917. Re application of Northern Pacific Ry., under sec. 331 of the Railway Act, for approval of its Standard Parlor Car Tariff, C.R.C. no. S3. Upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff, showing a rate of ½c a mile between stations in British Columbia, be hereby approved.

Northern Pacific Standard Freight Tariff.

26899. Jan. 11. Re application of Northern Pacific Ry., under sec. 327 of the Railway Act, for approval of its Standard Freight Tariff of Maximum Mileage Tolls, C.R.C. 375. Upon the report and recommendation of the Board's Chief Traffic Officer, it is ordered that the said tariff applying between all its stations in British Columbia be approved; the said tariff, together with a copy of this order, to be published in at least two consecutive weekly issues of the Canada Gazette.

Interchange Between C.P.R. and G.T.R. at Port Hope.

26887. Jan. 3. Re order 26400, Aug. 1, 1917, directing the C.P.R. to construct interchange tracks between its railway and the G.T.R. at Port Hope, Ont., and the application of the G.T.R. for an order amending said order. Upon reading what is filed in support of the application, it is ordered that order 26400 be amended by adding the following clause, viz., "2. That the company upon whose line, including private sidings contributory thereto, the traffic is loaded, shall be entitled to the line haul and to the privilege of effecting the required delivery on the line of the other company by means of interswitching at destination."

Track Storage Charges at Cartier.

26901. Jan. 14. Re application of the Transportation Bureau, Montreal Board of Trade, for a ruling by the board on the validity of the track storage charges authorized by order 24436 to be collected on cars containing western grain and grain products detained at Cartier, Ont., for more than 72 hours, for consignees' furtherance orders, as published in Supplement 15 to C.P.R. Tariff C.R.C. no. E-3280. Upon reading the application and what is alleged in support thereof; and upon the report of the board's Chief Traffic Officer, it is ordered that the object sought to be attained by the ascending scale of track storage tolls at Car-

tier, authorized by order 24436, Nov. 11, 1915, having received consideration in general order 201, Aug., 1917, prescribing the amended Canadian Car Demurrage Rules, order 24436, be rescinded on and after Feb. 1, 1918. And it is further ordered that the C. P. R. be authorized to file a tariff to provide for a special toll of \$1 a car per day, for detention of cars containing western grain and grain products at Cartier, for more than 72 hours, while awaiting furtherance orders from the consignees thereof; the said tariff to be made effective Feb. 1, 1918.

Collection of Cartage Charges.

26905. Jan. 15. Re complaint of Retail Merchants' Association of Port Arthur and Fort William, Ont., against the practice of certain railway companies of advancing cartage charges at certain shipping points and collecting same from the consignees. Upon hearing the complaint at Fort William, Oct. 22, 1917, the Port Arthur and Fort William boards of trade being represented at the hearing, and upon reading the further submissions upon the report of its chief Traffic Officer, and upon its appearing that the board has no jurisdiction to correct the grievance complained of, it is ordered that the complaint be dismissed.

Railway Employes and the Victory Loan.

One noticeable feature of the recent Victory Loan campaign was the surprisingly large contribution made by many railway employes. Conductors put down their names for \$500 or more without a murmur. So too with the locomotive men and mechanics and in a lesser degree with trainmen and firemen. The reason is that the railway employe was never so well paid as he is today, indeed he is better off even than the munition worker, as his income is not of a temporary nature, and he has the further advantage of pass privileges for his family and of a pension when he gets to be too old for service.

Three hundred dollars a month is quite a common pay cheque to be drawn at the end of the month by a Canadian locomotive man, who earns more than many a captain of an ocean going liner, and sometimes \$350 is touched. Conductors range as a rule from \$200 to \$250 a month, sometimes more and sometimes less. Almost as well paid are the firemen on the western lines, who earn from \$150 to \$230 a month. Section foremen, who have special privileges of houses at nominal rents, free fuel, market passes for their wives and free land for gardens, earn from \$80 to \$110 a month.

C.P.R. stock is now held by over 50,000 persons, chiefly in Great Britain, Canada and the U. S., approximately 12% of it being held in other countries. The holdings in Canada have increased considerably since the commencement of the war, and now represent over 15% of the outstanding capital stock, distributed amongst 7,000 holders. In the last four years, the number of shareholders has more than doubled.

T. McHattie, ex-Master Mechanic, G.T.R., Montreal, in remitting his renewal subscription, writes: "I always look forward with pleasure for Canadian Railway and Marine World from month to month, as the matter it contains is so interesting and instructive."

Discussion on Draft Gears on Railway Rolling Stock.

The paper on this subject, by L. E. Endsley, professor, University of Pittsburgh, Pa., read before the Canadian Railway Club and published in Canadian Railway and Marine World for Dec., 1917, was discussed by several of the club's members. The following are the most important parts of the discussion:

T. H. Curtis: I would like Mr. Endsley to make plain to us the shearing of the 19/31 in. rivets. Does this mean that each lug has 9 rivets in it? If so, are they in the same channel? Or are there two lugs to shear 18 rivets; each lug bearing about half the load? Referring to fig. 2, the cut shows 18 rivets on the side. I think this should be explained.

L. E. Endsley: There are 18 rivets in the single shear and two lugs. Sometimes under a test both lugs would shear off. I meant to say that there are two lugs, 9 rivets in each and each rivet in single shear. As regards the 18 rivets in the channels, as shown in fig. 2, it only took 800,000 lb. to shear off 10 rivets and as this was not the strength of the sill, we added more rivets. We did not want to shear the lug off, but to obtain the strength of the sill.

Jas. Coleman, Superintendent Car Department, G.T.R.: Mr. Endsley has opened up a very interesting and broad subject—one that all railway companies are very much concerned in at present. It is the opinion of many operating men that in 70% of the claims paid by the claims departments for damage to freight in transit the cause for such damage cannot be traced; this high percentage is due to damage in switching and yard service, due to weak draft rigging. With the ordinary spring draft gear, that has not sufficient tension to absorb the shocks in switching and in road service, the gear becomes solid in switch movement and moves car under load. This means, it forces the load, or contents against the end of the car, scattering it over the floor of car, thereby causing unknown damage to contents, that cannot be determined until car has reached its destination. If the spring tension of draft gear was strong enough to absorb the shock before the spring went solid, it would prevent movement of contents or load in car, also stop movement of car under load and forcing load against ends of car. It is clearly demonstrated, on account of heavy train movement, increased tonnage in train service, and heavy switching service, due to increased tare weight of car and increased capacity of cars, that it has become necessary that a friction draft gear should be applied to all freight and passenger car equipment. It has been fully demonstrated that a spring tension draft gear is not sufficient to absorb the shocks and prevent them from being centralized in underframe and from of cars. In a discussion with some railway men, in connection with claims paid for damage to freight, the cause of which could not be traced, one company, I heard of \$200,000 being paid out in 1916 for damage to freight in transit, cause of which could not be traced, or damage was not discovered until car reached its destination. This amount was only a portion of the total amount of damage, as usually it is pro-rated over the different lines over which the car may be routed. This is conclusive that the mechanical departments should do something to improve this condition, that will prevent the constant flow of expense for damage to

freight, a large percentage of which can be saved and avoided by the introduction of a stronger and more efficient draft gear. Large numbers of equipments have been in service for a number of years, but at the time such equipment was originally constructed, it was not necessary for a heavy friction draft gear. In the last few years, or less than the average life of a great deal of equipment now in service in the country, it has become necessary, due to the increased tonnage of trains and increased draw bar pull on large and heavy locomotives to apply a reinforced steel underframe and a stronger draft gear to stand the service of present day operation, the same applies to improvements made in sorting yards and switching.

W. H. Yost, Mechanical Engineer, Hart-Otis Car Co.: As trains get bigger the draft gear must necessarily be made heavier. The modern friction gears give good service and much better than the spring gears. The heavier trains will require us to adopt something heavier.

C. W. Van Buren, General Master Car Builder, C.P.R.: There is one feature which Mr. Endsley did not bring out very strongly, although it has no doubt occurred to nearly all car department men here, that is that defects which develop in the draft gear and attachments cannot always be attributed to inferior draft gear. Many cars have been built and remodelled in recent years, with sills too weak to stand up under the severe service to which they are subjected. This is usually called rough switching, and in many cases it is, but we must remember that the traffic conditions which now prevail do not always permit of slow and careful movements of freight cars, and that it is at times extremely difficult to prevent damage to sills, couplers or draft gears without higher capacity gears, heavier couplers and stronger sills, draft arms and other attachments. I am not speaking of spring gear only. It is brought out quite clearly in the paper that friction draft gears frequently do go solid before any other parts of the car are damaged. Perhaps we might say that none of the draft gear manufacturers are keeping pace with the requirements. It has been my opinion for some time that the draft gear usually goes solid before the coupler breaks, and it would appear that the coupler should be the weakest link in the chain. We should design our sills, draft arms and lugs strong enough to stand a shock sufficient to break the coupler, and, if it is possible, the draft gear should be designed with at least as great a capacity as the coupler, and I believe that at least four inches travel is desirable. Officers in charge of the management of railways usually come up through the traffic or operating department, and it has been part of their training to keep the tare weights of cars and trains down to the minimum. Quite frequently, strength, durability and efficiency have been sacrificed in order to reduce the tare weight. Perhaps this condition is to some extent responsible for many of the comparatively weak draft gears in service today. There is one other point I would like to refer to on behalf of friction gear. When we were using nothing but spring gears, we expected to have couplers, followers, lugs, springs, and other parts broken. These failures were seldom criticized; we usually called it rough handling and let it go at that,

but when we got the friction gear and it began to fail, we sometimes said it was no good. We thought it did not stand up in service as it should, and we were sometimes inclined to condemn it because some parts had to be renewed, for we forgot that friction meant wear. I believe that it is impossible to build any friction draft gear which will not at some time during the life of the car require some repairs, and its efficiency, like wheels, brake shoes, couplers, brasses and other parts of cars, depends largely upon the inspection and repairs which it receives. This is something which we should endeavor to impress upon our managements. I believe all car men who have had any experience with friction draft gear are in favor of it as compared to spring gear. Most of our operating men who don't should visit the various laboratories and become familiar with the results of the tests.

R. W. Burnett, Master Car Builder, Delaware and Hudson Co.: I feel confident that up to recently 80 or 90% draft gear troubles have been the failure of attachments; that is couplers, yokes, yoke rivets or attachments to wooden draft timbers. The couplers are now being made stronger, modern cast steel yokes do away with the rivets and distribute the metal so that breakages are greatly reduced and the use of steel centre sills or metal draft timbers is greatly reducing the draft timber attachment failures. The things I have mentioned may seem minor details, but they have constituted the greater part of the failures that have made the draft gear problem so prominent. With modern appliances these troubles will in time be reduced to a minimum which will leave us free to realize to the full on the wonderful developments that the friction draft gear people have made. With the increased weight of the cars and trains, and power of the locomotives, the full capacity that has been developed in the gears will be needed. We must not lose sight of the fact that the great capacity developed in the limited space will mean wear, and we must expect some cost in repairs and renewal, but, I feel that every dollar spent for improved modern draft gears will be saved many times over in repairs to other parts of the cars and in loss and damage to lading.

K. F. Nyström, Chief Draftsman, Car Department, G.T.R.: There is one thing brought out very clearly by Mr. Endsley, viz., the wear of the friction draft gears. The great fault with certain friction draft gears is that the parts become worn and produce a slack in the gear. If this slack is not taken care of either by manual or automatic adjustment the gear will lose in capacity and soon be hammered to pieces. It is my opinion that in the ideal draft gear the wear should be reduced to a minimum and the slack or wear taken up automatically, so the gear will be in a good efficient condition during its entire life, the same as, for instance, a brake shoe. I should like to ask Mr. Endsley as to the relation between the draft gear and the centre sill. The draft gear will take care of a portion of the energy, or end shocks, the centre sill has to take care of the balance. How strong should we design the centre sills behind the draft gear to take care of reasonable load, say, in so many pounds static load?

L. E. Endsley: It would depend entirely upon the strength of the coupler. If I

had a coupler that would stand about 500,000 lb. I would want to have an under frame that would stand over 600,000 lb., and two 25 lb. channels with 19 sq. in., including cover plate, would give an under frame plenty strong enough. The coupler is going to fail before the strength of the sill is reached. If you have a coupler going 700,000 or 800,000 lb. you must go to a centre sill that will stand a greater load. I want my coupler to break first. If that will stand a million pounds we should have an underframe stronger than that or the underframe is going to fail first.

K. F. Nystrom: Two 12 in. channels will not safely stand a million pound shock?

L. E. Endsley: I said that two 12 in. channels of 25 lb. per foot would stand 600,000 lb.

K. F. Nystrom: If you allow, say, 16,000 or 20,000 lb. per sq. in., you have got to get more than 12 in. channels.

L. E. Endsley: You will not bend the sills until you have a stress of 35,000 or 38,000 lb. per sq. in. You will shorten it a little as you get above the elastic limit, but you won't bend it until you get a force which is equal to over 35,000 lb. per sq. in. In the tests mentioned in the paper we used an accurate strained gauge that is constructed to read to 0.0002 parts of an inch. If there is any give in that sill over 0.0002 then this strain gauge will show it. If the webs of the channels are as thick as they are in a 12 in. channel that weighs 40 lbs. per foot the force per sq. in. to destroy or bend the sill is increased. In two sets of channels of the size just given, the area would be approximately 28 sq. in. for the centre sills with the cover plate included. In a test of these channels the force to destroy them was over 1,300,000 lb. or over 47,000 lb. stress per sq. in.

T. H. Curtis: I think Mr. Endsley's paper brings out the necessity of not having too much eccentricity through the location of the draft gear in relation to the centre sill. I would refer him to the table in the paper where the draft gear has been 2½ in. from the edge of the channel. It is very little more than half the strength of when it is in the centre of the channel. To get away from this eccentricity it seems to me the trucks should be designed so they will be as low as possible and the spring draft nearer to the centre of the sill. There is another advantage gained by this and that is that it will lower the centre of gravity of the car body. With respect to broken draft gears: one point is that the repair men do not always know when they should be repaired and when they should be replaced. I think the suggestion made by Mr. Nystrom is worthy of consideration and shows the need of a draft gear that will automatically take up the slack caused by wear and abuse. I have not heard anything said here about the auxiliary to the draft gear, which is the buffer block. That is something which takes up some of the greatest shocks and if that were so set that the coupler horns would strike before the draft gear became solid it would be a great advantage as it is something which the repair men can see readily and is something which can be easily fixed.

Mr. Hatch: I would like to enquire of Mr. Endsley what effect it would have on increasing the length for the distance of travel on train slack, bearing in mind the difference in loaded cars, difference in piston travel, and so forth. I refer particularly to passenger equipment.

L. E. Endsley: Mr. Hatch has opened

a subject that I had hoped to have the best man in the United States with me tonight to reply to, but I received a telegram that he could not be here. There are two entirely different things in this subject, for instance, slack is movement between two cars without any resistance. But the draft gear movement is entirely different. Some men have I think mistaken draft gear travel for slack, and if you increase your slack between two cars you are going to increase the evils due to that slack. Let us assume for instance that you have a foot slack between two cars. You would get one car going in starting the train, and would go a foot before you picked up the next car, and in going that foot, probably could increase your speed a mile an hour or so, but if in going that foot you had resistance equivalent to a large number of foot pounds, and if you have between the two cars 4 in. of draft gear travel under 200,000 lb. final force your average will be 100,000 lb. Now if this force acts through between each car and no slack, the other car would be moving almost before there was any difference in speed, the slack happens after the gear goes solid. If there was a lot of slack on a car I would expect a shock but if I had resistance that the locomotive could not take entirely up, and it had to start the cars with resistance, then I would have a little give between the cars, and when picking up the last car of the train, each car in the train would be moving at almost the same speed. I think one of the things we have overlooked is the advantage we are going to gain by cutting down the slack, that is moving without any resistance whatever. I would be very glad if I had the assistance here tonight of W. V. Turner of the Westinghouse Air Brake Co., to discuss this question more fully, as it is a very deep one.

J. Hendry, Master Car Builder, G.T.R.: In my opinion an underframe, properly designed and constructed, having been obtained, the most important part of the design to consider is the type of draft gear. In this connection I think it is generally conceded that a modern friction draft gear gives the greatest protection, as it reduces the cost of maintenance and all other expenses incident to failures. A careful examination of cars placed on shop tracks for repairs will, I am convinced, show that probably 70% are placed on account of defects that have developed due to shocks, and I believe investigation into this cause of damage to lading indicates that a large percentage can be traced to the same cause. If such is the case, and we all know it is, something should be done to relieve the equipment of such ravages.

A great deal of attention has been given to the design of the underframe construction of freight equipment, but the desired results will never be attained unless some device, between the frame and the coupler, is installed which is especially designed to destroy or absorb the force of the blow. A car may be properly designed and constructed through, but if it is not protected against the force of shocks, which all freight cars are subjected to, the weakest point will begin to fail. Springs have been used, varying from 18,000 to 60,000 lb. capacity and gave good protection some years ago, when cars were of light capacity and were handled in short trains; but they do not meet the requirements of today and a large number of roads have started to replace the spring gear with friction devices that have from three to four times the shock-absorbing capacity that can be

obtained from the spring gear. In a friction gear there should be no recoil. The force exerted by the recoil of a spring is practically as great as the force to compress it, and results in much damage to equipment handled in long trains. A reduction of car failures is sure to follow in the adoption of the friction draft gear, which means a great saving to a railway, because of the increased earning power of the cars and the decreased cost of maintenance, lost and damaged lading accounts, delays and interruptions of traffic, transfers of lading and switching through various terminals. The draft gear, I consider, is one of the most important factors in the question of car maintenance and other expenses incident to car failures. It is the only device that we can apply to a car to protect it and its lading from being damaged. It has no other function to perform. It must destroy shocks from impact, shocks from pulling and shocks due to recoil. A few of the damages occurring to cars due to the draft gear failing to perform its work are as follows: If we could use a draft gear between the coupler and the car that would absorb the heavier shock, we would do away with broken couplers, but with improved friction draft gear this may be obtained by continuing to use our present style of couplers without increasing their weight. While knuckles wear out in service, yet a great many of them break; and here again would relieve the knuckle by absorbing the shock. What is true of the coupler and knuckle, is also true of the knuckle pin, either the draft gear absorbs the shock, or we will have to increase the size of the pin or have the knuckle so arranged that when locked in position the strain will not come on the pin. Failure of coupler yokes is also due to shock. These are, I think, being replaced by other forms of attachments, on account of pocket rivet failures, on account of pocket rivets in shear under impact. By eliminating this feature the wrought iron or forged steel yoke with 1¼ x 5 section riveted to the coupler with two 1¼ in. rivets can be operated with very few failures. No one will deny that draft springs are destroyed by shock, but with a properly designed friction draft gear, the failures are few, for the reason that draft gears are not driven solid, even though the draft gear receives a shock sufficient to close it. Draft lugs, draft arms, draft sills, deadwoods and end sills all fail, simply because the draft gear fails to destroy the force of the blow. I do not say that a friction draft gear will cure all the ills to which the freight car has fallen heir to, but I do know that it helps to maintain freight cars in service and keep them off the repair tracks; thereby increasing the earning capacity and efficiency of the freight car. I believe that a standard specification for the testing of draft gear, to determine its shock-absorbing capacity and amount of recoil, should be established to obtain, by means of physical tests, their worth or efficiency as a shock destroyer.

E. J. McVeigh, General Storekeeper, G.T.R.: If the fact that I have seen a vast number of broken couplers and draft gears gives me a right to claim some knowledge of these things, then I should be an expert, but I am afraid such is not the case. When I first heard that Mr. Endsley was coming to give us a paper on draft gears, my first thought was, "Have we found a Moses at last who will lead us out of the wilderness of broken and disabled cars?" While Mr. Endsley has given us much valuable information, and if we make proper use of it we will

receive much benefit, no doubt, I do not expect to find the number of broken couplers and draft gears decreased, or the number of damaged cars become less for many years to come, and the discussion by the car men here tonight confirms me in this belief. To me it seems that this question of damaged cars is merely a part of the great railway problem that confronts us today and with which the railways have been at death grips for years. It is, as our president has stated, a business proposition. Mr. Coleman hinted at this when he spoke of the large locomotives that damage our cars. Another gentleman did not agree with this, but claimed that the damage was done largely by the small locomotives in the yards. To me it seems to be all of one piece. We use the big locomotives in an attempt to haul sufficient tonnage to make the haul pay. We shunt our cars fast and roughly, in an attempt to handle enough of them in a day to catch up to the vanishing allowance we have for such work. I am not so very old, and yet I can remember when a railway used a small, weak car with the old pin and link coupler, and a small locomotive to handle them, and made good money by so doing. There were various reasons for this. One was that in proportion to the expense of handling the car and the load, the railway received a fair compensation. Under the head of expense of hauling the load we must count the general operating expense of the railway, and the interest on capital account. The cars cost \$400 to \$500 each. The locomotives cost \$7,000 to \$10,000 each. Repairs to both were small in cost. The wages paid were small. The strength of the locomotive and the car were more evenly balanced than they are today. The locomotive could not damage the cars because they had not the strength—they could not haul 75 or 100 of these cars in a train and pull them to pieces in so doing, but they made money by hauling a reasonable number, because things were more evenly balanced. There wasn't so much talk of tonnage in those days, but they were not such bad days after all. But the world moves, the expense of operation began to grow, the cost of hauling the small train of small cars became so great that it ate up the revenue. The revenue had gone down while the expense had gone up. You can't make two things meet when they pass each other and are going in opposite directions. When this happens in any line of business, outside of railroad-ing, there is a halt called and a readjustment made, not so with the railway, they can't halt, and the power to readjust had been taken away from them, so when they found that hauling the light train did not pay they found a heavier locomotive that could haul a heavier train. Then they found that the old cars could not stand the increased strain, so they bought or built a stronger car, but this was not the answer. The locomotive and cars had cost so much, and wages had again gone up, so that there was still no margin left. What to do now? I know what should have been done, but we all know what was done. The locomotive was again made heavier and back came the old trouble of the car being too weak to stand the extra strain. The coupler broke, so we made a stronger coupler. Then the draft gear gave way and we made a stronger draft gear. Then the sills gave way and we strengthened them, then back to the coupler and so on round and round a vicious circle. Increased cost and upkeep of locomotives cost and upkeep of cars, increased cost and upkeep of track, increased

wages, increase everywhere, except increase in net revenue. Feverish and superhuman efforts on the part of the railways to keep going and give the country that service they have never failed in. These are a few of the things I think I see, and I can only say that while an improvement in the draft gear might be of some slight help it is not the answer to our problem. And what is the answer? In my opinion it is this. Give the railways a fair wage for the service they are giving so they may stop trying to do the impossible. Let them come back to a safe and working basis. The railway is a merchant selling transportation. Does anyone expect the merchant to sell his goods at less than cost? Does anyone expect to find within himself means to overcome such a condition and remain in business? I think not. And why should the railway be expected to do it?

