

Canadian Railway and Marine World

May, 1920

The Minister of Railways' Annual Statement on Canadian National Railways Etc.

Hon. J. D. Reid, in speaking in the House of Commons, Mar. 30, said: In presenting the Railways and Canals Department estimate for the forthcoming fiscal year, I desire to place before the house a statement dealing with the operation of the Canadian National Rys for the calendar year 1919. The Canadian Northern was merged with the government railways in Dec., 1918, so that we are now in a position to review one completed year of operation under non-political and purely business auspices. The national system, with which we are now dealing, comprises the following lines:

Canadian Northern system	9,479 miles
Intercolonial	1,592 "
Prince Edward Island	278 "
National Transcontinental	2,002 "
Branch lines	376 "
Total	13,727 "

Operating Results—It is unfortunate that abnormal economic conditions, the disturbing effects of which are world-wide, and beyond the control of any railway management, whether a public or private, should have prevented a better showing for the first year of large scale national operation, but the result when closely analysed, is not without hope for the future of government ownership and operation.

Briefly stated, the national system, comprising the Canadian Northern, the Intercolonial, and the Transcontinental, earned \$94,000,000 during the year, or almost \$12,000,000 more than during 1918. But even with the \$12,000,000 increased earnings, the operating loss is \$14,000,000, made up as follows: Canadian Northern, \$6,500,000; Intercolonial and Transcontinental, \$7,500,000.

The explanation of this is that during the year the operating expenses advanced from \$84,000,000 to practically \$108,000,000, an adverse increase of nearly \$24,000,000. For the most part, this was due to advances in wages under the McAdoo award and supplements thereto, which were not offset by corresponding increases in rates. There was no rate increase during 1919. Given the same operating costs as 1918, the earnings for 1919 would have taken care of them and provided in addition \$9,000,000 towards meeting fixed charges. These interest obligations in themselves amount to \$19,000,000, and, singularly enough, a comparison of the payroll of the national system for the two years shows an increase of practically \$19,000,000 in wages alone during 1919.

The operating loss of \$14,000,000, and the consequent failure to provide for fixed charges, is really a reflection of conditions which obtain all over the world as a result of the war. Comparisons are seldom conclusive, but sometimes they are illuminating, and, in passing, I am reminded that in the United States, where economic conditions so closely approximate our own, the lines taken over by the government for operation during the war are reported to

have failed in two years by over \$700,000,000 to earn the net revenue which the government guaranteed them when taken over by the U.S. Railroad Administration.

Passenger and Freight Traffic.—Although the freight earnings of the National system show an increase in excess of \$2,500,000 for the year, there was a falling off in freight handled amounting to 3,000,000 tons. This was due in part to the stoppage of munition shipments on cessation of hostilities, and four-fifths of the decreased tonnage was on the old Canadian Government system, which formerly handled so much war business. There was a noticeable falling off also in westbound business, due to unsettled conditions in the period of transition from war to peace. That there was an increase in freight earnings at all is attributable to the increased rates put into effect during 1918. Had the volume of freight handled during the preceding year been maintained, the increased freight earnings would have amounted to \$7,500,000 instead of \$2,500,000. Thus the return of the world to a peace basis may be said to have cost the national system \$5,000,000 in freight revenue during the year 1919. But no one will say it was not worth while.

The national system carried 11,500,000 passengers during the year, an increase of about 1,750,000. Additional services and the return troop movement helped to swell these figures. Total passenger earnings increased from \$14,000,000 to a little less than \$22,000,000. About \$1,500,000 of this increased revenue is attributable to the 10% increase in passenger rates granted during 1918, and in effect for the first time for the full year. The coupling up of the Canadian Northern and the Canadian Government railways has resulted in an increase in better paying long-haul business, and the management has every expectation that this business will be maintained, notwithstanding the completion of troop movements.

Operating Costs.—I shall try not to weary the House with an endless procession of figures, but as briefly as possible call attention to their significance, and then append to this verbal statement detailed statistical information, which could appear as appendices to these remarks, and thus receive the leisured scrutiny which their importance warrants. The tables to which I refer differentiate between Canadian National and former Canadian Government lines, and, as well, give the totals for the entire system, with which I have been dealing. They do not, however, include the Grand Trunk Pacific, which, pending the taking over of the Grand Trunk system, has been operated as a separate entity. As receiver for the Grand Trunk Pacific, I intend in due course to present a detailed report of the operation of that line for 1919, though I shall refer briefly to the results

of that operation at a later stage of my present remarks.

The operating revenue of the national system was more than \$93,000,000. The wage bill for the year exceeded \$73,000,000, having, owing largely to the McAdoo series of advances, jumped from \$54,000,000 in 1918. In other words, out of every dollar of revenue earned, 78c passed directly, by way of wages, to the employes.

Labor Conditions.—The cessation of hostilities appreciably relieved the labor situation and enabled a start to be made on overtaking considerable maintenance of way and equipment work which had been deferred under war conditions. An extra large number of tie renewals were made, which at the higher price and higher cost of labor, made a large item; also relaying of rails which could not be gone on with during the war, added to operating expenses. Special locomotive, car, and work equipment repairs were undertaken with a view to keeping in service as much equipment as possible, so as to avoid purchase of new units at the extraordinary high prices to which I shall refer later.

It is to be remembered then, in dealing with the operating expenses for the year under review, that such deferred maintenance work as has been done, amounting to over \$5,000,000, is included in the year's operating expenses, and to that extent has increased the deficit. There is still a large amount of deferred work to do, which will add to the operating costs for 1920, but it is satisfactory to know that all the work which is being done is increasing the physical value of the property, as well as making for higher efficiency and economical operation.

The position of the 55,000 employes of the national system was materially improved during the year. They worked on the average a shorter day, and capital expenditures for the year included large items for the improvement of their housing and working conditions. In 1914 the average wage per year of railway employes of Canada was \$700; in 1919 on the national system it was \$1,447. The relations between the management and the employes have been very satisfactory. Since Canadian Railway Board of Adjustment No. 1 was established in Sept., 1918, Canadian railways have been remarkably free from serious labor troubles, and although the national system then comprised 35% of the mileage in Canada, the grievances arising therefrom amounted to only about 16% of the cases before the board. It is hoped that this board, which is comprised of six representatives of the large railway labor brotherhoods and six railway officers, will be maintained, so that differences of opinion may continue to be settled by round table conference rather than by more expensive uneconomic and inconvenient methods.

Betterments.—Important progress was made during the year in improving the

transportation plant of the government-owned lines. The aim of the management is to bring the lines up to the standard which existing traffic justifies, to improve these standards as traffic increases, and finally to reach the position where the facilities will provide a slight margin over the immediate traffic requirements, so that when emergency traffic develops there will not be congestion. With respect to many sections of the main lines, this margin of capacity now exists, but expenditures are required on various sections, and at terminal and other important points where limiting conditions now restrict the economical handling of traffic. To improve track conditions, 625 miles of new 85 lb. rail were laid, and on 130 additional miles of track the existing rail was replaced with heavier section, this being largely good 80 to 70 lb. rail released by the first item. The balance of the released rail was used up on the construction of 64 new passing tracks, and the extension of 35 others; also 44 transfer, storage and other tracks, and 46 private and industrial tracks. This additional trackage will greatly facilitate the handling of trains and switching in yards.

About \$1,200,000 was spent on ballasting. Over 100 trestles were replaced with permanent structures, and many other bridge improvements were made, a large item being \$267,000 expended on the St. Charles river bridge. Good progress was made on the important work of providing second track where in previous years serious congestion has occurred on the Intercolonial Ry. The points where double tracking is being undertaken are between Ste. Rosalie and Charlotte, Truro and Belmont, Springhill Junction and Maccan and also out of Moncton. Over \$1,000,000 was expended on the work during 1919. The double track between Drumheller and Munson Jct., Alta., has been completed, thus greatly facilitating the handling of coal from the Drumheller mines. In the case of the Drumheller work, the grouping of 23 mines in one locality, and the attendant mining conditions, make the handling of the traffic practically a limiting factor in production; the movement, too, being crowded into a relatively short season, makes it imperative that good facilities for handling be provided. These expenditures to improve operating conditions produce in many cases a much greater return on the investment than equal expenditures on new lines, as not only are additional earnings secured, but operating expenses are reduced, greater use of equipment is obtained and better service to the public. In line with the management's policy of improving existing facilities, many new structures have been erected, among these being 16 water tanks, 11 coal handling plants, 2 coaling trestles, 26 stations, 12 station shelters, 13 freight sheds, 4 express buildings, 64 single section houses, 10 double section houses, 36 bunk houses, and 8 workmen's cottages. Such expenditures eliminate train delays, effect labor saving, add needed facilities, provide housing and tend to the welfare of employes.

Additions and improvements to locomotive houses, machine shops and other mechanical facilities accounted for \$125,000. General improvements included considerable ditching, widening banks and removing sags, preparatory in some cases to ballasting. Some diversions, to reduce grades, to give better alignment, or eliminate bridges were

completed and others are under way.

The rebuilding of the Canadian Northern line between Cap Rouge and Portneuf, washed out by the tidal wave in 1918, was almost completed.

On Prince Edward Island, where the lines are narrow gauge, a third rail has been laid from Charlottetown to Summerside, and from Port Borden to Emerald—60 miles in all, which enables standard gauge rolling stock to be interchanged by car ferry, greatly facilitating the handling of traffic to and from the Island.

New Construction in 1919.—In submitting the construction programme for 1919, the directors recommended that the work to be undertaken should be as closely as possible confined to completing branch lines which were under construction in Western Canada at the outbreak of the war. Following this policy, work was done on various lines, among the more important being the extension of the Hanna-Medicine Hat line to Red Cliff, and the St. Paul de Metis line in Alberta; the Humboldt-Melfort connection and Duck Lake branch in Saskatchewan, and the Kamloops-Kelowna line in British Columbia. On Vancouver Island, 28 miles of track were laid on grade previously constructed, and 40 miles of ballasting completed. The Vancouver passenger station was completed and opened for traffic.

Shortage of labor and disturbed industrial conditions during the summer prevented the expected completion of certain western branches, but the work on these will be vigorously pushed this year.

At Toronto, the Leaside terminal yard was further developed. Most of the facilities at this point are now utilized and are proving of great value in handling the business on the lines in Southern Ontario.

Betterments Proposed for 1920.—The following general improvements are recommended by the directors as being among the most pressing requirements of the system:

Canadian Government Rys. The relaying of about 200 miles of track with heavier steel, and the utilization of the released steel for additional passing tracks, spurs and sidings.

The completion of the 20 miles of double tracking already referred to and now well under way. Improvements to or replacing of over 200 bridges, trestles and culverts, including filling and other permanent work.

The construction of 25 stations and freight sheds, 7 coaling plants, 7 water stations, 9 buildings for the mechanical department such as locomotive houses, machine shops, etc., 58 buildings for housing employes such as section houses.

Provision will be made for the general improvement of track conditions, and at St. John, N.B., an extension of the yard trackage is required to relieve the congestion at that point.

Canadian Northern Lines. The construction of branch line mileage in Western Canada provides an opportunity to replace steel now on main lines with heavier section, the steel taken from the main lines being serviceable for branch line traffic. The additional traffic being provided by the branch lines is enabling heavier train movements to be made, and the present demand for all-steel passenger equipment requires the utilization of very heavy power, making it necessary to continually improve the standard of main line roadbed, track and structures.

The programme in respect to rail re-

placements covers the relaying of 350 miles of new steel on main lines; 331 bridges, trestles and culverts are to be replaced, filled or renewed, involving the replacing of many temporary structures by permanent work. The completion of additional mileage in the prairie provinces has necessitated the construction of many new buildings, a large item being 68 stations and freight sheds. There were also built 22 coaling plants. The present price of labor necessitates the adoption of labor-saving devices of this kind. There are also listed 20 new water stations. The mechanical department's facilities will be improved by the construction of new locomotive houses, machine shops, etc., 19 in all. Some of these are required at the end of new branch lines. Additional lines also account for a number of the 134 section houses required.

A large appropriation is required for general roadbed and track improvements, and increasing traffic warrants improvements and revision of the main line between Montreal and Quebec.

A greatly needed improvement is the stringing of an additional copper and steel wire between Montreal and Toronto and Winnipeg, to provide through wires between these important points, the present wires being required for local business and train dispatching. The new wires will also enable new through business to be handled by the G.N.W. Telegraph Co. through Canada, whereas the company's through business now goes via United States connections.

Construction Programme, 1920.—It is again proposed to confine new construction in Western Canada to the completion of branch lines on which work is well under way. The programme includes work on 16 branch lines in Manitoba, Saskatchewan, Alberta and British Columbia. The principal items of track laying will be from Eston south-easterly, 35 miles; Humboldt-Melfort line, 32 miles; Melfort north-easterly, 32 miles; Oliver north-easterly, 22 miles; Peace River line, 32½ miles; Swift Current line, 18½ miles, and Jackfish Lake branch, 27 miles. In British Columbia it is proposed to grade 40.4 miles to complete the Okanagan branch. In all, 349.6 miles of track is to be laid and 123.4 miles of line to be graded. The extension of other lines and the construction of additional branches is very strongly urged, and while certain of these projections are fully justified on traffic considerations, their construction has to be postponed on account of the financial situation, labor shortage and high cost of material and supplies.

In Eastern Canada there are several very important connections which can be regarded as essential to economic and unified operation with other lines of the national system, but which must also be postponed until the financial situation improves. Among these may be mentioned the Long Lake connection between the National Transcontinental and the Canadian Northern main lines, which, when completed, will give the Canadian Northern the short route between Winnipeg, Montreal and Toronto.

Rolling Stock Orders.—During 1919 the following rolling stock was ordered for Canadian Government railways: 25 Pacific type locomotives, 25 switching locomotives, 13 compartment observation cars, 18 standard sleeping cars, 9 dining cars, 30 baggage cars, 130 colonial cars, 20 tourist cars, 20 mail cars, 550 general service or coal cars, 500 flat cars,

750 box cars, 250 ballast cars, 800 stock cars, 150 refrigerator cars, 25 cabooses.

This equipment has been delivered, except 7 of the standard sleepers, the observation cars, diners, first-class cars and mail cars, all of which it is expected will be in service at an early date.

Passenger earnings have shown such a good increase that 30 additional heavy passenger locomotives are required, and 50 additional passenger train cars.

On account of the very high unit prices of rolling stock, the requirements have been kept down to the lowest point consistent with traffic conditions. This is very necessary, in view of the fact that locomotives suitable for our purpose which could be purchased for \$24,000 in 1914 cost \$62,000 now; first-class cars have increased from \$16,000 to \$38,000; dining cars from \$28,000 to \$46,000. The increase in price of freight cars ranges from 144% for refrigerators to 170% for steel frame box cars.

The equipment to be ordered is as follows: Locomotives—20 Pacific type, medium weight; 10 Pacific type, heavy weight; 25 heavy freight, 20 switching. Freight cars—3,000 40-ton box, 500 refrigerator, 650 50-ton coal or general purpose, 350 50-ton ballast, 100 cabooses, 6 snow ploughs, 150 stock cars. Passenger cars—20 baggage, 18 standard sleepers, 12 standard diners.

Freight and Passenger Rates.—The question of rates is one which will bear careful examination. No system can indefinitely stand the relationship at present existing between earnings and operating expenses of the national, but before proceeding to a consideration of future rates, it may be well to review what has taken place in recent years in that connection. Members will recall the agitation, extending over a period of years, for a reduction of rates in Western Canada, by many urged because it was felt one railway at least could well afford a reduction. Just a few months before the outbreak of war, this western rate case was finally decided. The judgment involved a comprehensive reduction in rates in territory west of the Great Lakes, and very seriously affected the newer lines. Then came the war, and with it undreamed of problems of transportation, and the railways began to feel the effects of war conditions. In 1916 what is known as the eastern rate case provided for a 5% increase in tariffs of eastern roads, both Canadian and U.S., but it did not apply to the west. In 1918, there were two rate increases, the March order, commonly called the 15% increase, and the August increase of 25% (so-called) which accompanied the first of the McAdoo series of wage increases. There was this difference, however, between the rate increases and the wage increases; the latter were retroactive, but the rates could not be retroactive; and, in addition, it was found that the rate increases, when finally applied, did not produce anything like the increase in revenue hoped for. The first mentioned (15%) netted only 7% on the national railway system's passenger revenue and 10% on the system's freight revenue, or on the gross. The second increase was on freight only, and was less in the west than in the east, owing to the equalization of eastern and western rates involved. For instance, in Western Canada the 25% increases wiped out the previous 15% increment. Taken together, these two rate increases are estimated therefore to have been approximately only 30% instead of considerably

more than 40% as they would have had they been imposed upon the other.

There are only two ways by which a railway's revenue may be increased. One is by increased rates and the other is by increased business. The Canadian National Rys, should, in view of the resumption of trade and immigration, in view of the strengthening of weak spots by the inclusion of Grand Trunk lines, and especially in view of the traffic possibilities of the 60 steamships, the freight of which will come to national railways, commence to show a steady increase in business, but the management has, in the course of public utterances, called attention to the necessity for increased rates if operating expenses are to be met out of earnings. There are and will be various opinions as to this, but it behooves us to give careful consideration to the management's viewpoint. They point out that Canadian roads are closely bound up with U.S. roads, in proof of which witness the application of the McAdoo awards to Canada. Not only do we pay the same wage schedules and apply the same working conditions, but, generally speaking, freight rates are the same on both sides of the line. In the U.S. the roads are being handed back to their owners in groups and the legislation provides that they be allowed to earn 5½% on their investments, with an additional ½% construction betterments. During the war the U.S. roads were guaranteed a certain return which was made up from the public treasury. Now that this guarantee no longer applies, either an increase in rates will be necessary or the U.S. Government must continue to implement the earnings of the weaker roads. It is estimated that a rate increase of 26% would be required to put the U.S. roads on a paying basis. An increase to that extent, if applied to the earnings of 1919 on the national system, would have produced a revenue of a little more than \$110,000,000, which would have left a surplus of net earnings of over \$2,000,000. That, of course, does not take the fixed charges into account. The management, therefore, feel that, both because we have the same expenditures to meet and must compete with each other all along the line, whatever freight increase is permitted in the U.S. ought also to be applied to Canadian roads. As Minister of Railways and having asked the management to operate on a business basis, I am bound to present the management's viewpoint for the consideration of Parliament.

I have, however, a larger responsibility as Minister of Railways, having, as such, to do with all Canadian roads, and answerable, in the final analysis, to the people who at present find the cost of commodities sufficiently high. The railway situation in Canada has undergone a marked change, the entire mileage being now controlled in two great groups or systems, the Canadian National and the Canadian Pacific. In Canada the mileage of the latter road is 14,824, but there are 4,948 miles of owned or controlled lines in the United States, so that the system mileage aggregates 19,772. Including the Grand Trunk lines, the Canadian National system will comprise 22,356 miles, of which 2,093 miles are located in the U.S. These two systems are, from the mileage standpoint, at any rate, fairly evenly balanced and it is unnecessary to point out that any increase in rates granted the Canadian National Rys. would equally apply to Canadian Pacific lines. The annual

statement of that immense corporation showed that, notwithstanding the disadvantage of increased operating costs and charges common to all roads, the C.P.R. had been able to pay a dividend of 7% on its railway operation, and 3% on its outside operations, or in all its usual 10% dividend on last year's operation.

The argument has been advanced that it would be possible to tax out of the C.P.R. any increase in earnings which might be permitted it in common with the Canadian National Rys. I have my own opinion as to the fairness of such a proposition, but, in any event, I personally feel that such a proposal, even if fair from the standpoint of competition, would not be practicable, for the simple reason that you could not prevent the C.P.R. from spending its revenue legitimately on the improvement of its property, and if, at the end of a year, we found that the increased earnings had gone into betterments, how could we tax it out?

My own feeling is that the C.P.R. is entitled to a rate sufficient to earn 7% on its railway investment, and this they appear to be able to do, notwithstanding present abnormal conditions. The question resolves itself, therefore, into the following proposition: Shall Canadian freight rates be increased generally for the particular purpose of enabling the Canadian National Rys. to meet their operating expenses and fixed charges, or would it be better to go on with the present rates, giving dealers no additional excuse for increasing the cost of living, and trusting to increase in business, the economics it should be possible to effect by co-ordination, and the return of normal conditions to gradually reduce these deficits until the day (which I personally feel is not far off) when the revenue will prove sufficient to pay for operation, and, later also to take care of fixed charges. Should this latter suggestion prevail, it would require to be thoroughly understood that the Minister of Railways, no matter who he may be, must come down next year with a deficit, and the next year with a deficit, and so on for a few years until we shall have turned the corner.

The earnings of the Canadian railways last year were \$350,000,000, made up as follows: C.P.R., \$177,000,000; Canadian National, \$94,000,000; G.T.R., \$68,000,000; G.T.P.R., \$11,000,000.

A 25% increase on these earnings would approximate \$88,000,000, the greater part of which would be earned in Canada. Whether we shall take \$88,000,000 in increased freight rates out of the people of the country next year in order to show a surplus for the national system is a question as to which I myself am not prepared to take the responsibility of deciding either one way or the other at present. I leave it to the consideration of the house, and of the people of Canada as a whole, and shall be glad to elicit representative public opinion in the matter, so that the government may be in a position to give this important question the best consideration.

Bringing in the Grand Trunk.—The current year will witness the rounding out of the Canadian National Rys. system by the acquisition of the Grand Trunk and its subsidiary lines. With these added, it is estimated that over 50% of the domestic freight traffic of the Dominion will be found to originate along government railways. The con-

necting up of the Grand Trunk lines will give direct access to eastern industrial centers, especially in Ontario. Western Canadian business originating on Grand Trunk lines will no longer require to be split into three but can go forward in one long haul over all-national lines, and, vice versa, the G.T.R. will benefit from a large amount of additional business from our western lines which it could not obtain except as a member of the national system.

Fear has been expressed that Halifax and St. John might suffer as a result of the government taking over the G.T.R. The people of Eastern Canada need have no fear of this, for the reason that these are the terminals of our immense railway systems and have been for many years. They have been greatly improved, and in the operation of our national system, more especially in view of the ocean tonnage we now control, these ports will become increasing, rather than diminishing, factors in the Canadian railway situation.

The connecting up of the G.T.R. lines will mean that 52% of the entire railway mileage of Canada will have passed under government control. This will permit of economies in operation, where the two systems have been maintaining parallel lines and duplicate staffs, and, as already pointed out, there should be compensating advantages to the Canadian Northern, the Intercolonial and the Grand Trunk as well. I wish to point out, however, that, in speaking of advantages, I am referring to the G.T.R. lines only, not the G.T.P. or the Transcontinental Rys. These last named colonization roads, built as part and parcel of the G.T.R., are bound to be unprofitable for many years to come. The loss on operation of the Transcontinental last year was \$2,735,000. This was included in the Canadian National figures already referred to. But there is also the Grand Trunk Pacific, which the government found on its doorstep in Mar. 1919, and as to the operation of which I shall have to make a separate report, as the figures form no part of the national system figures with which we have been dealing. But to make my present statement complete, I desire to point out that the G.T.P. for the year ended Dec. 31, 1919, showed an operating loss of \$5,500,000. To this must be added fixed charges of \$8,500,000, making a total deficit of \$14,000,000, an increase of \$3,500,000 over 1918. The reasons for this increase were set out in a communication from the General Manager to myself as receiver, and these will be dealt with at the proper time.

Personally, I do not think it will be possible for many years to make the expenses of operating these colonization roads, nor do I think it fair that they should be expected to make the showing we look for from the Canadian Northern, the Intercolonial or the Grand Trunk proper. Therefore, I think the annual loss on these railways should not be added to the net deficit of the Canadian National Rys., for purposes of comparison, and I have instructed the management that the operation of these systems must be shown separately at the close of each year, so that when comparisons are made between other systems and our government system, the comparison may be a reasonably fair one.

Hudson Bay Railway.—There is one more railway which was commenced and which has not been completed, viz., the Hudson Bay Ry. For the information of

members, I may say that the government has decided that no more work shall be done on it during the coming year. It is the intention to use every effort to extend branch lines into districts where settlers are much more in evidence and in much greater need of railway communication. The Hudson Bay Ry will therefore stand until financial conditions will permit of its resumption.

In conclusion let me say there was a time, not long ago, when the government system was largely a local carrier getting the short end of business that goes with the short haul. The longest haul it could hope for was from Halifax or Sydney to Montreal, and vice versa. And in competing with the Grand Trunk for Montreal business offering to the seaboard, we could charge only the Portland rate, though the Intercolonial mileage to Halifax was 841 as against the Grand Trunk's 297 to Portland. Similarly, the C.P.R. had the advantage of its comparatively short haul of 481 miles to St. John, and for business originating at the Intercolonial chief terminal, Halifax (it had to compete with this same highly organized and stronger competitor, whose agents were always active abroad and whose ships were ever on the seas. But a change has come over the scene. Now the government system itself bestrides the continent, with branches reaching, for the first time, into productive centers and with terminals upon both eastern and western oceans. The story of the Canadian Government Merchant Marine has been told by the Minister of Marine, and at last we also have our ships upon the seas, and our agents abroad will actively compete for international trade. Keen competition, 'adroit, persistent, aggressive and fair,' is promised by the C.P.R. President, who expresses the hope that both their own systems and the national may in future work in common for the advancement of the country. He says there need no longer be controversy, but that there will always be keen com-

petition. That is what the management of the national system expects and welcomes. I am told that the nationalization of the Canadian Northern has made no difference in the morale of the employees of that road, that they are as keenly alert as ever and "on their toes" to make government ownership and operation a success. We expect the employees of the G.T.R. systems will co-operate with equal loyalty, and the government in turn will spare no effort to build up a great national railway system able to compete with and maintain the high standard of transportation efficiency reached by the C.P.R. That road may well be the standard against which we may measure the success of government ownership and operation. I say "success" because I am not prepared for one moment to contemplate any other possibility. The national lines, with the G.T.R. included, will comprise a system which will serve every province in Canada, which will be identified with every progressive community, and must continue to perform the major part of the transportation service of the entire Dominion. We have taken steps to remove the government's lines from political interference. Experienced railway men are in charge; they are being given money to improve the roadbed, to buy the best equipment to enable the greatest tonnage to be hauled in a single train. It is the greatest encouragement towards expansion to have this great national system ready and equipped to handle additional traffic as it develops—and it surely will develop. If we imagine Canada to have reached the maximum of development then we shall have planned foolishly, but I, for one, have the faith to feel and the vision to prophesy that this great transportation system is not being prepared to perform this splendid transportation service in vain.

I would like to hand in the schedules I referred to to be inserted in the official report of the debates, so that members may have before them all the details I have mentioned:

Canadian National Railways.

Comparative summary of operating results, 12 months ended Dec. 31:				
Operating revenue.	1919.	1918.	Increase.	% Increase.
Canadian Northern	\$ 53,562,177.57	\$47,310,011.91	\$ 6,252,165.66	13.22
Canadian Government	40,179,380.93	34,636,484.67	5,542,896.26	16.00
Canadian National	93,741,558.50	81,946,496.58	11,795,061.92	14.39
Distribution.				
Passenger	21,837,744.47	14,327,355.63	7,510,388.84	52.42
Freight	63,154,773.39	60,550,011.42	2,604,761.97	4.30
Other	8,749,040.64	7,069,129.53	1,679,911.11	23.76
Operating expenses.				
Canadian Northern	60,034,023.92	44,062,949.94	15,971,073.98	36.25
Canadian Government	47,728,205.73	40,028,099.35	7,700,106.38	19.24
Canadian National	107,762,229.65	84,091,049.29	23,671,180.36	28.15
Distribution.				
Mtce. of way and str.	28,476,450.66	19,266,424.83	9,210,025.83	47.80
Mtce. of equipment	19,950,409.17	15,792,342.10	4,158,067.07	26.33
Traffic	1,478,372.41	1,291,721.00	186,651.41	14.45
Transportation—rail	52,914,891.80	44,406,311.93	8,508,579.87	19.16
Transportation—water	782,316.69	319,857.23	462,459.46	144.53
Miscellaneous	1,877,168.08	1,162,311.69	714,856.39	61.50
General	2,282,620.84	1,852,080.51	430,540.33	23.25
Operating ratio.				
Canadian Northern	112.08	93.14	18.94	20.33
Canadian Government	118.79	115.57	3.22	2.78
Canadian National	114.96	102.62	12.34	12.02
Operating loss.				
Canadian Northern	* 6,471,846.35	3,247,061.97	* 9,718,908.32	*299.31
Canadian Government	* 7,548,824.80	* 5,391,614.68	* 2,157,210.12	* 40.01
Canadian National	*14,020,671.15	* 2,144,552.71	*11,876,118.44	*553.84
Mileage operated.				
Steam	13,601.75	13,451.16	150.59	* 1.12
Electric	125.60	62.00	63.60	*102.53
Total	13,727.35	13,513.16	215.19	* 1.58
Revenue train miles	29,633,393	28,555,928	1,077,470	3.77
Earnings per r.t.m.	3.09†	2.82†	0.27	9.53
Expenses per r.t.m.	3.57†	2.91†	0.66	22.66
Loss per r.t.m.	0.48†	0.09†	0.39	433.33

*These figures denote decrease or deficit.

†Electric and water lines excluded.

Statement excludes income and equipment items and branch line rentals.

Canadian National Railways.

Operating deficit	\$14,020,671.15	\$ 2,144,552.71	\$11,876,118.44	553.84
Canadian Government rentals	697,384.22	692,400.00	4,984.22	7.20
Miscellaneous income	*961,665.21	*298,075.67	*1,259,740.88	*422.62
Def. St. John and Quebec	187,269.97	142,941.87	44,328.10	31.01
Net deficit excluding Canadian Northern fixed charges and miscellaneous income balance ..	\$13,943,660.13	\$ 3,277,970.25	\$10,665,689.88	325.38
Traffic—Passengers carried (exclusive of electric lines.)	1919.	1918	Increase.	Per cent.
Canadian Government	6,697,232	5,779,085	918,157	15.89
Canadian Northern	4,910,160	4,114,965	795,195	19.32
Canadian National	11,607,392	9,894,050	1,713,352	17.32
Tons of freight handled.	1919.	1918.	Decrease.	Per cent.
Canadian Government	11,108,391	13,476,755	*2,368,364	*17.57
Canadian Northern	13,066,315	13,699,345	*633,030	* 4.62
Canadian National	24,174,706	27,176,100	*3,001,394	*11.04
Passenger train mileage.				
Canadian Government	4,744,179	3,946,703	797,476	20.21
Canadian Northern	5,829,184	5,043,098	786,086	15.58
Canadian National	10,573,363	8,989,801	1,583,562	17.62
Mixed train mileage.				
Canadian Government	1,182,041	1,205,829	* 23,788	* 1.97
Canadian Northern	1,841,603	1,788,536	53,067	2.97
Canadian National	3,023,644	2,994,365	29,279	0.98
Freight train mileage.				
Canadian Government	6,199,775	6,986,399	* 786,624	*11.26
Canadian Northern	9,788,782	9,545,329	243,453	2.55
Canadian National	15,988,557	16,531,728	* 543,171	* 3.29
Work train mileage.				
Canadian Government	547,594	492,558	55,036	11.17
Canadian Northern	1,505,543	1,108,625	396,918	35.80
Canadian National	2,053,137	1,601,183	451,954	28.23
Total train mileage.				
Canadian Government	12,673,589	12,631,489	42,100	0.33
Canadian Northern	19,012,946	17,525,622	1,487,324	8.49
Canadian National	31,686,535	30,157,111	1,529,424	5.07

*Decrease.

Canadian National Railways.

Comparison of pay-roll, 12 months ended Dec. 31.

Can. Government railways	\$31,545,481.18	\$24,980,155.59	\$ 6,565,325.59	26.28
Canadian Northern railway	41,620,133.30	29,269,906.70	12,350,226.60	42.19
	\$73,165,614.48	\$54,250,062.29	\$18,915,552.19	37.87

Explanation of Increase.

Increase due to G.O. 27	Can. Govt. Rys.	Can. Nor. Ry.	Total	Per cent.
Supplements	\$ 2,499,353.28	\$ 3,218,339.56	\$ 5,717,692.84	30.23
Deferred maintenance and increased service ..	3,749,029.92	4,827,509.34	8,576,539.26	45.34
Backe time 1918	316,942.39	3,456,199.97	3,773,142.36	19.14
Total	6,565,325.59	12,350,226.60	18,915,552.19	100.00

Canadian National Railways.

Revised estimate of wages for 12 months at present rates, showing increase under McAdoo Award, supplements and collateral increases down to and inclusive of 4c. increase to shopmen. Based on number of hours on duty for all employes for year ended June 30, 1918.

Class of employes.	Compensation prior to G.O. 27.		Increase under G.O. 27.		No.	Increase under Supplements.		Estimated wages 12 months under existing rates.	Total Increase over 1917.					
	\$	cts.	Amount	%		Amount	%		\$	cts.				
Maintenance of way	10,686,978	83	2,837,304	83	26.55	8	4,701,487	53	43.99	18,225,771	24	7,538,792	41	70.54
Maintenance of equipment	9,595,877	56	2,921,562	96	30.44	4	3,163,022	42	32.96	15,680,462.94	67	6,084,585	38	63.41
Enginemen	5,334,427	54	611,870	90	11.47	15	636,936	23	11.94	6,583,284	67	1,248,857	13	23.41
Trainmen	6,323,329	91	673,679	16	10.65	16	392,532	24	6.21	7,389,541	31	1,066,211	40	16.86
Agents and telegraphers	2,468,844	39	177,110	04	7.17	13	956,310	93	38.74	3,602,265	36	1,133,420	97	45.9
Clerical and other station forces	6,199,273	57	1,195,561	46	19.28	7	1,970,250	30	31.79	9,365,115	53	3,165,841	76	51.07
Various (not distributed)	1,831,846	26	261,059	04	18.89	Var.	830,951	46	60.14	2,473,886	76	1,092,040	50	79.03
Officers	1,275,303	73				Coll.	361,353	81	26.33	1,636,657	54	361,353	81	28.33
Grand total	43,265,881	79	8,678,148	44	20.06		13,013,954	92	30.07	64,956,985	15	21,691,103	36	50.13

Standard Conditions and Specifications for Wire Crossings.

The Board of Railway Commissioners passed general order 288, Mar. 23, as follows:—Re sec. 372 of the Railway Act, 1919, for carrying of wires and cables along or across railway tracks and the Canadian National Rys. application for an order amending the Standard Conditions and Specifications for Wire Crossings, approved by general order 231, May 6, 1918, as amended by general order 267, June 27, 1919: Upon reading what is filed in support of the application, the Canadian Pacific and Grand Trunk Railways concurring therein, it is ordered that the Standard Conditions and Specifications for Wire Crossings, as approved by general order 231, be amended by striking out paragraph 4 of part 1 and substituting therefor the following, viz:—"4. The applicant, before any work is begun, shall give the railway company owning, operating, or using the said railway at least 72 hours prior notice thereof in writing, and the said railway com-

pany shall be entitled to appoint an inspector, under whose supervision such work shall be done, and whose wages, at a rate not to exceed \$11 a day, shall be paid by the applicant; such payment to cover both wages and expenses. When the applicant is a municipality, and the work is on a highway under its jurisdiction, the wages of the inspector shall be paid by the railway company."

General order 267 is rescinded.

London to Calcutta by Rail.

The Bagdad Railway begins at Konia, in the heart of Asia Minor, where, by means of the Anatolian Railway it connects with Constantinople. From Constantinople to Aleppo, is some 850 miles. From Aleppo the line proceeds to Jerablus, on the Euphrates, and thence by Nisibin to the important center of Mosul on the Tigris; thence southward to Bagdad and to Basra. From Aleppo to Bagdad is about 650 miles. Carry the imagination further, and we may reasonably picture, under the new

political arrangements between Great Britain and Persia, the extension of the Bagdad Railway to Teheran, and thence to Quetta and India. That done—and the conception has its grandeur—travel overland between London and Calcutta should be a matter of less than a fortnight. Lindsay Bathford in Edinburgh Review.

Alberta's Guarantees of Railway Bonds.

The Province of Alberta is reported to have made a statement in the Legislature recently, in reply to questions as to the position of the province in regard to its guarantees of bonds for railway construction. His reply covered the guarantee of bonds for lines forming part of the Canadian Northern Ry., and for branch lines of the Grand Trunk Pacific Ry., both of which railways are now under the Dominion Government's control, the first forming part of the Canadian National Rys., and the second being under a Dominion Government Receiver-ship, and will shortly pass, with the G.T.R. under government ownership.

In reference to the Canadian Northern Ry. the Premier said the Alberta Government had guaranteed bonds for the lines from Strathcona to Calgary, 230 miles; from north of Calgary to Lethbridge, 125 miles; from Camrose to Vegreville, 45 miles; from near MacLeod to the western boundary of the province, 65 miles, and from the crossing of the Lethbridge-Calgary line over the Little Bow River, via MacLeod to the international boundary, 110 miles. Bonds have been sold in respect of these lines to the extent of 88.35% of the guarantee, the

amount of money standing to the credit of the province from the proceeds of the sales of such bonds being \$1,201,791.85. The completed lines of the branches guaranteed are those from Camrose to Vegreville; Strathcona to Calgary, and a portion of the Lethbridge-Calgary line, there being still 96.87 miles to build. Monies paid over to the C.N.R. for work done amount to \$188,600 on the Calgary-Lethbridge line; \$182,325 on the Little Bow-Boundary line and \$86,282.30 on the Macleod-B.C. boundary branch.

In reference to the Grand Trunk Pacific branch lines the Premier said the provincial guarantee was for the lines from Tofield to Calgary, 201.5 miles, the bonds for which had been sold and the entire proceeds paid to the company. This line is completed and has been in operation for some years.

Van Horne Estate. The transferring of 122½ square miles of crown lands, owned by the late Sir William Van Horne's estate in Northumberland County, N.B., to the International Paper Co., New York, has been completed.

Canadian Pacific Railway Co's Annual Report.

Following is the directors' report for the year ended Dec. 31, 1919. The accounts show the following results:

Gross earnings\$176,929,060.00
Working expenses 143,996,023.58

Net earnings\$ 32,933,036.42
Deduct fixed charges 10,161,509.77

Surplus\$ 22,771,526.65
Contribution to pension fund 500,000.00

.....\$ 22,271,526.65

From this there has been charged a half-yearly dividend on preference stock of 2%, paid Oct. 1, 1919\$ 1,613,638.42
And three quarterly dividends on ordinary stock of 1 3/4% each, paid June 30, Oct. 1, and Dec. 31, 1919 13,650,000.00

..... 15,263,638.42

From this there has been declared a second half-yearly dividend on preference stock of 2% payable April 1, 1920\$ 1,613,638.42
And a fourth quarterly dividend on ordinary stock of 1 3/4% payable Apr. 1, 1920 4,550,000.00

..... 6,163,638.42

Leaving net surplus for year\$ 844,249.81
(which amount has been placed in reserve to meet special taxes imposed by the Dominion Government)

In addition to the above on ordinary stock 3% was paid from special income.

Special Income For Year Ended Dec. 31, 1919.

Bal. Dec. 31, 1918.....\$16,114,502.37
Less: dividend paid April 1, 1919 1,950,000.00

.....\$14,164,502.37

Net revenue from investments and available resources 1,765,220.18

Interest on deposits, and interest and dividends on other securities less exchange 1,040,544.13

Net earnings ocean and coastal steamship lines 3,567,510.38

Net earnings commercial telegraph and news department, rentals and miscellaneous 2,676,067.21

.....\$23,213,844.27

Less: payments to shareholders in dividends in 1919 5,850,000.00

.....\$17,363,844.27

From this a dividend has been declared payable April 1, 1920\$ 1,950,000.00

The working expenses for the year were 81.39% of the gross earnings, and the net earnings 18.61% compared with 78.10% and 21.90% respectively in 1918.

The gross earnings of your transportation system during the year exceeded those of any previous year in the company's history, and exceeded those of 1918 by \$19,391,362, but the net earnings were less by \$1,569,351. This large addition of \$20,960,713 to working expenses is due to the great advance in wages and the increased cost of fuel and other materials.

Your directors cannot hold out any hope of substantial relief, for some time to come, from these high costs, which are reflected so strongly in the operating expenses, but every effort is being made to offset the effect on your revenues by economy in operation and the extension of the company's freight and passenger business. It is not to be expected, however, that any normal increase in business can possibly equal the extraordinary increase in wage and other costs which all railway companies have experienced during the past two years.

The sales of agricultural land in the year were 681,763 acres for \$13,668,443, an average of \$20.05 an acre. Included in this area were 80,795 acres of irrigated land, which brought \$52.53 an acre, so that the average price for the balance was \$15.68 an acre.

There were no sales of 4% consolidated debenture stock, 4% preference stock, other capital securities during the year.

The late granting of the necessary statutory authority, combined with difficulty in securing labor and the early setting in of winter in the west, prevented extensive construction during the year of branch line mileage which you authorized at the last annual meeting. Your directors are of the opinion that reasonable additional construction should be gone on with as conditions warrant, and your authority will be asked for proceeding with the construction of the following lines and for the issue and sale of a sufficient amount of 4% consolidated debenture stock to meet the expenditure, viz:

- Wymark-Archive Branch, 25 miles.
- Rosetown South Branch, 45 miles.
- Weyburn-Lethbridge Branch, from Altawan to Manyberries, 35 miles.
- Moose Jaw Southwesterly Branch, from Consul southeasterly, mile 35 to 60.
- Moose Jaw Southwesterly Branch, from Assinboia southwesterly, 80 miles.
- Leader Southerly Branch, 50 miles.
- Duchess, or Rosemary, North Branch, 34 miles.
- Cutknife to Whitford Lake Branch, 40 miles.
- An extension of the Swift Current Northwesterly branch from Empress northwesterly, 20 miles.
- An extension of the Swift Current Northwesterly Branch, from Sedgewick to Vegreville, 54 miles.

Your directors appreciate that the construction of the above lines can only be proceeded with gradually, in view of the probable shortage of labor available for such purposes, but they deem it desirable to obtain your authority, in order that the work may be gone on with from time to time as circumstances permit.

In order to facilitate the economic handling of traffic in and out of Winnipeg, your directors think it desirable to double track the line extending from Winnipeg to Molson, and, for the purpose of relieving the main line of pressure of traffic during grain shipping seasons, that capital expenditure should be made on the Bassano Branch, extending from Bassano to Java, with the view of raising it to the standard of the main line, and thus permitting the expeditious and cheap handling of grain and other traffic from points west of Bassano. The estimated total cost of these works will be about \$2,000,000, but in the opinion of your directors the heavy present and prospective traffic in these districts amply warrants the outlay.

In anticipation of your confirmation your directors authorized capital appropriations, in addition to those approved at the last annual meeting for 1919, aggregating \$3,359,000, and subject to your approval have authorized expenditures on capital account during this year of \$9,613,353. Of this amount the principal items are:—

- Replacement and enlargement of structures in permanent form\$1,267,144
- Additional stations, roundhouses, freight sheds and shops, and extensions to existing buildings 2,009,166
- Tie plates, rail anchors, ballasting, ditching and miscellaneous betterments 1,113,599
- Replacement of rail in main and branch line tracks with heavier section 979,493
- Additional terminal and side-track accommodation 442,363
- New coal dock at Port William terminals 871,000
- Proposed new station and yard changes at Trois Rivières 500,000

- Improvements in connection with telegraph service 575,860
- British Columbia Coast Steamship Service 135,000
- Mechanical department, machinery at various shops 363,236

The balance of the amount is required for miscellaneous works, to improve facilities over the whole system, and effect operating economies.

Your directors are making provision for obtaining the following necessary additions to your company's equipment, viz: 3 dining cars, 43 sleeping cars, 67 air dump cars, 2,500 sixty-ton box cars, 500 refrigerator cars; at a total cost of approximately \$13,162,000.

During the year the following steamships were disposed of: Prince George, Princess Margaret, Princess May, Virginian, Monmouth. The s.s. War Peridot and War Beryl, having a d.w. tonnage of 10,500 tons each, were bought.

The lease of the Nakusp and Slocan Ry., extending from Nakusp to Three Forks, with branches to Sandon and White Water, having an aggregate mileage of 48.47 miles, which was executed in 1895, and under which this railway was leased to your company for 25 years from July, 1895, will expire in July next. Your directors will therefore submit for your approval a new lease of the railway to this company for 99 years on the usual terms.

Appreciating the vital importance to Canada of 1919, the success of the Victory Loan of 1919, your company subscribed to \$20,000,000, of which \$14,000,000 was taken for the company's special investment fund.

The Consolidated Mining and Smelting Co. in which your company has a substantial direct interest, through its holdings of bonds and stocks and upon the success of whose undertaking the prosperity of Southern British Columbia, and the consequent traffic for your railway depend to a marked degree, will require during this year additional sums for needed extensions and additions to its plant. In anticipation of your consent your directors have decided to advance such amounts as may be required, pending the making of capital issues or other permanent financial arrangements by the Consolidated Company.

Your directors regret to report the death on May 24, 1919, of Wilmot D. Matthews, of Toronto, who had been a director of the company for 31 years, and whose advice and counsel had always been of the utmost value to his associates on the board. During the year Hon. James Dunsmuir, of Victoria, resigned as a director. The Hon. W. J. Shaughnessy was elected to succeed Hon. James Dunsmuir, and Sir John C. Eaton was elected to fill the vacancy created by Mr. Matthews's death.

The undermentioned directors will retire from office at the approaching annual meeting. They are eligible for re-election: Sir John C. Eaton, Grant Hall, Sir Vincent Meredith, Sir Augustus M. Nanton.

Receipts and Expenditures, Year Ended Dec. 31, 1919.

RECEIPTS.
Cash in hand, Dec. 31, 1918.....\$39,548,416.63
Surplus revenue\$22,271,526.65
Special income 9,049,341.90
..... 31,320,868.55

Land Department.
Lands and townsites:
Proceeds of sales
and interest, less
cancellations\$14,893,960.31

Less sales expenses and irrigation	4,284,045.93	
	\$10,609,914.38	
Deferred payments on previous year's sales	3,228,239.02	
	\$13,838,153.40	
Amount remaining in deferred payments on the sales of the year	9,183,640.97	4,654,512.43
Amount received from sales of government securities and repayment of advances to governments		9,017,458.13
Amount of West Kootenay Power & Light Co.'s first mortgage bonds transferred from miscellaneous securities to pension fund (cost)		35,283.33
Amount applied in reduction of cost of mining and other properties		17,956.58
Increase on current liabilities, rentals of leased lines and coupons on mortgage bonds, and reserves and appropriations	24,740,569.94	
	\$109,335,065.59	

EXPENDITURES:

Dividends on preference stock.....	\$3,227,276.84	
Dividends on ordinary stock.....	26,000,000.00	
Construction of branch lines.....	1,415,970.35	
Additions and improvements, main line and branches.....	3,095,694.08	
Expenditure on leased and acquired lines	1,198,548.55	
Shops and machinery	64,452.85	
Lake and river steamships	27,115.40	
Ocean and coastal steamships:		
Payments on steamships acquired and under construction	\$10,394,443.06	
Less amount paid from steamship replacement	8,009,690.30	2,384,752.76
Deposited with trustee, special investment fund		6,607,318.59
Securities acquired:		
Consolidated Mining & Smelting Co. bonds	\$2,698,400.00	
Lake Erie & Northern Ry. 1st mortgage bonds	6,700.00	
Nakusp & Slocan Ry. bonds	647,072.00	
Alberta Stock Yards Co., preferred stock	430,500.00	
Public Markets Ltd., of Manitoba, stock	50,000.00	
Trustee securities.....	2,201,539.69	6,084,211.69
Payments on subscriptions to government loans	2,087,981.25	
Payment of equipment obligations....	940,000.00	
Increase in working assets and advances to controlled properties and insurance premiums.....	2,782,322.45	
	\$ 55,815,644.81	53,519,420.78
Cash in hand, Dec. 31, 1919.....		\$109,335,065.59

Construction of Branch Lines.

Archive—Wymark Branch	\$ 81,099.10
Bassano East (Milden southwest)	26,444.27
Langdon North (Acme-Drumheller)	483,962.31
Langdon Northeast Branch	347,657.80
Leader Southeast Branch	94,561.20
Moose Jaw Southwest (Consul Southeast) Branch	109,633.16
Rosetown Southeast Branch	136,964.26
Surveys	135,648.25
	\$1,415,970.35

Earnings for Year Ended Dec. 31, 1919.	
Passengers	\$ 46,132,151.12
Freight	111,064,441.68
Mails	1,483,332.26
Sleeping cars, express and miscellaneous	18,199,134.94
Total	\$176,929,060.00

Working Expenses for Year Ended Dec. 31, 1919.	
Transportation	\$ 68,054,174.76
Maintenance of way and structures..	28,912,220.30
Maintenance of equipment.....	33,897,727.64
Traffic	3,829,686.56
Parlor and sleeping cars	1,861,428.05
Lake and river steamships	1,335,003.19
General	6,105,783.08
Total	\$143,996,023.58

Description of Freight Forwarded, Years Ended Dec. 31.

	1918.	1919.
Flour, barrels	13,301,740	12,787,020
Grain, bushels	137,070,428	121,059,921
Live stock, head.....	2,364,870	2,603,571
Lumber, feet	3,241,312,802	3,143,431,200
Firewood, cords	339,631	279,925
Manufactured articles, tons	9,718,373	7,854,163
All other articles, tons	9,798,523	7,589,275

Freight Traffic, Years Ended Dec. 31.

	1918.	1919.
Tons carried	29,856,694	25,102,321
Tons carried one mile	13,014,665,922	11,121,322,012
Earnings per ton per mile	0.85 cents	1.00 cents

Passenger Traffic, Years Ended Dec. 31.

	1918.	1919.
Passengers carried....	14,502,546	15,815,982
Passengers carried one mile	1,289,280,061	1,776,740,850
Earnings per passenger per mile	2.39 cents	2.60 cents

Train Traffic Statistics, Years Ended Dec. 31. Earnings of lake and river steamships and of Kettle Valley Ry. not included.

TRAIN MILEAGE.

	1919.	1918.
Passenger trains	20,411,110	16,665,928
Freight trains	19,994,867	22,326,115
Mixed trains	1,943,410	1,966,362
Total trains.....	42,349,387	40,958,405

CAR MILEAGE.

Passenger.		
Passenger and P. D. and S. cars....	110,759,727	82,747,310
Combination cars....	2,400,909	2,366,268
Baggage mail and express cars	46,196,600	40,903,961
Total passenger cars	159,357,236	126,017,539
Freight.		
Loaded	494,862,169	539,157,440
Empty	170,620,412	199,157,368
Caboose	23,988,547	25,343,851
Total freight cars	689,471,128	763,658,659

Passenger cars per traffic train mile....	7.13	6.76
Freight cars per traffic train mile.....	31.43	31.44

PASSENGER TRAFFIC.

Passengers carried (earning revenue)	15,671,752	14,396,753
Passengers carried (earning revenue) one mile	1,763,604,596	1,280,583,734
Passengers carried (earning revenue) one mile per mile of road	135,727	98,550
Average journey per passenger miles.....	112.53	88.95
Average amount received per passenger	\$2.91	\$2.12
Average amount received per passenger mile	2.59c	2.38c
Average number of passengers per train mile	78.89	68.73
Average number of passengers per car mile	15.58	15.04
Revenue from passengers per passenger car mile.....	40.32c	35.81c
Total passenger train earnings per train mile	\$2.59	\$2.15
Total passenger train earnings per mile of road	\$4,463.87	\$3,078.88

FREIGHT TRAFFIC.

Tons of revenue freight carried one mile	10,926,848,494	12,885,684,625
Tons of non revenue freight carried one mile	1,378,437,805	1,423,459,482
Total tons (all classes) freight carried one mile	12,305,286,299	14,309,144,107

Tons of revenue freight carried one mile per mile of road	840,928	991,680
Tons of non-revenue freight carried one mile per mile of road	106,034	109,549
Total tons (all classes) freight carried one mile per mile of road	947,012	1,101,229
Average amount received per ton per mile of revenue freight	1.003c	0.847c
Average no. of tons of revenue freight per train mile.....	498.07	530.44
Average no. of tons of non - revenue freight per train mile	62.83	58.60
Average no. of tons of (all classes) freight per train mile	560.90	589.04
Average no. of tons of revenue freight per loaded car mile	22.08	23.90
Average no. of tons of non - revenue freight per loaded car mile	2.79	2.64
Average no. of tons of (all classes) freight per loaded car mile	24.87	26.54
Freight train earnings per loaded car mile	22.15c	20.24c
Freight train earnings per train mile	\$5.00	\$4.49
Freight train earnings per mile of road	\$8,434.11	\$8,398.25
Mileage of Company's Lines.		
Included in C.P.R. traffic returns.....	13,388.5	
Other lines worked	383.6	
Lines under construction	234.0	
	14,006.1	
Minneapolis, St. Paul & Sault Ste. Marie Ry.	4,227.8	
Duluth, South Shore & Atlantic Ry.....	625.8	
	4,853.6	
	18,859.7	

French Railway Rates Increased. The French Official Journal states that an act has been passed authorizing further temporary increases in French railway rates. The new increases, which will be in force for 1920, are as follows: third class tickets, 45%; second class tickets 50%; first class tickets 55%; transport of merchandise, 115%. The present increases will be added to the increase of 25% provided by the law of Mar. 31, 1918, but the new percentage of increase will not apply to or be calculated upon this previous increase of 25% itself.

Canadian National Rys. Shop Employees.—The Minister of Railways, replying to questions in the House of Commons recently, said that 93 employees of the Riviere du Loup, Que., shops had been transferred to the St. Malo shops at Quebec City, of whom 33 are single and 60 married; there are dependent on the married men 227 women and children and 29 other dependents. The total population thus removed from Riviere du Loup was 349.

Esquimalt & Nanaimo Ry. Land Grants. The British Columbia Legislature appointed a committee recently to enquire into and determine certain matters respecting coal licenses granted on lands ceded to the Esquimalt & Nanaimo Ry. under the settlement agreement of 1910, and to report what, if any, measure of relief should be granted to the license holders.