C. Brady, Chief Draftsman, General Master Car Builder's Office, C.P.R.: I would like to ask Mr. Endsley if he has any further information to give out as to tests of gears having high initial starting force, for example: resistance which will require springs that will take in 20,000 lb. or so. It appears from his analysis that there are three different kinds of work that the draft gear must take care of, and the construction will be more or less affected, but it is desirable that the most important function be given the preference. It has always seemed to me that the draft gear was the same as any other part of the car, an operating problem. By that I mean that the cars should be designed to operate at the speed which the operating department considers desirable and it is up to the mechanical department to meet their requirements if possible. Mr. Endsley has been of inestimable assistance to all the mechanical fraternity in designing draft gear, and I believe he is entitled to credit for giving a clearer understanding of the necessity for draft gear being built in proportion to the capacity of the car, in other words, a 70-ton car should have a larger draft gear than a 50-ton car. If the operating department will say as to the capacity of the car and the speed at which it is to be operated, then it is up to the mechanical department to put a car in service that will do the work: There is one other point which should not be overlooked, and that is the general tendency to blame the large locomotive for draft gear troubles. I think this is more or less wrong and that the large locomotive does not damage the draft gear as much as the smaller locomotive, because the smaller locomotive has to take the slack in starting. The best illustration of that is one road in the United States which is hauling trains 10,000 tons with spring gear exclusively and using Mallet locomotives, they do not have any draft gear troubles.

L. E. Endsley: A locomotive has the power to start a few cars. There is always enough slack in a coupler or give of the different cars to have a movement between the cars to start the train. If your draft gears all have initial movement with low resistance for any given travel of the draft gears, this is going to reduce its capacity. I do not believe you need a very large initial movement in the draft gear.

G. E. Smart, Master Car Builder, Canadian Government Railways, President: I believe we are fully alive to the subject of draft gears. Friction draft gear is the gear for all types of cars today. I do not believe there is any railway in Canada that during the last five years has applied any other type than friction draft gears

on its passenger equipment, and the day is coming when there will be no other type on freight equipment. The ideal conditions have been explained tonight—as four miles per hour in switching cars in yards—but we do not always obtain this ideal condition, the switching speed is often more than four miles, judging by the noise of cars being coupled in freight yards. The question narrows down to a commercial proposition; the cost of switching cars and the cost of maintenance of car equipment for repairs per thousand miles. Many times the cost of repairs is increased as the result of reducing the cost of switching cars in yards and further damage as the result of same, which causes trouble and delay on the road after leaving terminals. We have a large number of wooden cars in Canada which must be considered by the railways, and as we cannot obtain steel for steel underframes we shall have to put on these wooden cars, metal draft arm and suitable draft gear. Money would be saved if we could apply a steel draft arm on the wooden centre sill, but steel underframes would be preferable, but owing to the demands for steel for shipbuilding we are not going to be able to do this, as we cannot get the necessary material; the next best method is metal draft arm.

The Temiscouata Railway's Earnings.

At a meeting of holders of provisional certificates issued by this company's bond certificates issued by this company's bondholders' committee, in London, Eng., recently, the chairman stated that the gross earnings for the financial year ended June 30, 1917, were \$226,817; operating expenses \$202,240; net earnings \$24,577, against \$222,872 gross earnings; \$18,450 operating expenses, and \$42,421 net earnings for 1915-1916. The percentage of operating expenses to gross earnings was 89.17 compared with 80.96 for the previous year. He attributed the decrease in passenger revenue to the fact that the annual pilgrimage excursions usually run by the company, were banned by the Board of Railway Commissioners. The freight carried was 165,393 tons, against 159,985 during the previous year. In the operating expenses there was an increase of \$7,800 for fuel for road locomotives, due to an increase of 35c a ton in the price of coal, and also to the extra amount used due to cold weather. The amount brought forward from the previous year was \$2,313 which, with the net earnings, \$24,577, interest on deposits, \$1,054, and profit on exchange \$1,404, totals \$29,348, from which was paid, \$12,166 for one year's interest on prior lien bonds and \$9,733 to the redemption fund for prior lien bonds, leaving a balance of \$7,448, which is carried forward to the current year's accounts. No dividend will be paid for the past year on the provisional certificates issued by the committee. For the current year, the gross earnings for the first quarter showed an increase of \$15,068, and the net earnings, one of \$3,965. There is an abundance of traffic on the line, and should the car situation improve, better traffic results will follow. The operating expenses are continually increasing, and the company has been obliged to grant increases of wages in all departments. The General Manager reported from Canada by cable that at the end of Nov. 1917 there was a surplus of \$10,000, including the amount brought forward, after providing for fixed charges.

Electric Railway Department

An Address on Street Railway Operation.

By Edward P. Coleman, General Manager, Dominion Power & Transmission Co., Ltd.

The following address was delivered before the Hamilton, Ont., Rotary Club recently:—There are many and widely differing classes of electric railways, ranging from the street railway proper—or improper, as you may desire—to the modern type of interurban or radial railway, generally constructed on its own right of way, which handles freight and express, as well as passengers, and is operated practically under steam railway rules. I wish to be understood as referring solely to street railways operating within the closely settled areas of busy communities with comparatively frequent car service and stops closely spaced. It will perhaps prevent misunderstanding to say that my statements are not intended to apply, except incidentally, to operation under present conditions. There is no doubt that traffic is now extremely congested on the Hamilton St. Ry., as it is on every street railway on this continent, on account of the present abnormal demands which at times would hardly be met if our tracks could be converted into moving sidewalks. There is a general impression that we should supply more cars, but I wish to say that if we had a hundred more cars we could not use them, on account of the serious shortage of power which now exists. Under the circumstances it is entirely out of the question to divert another horse power to street railway service, and if we were so blind to the situation as to make the attempt we would not be allowed to do so by the Power Commissioner. The many power customers who are here present should certainly appreciate this phase of the situation.

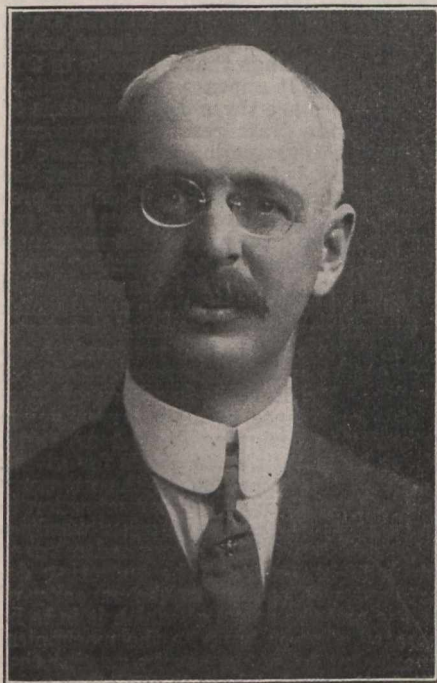
On account of the peculiar character of the work, street railways are also hampered in their operations by the present labor conditions, to an even greater extent than are the operations in other lines of activity represented in this club. For example, the Hamilton St. Ry. requires for its complete operation 272 car men, and during 1917 we hired 246 new men. As 107 men, or 39%, have been with us over two years, you will perceive that this constitutes a very considerable problem in training.

A yearly period of abnormal demand always exists at the merry Christmas season. I will, however, pass over that special feature and merely ask if you know of any busy store, barber shop, or post office where you can walk in at that time of year and be served immediately? Why, then, should not the street railway claim the right to be judged by the same standard?

In considering the question of street railway operation in normal times, we find that what is universally demanded is "satisfactory service," but that in itself is capable of an infinite variety of definitions. As a matter of fact, such a thing as "satisfactory" street railway service does not and cannot exist, as that would imply perfect results under extremely variable conditions which are entirely beyond the operator's control. The nearest approximation to this ideal result is a combination of compromises, and the only possible measure of efficiency is comparison with the service in similar com-

munities. A careful study of the situation develops the fact that precisely the same complaints and criticisms are made of the local street railway service in every busy and progressive community. The principal complaints can be grouped under the following heads, each of which bears a close relation to the others: 1, Frequency of service; 2, Variable spacing between cars and delayed cars, resulting in slow service; 3, Overcrowding of cars; 4, Cars running by passengers; 5, Inefficiency and discourtesy of employees; 6, Physical condition of equipment.

Let us briefly consider the problems



E. P. Coleman
General Manager, Dominion Power and
Transmission Company

and limitations of service under these heads, first frequency of service. As business men, you will naturally realize that the operation of a street railway must be governed by economic laws to the same extent as any other active enterprise, and must be as economically successful, that is, it must pay operating expenses, provide for replacement and depreciation and pay such amounts as interest or dividends as to attract the additional capital necessary for improvement and extensions. This should apply, whether the railway is owned by the public or by the so-called private corporation. The normal frequency of service, or car headway as it is technically termed, must then be governed to a considerable extent by the normal average demand. Usually this normal service is supplemented by more frequent service or shorter headway during certain hours of the day and also by trippers or extra cars interpolated to cover special service from large factories or centres of traffic. This condition is complicated by the fact that, 1st, every employe must be provided with a day's work of reasonable length and, 2nd, your legis-

lature has enacted a law which provides that no street railway motorman or conductor may, whether he wishes to or not, work more than 10 hours in any one day or on more than 6 days of any week. The general impression seems to be that a car is run out of the barn and thereafter goes its own way regardless of rhyme or reason, but such is not the case. The car operation of a street railway is divided into car schedules, and crew schedules, with time tables which must be absolutely conformed to, or they will not work out. To the uninitiated it often appears the most simple problem in the world to devise a better or more satisfactory schedule from our patrons' point of view, but when the earnest student of progress undertakes the task he invariably gives up in despair when confronted with the limitations. I remember one very attractive schedule submitted for our consideration, the claims of which were presented with considerable animation until it was pointed out that its operation required an average speed of 72 miles an hour on one portion of the line. The limit of car headway at rush hours is physically fixed by the congestion of traffic on the principal streets traversed, taking ordinary vehicular and pedestrian traffic as well as car traffic into consideration, and in many cities the traffic on these streets is often so dense that it is impossible for a cat to cross during rush hours.

Second, Variable spacing and delayed cars. Taking a normal five minute service on our Belt Line for an example, the problem is to start out 10 cars in each direction, spaced 5 minutes apart, making a round trip every 50 minutes and keep the cars 5 minutes apart and in their proper places at the various time points. The difficulty is to accomplish this under variable traffic demands, that is, not only variable over certain hours of each day, but from day to day as the weather may be fair or stormy, being at the same time subject to local delays from level railway crossings, avoidance of teams and automobiles, and the not infrequent delays caused by accidents of various degrees of seriousness. And then again, how much more difficult must it be when it is necessary to vary the spacing or headway at certain portions of the day to cover normally increased or rush hour traffic. When I state that the normal headway on our Belt Line varies from 5 minutes to 2 minutes, exclusive of trippers during each day, with special variations on Saturdays, you will realize the magnitude of the problem.

Third, overcrowded cars. Overcrowded cars are not only annoying to our patrons, but are responsible to a large degree for variable headway, but an investigation of this important item will develop the fact that the public are more responsible for this condition than they can possibly realize. With a reasonably close headway and cars of ample size, the only possible remedy for overcrowding is not to enter a crowded car but wait until accommodation can be secured. I know that this sounds like very unpalatable advice, but I can assure you that if it were followed the resulting service to each passenger would be more prompt as well

as more comfortable than at present. Given a string of cars a short distance apart, with everyone trying to get on the first car, and no matter how large that car may be or how many cars may be following, the first will always not only be crowded but will delay the others in which proper accommodation might have been secured. The so called comfortable service in Europe (I am speaking now of the period before the war) was secured by laws which forbade passengers to enter a crowded car, and I am assured on competent authority that it was often necessary to wait half an hour before accommodation could be secured. That would not be necessary here, as 5 minutes delay, or at most 10 minutes under the worst conditions, would be the limit, and we have all waited longer than that for service in barber shop or shoe shine parlor. In connection with this item I wish to remark, parenthetically, that the public in Canada are to a large degree responsible for the crowded rush hour conditions by reason of having imposed upon the companies the so called limited fare periods, which in effect offer a premium for using the cars at the time of the greatest congestion. This is entirely wrong in principle, as every merchant will realize.

Fourth, Cars running by passengers. The only means that the street railway operator has under his control to restore normal service or to prevent overcrowding, with its attendant delays, is to run the delayed or crowded car by waiting patrons and leave them for the next car, and this should properly be done in the general interests of the public. This is the fact, but you all realize the storm of complaint that is aroused when it is carried out. We even have the most bitter complaints presented because car crews do not wait for passengers who are running after a car, regardless of the fact that not only would such action, if carried out to any extent, result in variable service, but that the motorman and conductor are compelled to keep their eyes very rigidly on the limited space in the immediate vicinity and ahead of their car to guard against accident and other contingencies. I am sure that if anyone will take a seat at the front of any of our cars and stay through several round trips, giving careful consideration to the details of operation, he will have a much greater respect for the responsibilities of the crew than he can have at present. It is true that a motorman will sometimes run by passengers, with a clear view and a partially loaded car, but this is seldom done intentionally. It is very often the fact that following a near collision, or on approaching a cross street from which an automobile is liable to appear, the motorman may be mentally oblivious to everything excepting the averted or anticipated danger. Our medical members can assure you that this constitutes a well known and common mental lapse in the most intelligent.

Fifth, Inefficiency and discourtesy of employes. How many department store managers could send their employes off around the city in pairs and be willing to guarantee their courtesy and capability under all conditions and in all circumstances? Street railways are under the same limitations regarding their employes as any other employer, and at the same time the street railway employe is in a much more difficult position than obtains in other lines. In many, many cases that have been brought to my personal attention I have been shocked by the discourtesy of passengers to conductors. Too

much should not be expected of these men. Some of our employes, who are the most faithful and reliable in the matter of safe operation, and whose care for the physical safety of their passengers, is the most unremitting, are unfortunately not gifted with the suave diplomacy of a Chesterfield. We wish our men to be courteous under all circumstances, but a large part of our problem would be solved in this respect if our passengers would be more uniformly courteous to our men. I have myself seen a young conductor become almost hysterical under the badgering of a passenger, with the result that he was rude to the next passenger who innocently accosted him. I do not defend discourtesy, on the contrary we deal with it severely, but it is absolutely necessary that we should deal justly and with careful consideration of all of the attendant circumstances in cases of this nature. We must also realize that 272 men must necessarily vary to a large degree in intelligence and disposition and make proper allowances for the fact.

Sixth, Physical condition of equipment. It is naturally impossible to secure perfection in constantly operated and sometimes abused machinery. An electric car is a very complicated machine and gears will get out of true and rub on the gear cases. Wheels will get flat, but it is not true that it is the same flat wheel that you hear the next day, even if it is the same car. Whenever the wheels are locked by the brakes and skidded, a flat is liable to result, especially on a dusty or sanded track. A car may leave King and James Sts. with its wheels in perfect condition and have a flat before it reaches Hunter St. These flats, which sound so portentously on our solid track structure, are small affairs, often about the size of a silver five cent piece, and are extremely hard to locate. The only remedy is to lay the car up and grind the wheels, or to replace the pair of wheels and axle in bad cases. Under certain weather conditions it is impossible to avoid skidding, and an epidemic of flats will develop which cannot be repaired at once without discontinuing the service almost entirely, but no car is allowed to remain in this condition for any length of time. Ordinarily it is removed from service at once. A long paper could be written on the care and condition of cars alone. How many here realize that our cars are continually washed inside with an antiseptic solution? That is the reason for the peculiar odor sometimes observed, which passengers take to indicate that the car is dirty, when the contrary is the fact. It is only by unremitting care that street cars are prevented from running a close second to the trenches in many respects.

The public can do more to secure good service than can we, if passengers will only observe the following simple precautions:

Board the car promptly and do not stand in the rear vestibule. This not only interferes with the operation of the car and hampers rapid loading, but is an annoyance to everyone getting on the car, especially to ladies.

Pass up forward. The chances are that you will find a seat at the front of an apparently crowded car. I have done so many times. In one case I observed five empty seats in a car that was so packed at the rear end that I was obliged to use the front door.

Leave by the front door if possible. This will reduce the stopping time to a very considerable extent and is much the safest practice.

Do not enter a crowded car. Wait for

the car following.

Do not enter into an argument with the conductor. If there is any cause for complaint, refer it to the office and it will receive careful and considerate attention. If the trouble is over a fare or transfer, the office is the only place where it can possibly be corrected.

We welcome complaints at the office, as they enable us either to give a satisfactory explanation or to correct abuses of which we could otherwise have no knowledge. Indefinite newspaper complaints are of no value except to make useless trouble, and it must be remembered that the newspapers' interest in the matter is based upon far from unselfish grounds.

All complaints to be effective must carry reliable information as to car number, place and time, or we will be absolutely helpless in the matter. In serious cases a reliable witness should be secured, as we cannot act upon a passenger's unsupported word against that of the car men. No court in the land would do that.

Port Arthur Civic Railway's Financial Position.

J. A. Oliver, the retiring President of the Port Arthur, Ont., Board of Trade, in the course of his address at the annual meeting Jan. 14, made the following reference to the Port Arthur Civic Ry.:—"In 1916, 2,748,213 passengers travelled on our street cars. On July 25, 1917, the railway fares in the city were reduced. Six ordinary tickets or 8 workingmen's tickets or 10 children's tickets are sold for 25c. On the main line the rates are doubled at the boundary between Port Arthur and Fort William. During 1917, including the additional fare at the boundary, since July 25, 3,246,953 tickets were collected. On the main line, as well as on each belt line, the number of passengers travelling has steadily increased each month, but the increase has not been sufficient to make up the decrease in the price of tickets within the city. The main line, however, has made up at least \$2,000 each month since the change. The street railway revenue since 1916 amounted to \$125,000, being an increase of \$19,000 over 1916. The commissioners, however, out of this amount paid \$7,000 for the repairs on Cumberland St. and \$3,000 for the bridge over the Neebing River, leaving the net deficit on the railway at \$8,000 less than in 1916. For the benefit of the citizens, let me state that the net earnings exceeded the operating expenses by \$23,000, but this excess is not sufficient to clear the interest on investment and depreciation charges; and in addition the sinking fund each year must be met. To sum up the position as regards public utilities during last year, this city faced a loss on its street railway, telephone and water, and had a surplus on its light and power and Current River improvement accounts, the net loss for the year being \$55,425."

Winnipeg Electric Ry. Stops.—Referring to a complaint as to the number of stops. A. W. McLimont, General Manager, Winnipeg Electric Ry., said to the city's Board of Control Jan. 15:—"While most of our patrons are willing to admit there are too many stops, reluctance is shown immediately their own particular stop is questioned, but with the appreciation of the public of the advantages obtained for themselves by reducing the number of stops in securing more rapid and generally improved transportation. I feel they will co-operate with us in this respect."

The City of Toronto and the Toronto Railway.

At a meeting of the Toronto Board of Control, Jan. 18, the Mayor outlined his proposals in regard to the operation of the Toronto Ry. and for the improvement of the service. He stated that the company was several hundred cars short, and overcrowding was never worse; that the Ontario Railway and Municipal Board, in six years, had made several orders and revoked them, and that the law courts seemed unable to cope with the evil, and public rights were nowhere.

The Mayor's proposals, which were agreed to by the Board of Control, cover an application under sec. 260 of the Ontario Railway Act, for the Ontario Government, through the Ontario Railway and Municipal Board, to take over and operate the railway on account of breach of contract between the city and the company; to place penalties on the company for failure to build the cars ordered to be built, the penalty to be \$500 a day, dating from Jan. 1, 1918; to commit the company's officials and for a mandamus to compel the company to build the cars as ordered; for an indictment against the company for overcrowding, for maintaining a public nuisance, and for breaches of the Public Health Act; for legislation overruling the Imperial Privy Council's recent judgment on the overcrowding case; to compel the Ontario Railway and Municipal Board to enforce its orders, and in general to "reform" the Ontario Railway and Municipal Board.

No doubt many of these proposals are in reality New Year resolutions, but whether so, or not, they are strong evidence of the utter incompetency of those responsible, to realize the situation as it is, or to propose any proper solution of the difficulties, for which, to a certain extent, the city council is blameable. By sec. 260 of the Ontario Railway Act it is provided that where an agreement between a municipality and a company for the operation of a street railway has been violated, the Ontario Railway and Municipal Board shall hear all matters relating to such alleged violation, and shall make such order as to it may seem just, and may direct such company or such municipality to do, or refrain from doing such things as may be necessary for the fulfilment or may constitute a violation of such agreement; and for the enforcement of such order, it may take possession of, and operate, such street railway, and carry it on with all the powers possessed by the company. It therefore follows that an application by the city for the board to take over and operate the railway would lie pending a hearing as to the alleged violation of the agreement. If the city alleges a violation of the agreement, its duty is to lay the claim before the board, upon which an enquiry will be held, and should the evidence justify it, an order would be made.

Legislation for affixing a penalty clause to an order for building additional cars has already been refused by the Ontario Government, and it is not likely, under existing circumstances, that another application will meet with success. On the matter of building additional cars, the board some time ago ordered that the company place in service by Jan. 1, 1918, 100 additional double truck cars, and by Jan. 1, 1919, another 100. This order was made just prior to the outbreak of war, and only a very small proportion was built, the disorganization of ordinary business, owing to the demand for muni-

tions, being responsible for the company's failure in complying with the board's order. On hearing various applications of the city on the matter, the board expressed the view that it would be useless to attempt to force the issue on account of war conditions, and on the city pressing for some enforcement, and on the company explaining the impossibility of obtaining cars, or the material with which to build them in Toronto, according to the company's agreement with the city, the city was given power to waive its rights regarding the building of cars in the city, and to co-operate with the company in the endeavor to obtain cars from other sources. As was expected, the result was the same, the city being in no better position to obtain cars than the company, even for the civic railways. The situation today, as regards car building, is no better than it was, the demands for war purposes, naturally, being met first. It therefore seems improbable that the legislation asked for will be granted.

The overcrowding question, which is a very serious one, has, owing to the perverseness of the city authorities, developed into something of a joke, a rather grim one truly. The history of the various cases before every variety of court from the police court to the Judicial Committee of the Privy Council, exhibits the ineptitude of the city council for finding a reasonable way out of an intolerable situation. Thousands of dollars have been spent on reports and investigations, to no purpose, while the city has the remedy in its own hands. When a charge of overcrowding was before the local courts some time ago, the company pointed out that it was wrongfully laid, and in admitting overcrowding, claimed that the charge should have been laid in an entirely different manner. On the final appeal to the Privy Council, this contention was upheld, it being stated that "the wrong done is only a civil wrong." The city laid the indictment under the Criminal Code, and not under a civil law, under which a judgment may be rendered, providing for the abatement or remedy of the mischief done. Apparently, it is the intention to proceed along the same lines as before, and in addition, to apply for legislation by an amendment of the Ontario Railway Act, providing penalties for overcrowding.

Regarding the power of the Ontario Railway and Municipal Board to enforce its orders, it may be said that it is possessed of ample powers in this respect, but it is not called upon to enforce its orders against its better judgment.

Execution against Toronto Ry.—A motion to stay an execution obtained by the City of Toronto against the Toronto Ry. was heard Jan. 21. The execution was obtained following an order by the Board of Railway Commissioners, directing the Toronto Ry., in conjunction with the C.P.R., G.T.R. and Canadian Northern Ry. to pay certain sums, in the case of the Toronto Ry., \$80,000, amounts due in connection with the construction of the bridge over the steam railways, carrying Queen St. East and the T. R. tracks. Questions were raised as to the board's jurisdiction, the Toronto Ry. being a provincial company, and also whether the courts are not being made ancillary machinery to the enforcement of the board's orders. Judgment was reserved.

Sandwich, Windsor and Amherstburg Railway Franchise.

The following three questions were submitted to the ratepayers of Windsor, Ont., at the annual municipal elections Jan. 7:

1. Are you in favor of the city corporation, by due process of law, taking over the lines and other property of the Sandwich, Windsor & Amherstburg Ry., the same to become, through mutual arrangement, and upon fair conditions, the property of the several municipalities immediately concerned, and the whole of the lines or branches of the said railway to be operated by the Hydro-Electric Power Commission of Ontario?

2. The Sandwich, Windsor & Amherstburg Ry. having refused to make the necessary extensions of its lines to meet the needs of the municipality, unless its existing franchise be extended till 1932, are you in favor of the franchise being extended to that date in order to secure the said extensions?

3. Are you in favor of the city constructing the necessary extensions of the tracks of the Sandwich, Windsor & Amherstburg Ry., and securing, through the Ontario Railway and Municipal Board, an arrangement on a rental basis for the operation of such extensions by the aforesaid railway until the expiration of its franchise in 1922?

The first question was answered in the affirmative by 1,510 to 330; the second question was answered Yes by 380 and No by 891; and the third was answered Yes by 997 and No by 399.

It is stated in regard to the subject of the first question that the plan in mind is to prepare for the purchase of the system by the time the franchise expires in 1922 and for the operation of it under the direction of the Hydro-Electric Power Commission of Ontario.

The city council has under consideration a plan for building a loop at Ferry Ave. The company claims that this loop is necessary in order to give an adequate service, but it is argued on the other hand that double diamonds at the corner of London and Oulette Sts. and at Sandwich and Oulette Sts. are all that is necessary. The question involved is whether a two-way service is required on the west side for the Sandwich and tunnel cars.

The council will take up at an early date the question of building certain extensions to the company's existing tracks at the city's cost. One of the propositions made is to extend the line from Oulette to McDougal St., to Gladstone or Lincoln St. and to connect it with the Ottawa St. line in Walkerville. (Jan., pg. 32).

Ottawa Electric Ry. Strike Averted.—Owing to the dismissal of a motorman and a conductor on the O.E.R., for violation of rule 15, by leaving their car, the farebox being stolen during their absence, the other employes threatened to go on strike on Jan. 21, but this was averted, as a result of a conference between President T. Ahearn and the men's grievance committee, the company agreeing to reinstate the conductor and motorman and the men agreeing not to press for a five-minute lay-off on each trip, which they contended was necessary, if rule 15 was not to be violated in the future. The chairman of the men's grievance committee, and the secretary of the men's organization, spoke highly of their treatment by Mr. Ahearn, and of his declining to have the loss involved by the fare box being stolen, while the conductor and motorman were absent from the car, being borne by them.

Storm Damage on the British Columbia Electric Railway.

Canadian Railway and Marine World has been favored with the following particulars of the damage done on the B.C. E. R. Co.'s Fraser Valley Branch by the storms known as "the silver thaw." The letter was dated Vancouver, Jan. 14: The first storm swept the valley on Dec. 13, but fortunately little damage was done to the distribution system. The high tension, as well as trolley, wires were broken in one or two places but were soon repaired and little inconvenience was caused. The B. C. Telephone Co., however, suffered very severely and it will be some months before its poles and lines will be replaced as they existed formerly.

The second storm commenced on the night of Dec. 27, and continued for the best part of three days, during which period heavy rains fell, freezing when coming in contact with wires, poles, rails, trees, etc. The ice was of the transparent kind and formed to a thickness of between 4 and 5 in. on the standing objects and the weight, together with the wind, caused many poles carrying high tension, trolley and telephone wires to fall. On one stretch of two miles of track 146 poles fell and at another point 106 were brought down. All the damage to the railways occurred between Coghlan and Chilliwack, the former point being 25 miles east of New Westminster.

As soon as the extent of the damage done was ascertained, wrecking equipment, consisting of 3 steam locomotives, 1 steam derrick, 2 line cars, and 3 work trains, was rushed to the scene of the trouble and work commenced immediately to repair lines. One of the locomotives was borrowed from the C.P.R., and the other two small logging ones from the Timberland Lumber Co. and the Shearwater Lumber Co., both industries on the Fraser Valley Branch, and by this means it was possible to proceed with clearing operations without the aid of electrical energy. Ice formed on the rails, wires, etc., almost as quickly as it could be removed, and this, coupled with the fact that in many places poles, which at one time stood on both sides of the railway had fallen across the centre of the track, made progress very slow for the first three days. At the end of three days milder weather set in, a chinook wind soon caused all ice and snow to disappear, and while this helped tremendously, in one way it caused exceedingly high water in all streams and rivers, washing out the tracks in many places, the most serious one occurring at Whatcom Road, just east of Huntingdon, where the Nootsack River intersects the railway, and where a gap 65 ft. long and 20 ft. deep had to be bridged. At another point just west of Chilliwack, the track was washed out in spots for three-quarters of a mile from 1 to 4 ft. deep. Smaller washouts were encountered frequently.

During the whole time train service was operated between New Westminster and the point of clearing, part of the way by trolley and the balance by steam power. During the first week three trains were operated only to Coghlan, then to Gifford, then to Abbotsford, and then to Huntingdon, finally reaching Chilliwack on the night of Jan. 9. At the time of writing the trolley wire is up and operative as far as Huntingdon—from there to Chilliwack the trains are being hauled by steam power.

It is estimated that about 550 poles are

down or hanging, a number of which will require to be reset, but in order that the line may be put in operation with the least possible delay, poles are being placed at intervals of approximately 200 ft. on which trolley bracket arms are being placed. The trolley wire is following the erection of these arms and only just sufficient other wires are placed on the poles as will permit re-establishing light, power and telephone connections with Chilliwack and intermediate points which have been so hard hit. This will be followed up with the placing of additional poles at distances of 100 ft. apart, and when complete will be of similar construction to the distribution system on the Burnaby Lake Branch. The double pole line, which formerly existed on the Fraser Valley Branch, will not be re-established.

Several small slides occurred around Vedder Mountain, but these were cleared away by section forces before trains reached that point.

There are employed on this repair work approximately 50 linemen and groundmen, 30 trackmen and 10 bridgemen, in addition to men in train service and on wrecking equipment. The equipment available to make repairs does not justify the employing of a greater number than this, and it is doubtful if additional skilled labor could be got, even if wanted.

Sufficient materials are on hand to make temporary repairs only, and it is necessary to get a supply of copper wire, guy wire, telegraph wire, trolley ears, pull-overs, bunk house equipment, etc. It is quite impossible to give anything like an accurate figure as to what the cost of repairs will amount to, but from a casual inspection of a portion of our property affected, made a few days after the storm it is estimated that \$150,000 may be required. If all goes well it is anticipated that the high tension line will be re-established into Chilliwack by Jan. 23 or 24, and the trolley and telephone services about the same time.

At present three passenger trains are being operated each way on the Fraser Valley Branch: one goes to Mt. Lehman only, the other to Huntingdon, while the third operates to Chilliwack. In addition to these 1st class trains, a milk, way freight and express service is also operated over the whole line. These services will not be augmented until the trolley wire and roadbed are more substantially repaired.

Nova Scotia Tramways & Power Co.—The Nova Scotia Public Utilities Commission, in dealing with the company's recent application to increase the authorized capital stock from \$6,000,000 to \$10,000,000, and to issue \$975,000 of bonds, approved a capital expenditure of \$845,641, but deferred approval of a further expenditure of \$569,586 and, for the present, declined to approve the proposed increase in capital.

Near stops in Winnipeg.—The Winnipeg Electric Ry. started on Jan. 9 to stop its cars for passengers before crossing a number of intersecting points, instead of both before and after crossing as formerly. Where poles are available, stopping places are designated by poles painted white. In order to facilitate the service the company has in a number of instances where local conditions are suitable, eliminated the far side stops.

Electric Railway Finance, Meetings Etc.

Brantford Municipal Ry.—A press dispatch states that during 1917 the earnings totalled over \$111,598, an increase of about \$13,000 over 1916. The increased earnings have been absorbed by increased wages and other operating charges.

British Columbia Electric Ry. and allied companies.

	Nov. 1917	Nov. 1916	5 months Nov. 30, 1917	5 months Nov. 30, 1916
Gross	\$525,629	\$472,767	\$2,368,105	\$2,168,426
Expenses	384,320	363,230	1,935,641	1,765,086
Net	141,309	109,537	432,564	403,340

Calgary Municipal Ry. Earnings.—Dec. 1917, \$58,379.08; for Dec., 1916, \$49,605.13. Increase, \$773.95.

Cape Breton Electric Co.

	Nov. 1917	Nov. 1916	11 months Nov. 30, '17	11 months Nov. 30, '16
Gross	\$42,612.67	\$34,904.09	\$205,999.52	\$173,297.82
Exp.	28,255.79	19,088.26	134,013.02	93,833.67
Net	14,356.88	15,820.83	71,986.50	79,464.15

London & Port Stanley Ry.—At the annual meeting of the London City Council Jan. 15 the following appointments were made: London & Port Stanley Ry. Board—Mayor C. R. Somerville, Controller J. H. Saunders, Ald. P. J. Watt, F. R. Watkinson, L. S. Holmes, W. A. Wilson, H. B. Ashplant, S. R. Manness and Winnett. Members of the London Railway Commission—Sir Adam Beck and Philip Pocock.

The Mayor at the inaugural meeting of the London City Council Jan. 15, referring to the L. & P. S. Ry., said: "It is possible that the London Railway Commission, by curtailing every capital expenditure not imperatively demanded, may be able to meet all or part of the bonded indebtedness of the L. & P. S. Ry. The commission provided for the payment of its own debenture account, but the city still has to pay, annually, about \$5,000 on account of the old L. & P. S. Ry. debt."

Toronto Railway.

	1917	percentage	1916	percentage
Jan.	\$150,052.52	\$76,507.88	\$473,784.15	\$68,846.63
Feb.	473,185.48	70,977.82	470,764.90	70,614.73
Mar.	531,080.42	105,875.82	518,555.65	97,237.26
Apr.	510,334.90	102,066.98	496,172.00	99,234.40
May	510,869.55	102,173.91	500,515.28	100,103.05
June	499,731.83	99,946.36	467,086.05	93,417.21
July	467,382.15	93,476.43	469,845.72	93,969.15
Aug.	516,966.70	103,393.34	474,824.90	94,964.98
Sept.	532,007.92	42,560.63	506,620.38	40,529.63
Oct.	534,135.95	44,053.75	487,954.07	39,036.32
Nov.	537,505.22	55,823.51	489,987.03	48,890.20
Dec.	570,310.03	73,655.98	525,395.15	63,037.34

\$6,193,562.67 970,512.41 \$5,881,505.28 909,880.90

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

	Nov. 1917	Nov. 1916	11 months to Nov. 30, 1917	11 months to Nov. 30, 1916
Gross	\$1,052,000	\$911,829	\$10,986,998	\$9,825,053
Expenses	628,444	474,520	5,954,822	5,032,010
Net	428,556	437,309	5,032,176	4,793,043

Winnipeg Electric Ry. and allied companies.

	Nov. 1917	Nov. 1916	11 mths. to Nov. 30, 1917	11 mths. to Nov. 30, 1916
Gross	\$305,881	\$282,899	\$3,039,397	\$3,023,170
Expenses	218,993	181,267	2,290,421	1,946,412
Net	86,888	101,632	748,976	1,076,758

The British Columbia Electric Ry. Social Club officers for the current year as elected Jan. 14 are: Honorary President, G. Kidd; Honorary Vice President, W. G. Murrin; President, E. A. Chamberlain; Vice President, E. E. Walker; Secretary, P. Lewis; Treasurer, J. V. Armstrong; Executive Committee; R. Carvel, F. E. Reid, J. Lightbody, F. Fatkin, C. Cook, O. C. Mix, S. A. Horner, A. Forsyth, H. Findlay, P. Runcie, A. Manfield, J. Munro, R. V. Moss, W. G. Chandler, J. G. Richardson, F. Potts, E. W. Arnott, F. Fisher, J. McNe and J. Baldwin.

Electric Railway Notes.

The British Columbia Electric Ry. office staff held its annual dinner recently, G. Kidd, General Manager, presiding.

The Montreal & Southern Counties Ry. has under consideration the purchase of two electric locomotives of 50 tons capacity each.

South Vancouver municipality decided Jan. 11 to oppose any proposal made by the British Columbia Electric Ry. to increase fares.

The Brantford Municipal Ry. has reduced the service to Paris, Ont., from a car every hour to one every two hours in either direction.

The Quebec Railway, Light and Power Co. is reported to be about to apply to the city council to authorize it to increase its passenger fares.

The Guelph Radial Ry., owing to the necessity of conserving power, has reduced its car service to one hour at noon, and the ordinary service in the evening.

The Cape Breton Electric Co. is reported to have decided to place in service, on its electric railway in Sydney, N.S., early this year, a number of what are commonly known as "safety" cars.

Hon. John Oliver, Minister of Railways for British Columbia, went to Seattle, Wash., Jan. 6, to study the street railway situation there and in other Washington cities, in connection with Adam Shortt's report on the British Columbia Electric Ry.

Edmonton, Alta., City Council has been asked by the Street Railwaymen's Union to reconsider the question of the recognition of the union, the reinstatement of men who were laid off at the termination of the recent strike, and the wage schedule.

The British Columbia Electric Ry. carried 2,742,575 passengers in Vancouver during Nov., 1917, against 2,231,699 in Nov. 1916. On Monday, Dec. 24, 1917, the Vancouver city line cars carried 142,666 passengers against 110,411 Dec. 24, 1916.

The Edmonton City Council will consider at an early meeting a bylaw embodying all regulations for working for employes in the street railway department, to take the place of the agreement which was terminated with the strike last year.

The Edmonton City Council is applying to the Alberta Legislature for a number of amendments to its charter, among them being one authorizing the charging of fares on the Edmonton Radial Ry. on the zone system, instead of the present system.

The Public Utilities Committee of Edmonton, Alta., is giving considerable consideration to the fare question on the Edmonton Radial Ry. The city council is applying to the Alberta Legislature for power to charge fares on the zone system if thought expedient.

The Brantford Municipal Ry. Commission decided Jan. 16 to suspend all freight traffic on the Grand Valley section of the line from Brantford to Galt, Ont., from Jan. 19, owing to power shortage. The passenger service is confined to a car every two hours in each direction.

The Sandwich, Windsor & Amherstburg Ry. has curtailed the service on its lines in Windsor, Ont., by laying off six cars. The mayor called for a resumption of the full service on Jan. 10, and said the coun-

cil would appeal to the Ontario Railway and Municipal Board if satisfaction was not given.

The Windsor, Essex and Lake Shore Ry. has cut its service between Windsor and Leamington, Ont., by taking off the car leaving each terminal at 9 p.m. The special freight and express car will make one trip a day in each direction, leaving Leamington at 10 a.m. and leaving Windsor at 2 p.m.

Among items culled from the Winnipeg Free Press of Jan. 23, 1893, in "Twenty-five years ago to-day," was the following: "Though the Winnipeg St. Ry. system is now complete, A. W. Austin has gone to New York to see if something better than electricity cannot be found for street transportation."

A. W. McLimont, General Manager, Winnipeg Electric Ry., advised the Winnipeg Board of Control, Jan. 7, that expert advice had been called in by the company to advise as to the system of heating the street cars. There had been numerous complaints, and the company was going to see what could be done to remedy matters.

The Toronto Suburban Ry. has advised the Ontario Railway and Municipal Board that it considers its portion of the cost and maintenance of the safety devices placed at the crossing of the T.S.R. by the Toronto Civic Ry. at Lansdowne Ave. and Davenport Road, is excessive. The board is looking into the matter and has ordered a report by its engineer.

The Guelph, Ont., City Council is asking the Ontario Legislature for a reorganization of the council and among other things the dissolution of the board of directors of the Guelph Radial Ry., and that the directors' powers shall in future be vested in the members of the council, who shall be considered to be directors under the acts relating to the G. R. Ry.

Superintendent Moir of the Edmonton, Alta., Radial Ry., complains of the manner in which the public treat the waiting rooms. He states that their condition is due to wanton mischief and deliberate destruction, and instances a recent case where the stove in the waiting room was overturned and considerable damage done, while the lamp and everything available was stolen.

Montreal Tramways Co.'s employes are reported to have decided at a meeting, Jan. 15, to ask for a 4% increase in wages on the ground that they were being asked to work longer hours because of the shortage of labor due to the operations of the Military Service Act. It is stated that some of the employes were of the opinion that a strike should be called on Feb. 1, if the demand was not complied with.

The Brantford Municipal Ry. Commission announced Jan. 11 that owing to the Hydro Electric Power Commission of Ontario's request that the power load be reduced, it was necessary to reduce the schedule on the main line to a 15-minute one, and on the Eagle Place and Holmedale line to a 20-minute one. This applies to the day traffic up to 6 p.m., after which hour the regular schedules are in force.

The question of the employment of naturalized aliens has again become a live one in Calgary, Alta. Some months ago a resolution was passed directing the dismissal of all aliens, but at the last meeting of the council of 1917 this was repealed. T. H. McCauley, Superintendent Calgary Municipal Ry., states that he has

employed only one such alien under the new order, and that for snow shovelling, and other work.

The International Ry., which operates the Niagara Falls Park and River Ry., between Queenston and Chippewa, Ont., will, it is said, be considerably affected by the U. S. War Department's order requisitioning all electrical energy imported and distributed by the electrical companies at Niagara Falls, N.Y., and will be compelled to rely largely on its steam generated power, which has been held in reserve for emergencies.

G. Kidd, General Manager, British Columbia Electric Ry., has advised the Point Grey municipality that the company cannot run cars on its line in the municipality much longer under existing conditions, and suggests an increase of fares from 10 tickets for 50c to 10 tickets for 70c; school children's tickets to remain as at present, as far as Magee station. It is stated that the cost of operating cars in the municipality is 23c a mile, while the revenue is only 6.7c a mile. A committee of business men has been formed to discuss the matter with the company.

We have been advised that it is not likely that the projected line from the G.T.R. to the military hospital at Whitby will be electrified. There was a proposal that a street railway be constructed, running from the C.P.R. through the town to the hospital, and the Hydro Electric Power Commission of Ontario looked into the matter, and reported that such a line could only be operated at a considerable annual loss, which would have to be borne by the town. As a result nothing was done, and we are informed that it is not likely that the line from the G.T.R. to the hospital will be electrified.