E. A. Campbell, agent, C.P.R., Sussex St., Ottawa, in remitting his annual subscription, writes: "I enjoy Canadian Railway and Marine World very much."

Rules for Inspection of Locomotives and Tenders.

The Board of Railway Commissioners passed general order 289, Mar. 24, as follows:—Re consideration of adoption by railway companies of rules relative to inspection of locomotives and tenders. In pursuance of powers conferred upon the board by the Railway Act, 1919, Sec. 287, and of all other powers possessed by it in that behalf; and upon reading the submissions filed by the Railway Association of Canada and the Canadian Pacific and Grand Trunk Railways, and the report and recommendation of the board's Chief Operating Officer, it is ordered that railway companies adopt and put into force, not later than June 1, 1920, the rules relative to the inspection of locomotives and tenders, hereto attached marked "A".

"A" Rules relative to inspection of locomotives and tenders.

Every locomotive and tender shall be inspected after each trip, or day's work. The employe making the inspection shall report all defects found, in report book. Defects reported, which are not repaired before the locomotive is returned to service, shall be filed in the office where the inspection is made.

Air Brakes. It must be known before each trip that the brakes on locomotive and tender are in safe and suitable condition for service; that the air compressor or compressors are in condition to provide an ample supply of air for the service in which the locomotive is used; and that all other devices for controlling or regulating the pressure are properly maintained.

Testing Main Reservoirs. Every main reservoir, before being put into service, and at least each 12 months thereafter, shall be subjected to hydrostatic pressure, not less than 25% above the maximum allowed air pressure. The entire surface of the reservoir shall be hammered tested each time the locomotive is shopped for general repairs, but not less frequently than once each 18 months.

The draw gear between the locomotive and tender, together with the pins and fastenings, shall be maintained in safe and suitable condition for service. The pins and drawbar shall be removed and carefully examined for defects not less frequently than once each 3 months. Suitable means for securing the drawbar pins in place shall be provided. Inverted drawbar pins shall be held in place by plate or stirrup. (b) Two or more safety bars or safety chains of ample strength shall be provided between locomotive and tender (except when double drawbars are used), maintained in safe and suitable condition for service, and inspected at the same time draw gear is inspected. (c) Safety chains or safety bars shall be of the minimum length consistent with the curvature of the railway on which the locomotive is operated. (d) Lost motion between locomotives and tenders not equipped with spring buffer, shall be kept to a minimum and shall not exceed ½ in. (e) When spring buffers are used between locomotives and tenders, the spring shall be applied with not less than ¾ in. compression, and shall at all times be under sufficient compression to keep the chafing faces in contact.

Chafing irons of such radius as will permit proper curving shall be securely attached to locomotive and tender, and shall be maintained in condition to per-

mit free movement laterally and vertically.

Draft gear and attachments on locomotives and tenders shall be securely fastened and maintained in safe and suitable condition for service.

Cab Lights. Each locomotive, used between sunset and sunrise, shall have cab lamps, which will provide sufficient illumination for the steam, air, and water gauges, to enable the enginemmen to make necessary and accurate readings from their usual and proper positions in the cab. These lights shall be so located and constructed that the light will shine only on those parts requiring illumination. Locomotives used in road service shall have an additional lamp, conveniently located, to enable the persons operating the locomotive to easily and accurately read train orders and time tables, and so constructed that it may be readily darkened or extinguished.

The total lateral motion, or play, between the hubs of the wheels and the boxes on any pair of wheels shall not exceed the following limits:

For engine truck wheels (trucks with swing centers)	1 in.
For engine truck wheels (trucks with rigid centers)	1½ in.
For trailing truck wheels	1 in.
For driving wheels (more than 1 pair) not more than	¾ in.

These limits may be increased on locomotives operating on track where the curvature exceeds 20 degrees, when it can be shown that conditions require additional lateral motion.

Pilots shall be securely attached, properly braced, and maintained in a safe and suitable condition for service. The minimum height from the rail 3 in. and the maximum 6 in.

Brazilian Railway Electrification.—A Rio Janeiro press dispatch says that the Paulista Ry. has given the General Electric Co., Schenectady, N.Y., a contract for the electrification of its lines, at a cost of over \$2,000,000, which will include the electrification of 44 kilometers of double track, between Jundiahy and Campinas, the building of a 4,500 k.w. sub station at Louviers, and the supply of 12 electric locomotives.

Canadian National Railway's Official Cars — Replying to questions in the House of Commons recently, the Minister of Railways said that official cars are used by the management and superintendents in connections with operation over the entire system of 14,000 miles, the expenses of which are charged to operating expenses under the headings of administration and superintendence.

Temiscouata Ry.'s Future.—The Minister of Railways stated in reply to a question in the House of Commons recently that it is not the government's intention to acquire the Temiscouata Ry., running from Riviere du Loup, Que., to Edmundston, N.B., in order to make it a Canadian National Ry. branch.

The Railway Maintenance of Way Men through their brotherhood organization, will according to a press report, establish co-operative stores at several Canadian railway centers for the benefit of members. Arrangements are said to be in progress for a store in Windsor, Ont.

The Point St. Charles Railway Y.M.C. A building at Montreal is reported to have been sold to the G.T.R. for conversion into an office building. A new building for Y.M.C.A. purposes will, it is said, be built on Wellington St., during this year.

Birthdays of Transportation Men in May.

Many happy returns of the day to:

J. F. Aitchison, Auditor of Disbursements, G.T.R. and Grand Trunk Pacific Ry., Montreal, born at Edinburgh, Scotland, May 28, 1880.

Jas. Bain, Superintendent, Halifax & South Western Ry. (Canadian National Rys.), Bridgewater, N.S., born at Pictou, N.S., May 24, 1860.

B. A. Bourgeois, Assistant to Comptroller and Treasurer, Canadian Government Railways, Moncton, N.B., born there May 24, 1869.

B. T. Chappell, General Superintendent, Prairie District, Western Lines, Canadian National Rys., Saskatoon, Sask., born at Charlottetown, P.E.I., May 1, 1878.

N. R. DesBrisay, District Passenger Agent, C.P.R., St. John, N.B., born at Minneapolis, Minn., May 18 1888.

A. E. Duff, ex-District Passenger Agent, G.T.R., Toronto, now of Winnipeg, born at Sherbrooke, Que., May 1, 1872.

G. C. Dunn, Division Engineer, Grand Trunk Pacific Ry., Winnipeg, born at Quebec, May 13, 1862.

C. S. Gzowski, Jr., Special Engineer to Vice President, Operation, Etc., Canadian National Rys., Toronto, born there, May 1, 1876.

G. H. Hedge, Works Manager, Canadian National Rys., Winnipeg, born at Neath, Wales, May 26, 1865.

G. A. Hoag, Superintendent, Nipissing Division, Ontario District, Canadian National Rys., Capreol, Ont., born at Walters Falls, May 31, 1866.

J. Irwin, Superintendent, Division 4, Western District, Canadian National Rys., Calgary, Alta., born at Clinton, Ont., May 28, 1866.

J. N. Murphy, Roadmaster, C.P.R., Brandon, Man., born at Mooretown, Ont., May 10, 1879.

Sir Augustus M. Nanton, President, Winnipeg Electric Ry., and director, C.P.R., Winnipeg, born at Toronto, May 7, 1860.

A. V. Redmond, District Engineer, Central District, Canadian National Rys., Winnipeg, born at Kingston, Ont., May 16, 1879.

A. C. Shaw, Passenger Department C.P.R., Montreal, born at Detroit, Mich., May 12, 1865.

W. H. Snell, General Passenger Agent, C.P.R., Montreal, born at Palmyra, Neb., May 23, 1872.

W. Stapleton, District Passenger Agent, Canadian National Rys., Saskatoon, Sask., born at Bristol, Eng., May 20, 1884.

R. B. Teakle, Manager, Canadian Government Merchant Marine, Ltd., Montreal, born at Quebec, Que., May 19, 1877.

J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke, Que., born at Quebec, May 12, 1860.

H. K. Wicksteed, B.A.Sc., C.E., Consulting Engineer, Canadian National Rys., Toronto, born at Quebec, May 25, 1855.

C. L. Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto, born at Boston, Mass., May 23, 1871.

A. O. Wolff, Resident Engineer, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Copenhagen, Denmark, May 14, 1887.

Freight Car Roofs.

By H. R. Naylor, Assistant Works Manager, Canadian Pacific Ry., Montreal.

Car roofs, or the upper covering of what are classed as house cars, are a most interesting study. In point of importance they may be considered almost as essential as the wheels of a car, for although the wheels are the principal factor in moving a car from one location to another, the roof provides the necessary protection for the merchandise, which otherwise would be damaged or totally destroyed. The essential features of a car roof are to act as a watershed, enclosing the car, thereby providing security for the contents, and also to effectively tie and brace the car superstructure. A car roof consists of a suitable framing, securely attached to the top of the side and end framing of the car, providing the necessary support for the roof boards, metal sheets, or other materials which form the outer covering. In Europe, where the roof type of car has not been adopted to the same extent as in America, large quantities of freight are transported in open top cars, over which tarpaulins are spread and fastened, to protect the lading from the weather. This system, however, is gradually being abandoned as new equipment is built, and the house class of car adopted.

It is interesting to note the progress made on this continent in car roof construction from the time when the outer covering consisted only of a single layer of boards having tongue and groove joints. In many instances, I believe it was customary to use a wood shingle roof, similar to that commonly used in house construction. Another method adopted, presumably to overcome the leakage, was to apply the roof boards lengthwise of the car, overlapping each other, similar to clapboarding on present day wooden buildings, but it can be readily understood that this method of construction proved unsatisfactory, and gave way to the double board roof which can be seen on a large number of cars even today. This was a decided improvement over the earlier types of roof, especially when at a later date a layer of waterproof paper was applied between the first and second course of boards, and became known as the "plastic roof." This roof undoubtedly protected the lading for some time, but it eventually became waterlogged, and a method was then sought to prevent the water leaking between the joints of the top course of boards, which rapidly destroyed the paper and bottom boards. This was overcome, to a great extent, by grooving the face of the top boards, the grooves acting as drains, carrying off the water, and protecting the joints from possible leakage. In fact, this is the most common type of roof to be found on stock and refrigerator cars at the present time. The plastic roof, however, proved unsatisfactory for box cars, as the top course of boards soon warped, shrunk, and split, due to the constant drenching under courses of paper and boards to become waterlogged, setting up rapid decay and ending in numerous damage cases.

Metal Sub Roof.—So far it should be noted that only wood, paper, and, in some instances, canvas, were being used in roof construction, which in themselves are very poor weather-resisters, creating a demand for further improvements,

which brought metal into use for the first time. The next step was a distinctly new departure, and brought into existence the metal sub roof, over which a wood roof was applied, for protection only. The roof framing consisted of a ridgepole, carlines and purlins, to which an addition was made in the form of cross rafters. The galvanized metal sheets were formed with corrugations, and fitted into suitable grooves in the ridgepole and rafters, providing altogether a fairly effective watershed. This was undoubtedly a distinct advance in roof design, and was the forerunner of the sub-metal roof on thousands of box cars at present, but it was not long before the usual complaints were being made about this new metal roof, owing to the grooved edges of the wooden rafters breaking away, allowing the metal sheets to sag and leak. This defect was eventually overcome by flanging the roof sheets, and applying a metal capping over the rafters, which enclosed the flanges of the roof sheets, making a continuous metal watershed for the full length of the car. With a few later modifications this was the final attempt along the lines of a metal sub-roof. Some of the principal objections to the metal sub-roof are that the roof sheets, in time, buckle up at the eaves, and work out of the grooves in the ridgepole. With the constant twisting and straining of the car superstructure, the metal sheets and caps are soon displaced and bent, and in making repairs to the outer wood roof, the metal sheets are frequently punctured by nails, carelessly driven, all of which result in damage to the lading. The outer wood roof also requires frequent renewal, on account of constant exposure, which is a rather expensive item, when added to the cost of maintaining the metal sub-roof.

Before passing to the consideration of more modern roofs, it should be observed that the metal sub-roof proved a distinct advance over the types previously used, and was, with a few exceptions, the standard design on box cars for upwards of 20 years, but the steady increase in car capacity, and length of train, threw an ever increasing load on the car superstructure, including the roof framing, this demanding in turn improved roof construction. This demand was met by adopting a roof framing made of steel, as in other parts of the car, for instance, the wooden carlines which were bolted to the sideplates, and a source of constant trouble, gave way to the steel carlines of various shapes, rivetted to the sideplates, in order to give greater rigidity and strength. Other parts of the roof framing were improved, and reinforced, in a similar manner, providing greater stability, which is most essential if the outer roof is to be protected from the racking and straining of the car superstructure. This demand for greater stability was largely responsible for an entirely new departure in roof design, for instead of placing the wood roof boards on the outside, as in the case of the metal sub-roof, the plan was reversed, the roof boards being applied direct to the roof framing, and the metal roof sheets used as an outer protection for the boards, in addition to acting as a watershed. The roof boards in this case, being applied direct to the roof framing, had the ef-

fect of bracing the roof against cornering and bulging, and brought into extensive use the outside metal roof.

The outside metal roof usually consists of one course of 13/16 tongue and groove boards, securely fastened to the roof framing, the outer metal roof being formed of galvanized iron sheets, generally of no. 22 gauge. At the junctions of the main sheets, weather-proof protection is provided by metal caps, formed in various ways to interlock with the flanged edges of the main sheets. The method of securing the outside metal sheets at the eaves is very different to that on the metal sub-roof. The roof sheets on the latter type are prevented from lifting, by the capping and outer wood roof, the fascia boards securing the sheets laterally on the car, making nailing unnecessary at the eaves. On the outside metal roof, the main roof sheets, or eave flashings, are flanged at the eaves, and secured to the outside of the fascia boards. This difference in the method of attachment on the early types of outside metal roofs, which were not designed to allow freedom of movement at the roof sheet intersections, resulted in cracked sheets and a considerable number of defective roofs, but eventually this was entirely overcome, by providing ample sideplay at the main sheet capping, and applying eave flashings, giving the roof the necessary flexibility to withstand the cornering, weaving and bulging of the superstructure. In the development of roof construction wood is being gradually eliminated, or restricted in its use, for instance, the wood framing is being abandoned in favor of steel, and as a roofing it is used only to protect or support the metal roof sheets, all of which is in keeping with the steady advance in car construction.

All Steel Roofs.—Progressing still further along these lines we find roofs today built entirely of steel, and in consequence known as all-steel roofs. In comparison with the composite roofs already described, the all-steel roofs presents an entirely new departure in design, both in regard to framing and roofing. The roof sheets are usually of 1/16 in. galvanized steel, but in some instances the sheets are 3/32 in. thick, and span the full width of the car, providing in themselves the necessary protection against puncture or other hard usage. Additional reinforcement can be obtained by corrugating the roof sheets at suitable intervals. The carlines in most cases are designed to provide ready means of connecting the roof sheets, in addition to supporting the roof, and bracing the superstructure of the car. With the adoption of the all-steel roof, the question of flexibility becomes a very live subject, some types provide for free movement of the roof sheets, in a similar manner to the flexible outside metal roof, while in others the roof sheets are flanged, capped and rivetted together, forming in themselves an absolutely rigid roof. It is claimed for the first type that the roof should be sufficiently flexible to take care of the constant straining of the car body, while in the rigid type the roof is made strong enough to resist the straining of the body, and act as bracing for the superstructure. The all-steel roof lends itself readily to the use of outside carlines, this arrangement giving the car a considerable advantage in loading space.

Other advantages are the reduction in fire risk, and final cost, owing to the life of the car, and finally, a greater safeguard against leakage is obtained by the use of thicker sheets, which resist corrosion and cracking to a greater extent, and as a result this type of roof is gradually meeting with more general approval.

An objection which is sometimes raised against the all-steel roof is the claim that under certain conditions it is liable to sweat, resulting possibly in damage to lading. For instance, freshly milled flour, containing a high percentage of moisture, and which is usually hot when loaded, quickly raises the temperature of the car above that of the outside atmosphere. It is claimed that the metal roof, being then subject to two widely varying temperatures, commences to sweat, and that the resultant moisture is sufficient to damage the contents. It is questionable, however, if this is of enough importance to warrant special attention when building box cars for general service requirements, but as a measure of precaution effective steps are being taken to prevent the possibility of this occurring, even under the most extreme conditions, and eventually there is good reason to believe that the all-steel roof will meet all requirements, even to the extent of satisfying the demands of very exacting shippers.

Double Board Roof.—As previously mentioned, the double board roof is the most common type on refrigerator and stock cars today, and while it meets the requirements for stock cars, it is rather surprising that a better roof has not been previously adopted for refrigerator cars, in order to protect the insulation more effectively. In making repairs to this class of car, it is often necessary to renew the whole roof insulation, and ceiling, which have become waterlogged and decayed, owing to the poor protection offered by the double board roof. The entire side and end framing, with their insulation, are often affected in a similar manner, due to the water working down through the defective roof. These conditions are becoming better recognized, and as a result we find the outside metal roof now being adopted for refrigerator cars. Owing to the metal roof being a greater conductor of heat, it might be necessary to increase the roof insulation, but the added cost would be more than offset by the saving in maintenance.

Having briefly sketched the development of the car roof from the old time shingle to the modern metal type, it may be well to summarize a few of the more essential features entering into roof design, and conclude with a reference to maintenance. In comparison with the roof of a stationary building, which, outside of providing the necessary shelter, has only to contend with wind pressures, the car roof has to withstand considerably more abuse, due to the fact that the car is constantly in motion, from the day it is built to the last day of its existence. Consider for a moment what happens to a car, especially a loaded car, when in a switching movement it is shot at a speed varying anywhere up to 10 miles an hour, on to a train of cars at rest. Many of us have seen this happen frequently, and still more have heard the report and marvelled that the cars withstood the racket. The underframe of the car in motion is immediately arrested on impact with the other car, but the car superstructure, with its contents, is not arrested so quickly, with the result that it is strained from end to end, including the roof, which ties the side and end

framing together. The car roof must also take care of a bulging load, when grain or other material is carried in bulk, uneven track, curving, side wiping, and hump yard switching, all of which set up different strains, which must be considered and provided for in car roof construction, in order to keep clear of future trouble. It is these conditions that persuade many car builders to adopt a roof sufficiently flexible to accommodate the strains in order to ensure it being water tight. On the other hand, the advocates of the rigid roof believe in making the roof sufficiently strong to withstand the strain, and tie the superstructure together.

In conclusion, I may point to the importance of roof maintenance. A car roof should be so constructed that repairs can be made quickly, and at a minimum cost. The position of the roof, in relation to other parts of the car, does not lend itself to proper maintenance. Trucks, airbrakes and draft gear are constantly being inspected for indications of possible failure, but unfortunately, and all too often, the only warning received of roof failure is when the damage has actually occurred to the lading. Car roofs should therefore be as far as possible self maintaining.

Corrosion will be an important factor in modern roof maintenance, and calls for a systematic method of painting, for it cannot be expected that the galvanizing will protect the roof sheets indefin-

itely. The best designed car roof will only last in proportion to the maintenance it receives, and the object should be to make the life of the roof equal to the life of the car.

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

Railway and Steamship Terminal for Sydney, N.S.

The Sydney, N.S., Board of Trade is reported to have received from the Public Works Department at Ottawa plans of a terminal dock to be built at Sydney towards the construction of which \$100,000 on account is passed in this year's estimates. The plans are said to call for the construction of a pier 540 ft. x 72 ft., having on each side 2 ship berths, one 350 ft. long and one 150 ft. long, was a low water depth of 29 ft. on the inside berths and 30 ft. on the outside berths. A warehouse 450 ft. x 40 ft. is to be erected on the pier, on each side of which will be a 4 ft. platform, level with the freight car floors. Two railway tracks will extend to the head of the dock on either side of the shed. The dock will consist of 25 concrete crib piers filled with stone, and the approach will be by an earth embankment, and will be located at about the site of the old Intercolonial Ry. wharf. The cost of the work is estimate at \$700,000 or \$800,000.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and Public Elevators in the East.

Week ending April 9th, 1920.	Wheat. Bush.	Oats. Bush.	Barley. Bush.	Flax. Bush.	Rye. Bush.	Totals. Bush.
Fort William						
C.P.R.	89,515	30,622	131,286		55,762	307,185
Empire Elevator Co.	266,262	150,507	229,705	9,906	65,237	721,617
Consolidated Elevator Co.	264,444	39,173	121,344	30,211	16,651	471,823
Orilvie Flour Mills Co.	795,851	26,093	83,562			968,620
Western Terminal Elevator Co.	147,920	56,118	24,018	15,794	11,395	355,245
G. T. Pacific	881,161	289,341	54,637	19,735	40,005	1,284,879
Grain Growers' Grain Co.	858,618	269,439	241,386		65,373	1,434,816
Port William Elevator Co.	225,082	319,891	52,646	5,827	24,881	628,327
Northwestern Elevator Co.	484,098	26,855	87,660	43	69	598,725
Port Arthur—						
Port Arthur Elevator Co.	2,316,188	902,946	358,079	327	69,508	3,647,048
Sask. Co-op. Elevator Co.	1,484,743	405,811	150,703	43,504	32,500	2,117,261
Canadian Government Elevator	190,269	87,277	34,651	59,830	27,523	399,550
Thunder Bay	481,154	471,459	103,106	13,966	23,426	1,093,966
Davidson and Smith	123,085	27,393	11,854		7,119	169,451
Eastern-Richardson	435,351	117,628	75,775	7,567	40,517	676,838
Total Public Terminal Elevators	9,143,741	3,220,553	1,760,412	210,280	543,080	14,878,066
Total Private Terminal Elevators	290,827	288,491	102,664	162	459	682,603
Saskatoon Can. Gov't. Elevator	1,997,543	379,687	4,337	2,521		2,384,088
Moose Jaw Can. Gov't. Elevator	947,122	384,175	12,770	8,435	3,921	1,356,423
Calgary Can. Gov't. Elevator	1,365,475	582,356	69,961	1,865	21,820	2,039,977
Vancouver, B.C.	16,857	32,077	10,376			59,310
*Total Interior Terminal Elevators	4,326,997	1,378,295	96,444	12,321	25,741	5,839,798
Midland—						
Aberdeen Elevator Co.	3,000	23,524	73,158			99,682
Midland Elevator Co.	25,171	211,398				236,569
Tiffin, G.T.P.	61,145					61,145
Port McNicoll	207,483	140,489	3,415			351,387
Goderich—						
Elevator and Transit Co.	321,092	22,400				343,492
West Can. Flour Mills Co., Ltd.	260,149					260,149
Toronto Campbell Flour Mills Co.	181,468	8,851	1,371			191,690
Kingston—						
Commercial Elevator Co.		19,593				19,593
Montreal—						
Harbor Commissioners No. 1 and 2	60,793	282,369	64,304		3,439	410,905
Montreal Warehousing Co.	441,323	12,342				453,665
Ogilvie Flour Mills Co.	259,423		1,380			260,803
Quebec Harbor Commissioners		30,671				30,671
West St. John, N.B., C.P.R.	486,898		136,905			623,803
St. John, N.B., Can. Nat. Rys.	352,686		91,307			443,993
Halifax, N.S., Can. Nat. Rys.	150,233					150,233
Baltimore, U.S.A.					8,336	8,336
Total Public Elevators	2,810,864	751,637	371,840		11,775	3,946,116
Total Country Elevators	14,148,779	10,368,491	1,739,249	324,697		26,581,216
Total Quantity in Store	30,721,208	16,007,467	40,706,609	547,460	581,055	51,727,799

*Quantity for each individual interior terminal elevator not received.

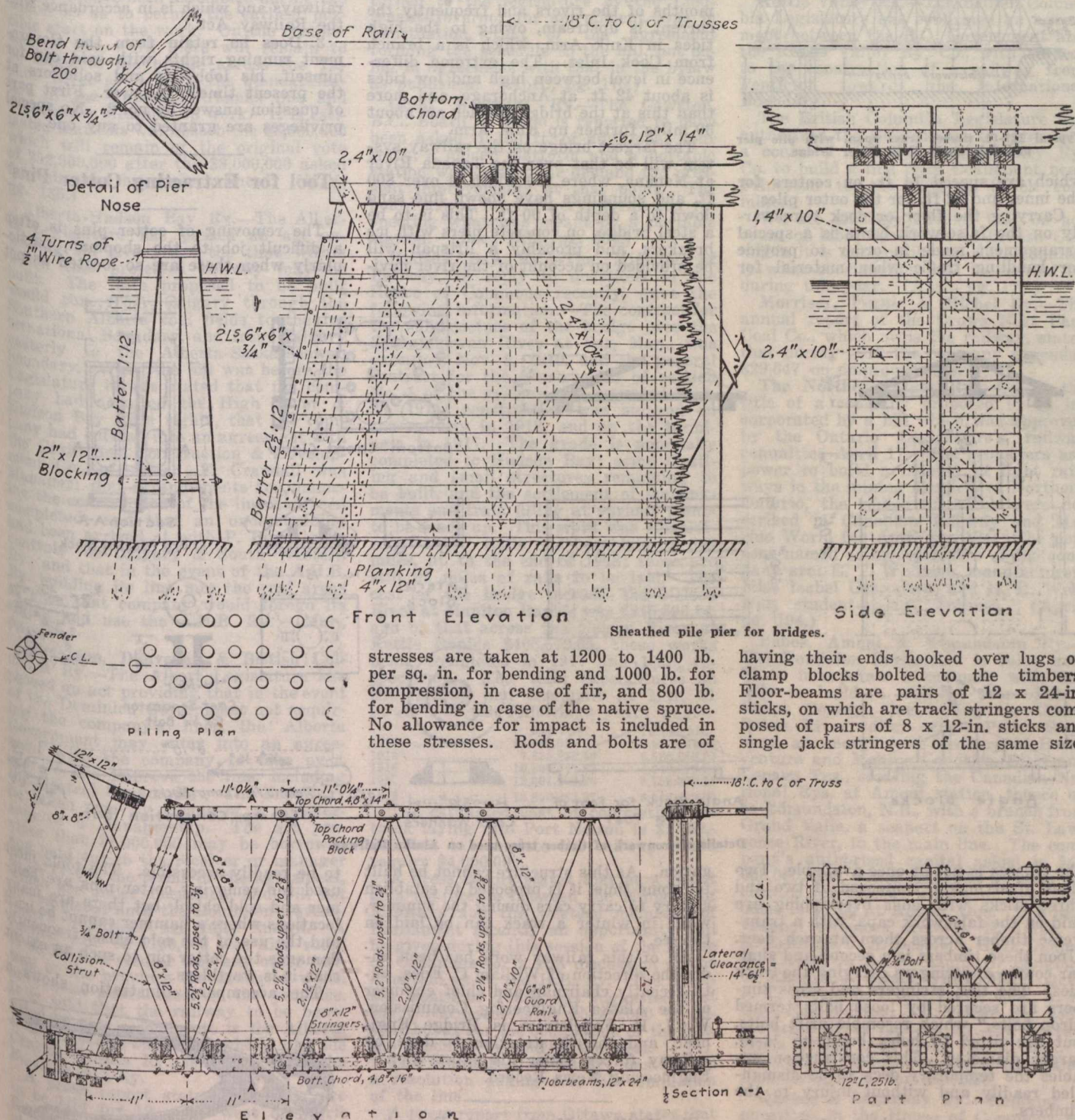
Timber Bridge Problems on the Alaska Railway.