Increased rates for electric railways.—Following the issue of general order 213 on Dec. 26 by the Board of Railway Commissioners, authorizing steam railways to advance freight and passenger rates generally speaking 15%, except in British Columbia, several electric railways under Dominion jurisdiction filed freight and passenger tariffs with the board making similar increases. The board has refused to sanction these tariffs, on the ground that no application having been made by electric railway companies for rate increases and no costs or other statistics having been submitted in their behalf no general order can be made in their favor.

British Columbia Electric Ry. Franchises.—The Mayor of Vancouver and representatives of some other city and rural municipalities on the mainland in which the British Columbia Electric Ry. operates, met Jan. 7, to discuss the question of a consolidation of the company's franchises. It was arranged to hold another conference later, so that every municipality in which the company operates may be represented. A press report says: "It is understood the scope of the next conference is to include not only the consolidation of B. C. E. R. franchises but also unity of action in regard to all B. C. E. R. matters generally in which any or all of the municipalities or cities are interested."

Higher Fares for Boston.—The Massachusetts House of Representatives has under consideration a bill providing that the Boston Elevated Rd. may charge a 6c fare, the extra cent to be paid to the city of Boston in lieu of other taxes. The bill further provides that the city shall utilize the funds received from this source for the maintenance of subways, tunnels and other ways along the company's lines.

British Columbia Electric Railway Co's Annual Report.

The following report was presented at the annual meeting in London, Eng., Jan. 4:—

The following charges have been made against the revenue account for the year:

Provision for renewals maintenance	£101,459	4	3
Provision for income tax	15,000	0	0
Addition to capital amortization fund	2,761	17	11
	£119,221	2	2
The net revenue for the year, after making the above deductions, amounts to	£160,844	6	8
To which is added—			
Balance brought forward from last year	6,859	13	3
Amount transferred from reserve fund	44,000	0	0
	£211,703	19	11
And deducted—			
Interest on debenture and debenture stock for the year to June 30, 1917	£132,671	1	6
Dividends already paid on 5% cumulative perpetual preference stock for the year to June 30, 1917	72,000	0	0
	£204,671	1	6
Leaving, to carry forward to next account, a balance of	£7,032	18	5

It will be noted that in order to make the above dividend payments it has been necessary to transfer £44,000 from the reserve fund. The above figures represent an improvement of approximately \$26,000 over the previous year's results. As intimated in the statement issued to the stockholders in July, 1917, the British Columbia Government appointed Adam Shortt, of Ottawa, as a commissioner to investigate the question of transportation in the City of Vancouver and the surrounding districts, it being agreed that this company and the Vancouver City Council would abide by the decision arrived at by the commissioner. By mutual agreement, the enquiry was subsequently extended so as to include the whole scope of the company's operations. The commissioner's report has just come to hand, and his findings and recommendations are annexed to this report. The commissioner's full report, which comprises 110 closely typed foolscap pages, and which deals with many purely technical matters, is being set up in print, and a copy will, when ready, be forwarded to any stockholder on application. The commissioner's report justifies the company's past policy and operations and is not only an answer to criticisms, but upholds the contentions of the directors and management in regard to the jitney competition. Negotiations are now being carried on by the company's management in British Columbia with a view to making arrangements for giving effect to the commissioner's recommendations, and pending the outcome of these negotiations the directors are of opinion that it is not advisable to deal further with the situation arising out of the recent amendments to the Vancouver Incorporation Act explained in the statement issued to the stockholders in July last. A further statement will be issued to the stockholders as soon as the arrangements have been completed.

For the first four months of the current year the gross earnings show an increase of approximately \$146,817. This increase has, however, been more than absorbed by increased expenses due to higher wages and increased cost of materials, in consequence of which the net earnings for

the period show an approximate decrease of \$2,648. Having regard to the uncertain outlook for the immediate future, the directors feel that it is prudent to postpone the payment of the interim dividend payable Jan. 15, 1918, on the 5% cumulative perpetual preference stock. It, however, at the end of the financial year, an improvement in the operating results is shown, the whole or part of the dividend may be distributed in July next, and a resolution giving authority to the directors to draw on the reserve fund so far as may be necessary for this purpose will be submitted to the meeting.

The directors desire to express their appreciation of the very valuable services rendered during a most arduous year by the General Manager and other responsible officials of the company, and also of the co-operation of the whole staff. Two directors, R. M. Horne-Payne and E. Maes Harvey, who are due to retire, offer themselves for re-election.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—The municipalities of Point Grey, South Vancouver, Burnaby and other suburban districts are taking up the question of consolidating the B.C.E.R. Co.'s various car line franchises. A conference has been called at the instance of the Point Grey municipal council. (Jan., pg. 32).

Chatham, Wallaceburg & Lake Erie Ry. A press report states that it is proposed to utilize Hydro-Electric power on the Chatham-Wallaceburg section of this railway. Owing to coal shortage the company has been unable to generate sufficient power at its own plant to keep the line going. It was reported Dec. 29 that converters were being installed at Wallaceburg, and that hydro-electric power would be utilized early in January.

Edmonton Radial Ry.—A press report states that about 900 ft. of line is under construction to connect up two parallel lines in Edmonton, Alta., and thus form a new belt line.

A waiting room has been erected at the corner of 109th St. and Jasper Ave., Edmonton. (Jan., pg. 32.)

London St. Ry.—The London, Ont., city council has under consideration a petition asking that a request be made to the company to extend its line north on Quebec St. from Dundas St. to the C.P.R. tracks. (Dec., 1917, pg. 488.)

Nova Scotia Tramways & Power Co.—A press report states that the company expects to place in service about 3.5 miles of new track during this year. (Sept., 1917, pg. 369.)

Okanagan Lake, B.C., to Oroville, Wash. A press report states that in connection with the development of the West Kootenay Power Co., in the Copper Mountain district, an electric railway may be built from Okanagan Lake to Oroville, at the International Boundary.

Ottawa Electric Ry.—A special committee was appointed by the Ottawa City Council Jan. 18 to meet the company's officers and ascertain under what arrangements the company would consent to extend its car lines to Ottawa East. About a year ago, when the matter was discussed, the company stated that it would not

make the extension for two reasons: first, that it would not operate cars over the Pretoria Ave. bridge, and second, that owing to the short time its franchise has to run, it was not prepared to make such extensions. (Oct., 1917, pg. 407.)

Sandwich, Windsor & Amherstburg Ry. We are officially advised that the company recently completed the laying of 2,000 ft. of new track on Ottawa St., Walkerville, Ont. This is an extension.

The Southern Canada Power Co., which has among its subsidiaries the Sherbrooke Ry. & Power Co., is contemplating the construction of about 100 miles of high tension transmission line, and has called for tenders on poles, cross arms, insulators, cross sarran braces, wire and other material for same.

Whitby, Ont.—Construction is reported to have been started on a line from the G.T.R. main line to the Military Hospital at Whitby, Ont. It is reported that this piece of line will be electrified, and will ultimately form part of the electric lines proposed to be built under the Hydro Electric Power Commission of Ontario's plans.

Windsor, Essex & Lake Shore Rapid Ry.—A press report states that a plan has been given consideration for the building by the Windsor, Ont., city council of a cross town line on Erie St., Windsor, and renting it to the W. E. & L. S. R. Ry. for operation. (Dec., 1917, pg. 407.)

Damage Action Against the Montreal Tramways Co.

Five actions for damages were entered in a Quebec court Jan. 4, against the Montreal Tramways Co. The total amount of damages claimed is \$9,575, the smallest amount being \$300 and the largest \$4,000. From the declaration of the plaintiffs—J. R. Trudeau, Pierre Gagnon, Alderic Crump and Ulric Belanger—it appears that on Oct. 27, 1917, they were all passengers on a Lachine car; that between the Montreal West and Senecal stations while they were all in the smoking compartment of the car, the conductor ordered them to stop smoking. They refused to abide by his request, whereupon he ordered the motorman to back up the car to Montreal West. In backing up the car, a collision followed, in which the plaintiffs allege they were seriously injured and they blame the Montreal Tramways Co. for the action of its employees.

Toronto & York Radial Ry.'s Metropolitan Division.—The Ontario Railway and Municipal Board, at the request of the Toronto City Council, will conduct an arbitration into the question of the price which the city is to pay for acquiring portions of the T. & Y. R. Ry. Metropolitan Division within the city. The matter came up for discussion before the board Jan. 11, when R. C. Harris, City Works Commissioner, stated that the parties had come so close together on the amount to be paid for the physical assets, that the matter could be settled in an hour, but could not agree on the amount for the intangible assets. The board fixed Jan. 28 for the hearing, when it would also be determined whether York County had any right to enter the proceedings.

The Quebec Legislature has approved the Shawinigan Water & Power Co.'s application for an increase of capital from \$15,000,000 to \$20,000,000. The company owns the Shawinigan Terminal Ry. Co. and the Three Rivers Traction Co.

The Nova Scotia Tramways & Power Co. and the Halifax Explosion.

It was impossible to obtain in time for our last issue any reliable information as to the damage done to the Nova Scotia Tramways and Power Co.'s property by the explosion of the munitions steamship Mont Blanc in Halifax harbor on Dec. 6. We are now indebted to the company's Managing Director, H. R. Mallison, for the following facts:

In view of all the circumstances, the company escaped very lightly. One of its transportation inspectors, T. Burgess, who was in the vicinity of the explosion, was killed instantly, and the force of the explosion practically tearing the clothes off his body. By the time the body was found, ghouls had been at work and had robbed him of his fortnight's pay and his watch and chain. One of the company's cars happened to be almost opposite the s.s. Mont Blanc at the time of the explosion. The motorman in charge was killed immediately, the conductor by some miraculous means escaped with his life, but was very severely injured, and has not yet been able to get about. So far as can be learned, none of the passengers in this car were killed; though its top structure was completely demolished, and all that remained of the truck and equipment was a bunch of twisted scrap. Other cars that were on the line in the vicinity of the explosion were very badly damaged and twisted, and at least three cars will have to be completely rebuilt, as far as the bodies are concerned. All of the company's rolling stock sustained damage such as broken glass, broken window sashes, broken doors, twisted joints in the wood work, and other damage caused by concussion. A number of rheostats were cracked, and some of the truck frames were badly shaken up.

A number of conductors and motormen who were on their cars at the time, were injured more or less by flying glass, but none of them seriously. So far as can be learned, only three platform men were killed while on duty, but altogether nine employes have been lost as a result of the disaster.

The overhead line in the destroyed area was completely demolished, this including the overhead trolley work, as well as the light and power distribution circuits, arc lamps, transformers, etc. Over 200 electric meters were completely destroyed as a result of the explosion and ensuing fire, and in addition, the company has had to remove about 250 meters, some of them in a more or less damaged condition, from houses which have been deserted since the accident.

The damage to the company's power house was, fortunately, not of a serious character. All the doors and windows were blown in and completely shattered, and some of the joints in the steam piping were sprung, but the generating machinery and the boilers were not in any way effected, and consequently, the light and power service was resumed as soon as the destroyed section of the city was cut free from the distributing system.

The repair shop, car barns and offices all sustained damage to doors and windows; the steel sashes in the machine shop and storeroom, which were glazed with wired glass, were blown out of the wall, sash and all.

The sprinkling system in the buildings was also damaged and discharged as a result of the concussion, but the water was turned off before any great amount

of damage occurred from this source.

The tracks and gas mains in the streets did not suffer damage to any great extent. Some of the crown plates on the gas holder were sheared off, and about 200,000 ft. of gas were lost. Fortunately, it was possible to repair this damage, and after three days and nights of hard work, to resume a gas supply to the city; the mains entering the destroyed area having been cut off in the meantime.

When the accident occurred, a great number of the company's employes who lived in the destroyed area, immediately left their posts and hurried to aid their families, and as a result only about 40% of the employes were available for service. The morning following the disaster, snow began to fall, and a very severe blizzard raged during all the day and night. Owing to the damage to rolling stock, and the fact that many employes were not available for their regular duties, the car service was completely tied up. All efforts were directed toward improving this condition, but it was not until Sunday, Dec. 9, that it was possible to resume any semblance of car service. Very valuable assistance was received on the Saturday night by a company of soldiers garrisoned in the city, and also by 150 seamen off a United States warship, which came into port the previous day. Owing to the scarcity of employes, it was found extremely difficult to keep the snow fighting equipment in operating condition and this, too, very seriously hampered the company resuming service.

On Monday, Dec. 10, a second blizzard completely tied up the car service for the day. A partial service was resumed again on Dec. 11, and from that time on the service has been increased until the customary schedule is now being operated.

The destruction of a large area of the city has forced the residents into other districts, and as a consequence the trend of traffic has very markedly changed, necessitating a reconsideration of the service formerly given.

Owing to the number of men required for reconstruction work, the company found it very difficult to get its full complement of men back into the service. A number of employes whose old homes were in the surrounding country, returned there when they found that their city houses had been irreparably damaged or burned. As a result, the management took into consideration the advisability of employing women conductors, and has finally adopted this principle. On Dec. 31 eight women conductors were in charge of cars, and a number of others were training. The experience, so far, is that the services of women conductors are practically as efficient as those of men, and it is the intention to utilize women's services for this purpose to the fullest extent possible.

Oshawa Railway Service.—The town of Oshawa, Ont., applied to the Board of Railway Commissioners some time since for an order directing the Oshawa Ry. to furnish a passenger service to and from various portions of the town similar to what it has been giving to the G.T.R. Co. The application was heard at Oshawa, Dec. 11, the town, the Oshawa Ry. and the C.P.R. being represented, and upon reading submissions filed and the report of one of the board's inspectors, it was ordered that the application be refused.

The Street Railway Fare Question in Edmonton.

At the invitation of the Edmonton, Alta., City Board of Control, a conference of public organizations was held Jan. 14, to discuss various questions, particularly financial, connected with the Edmonton Radial Ry. The following organizations were represented: Board of Trade, Trades and Labor Council, Labor Representation League, Property Owners' Association, Property Owners' Protective Association, Delton Home Rule Association, Local Council of Women, Consumers' League, Teachers' Association, Ministerial Association, 142nd St. League, Bonnie Doon Ratepayers' Association.

After a lengthened general discussion, Mayor Evans said three things had been suggested to help to improve matters, one was to cut out all transfers, another was to have tickets at 4 for 25c, with workmen's tickets 6 for 25c, and children's tickets at 10 for 25c. There might also be a special night car rate to come into operation after a certain time at night, and, thirdly, there was the zone system. This, to his mind, was the most rational one. It was decided not to take a vote on any of the three suggestions until a definite plan for working on the zone system was prepared.

During the discussion Commissioner Harrison made a statement showing that for the first 11 months of 1917 the railway had a deficit of \$155,615, which was larger than for the 12 months of the previous year. This was attributed to fewer passengers, increased cost of material and higher wages paid. It was added that therewas a deficit of 1 7/10c on each passenger carried. The power charges for 1917 were less by \$64,000 than they were in 1912. The strike of July, 1917, made a difference of \$600 in the final showing.

D. Donaldson, who is spoken of in a local paper as "representing the Society of Canadian Engineers," said that the success of a street railway depended upon density of population, and the Edmonton Radial Ry. could be compared to James Ramsey's store if it was taken up and planted down at Camrose. They had to get out of their minds all idea of making the street railway pay.

Electric Railway Traffic in Regina.

A statement prepared by Regina Municipal Ry. officials shows that the traffic is about 65% greater in winter than in summer. Two days were selected for the test, viz., Monday, Sept. 10, and Monday, Dec. 10, both of which happened to be fine days, and typical of the season. The cash fares received on Sept. 10 were \$474.82, and on Dec. 10, \$795.56. The traffic figures for the two days on the various lines were:

	Sept. 10	Dec. 10	Per cent. increase
Red	3,179	5,867	84.6
White	2,109	4,013	90.3
Blue	3,016	5,196	72.3
Green-red	3,038	4,012	32.6
	11,342	19,088	68.3
Specials	1,574	2,212	40.5
	12,916	21,300	65.0

Toronto Railway Purchase.—At the municipal elections on Jan. 1, Toronto ratepayers were given a ballot with the question, "Are you in favor of the city taking over the Toronto Street Railway in 1921?" They answered it by 39,979 affirmative votes and 3,759 against.

The Montreal Tramways Co's Snow Clearing Work.

The following extracts from a paper on snow removal in Montreal, read by Paul E. Mercier, B.A.Sc., Chief Engineer and City Surveyor for Montreal, before the last Good Roads Congress in Montreal, are of interest at this season.

The City of Montreal has a total area of 26,226 acres. The length of the streets aggregate 485 miles, 104 miles of which have electric railway tracks. The snow fall varies, but has averaged, for the last 41 years, 119.3 in. The snow removal is done entirely by the city, by day work. The cost of removal of snow from the sidewalks, is paid by the proprietors at the rate of 5c per running foot. The cost of the snow removal from streets with electric railway tracks is paid half by the Montreal Tramways Co. and half by the city. The cost of the snow removal in any other streets is paid by the city. As the country surrounding Montreal has winter roads, the city does not entirely remove the snow from its streets, but keeps, during the winter, a thickness of 6 to 12 in. of snow.

The Montreal Tramways Co. has a wonderful organization to keep its tracks clear during a snow storm. Regular routes are mapped out for the sweepers, before the beginning of the winter. Routes that can be handled to best advantage from it are given to each depot. These routes are arranged so that each can be covered by its sweeper in from 45 minutes to one hour and also arranged so as to have one central conveying point for three or four sweepers. In case of need, it is, therefore, easy to direct a sweeper from another route, when it reaches this spot. In each car, a blue print is posted, giving the detailed route of that particular car. The necessary men are appointed to each car at the beginning of the winter, and they are kept during the entire winter. The Superintendent meets all of these men before the winter opens and discusses with them proposed improvements on actual conditions. Their organization is so well thought of, that, as Arthur Gaboury, the Montreal Tramway Co.'s Superintendent, said: "Each man knows where to go and what he has to do, and it seems that he simply goes and does it."

The Montreal Tramways Co. has 39 sweepers and 12 levellers or wing cars. Most of the sweepers are of the 2-broom type, having on the right side a large iron wing to clear the snow from the outside of the track and on the left side a smaller wing to clear the devil strip. Following are details of the equipment:—

Single truck sweeper: Two 50 h.p. motors, G. E. 80, and one K10 controller at each end, one K10 controller for broom, length 28 ft., width 8 ft., height 11 ft., weight 31,000 lbs., wing 8 x 22 ft. Used to brush off the snow from the track and push it towards the sidewalk.

Double truck sweeper: Two 50 h.p. motors, G. E. 80, and two K35 controllers for broom, two 101 motors and one K10 controller for broom, length 39½ ft., width 7 ft. 6 in., height 11 ft., weight 44,500 lbs., wing 11 ft. Does the same work as the first one.

Leveller or wing car: Flat freight car fitted up with iron shaped wing 12 ft. long and 2 ft. high. The wing is pushed out by reinforced wooden bar, operated by chains and drum; four 50 h.p. motors, G. E. 80, weight of car 43,400 lb. Used to push the snow towards the sidewalk.

Single truck leveller or wing car: Made

from old box car, length 26 ft. 7 in., height 11 ft. 1 in., width 8½ ft., two G. E. 80 motors, wing 16 ft. long, weighted down by double floor filled in with rails and cement, total weight 30,640 lb.

At the beginning of the storm, all hands are called. The Tramway Co.'s sweepers are sent out on the route; the city plows are sent out to remove the snow from the roadways and from the sidewalks. The heavier the snow storm, the shorter the routes are made, so that each plow can be back at the starting point before the snow accumulates. Snow shovellers are sent out to keep the street corners clear of snow. Whenever a section foreman feels that his section will be snowbound, he calls the Division by telephone for more help. In case of emergency, section or division lines are wiped out and everybody works with one ambition: beat all the others in results. Working hours are the usual hours in a ten hour day; but, if necessary, the work lasts as long as the snow.

The cost of removing snow from streets is \$2,500 a mile.

Mainly About Electric Railway People.

F. J. Colbeck was re-elected a member of the Brantford Railway Commission at the municipal elections Jan. 7.

W. R. McRae, Master Mechanic, Toronto Ry., Toronto, has been elected a member of the American Institute of Electrical Engineers.

A. E. Wideman and A. G. Alexander were re-elected members of the Port Arthur, Ont., Public Utilities Commission at the municipal elections Jan. 7.

Jos. J. Gibbons, Business Manager, Toronto Street Railwaymen's Union, has been re-elected an alderman of the City of Toronto. He was a conductor for 17 years.

W. D. Robbins, who has been Secretary, Toronto Street Railwaymen's Union, for ten years, and an alderman since 1912, has been elected a member of the Toronto City Board of Control.

E. L. Milliken, heretofore General Manager, Cape Breton Electric Co., who was appointed some months since as General Manager, Houghton County Traction Co., has left Sydney, N.S., to take over his new duties at Houghton, Mich.

His Honor Frank Stillman Barnard, Lieutenant Governor of British Columbia, who has been made a Knight Commander of St. Michael and St. George, is the eldest son of the late F. J. Barnard, M.P., who founded the British Columbia Express Co. He has for a number of years been interested in the British Columbia Electric Ry., latterly as Advisor to Directors.

W. N. Warburton, General Manager, London & Lake Erie Ry. & Transportation Co., was presented by the company's employes, on Christmas eve, with a gold mounted pipe in case, a leather upholstered arm chair and a club bag. An accompanying letter expressed the employes' appreciation of his "uniform kindness and thoughtfulness of their welfare," and spoke of him as a "friend rather than as a master."

W. J. Lynch, General Manager, Quebec Ry., Light, Heat & Power Co., and M.

W. Kirkwood, General Manager, Galt, Preston & Hespeler St. Ry., have been elected members of the Canadian Electric Railway Association's executive committee, to fill vacancies caused by the death of H. G. Matthews, formerly General Manager, Quebec Ry., Light, Heat and Power Co., and by the removal of E. L. Milliken, heretofore Manager, Cape Breton Electric Co. to Houghton, Mich.