Timber truss spans used extensively on the Alaskan Government Railway consist mainly of 121-ft. Howe-truss through and deck spans of standard designs, with 56-ft. pony truss spans for small openings: Bridging Alaskan riv-

cases where material for the trusses is delayed.

Douglas fir is used exclusively, except that Alaska spruce has been employed to a limited extent for temporary structures and a few small spans. Working

sticks 8 x 14 in. and 8 x 16 in., respectively, with cast-iron angle blocks for the truss members and transverse steel channels as bearing for the washers of the vertical tension rods. Splices in the chord timbers are made with clamp bars



Standard design of 121-ft. timber truss through span, Alaska Railway.

ers involves careful consideration of flood, drift and heavy ice, especially in streams fed by glaciers, and these factors have to be reckoned with in regard to erection of falsework as well as pier construction. As delivery of material is far from a base of supply, arrangements have been devised for carrying a temporary deck on the falsework bents in

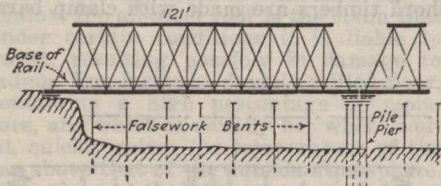
wrought iron of 50,000-lb. tensile strength, or of soft bessemer or open-hearth steel conforming to the American Society for Testing Materials structural steel specifications. All truss spans are designed for Cooper's E-50 loading.

The general design and details of the 121-ft. through truss span are shown in the accompanying drawings. The top and bottom chords are composed of four

having their ends hooked over lugs on clamp blocks bolted to the timbers. Floor-beams are pairs of 12 x 24-in. sticks, on which are track stringers composed of pairs of 8 x 12-in. sticks and single jack stringers of the same size.

A camber of 0.126 ft. is framed into the truss by means of blocking under the panel points of the bottom chords on the falsework during the erection of the bridge, the final adjustment being made by the tension rods. The piers have four rows of piles with diagonal bracing and have an outside sheathing of horizontal planks to prevent the lodging of ice and drift. In tidal

waters, where the current may flow in either direction with changes of the tide, a pile cluster is placed 10 ft. above and below each pier to act as a fender and ice breaker. Falsework bents are arranged as shown in one of the drawings. Each bent has a 24-ft. cap, 12 x 12-in., driftbolted to four vertical piles



Typical 121-ft. timber truss span, with pile pier and falsework, Knik River bridge.

which are spaced 14 ft. on centers for the inner and 22 ft. for the outer piles.

Carrying the floor or deck temporarily on the false-work bents is a special arrangement made in order to provide for handling traffic when material for

meaning "tent-house or summer-house river") comes from a glacier which has an extensive lake behind it. This lake overflows occasionally and breaks through the glacier, causing a destructive flood which covers the entire delta at the mouths of the two rivers. These floods occur generally during September and last from three to four weeks. The two bridges are located close to the mouths of the rivers and frequently the current is upstream, owing to the high tides in Knik Arm, which is a branch from Cook Inlet. The extreme difference in level between high and low tides is about 42 ft. at Anchorage, and more than this at the bridges, which are about 30 miles further up Knik Arm.

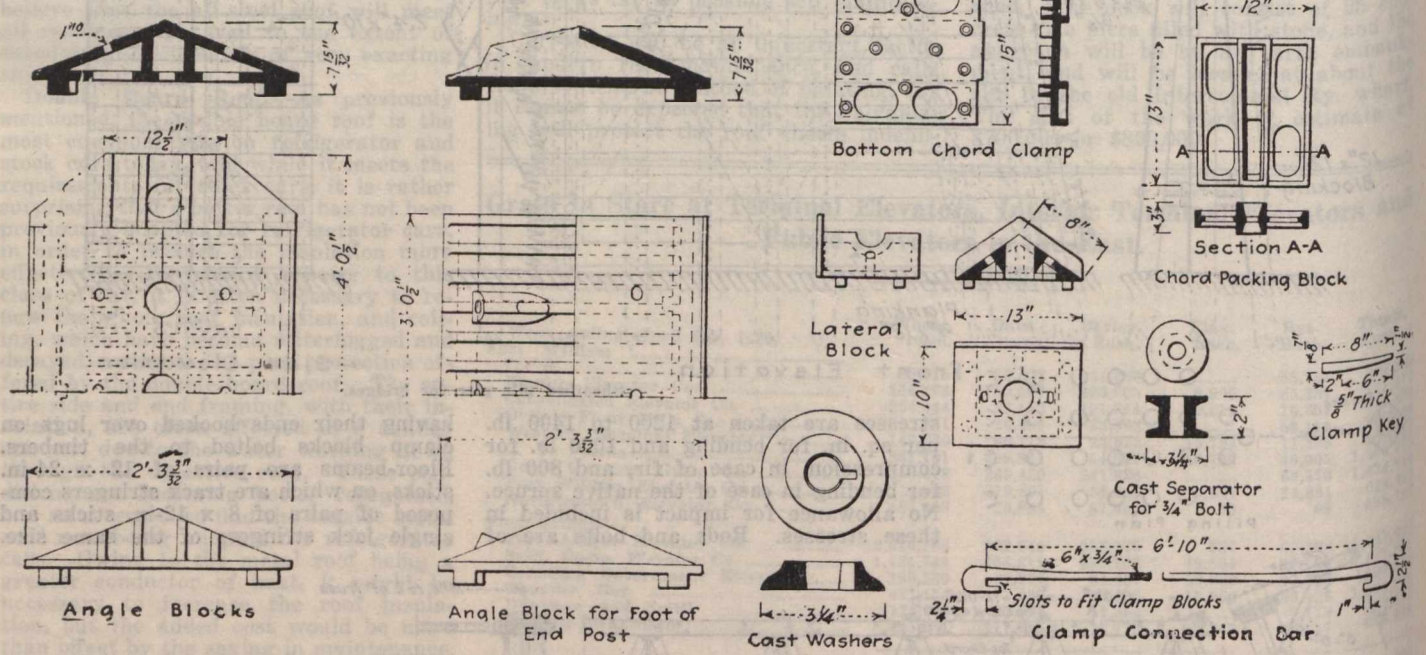
The largest bridge on the railway system will be that over the Tanana River at Nenana, where the width is over 800 ft. and soundings have shown fine sand down to a depth of 90 ft. This is to be a steel bridge, on concrete piers with ice breakers, and probably a liftspan will be provided on account of the river navi-

2. What office does Sir William Mackenzie hold in connection with the National Railways administration? Answer. Sir William Mackenzie holds no office of any kind, and has no connection in any way with the operation or administration of the Canadian National Rys. As ex President of the Canadian Northern Ry. he is allowed the transportation that all railways extend to ex presidents of railways and which is in accordance with the Railway Act.

3. Does he retain from the Government running rights with said car for himself, his lobbyists and solicitors at the present time? Answer. First part of question answer by no. 2. No special privileges are granted to any one.

Tool for Extracting Cotter Pins

The removing of cotter pins is often a difficult job to the shopman, particularly when these are so located as not



Details of ironwork of timber truss used on Alaska Railway.

the trusses is not at once available. Two lines of stringers, composed of two and three sticks with ends overlapping are laid on the falsework caps, with a transverse timber across them at each bent. Upon these timbers is a second and similar course of stringers carrying the track ties. The ties, stringers and cross timbers are secured by loose bolts termed "drop bolts," which resemble drift bolts, but are fitted to holes bored to 1/8-in. larger diameter. This construction enables the temporary deck to be dismantled readily and without injury to the timbers.

Two of the larger bridges of this type, across the Knik and Matanuska Rivers, have six and five 210-ft. through truss spans, respectively. In these cases special provision had to be made for ice and floods, as both rivers originate from larger glaciers and carry immense quantities of floating ice and drift at certain seasons.

The Matanuska River (or Chatonka, meaning "swift river") carries a large volume of water and quantities of driftwood. The Knik River (or Skidina,

gation. As this structure cannot be built for some time, it is proposed to establish a ferry to carry cars during the summer, while in winter a track can be laid on the ice.

All of this railway work has been under the direction of William C. Edes, until recently chairman and chief engineer of the Alaska Engineering Commission. W. J. H. Fogelstrom is Bridge Engineer, and the construction is done by railway forces under his supervision.—Engineering News Record.

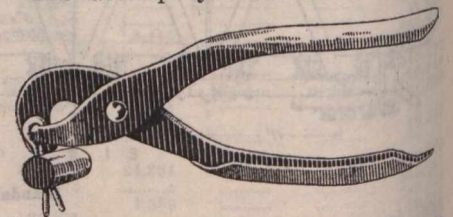
Sir William Mackenzie's Private Car.

The following questions were asked in the House of Commons recently, by P. F. Casgrain, M.P. for Charlevoix-Montmorency, the answers being given by the Minister of Railways:—

1. Was Sir William Mackenzie's private car included in the rolling stock of the Canadian Northern Railway taken over by the Government? Answer. No.

to be readily accessible. The tools most used for removing cotter pins are hammer and cold chisel, but there are many locations where a hammer cannot be used and the use of the cold chisel frequently damages the cotter pin to such an extent that it is worthless.

The accompany illustration shows a



tool for removing cotter pins which is of the same size as an ordinary pair of pliers. One tong of the pliers engages the pin, while the other uses all of the leverage exerted against the member through which the pin is inserted. As this leverage is four times as great as the actual force used the pin comes out quickly and easily.

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

Alaska.—The United States Congress is being asked to grant \$8,000,000 on account of construction work on the Alaskan railway for this current year. It is estimated that this will complete the railway through from Seward to Nenana on the Tanana River. Supplies are reported to have been assembled during the winter so as to permit the earliest possible start on the work. On the completion of this work there will remain to be complete the bridge across the Tanana River at Nenana, the standardization of the Tanana-Fairbanks line and some minor cleaning up work. It is estimated that this will absorb the \$3,000,000 which will remain of the original vote of \$52,000,000 after the \$8,000,000 asked for this year has been granted. (Mar., pg. 135.)

Alberta-Hudson Bay Ry.—The Alberta Legislature has passed an act extending for five years the time within which this projected railway may be built. The lines proposed to be built would run from Calgary through the Southern Alberta coal fields to the International Boundary, and from Calgary easterly to the Alberta-Saskatchewan boundary. When the bill was before the Legislature it was stated that the company had acquired the High River & Hudson Bay Ry.'s rights, that the company had entered into an agreement with the Grain Belt Construction & Development Co., of which F. Crandall was Manager; that arrangements for financing the construction of the line had been completed; and that an understanding had been arrived at with P. Burns, who controls the Calgary & South Western Ry., and that in the event of the A.H.B. Ry. building its line into the coal areas at once that company would forego its rights and use the A.H.B. Ry. (Mar., pg. 135.)

Edmonton, Dunvegan & British Columbia Ry.—The Alberta Legislature has passed an act providing that in the event of the Dominion Government not acquiring the company's lines, the Alberta Government may enter into an agreement with the company to take over, operate and improve the line, including the Central Canada Ry. The lines may be taken over by means of a receivership or a managership. The act provides that \$1,000,000 may be borrowed and paid out to the receiver or manager to carry out the terms of the agreement, which are under discussion, and will not be completed until the Dominion Government's intentions are fully known. A further sum of \$100,000 was also voted to assist in a similar way any other railway in the province the bonds of which have been guaranteed by the province. It is said that the railway to be benefited by this second vote is the Alberta & Great Waterways Ry., which, like the Central Canada Ry., is a branch of the E., D. & B.C. Ry.

A press report states that rails are to be laid for 12 miles west of Spirit River, on the E., D. & B.C. Ry. completed grade, in order to reach a block of timber land, where ties and other railway timber may be obtained. (April, pg. 175.)

Esquimalt & Nanaimo Ry.—The British Columbia Legislature has passed an act validating agreements made between the Victoria City Council and the Esquimalt & Nanaimo Ry., and between the Victoria City Council and the British Columbia Government, and the city's by-

law, passed in connection therewith, respecting the construction of the Johnston St. Bridge, Victoria, and to enable the city council to build the bridge. We are officially advised that the only change made in the bill as finally passed and the one passed originally and returned to the legislature by the Lieutenant-Governor for amendment, was in punctuation, that of the agreement forming the schedule to the bill, not being in agreement with that in the bylaw as published. (April, pg. 175.)

Great Northern Ry.—The Cawston, B.C., Board of Trade is reported to have been asked if 150 ft. of additional spur track, a cinder platform and a portable station would meet the demand for present improvements at that point. The board asked for further information respecting what was meant by a portable station. (Dec., 1919, pg. 604.)

Hudson Bay Ry.—The Minister of Railway, in reply to questions in the House of Commons recently, gave the following information:—The contract for the substructure of the bridge over the Saskatchewan River at Pas, Man., was executed, Nov. 5, 1910, and the general contract for the construction of section No. 1 of the railway was executed Sept. 25, 1911; construction was stopped on the railway in 1918, and on the terminals in 1917. The grade is nominally completed to Hudson Bay; some trestling and small structures remaining to be built, and the settlement of embankments and train filling at various points to be made up. This work was completed in 1917. Rails had been laid on 332 miles, up to the end of 1918; there are still 92 miles of rails to be laid. The cost of the bridge across the Nelson River at Manitow Rapids was \$215,596.34, and of that across the Nelson River at Kettle Rapids \$406,572.65, these works being completed in 1917 and 1918, respectively. The total expenditures on the railway and terminals at Mar. 31 in each of the followings years was:—

	Railway.	Terminals.
1914	\$4,569,908.01	\$1,517,124.66
1915	7,825,982.40	3,588,668.03
1916	10,809,407.87	4,940,500.56
1917	12,601,598.26	5,752,590.11
1918	13,890,387.87	6,343,499.50

The estimated cost of completing the track laying into Port Nelson is \$1,750,000, but to complete the railway would require \$4,000,000.

A press report states that as a result of a conference between the Minister of Railways and the western members of Parliament recently an opportunity will be given during this session of the House of Commons for a full discussion of the situation as to the H.B. Ry. The Yorkton Board of Trade has suggested that the Government issue \$5,000,000 of 20-year bonds for the completion of the line, the bonds to be sold in the west.

The Manitoba Legislature has passed a resolution asking for the completion of the line.

A press report from Ottawa states that a group of western members proposes to oppose the granting of supplies for the Welland Canal and other construction work, unless a vote is also approved for the completion of the Hudson Bay Ry. (April, pg. 175.)

The committee appointed by the Senate early in 1919 to investigate the navigability of Hudson Bay and Strait, and of Hudson Bay ports, with regard to their fitness as railway terminals, as well as on the fishery resources of the Bay,

was reappointed by the Senate April 22. The committee has power to continue its work between sessions. Senator Fowler, chairman of the committee, explained that it was nearly ready to make its report, and the reappointment was desired so that the report might be presented.

Kettle Valley Ry.—The British Columbia Legislature has confirmed an agreement between the B.C. Government and the Kettle Valley Ry. Co., with respect to the construction of a railway from Penticton towards the International Boundary.

The British Columbia Legislature has authorized the Government to enter into a contract with the Kettle Valley Ry. Co. to build a line from Coalmont, near Princeton to the Granite Creek coal mines.

We are officially advised that on account of labor conditions in British Columbia it is not possible to state definitely what construction will be carried on during this year. (April, pg. 175.)

Morrisey, Fernie & Michel Ry.—The annual report of the Crows Nest Pass Coal Co., which owns the railway, states that during 1919 the company expended \$29,647 on improvements.

The Northern Light Rys. Co. is the title of a company proposed to be incorporated by a bill which was approved by the Ontario Legislature's railway committee April 17. The promoters ask power to build a number of light railways in the mining districts of Northern Ontario, the routes of which were described in Canadian Railway and Marine World for April, pg. 194. The persons named as incorporators of the company are: E. T. Williams, manufacturer; Miss Isabel Gee, clerk, and H. R. Webster, student-at-law, Toronto. (April, pg. 194.)

Pabos, Amqui & Edmundston Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Pabos, Gaspé County, Que., along the Grand Pabos River valley across Pabos Seignory, an unorganized territory in Bonaventure and Matane Counties, Blais and Lepage Tps., crossing the Canadian National Rys. at Amqui station, thence on to Edmundston, N.B., with a branch from Grand Valle, a seaport on the St. Lawrence River, to the main line. The company's authorized capital asked is \$4,000,000, and power is asked to issue securities for \$75,000 a mile of line. The office is to be at Amqui, Que. The provisional directors are:—D. N. Dube, J. A. Brilliant, J. A. Desbiens, G. L. Dioune, M. Caron, L. A. Peduault, G. Langlois, of Amqui; J. Sirois, Val-Brillant, Que.; J. T. Bertrand, L'Isle Verte, Que.; J. A. Guy, Edmundston, N.B. (Mar., pg. 136.)

Pacific Great Eastern Ry.—A contract for a bridge over Deep Creek, B.C., is reported to have been given the Canadian Bridge Co. for \$330,220.

Quebec & Saguenay Ry.—Replying to questions in the House of Commons recently, the Minister of Railways said the work of bringing up the condition of the Quebec & Saguenay Ry. to standard was being carried on by the contractors, and that until they had ceased work the railway could hardly be said to be completed. During the time the contractors are at work it is deemed advisable that the operation of the railway be carried on under their superintendence. It is expected that the railway will be finally completed during this year.

The funds accruing from its operation are paid or credited to the Railways Department. (Oct., 1919, pg. 536.)

Quebec Central Ry.—A press report states that a contract has been let to J. T. and J. F. Davis, Montreal, for grading, concrete and masonry work on the eight mile extension from Scotts Station to St. Isidore, Que., which will give the company direct connection into Quebec City by using a short section of the National Transcontinental Ry. and the Quebec bridge.

The report also states that it is expected that construction will be gone on with at an early date on the 25 mile extension of the Chaudiere Valley line from the present terminus at Lake Frontier to St. Pamphile, for which the Quebec Legislature granted a land subsidy last session. This line will, it is stated, open up a valuable section of the country for colonization and traffic. (Mar., pg. 137.)

Quebec Rapid Transit Ry. Co. — The Dominion Parliament is being asked to extend the time within which the company may extend its projected railway. A. Taschereau, Quebec, is solicitor for the applicants. The company was incorporated by the Dominion Parliament in 1913 to build a railway from Quebec through Charlesbourg, Jeune Lorette, Aucrene Lorette, St. Foye, Cap Rouge, Sillery and Montcalm; also from Charlesbourg, through Riviere Jaune, Notre Dame des Laurentides, and Lake St. Charles to Jeune Lorette; also a line round Orleans Island and across the island, and a bridge from the north shore of the St. Lawrence River to Orleans Island. The company is authorized to enter into agreements with other railways, including the Quebec Ry., Light & Power Co., as regards its railways. The original incorporators were farmers and others along the route of the projected railway.

The Q. Ry., L. & P. Co. has recently been in negotiation with certain interests regarding a proposition for the construction of a line from Quebec to Loretteville.

Reid Newfoundland Co.—H. D. Reid, President, Reid Newfoundland Co., prior to leaving Montreal for Newfoundland recently is reported to have stated that it is proposed to build an hotel at St. John's at an estimated cost of \$500,000, in conjunction with local interests, and that progress will be made with the work of developing the company's lands, etc.

Timiskaming & Northern Ontario Ry. The Ontario Legislature has passed a resolution to the effect that a great impetus would be given to the development of New Ontario by the extension of the T. & N. O. Ry. from Cochrane to Moose Factory, on Hudson Bay. The resources of the area between these two points now being practically unattainable on account of transportation difficulties, which condition should be remedied at the earliest possible date. Premier Drury, in the course of the discussion, stated that the government had placed in the estimates \$125,000 for surveys and explorations in connection with this matter. The extension of the railway to James Bay would be the logical outcome and rounding out of the T. & N. O. R. system, but he believed that the government would be unwise to commit itself to the immediate building of the railway for financial reasons.

On the same day a resolution was proposed by R. R. Hall, M.L.A., favoring the building of a branch of the T. & N. O. Ry. from North Bay to Parry Sound. The debate was adjourned and on a subsequent date the motion was withdrawn,

the government having promised to look into the matter. (April, pg. 176.)

Toronto, Hamilton & Buffalo Ry.—The Board of Railway Commissioners has ordered that the company proceed with the construction of the highway bridge at King St., Hamilton. The existing bridge has been shown to be unsafe and

inadequate to present traffic requirements.

The Board of Railway Commissioners has made an order, amending a previous order, directing Barton Tp. Council to bear all cost of maintenance of a crossing over the railway at Barton Ave., Hamilton. (April, pg. 176.)

Canadian National Railways Construction, Betterments, Etc.

Prince Edward Island Ry.—The Minister of Railways, during a discussion of the Canadian National Railways, was asked in the House of Commons recently as to whether it is the government's intention to proceed with the widening of the gauge over the whole of the P.E.I. Ry. The Minister replied:—"We shall not proceed with that work during the present year. By standardizing the gauge between Charlottetown and Summerside we can take care of about 75% of Prince Edward Island's trade. As soon as financial considerations permit standardizing the gauge of the whole railway will be proceeded with, but not this year. The other parts of the island have the narrow gauge system and the only inconvenience involved is where there is trans-shipment. This, however, is not serious, because it is done by the railway forces at Charlottetown. The widening that has been so far done is of great importance and I quite appreciate the necessity for completing the work over the whole line as soon as possible. But financial conditions, we felt, would not justify our doing it during this year.

Sydney Dry Dock.—A press report states that work is about to be started on the construction of a spur line to connect the C.N.R. with the site of a dry dock to be built at Sydney, N.S., by the Sydney Foundry & Machine Co.

Stewiacke District.—At a conference at Truro, N.S., April 5, it was decided to ask the Dominion Government to build a loop line from Brookfield, serving Middle and Upper Stewiacke districts, and connecting with the Musquodoboit Ry. at its terminus at Deans, N.S. It was stated that a line had been surveyed and partly graded some years ago through the district, and that the area contains large timber, coal, iron, silver and gold resources.

Gosford Branch.—A press report states that Edward Conway has leased the Gosford Branch of the Quebec & Lake St. John Ry., that he has bought a gasoline engine and several cars, and that he will put the line in condition for operation.

Fort William to Winnipeg Pits. — A press report states that work has been started on the repair, replacing and filling of trestles on the National Transcontinental Ry. between Fort William and Winnipeg Pits, preparatory to reballasting the line. Work depots are stated to have been opened at Sioux Lookout, Vivian and Watcombe, Ont.

Lampman Coalfields.—At a meeting of the House of Commons railway committee April 15, O. R. Gould, M.P., urged the completion of an extension of the Canadian Northern Ry. to the Lampman coalfields, Sask., and the building of a half mile transfer switch to connect the C.N.R. with the C.P.R. at Carlisle, Sask. The Minister of Railways stated that the suggested extension of 9 miles was one among many other suggestions under consideration by the C.N.R. directors and would be built as soon as the board could

see its way clear to authorize the expenditure. With regard to the switch at Carlisle he suggested that application should be made to the Board of Railway Commissioners to order it to be put in.

North Battleford-Turtleford Branch Extension.—A press report states that it is proposed to build a 25 mile extension of the branch line from North Battleford, which at present is operated to Turtleford, 55.9 miles.

White Court to Grande Prairie. — A delegation of soldier settlers of the Grande Prairie district, Alberta, waited on the Dominion Government, April 16, and urged the building of a branch line from White Court, on the Peace River branch, to the Grande Prairie country. Grande Prairie is now reached by an Edmonton, Dunvegan & British Columbia Ry. branch from Spirit River.

British Columbia Terminals.—The B.C. Legislature has passed an act extending for a year the time within which the proceeds of the guaranteed securities held by the Finance Minister in respect of the works to be carried out under the Canadian Northern Pacific Ry. Extension Act, and the Canadian Northern Pacific Ry. Terminals Act, both passed in 1913, may be paid out. A statement as to the total amounts of guaranteed securities, the amounts expended and the amounts available for further expenditures were given in Canadian Railway and Marine World for April, pg. 195.

Vancouver Island.—A recent British Columbia press report stated that a freight service was about to be inaugurated on the Victoria-Alberni line between Victoria and the Koksilah River, to which point track had been laid. The bridge over the river was expected to be completed towards the middle of April, when tracklaying was expected to be resumed on the 16 miles intervening to the Canyon crossing of the Cowichan River. It is expected that the bridge across the river will be complete in about three months, and that track will be laid to the Nitinat River this year. (April, pg. 186.)

The Gowganda Engineering & Construction Co., Ltd., has been incorporated under the Ontario Companies Act, with \$40,000 authorized capital and office at Toronto, to carry on a general mining and construction company, with power to build tramways, railways, bridges, water courses, wharves, warehouses, etc. The provisional directors are: T. R. Ferguson, G. R. Sproat, and W. T. Jones, Toronto.

Canadian Transfer Co., Ltd. has been incorporated under the Dominion Companies Act, with \$500,000 authorized capital, and office at Montreal, to take over as a going concern, and carry on, the business of the Canadian Transfer Co., Ltd., with head office in Montreal, and offices at Toronto, Ottawa and Hamilton, and to carry on a general cartage contracting and forwarding business.

Mainly About Railway People Throughout Canada.

Harry Raymond Arthur, whose appointment as Trainmaster, Canadian National Rys., Lucerne, B.C., was announced in our last issue, was born at Lewisburg, Pa., May 25, 1875, and entered railway service June 15, 1890, since when he has been, to 1896, agent and operator at various points Chicago and North Western Ry.; 1896 to 1899, assistant to chief clerk, Local Freight Office, Sioux City and Northern Ry., Sioux City, Ia.; 1891 to 1904, chief clerk to Commercial Agent (Traffic), Illinois to Central Rd., Sioux City, Iowa; 1904 to 1912, Division Freight Agent, travelling auditor and chief clerk to Auditor of Station Accounts, same road, Fort Dodge, Iowa, and Chicago, Ill.; Oct., 1912, to Feb. 1, 1913, Travelling Car Agent, Canadian Northern Ry., Winnipeg; Feb. 1, to Nov. 18, 1913, chief clerk, General Manager's office, same road, Winnipeg; Nov. 18, 1913, to Nov. 20, 1915, Inspector of Transportation, same road, Winnipeg; Nov. 20, 1915, to Dec. 18, 1918, Inspector of Transportation, same road, Vancouver, B.C.; Dec. 18, 1918, to Jan. 1, 1919, acting Superintendent, same road, Kamloops Jct., B.C.; Jan. 1, 1919, to Feb. 17, 1920, Trainmaster, Canadian National Rys., Saskatoon, Sask.