M. F. Werth, who has been appointed Superintendent of Power, Detroit United Ry., Detroit, Mich., was made Assistant Superintendent of Power in June, 1916, and has been acting Superintendent since the promotion of E. H. Burdick to be Assistant General Manager in July, 1916. He is a native of Richmond, Va., graduated from Virginia Military Institute, electrical engineering course, and began his career as a railway man with the Mahoning & Shenango Ry. & Light Company, of Youngstown, Ohio. Later he was with the British Columbia Electric Ry.

George A. Mills, whose appointment as Electrical Engineer, Winnipeg Electric Ry., Winnipeg, was announced in our last issue, was born at Indianapolis, Ind., July 5, 1885, and was educated at the Iowa State College, Ames, Ia., graduating in electrical engineering in 1909; 1909 to 1910, apprentice, Allis-Chalmers Mfg. Co., Cincinnati, Ohio; 1910 to 1911, instructor in electrical engineering, University of Pennsylvania, Philadelphia; 1911 to 1917, Electrical Engineer, Waterloo, Cedar Falls & Northern Ry., Waterloo, Ia., when he had charge of electrical design and construction of 60 miles of 1,300 volt, d.c., high speed interurban and freight line, also the enlargement of power station and operation of electrical generation, conversion, distribution and engineering, and of rolling stock.

Report on Toronto Civic Railway.

The Toronto City Council's works committee reported on the civic railway towards the end of December as follows: Traffic increased steadily during 1917. Comparing the first 10 months of 1917 with the first 10 months of 1916, the Gerrard St. route increased 19.22%; Danforth Ave. route 13.88%, St. Clair Division 31.14%; Bloor Division 10.99%, and the entire system 21.68%. The Lansdowne Ave. route of the St. Clair Division which was opened for traffic on Jan. 16, 1917, is 0.615 mile long. A single track extension to the Bloor Division, from Quebec Ave. to Runnymede Road, 0.493 mile long, was opened for traffic on Nov. 12, 1917. We are now carrying about 49,000 revenue passengers a day.

One single-truck car was added to the equipment of the Gerrard route, and all rolling stock is working to its full capacity. A 9 car capacity addition to St. Clair Ave. barn was occupied in February.

The wages of trainmen and shedmen were increased from 30c to 33 1/3c an hour on Jan. 1, 1917, and on June 16 they were changed to the scale adopted by the Toronto Ry., having a minimum of 30c and a maximum of 37c an hour.

Electric Railway Assessment in Toronto.—Assessments for this year, on electric railway and allied property in Toronto, are as follows: Toronto Ry., \$4,952,780; Toronto and York Radial Ry., \$410,181; Toronto Suburban Ry., \$79,355; Toronto, Niagara and Western Ry., (not operating), \$4,500; Toronto Power Co., \$1,052,276; Toronto Electric Light Co., \$3,493,221.

Marine Department

Specifications and Plans of Marine Engines for Standard Wooden Steamships for British Government.

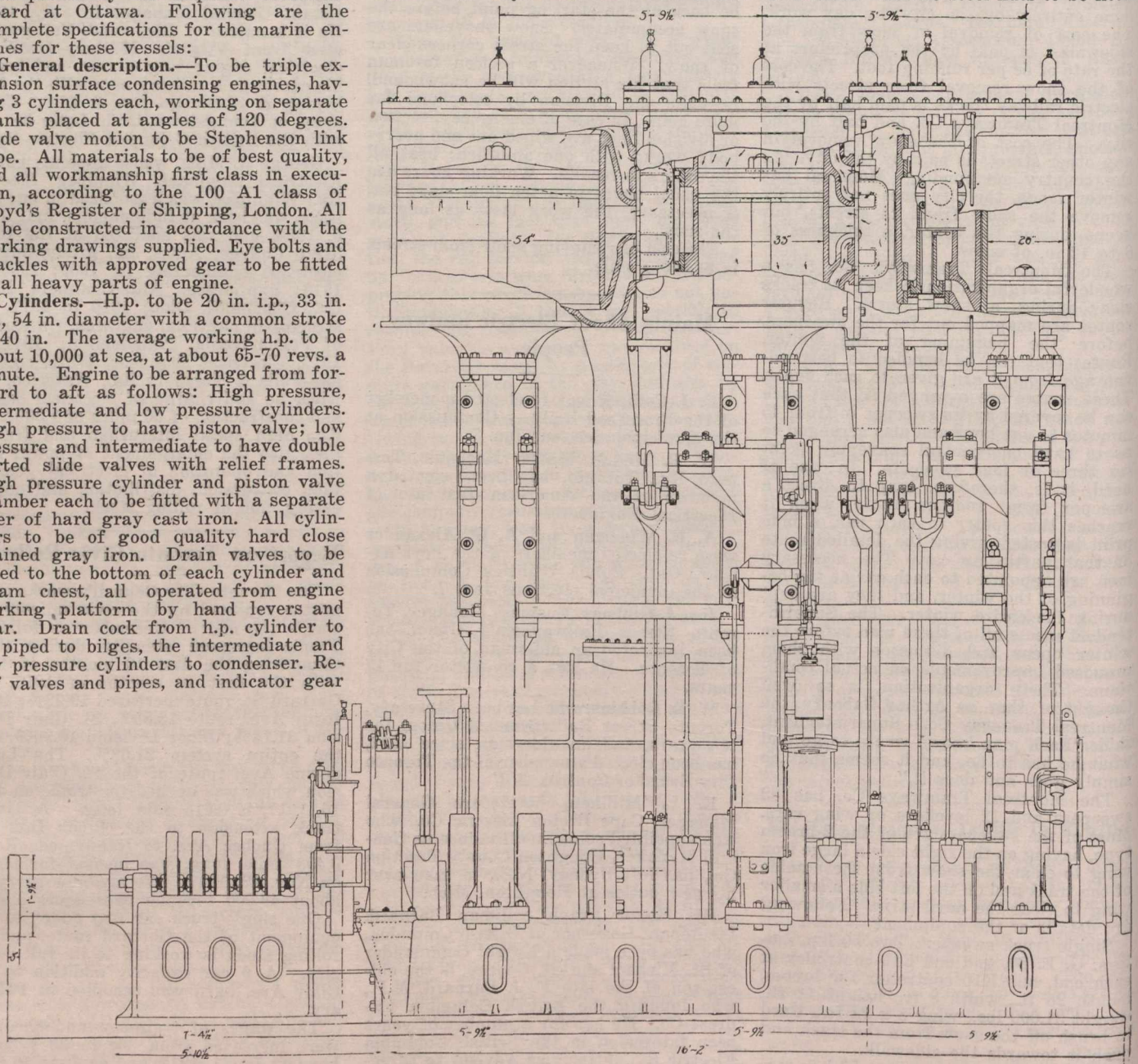
Canadian Railway and Marine World for January contained a very full summary of the specifications for the hulls of wooden steamships being built in Canada for the British Government, under orders placed by the Imperial Munitions Board at Ottawa. Following are the complete specifications for the marine engines for these vessels:

General description.—To be triple expansion surface condensing engines, having 3 cylinders each, working on separate cranks placed at angles of 120 degrees. Slide valve motion to be Stephenson link type. All materials to be of best quality, and all workmanship first class in execution, according to the 100 A1 class of Lloyd's Register of Shipping, London. All to be constructed in accordance with the working drawings supplied. Eye bolts and shackles with approved gear to be fitted to all heavy parts of engine.

Cylinders.—H.p. to be 20 in. i.p., 33 in. i.p., 54 in. diameter with a common stroke of 40 in. The average working h.p. to be about 10,000 at sea, at about 65-70 revs. a minute. Engine to be arranged from forward to aft as follows: High pressure, intermediate and low pressure cylinders. High pressure to have piston valve; low pressure and intermediate to have double ported slide valves with relief frames. High pressure cylinder and piston valve chamber each to be fitted with a separate liner of hard gray cast iron. All cylinders to be of good quality hard close grained gray iron. Drain valves to be fitted to the bottom of each cylinder and steam chest, all operated from engine working platform by hand levers and gear. Drain cock from h.p. cylinder to be piped to bilges, the intermediate and low pressure cylinders to condenser. Relief valves and pipes, and indicator gear

springs in accordance with drawings. To be of open hearth steel, connected to piston by taper and nuts, securely locked. Cross heads of steel to be connected to piston rods, in the same manner, and fitted with adjustable cast iron shoes.

with rings as shown on drawings. The intermediate and low pressure slide valves to be double ported and to be made of hard cast iron. Valve rods to be of steel, guided at top, outside stuffing box at bottom. Double steel nuts to be fitted



Marine Engine for Standard Wooden Steamships, Elevation of Starboard Side.

to be provided on all cylinders. Cylinders to be lagged on sides with insulation of magnesia, and cleated with steel plates, fastened with bands and screws. Cylinder covers to be sound castings, strongly ribbed, and to have corrugated cast iron plates on top. Eye bolts for lifting and starting screws to be fitted to each cylinder and one strong beam with roller and screw for lifting cylinder covers, etc., to be fitted in engine room.

Pistons to be hollow box castings, well ribbed and furnished with rings and

U. S. or other approved metallic packing to be fitted to h.p. and i.p. rods.

Connecting rods to be of open hearth steel to Lloyd's requirements, length between centres being 8½ ft. The top ends to be forked and fitted with adjustable brass bearings; lower ends to have cast steel bearings lined with white metal of approved composition and secured by w.i. or steel bolts and nuts with locking rings, lubricating pipe to be fitted to each rod.

Slide Valves.—H.p. to be piston-valve,

at top end. Washer to be fitted at bottom of slide valve. H.p. and i.p. valve spindles to be fitted with U.S. metallic packing or other approved make. Slide valve motion to be of Stephenson link type, with double eccentric. All working parts to be made with adjustable bearings. Eccentric sheaves to be cast iron, with good wearing surface, and eccentric straps of cast iron bushed with white metal; to have liners for adjustment. Eccentric rods to be of forged steel.

Reversing engine to be of direct steam driven type, with floating valve motion exhausting to condenser, and to be operated from the engine working platform. Hand reversing gear to be provided. Reversing shaft to have adjustable bearings. Reversing arms to have adjustable slides for linking up all valve gears.

Columns to be of cast iron hollow section. Guides are to be single, the guide surface to be of hard, close grained iron with water cooling for ahead motion.

The engine bed plate to be of cast iron, with 6 adjustable bearings of cast steel, white metal, bushed. Bottom halves to

Pump levers to be of steel plate, driven from i.p. cross head to drive the air, circulating, feed and bilge pumps through links with adjustable brasses. Pump cross head to be fitted with guide bracket and adjustable bearings. Bearings in the pump motion to be of brass. Bearing for pump lever on column to be of white metal.

Air pump to be of single acting type Edwards system, fitted with brass bushing. Valves to be of brass as indicated on plan. Pump rod to be of Muntz metal. Air pump to have drain cock and shifting valve.

so that each pump can be inspected while the other is working.

Bilge pumps, two in number, single acting pumps of cast iron; bushing, plungers, valves and seats to be of brass. Each pump fitted with air vessel of cast iron. To be fitted with safety valves. Both pumps arranged so that they can deliver overboard, and one to draw from sea and discharge to deck and sanitary tank.

Main stop and throttle valve of cast iron, bolted to high pressure cylinder. Rods of steel to be operated conveniently from engine working platform as shown in plan.

Crank shaft to be built up section in 3 interchangeable parts 11½ in. dia., with solid forged couplings. Crank webs to be of cast or wrought steel. Crank shaft may be either iron or steel to pass Lloyd's requirements.

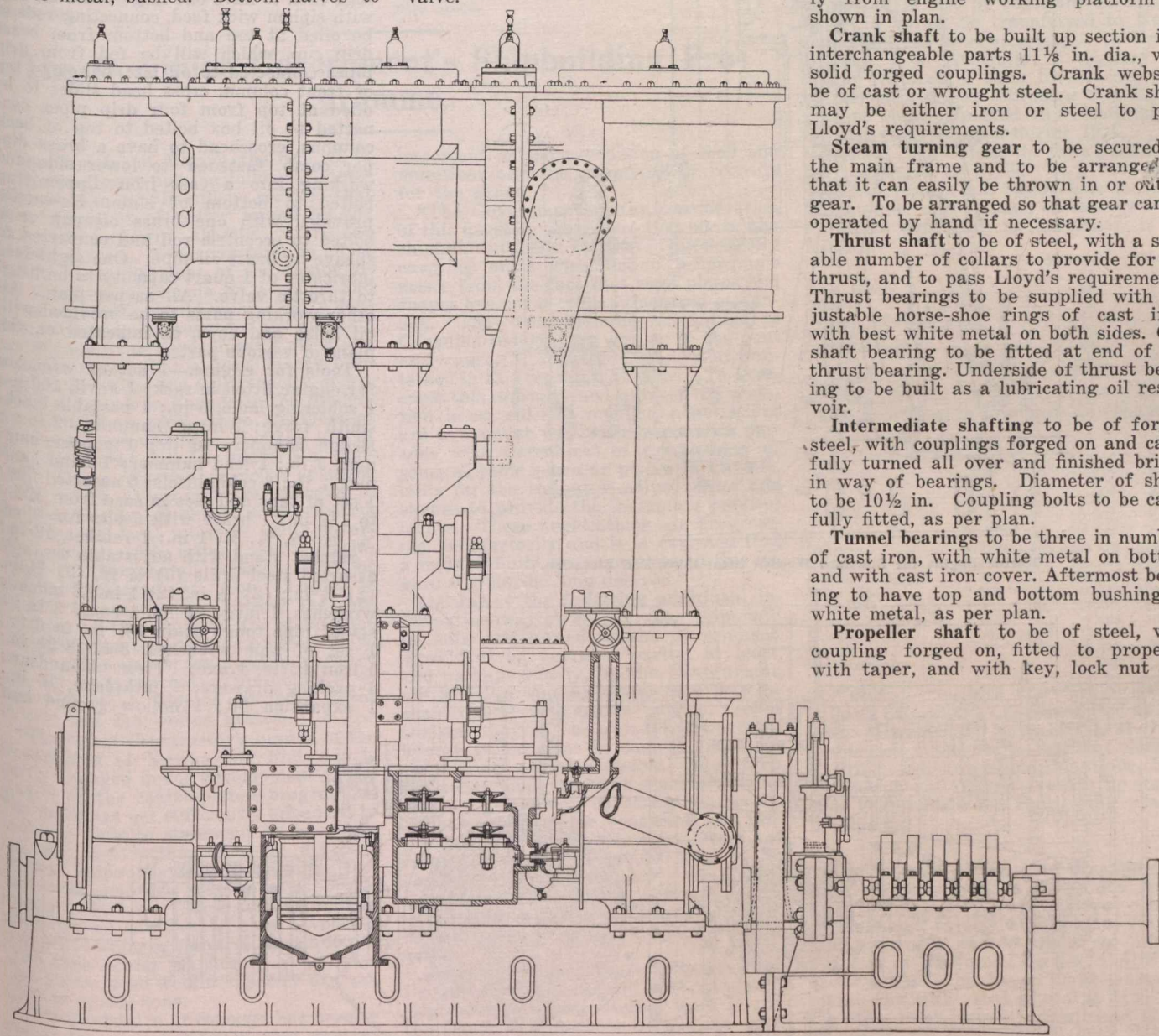
Steam turning gear to be secured to the main frame and to be arranged so that it can easily be thrown in or out of gear. To be arranged so that gear can be operated by hand if necessary.

Thrust shaft to be of steel, with a suitable number of collars to provide for the thrust, and to pass Lloyd's requirements. Thrust bearings to be supplied with adjustable horse-shoe rings of cast iron, with best white metal on both sides. One shaft bearing to be fitted at end of the thrust bearing. Underside of thrust bearing to be built as a lubricating oil reservoir.

Intermediate shafting to be of forged steel, with couplings forged on and carefully turned all over and finished bright in way of bearings. Diameter of shaft to be 10½ in. Coupling bolts to be carefully fitted, as per plan.

Tunnel bearings to be three in number, of cast iron, with white metal on bottom and with cast iron cover. Aftermost bearing to have top and bottom bushing of white metal, as per plan.

Propeller shaft to be of steel, with coupling forged on, fitted to propeller with taper, and with key, lock nut and



Marine Engine for Standard Wooden Steamships, Elevation of Port Side.

be of semi-circular section, so as to be removable without lifting shafting. All bearings to have large lubricating cups, and nuts and other fittings which will down bolts and foundation bolts to be supplied as per detailed drawings.

Condenser to be of cast iron, having rolled brass tube plate, ⅞ in. thick, with 613 ¾ in. outside diameter brass tubes, tested inside and out, to provide 1,560 sq. ft. of cooling surface. Tubes to be packed in brass ferrules adapted to hold tubes in direction of flooding. Manhole and clearing doors to be provided. All bolts and nuts and other fittings which will come in contact with sea water to be brass.

Circulating pump to be of double acting type; to have all bushings, pistons, valve guards and seats of brass. Valves to be of rubber. Plunger rods to be of Muntz metal.

Feed pumps to be two in number, driven from pump cross head, single acting of cast iron. Bushing, valve, and boilers with water when operating full power and to be able to work independently of one another. Pumps and housing of cast iron. Bushing, valves, and seats, of brass. Plungers of steel with brass sleeves. Each pump to have an air vessel of cast iron. Safety valve, air valve, and all the necessary valves and cocks on suction and pressure pipes,

ping, to Lloyd's requirements. Diameter of shaft 12 in. A continuous brass liner to be fitted on tail shaft, running in the lignum vitae bearing in stern tube, all as per plan.

Propeller to be of cast iron, a right hand screw of solid section with 4 blades 14½ ft. diameter and 15¼ in. pitch. To be taper bored to fit propeller shaft, with through way, and to be secured by nut, having left hand thread. A spare propeller to be supplied. Care to be taken in moulding propeller to obtain smooth surface true to pitch.

Stern tube to be of cast iron, fitted with forged steel nut on the aft side. To have brass bushing in after end, which

is to be fitted with lignum vitae strips, end grain wood in lower half, the forward end of stern tube also to be fitted

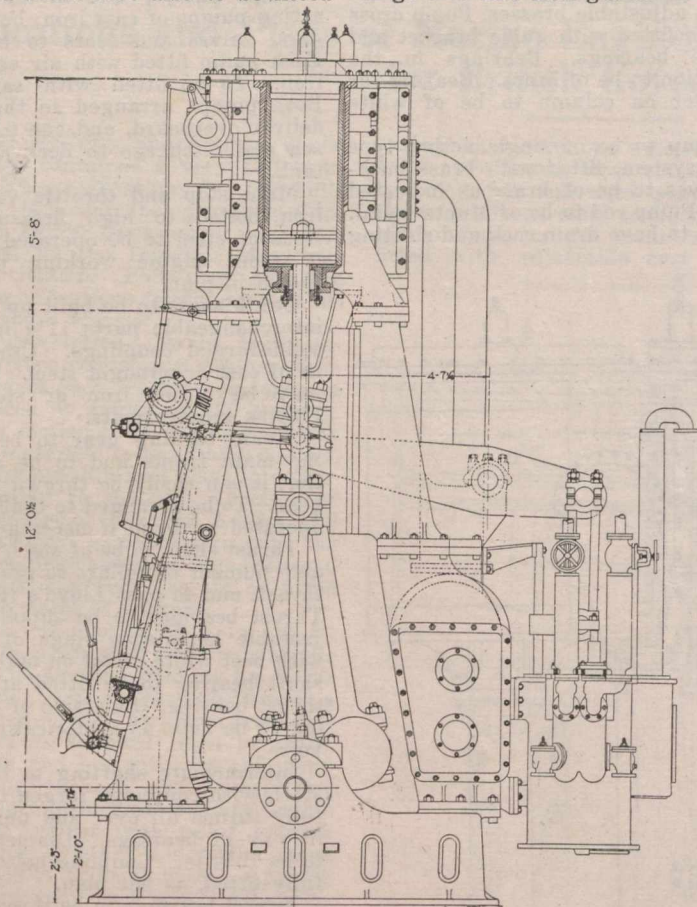
with brass bushing. Inboard end of stern tube to have stuffing box, with brass neck rings and cast iron gland. The studs to

be of Muntz metal 10½ in. long from face to tube flange, to permit packing at sea. Cored holes as shown on plan for water cooling system.