John Alton Audrain, who has been appointed station master, C.P.R., Winnipeg, was born at St. John's, Jersey, Channel Islands, Jan. 23, 1883, and entered C.P.R. service in April, 1897, since when he has been, to 1904, apprentice, car shops, Winnipeg; 1904, to July 1, 1905, mechanic, car shops, Winnipeg; July 3 to Aug. 31, 1905, express messenger, Dominion Express Co., Winnipeg to Gretna and Emerson; Aug. 31, 1905, to May 1, 1906, mechanic, car shops, C.P.R., Winnipeg; May 10, 1906, to July 28, 1910, brakeman and baggageman, main line and branches out of Winnipeg; July 28, 1910, to Sept. 7, 1915, station master, Winnipeg; Sept. 7, 1915 to Jan., 1916, Trainmaster, C.P.R., Minnedosa, Man.; Jan., 1916, to April, 1920, Trainmaster, Saskatoon, Sask.

H. H. Ayer, Special Auditor, Canadian National Rys., Montreal, died there, April 5, after a short illness.

J. H. Barber, who has been appointed Division Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto, was born near Cobourg, Ont., Dec. 20, 1856, and educated in Toronto. He was an article pupil of James Ross, C.E., from 1875 to 1878, and was engaged as Assistant Engineer, and Division Engineer, on various sections of location and construction on the C.P.R. up to 1891. In 1891 he was appointed Resident Engineer, Maintenance of Way Department, C.P.R., Toronto, and was later appointed Division Engineer, Atlantic Division, C.P.R., St. John, N.B., holding that position until April, 1906, to 1916, Division Engineer, Eastern Division (now Quebec District); C.P.R., Montreal; 1916 to April, 1920, on special work at various points, including double tracking and grade separation, etc., Toronto.

Thomas J. Burns, Superintendent, Rolling Stock, Michigan Central Rd., died at Detroit, Apr. 18. He was born at Hillsdale, Mich., July 24, 1868, and was educated at Assumption College, Sandwich, Ont., and the Grand Seminary, Montreal. He entered M.C.R. service Apr. 4, 1890, as clerk in the Maintenance of Way Department, Bay City, Mich., and was promoted to locomotive dis-

patcher Nov. 1, 1896; appointed chief clerk to Master Mechanic, Jackson, Mich., Dec. 15, 1902; and was, from Aug., 1905, to July 1, 1909, chief clerk to Superintendent Motive Power; July 1, 1909, to June 1, 1912, Assistant to Superintendent, Motive Power; May 1, 1915, on the separation of the Locomotive and Car Departments, he was appointed Superintendent Rolling Stock, and held that position at the time of his death.

His Honor L. H. Clarke, Lieutenant-Governor of Ontario, and R. Home Smith, are spoken of as probable members of the commission to prepare for taking over the Toronto Ry., and to operate it after it becomes municipally owned. Sir John Woods and Mayor Church are also mentioned for the third membership of the commission.



S. W. Crabbe, Superintendent, Smiths Falls Division, Quebec District, Canadian Pacific Railway.

Stanley W. Crabbe, who has been appointed Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., was born at Teeswater, Ont., Aug. 9, 1885, and entered C. P. R. service in 1903, since when he has been, to Mar. 11, 1918, section laborer, telegraph operator and agent, consecutively, at different points; Mar. 11, 1918, to Apr. 1, 1920, Superintendent, Schreiber Division, Ontario District, C. P. R., Schreiber, Ont.

Victor Albert George Dey, who has been appointed Division Engineer, Bruce Division, Ontario District, C. P. R., Toronto, was born at Aberdeen, Scotland, Feb. 4, 1883, and entered railway service in Sept., 1903, since when he has been, to June, 1907, draftsman, C.P.R., Montreal; June, 1907, to June, 1911, office engineer, Quebec, Montreal & Southern Ry., Montreal; June, 1911, to Aug., Department, C.P.R., Montreal; Aug., 1918, to Apr. 1, 1920, Division Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto.

J. E. Duval, General Superintendent of Car Service, G.T.R., Montreal, died there

Apr. 28, after a very short illness, aged 60. He entered transportation service in Nov., 1884, as agent and operator, Canada Atlantic Ry., now part of the G.T.R., at Coteau Landing, Que., and from May, 1885, to 1902, was train dispatcher; 1902 to 1904, Chief Inspector, Board of Railway Commissioners; and in 1906 he organized the Canadian Car Service Bureau, of which he was appointed Manager, holding that position until Aug. 1, 1913, when he was appointed General Superintendent of Car Service, G.T.R., and in Feb., 1917, General Superintendent of Transportation, G.T.R., Montreal, and from Feb., 1917, was General Superintendent of Car Service, G.T.R., Montreal.

James Ferguson, whose appointment as Trainmaster, Canadian National Rys., Prince Albert, Sask., was announced in our last issue, was born at Woodbridge, Ont., June 17, 1878, and entered railway service Oct. 10, 1892, since when he has been, to Nov. 1, 1893, assistant agent, G. T. R., New Lowell, Mass.; Nov. 1, 1894, to June 5, 1895, operator at various points, G. T. R.; June 5, 1895, to Jan. 1, 1899, agent and operator at various points, C. P. R.; June 1, 1899, to Sept. 1, 1902, agent, Canadian Northern Ry., Belmont and Winnipeg, Man.; Sept. 1, 1902, to Jan. 13, 1907, dispatcher, same road, Port Arthur, Ont.; Aug., 1907, to Feb. 11, 1920, in train service, same road, Port Arthur, Ont.

W. R. Fitzmaurice, who has been appointed Superintendent, New Glasgow Division, Maritime District, Canadian National Rys., New Glasgow, N.S., was born at Bedford, N.S., March 19, 1870, and entered I.R.C. service May 21, 1886, since when he has been, to 1889, operator at various stations in Nova Scotia; 1889 to 1897, assistant agent, Springhill Jct., N.S.; 1897 to 1898, agent, Oxford Jct., N.S.; 1898 to Aug. 12, 1913, agent, Amherst, N.S.; Aug. 12, 1913, to Sept. 28, 1915, assistant Superintendent, Moncton-Ste. Flavie District, Newcastle, N.B.; Sept. 28, to Nov., 1915, acting Superintendent, District 2, Campbellton, N.B.; Nov., 1915, to Aug. 31, 1916, Assistant Superintendent, Moncton-Ste. Flavie District, Newcastle, N.B.; Aug. 31, 1916, to Apr. 24, 1920, Superintendent, District 2, Intercolonial Ry., now Campbellton Division, Maritime District, Canadian National Rys., Campbellton, N.B.

Charles Harry Fox, whose appointment as Assistant District Engineer, Manitoba District, C. P. R., Winnipeg, was announced in our last issue, was born there, Apr. 2, 1885, and entered C. P. R. service in May 1902, since when he has been, to July, 1903, clerk, Construction Department, Winnipeg; Aug., 1903, to Sept., 1904, rodman, maintenance of way, Fort William, Ont., and Brandon, Man.; 1904 to 1910, at McGill University, and during vacations, transit man, maintenance of way and construction, Winnipeg; Apr. to Dec., 1910, Resident Engineer on construction, Winnipeg; Dec., 1910, to Apr., 1912, Resident Engineer, Maintenance of Way, Fort William, Ont.; Apr., 1912, to Oct., 1916, Assistant Division Engineer, Winnipeg; Oct., 1916, to May, 1918, Division Engineer, Winnipeg; May, 1918, to Jan., 1919, on military service; Jan., 1919, to Mar., 1920, Division Engineer, Maintenance of Way, Regina, Sask.

J. Graff, civil engineer, was asphyxiated, owing to a leakage of gas in his bed-

room, at Seattle, Wash., Apr. 12. He was some years ago engaged in considerable railway construction work, having had charge of location at different times for Northern Pacific Ry., Great Northern Ry., Chicago, Milwaukee and Puget Sound Rd., in the United States, and C.P.R. and Esquimalt and Nanaimo Ry. in Canada.

G. G. Graham, exchange agent, Passenger Department, C.P.R., St. John, N.B., and Quebec, Que., during the respective seasons, has resigned and removed to Perth, Ont., where he has taken up farming. Before leaving St. John, he was presented with a set of pipes and a purse of money by a number of his associates.

Gordon Grant, Consulting Engineer, Railways and Canals Department, Ottawa, and heretofore Chief Engineer, Quebec & Saguenay Ry., has been appointed Chief Engineer of the Dominion Highways Commission. He continues as Consulting Engineer, Railways and Canals Department, but his duties as Chief Engineer, Quebec & Saguenay Ry., have ceased, the line having been transferred to Canadian National Rys., for operating purposes.

H. C. Grout, who has been appointed General Superintendent, Ontario District, C.P.R., Toronto, was born at Wausau, Wis., Mar. 14, 1881, and has been, to Feb., 1899, rodman; Feb., 1899 to Apr., 1901, leveller; Apr., 1901 to Apr., 1903, transit man; Apr., 1903 to Apr. 1, 1907, Resident Engineer, Toronto; Apr. 1, 1907 to Apr. 1, 1908, Assistant Division Engineer; Apr. 1, 1908, to Apr. 20, 1909, Resident Engineer, Toronto; Apr. 20, 1909 to Jan., 1910, Assistant Superintendent, District 3, Ontario Division, Toronto; Jan., 1910 to Feb., 1912, Assistant Superintendent, District 1, Ontario Division, Havelock; Feb. to July, 1912, Superintendent, District 1, Ontario Division, Toronto; July to Nov., 1912, Superintendent, District 1, Atlantic Division, St. John, N.B.; Nov., 1912 to May, 1913, Assistant General Superintendent, Atlantic Division, St. John, N.B.; May, 1913, to Sept., 1914, acting General Superintendent, Atlantic Division, St. John, N.B., and from Sept., 1914, General Superintendent, Atlantic Division, now New Brunswick District, St. John, N.B. Prior to leaving St. John, he was entertained at luncheon at the Union Club, Apr. 21, by a number of public officials and other citizens.

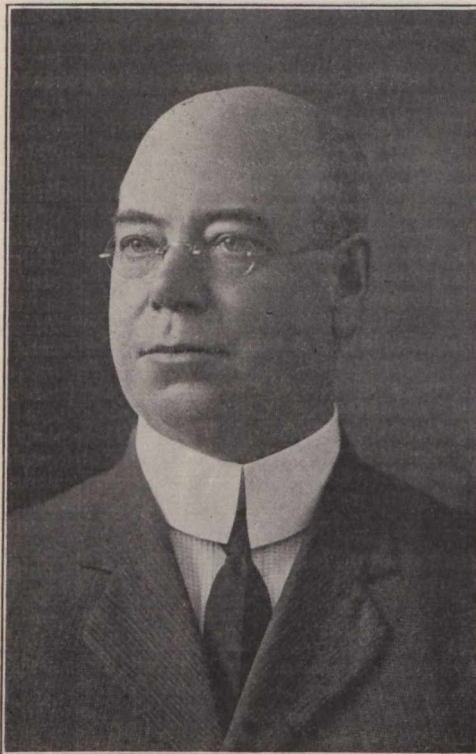
William C. Guthrie, who has been appointed Superintendent, Schreiber Division, Ontario District, C.P.R., Schreiber, Ont., was born at Arnprior, Ont., June 15, 1876, and entered C.P.R. service in 1892, since when he has been, to 1893, section laborer; 1893 to 1895, relieving section foreman; 1895 to 1898, section foreman; 1898 to Dec. 1, 1903, extra gang foreman, North Bay, Ont.; Dec. 1, 1903, to Feb. 1, 1911, Roadmaster, Chapleau, Ont.; Feb. 1, 1911, to Feb. 1, 1912, Roadmaster, North Bay, Ont.; Feb. 1 to Dec. 1, 1912, Roadmaster, Mattawa, Ont.; Dec. 1, 1912, to Apr. 1, 1920, Superintendent, Chapleau Division, Ontario District, Chapleau, Ont.

D. B. Hanna, President, Canadian National Rys., unveiled on April 16, an oil painting of Noel Marshall, President, Canadian Red Cross Society, which was presented to the National Club, Toronto, by a number of Mr. Marshall's fellow members. Mr. Hanna addressed the Lindsay, Ont., Board of Trade on Apr. 13, and spoke at a dinner given by the Quebec Board of Trade, on Apr. 21.

Wm. C. Hawkins, Managing Director

and Secretary, Dominion Power & Transmission Co., Hamilton, Ont., who, as stated in Canadian Railway and Marine world for April, left there Mar. 15, to spend some time in the south, but became worse on reaching Washington, D.C., and had to return to Philadelphia for treatment, went back to Washington, where he is seriously ill.

Jacob Samuel Lillie, whose appointment as Land and Tax Agent, Western Lines, G. T. R., Detroit, Mich., was announced in our last issue, was born at Sullivan, Ind., Jan. 9, 1888, and entered railway service in June, 1911, since when he has been, to Sept., 1911, rodman and levelman, Illinois Central Rd., Natchez, Mo.; June, 1913, to May, 1915, rodman and transit man, same road, Mattoon, Ill.; May to June, 1915, in valuation department, same road, Chicago, Ill.; June to Sept., 1915, levelman, same road, in Missouri, Arkansas and Kentucky; Sept., 1915, to Aug. 1916, in Land and Tax



J. E. Duval, General Superintendent of Car Service, Grand Trunk Railway, who died at Montreal, Apr. 28.

Commissioner's office, same road, Chicago, Ill.; Aug., 1916, to May, 1918, land accountant in charge of land work, Valuation Department, Western Lines, G. T. R., Detroit, Mich.; May to Oct., 1918, Assistant Land and Tax Commissioner, same road, Detroit, Mich.; Oct., 1918, to Mar. 1, 1920, Land and Tax Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich.

J. W. Lyon, of Guelph, Ont., who has been an active worker for hydro electric railways in Ontario, fell on a slippery bridge recently, and broke his right shoulder.

William Edward Massie, whose appointment as Master Mechanic, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., was announced in our last issue, was born at Elora, Ont., June 5, 1880, and entered electric railway service in 1895, serving in various capacities to 1907 on Toronto Ry., Toronto; from 1907 to 1915 he was General Foreman, Toronto and York Radial Ry., Toronto, and from 1915 to 1920, General

Superintendent, Sudbury-Copper Cliff Suburban Electric Ry., Sudbury, Ont., and in this capacity started and operated the first electric car in Sudbury.

M. T. McCraney, General Agent, Freight Department, Chicago, Rock Island and Pacific Ry., Pittsburg, Pa., died suddenly there, Apr. 7, and was buried at Toronto, Apr. 10. He was born at Oakville, Ont., and was educated for the law and called to the Ontario bar. He had been in C.R.I. & P.R. service for over 30 years.

M. H. MacLeod, Vice President, Operation and Maintenance, Canadian National Railway, Toronto, is spending some time at Victoria, B.C., for the benefit of his health.

R. P. Ormsby, Secretary, Canadian National Rys., returned to Toronto early in April after a trip to Great Britain.

W. J. Ptolemy, who has retired from the position of Deputy Provincial Treasurer for Manitoba, after 37 years service, was, a number of years ago, in the service of the Great Western Ry., now part of the G.T.R., and was later engaged in the construction of the telegraph line for the Dominion Government between Fort Pelly and Edmonton.

Allan Purvis, who has resigned as General Superintendent, Ontario District, C.P.R., Toronto, was born at Batavia, Java, June 29, 1878, and was educated at the Merchant Taylors' School, London, Eng. He entered C.P.R. service in Vancouver, B.C., at an early age, and was from Aug., 1890, to Feb., 1891, messenger, Stores Department; Feb. to Nov., 1891, storeman; Nov., 1891, to Sept., 1892, junior clerk, Vancouver, B.C.; Sept., 1892, to Aug., 1893, timekeeper, Donald, B.C., Aug., 1893, to Oct., 1894, clerk, Vancouver, B.C.; Oct., 1894, to Mar., 1895, assistant storekeeper, North Bend and Kamloops, B.C.; Mar., 1895, to Sept., 1896, clerk and operator, Car Service and Fuel Department, Vancouver, B.C.; Sept., 1896 to Jan., 1899, Chief Clerk, Fuel Department, Vancouver, B.C.; Jan., 1899, to Feb., 1908, chief clerk to General Superintendent, Pacific Division, Vancouver, B.C.; Feb. to Nov., 1908, Superintendent, District 4, Central Division, Souris, Man.; Nov., 1908, to Oct., 1909, Superintendent, District 3, Pacific Division, Nelson, B.C.; Oct., 1909, to Oct., 1911, Local Manager, Fraser Valley Branch, British Columbia Electric Ry., Vancouver, B.C.; May, 1912, to Feb., 1915, Manager of Interurban Lines, same company, New Westminster, B.C.; May, 1915, to May 1, 1916, Superintendent, District 2, Ontario Division, C.P.R., London, Ont.; May 1 to Nov. 1, 1916, General Superintendent, Eastern Division, C.P.R., Montreal; Nov. 1, 1916, to Feb. 1, 1917, acting General Superintendent, Ontario District, Toronto; Feb. 1, 1917, to Oct. 15, 1918, General Superintendent, Quebec District, Montreal; Oct. 15, 1918 to Apr., 1920, General Superintendent, Ontario District, Toronto.

Gerard G. Ruel, who has been appointed General Counsel, Canadian National Rys., Toronto, was born at St. John, N.B., July 5, 1866, and studied law there, subsequently graduating in law at Harvard University, Cambridge, Mass., in 1889. He practised in St. John for a number of years, and was for some time a partner in the law firm of Blair, Ruel & Blair. From July, 1899, to Oct. 1, 1905, he was Law Clerk, Railways and Canals Department, Ottawa; from Oct. 1, 1905, to 1909, Assistant Solicitor, Canadian Northern Ry., Toronto; 1909, to Dec. 31, 1918, Chief Solicitor, Canadian Northern Ry., Toronto; Jan. 1, 1919, to Apr., 1920,

Counsel, Canadian National Rys., Toronto.

Lady Shaughnessy and Hon. Marguerite Shaughnessy sailed from St. John, N.B., Apr. 3, on the Canadian Pacific Ocean Services' s.s. Melita, for England.

Harold George Studd, whose appointment as Auditor for Europe, C.P.R., London, Eng., was announced in a recent issue, was born at Tottenham, Eng., July 10, 1883, and entered transportation service in 1898, since when he has been to 1903, clerk, Great Eastern Ry., Stratford and London, Eng.; Mar. 4, 1903 to Aug. 31, 1905, clerk, C.P.R., London, Eng.; Sept. 1, 1905 to Nov. 30, 1913, cashier, Passenger and Management Departments, C.P.R., London, Eng.; Dec. 1, 1913 to Dec. 31, 1919, assistant chief clerk, European Manager's office, C.P.R., London, Eng., and acting accountant, Dominion Express Co., Liverpool, Eng.

E. R. Thorpe, formerly City Freight Agent, G.T.R., Toronto, was entertained at dinner by a number of his associates and presented with a gold and platinum watch chain and locket, on leaving to become General Agent, Freight and Passenger Traffic, Lehigh Valley Ry., Toronto.

Guy Toombs, Manager Transportation Department of the Canadian Export Co., Montreal, and formerly in the Canadian Northern Railway Freight Department recently at the Laurentide School, Grande Mere, Que., tracing the development of transportation from the earliest date to the present day and illustrating it by moving and other pictures.

William J. Uren, who has been appointed Assistant General Superintendent, Quebec District, C.P.R., Montreal, was born at St. Marys, Ont., Jan. 23, 1872, and entered railway service Sept. 6, 1888, since when he has been, to June, 1890, telegraph operator, C.P.R., Hawk Lake, Rat Portage, Ont., and various other points; June, 189, to Nov., 1892, agent and operator, C.P.R., Marclay and Dexter, Ont.; Nov., 1892, to Nov., 1898, Terminal Agent and Yardmaster, C.P.R., Ignace, Ont.; Nov., 1898, to June, 1903, dispatcher, C.P.R., Fort William, and Rat Portage, Ont.; June, 1903, to Apr., 1904, Chief Dispatcher, C.P.R., Rat Portage, now Kenora, Ont.; Apr. to June, 1904, Night Chief Dispatcher, C.P.R., Winnipeg; June, 1904, to May, 1905, Chief Dispatcher, C.P.R., Moose Jaw, Sask.; May, 1905, to Nov., 1908, Chief Dispatcher, and Relieving Trainmaster, C.P.R., Winnipeg; Nov. 1908, to Nov., 1909, Superintendent, C.P.R., Brandon, Man.; Nov., 1909, to June, 1910, Superintendent C.P.R., Moose Jaw, Sask.; June 1910, to Sept., 1912, Superintendent, C.P.R., Cranbrook, B.C.; Sept., 1912, to Nov., 1913, Superintendent, C.P.R., Calgary, Alta.; Nov., 1913, to Nov., 1918, Superintendent, and relieving General Superintendent, C.P.R., Toronto; Nov., 1918, to Apr., 1920, Superintendent, Farnham Division, Quebec District, Farnham, Que.

Barton Wheelwright, whose appointment as Engineer, Maintenance of Way, Portland Division, G. T. R., Portland, Me., was announced in our last issue, and whose resignation is announced in this issue, was born at Minneapolis, Minn., March 12, 1888, and entered G.T.R. service July 1, 1911, since when he has been, to May, 1912, draftsman, Toronto; May, 1912, to Nov., 1918, signal inspector, Assistant Signal Engineer, and acting Signal Engineer, successively, Montreal; Nov., 1918, to March 1, 1920, Engineer, Maintenance of Way, Grand Trunk Lines

in New England (U.S.R.A.), Portland, Me.

T. A. Wilson, who has been appointed Superintendent, Sudbury Division, Algoma District, C. P. R., Sudbury, Ont., entered railway service in Jan., 1885, since when he has been, to July, 1892, successively, call boy, Stratford, Ont.; operator and brakeman, G.T.R.; July, 1892, to Oct., 1900, agent and operator at various points, Lake Superior Division, C.P.R.; Oct., 1900, to Oct., 1912, General Yardmaster, C.P.R., Ottawa, Ont.; Oct., 1912, to June, 1916, Assistant Superintendent, District 3, Lake Superior Division, C.P.R., Schreiber, Ont.; June, 1916, to Oct. 16, 1918, Assistant Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont.; Oct. 16, 1918, to April 1, 1920, Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont.

Andrew Williams, who has been appointed Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, Que., was born at Mono Road, Ont., Feb. 22, 1872, and entered C.P.R. service, Jan. 1889, since when he has been, to 1892, telegrapher; 1892 to 1893, relieving agent; 1893 to 1894, assistant to car distributor and fuel agent, all Atlantic Division; 1895 to 1896, relieving dispatcher, St. John, N.B.; 1896 to 1898, trick dispatcher, St. John, N.B.; 1898 to 1904, Chief Dispatcher, Woodstock, N.B.; 1904 to 1905, rule instructor, Atlantic Division; 1905 to 1909, Trainmaster, Atlantic Division; 1909 to 1911, Assistant Superintendent, Atlantic Division; 1911 to Jan. 5, 1914, Assistant Superintendent, District 1, Lake Superior Division, North Bay and Sudbury, Ont.; Jan. 5, 1914, to Jan., 1916, Superintendent, District 2, Atlantic Division, Woodstock, N.B.; Jan., 1916, to Apr., 1917, Superintendent, District 1, Atlantic Division, Brownville Jct., Me.; Apr., 1917, to Apr., 1920, Superintendent, London Division, Ontario District, London, Ont.

James Miller Woodman, who has been appointed General Superintendent, New Brunswick District, C.P.R., St. John, N.B., was born at St. Marys, Ont., May 15, 1866, and served as brakeman, yardmaster, conductor and trainmaster, until 1910, when he went into the insurance business in Indiana. In 1911 he entered C.P.R. service and was appointed Superintendent of Terminals, Winnipeg, and in 1916 was appointed Superintendent of Terminals at Montreal, retaining that position until Oct., 1918, when he was appointed General Superintendent, Quebec District, Montreal, which position he held at the time of his present appointment.

Return of Empty Freight Cars from the United States.—The Railway Association of Canada has issued the following circular: The new codes of Car Service and Per Diem Rules of the American Railroad Association, effective Mar. 1, 1920, having been adopted by Canadian railways, regulations governing the handling of freight cars between railways operating in Canada, and between Canadian and United States railways, embodied in circular 98, issued by Canadian Railway War Board, Jan. 31, 1919, are cancelled. In present circumstances it is considered most desirable that no obstacle should be placed in the way of prompt return of empty Canadian cars to home rails and, therefore, until further notice, Canadian railways will continue to accept empty Canadian equipment from U. S. railways at any junction point, regardless of ownership.

Grand Trunk Railway Construction, Betterments, Etc.

Ottawa Cross Town Tracks.—N. Cauchon addressed the Engineering Institute of Canada's Ottawa branch recently, urging the removal of the G.T.R. cross town tracks, and the members passed a resolution endorsing the proposal. The Ottawa City Council also had the matter brought before it recently by a deputation from city business organizations. It was arranged to promote the signing of petitions to the government, asking that the cross town tracks be removed. Two plans for the removal of the tracks are suggested, one for G.T.R. trains going west to leave the city over Canadian National Rys. lines, and the other that all trains cross the city through a tunnel.

Palmerston Car Shops and Yards.—The Palmerston, Ont., Town Council has been asked to close up certain streets in order to permit of the enlargement of the company's yards and the building of car shops. The council on April 4 decided to ask for full particulars of the proposed works before deciding.

Stoney Creek Road Bridge.—The Ontario Railway and Municipal Board's engineer is reported to have found that the bridge carrying the G.T.R. over the Stoney Creek road, near Hamilton, Ont., does not comply with the provisions of the act as to width and clearing height, and to have recommended that steps be taken to have it conform to the regulations.

London, Ont., Grade Crossings.—The Board of Railway Commissioners is reported to have been asked to send a representative to confer with the London City Council and representatives of the company regarding the construction of two subways and the question of track elevation. (April, pg. 182.)

Record Run on a Michigan Central Rd.

We are officially advised that on Mar. 29 a special train, consisting of 2 cars and a locomotive, ran from Windsor, Ont., to Buffalo, N.Y., over the Michigan Central Rd.'s Canadian Division, 233.46 miles, in 3 hours and 29 minutes. The train, on board which were A. H. Smith, President, New York Central Lines, and H. Shearer, General Manager, Michigan Central Rd., left Windsor at 9.10 a.m., arriving at St. Thomas, where the locomotive was changed, at 10.40 a.m., leaving there at 10.46 a.m., arriving at Bridgeburg 12.20 p.m., and reaching Buffalo at 12.30 p.m. The mileages between these points, with the speed of the train, are as follows:—

	Mileage	Min.	Average miles an hour
Windsor to St. Thomas.....	109.50	90	73.06
St. Thomas to Bridgeburg 118.20	96	73.875	
Bridgeburg to Buffalo	5.67	17	66.06
	233.46	203	69.00

G.T.R. Station Employees.—A board of conciliation consisting of Justice MacLennan, Chairman, U. E. Gillen, representing the company, and F. Bancroft, representing the men, began an investigation April 12 into the demand of G.T.R. clerks and station employes for an increase of wages. The investigation affects some 1,400 employes who are connected with the Canadian Brotherhood of Railway Employes, which made the application for the board of conciliation.

Freight and Passenger Traffic Notes.

The Interstate Commerce Commission has, a press report states, authorized the Pullman Co. to file tariffs increasing berth rates approximately 20%.

The Minister of Railways stated in the House of Commons April 7 that of the 59,716 cars belonging to Canadian railways in the United States on a recent date, 10,840 belonged to the Canadian National Rys., 21,028 to the G.T.R., and 12,366 to other Canadian railways.

The G.T.R., a press report states, has, as a result of a conference held at Sarnia, Ont., April 4, decided to retain Port Huron, Mich., as a terminal for freight purposes, and to rescind the order to transfer the terminal yards to Battle Creek, Mich.

A press report states that a new 20-hour train service will be put in operation by the New York Central Lines and connections between New York and Chicago, running over the Michigan Central Rd.'s Canadian Division between Bridgeburg and Windsor, Ont.

A press report states that an arrangement has been made between the Dominion and Alberta Governments under which each will pay one-third of the cost of freight from the point of entry into Canada of United States hay shipped into Alberta to relieve the shortage for stockfeeding.

The Canadian National Rys. summer time table will go into operation May 3. It is reported that there will be a number of important alterations in the services given on the lines in New Brunswick and Nova Scotia, with improved services between these provinces and Quebec and Montreal. The transcontinental services, it is reported, will also be improved.

J. D. McArthur, President, Edmonton, Dunvegan & British Columbia Ry. and allied lines, was in Ottawa April 19, and was reported as seeing the Minister of Railways to endeavor to secure a loan of rolling stock to accommodate the increasing traffic on the line. It is reported that large numbers of settlers are proceeding to the Grande Prairie and Peace River Districts.

The adoption of the daylight saving bylaw by a number of municipalities in Canada will be met by the C.P.R. by the insertion of daylight saving time in red, in addition to standard time in black, in respect to trains affected. There will be a few suburban trains in and out of Montreal which will be affected, in addition to some of the through trains from United States points.

The C.P.R. is, a press report states, arranging to run an excursion to Fort Yukon, in the Arctic Circle, to see the midnight sun on June 20. The party is expected to leave Vancouver on the s.s. Princess Alice, June 12, connecting with the White Pass & Yukon Ry. at Skagway, and taking that company's river steamboats at White Horse to reach Fort Yukon June 20. It is expected to spend 48 hours at Fort Yukon and to make some side trips on the return journey to Skagway, where the Princess Alice will pick up the travellers July 1.

The Minister of Railways informed the House of Commons recently that the suspension of daily trains on the Quebec & Saguenay Ry. in Nov. 1919, was agreed upon after consultation with the Quebec, Montreal & Charlevoix Ry. Co., which suspended its daily trains also. This suspension was recommended by Gordon

Grant, Chief Engineer Q. & S. Ry., on the ground that the business offering did not warrant a daily train service. Complaints had been received, and as soon as business warrants it is intended to resume operating a daily train.

A press report dated April 21 states that train service on the Reid Newfoundland Ry. was completely demoralized throughout the past winter, owing to a succession of blizzards and rainstorms. It was impossible to get a train through from St. John's to Port aux Basques, and the only services that could be maintained were for some miles inland from either end of the line. The report also states that in the interior about 40 miles of track are covered with ice varying in thickness up to 9 ft. Gangs are clearing the line and it is hoped to resume through traffic in a few weeks.

The Quebec Superior Court on April 1 dismissed an action of M. L. Kandar against the Pullman Co. to recover damages for loss of a suitcase while travelling in a Pullman car on the New York Central Ry. Kandar left his suitcase in the aisle, and contended that it was under the company's charge. Justice Surveyor held that this had not been proved and dismissed the action, but, on the ground that the company had not done everything in its power to give the plaintiff information about the suit case, when it and part of its contents were recovered, costs were not allowed against Kandar.

The Mayor of Toronto headed a delegation from Toronto, which waited on the Dominion Government at Ottawa, April 19, to ask among other things for reduced railway rate to Toronto during the National Exhibition, suggesting that an amendment to the Railway Act should be passed giving single fares on Labor Day and restoring the fare and a third rate on other Exhibition days to cities with an exhibition of two weeks' duration. The Minister of Railways is reported to have stated that a special act of the kind would not be brought before parliament, but the matter could be submitted to the Board of Railway Commissioners on an application for reduced fares.

With the coming into operation of the C.P.R. summer train schedule on May 2, the passenger service on the line will, a press report states, approximate to that given prior to the war. The daily all-sleeping car Trans-Canada train, which was put on in 1919, and made the run between Montreal and Vancouver in 94 hours, will again be operated and on a 92 hour schedule. The first westbound train will start from Windsor St. station, Montreal, May 2, at 5 p.m., and the first eastbound train will leave Vancouver May 2 at 3 p.m. Among the other new trains will be a daily fast train leaving Montreal for Ottawa at 8.30 a.m., returning from Ottawa at 4 p.m. The double daily service between Montreal and St. John, N.B., inaugurated in the autumn of 1919, will be continued. The full summer service of trains on eastern lines will go into force June 6.

Hotel for Sydney, N.S.—Plans are reported to have been completed for the erection of a large hotel at Sydney, N.S., at an estimated cost of over \$500,000. T. Cozzolino, of the Nova Scotia Construction Co., is reported to be the principal promoter.

Aerial Transportation Notes.

J. A. Wilson, heretofore Assistant Deputy Minister, Naval Service Department, Ottawa, has been appointed Secretary of the Air Board.

Hon. Hugh Guthrie, Minister of Militia, is reported to have been appointed Chairman of the Canadian Air Board, succeeding Right Hon. A. L. Sifton.

The Eastern Canada Air Lines, Truro, N.S., is reported by a London, Eng., cable of April 9 to have bought 6 aeroplanes, which are on the way to Canada.

F. C. Higgins, Ottawa, a returned soldier, is the successful candidate for the position of Aeronautical Intelligence Officer, Canadian Air Board, at an initial salary of \$2,400 a year.

Negotiations are stated to be in progress for the purchase of sites for landing places for aeroplanes in Port Arthur and Fort William, Ont., and it is expected by July to have aeroplane services to Duluth and Minneapolis, Minn., established.

The Northern B.C. Aero Co. has been incorporated under the British Columbia Companies Acts with authorized capital of \$300,000 and office at Prince Rupert, B.C., to carry on an aeroplane and hydroplane freight and passenger carrier and transfer business.

Sir Fortescue Flannery, in his presidential address to the Society of Consulting Marine Engineers and Shop Surveyors, in London, Eng., recently, is reported to have said: "The airship which could fly and in fact float and submerge is no impossible dream of the future."

Canadian Aerial Services, Ltd., has been incorporated under the Dominion Companies Act with authorized capital of \$50,000 and office at Montreal, to deal in, manufacture and operate aeroplanes, balloons, airships and flying machines of all kinds, and for other allied purposes.

Col. O. W. Biggar, Vice Chairman Canadian Air Board, and Col. Scott, of the certificates branch of the board's work, are reported to have left Ottawa for Winnipeg and other western points April 14, to look into the various projects for commercial flying throughout the West.

The Pacific Aviation Co. has been incorporated under the British Columbia Companies Act, with authorized capital of \$100,000, and office at Vancouver. A press report states that the officers are: President, B. D. Rogers; Vice President, R. Marpole; Managing Director, G. K. Trim.

The United States Aerial Express Corporation of Detroit, Mich., is reported to have bought 12 naval airships from the U.S. Navy Department and it is said that it will establish a number of air routes, to carry mail and express, one of which it is said will be from Detroit to Toronto.

The Canadian Air Board proposes, a press report states, the organization of an air force for Canada of not to exceed 5,000 men, on a militia basis. Commissions will be given to officers, and air-men will be enlisted in the usual way, and it is reported that the first training camp will be opened at Camp Borden, Ont.

Prepayment of freight from United States—A press dispatch says that U.S. railways have given notice that on and after May 1, the charges on all freight shipped from United States points to Canada, must be prepaid in U.S. currency.

Railway Rolling Stock Orders and Deliveries.

Electro Metal Co. has ordered 2 flat cars from Canadian Car & Foundry Co. The Pacific Great Eastern Ry. is stated to be in the market for three Mikado type locomotives.

The Grand Trunk Pacific Ry. has received 157 repaired box cars from Canadian Car & Foundry Co.

Canadian National Rys. has received 4 repaired baggage cars from Canadian Car & Foundry Co.

Canadian National Rys. has ordered 350 stock cars, 30 tons capacity, from Canadian Car & Foundry Co.

The G.T.R. has received 7 dining cars, 7 steel mail cars, and 47 repaired box cars, from Canadian Car & Foundry Co.

Canadian National Rys. has received 6 dining cars of an order placed June 26, 1919, from Canadian Car & Foundry Co.

F. H. Hopkins & Co., Montreal, have ordered 6 sets of car trucks, 50 tons capacity, from Canadian Car & Foundry Co.

The G.T.R. has ordered 1,000 automobile cars, 50 baggage cars, and 15 express refrigerator cars, from Canadian Car & Foundry Co.

The G.T.R. has ordered 1,000 flat cars, 50 tons capacity, from National Steel Car Corporation. They will be approximately 40 ft. over end sills, 8 ft. 10 in. over side sills, with plate girder center and side sills, of 10 in. channel, pressed steel bolsters and cross ties, arch bar type of truck, journal bearings 5 1/2 x 10 in., standard M.C.B. class D couplers, Westinghouse air brakes, and 33 in. cast iron wheels.

C.P.R. orders.—Canadian Railway and Marine World was able to give in the April issue, some preliminary details of orders for rolling stock placed by the C.P.R. for delivery during this year. Since then, we have been officially advised of orders placed as follows: 3 dining cars, the bodies to be built complete by Canadian Car & Foundry Co., and the interior finishing to be done in the C.P.R. Angus shops; 43 sleeping cars, the steel frames for 18 to be built by National Steel Corporation, Ltd., and for 25 by Canadian Car & Foundry Co., the interior finishing to be done at C.P.R. Angus shops; 67 second hand air dump cars bought from Cook Construction Co., Montreal; 2,500 box cars, 60 tons capacity, 1,500 of these to be built by Canadian Car & Foundry Co. and 1,000 by National Steel Car Corporation; 500 refrigerator cars to be built at C.P.R. Angus shops, and 5 Santa Fe (2-10-2) locomotives to be built at Angus shops.

The C.P.R. 35 steel frames for sleeping cars which are being built by Canadian Car & Foundry Co., as mentioned in our last issue, will have underframes composed of 4 bottom flange angles 3 x 3 x 3/8 in., 2 top flange angles 6 x 4 x 5/8 in. with 5/16 in. webs and 9/16 x 30 in. top cover plates; depth over flange angles at center of cars 30 ft., and at each end there will be a steel buffer casting and a 2 ft. 9 in. platform. The end framing will consist of two 6 in. x 23.9 I beams at buffer beam and body end, with four 4 in. x 8.2 Z bars at each body end. The side construction will consist of 1/2 in. channel shaped pressed posts with side rail 3 3/4 x 15/16 x 1/2 in. rolled steel plates and 3/16 side guide plates 1/2 in. pier plates and 1/2 letter plate. The roof will be composed of 1/8 in. pressed Z shaped upper deck and channel shaped lower

deck carlines, 0.078 steel upper deck and 0.063 lower deck roof sheets, vestibule roof slats 0.109 thick. The chief details of the cars will be:—

Length inside coupler knuckles.....	83 ft. 10 1/2 in.
Length over end sills	75 ft. 6 in.
Truck centers	59 ft. 6 in.
Width over side sills	9 ft. 9 3/8 in.
Width over eaves	10 ft. 0 3/8 in.
Height, rail to eaves	11 ft. 1 3/8 in.
Height, rail to top of roof	14 ft. 0 3/8 in.
Height, rail to side sill	3 ft. 7 3/8 in.
Truck, wheel base	11 ft.
Truck, type	Commonwealth with clasp brakes
Journals	5 x 9 in.

The Timiskaming & Northern Ontario Ry. has invited tenders for supplying 4 Mikado (2-8-2) locomotives and two 8-wheel switching locomotives of the following general specifications:—

Cylinders	25 x 30 in.	23 x 28 in.
Driving wheel diar.	63 in.	53 in.
Boiler pressure	180 lbs.	180 lbs.
Weight on drivers	197,000 lb.	202,000 lb.
Weight on front truck	29,500 lb.	.....
Weight on rear truck.....	31,600 lb.	.....
Weight on engine, total.....	268,000 lb.	.....
Driving wheel, base	16 ft. 6 in.	16 ft. 6 in.
Engine wheel, base	34 ft. 8 in.	.....
Fire box, length and width	96x75 1/4 in.	89 1/2x75 1/4 in.
Grate area	50 sq. ft.	46.26 sq. ft.
Boiler, diar., front end.....	71 in.	71 in.
Boiler, diar., back end.....	78 in.	78 in.
Tubes, no. and diar.	202 2 in.	202 8 in.
.....	32 5 1/2 in.	32 5 1/2 in.
Tubes, length	20 ft.	14 ft. 6 in.
Arch tubes, no. and diar.	4 3 in.	4 3 in.
Heating surface, tubes	3,016 sq. ft.	2,186 sq. ft.
Heating surface, fire box.....	208 sq. ft.	153 sq. ft.
Superheating surface	757 sq. ft.	570 sq. ft.
Weight of tender loaded	143,000 lb.	143,000 lb.
Coal capacity	12 tons	9 tons
Water capacity	6,500 imp. gal.	6,500 imp. gal.

Canadian National Rys. 12 dining cars ordered from Canadian Car & Foundry Co. will be C.N.R. standard, except when non vestibule ends are to be applied, making a more simplified arrangement. The interior finish will be quarter cut oak, except in the kitchen and pantry, which will be painted; the air pressure water system will consist of longitudinal tank 96 x 26 in. diar., connecting with 2 overhead copper tanks in the kitchen. Following are the chief details:—

Length over end sills	79 ft. 1 in.
Length between truck centers	57 ft. 6 in.
Width over all at eaves	10 ft. 7 7/8 in.
Width over side posts	9 ft. 9 3/8 in.
Width over upper deck at eaves	5 ft. 11 1/4 in.
Height, track to roof at center.....	14 ft. 2 in.
Height, rail to side at eaves	11 ft. 2 1/2 in.
Height, track to sill at track centers.....	3 ft. 7 3/8 in.
Heating	Vapor Car Heating Co.
Lighting	Electric
Couplers	Sharon bottom end operating
Draft gear and buffing device	Friction
Airbrake	Westinghouse
Hand brake	Miner ideal staff at both ends
Trucks	Commonwealth 6 wheel type with clasp brake

Canadian National Rys. 20 baggage cars ordered from Canadian Car & Foundry Co. are to be built to the C.N.R. standard. Following are the chief details:—

Length over end sills	73 ft. 6 in.
Length between truck centers	55 ft. 7 in.
Length over buffers, approximate.....	77 ft. 6 in.
Width over side sills	9 ft. 9 3/8 in.
Width overall at eaves	10 ft. 1 1/8 in.
Width at clerestory	5 ft. 11 1/4 in.
Height, track to center of roof.....	14 ft. 2 in.
Height, over smoke jacks, approximate.....	14 ft. 5 in.
Height rail to eaves	11 ft. 2 1/2 in.
Height, track to sill at end	3 ft. 7 3/8 in.
Height, track to sill at center	3 ft. 9 in.
Couplers	Sharon bottom operating
Draft gear	Miner friction
Buffing device	Miner B-10
Side bearings	Miner roller
Heating system	Vapor Car Heating Ct.
Lighting	Safety Car Heating & Lighting Co.
Air brakes	Westinghouse K1
Hand brake.....	Miner double acting for non vestibule cars
Trucks	Commonwealth 6 wheel type with clasp brake
Wheel, diar.....	Steel tire 36 1/2 in.
Journal boxes	McCord

Canadian National Rys. 18 drawing room sleeping cars, ordered from Cana-

dian Car & Foundry Co. will be built to C.N.R. standard, with the latest standard air pressure water system, having a 26 x 96 in. water tank, with a temperature control device for heating water for wash stand; standard system of hot water heating and piping in addition to the Vapor heating system. The electric light system will consist of a body hung, belt driven, generator of 4 k.w. capacity and one 350 ampere hour battery. Following are the chief details:—

Length over end sills	73 ft. 6 in.
Length between truck centers	57 ft. 6 in.
Length over buffing, approximate	82 ft. 4 1/2 in.
Width over side sills	9 ft. 9 3/8 in.
Width overall at eaves	10 ft. 1 1/8 in.
Width at clerestory	5 ft. 11 1/4 in.
Height, track to roof at centers	14 ft. 2 in.
Height over smoke jacks, approximate.....	14 ft. 5 in.
Height, rail to eave moulding	11 ft. 2 1/2 in.
Height, track to sill at end	3 ft. 7 3/8 in.
Height, track to sill at center	3 ft. 9 in.
Heating	Vapor Car Heating Co.
Couplers	Sharon bottom operating
Draft gear and buffing device.....	Miner friction
Trap doors	National steel
Air brakes.....	Westinghouse
Hand brakes.....	Miner ideal staff type at both ends
Trucks.....	Commonwealth 6 wheel type with clasp brake

Canadian National Rys. 600 refrigerator cars ordered from Canadian Car & Foundry Co. will have La Flare insulation and Miner door fixtures. The floor will have removable floor racks, built of 3 x 1 1/4 in. stringers, and to each will be fastened 3 3/4 x 1 1/2 in. thick wood slats. They will be equipped with 4 brine tanks at each end, supported by Union Railway Equipment Co.'s Ureco brine tank supports, handhole and brine valve. The height of one brine tank at each end will be reduced to leave room for a heater, to be used when transporting perishable products during winter. Brine tanks will be iced from hatches in the roof, and ventilators will be operated from outside of the roof. The underframes will be of wood, with 5 x 8 side sill, and center of intermediate sills, reinforced by a center sill construction of two 7 in. 21.8 lb. ship channels, with 5/16 in. thick covered plates top and bottom. The sides and underframing will be of wood, and the body bolster and cross bar of built up steel construction. Following are the chief details:—

Capacity	60,000 lb.
Length over end sills	36 ft.
Width over side sills	8 ft. 11 in.
Top of sill to underside of plate	7 ft. 8 in.
Length inside between brine tanks	28 ft. 9 1/4 in.
Width inside	8 ft. 2 1/4 in.
Height, top of floor to underside of ceiling	7 ft. 6 3/8 in.
End sill, outside to center of body bolster	5 ft.
Width of side door opening	5 ft.
Height of side door opening	6 ft. 3 in.
Height, top of rail to center of coupler	2 ft. 1 1/2 in.
Trucks, center to center	26 ft.
Draft gear	Miner tandem spring
Couplers	M.C.B. type D
Air brakes	Westinghouse K.C.-1012
Trucks	Diamond arch bar
Bolsters and brake beams	Simplex
Side bearings	Miner balance
Journal boxes	McCord

Canadian National Rys. 1,000 box cars, 40 tons capacity, ordered from Canadian Car & Foundry Co., will have underframes of two 15 in. 33 lb. journals with one 19 1/2 x 1/4 x 33 in. top cover plate, side sills 8 in. 11 1/4 lb. channels, end sills 10 in. 15 lb. channels, floor stringers 3 in. 6.7 lb. Z bars running longitudinally and spaced equidistant between centers of side sills. The corner posts of the superstructure will have 5 x 5 x 3/8 in. angles, door post, front 86 x 3 1/2 x 5/16 in. angles, door post, rear, 4 x 3 1/2 x 5/16 in. angles and the door will be Camel improved type top hung. The roofs on 500 of these cars will be Chi-

ago Winslow improved type B, inside metal roof, with 24 gauge galvanized steel, and the other 500 will have Hutchins outside metal roofs. One end of the cars will be equipped with an upper sliding end door for grain service, and at the same end below, a small sliding door for loading grain, etc. Inside the car, at the end, $\frac{1}{4}$ x 24 in. reinforcing plates will be fitted, extending clear across the car and bolted to the end lining near the floor. Following are the chief details:—

Length inside	36 ft.
Width inside	8 ft. 6 $\frac{1}{2}$ in.
Height, floor to car line	8 ft. 0 $\frac{1}{2}$ in.
Width on side door opening	5 ft.
Height on side door opening	7 ft. 8 $\frac{7}{16}$ in.
Length between end sills	37 ft. 1 $\frac{1}{2}$ in.
Width over side sills	8 ft. 9 $\frac{1}{2}$ in.
Height, rail to center of coupler	2 ft. 10 $\frac{1}{2}$ in.
Height, sill to bottom of side plate	7 ft. 10 $\frac{3}{16}$ in.
Width over eaves	9 ft. 3 $\frac{1}{2}$ in.
Trucks, center to center	26 ft 10 in.
Draft gear	Miner twin spring
Couplers	M.C.B. type D
Brakes	Westinghouse K.C. 812
Hand brakes	Standard type
Trucks	Diamond arch bar
Booster and breakbeam	Simplex
Side bearing	Miner balance
Journal boxes	McCord

Railway Finance, Meetings, Etc.

Algoma Central & Hudson Bay Ry.—The full terms of the proposed settlement discharge and release of all defaults upon the Algoma Central & Hudson Bay Ry., and Algoma Central Terminal bonds have been announced in a circular from the Lake Superior Corporation to its stockholders. Among other things the Lake Superior Corporation undertakes that the Algoma Steel Corporation will complete a new rail and structural mill unit, so as to bring its capacity of standard steel products up to 500,000 tons annually. Meetings of the railway and terminal bondholders will be held in London, Eng., to ratify the agreement, and meetings of the Lake Superior Corporation shareholders and of the subsidiaries concerned will be held in Toronto or Sault Ste. Marie, to take similar action.

Central Vermont Ry.—Application has been made by the Central Vermont Ry. Co. to the Massachusetts Public Utilities Department for permission to issue \$15,000,000 of bonds to retire and refund \$12,000,000 of outstanding bonds due May 1; to pay off other outstanding debts and to provide funds for certain improvements.

Lacombe & North Western Ry.—The Alberta Railways Department's report for 1919, laid before the legislature recently, is stated in a press report to give the following information relative to the Lacombe & North Western Ry.:—The line has been extended from Bentley to Rimbey, 13 miles, bringing its total length up to 33 miles. The total revenue for the year was \$28,268.04, an increase of 50.3% over 1918, and the operating expenditure was \$36,541.65, an increase of 94.7%. The year's deficit was \$8,273.61, which added to the deficit of \$219,97 for 1918, makes a total deficit under government ownership of \$8,493.18.

Morrisey, Fernie & Michel Ry.—The Crows Nest Pass Coal Co., which owns this railway, states in its annual report for 1919, that the profits of the railway for the year were \$1,572.61, which was carried to reserve for depreciation.

Nakusp & Slocan Ry.—A special general meeting of shareholders of the Nakusp & Slocan Ry. Co. has been called to be held in Montreal, May 4., to consider and, if deemed advisable, to approve a proposed agreement to lease the company's railway, etc., to the C.P.R., and to consider the advisability of em-

powering the directors to issue bonds, and to fix the amounts and terms thereof and to approve the form of mortgage to be given to secure the same. This railway was built by a company, the bonds of which were guaranteed by British Columbia, and was subsequently operated by the C.P.R. under an agreement. The term for which the guarantee of bonds lasted expired in 1918, and an arrangement was then made and confirmed by the B.C. Legislature in 1919, under which the bonds were to be acquired by the government and sold to the C.P.R. at face value. The present lease to the C.P.R. expires June 30.

In the course of his budget speech in the British Columbia Legislature the Finance Minister is reported to have said: "Included in the deferred assets is \$993,332.08 paid on account of principal and interest of N. & S. Ry. bonds under the authority of the N. & S. Ry. Aid Act, 1894. Of this sum there has since been paid to the province by the C.P.R. in accordance with the agreement ratified by the legislature last session, \$647,070, leaving the province with a net loss, as a result of the guarantee given, to the extent of \$346,262.08." A resolution was passed authorizing the writing off of this loss against the consolidated surplus account.

Timiskaming & Northern Ontario Ry.

	Jan. 1920.	Jan. 1919.
Passenger earnings	\$59,372.42	\$54,666.99
Freight earnings	197,216.72	160,907.64
	\$256,589.14	\$215,574.63

In the course of his budget speech in the Ontario Legislature April 13, the Finance Minister is reported to have pointed out that on an investment of \$23,000,000 in this railway no revenue was derived last year, and it was a question whether it could be regarded as an asset.

Electrification of Government Railways Urged.

A motion expressing the opinion that it is expedient and in the interest of Canada for the government to substitute electricity for steam as a motive power upon the railways owned by the government, as soon as, and wherever practicable, was submitted to the Senate, April 15, by Senator E. D. Smith, who pointed out that 10,000,000 tons of coal a year are used on Canadian steam railways, costing about \$4 a ton at the International Boundary, a large proportion of which could be saved if the lines carrying the heavier traffic were electrified. There are many arguments in favor of electric traffic in contrast with steam railway traffic, which are summed up in an article describing the results of the electric operation of 440 miles of railway in the Rocky Mountain district by the Chicago, Milwaukee & Puget Sound Ry. After having referred to the fact that so far as the electric operation of railways in Canada is concerned there is not very much guidance to be obtained from experience, Mr. Smith pointed out that some 57 municipalities in Ontario have voted in favor of building electric railways under the Hydro Electric Power Commission of Ontario. These plans represent about 1,600 miles of new lines, and it appeared to him to be impossible to build new lines in Ontario without duplicating or paralleling existing steam railways. It is said that these new electric lines will be built as soon as the Chippewa power development plans are completed, and the 400,000 h. p. available. The government has taken

over the Canadian Northern Ry., and is taking over the Grand Trunk Ry., and it does appear that the proposed electric railway construction will materially decrease the earnings of these steam railways. It would cost about \$2,000 a mile, a year to electrify existing steam railways, and he argued that it would be in the public interest to undertake the electrification of many sections of the government owned steam railways.

Several other Senators having spoken, the debate was adjourned, and was resumed April 21, when Sir James Loughheed suggested that it might be inexpedient to pass a general resolution of the kind, without having more definite information as to the probable cost of electrification, and Canada's financial position to enter upon so great a responsibility. The intention of the mover, to draw the government attention to the matter, had been accomplished, and no great purpose could be served by committing the Senate in this very general way to so important a proposition. The motion was then withdrawn.

Cost of Quebec Bridge Construction.

Replying to questions in the House of Commons, April 15, Right Hon. A. L. Sifton said the total amount expended and charged to capital account for the construction of the Quebec bridge is \$21,707,889.34. There is no railway constructed in connection with the bridge. There has been charged to capital account, as having been paid under par. 18 of the agreement forming the schedule to chap. 54 of the statutes of 1903, \$6,424,781, the details of which are: principal, \$5,016,453.66; special account, \$162,360.46; accrued interest on principal, \$800,454.16; accrued interest on special account, \$13,560.48; interest on accrued interest, \$75,673.18; remuneration to Royal Trust Co. re bond issues, two amounts of \$500 each, \$1,000; cash indemnity to shareholders, including interest, \$355,279.07. Interest has been included in the amount charged to capital account only in respect to the amounts mentioned above, the total being \$954,896.88 at 5%.