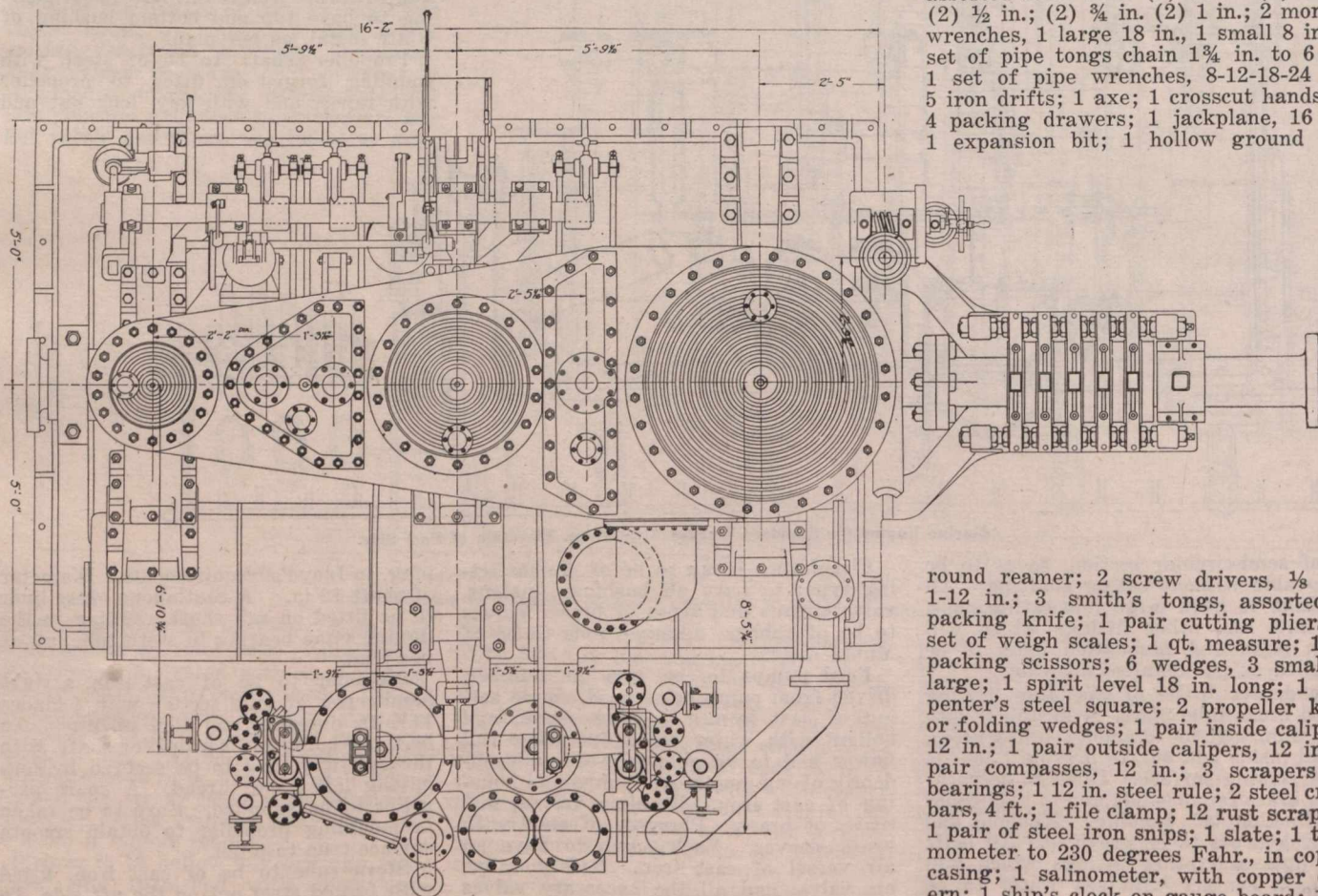
Piping.—One main exhaust pipe 17 in. diam., with openings for auxiliary exhaust pipes; one discharge pipe from circulating pump to condenser, 8 in. dia.; one elbow for circulating pump suction from sea, 8 in. diam.; one air pump discharge 6 in. diam.; one U bend for air pump discharge 3 in. diam.; all of cast iron as per plan.

Main oil piping and cups.—Main bearings each to have one large brass oil cup, with siphon wick feed, connecting rods to be oiled at top and bottom from brass drip cup, which will be fed from drip pipes connected to oil box, bolted to top of front column, cross head slides to be oiled at top from four drip pipes connected to oil box bolted to top of back columns, crosshead to have a brass dipper comb fastened to lower side and working into a cast iron dipper tray bolted to bottom of slide. Eccentrics provided with one brass oil cup each, bolted to eccentric rod and connected to sheave by brass oil pipe. One sight feed lubricator of 1 quart capacity to be fitted to throttle valve. All as per plan. All other working parts to be provided with oil holes and cups, as indicated on the plans of various parts.

Tools for engine.—1 set of wrenches for engine fitted in rack; 1 anvil, 100 lb.; 1 soldering ladle, 5 in.; 1 portable blacksmith forge; 1 large hammer, 32 lb.; 1 sledge hammer, 16 lb.; 1 copper hammer, 5 lb.; 1 lead hammer; 1 hand hammer, 2 lb.; 3 cold chisels; 6 assorted files; 1 set of taps and dies in case from ¼ in. to 1½ in.; 1 brace with 6 bits for wood, ¼, ⅜, ½, ⅝, ¾, 1 in.; 1 ratchet, 12 in.; 1 ratchet stand with adjustable arm; 12 assorted steel drills (3) ¼ in. (3) ⅜ in. (2) ½ in.; (2) ¾ in. (2) 1 in.; 2 monkey wrenches, 1 large 18 in., 1 small 8 in.; 1 set of pipe tongs chain 1¼ in. to 6 in.; 1 set of pipe wrenches, 8-12-18-24 in.; 5 iron drifts; 1 axe; 1 crosscut handsaw; 4 packing drawers; 1 jackplane, 16 in.; 1 expansion bit; 1 hollow ground half



Marine Engine for Standard Wooden Steamships, End Elevation.



Marine Engine for Standard Wooden Steamships, Top View, looking down.

round reamer; 2 screw drivers, ⅜ and 1-12 in.; 3 smith's tongs, assorted; 1 packing knife; 1 pair cutting pliers; 1 set of weigh scales; 1 qt. measure; 1 air packing scissors; 6 wedges, 3 small, 3 large; 1 spirit level 18 in. long; 1 carpenter's steel square; 2 propeller keys, or folding wedges; 1 pair inside calipers, 12 in.; 1 pair outside calipers, 12 in.; 1 pair compasses, 12 in.; 3 scrapers for bearings; 1 12 in. steel rule; 2 steel crowbars, 4 ft.; 1 file clamp; 12 rust scrapers; 1 pair of steel iron snips; 1 slate; 1 thermometer to 230 degrees Fahr., in copper casing; 1 salinometer, with copper cistern; 1 ship's clock on gauge board; 1 oil funnel; 1 oil squirt gun; 1 tin measure;

1 gal.; 4 assorted tin oil cans; 2 filling cans for oil (2½ gall.); 2 oil funnels, 1 pint; quantity of assorted bolts and nuts and sizes bar iron; 1 set eye bolts ¾, ½, ⅜, ¼, ⅓, 1, 1½, 1¼ in.; 2 eye bolts ⅝ in. long link for bottom ends; 2 brass oil waste pans; 1 brass cock for oil barrels; 1 large funnel; 3 water buckets; 1 small grindstone, fitted in iron trough; 1 3-ton chain block; 1 5 parts tackle with iron sheave; 4 hand lamps of tin; 4 lamps or lanterns; 1 engine indicator; 50 ft. of 1½ in. hose, with coupling and nozzle; 4 bulkhead lamps of brass, fitted in engine room.

Spare gear.—According to requirements of class but with the following additions: 1 set of air pump valves; 1 set of circulating pump valves; 1 set of feed pump valves; 1 spare propeller; 25 condenser tubes; 50 screwed glands for tubes.

Lloyd's spare gear.—Connecting rod or piston rod top-end bolts and nuts; 2 connecting rods or bottom-end bolts and nuts; 2 main bearing bolts; 1 set of coupling bolts; 1 set of feed and bilge pump valves; 1 set of piston springs; quantity of assorted bolts and nuts; iron of various sizes.

The Dominion Government's Shipbuilding Programme.

The Minister of Marine, the Hon. C. C. Ballantyne, gave out the following statement, on Jan. 3: "It will be recalled that in a statement of policy issued by the Union Government shortly before the general election, it was set forth in effect that the establishment of the shipbuilding industry in Canada on a sound and permanent basis would receive early consideration. In the meantime the question has engaged the government's attention with the result that a decision has been reached to utilize the full capacity of existing shipyards in Canada in the production of modern steel cargo steamers of the most approved types for the use of the government and for registry in Canada. The productive capacity of these yards, which at present are engaged in the construction of ships for the British Government, local interests and for foreign account—the latter almost exclusively for Norwegian registry—may be roughly estimated at from 275,000 to 300,000 tons annually. During the continuance of the war and for some time thereafter the construction of steel ships in Canadian yards for foreign registry will not be permitted. This policy is in line with that adopted by both Great Britain and the United States.

"The Naval Constructor's branch of the Department of Marine and Fisheries is busily engaged in the development of the details of the contemplated programme. The work has not sufficiently advanced to enable a definite statement to be made, but the construction of three different types of ships is under consideration. One type will comprise vessels of approximately 3,000 tons. These may be built in shipyards on the Great Lakes. Another type will comprise ships of from 5,000 to 7,000 tons, while yet another will be a type with a dead weight capacity of from 8,000 to 10,000 tons.

"The production of tonnage has become one of the most important that can occupy the attention of serious men and of governments. As is well known, shipping has sustained enormous losses since the commencement of the war. As the result of its activity in maintaining commerce on the seas and providing for the requirements of the allied armies, these losses have borne most heavily on British shipping. The entry of the United States into the war—the most important event of the past year—and that country's resolve to place a large army in the field have made and continue to make heavy demands on shipping. The losses continue though in much less degree than in the months immediately succeeding the inauguration of the unrestricted campaign by the enemy. Additional tonnage has therefore become equally

important as the production of food and munitions and the supplying of recruits for the army.

"The Government in the consideration of this question recognizes that one of the chief difficulties in the way of successfully carrying on a construction programme arises from the fact that steel plates and shapes are not now manufactured in Canada. The overwhelming advantage to Canadian industry as well as to the general cause, of making Canada self contained in this regard is obvious. To overcome this difficulty and to meet the situation in an efficient manner, negotiations are now under way with responsible persons with the object of establishing at some suitable place or places in Canada, mills for the rolling of ships' plates and shapes to provide the maximum requirements. These negotiations are progressing satisfactorily and it is expected that a more definite announcement in this regard will not be long delayed."

On Jan. 4 the following additional information was given out: The ships will be built and owned by the government. They will be operated partly, at least, and perhaps wholly, by the Government, although, in special cases, they may be chartered to responsible parties. After the war they will be owned and operated by the government in co-operation with government owned railways. In a word, the policy inaugurated is a policy of government ownership of ocean transports.

The government's contemplated programme will involve an expenditure of from \$50,000,000 to \$60,000,000. C. F. N. Duguid, Naval Architect of the Marine Department, who has a wide experience in yards in Belfast and on the Clyde, will be the technical officer in charge of the work.

Ships now under construction for the British Government will be completed. Contracts for these vessels were let by the Imperial Munitions Board, and most of them will be completed early in the summer. After that Canada will take charge of all construction.

No new shipyards will be constructed for the present, but the existing yards will be utilized to their fullest capacity. There will be an equitable distribution of labor between the various plants so as to ensure the maximum of efficiency and speed in output of ships. Steel rolling plants—heretofore exclusively confined to the United States—will probably be erected at Sydney and New Glasgow, N.S., Hamilton and Sault Ste. Marie, Ont.

The New York & Cuba Mail Steamship Co.'s s.s. Mantanzas, which ran on the ledges recently, was released Dec. 29, and towed stern first into Halifax harbor.

Canadian Vessel Statistics for 1916.

The total number of vessels on the Dominion register at Dec. 31, 1916, was 8,660, measuring 942,598 net tons, a decrease of 97 vessels, and an increase of 13,286 tons, compared with 1915. During 1916, 432 vessels were removed from the register, of which 260 were broken up, reported out of existence, condemned, dismantled or abandoned; 26 were wrecked; 22 were sold to U. S. Government; 1 to French Government; 1 to Russian Government; 20 stranded; 7 lost; 7 abandoned at sea; 2 lost by collision; 14 foundered; 18 burnt; 25 transferred to Newfoundland; 17 to Barbados; 5 to Great Britain; 1 to Australia; 2 registry no longer required; 3 sunk by mines and 1 by torpedo. It was estimated that 42,566 persons were employed on vessels registered in the Dominion during 1916.

Vessels built during the year numbered 244, aggregating 28,303 tons, compared with 246 vessels and 18,832 tons in 1915. The number and tonnage of the new construction, according to provinces, is as follows:—

	Number.	Tons.
Quebec	51	8,643
Nova Scotia	65	7,661
Ontario	26	5,507
British Columbia	65	4,487
Manitoba	15	1,573
New Brunswick	22	332
Total	244	28,303

The total vessels on the register is divided according to provinces as follows:

	Sailing and 7/8 Steamships.	Steamships.	Gross tonnage of Steamships.	Net tonnage of sailing and Steamships.
Ontario	2,117	1,507	353,439	327,676
Quebec	1,452	573	225,959	273,769
British Columbia	1,687	1,255	128,976	145,525
Nova Scotia	2,064	484	46,627	123,052
New Brunswick	1,074	264	24,682	50,147
Prince Edward Is.	155	27	7,557	10,652
Manitoba	95	78	8,567	8,953
Yukon	11	10	2,716	2,295
Saskatchewan	5	4	660	529
Totals	8,660	4,202	799,183	942,598

Ports of registry are distributed as follows:—Ontario 38, Nova Scotia 21, New Brunswick 7, Quebec 6, British Columbia 4, Prince Edward Island, Manitoba, Saskatchewan and Yukon 1 each; no provision being made for registering vessels in Alberta.

The Dauphin Milling and Creamery Co. has been incorporated under the Manitoba Companies Act with power among other things to own and operate freight and passenger vessels, to carry on the business of a common carrier, and to act as forwarder, wharfinger, and warehouseman. The authorized capital is \$125,000; the office is at Dauphin, Man., and it has as provisional directors: S. Code, F. Fostick, D. C. Richardson, R. Fegan, J. F. Code, F. E. Simpson, Dauphin, Man.

Colborne Trading & Transportation Co. Ltd. has been incorporated under the Dominion Companies Act, with \$2,000,000 authorized capital and office at Montreal, to carry on a general merchandise, import and transportation business, and in connection therewith to own and operate steam and other vessels, wharves, docks, warehouses and other transportation facilities.

Pilots and Military Service.—Judge McCorkill, at Quebec, Jan. 23, decided that a pilot on the St. Lawrence River, was more useful to the Empire by remaining at the disposal of ships than by going into military service.

Steam and Sailing Ships Under Construction Throughout Canada.

Following are particulars of shipbuilding which was in progress throughout Canada, at Oct. 31, 1917, in addition to other vessels reported previously. The figures given in each case are the gross tonnage:

Steamships, Atlantic Coast.

Canadian Vickers, Ltd., Montreal: 2 cargo str., 9,400 tons, steel; 1 dredge, 2,364 tons, steel; 12 trawlers, 3,050 tons, steel; 23 drifters, 3,350 tons, wood.

Davie Shipbuilding Co., Levis, Que.: 1 car ferry, 5,000 tons, steel.

Grant & Horne, St. John, N.B., 1 cargo str., 2,800 tons, wood; Nova Scotia Steel & Coal Co., New Glasgow: 2 cargo str., 3,000 tons, steel.

Sincennes-McNaughton Lines, Sorel, Que.: 1 tug, 420 tons, wood.

Southern Salvage Co., Liverpool, N.S.: 1 cargo str., 2,800 tons, wood.

Total, Atlantic coast, 44 steamships; 32,280 gross tons.

Steamships, Great Lakes.

Collingwood Shipbuilding Co., 2 cargo str., 4,800 tons, steel.

Georgian Bay Shipbuilding & Wrecking Co., Midland, Ont.: 1 tug, 50 tons, wood.

Midland Dry Dock Co., Midland, Ont.: 3 cargo str., 6,000 tons, steel.

Polson Iron Works, Toronto: 8 cargo str., 18,800 tons, steel; 10 trawlers, 2,640 tons, steel.

Port Arthur Shipbuilding Co., Port Arthur, Ont.: 7 cargo str., 14,737 tons, steel; 6 trawlers, 1,530 tons, steel.

Thor Iron Works, Toronto: 2 cargo str., 4,874 tons, steel; 2 trawlers, 540 tons, steel.

Toronto Shipbuilding Co., Toronto: 2 cargo str., 6,000 tons, wood.

Welland Shipbuilding Co., Welland, Ont., 2 cargo str., 4,700 tons, steel.

Total, Great Lakes, 40 steamships, 64,621 gross tons.

Steamships, Pacific Coast.

British Yukon Navigation Co., Vancouver, B.C.: 1 pass. and frt. river str., 1,000 tons, wood; 1 motor boat, 100 tons, wood.

Cameron-Genoa Mills Limited, Victoria, B.C.; 2 aux. schr., 3,000 tons, wood.

J. Coughlan & Sons, Vancouver, B.C.: 3 cargo str., 17,190 tons, steel.

Pacific Construction Co., Port Coquitlam, B.C.: 2 cargo str., 5,600 tons, wood.

Wallace Shipyards, Ltd., N. Vancouver, B.C.: 4 cargo str., 17,500 tons, steel; 2 frt. and pass. str., 11,600 tons, steel; 2 aux. schr., 3,000 tons, wood.

Yarrows, Limited, Esquimalt, B.C.: 1 stern wheeler, 400 tons, wood.

Total, Pacific Coast, 18 steamships, 58,790 gross tons.

	Steamships.	Gross tons.
Atlantic coast	44	32,280
Great Lakes	45	64,621
Pacific coast	18	58,790
	107	155,691

Wooden Sailing Schooners, Atlantic Coast.

J. A. Balcom & Co., Margaretsville, N.S.; 1 scr., 409 tons.

T. K. Bentley, Advocate Harbor, N.S.: 1 scr., 449 tons.

Omer Blinn, Grosses Coques, N.S.: 1 scr., 375 tons.

G. M. Cochrane, Fox River, N.S.: 2 scr., 850 tons.

Innocent Comeau, Little Brook, N.S.; 1 scr., 250 tons.

J. W. Comeau, Comeauville, N.S.: 1 scr., 329 tons.

John Deveau, Meteghan, N.S.: 1 scr., 425 tons.

J. Ernst & Son, Mahone Bay, N.S.: 1 scr., 520 tons.

L. E. Graham, Port Greville, N.S.: 1 scr., 360 tons.

W. R. & C. A. Huntley, Parrsboro, N.S. 2 scr., 650 tons.

Leary & Sons, Bridgewater, N.S., 2 scr., 265 tons.

Lewis Hardwood Co., Lewiston, N.S., 1 scr., 670 tons.

Dr. McDonald, Meteghan, N.S., 1 scr., 544 tons.

W. C. McKay & Son, Shelburne, N.S., 3 scr., 480 tons.

W. K. McKean & Co., Liverpool, N.S., 1 scr., 400 tons.

Albert Parsons, Walton, N.S., 1 scr., 400 tons.

Quebec Shipbuilding & Repair Co., St. Laurent, Que., 2 scr., 2,600 tons.

J. N. Rafuse, Bridgewater, N.S., 3 scr., 755 tons.

J. W. Raymond, Port Maitland, N.S., 1 sch., 375 tons.

Robar Brothers, Bridgewater, N.S., 1 scr., 130 tons.

Robert Rutledge, Sheet Harbor, N.S., 1 scr., 300 tons.

Shelburne Shipbuilders, Shelburne, N.S., 1 scr., 350 tons.

Smith & Rhuland, Lunenburg, N.S., 2 scr., 225 tons.

Southern Salvage Co., Liverpool, N.S., 1 scr., 150 tons.

Wagstaff & Hatfield, Port Greville, N.S., 1 scr., 400 tons.

Total, 34 wooden schooners, 12,661 gross tons.

Naval Department Damage by Halifax Explosion.

In reference to the damage to the navy yard and the naval vessels at Halifax, N.S., by the explosion of Dec. 6, we are advised that the damage to the dockyard was quite extensive and the buildings were all more or less wrecked and some completely destroyed. The damage to the naval vessels was not serious, consisting in demolishing of upper works, perforated decks, broken glass, etc. One vessel caught fire and was slightly damaged. The department was rather lucky in being about on the edge of the heavy line of explosion. The property adjoining the dockyard was completely swept by the rush of air, and while the buildings in the yard were rather badly damaged only a couple were actually destroyed. The Naval Hospital was damaged and will not be habitable until the end of February or early in March. The Naval College is standing and the walls and roof are good. The building will not be in condition to receive the cadets for this term and temporary arrangements have been made with the Royal Military College at Kingston, Ont., for accommodation and the Naval College has been moved to Kingston for the term which began at the end of January. Five large temporary buildings are being erected in the Halifax yard to house the offices and stores during the reconstruction of the damaged buildings.

Mainly About Marine People.

Admiral C. E. Kingsmill, Director of Naval Service for Canada, has been created a knight bachelor.

J. L. Weller, M.Can.Soc.C.E., formerly Engineer in Charge, Welland Ship Canal, and Mrs. Weller, have left St. Catharines, Ont., to spend the winter in the south.

F. J. O'Connor has been appointed agent, Pacific Steamship Co., Vancouver, B.C., vice S. B. Stocking, who has been appointed chief clerk to the General Manager, Seattle, Wash.

W. E. Burke, Assistant Manager, Canada Steamship Lines, and Mrs. Burke, left Toronto early in January to spend some weeks at Miami, Fla., expecting to return about the middle of February.

A. B. Swezey, who has been Manager of the Mediterranean saloon department, Cunard Co., New York, for 25 years, is reported to have been appointed Manager of the joint office of the Cunard Co., Anchor Line and Anchor-Donaldson Line, at Vancouver, B.C., and C. A. Whitlock is reported to have been appointed Assistant Manager.

Stephen Birch, President, Kennecott Copper Corporation, and formerly Vice President, Alaska Steamship Co. and the Copper River & Northwestern Ry., is reported to have been appointed President, Alaska Steamship Co., vice S. W. Eccles, deceased, with office in New York. The actual charge of the company's operations remains under R. W. Baxter, Vice President and General Manager, Seattle, Wash.

The Detroit River Car Ferry and Tunnel Situation.

A press report stated recently that the car ferry services between Windsor, Ont., and Detroit, Mich., operated by the Grand Trunk, Pere Marquette and Wabash Railways, was to be abolished and that those lines would in future use the Michigan Central Rd. tunnel. Another report stated that the car ferry steamships now operated between Windsor and Detroit, by the Canadian Pacific, Grand Trunk, Pere Marquette and Wabash Railways were to be pooled, and that this will be an advantage to the service in general, and that it would not appear to be good policy to abandon any facilities that the railways have for communication between Canada and the United States.