Paragraph 18 of the agreement attached as a schedule to the act of 1903, reserves to the Dominion Government the right to take over the company's undertaking at any time on paying par value to the shareholders for their stock, not exceeding \$265,585.70, with simple interest at 5% from the time of taking over the stock until payment. The purchase is declared to be subject to the payment of such obligations of the company as may have been sanctioned by the government, and of the company's bonded indebtedness.

Changing Station Names.—The Board of Railway Commissioners has issued the following circular: Applications are from time to time made to the board by the residents of different localities for orders requiring railway companies to change the names of stations along their respective lines of railway, to which replies have invariably been made that the board has no power to make the orders applied for; that the railway companies themselves are the proper, in fact, the only parties to afford relief in such cases, unless, as has happened in some instances, a change in the name of a post office is desired, when, of course, the application would be to the post office authorities at Ottawa.

Pacific Great Eastern Railway Construction.

The Pacific Great Eastern Ry., which is owned by British Columbia, and is under that province's Railways Department's charge, consists of the completed portion of 180.7 miles, and the section under construction from Clinton to Prince George. The completed portions are from North Vancouver to Whytecliffe, 13 miles, and from Squamish Dock to Clinton, 167.7 miles. The B. C. Railways Department's report of the calendar year 1919, laid before the Legislature recently, states that in addition to the regular maintenance-of-way work done by the section and bridge and building crews, to maintain the roadbed in good operating condition, and the bridges and buildings in good state of repair, an extra gang of an average strength of about 20 men built 1,100 ft. of cribbing, of an average height of 15 ft. at miles 53.5 and 65.0 Squamish Division; cleaned slopes at mile 15.5 Squamish Division, and cuts north and south of Mackinnon, Lillooet Division, and resurfaced 34.2 miles of track on Squamish Division from mileage 24.4 and mileage 54 to 76.7. This gang also lined out 409 ft. of track for 8 ft. from bank at mile 54 Squamish Division, and put in 13,000 new ties, in addition to the 8,000 ties put in by the regular section crews. On the North Shore Division, viz., between North Vancouver and Whytecliffe, four wing dams were built on Capilano Creek to divert the force of flood flow from weak spots along the west bank. A crib was built on the east bank, to help remove a gravel bank which was blocking the channel of the east Howe truss span, and the east abutment of the bridge was protected by laying a double brush mattress up stream along the toe of the river bank to connect with the center. Considerable repairs were carried out at five bridges on the division, where floods had weakened piers, etc. On the line from Squamish to Clinton, considerable work of a similar character was done for the protection of the line and the bridges, during sudden floods. The bridge across the Cheakamus River Canyon, mile 19.1 north of Squamish, was destroyed Sept. 27 by a forest fire. This bridge consisted of a 130-ft. deck Howe truss span, on framed towers, with trestle approach at each end. Temporary provision was made by Oct. 4, for carrying on traffic and the new bridge was completed and ready for traffic Nov. 8. Considerable work had to be done on tunnel 3, at mile 18, north of Squamish, where there was a cave in of the roof at an unlined part of the tunnel, Nov. 30. The debris was cleared and traffic resumed Dec. 5. Orders have been given to remove the material now being supported by the timbered section at the south end, thus making an open cutting; the south portal will then be removed further north, and the remaining portion of the rock section widened and timbered. This will give a completely lined funnel, safe while the timbering lasts. Fencing was erected on 10 miles of line, principally north of East Lillooet, and between East Lillooet and Kelly Lake, and the 166 bridges between Squamish and Chasm Station were given a thorough examination with a view to repair during 1920.

Construction on the lines from Clinton to Prince George was prosecuted throughout the year, and is still going on. During the winter of 1918-19 there were got out for the summer's work 300,

000 ties, 2,000 telegraph poles and fence posts for 75 miles of fencing, and a large material yard was laid out at Lone Butte, 6 miles north of Horse Lake summit. About 24,000 tons of construction material were unloaded there. Lone Butte was the farthest point to which track could be laid, as only the clearing of the right of way had been done on the next six miles, and there was a further 12½ miles of right of way, six miles beyond that. Grading and bridge work was pushed actively, and track laying was commenced July 15, Williams Lake, the objective being reached Sept. 15. This necessitated the laying of 66 miles of main line track and 7 miles of secondary track. Ballasting and surfacing was then proceeded with, but owing to the difficulty in securing good ballast, and the inability to get sufficient labor the work is very much behind. The year's work included the grading of 23 miles of new line, laying 113 miles of track (main line, secondary and spur lines), hauling 250,000 cu. yd. of ballast, and train fill, building 102 miles of telegraph line, putting up 49 miles of fencing, building 15 bridges containing 1,750,000 ft timber; erecting three 40,000-gal. water stations, and the erection of station buildings, section houses, etc. A 4-stall locomotive house, a first-class station building, with operating officials' quarters is being built at Williams Lake.

The 1920 construction programme contemplates the completion of the line to Prince George. Tracks had been laid to about 10 miles north of Williams Lake at the end of 1919, and the roadbed was ready for the laying of a further distance of 7 miles to Deep Creek, at which point a steel viaduct is being built. A description of this viaduct was given in Canadian Railway and Marine World for Dec., 1919, pg. 654. The construction headquarters for 1920 will be at Williams Lake, where materials are being assembled. The year's construction programme covers first the completion of the line through to deep creek, and ballasting operations will be started in April, at the point where work was stopped in 1919. It is expected that the Deep Creek Bridge, which the report states may be classed among the important bridges on the continent, presenting peculiarly difficult problems in foundations and in erection details, due to its great height, and the wide spread of the lower legs—will be completed by the middle of July, and the line ballasted thereto. A bridge has to be built at Quessel to consist of 3 deck plate girder spans, on concrete piers and abutments, whence track laying and ballasting will be pushed to Cottonwood Canyon, which is expected to be reached Dec. 1. There is about 20 miles of new construction to be done between Deep Creek and Cottonwood Canyon.

As early as the weather will permit tracklaying will be started at Prince George, on the grading done towards Cottonwood Canyon, and gangs will be employed regrading the right of way, and in building bridges. The engineers reported that practically the whole of the right of way, between these two points has been covered by brush and small trees, and a great many large trees have blown into the original clearing from the sides, and many new culverts are required. The estimated quantity of material required to be shifted to re-

store the grade to a condition ready for tracklaying is 710,000 cu. yd., and the estimated cost of the work was \$588,000. The Railway Department's Chief Engineer states that the experience of the work to Deep Creek has shown that these estimates are too low. The cantilever bridge across Cottonwood Canyon will be of considerable magnitude, and will be built out from both ends. The other bridge construction includes 41 timber structures for the erection of which it is estimated that 8,000,000 ft. of timber will be required. It is expected that all this work will be completed by Dec. 31. It is not intended to do any ballasting between Cottonwood Crossing and Prince George this year. This portion of the line will simply be lined up and side surfaced and put in a condition to be operated at a low rate of speed.

The 20 miles of new construction referred to, which will be done this year, consists of relocation north and south of Quessel. The estimated cost of completing the line as originally planned was \$1,821,825, while the cost of the line on the new location is estimated at \$1,210,340. The new location is said to be in a better country than the original one.

A project was laid before the B.C. Government in 1918 to build a branch from Clinton to connect with the Canadian National Rys., at Ashcroft, and a reconnaissance survey was made in that year by H. E. C. Carry. A survey was made during 1919, the field work being completed Nov. 10. The starting point of the projected line is 0.85 mile west of Clinton station, and connection will be made with the C. N. Rys. near Ashcroft yard limits, the distance between these two points being 41.5 miles. With the exception of a portion of the line between miles 5 and 6 a gradient of 1% compensated is maintained for 33.8 miles to the siding at the top of a pusher grade from Ashcroft, and 4,400 ft. on the level is allowed for passing tracks at this point. The 2.2% compensated pusher gradient from Ashcroft up to this point is 6.8 miles long. The top of the 1% compensated gradient at Clinton is at an elevation of 3,278 ft. (Pacific Great Eastern datum), and at the junction with the C.N. Rys. at Ashcroft the elevation is 1,100 ft. (P.G.E. datum), this equals an elevation of 1,000 ft. (C.N.R. datum), giving a fall from Clinton to Ashcroft of 2,178 ft. The curvature is not excessive and 10° curves have been adopted as a maximum. The main engineering difficulty to overcome was the development of distance to maintain a 1% compensated gradient from Clinton to join up with a pusher gradient of reasonable length out of Ashcroft. Trestle work is comparatively light, the greatest being over Allan Creek, 140 ft. high and 800 ft. long. Other large trestles are that over Madden Creek, 500 ft. long by 100 ft. high, and over Hat Creek, 600 ft. long by 85 ft. high. Six steel bridges will be required in the Bonaparte Canyon. Three of them will consist of single 100 ft. deck plate girders, one of a single 80 ft. deck plate girder; one of an 80 ft. and two 40 ft. deck plate girders, and the sixth of three 80 ft. and three 44 spans deck plate girders. There will be six tunnels, the longest being 1,000 ft. The material to be moved is estimated at 56% solid rock, 15% loose rock, 27% hard pan, and 2% earth. An alternative route via Boston Flats has

been surveyed, starting at mile 33 from Clinton, which gives a route 4 miles longer than that through Bonaparte Canyon. On this route there would be little trestle work, no steel bridges, and the pusher grade would be 4.6 miles long. There would, however, be a heavy cutting at Ashcroft of 140,000 cu. yd., and 3,000 ft. of tunnelling at the top of the pusher gradient.

The Lieut.-Governor in his speech at the opening of the British Columbia Legislature recently, said: "Construction of the P.G.E. Ry. northward from Clinton has been prosecuted vigorously, and an agreement has been entered into for the completion of it to Fort George during this year." In the Legislature on Feb. 13, the Premier agreed to a motion for a return of all correspondence relating to the agreement for the construction of the extension to Fort George. On the following day a delegation from British Columbia board of trade waited on the government to press speedy construction of the extension, and is reported to have been informed that it would be impossible to continue construction to Fort George this year, as necessary construction and other equipment could not be obtained.

As to the Ashcroft-Clinton cutoff, the Premier pointed out that it was a strategic point for railway building and any corporation that secured the route would control the whole traffic of the P.G.E. to Fort George and Peace River. Therefore the government last year had made surveys and secured this key, which it could use whenever it became necessary.

A bill was introduced in Mar. 5 providing for the issue of \$4,800 of securities to retire the note of the P.G.E.R. Co., guaranteed by the province in 1919. This note is held by the Bank of Commerce, which has as security \$6,000,000 of the company's capital stock. A second bill before the Legislature asks for authority to raise \$4,000,000, to be advanced by way of a loan to the P.G.E.R. for the construction, equipment and operation during the building of the company's railway. The loan is to be secured upon a mortgage of the undertaking, ranking next after the security given to the government under the acts of 1912, 1914 and 1916; the loan to bear interest at the rate at which it is placed with the public, and any instalments of unpaid interest are to be charged with compound interest at the same rate; the loan to be repaid in 1926.

Brakeman's Seats on Locomotives.

General order 293, April 26, as follows:—Re application of Brotherhood of Railroad Tramen for an order requiring railway companies to provide suitable seating accommodation in locomotive cabs for front end brakemen on freight trains, who are required to ride the engine: Upon reading what is filed in support of the application, and on behalf of the Railway Association of Canada; and upon the report and recommendation of the board's Mechanical Expert, concurred in by its Chief Operating Officer, it is ordered that all locomotives of railway companies subject to the board's jurisdiction be equipped with a seat for the brakemen. That the seat provided by of a comfortable design, and, where practicable, equipped with back and window arm rest. That such seating accommodation be provided by May 1, 1921.

Recollections of Early Surveys for the C.P.R.

By F. Houghton, Montreal.

During the summer of 1881, we were locating and running trial lines for the main line of the Canadian Pacific Railway along Nosbonsing Lake and down the Vase Creek towards Lake Nipissing. A Mr. Hegan was in charge of the party, that glutton for work, E. J. Duchesnay was transitman, and Emile Tetu leveller. At that time there was but one settler on Nosbonsing Lake, and what fishing there was in it!

While we were camped along the lake we used a lumberman's red boat to take us to and from our work, when we invariably trawled with a hand line and common spoon. I recollect while rowing to work one morning, Duchesnay trawled. I sat looking on. Suddenly there was a tremendous tug at the line. Uttering an exclamation Duchesnay began hauling it in, but it was no easy matter. 'Twas evident he had hooked a big one. Fortunately, however, the line was a stout one and the fish securely caught. After a brief and desperate struggle on the part of the fish, he was brought alongside of the boat. The question then was, how to get him on board, for we had neither gaff nor landing net. At his belt, Duchesnay carried a neat little 32 caliber Smith and Wesson revolver. A brilliant idea occurred to me. "Shoot it, Mr. Duchesnay," I called out. Promptly acting on my suggestion, at a range of a couple of feet or so, he broke his back with a bullet, killing him immediately and a maskalunge of 32 lb. weight—weighed on our return to camp in the evening—was lifted into the boat without any trouble.

The following Sunday morning Duchesnay and I took a bark canoe and went trawling. We had but one line and took it turn about to fish and paddle. I do not recollect how many we caught, but I do remember that after fishing for only a portion of the morning, we brought back to camp more black bass and dore than the whole party of about 22 healthy men could eat, before a good part of the catch went bad and had to be thrown away.

I do not know how many settlers may now be living about the lake, or how much fishing has been done since those days, but unless it has been much fished it should still well repay a visit of any enthusiastic disciples of the gentle art. Recollect we had but one common, large red, and silver spoon. How the fish must have swarmed in the lake, then. What sport might not expert fishermen have today, with rods and proper tackle? Where could they find finer camping grounds, either, or lovelier wild scenery of lake and woods?

When we had left the lake a few miles with our survey we got into the undulating brule country along the Vase Creek. What a paradise that country was for sportsmen, then, before its world old silence had been disturbed by the locomotive's whistle. Moose, bear, lynx abounded. Never a day passed that we did not see fresh tracks of them. The bear and lynx we never saw. What animals are more shy or wary? A moose occasionally we did. One day, while running the line along a side hill, in the open brule country, we saw six magnificent moose. But, of course, no rifle was ever carried on the line and we could only watch them trot away. What strides they took, with what ease they nego-

tiated fallen timber!

It was about midsummer, if I remember rightly, of 1881, somewhere along the Vase. We had gone out to work as usual, I was a rodman on that survey; that morning, however, one of the chainmen was laid off, for sickness or something, and I was told to fill his place. As usual, that morning, Duchesnay set up his transit, and as usual the axemen lolled about, lighted their pipes, or gave a final touch with whetstones to their axes, while they waited for line. In a few moments the transit was in readiness and Duchesnay turned to me.

"Get a good stout 4 x 4 in. 4 ft. dry stake, like a hubstake, blaze it like a hub stake, and mark on it with red keel, in big letters, 'C.P.R. Station O.' From now on this line will be known as The Canadian Pacific Railway, not The Canada Central." He turned to the men. "All right, boys, stick up a picket and get line now."

Thus I had the distinction of making and driving in the first station stake marker, C.P.R. I think there is a station now somewhere about there, called Calendar.

Canadian National Railways Earnings.

	1920	1919
January	\$ 7,726,562	\$ 6,787,517
February	6,516,059	6,265,562
March	7,761,326	7,160,086
	\$21,544,947	\$20,213,115

Approximate earnings for three weeks ended April 21, \$5,458,837, against \$4,615,570 for same period in 1919.

Canadian Northern Railway System.

	1920	1919
January	\$4,200,700	\$4,026,000
February	3,862,300	3,363,800
	\$8,063,000	\$7,389,800

Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

	Gross	Expenses	Net	Increases or
Jan...	\$13,914,569	\$13,328,628	\$585,941	*\$967,571
Feb...	13,557,104	12,843,231	713,873	*267,242
	\$27,471,673	\$26,171,859	\$1,299,814*	\$1,234,813
Incr.	3,379,178	4,613,992		
Decr.			\$1,234,813	

Approximate earnings for March \$15,489,000, and for three weeks ended April 21, \$10,876,000, against \$15,127,000 and \$8,826,000 for same periods respectively 1919.
*Decrease.

Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

	Gross	Expenses	Deficit	Increase
Jan. \$	5,054,034	5,867,445	\$813,411	\$7,406
Feb. \$	4,660,807	5,159,640	498,833	188,756
	\$9,714,841	\$11,027,085	\$1,312,244	\$286,160
Incr.	1,224,453	1,510,613	286,160	

Approximate earnings for March, \$5,756,872, and for three weeks ended April 21, \$3,795,770, against \$5,513,593 and \$3,786,346 for same period respectively 1919.

The Gulf of St. Lawrence Shipping & Trading Co's s.s. Guide, commenced a regular service between Pictou, N.S., and Magdalen Island, Apl. 19, leaving Pictou on Mondays and Thursdays after the arrival of the Canadian National Rys. trains from Halifax.

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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.
ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of the issue in which it is to appear.

TORONTO, CANADA, MAY, 1920.

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Dolly Varden Mines Railway Dispute.

A memorandum from the Dominion Minister of Justice at Ottawa is reported to have been laid before the British Columbia Government, April 12, respecting the Dolly Varden Mines Co.'s application for the disallowance by the Dominion Government of the act passed in 1919 by the B.C. Legislature, providing for a settlement of difference between the company and the Taylor Engineering Co., which carried out the contract for the construction of the railway, under which act the Taylor Engineering Co. acquired possession of the mines and the railway. The memorandum reviews the history of the case from its inception to date. The Dolly Varden Mines Co.'s application for disallowance of the act is refused on various grounds, among them being the fact that about a year was allowed to lapse before any application for disallowance was made; and that the company has a right to resort to the courts which could give a mandatory remedy against compulsory proceedings which have not legal sanction.

The Dolly Varden Mines Co. is reported to have issued two writs against the Taylor Engineering Co. and the Taylor Mining Co., one asking for a series of declarations setting aside the act of 1919 and all proceedings taken under it, and the second asks for damages for trespass and for payment to the Dolly Varden Mines Co. of all money realized from ores produced at the mines. In the first set of actions C. M. Rolston is named as a personal defendant, in addition to the two Taylor companies.

The British Columbia Legislature on April 17 passed an act confirming and validating the act of 1919 and all that had been done under it.

The history of the case may be shortly stated as follows:—The Dolly Varden Mines Co., a United States corporation, some years ago obtained a charter from the B.C. Legislature to build a light railway from its mines to tide water at Alice Arm, running for the main part of the distance along a public highway. The contract for building the railway was let to the Taylor Engineering Co., which financed the construction, about which there was some dispute, and finally had a claim of about \$500,000 against the Dolly Varden Mines Co. The time for the construction of the railway expired in 1918, and as the line was not completed, the company in 1919 made application to the B.C. Legislature for an extension of time. Prior to this application there had been some attempts to sell the property on terms which it is alleged did not protect the Taylor Engineering Co. for its outlay. This company, when the application came before the Legislature, asked to be protected, and following an investigation by a special committee an act was passed extending the time for the construction of the railway, providing that the Taylor Engineering Co. was to be paid for the work theretofore done, and making provision for other payments. The Dolly Varden Mining Co. was given time to make payment, and on its default, the Taylor Engineering Co. was given permission to take over the property and make sundry payments, including \$613,000, to the Dolly Varden Mines Co. for its investment in the mines. The property was taken over by the Taylor Engineering Co., and the Taylor Mining Co. was formed to finance the undertaking. The wages claims were at once

paid off; the railway was finished by Sept., 1919, and the property developed. By Dec. 1, the company had shipped \$600,000 worth of ore to the smelter, and had made provision for further development this year. The development plans for the year include the raising of \$1,000,000 of debentures for the purpose, among other things, of paying the \$613,000 to the Dolly Varden Co. under the provisions of the act of 1919.

The officers and directors are:—President, A. J. T. Taylor; Vice President, H. C. Cheine; Treasurer, C. M. Rolston; other directors:—R. P. Butcher, C. Spencer and W. Lees.

D. B. Hanna and the Canada Steamship Lines.

In the House of Commons on Apr. 26, during a discussion on the Minister of Railways refusal to answer a number of questions in connection with Canadian Government Merchant Marine Ltd., on the ground that the Railways Department had no returns in its records showing the information asked for, and that the transactions about which information were asked were carried on by Canadian Government Merchant Marine Ltd., as an incorporated company, Wm. Duff, M.P. for Lunenburg, said: "Is the Minister of Railways or the Government aware of the fact that Mr. Hanna, who is President of Canadian Government Merchant Marine Ltd., and practically General Manager, is also a director of Canada Steamships, Ltd.? We have been told tonight about not letting our competitors know what we are doing, but here is a man who is President of our Canadian Government Merchant Marine, who, if I am correctly informed, is also a director of the Canada Steamships, Ltd."

On Apr. 28, Mr. Duff said that, after making his statement in the House on Apr. 26, as quoted above, he had received many enquiries as to whether Mr. Hanna actually was connected with the company competing with Canadian Government Merchant Marine, Ltd. The Minister of Railways replied that Mr. Hanna was not in Toronto, but the question was of such great importance that he would make enquiries and answer the question the following day.

The matter came up again on Apr. 29, when the acting Premier, Sir Geo. Foster, said:—"Mr. Hanna was appointed a director of Canada Steamships, Ltd., some years ago to represent the Canadian Northern Ry. on the Canada Steamships Board, for the purpose of protecting the interests of the railway in connection with the interchange of traffic on the Great Lakes, and he has continued to be a director of the steamship company. He has no financial interest in the Canada Steamships and is there simply to protect the interests of the railway. Mr. Dalrymple, Vice President of the Grand Trunk Ry., is also a director of Canada Steamships for the same purpose. He has no financial interest in the company."

Lotbiniere & Megantic Ry.—We are officially advised that the Lotbiniere & Megantic Ry., extending from Lyster to Deschailons, Que., 30 miles, was taken over by the Canadian National Rys. April 1. For operating purposes the line has been attached to the Levis Division, under the supervision of E. L. Desjardins, Levis, Superintendent.

Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—A Fredericton press report, April 14, states that under instructions from Montreal, all betterment work in the district has been held up for the present, with the exception of such pieces of work as are urgently needed and which must be undertaken at once.

St. John River Bridge.—J. M. R. Fairbairn, Chief Engineer, and P. B. Motley, Engineer of Bridges, C.P.R., are reported to have visited St. John, N.B., April 11, in connection with the borings at the reversible falls of the St. John River, which are being made to determine the site for the main piers of the proposed new bridge.

Angus Shops, Montreal.—A Montreal press report of April 20 states that plans have been filed at the City Hall there by the C.P.R. for an extension of the Angus shops, at an estimated cost of \$1,000,000. The plans are said to pro-

vide for additions to the passenger and freight car building shops, as well as to the machine shops. The new buildings will, it is said, be one story high, to conform to the present buildings. Construction will, it is stated, be started at once.

London Division.—Work is reported to be in progress on the London Division relaying the track west of Guelph Jct., Ont., with new 85 lb. rails.

A press report states that a second track will shortly be built between Woodstock and Zorra, Ont., 13 miles.

Owen Sound to Utopia.—Representatives of municipalities along the southern shore of Georgian Bay met at Meaford, Ont., recently to discuss the advisability of asking the C.P.R. to build a line from Utopia, on the Toronto-Sudbury line via Thornbury, Collingwood and Meaford to Owen Sound. A committee representative of all the municipalities was appointed to negotiate with the company. Meaford is now served by the G.T.R., and both the C.P.R. and the G.T.R. reach Owen Sound. Several plans have been suggested within recent years for the building of a line between Owen Sound and Meaford, but none of them materialized. Some years ago the C.P.R. was reported to have surveyed a line from Baxter, or Utopia, to Collingwood on the one hand and to Barrie on the other.

London to Sarnia, Ont.—Considerable discussion is taking place in the municipalities between London and Sarnia as to the company's reported plans to build a line from London to Sarnia. This matter has been considered for several years past, and some years ago surveys were

made for such a line, starting from various points between St. Marys and London, but nothing was done. Meetings have been held in the various municipalities, and considerable correspondence is said to have taken place between representatives of local business interests and C.P.R. headquarters. It is reported that E. W. Beatty, K.C., President, C.P.R., will make a trip at an early date through the territory proposed to be opened up.

Fort William Coal Dock.—We were officially advised April 12 that the company's plans for the proposed new coal dock at Fort William, Ont., were not definitely settled.

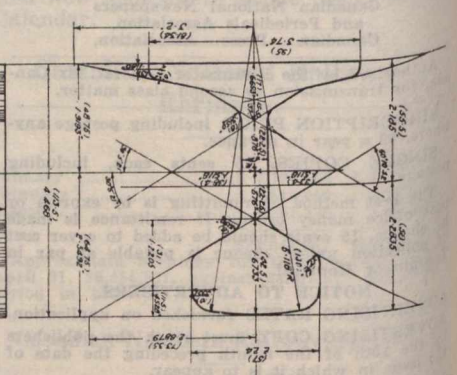
Western Branch Line.—The directors' annual report, which is published in full on pgs. 228 and 229 of this issue, gives complete information as to the provision made for branch line construction in Saskatchewan and Alberta, and of the appropriations for betterments and other

work to be carried out during this year on the various western lines.

We were officially advised April 4 that a decision had not then been reached as to what construction, if any, can be undertaken this year on the Wilkie-Cutknife line or the Coronation-Empress line, which depends to a large extent on the labor situation.

In connection with the construction of this section of the Acme-Empress line, which it is expected to complete this year, a press report states that in the building of the line many engineering difficulties have been encountered between Acme and Caribou, Alta., and that owing to the cost of construction it is termed the "million dollar road." A site is reported to have been laid out at Carbon for a station and yards.

Moose Jaw Station, Etc.—The company's new station and office building at Moose Jaw, Sask., is to be built on the axis of Main St., between Manitoba St. and the present station. When the new building is completed, the existing station and express house will be demolished, and the space occupied by them used for extension of station trackage. The entrance to the station will be on the axis of Main St. and through the base of a clock tower approximately 90 ft. high, which will have an 8 ft. dial on each face. The dials will be flood lighted at night. At the right, after entering the station, will be the public telephones, city ticket office, C.P.O.S. office, baggage and parcel rooms and transfer office, arranged in the order mentioned, and all facing the west end of the waiting room. Directly opposite the entrance will be



The illustration above shows the section and drilling, of 7,500 tons of 60 lb. steel rails, which the Dominion Iron & Steel Co., Sydney, N.S., is supplying to the Roumanian Government.

have heather brown floors, grey tile wainscoting, and grey brick walls, with moulded and ornamental members in polychrome terra cotta, and ceilings in Guastavino tile. The luncheon room will be finished with heather brown floors and grey tile walls, the upper portion of the room in tinted enamel. The women's room will have heather brown tile floor and wood panelling to the ceiling. The woodwork generally will be in the birch stained walnut. The plans have been prepared by Hugh G. Jones, architect, Montreal. Tenders for the erection of the building were received to May 1.

Moose Jaw to International Boundary. A press report states that about 36 miles of 85 lb. rails will be laid on the line from Moose Jaw to the International Boundary at Portal, Sask., replacing 72 lb. rails, and that a considerable amount of ballasting will be done on the line, particularly, between Lang and Wilcox.

Vancouver Pier Construction.—Work was reported to have been started on the dredging and filling in connection with the foundations of the new pier at Burrard Inlet, Vancouver, between the present A and D piers. F. F. Busted is reported to have been appointed engineer in charge of construction. (April, pg.