The Michigan Central tunnel has capacity for far more business than it is now handling and in times of emergency has transferred cars from one country to the other for other roads. It would, however, not be practicable for the other railways mentioned to stop using their car ferries at once, as while the tunnel was designed for and is possibly capable of handling the entire traffic, it would be necessary to revamp the entire terminal situation on both sides of the river, as the existing railway lines were not originally planned to use the tunnel, but to use the car ferries, and there would have to be additional tunnel yard facilities and various connections provided before such an increase of business for the tunnel could be taken care of.

The privilege granted to U. S. fishing vessels operated by power, to enter Canadian Atlantic ports under license, for the purchase of bait, ice and other supplies and for the transshipment of catch and the shipping of crews, has been extended to U. S. vessels having no other propelling power than sails, for the current year.

Shipbuilding Activities Throughout Canada.

STEEL AND WOODEN STEAMSHIPS BUILDING FOR BRITISH GOVERNMENT.

Cameron-Genoa Mills Shipbuilders Ltd., Victoria, B.C.—One of the 4 wooden steamship hulls under construction at these yards was expected to be launched during January, after which she was to be taken to the Ogden Point assembly shed for the installation of the machinery, which is all ready waiting for it. She was to be named War Tye.

Foundation Co., Victoria, B.C. — The wooden steamship War Songhees was launched at the company's yards Dec. 27. As she was being launched she struck a boom and it was feared that some damage was done to the hull, or to the rudder post or propeller shaft.

Grant & Horne, St. John, N.B.—The first of the wooden steamships being built by this firm for the Imperial Munitions Board is approaching completion. The framing was complete early in January, and preparations were well advanced for the installation of the machinery. The timber, etc., was also received for the second vessel, which will be proceeded with at once.

William Lyall Shipbuilding Co., Vancouver, B.C.—The first of the six wooden steamship hulls being built for the Imperial Munitions Board was expected to be launched during January. She was ready for launching in December, but was held pending the arrival of the tail shaft. The second vessel, early in January, had all her planking up, the main deck on and the upper deck nearly completed; the third hull had the garboard on, about three quarters of the planking done and was ready to receive the decking; the fourth was closed in fore and aft and work was proceeding on the ceiling; the fifth had the framing finished and the keelson bolted, while on the sixth, over half of the square framing was completed.

Ogden Point Assembly Plant. — The contractors, Grant Smith & MacDonnell, are reported to have stated, recently, that they expected to have the assembly plant at Ogden Point, Victoria, B.C., completed and ready for full operation by Feb. 1. The work was retarded to some extent by weather conditions, but it was speeded up considerably in the early days of the new year. A quantity of machinery is on hand for equipping the wooden hulls, and large quantities are constantly arriving from eastern points. A large portion of the necessary steam winches, steam steering gear, etc., is being made in British Columbia.

Pacific Construction Co., Ltd., Coquitlam, B.C.—It is reported that extensive contracts for the construction of vessels have been awarded to this company, which has two wooden steamship hulls under way for the Imperial Munitions Board. Surveys are reported to have been made for additional shipbuilding facilities alongside the present berths.

Wallace Shipyards, Ltd., North Vancouver, B.C.—It is reported that negotiations are in progress for the construction of two steel steamships of the "War" type, and the management has announced that if the order is received, another berth will be laid down immediately on the west side of the existing one, where a steel steamship of this type is under construction.

Western Canada Shipyards, Ltd., Van-

couver, B.C.—The first of the wooden steamship hulls under construction for the Imperial Munitions Board was launched Jan. 14 and named War Nootka, by Mrs. A. R. Mann, wife of the company's President. The company has orders for six of these hulls, and work on the remainder is proceeding rapidly.

GENERAL SHIPBUILDING NOTES.

Canadian Car & Foundry Co.—A Fort William, Ont., press dispatch of Jan. 29, says this company has received a contract for building steel steamships for the United States, to the value of \$10,500,000.

G. M. Cochrane, Fox River, N.S.—A tern schooner of 460 tons register, was launched at this yard recently, and named Alfred Hedley. She is owned by Adam B. Mackay, of the Mackay Steamship Co., Hamilton, Ont. Her dimensions are, length 152.6 ft., breadth 36 ft., depth 12.6 ft.

J. Coughlan & Sons, Ltd.—One of the 3 steel cargo steamships of 17,190 gross tons, on order with this company at Vancouver, was launched Jan. 20, and named Alaska. She is being built for Norwegian interests.

Fraser Valley Shipbuilding Co., Vancouver, B.C.—A company, with this name, is being organized by a number of local men, to undertake the construction of all classes of vessels, wood, steel and concrete. A site for a plant is said to have been chosen in a central location on the Fraser River, within the city boundaries.

The s.s. **Keith Cann**, built recently for Hugh Cann and Sons, Ltd., Yarmouth, N.S., for service between Yarmouth and St. John, was given a trial run on Jan. 10. The trip was carried out successfully, an average speed of 11½ knots being maintained.

Marine Construction Co., Canada, Ltd., St. John, N.B., has a schooner of about 900 tons under construction, and is making arrangements for the building of other similar vessels.

Joseph McGill, Shelburne, N.S. — A tern schooner, 246 tons register was launched from this yard recently, and named Sparkling Gance, for Harvey & Co., St. John's, Nfld. A similar vessel is now under construction for the same firm.

Newfoundland Shipbuilding Co., Harbor Grace, Nfld.—This plant is reported to be ready for the construction of auxiliary powered vessels of about 1,200 tons dead-weight capacity. It is said to be the intention at a later date, to enlarge the plant to cover the construction of steel steamships. It is said that the company has orders on hand for the construction of 13 auxiliary powered vessels, of the sametype as those built recently on the Pacific coast for Canada West Coast Navigation Co., Each vessel will be equipped with 2 hot bulb engines of 120 b.h.p. driving twin screws. The interests concerned with this company are identical with those controlling the Thor Iron Works, Toronto, and also the projected Dominion Shipbuilding Co., which is laying out a large shipbuilding plant at Toronto.

St. Lawrence Shipbuilding & Steel Co. Ltd. has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Sorel, Que., to take over as a going concern the business carried on there by Beauchemin Fils Co., Ltd., with all its assets and liabilities, and to build, operate and deal in

vessels of all kinds, engines, boilers, etc., and to carry on a general brass, iron and steel foundry business.

St. Martins Shipbuilding Co., St. Martins, N.B.—A 450 ton schooner is under construction at these yards, and it is expected to have it ready for launching in the spring. Arrangements are going forward for the building of other schooners.

The Tidewater Shipbuilding Co., Ltd., is operating a shipyard at Three Rivers, Que., with James M. Smith as General Manager. Canada Steamship Lines Ltd. is interested in the company.

C. T. White & Son, Alma, N.B.—Two schooners of about 500 tons each are on the ways, with the expectation of launching in the spring.

Yarmouth Shipbuilding Co., Yarmouth, N.S.—The schooner which was mentioned in our last issue as being under construction by this company, was launched toward the end of December and named Eleanor S. She is to be equipped with twin engines of 25 h.p. each. She is owned by the Yarmouth Fish Co.

Newfoundland Shipping and Insurance in 1917.

The Newfoundland Marine Insurance Co.'s report for 1917, refers to Newfoundland shipping as follows: "The many losses in our foreign going fleet during last winter were probably the worst experienced in this trade in any one season, but it had no discouraging effect upon Newfoundland merchants and exporters, as is evidenced by the large fleet of new vessels now owned in this country and engaged in our foreign carrying trade. The unusually large number of vessels which have been built in this country during the past year, of larger tonnage than formerly, bears a striking testimony to the enterprise of those interested in our export trade.

"During 1917 we accepted marine risks of \$6,262,648.20 and war risks of \$1,346,183.47, a total of \$7,608,831, with gross premiums of \$108,231.81. We had losses upon the marine risks of \$16,377.00 and upon our war risks commitments of \$25,817.00.

"Lloyd's underwriters have notified the trade here that there will be a substantial advance in their rates on Newfoundland risks by domestic sailing craft, as well as on all our foreign going sailing vessels. This is a matter that should receive earliest consideration. Lloyd's rates are now getting extreme on our local craft and the high values of our produce greatly increases the aggregate amount of premiums. It is important, therefore, that as much as possible of this money should be kept in the country. These frequent advances in rates show the need of local underwriters and we must do everything in reason to protect the local business."

Maritime Wrecking & Salvage Co. Ltd. has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Montreal, to carry on the business of salvors and wreckers of ships and craft of any kind, to build, repair and operate steam and other vessels, dry docks, marine railways, etc.

Colonial Shipping Co. Ltd. has been incorporated under the British Columbia Companies Act, with \$40,000 authorized capital and office at Vancouver, to own and operate steam and other vessels and carry on a general transportation business.

Shipbuilding in British Columbia.

By Bradford W. Heyer, Vancouver, B.C.

Quite the most important development in British Columbia during 1917 was the development with regard to shipbuilding. While the shipbuilding industry advanced most during the past year, it had its beginning back in 1915, when the B.C. Government passed a shipbuilding act giving aid to those wishing to build ships, by a guarantee of security, and also by guaranteeing a fixed fair return on the investment for a period of years after the war. Twelve auxiliary powered schooners were built, 6 by the Wallace Shipyards of North Vancouver and 6 by the Cameron-Genoa-Mills Shipbuilders, Ltd., of Victoria. These ships were built for the Canada West Coast Navigation Co. which availed itself only of the guarantee of profit from operation, and did not apply for aid in the construction of the ships. These vessels are sailing ships, with auxiliary Bolinder equipment, and were intended to be used more especially for the deep sea shipment of B.C. lumber. The last of these vessels took the water in the spring but, because of the huge demand for bottoms, they have seldom returned to B.C. ports for reloading.

The Wallace Shipyards took the first contract for a steel vessel since the beginning of the war, the War Dog, for Japanese interests. This vessel, of 4,900 tons dead weight capacity, was floated during the summer, and has since departed with cargo for Britain and has been transferred to British ownership. The company has another under construction and has a contract for a third of similar design for British owners.

During the summer of 1916 Norwegian interests were on the coast seeking to place orders for steel ships wherever responsible people would accept them. J. Coughlan & Sons, structural steel fabricators, of Vancouver, signed a contract for four steel ships of 1,800 tons dead weight capacity. These vessels were to cost on an average \$1,250,000 per vessel. During the fall of 1916, the Imperial Munitions Board placed with J. Coughlan & Sons orders for two more ships of similar design, and took over three of the Norwegian vessels, leaving only one to be delivered to the Norwegian interests. It is expected, however, that before the Norwegian vessel takes the water, which will be some time in January, 1918, that arrangements will be made for either her transfer or charter to British owners or the Admiralty.

During Dec., 1917, contracts were signed with the Imperial Munitions Board for four more vessels to be built by J. Coughlan & Sons, who have now approximately \$13,000,000 of tonnage in process of construction.

In the spring of 1917 the Imperial Munitions Board awarded 27 contracts for wooden steamships of 2,800 tons dead weight capacity, amounting approximately to \$13,500,000. These contracts were awarded as follows: Foundation Co., Victoria, 5; Cameron-Genoa-Mills Shipbuilders, Victoria, 4; Wm. Lyall Shipbuilding Co., N. Vancouver, 6; Western Canada Shipyards Ltd., Vancouver, 6; New Westminster Construction & Engineering Co., New Westminster, 4; and Pacific Engineering and Construction Co., Coquitlam, 2. These vessels are all of standard design, 250 ft. long, 44½ ft. beam, and 25 ft. deep. They are built on the cost plus a fixed profit basis. Most of the equipment, including engines and boilers, are

being built in British Columbia. About four of these ships are ready to take the water, and it is expected that all will be in the water by May of this year. While nothing is known of future orders to be placed for this class of ship, it is confidently believed that all the yards that have shown themselves competent to build this class of vessel will be kept building to capacity.

The building of steel ships in competition with the Atlantic seaboard does not seem to promise permanence. Because of war conditions it is likely that the steel shipbuilding industry of British Columbia will be worked to the limit, but without the establishment of a steel industry in this province the outlook is not bright. The establishment, therefore, of a steel industry along this coast is one of supreme importance to the industrial development of British Columbia, and is a question that should be taken up in a national way.—Toronto Globe.

Wreck Commissioners' Investigations and Judgments.

Princess Mary-Henriette Collision. — The investigation held by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. S. W. Bucknam and D. S. Jones-Evans, as nautical assessors, into the collision in Vancouver harbor, Sept. 25, 1917, between the C.P.R. s.s. Princess Mary and the Coastwise Steamship & Barge Co.'s s.s. Henriette, was concluded at Vancouver, Dec. 6, and judgment rendered, Dec. 14, as follows:—The court, after carefully studying the evidence adduced, which was of such a conflicting nature that the court's opinion of the memory and veracity of some of the witnesses was not very favorable, can come to no other conclusion than that the blame for the collision must be imputed to the actions of both the masters of the vessels concerned. While no direct violation of the International Rules of the Road is concerned, there can be no doubt that both masters showed a want of discretion, a lack of patience and poor judgment, and both took unnecessary risks, with the result of a collision, slight fortunately, in broad daylight, fine weather and in the open waters of the harbor. The court, however, is of opinion that reprimand and a warning to both masters to be more careful in future under similar circumstances, will meet the requirements of the case, and therefore returns to Capt. Charles Campbell, master of the s.s. Princess Mary, and Capt. Otto Bucholz, master of the s.s. Henriette, their respective certificates of competency, with the remark that it trusts that its leniency will be appreciated, as it certainly will not be repeated should a casualty occur in the future under similar conditions.

Forwarders Ltd., the incorporation of which was announced in a recent issue, has been formed to take over the assets of Forwarders Ltd., which formerly owned and operated the steamships Port Colborne, Port Dalhousie and W. H. Dwyer in upper lakes service. These vessels were chartered for ocean and European service on the outbreak of war, and have since been torpedoed and lost. Hall and Holcomb, Ottawa, are chiefly interested.

Shipbuilding and Repairing at Esquimalt.

Yarrows Limited are building at Esquimalt, B.C., three stern wheel steamships for shipment to India. Two of them will be 132 ft. long and 32 ft. beam, exactly similar to two shipped to the same destination previously and one will be 165 ft. long and 35 ft. beam.

During the past year Yarrows Limited executed a large amount of important naval repair work for the Imperial, Canadian and Japanese governments, and at present the yard has a considerable amount of naval repair work in hand for the British Admiralty. In addition to this, the company executed a considerable quantity of other important repair work during the year, among which may be mentioned the following: Grand Trunk Pacific Coast Steamship Co.'s steamship that had been ashore, was repaired at Esquimalt, the work necessitating the renewal of practically the whole of the ship's bottom for a length of 180 ft.. The s.s. Niels Nielsen, a 8,800 ton cargo vessel, was repaired after sustaining heavy damage due to stranding. A new, fully laden cargo vessel of 8,800 tons, which was brought back from sea in a disabled condition, was fitted with a new 18 ft. diameter manganese bronze bladed propeller. This propeller was cast, fitted, and the ship made ready for sea again within a week, without docking or disturbing her cargo, the work being carried out by building a wooden cofferdam round the vessel's stern. The s.s. Gray, which was very badly damaged and had her back broken and buckled, was repaired, the work necessitating the removal of about 37 plates, the relining up and straightening of the ship, and the removal of the stern frame. At the present time, the G.T.P. Coast Steamship Co.'s s.s. Prince John is on the ways for general overhaul and for repairs to damage done by stranding. In addition to the above, a large number of vessels were drydocked for repairs and general overhaul.

A specialty has been made of the conversion of steamships from coal to oil burning, one of the most recent jobs being the cable ship Restorer, which was fitted out to carry 100,000 barrels of fuel oil. Several of the C.P.R. coast steamships and of the G.T.P. Coast Steamship Co.'s steamships and various local dredgers, have been converted from coal to oil burning. A large number of cast iron and manganese propeller blades, some weighing as much as 8 tons, have been made, also a number of large marine engine and other castings, bed plates, h.p. l.p. and i.p. cylinders being made for engines 24 x 38 x 62 x 42 in. stroke, also some large nitric acid retorts, weighing as much as 8 tons each. The plant is equipped with an oxy-acetylene welding and cutting outfit, and handles a large amount of special coppersmithing and pipe work, also galvanizing.

The yard is situated at Esquimalt Harbor, a suburb of Victoria, and covers an area of about 8 acres. The wharf is over 500 ft. long, and can accommodate, on both sides, vessels sent in for overhaul and repairs. The marine railway can accommodate vessels up to 300 ft. and 2,500 tons dead weight. Vessels of larger size up to 480 ft. are handled in the drydock. The plant is equipped with 60 ton shears and a 10 ton floating compressed air plant, which can be used on repairs to vessels lying off the yard. The company employs on an average about three hundred and fifty men.

Atlantic and Pacific Ocean Marine.

The Dutch s.s. *Nieuw Amsterdam* arrived at Rotterdam at the end of December with a cargo of grain for Belgian relief. She was in Halifax harbor at the time of the disastrous explosion on Dec. 6, and bore considerable traces of the damage she incurred.

The U. S. steamship *Alfred Mitchell*, one of the lake steamships transferred for Atlantic service, was libelled by her crew at Charlottetown, P.E.I., recently for \$4,200 representing wages due. She was on the way to a U. S. port when stress of weather drove her to Georgetown, P. E. I.

The auxiliary power schooner *Beatrice Castle*, which as previously announced, was sold by Canada West Coast Navigation Co., or one of its subsidiary companies, to W. B. Castle, President of the Zena Iron Works, Duluth, Minn., is now reported to have been sold to the French Government. She was built by Cameron-Genoa Mills Shipbuilders, Ltd., and was launched at Victoria, B.C., Nov. 23.

W. Smith, second officer on one of Canadian Pacific Ocean Services' Atlantic steamships, was sentenced at Liverpool, Eng., recently, to imprisonment for one month on each of two charges of stealing pickles, tea and bacon, the property of the company, from the Canada Dock, the sentences to run concurrently, and a Liverpool constable was fined £5 for receiving the goods knowing them to have been stolen.

The s.s. *George N. Orr* was driven ashore on the north side of Prince Edward Island, Jan. 10, while en route from Montreal to New York with a cargo of hay. She is stated to be owned by the United States Shipping Co., but is owned by the Canada Atlantic Transit Co., Montreal, and is reported immv ET ET Montreal, and is registered in the U. S., and probably has been requisitioned by the U. S. Government.

The s.s. *Angouleme* was reported recently to have been wrecked on Main a Dieu Island, off the Nova Scotia coast, and it was feared that she would be a total loss. We were advised Jan. 17 that she had been released, the damage not being so great as was anticipated. She was built by the Thor Iron Works, Ltd., Toronto, and was launched Aug. 1, 1917, and christened Orleans. She was built to the order of James Playfair, President and General Manager, Great Lakes Transportation Co., Midland, Ont., and while she was on the stocks was sold to the Oriental Navigation Co., of New York and Nantes, France.

The schooner *Malahat*, which was built by Cameron-Genoa Mills Shipbuilders, Ltd., at Victoria, B.C., last year, for the *Malahat Motor-Ship Co., Ltd.*, a subsidiary of Canada West Coast Navigation Co., composed of interests concerned with Canada Steamship Lines, Ltd., is reported to have been sold to Canada Steamship Lines, Ltd. The vessel, which was to have been equipped with auxiliary power of the Bolinder type, sailed from Port Alberni, B.C., Oct. 13, 1917, for Sydney, Australia, on her maiden trip, without the auxiliary machinery, owing to the difficulty in obtaining delivery in time. She took 65 days on the trip. She is returning to Vancouver, where the machinery is to be installed, after which, it is stated, that she will enter the West Indies trade.

The auxiliary schooner *Bowler* is expected to sail from Vancouver shortly, for Australia with a cargo, where she

will be taken in charge by a French crew and taken to France, having, it is reported, been sold to the French Government. The *Bowler* was originally the s.s. *Zafira*, and was built at Aberdeen, Scotland. For several years she was operated in the coal trade between Hong Kong and Manila, and was purchased by the U. S. for service during the Spanish-American war. She was subsequently bought by a Vancouver shipbuilder and has been lying in Burrard Inlet for about a year. All the machinery, etc., was removed and she was stripped to the steel frame, after which she was sheathed with 3 in. planking and equipped with a Diesel engine of 350 h.p., 4 steam winches, steam windlass and other fittings. Her dimensions are, length 237 ft., breadth 32 ft., depth 17 ft. The rebuilding was carried out under Bureau Veritas regulations, and was supervised by Capt. S. F. Mackenzie, a well known Pacific coast mariner.

Maritime Provinces and Newfoundland.

A channel 70 ft. wide, to a depth of 9 ft. has been dredged in the Boughton River, P.E.I., to Bridgetown, the head of navigation, where a wharf has been built on the north side of the river.

The Halifax Graving Dock Co., which suffered heavy loss through the disastrous explosion at Halifax, Dec. 6, is erecting temporary buildings to replace those wrecked, and hopes to be able to handle vessels there early in February.

The Public Works Department has completed the construction of a wharf in Cummings Cove, west of Deer Island, N.B. It extends out 385 ft. from high water mark, and is 20 ft. wide, with a block 50 ft. square at the outer end.

The s.s. *Beverley*, which went ashore at St. Marys, Nfld., recently, and which was released subsequently with comparatively slight damage, is reported to have been sold to W. A. Munn, St. John's, Nfld., for \$125,000, and to have been chartered for a Mediterranean trip with fish.

The sealing steamship *Seal*, owned by Farquhar & Co., Halifax, N.S., is reported to have been sold to Baine, Johnstone & Co., St. John's, Nfld. She was built at Glasgow, Scotland, in 1911, and is screw driven by engine of 85 n.h.p. Her dimensions are, length 175 ft., breadth 22½ ft., depth 12¼ ft.; tonnage, 608 gross, 277 register.

The s.s. Governor Dingley, operated until recently by the Eastern Steamship Corporation between Boston, Mass., and Yarmouth, N.S., has been requisitioned by the U. S. Government, and is being used as a training ship for merchant service crews. The same company's s.s. Calvin Austin is also being used for a similar purpose, and both are stationed at East Boston.

The Wedgeport Transportation Co., Ltd., has been removed from the Nova Scotia Companies Register for noncompliance with the requirements of the law. H. T. LeBlanc, Wedgeport; C. W. Collins, Granville Ferry; J. S. McCulloch, Annapolis Royal; H. J. Collins, Annapolis Royal; B. S. Collins, Granville Ferry, and F. C. Whitman, Annapolis Royal, N.S., were chiefly interested in the company.

The Public Works Department has completed the following dredging work in North Rustico harbor, P.E.I.:—Gauthier creek, up to a small basin near the fishing stages southward of the village, for 2,350 ft. by 60 ft. wide and 8 ft. deep, and the outer end of the fishing stages

for 500 ft. by not less than 4½ ft. off any stage, and has also enlarged the turning basin and dredged it to an average depth of 7 ft.

The Halifax pilotage bylaws have been amended by the substitution of a new by-law in place of bylaw 21. It provides for the appointment of one or more apprentices to each pilot boat, when the commissioners deem it necessary, each apprentice to serve five years, be of good moral character, and have the rudiments of an ordinary English education. At the expiration of their apprenticeship, they shall be eligible to be licensed as pilots, provided they have served at least six months as seamen on board a steam or sailing vessel, and have been found by the commissioners, after examination, to possess the qualifications required of pilots, by law.

Province of Quebec Marine.

Traffic through the Lachine Canal was considerably heavier during 1917 than in 1916. In 1917 there were 7,936 vessel passages, by 607 vessels aggregating 294,773 tons. The cargo tonnage was 3,335,943, and the number of passengers 69,910. The heaviest traffic was down bound.

On the reopening of navigation, a channel about 1¼ miles long, northwest of Longue Pointe shoal, in Montreal harbor, from Longue Pointe to Racine wharf, carrying at least a depth of 27 ft., will be marked by 6 spar buoys, placed at intervals from the northeast corner of Vulcan wharf to the southeast corner of Racine wharf.

The Dominion Government dry dock at Lauzon is reported to be practically complete, but it is said that the opening will not take place until September. The crib work at the entrance is yet to be done, and a portion of the work at the opposite end. The power house and pumping machinery are complete, and will be tested shortly. Several men are at present engaged there, mostly in the machine shop, but general work will not be resumed until the reopening of navigation.

Ontario and the Great Lakes.

The Midland Shipbuilding Co., Midland, Ont., has increased the number of its directors from five to seven. D. L. White is President, and T. C. Luke, Secretary.

The Toronto, Hamilton & Buffalo Navigation Co.'s car ferry steamship *Maitland No. 1*, discontinued its service between Port Maitland, Ont., and Ashtabula, Ohio, Jan. 4, for the remainder of the winter, owing to ice conditions.

The Toronto, Hamilton & Buffalo Navigation Co. announces that it has temporarily withdrawn the car ferry between Port Maitland, Ont., and Ashtabula, Ohio. Traffic, which would otherwise move via these points, is now being routed via Niagara and Detroit frontiers.

The Toronto Ferry Co.'s dock at the foot of Bay St., Toronto, was practically destroyed by fire, Jan. 6, the damage being estimated at \$55,000. The fire was confined to the company's property, though Canada Steamship Lines' s.s. *Chippewa*, which was berthed close by, was somewhat damaged by fire and water.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for December, as follows:—Superior, 602.16; Michigan and Huron, 580.80; St. Clair, 575.53; Erie, 572.67; Ontario, 246.45. Compared with

the average December levels for the past ten years, Superior was 0.13 ft. below; Michigan and Huron 0.80 ft. above; Erie and Ontario 1.09 ft. above.

Press reports emanating chiefly from Detroit, Mich., recently, stated that the abandonment of the car ferries between Windsor and Detroit, was likely to be a local result of the operation of the U.S. railways by the Government. It was also stated that the G.T.R. has been anxious to use the M.C.R. Detroit tunnel, and thus do away with its car ferry service across the river. We were officially advised, Jan. 12, that the G.T.R. does not at present contemplate the abandonment of its car ferry service between Windsor and Detroit.

The s.s. Forest City, owned by the Sil-Islet Navigation Co., Fort William, is reported to have been sold to W. McCullough, Manager, Fort William Grain Co., for \$27,000. She was built at Wilmington, Del., in 1891, and was formerly known as King Edward. The hull is of steel divided by five water tight bulkheads, and is of the following dimensions, length 175 ft., breadth 31 ft., depth 9½ ft.; tonnage, 571 gross, 449 register, and is equipped with beam condensing engine with cylinder 38 in. diam. by 108 ins. stroke, 400 i.h.p. at 25 r.p.m., and supplied with steam by two Scotch boilers 11 by 9 ft. at 25 lbs. working pressure.

British Columbia and Pacific Coast.

The Union Steamship Co. of British Columbia is increasing accommodation for passengers and freight on its wharf at Vancouver.

The s.s. Imperoyal, owned by Imperial Oil, Ltd., Toronto, was docked at Wallace Shipyards, North Vancouver, Jan. 14, for repairs to her propeller.

The Dominion Public Works Department will receive tenders, Feb. 4, for the construction of a wooden freight shed and the fireproofing of grain conveyor supports, on the west side of the government wharf, Vancouver.

The Tacoma, Wash., Chamber of Commerce, is reported to be negotiating with J. W. Troup, Manager, British Columbia Coast Service, C.P.R., for the service of one of its Princess steamships between Tacoma and British Columbia ports.

The Seattle Drydock and Construction Co. has secured judgment for \$87,000, against Grant Smith and MacDonnell, in connection with the capsizing of a floating dock rented from the dock company, for use on the Victoria Harbor improvement contracts.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John completed repairs at Yarrows Ltd., yards, Esquimalt, early in January, and sailed from Nanaimo with coal for northern ports, Jan. 8. After completing the trip she was placed on the run to Queen Charlotte Islands and Alaska alternately.

Salvage operations are reported to be proceeding on the remains of an old bark which foundered off San Juan Island in 1874, while en route from Nanaimo, B.C., to San Francisco. It is stated that all the upper works of the vessel have disappeared, and also the iron work, but that the copper sheathing and cargo of coal are intact.

The Grand Trunk Pacific Coast Steamship Co.'s auxiliary schooner Tillamook was docked at Seattle, Wash., early in January, for a general overhaul. She is

to be fitted with a new pilot house, and equipped with a steam heating plant and two electric winches, of 5 tons capacity each. During 1917 she was operated between Prince Rupert and the Alaska canneries.

The Grand Trunk Pacific Coast Steamship Co. is reported to be negotiating for the purchase of the s.s. F. A. Kilburn, from the Independent Steamship Co., San Francisco, Cal. The vessel has been operated for some time in the general freight and passenger trade between Columbia River and San Francisco, and if the sale is consummated, it is said to be the intention to transfer her to the Alaska cannery trade.

The s.s. Spokane, which went on the rocks at Idol Point recently, was released under the direction of Capt. W. H. Logan, Victoria, B.C., representing the Salvage Association, London, Eng. Her stem was bent and broken and on the starboard side there was a large opening 21 ft. long. This was patched with cement, about 100 tons being required, and pumping machinery was put in, with a capacity of 2,250 tons of water an hour. She was taken to Seattle, Wash., and arrived in port drawing 7 ft. forward and 19 ft. aft.

The liquidator of the All Red Line Ltd., is suing Capt. C. O. Polkinghorne for \$11,677, and also for a declaration that a resolution of the company is invalid, which authorized the writing off of a number of accounts due to the company, and the release of certain parties from any claim for liability, except in so far as one claim for \$2,095 against Capt. Polkinghorne is concerned. The company owned the steamships Santa Maria and Selma, which were purchased recently by the Union Steamship Co. of British Columbia.

The steam tug Lorne, which the Grand Trunk Pacific Coast Steamship Co. purchased recently from A. McDermott, Victoria, was expected to be ready for service during January. She was formerly owned by the Puget Sound Tug Boat Co., and was wrecked in Sept. 1914, when on the way from Seattle, Wash. to Vancouver, after which she was laid up in Eagle Harbor. The hull has been practically rebuilt in the G.T.P. dry dock at Prince Rupert, and the machinery has been overhauled, and a new tail shaft, supplied by Yarrows, Ltd., has been put in.

Marine Engineers' Wages.—At a recent meeting of the Great Lakes executive of the National Association of Marine Engineers at Toronto, the question of wages was discussed. The present rates are, chief engineers, \$1,200 to \$1,800; second engineers \$960 to \$1,500. It is reported that the rate asked for the forthcoming season will be, chief engineers \$1,440 to \$2,100; second engineers \$1,152 to \$1,800.

Co-operative Shipping Co. Ltd. has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Montreal, to build, own and operate steam and other vessels for the transportation of mails, passengers and merchandise, and to conduct a general transportation business by land and water.

Pilotage Investigation.—An Ottawa dispatch of Jan. 25 states that the Minister of Marine will appoint a commission shortly to investigate the pilotage systems at the various ports in the Dominion. It is also stated that in view of the recent disaster at Halifax, N.S., the system in operation there will be the first one to come under enquiry.

Pacific Coast Steamship Rates.

The Pacific Steamship Co. put into effect Jan. 20 a new schedule of fares from Victoria, B.C., to San Francisco, Wilmington and San Diego, Calif. The increases are as follows:

Victoria to San Francisco—Upper deck from \$19 to 23; lower deck, from \$17.50 to \$19. The steerage rate remains unchanged at \$12.

Victoria to Wilmington—Upper deck, from \$26 to \$33.50; lower deck, from \$25 to \$27; steerage, from \$15 to \$18.

Victoria to San Diego—Upper deck, from \$32.50 to \$36.50; lower deck, from \$28 to \$30; steerage, from \$15.75 to \$20.

Panama Canal Traffic.—For the year ended June 30, 1917, 1,876 vessels of all classes passed through the Panama Canal, against 787 in 1915-16 and 1,088 in 1914-15. In the year 1916-17, 905 vessels passed from the Atlantic to the Pacific and 971 from the Pacific to the Atlantic. The total tonnage for 1916-17 was 7,229,255, and the tolls were \$5,631,781.66.

"War" series vessels which are under construction at various U. S. Pacific ports, presumably for British interests, are being requisitioned by the U. S. Government, and those which have been named are having their names changed, the War Flame, War General and War Leopard have been renamed New Haven, Westfield and Westport, respectively, and those not yet christened are to be given names associated with the U. S.

Canadian Co-operative Marine Corporation Ltd. has been incorporated under the Dominion Companies Act, with \$1,000,000 authorized capital and office at Montreal, to carry on a general commercial and transportation business as owners or agents for others, and to build, own and operate steam and other vessels, and also to engage in general co-operative marine insurance business and for other purposes.

Wolvins Limited has been incorporated under the Dominion Companies Act, with \$2,000,000 authorized capital and office at Montreal, to import, export, manufacture, transport and deal in merchandise, to build public and private works, and in connection therewith to own and operate steam and other vessels and other transportation facilities. F. S. Isard, Comptroller, Canada Steamship Lines, Ltd., Montreal, is one of the incorporators.

The Winnipeg Citizens' Research League has issued a bulletin "Jitney or street car," giving the findings of Adam Shortt into the recent investigation into transportation matters at the Pacific Coast.

The C.P.R. s.s. Princess Victoria was towed to Yarrows yard, Esquimalt, Jan. 8, for hull cleaning and painting.

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BOILER — Locomotive type, 130 pounds steam pressure.

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Harbor Improvements at Victoria B. C.

The annual report of the Inner Harbor Association of Victoria, issued recently, shows that there is an increased width of about 60 ft. available on the west side of the harbor, immediately south of the Esquimalt and Nanaimo Ry. bridge, by the removal of rock from Discovery Rock, while Hospital Rock, east of Songhees Point, was also cut back about 80 ft., giving additional width where the C.P.R. ferry boats leave the harbor. The area in James Bay, north of the C.P.R. wharf, has been deepened from 14 to 20 ft. below low water mark, giving a safe mooring for the larger boats at all stages of the tide. The north side of the main channel between Songhees Point and the entrance to West Bay has been improved, the removal of rock from the south of Pelly Island giving 100 ft. additional width, and between Pelly Island and the entrance to West Bay, an additional 150 ft. An additional 100 ft. of width has also been made at Shoal Point. During 1917, about 252,000 cub. yds. of rock, hard pan, etc., were removed, some 16,000 cub. yds. being blasted by the drilling plants and the rock breaker. In the upper harbor considerable improvements were carried out in the area fronting Cameron-Genoa-Mills Shipbuilders' launching ways and the Foundation Co., where a depth of 20 ft. below low water has been cleared. The removal of rocks in the centre of the upper harbor has been undertaken, and when this work has been completed, a depth of 20 ft. below low water will be cleared, the same as in the mooring basin at the Marine Department's wharf north of the railway bridge, and near Point Ellice bridge.

Chartered Vessels and War Region Risks.

The Dominion Coal Co.'s appeal against a judgment of the Court of Appeal, came before Judicial Committee of the Privy Council recently. The Dominion Coal Co. chartered the s.s. Maskinonge from E. F. & W. Roberts, as owners of the vessel then under construction, for seven consecutive seasons from the spring of 1912. The rate was fixed at 4 shillings a ton and the owners were to insure the vessel. After war broke out the s.s. Maskinonge became the property of the Maskinonge Steamship Co. of Liverpool, Eng., and a new agreement was entered into, whereby the vessel was chartered for six consecutive years at 6s. 6d. a ton, and a clause was inserted providing that if the vessel was ordered by the charterer to trade in the war region, the war risk insurance premium payable by the owner, was to be refunded by the charterer. This charter came into operation in Nov. 1915, and the vessel was employed on the St. Lawrence until the navigation season closed, when she was placed in operation between Sydney and Halifax, N.S., and Boston, Mass. On Oct. 8, a German submarine appeared off Nantucket and sank five vessels. On enquiry by the owner, the charterer stated that it was the intention to continue the vessel on the same route, whereupon the owner claimed that it had been ordered to trade in the war region, and that the war risk premium payable by the owner should be refunded by the charterer.

A claim was entered in an English court, and judgment was given in favor of the charterer, it being held that the

actions of the submarine did not make the waters between Cape Breton and Boston a war region, and that the charter did not order the vessel to trade in the war region. The owner appealed the case to the Court of Appeal, when the decision was reversed and judgment entered for £1,765 and costs against the charterer. The judgment stated that when, as in this case, there had actually been warlike operations by the appearance of a German submarine and the sinking of vessels in the area in which this vessel was trading or ordered to trade in future, and that there was reasonable apprehension that these operations would recur, and no reasonable grounds for coming to the conclusion that this was a mere sporadic attack, then that constituted this area a war region within the meaning of the contract. The Dominion Coal Co. has now appealed the case to the final court, contending that it had not ordered the vessel to trade in the war region, and that the sporadic appearance of a single German submarine for one day at a place off New York, about 100 miles from the vessel's actual trading limits, did not constitute the waters in which she was trading, between Cape Breton and Boston, a war region. Judgment had not been received at the time of writing.

United States Lake Port Development and the Welland Ship Canal.

In a report to the U. S. War Department recently, on the possible effect of the construction of the Welland Ship Canal, by Canada, the Chief Engineer made the following statement: It is evident that the improvement of the Welland Canal alone will have but little influence on existing lake commerce between U. S. ports, other than to permit the vessels now engaged in that commerce to gain access to the New York State barge canal at Oswego. The deepening of the harbors of the Great Lakes and the connecting waters to 25 ft. would permit vessels to load to greater draft than at present, and this advantage could be given without any deepening of the Welland Canal, except as that canal affects access to the port of Oswego. The additional improvement of the harbors and connecting waters necessary to permit them to accommodate all vessels able to pass through the Welland Canal, when enlarged by Canada, consist in the deepening of such harbors and connecting waters to about 25 ft., which would involve an expenditure now deemed incommensurate with the benefits to be derived therefrom. The character of the vessels which may be expected to use the canal when so enlarged are those of the type now constituting the lake fleet."

Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened offices at Beamsville Camp, Ont., and Debden and Madison, Sask., and has closed its offices at Dropmore, Man.

The Marconi Wireless Telegraph Co. of America had a net income for 1917 of \$609,430, against \$259,888 for 1916. Gross earnings were \$1,328,525 and \$862,501 for the same years respectively.

The following assessments on "wire" companies have been made in Toronto for this year: Great North Western Telegraph Co., \$187,319; C. P. R. Telegraphs,

\$173,178; Dominion Telegraph Co., \$1,420 \$173,178; Dominion Telegraph Co., \$1,420; Bell Telephone Co., \$2,962,614.

The Montreal Telegraph Co.'s annual meeting was held at Montreal, Jan. 11. The balance sheet for 1917 shows assets of \$2,151,823, of which the principal item is telegraph lines in Canada and the U. S., valued at \$1,625,890. Cables are valued at \$33,487, offices and equipment \$212,500, and real estate \$279,946. Cash accounts receivable and other securities total \$161,862. The company's lines are operated under lease by the Great North Western Telegraph Co., and the payment of dividends is guaranteed by the Western Union Telegraph Co.

The C. P. R. Telegraphs reports that nearly all its wires in Halifax, N.S., were interrupted as a result of the explosion of a munitions ship in the harbor, Dec. 6, one circuit remaining in service long enough to report the disaster. Communication was established later in the day and then continued without interruption. Some delay was caused in restoring full communication, owing to the severe storms subsequent to the explosion, and there was a delay in handling the traffic, owing to the reduced facilities and to the large number of messages. Additional staffs of operators were dispatched from eastern centres.

Among the Express Companies.

The Board of Railway Commissioners has approved the Northern Ex. Co.'s standard mileagetariff of maximum tolls C.R.C. 40.

George A. Newman, Treasurer, Dominion Ex. Co., Toronto, died there, Jan. 19, aged 66. He was one of the original officials of the company.

A. J. Seaton, heretofore Assistant Superintendent, Eastern Division, Canadian Ex. Co., has been appointed Superintendent, Eastern Division, and his former position has been abolished. Office, Montreal.

W. E. Norman, heretofore Assistant to Superintendent, Western Division, Canadian Ex. Co., has been appointed Assistant Superintendent, Western Division, reporting to the Superintendent, and his former position has been abolished. Office, Toronto.

The Board of Railway Commissioners has ordered that the tolls of the Dominion and Canadian Ex. Cos. shall include the collection and delivery of express freight within the limits of Timmins, Ont., excepting Elm, Maple and Birch Sts., north of Sixth Ave., and also Sixth Ave. west of Maple St.

The Board of Railway Commissioners has ordered, on the application of the Board of Trade, Pas, Man., that the Canadian Northern Ex. Co.'s tolls shall include the collection and delivery of express freight in the portion of the town bounded continuously by the further side of Seventh St., the Hudson Bay Ry. and the Saskatchewan and Pas Rivers.

Under instructions from the Commissioner of Customs, express companies have been charging for storage in bond of express shipments waiting customs entry, as follows: under 15 lb. free; 15 to 25 lb. 5c; 25 to 100 lb. 10c; 100 to 200 lb. 15c; and over 200 lb. 20c. On the Toronto Board of Trade's application the Board of Railway Commissioners has ordered that the charge be discontinued pending the filing of such a tariff with the board, this formality having been omitted.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Taylor & Arnold, Ltd., Montreal, reports that its engineer, Godwin Shenton, has secured in Philadelphia, a contract for Chadburn's telegraph equipment, for the first 50 standard steamships to be built for the U. S. Emergency Fleet Corporation, by the American International Shipbuilding Co., in its Hogg Island plant.

Calendars for 1918 have been received from: John Bertram & Sons Co., machine tools, Dundas, Ont.; Dearborn Chemical Co. of Canada, Ltd., Toronto; Hiram L. Piper Co., Ltd., railway signals, lamps and supplies, marine lamps, lifebuoy lights and distress signals, Montreal; Ly-

man Tube & Supply Co., railway and industrial supplies and equipment, Montreal; Taylor & Arnold, Ltd., railway and marine specialties, Montreal.

Prest-O-Lite Co., Inc., Toronto, has issued a booklet, 28 pages, 8½ x 10¾ in., entitled "Turning waste into profit," which deals with the matters of conservation of steel and iron through oxy-acetylene welding and cutting. It is illustrated with half tone engravings of welding repair operations in railway, machine and other shops.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

- Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
- Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.
- Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.
- Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
- Canadian Railway Association for National De-

fence, W. M. Neal, General Secretary, 263 St. James St., Montreal.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Canadian Society of Civil Engineers—F. S. Keith, 176 Mansfield St., Montreal.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

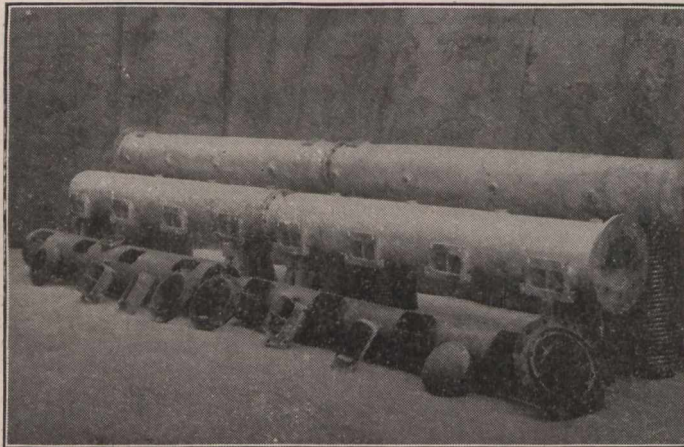
Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacramento Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

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