R. P. Ormsby, Secretary, Canadian National Rys., Toronto, writes: "Please, in future, send me two copies of Canadian Railway and Marine World instead of one, as I want to keep one copy on file and to cut out certain matter from the other copy. You give such a lot of useful information in the paper, in very convenient form."

Traffic Orders by Board of Railway Commissioners.

Free Transportation Regulations.

General order 290. April 12.—Re Sec. 345 of the Railway Act, 1919, and regulations to be prescribed for the issue and recording of free transportation by railway companies: Upon reading the submissions filed and the report of the board's Chief Traffic Officer, it is ordered as follows:

1. That the Regulations to Govern the Issue and Recording of Free Transportation by railway companies, attached hereto, marked A, be approved and prescribed for the use of such companies; and that each and every company be required to issue all free transportation, and keep all free transportation records, in conformity therewith.

2. That the said regulations are, and by virtue of this order do become, the lawful rules according to which all free transportation is to be issued, and all free transportation records are to be kept.

3. That each and every person directly in charge of the free transportation of any such company be required to see to, and he is hereby made responsible for, the correct application of the said regulations in the issue and recording of free transportation; and that it shall be unlawful for any such company, or for any person directly in charge of the free transportation of any such company, to issue any free transportation records, except in the manner and form in the said regulations set forth and hereby prescribed, and except as hereinafter authorized.

4. That the foregoing regulations shall, so far as the same are applicable, apply as well to all free transportation issued by express, telegraph, or telephone companies.

Increased Sleeping and Parlor Car Tolls.

General order 292. April 22.—Re application of various railway companies, under Secs. 330, 333 and 334 of the Railway Act, 1919, for approval of increased standard tariffs of maximum sleeping and parlor car tolls: Whereas, for the approval of the board, the applicant companies have filed from April 1 to April 20, standard tariffs of increased maximum sleeping and parlor car tolls, and have given publicity thereto through the medium of the press, and no objections thereto having been received by the board; and an increase in the existing tolls appearing to the board to be justified by existing transportation conditions, it is ordered that the following tariffs of the applicant companies be approved, and may be put into force after publication thereof, together with a reference to this general order, in two consecutive weekly issues of The Canada Gazette, viz.:

- Canadian National, C.R.C. W-S1 and E-S1.
- Canadian Pacific, C.R.C. S9.
- Dominion Atlantic, C.R.C. S5.
- Esquimalt & Nanaimo, C.R.C. S6.
- Grand Trunk, C.R.C. S7.
- Grand Trunk Pacific, C.R.C. S6.
- Kettle Valley, C.R.C. S4.
- Maine Central, C.R.C. S4.
- Michigan Central, C.R.C. S4.
- Napierville Junction, C.R.C. S2.
- New York Central, C.R.C. S4.
- Toronto, Hamilton & Buffalo, C.R.C. S5.

Joint Freight Tariffs for Interline Traffic.

29,495. Mar. 23.—Re application of Canadian Freight Association, on behalf of Grand Trunk, Canadian Pacific and Canadian National Rys., for a postponement and reconsideration of order 28,618, Aug. 1, 1919, re joint freight tariffs to apply to interline traffic between points on the said railways, respectively: Upon hear-

ing the application at Ottawa, Jan. 20, 1920, the Grand Trunk, Canadian Pacific and the Canadian National Railways, the Montreal and Toronto Boards of Trade, the Canadian Manufacturers' Association, and the Dominion Canners' Association being represented, and what was alleged, it is ordered that the order 28,618 be rescinded.

Lumber Rates from British Columbia.

29,539. April 15.—Re complaints of Lake Lumber Co., J. C. Wilson Lumber Co., and merchants of Qualicum Beach, British Columbia, against alleged unjust discrimination in the matter of the differential of 3c per 100 lb. over rates from Vancouver on lumber shipments from Qualicum Beach and Dashwood to destinations between the British Columbia-Alberta boundary and Port Arthur, compared with the differential of 1½c per 100 lb. from Victoria on shipments to the same destinations: Upon hearing the complaints at Victoria, Nov. 24, 1919, in the presence of representatives of the complainants and counsel and representatives for the Esquimalt & Nanaimo Ry., and what was alleged, and upon the report of the Board's Chief Traffic Officer, it is ordered that the complaints be dismissed.

Industrial Siding at Fahler, Alta.

29,501. Mar. 25.—Re application of United Grain Growers, Ltd., Calgary, Alta., for an order permitting them to use the industrial siding at Fahler, on the Edmonton, Dunvegan & British Columbia Ry. Upon hearing the application at Edmonton, Nov. 28, 1919, the appellants, residents of Fahler district, the Great War Veterans Association, and other parties interested being represented, and upon reading the written submissions filed after the hearing, both in support of, and in opposition to, the application, and the report and recommendation of an inspector of the board, it is ordered that the application be refused.

Additional Passenger Tolls Suspended.

29,502. Mar. 27.—Re tariffs filed by railway companies to take effect Mar. 29, imposing additional tolls on passenger traffic from Canada to destinations in the United States, Cuba and other foreign countries, where tickets are routed directly through U.S. ports or gateways, the adverse rate of exchange and the requirements of the U.S. railways for settlement in U.S. funds being stated in the tariffs as the reason for the additional tolls. In pursuance of the powers conferred upon the board under the Railway Act, 1919, sec. 325, and of all other powers possessed by it in that behalf, it is ordered that the following tariffs of the designated railways be suspended until further order:

- Canadian PacificC.R.C. no. 156
- Grand TrunkC.R.C. no. E-2884
- Canadian NationalC.R.C. no. E-123
- Toronto, Hamilton & BuffaloC.R.C. no. 1288
- Dominion AtlanticC.R.C. no. 476
- Quebec, Montreal & SouthernC.R.C. no. 276
- Napierville JunctionC.R.C. no. 125
- Pere MarquetteC.R.C. no. 597
- RutlandC.R.C. no. 670

Commutation Passenger Fares.

29,512. April 1.—Re complaints of the City of Toronto; residents of Oakville and stations between Oakville and Toronto; residents of Laval des Rapides, Que.; Gatineau Residents Association; E. N. Brown of Montreal; the Town of Weston, Ont.; and residents of Lasalle, Que., against the proposed increase in commutation fares published by railway companies, to become effective Mar. 1, 1920; and order 29,407, dated Feb. 27,

suspending the said fares pending a hearing by the board. Upon hearing the matter at Montreal, Feb. 25; Toronto, Mar. 5; Montreal, Mar. 9, and Ottawa, Mar. 16, citizens of Lachine and of the Town of Lasalle, the City of Montreal, the Citizens' Committee and the Town Council of Oakville, the Town of Weston, the City of Toronto, the Town of Bridgeburg, the Village of Port Colborne, the Township of Bertie, the Brampton Board of Trade, the Town of Brampton, the Canadian Manufacturers' Association, the Canadian National, Grand Trunk and Canadian Pacific Railways being represented at the hearing, and what was alleged, it is ordered as follows:

1. That the following tariffs, viz.:

- Canadian PacificC.R.C. 139, 140, and 145
 - Grand TrunkC.R.C. no. E-2822
 - Canadian NationalC.R.C. nos. W-90 and E-114
 - Toronto, Hamilton & Buffalo, C.R.C. 1279, 1281 and 1284
 - New York Central Supplement 4 to C.R.C. 9
 - Central Vermont Supplement 1 to C.R.C. 525
- be disallowed.

2. That the said railways be permitted to file new tariffs of fares, for commutation passenger traffic, applicable between the points included in the now existing tariffs of commutation fares, as follows,

- (a) 50-trip tickets, good for 30 days, on the basis of 8½ mills a mile of travel, subject to a minimum charge per ride of 7½c.
- (b) 40-trip tickets (scholars' tickets), good for 30 days, on the basis of 4¼ mills a mile of travel, subject to a minimum charge per ride of 7½c.
- (c) 10-trip tickets, good for three months, on the basis of 2.5c. per mile of travel, subject to a minimum charge per ride of 7½c.

subject to the provisions of the Railway Act, 1919, sec. 327.

3. That the application of the City of Toronto, the Town of Brampton, the Harris Wood Products Co., Toronto, the Town of Weston, Woodbridge Municipal Council, W. H. Cross and A. Newman of Bolton, Ont., for an order requiring commutation passenger fares to be extended to other territory than covered by the existing tariffs, be dismissed.

Additional Passenger Fares Suspended.

29,514. Mar. 30.—Re tariffs filed by railway companies to take effect Mar. 29, imposing additional tolls on passenger traffic from Canada to destinations in the United States, Cuba and other foreign countries, where tickets are routed directly through United States ports or gateways, the adverse rate of exchange and the requirements of the U.S. railways for settlement in U.S. funds being stated in the said tariffs as the reason for the said additional tolls. In pursuance of the powers conferred upon the board under the Railway Act, 1919, sec. 325, and of all other powers possessed by it in that behalf, it is ordered that the following tariffs of the designated railway companies be suspended until further order:

- Quebec CentralC.R.C. 177
- Wabash RailwayC.R.C. 1048

Free Transportation for Certain Cars and Attendants.

29,565. April 23.—Re application of Railway Association of Canada, on behalf of railway companies for free transportation under sec. 345 of the Railway Act, 1919: Upon reading the application and considering what has been urged in support thereof, it is ordered that rail-

way companies be permitted until further order to issue free transportation in the following instances, viz.: Dominion

and provincial agricultural demonstration cars and necessary attendants; provincial governments' fish cars and neces-

sary attendants; Canadian Forestry Association's demonstration car and necessary attendants.

Transportation Appointments Throughout Canada.

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

Canadian National Rys.—T. KEARNEY, heretofore Division Engineer, Montreal, has been appointed Assistant Division Engineer, Toronto.

W. R. FITZMAURICE, heretofore Superintendent Campbellton Division, Maritime District, Campbellton, N.B., has been appointed Superintendent, New Glasgow Division, Maritime District, vice R. H. Martin, transferred. Office, New Glasgow, N.S.

J. M. GRIEVE, heretofore Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, Winnipeg, has been appointed General Superintendent, Sleeping, Dining, and Parlor Cars and News Service, with jurisdiction over all lines. Office, Toronto.

W. A. KIRKPATRICK, who has been acting Assistant Superintendent, Division 2, Central District, Sioux Lookout, Ont., during the absence of D. W. Steeper, has resumed his position as Trainmaster, Neepawa, Man.

H. J. LAMBKIN has been appointed District Commissary Agent, Winnipeg, vice C. H. Worby, promoted.

R. H. MARTIN, heretofore Superintendent, New Glasgow Division, Maritime District, New Glasgow, N.S., has been appointed Superintendent, Campbellton Division, Maritime District, vice W. R. Fitzmaurice, transferred. Office, Campbellton, N.B.

S. H. MILLER has been appointed Roadmaster, Sioux Lookout Subdivision, Division 2, Central District, vice J. F. Flynn, assigned to other duties. Office, Sioux Lookout, Ont.

W. M. NEAL, heretofore Assistant Superintendent, Quebec District, Montreal, has been appointed Assistant General Superintendent, Ontario District, vice J. K. Savage, promoted. Office, Toronto.

GERARD RUEL, heretofore Counsel, has been appointed General Counsel. Office, Toronto.

J. K. SAVAGE, heretofore Assistant General Superintendent, Ontario District, Toronto, has been appointed General Superintendent, Quebec District, vice J. Woodman, transferred. Office, Montreal.

D. W. STEEPER has resumed his former position as Assistant Superintendent, Division 2, Central District, Sioux Lookout, Ont.

W. J. UREN, heretofore Superintendent, Farnham Division, Quebec District, Farnham, Que., has been appointed Assistant General Superintendent, Quebec District, vice W. M. Neal, transferred. Office, Montreal.

A. WILLIAMS, heretofore Superintendent, London Division, Ontario District, London, Ont., has been appointed Superintendent, Farnham Division, Quebec District, vice W. J. Uren, promoted. Office, Farnham, Que.

H. B. WOLLEN, heretofore Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, vice J. M. Grieve, promoted. Office, Winnipeg.

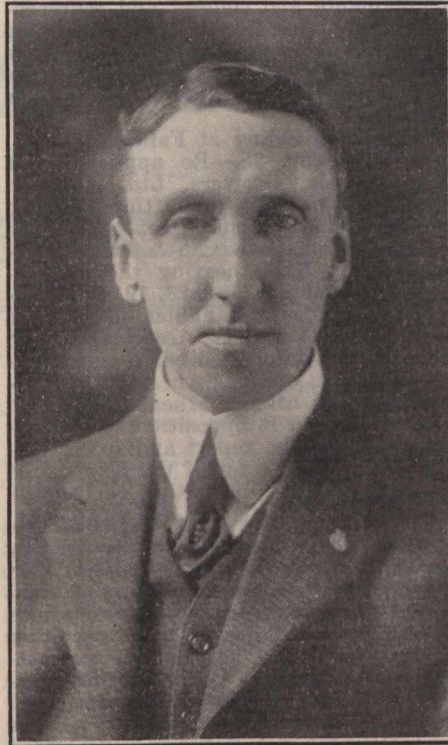
C. H. WORBY, heretofore District Commissary Agent, has been appointed

Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, vice H. B. Wollen, promoted. Office, Winnipeg.

Canadian Pacific Ocean Services Ltd.—Major M. L. DUFFY, heretofore Agent, Glasgow, Scotland, has been appointed Agent for Scotland. Office, 120 St. Vincent St., Glasgow.

Engineer Rear Admiral GEORGE W. ROOME, O.B.E., Royal Navy, retired, has been appointed Chief Superintendent Engineer of all the company's fleet, vice Kenneth McKenzie, deceased. Office, Liverpool, Eng.

Canadian Pacific Ry.—A. C. ADES has been appointed Roadmaster, Crowsnest Subdivision, Lethbridge Division, Alberta District, vice G. Peck, resigned. Office, Lethbridge, Alta.



V. A. G. Dey,
Division Engineer, Bruce Division, C.P.R.

J. A. AUDRAIN, heretofore Trainmaster, Saskatoon, Sask., has been appointed station master, Winnipeg.

J. H. BARBER, heretofore engaged on grade separation and other special work at various points, has been appointed Division Engineer, Toronto Terminals Division, Ontario District, vice V. A. G. Dey, transferred. Office, Toronto.

W. R. BOUCHER, heretofore Superintendent, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Superintendent, Chapleau Division, Algoma District, vice W. C. Guthrie, transferred. Office, Chapleau, Ont.

J. R. CASWELL, heretofore Division Engineer, London Division, Ontario District, Toronto, has been appointed Division Engineer, Sudbury Division, Algoma District, vice N. E. Gutelius, transferred. Office, Sudbury, Ont.

S. W. CRABBE, heretofore Superintendent, Schreiber Division, Algoma District, Schreiber, Ont., has been appoint-

ed Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., vice T. A. Wilson, transferred. Office, Smiths Falls, Ont.

V. A. G. DEY, heretofore Division Engineer, Toronto Terminals Division, Ontario District, Toronto, has been appointed Division Engineer, Bruce Division, vice J. A. Irvine, transferred. Office, Toronto.

J. E. FONTAINE, heretofore on the exchange staff, has been appointed exchange agent, St. John, N.B., vice G. G. Graham, who has left the service.

J. M. FRYERS has been appointed Trainmaster, Sutherland, Wynward-Lanigan Subdivision, Saskatoon Division, Saskatchewan District, vice J. A. Audrain, transferred. Office, Saskatoon.

H. C. GROUT, heretofore General Superintendent, New Brunswick District, St. John, N.B., has been appointed General Superintendent, Ontario District, vice Allan Purvis, resigned.

N. E. GUTELIUS, heretofore Division Engineer, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Assistant District Engineer, Quebec District. Office, Montreal.

W. C. GUTHRIE, heretofore Superintendent, Chapleau Division, Algoma District, Chapleau, Ont., has been appointed Superintendent, Schreiber Division, Algoma District, vice S. W. Crabbe, transferred. Office, Schreiber, Ont.

J. A. IRVINE, heretofore Division Engineer, Bruce Division, Ontario District, Toronto, has been appointed Division Engineer, London Division, Ontario District, vice J. R. Caswell, transferred. Office, Toronto.

F. H. JENKINS has been appointed Locomotive Foreman, Brownville Jct., Me.

I. MOORE has been appointed Roadmaster, Orangeville, Elora, Wingham and Teeswater Subdivision, Bruce Division, Ontario District, vice S. Lackey, superannuated. Office, Orangeville, Ont.

T. A. WILSON, heretofore Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Superintendent, Sudbury Division, Algoma District, vice W. R. Boucher, transferred. Office, Sudbury, Ont.

J. M. WOODMAN, heretofore General Superintendent, Quebec District, Montreal, has been appointed General Superintendent, New Brunswick District, vice H. C. Grout, transferred. Office, St. John, N.B.

Grand Trunk Ry.—W. J. BURR, heretofore at Toronto, has been appointed General Agent, Passenger Department, Pittsburg, Pa., with territory covering Ohio, except that portion north of the New York Central Rd., Butler, Ind., to Toledo; Pennsylvania, on and west of Baltimore and Ohio Rd., Pennsylvania System, Hyndman to Buffalo via Berlin, Johnstown, Blairville, Freeport and Oil City; Virginia, on and west of Norfolk and Western Ry., Bristol, N.C., to Bluefield, W.Va., via Radford; West Virginia.

W. M. DOHERTY, heretofore chief dispatcher, London, Ont., has been appointed chief dispatcher there, vice A. F. Sharpe, promoted.

J. H. EDWARD, Local Treasurer, Portland, Me., is acting as agent there, pend-

ing the appointment of a successor to the late J. A. Riddell.

F. GOULD, heretofore Travelling Freight Agent, Toronto, has been appointed City Freight Agent, there, vice E. R. Thorpe, resigned to enter Lehigh Valley Rd. service.

S. HAZZARD, heretofore conductor on Ontario Lines, has been appointed General Yardmaster, Brockville, Ont., vice C. F. McEwan, assigned to other duties.

W. H. HOWARD has been appointed Special Agent, Montreal Division, Eastern Lines, vice J. McVeigh, resigned, Office, Montreal.

W. J. LITTLE, heretofore Trainmaster, Districts 13 and 14, Barrie Division, Ontario Lines, Allandale, Ont., has been appointed Trainmaster, Districts 11 and 12, Barrie Division, Ontario Lines, vice W. J. Piggott, whose appointment as Superintendent, Stratford Division, Ontario Lines, Stratford, Ont., was announced in our last issue. Office, Allandale, Ont.

G. McBRIDE, heretofore night foreman, York, Ont., has been appointed Locomotive Foreman, Allandale, Ont.

A. B. McNAUGHTON, Superintendent, Portland Division, Portland, Me., has been given jurisdiction over all matters pertaining to maintenance of way on the division, B. Wheelwright, heretofore Engineer, maintenance of way, having resigned. The latter position has been abolished.

W. J. MATHISON has been appointed Trainmaster, District 16, District 17, Hamilton to Niagara Falls, District 19, Port Dalhousie to Port Robinson and Welland Jct., to Port Colborne, vice W. Hall, deceased. Office, Hamilton, Ont.

R. F. NICHOLSON has been appointed Assistant Engineer, Portland Division, Office, Portland, Me.

W. K. ROGERS, heretofore dispatcher, London, Ont., has been appointed night chief dispatcher there, vice W. M. Doherty, promoted.

A. L. SHANLEY has been appointed Industrial Agent, Western Lines. Office, Detroit, Mich.

A. E. SHARPE, heretofore Chief Dispatcher, London, Ont., has been appointed Trainmaster, Districts 13 and 14, Barrie Division, Ontario Lines, vice W. J. Little, transferred. Office, Allandale, Ont.

JNO. A. WRIGHT, formerly chief clerk to General Foreign Freight Agent, Montreal, and during the past year loaned to Canadian Wheat Board, has been appointed Assistant Foreign Freight Agent, G.T.R. Office, Montreal.

Great Northern Ry.—E. A. DYE, heretofore General Agent, Chicago North Western Ry., Vancouver, B.C., is reported to have been appointed District Freight and Passenger Agent, G.N.R., there, vice H. E. Watkins, transferred.

H. E. WATKINS, District Freight and Passenger Agent, Vancouver, B.C., is reported to have been transferred to Toronto.

New York Central Rd.—FRANK FOY, formerly Canadian Passenger Agent, and who, since the closing of United States railway offices in Canada, has been acting as Passenger Agent at different points in New York State, has again been given charge of Ontario territory, with headquarters, for the present, at Buffalo, N.Y.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—J. C. PETERSON has been appointed General Agent, Winnipeg, Man.

Pacific Great Eastern Ry.—G. E. MacDONALD, General Manager, has resign-

ed, as reported in our last issue. The appointment of a successor had not been considered when we were advised at the middle of April.

Union Pacific Rd.—L. J. CANFIELD has been appointed General Agent, Calgary, Alta.

J. H. CUNNINGHAM has been appointed General Agent, Vancouver, B.C.

Increases in Sleeping and Parlor Car Rates.

A 20% increase in sleeping car fares, to meet an increase of from 100 to 200% in the cost of these services, will be effective on May 1, between points in the United States and on international traffic between Canada and the United States, and probably shortly thereafter between points in Canada.

The rates paid for sleeping car berths, and parlor car seats, except for the war tax, are to-day practically the same as 20 years ago. In 1911, sleeping and parlor car rates were adjusted to a standard basis per mile, involving certain slight advances, and certain slight decreases, but no general advance was made.

During the war, material for new cars could not be provided. Today, there is a marked shortage of sleeping and parlor car equipment, and the railways must provide many new cars. A sleeping car which could be obtained in pre-war days for \$20,000 now costs from \$45,000 to \$50,000. The linen, of which there must be a big supply, now costs more than four times what it did in pre-war days. All the incidentals that enter into the cost of upkeep have doubled or trebled. The cost of operation is three times what it was 10 years ago.

By the new tariffs the minimum charge for a lower berth in standard, or first class, sleeping car is set at \$2, for an upper, \$1.60, for a drawing room \$7, and for a compartment \$6, and the existing fares are raised about 20%. This means that, in the new tariffs the lower berth fare between Toronto and New York will be \$3, between Toronto and Detroit \$2, both effective May 1, and, when the advance becomes effective between points in Canada, the lower berth fare between Toronto and Montreal will be \$2.50, between Toronto and Ottawa \$2, and between Toronto and Winnipeg \$9. The new berth fares will be 80% of these figures, respectively. The minimum charge for a parlor car seat is fixed at 50c., which is felt to be a reasonable charge for the accommodation offered, but no other advances are proposed in parlor car fares.

See Board of Railway Commissioners' general order 292, on another page of this issue.

Railways Department Estimates for 1920-1921.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items:—

Chargeable to Capital, \$23,346,695.

Canadian Government Rys.—Construction and betterments (to be expended under the direction of and upon such terms and conditions as the governor in council may from time to time provide). \$6,321,194, including a revote of \$5,036,005 unexpended balance of the 1919-1920 appropriation of \$11,121,681.

Miscellaneous railway equipment—To acquire directly or indirectly, or to assist in acquiring during the current fiscal year, railway equipment and materials for the purposes and upon the terms (save as herein varied) mentioned in the Statutes of 1918, chap. 38. The assistance herein pro-

vided may be by way of advances to the Canadian National Rolling Stock Co., or any company comprised in the Canadian Northern Ry. or by way of equipment or materials acquired by the Minister, \$16,925,501, including a revote of \$3,603,322 unexpended balance of the 1919-1920 appropriation of \$35,000,000.

Hudson Bay Ry., Port Nelson Terminals, \$100,000, including revote of \$70,000 unexpended balance of 1919-1920 appropriation of \$100,000.

Chargeable to Income, \$49,147,174.33.

Arbitration and awards and costs of litigation, \$2,000.

Board of Railway Commissioners—Maintenance and operation of, including \$800 for Clyde Leavitt as Chief Fire Inspector, \$190,000.

Board of Railway Commissioners—To pay expenses in connection with cases before board, \$5,000.

Contribution to International Association of Railways Congress, \$97.

Commissioner of Highways—To provide for organization and payment of staff of Commissioner of Highways, including A. W. Campbell, C.E., as Commissioner of Highways at \$5,000 per annum, \$25,000.

Governor General's cars; attendance, repairs and alterations, \$5,000.

Loan not exceeding \$48,611,077 repayable on demand with interest payable half yearly at 6% to be used to meet expenditures made or indebtedness incurred in paying deficits in operation or interest on securities in excess of amount available from net earnings, or paying maturing loans of the Canadian Northern Ry. Co., or any company included in the Canadian Northern Ry. System, and for construction and betterments; said loan to be secured by mortgage on the undertaking of the Canadian Northern Ry. System, containing such terms and conditions as the Governor in council may approve, \$48,611,077.

Miscellaneous works not provided for, \$2,000.

Printing and stationery, outside service, \$7,000.

Surveys and inspections, and general expenditures, railways, including salaries and expenses of experts employed temporarily, \$100,000.

To provide for payment of expenses in connection with the acquisition of the Grand Trunk and associated railway systems, \$200,000.

Authorized by statute—Salaries of Board of Railway Commissioners, \$58,500.

Chargeable to Collection of Revenue, \$5,200,000.

Canadian Government Railways, toward deficit of working expenditure for 9 months ended Dec. 31, 1920, the management of the railways being hereby authorized to apply the receipts and revenues toward payment of the working expenditure, \$5,000,000.

Compassionate allowance to widow and children of J. L. A. Frobe, who was killed while in discharge of his duty as brakeman on Canadian Government Rys. at Aston Jct., Que., Sept. 11, 1918, \$2,000.

Under the head of "Civil Government," the department is voted \$194,162.50 for salaries, and \$28,000 for contingencies.

United States Railway Notes.

W. D. Hines, Director General, U.S. Railroad Administration, has resigned, effective May 1.

The U.S. Federal Reserve Board has announced the appointment of a railway loans advisory committee, consisting of F. A. Delano, formerly Vice Governor of the board; Paul M. Warburg and Bradley Palmer. The committee was organized immediately, and has received railway executives who have applied for cash advances.

C.P.R. Pension Fund.

On Dec. 31, 1919, there were 912 persons on the C.P.R. pension roll, of whom 456 were over 70 years of age; 420 between 60 and 70, and 36 under 60. The position of the fund was as follows:—

Balance to Dec. 31, 1918.....	\$1,166,266.55
Amount contributed by company.....	500,000.00
Amount received as interest.....	45,906.65
	\$1,712,173.20

Payment of pension allowances for year	387,434.49
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Balance in cash and investments.....	\$1,324,738.71
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The C.P.R. is reported to have given Acadia University, Dalhousie, N.S., the original burnt clay model of "Evangeline," designed by the late Phillippi Herbert and used for the statue being erected by the company at Evangeline's Well in the Annapolis valley.

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.

Important traffic orders made by the board are given in full on another page of this issue.

General order 287. Mar. 22.—Amending order 260, Mar. 17, 1919, respecting regulations for transportation by freight of dangerous articles other than explosives.

General order 288. Mar. 22.—Rescinding general order 267, June 27, 1919, and amending standard conditions and specifications for wire crossings, as approved by general order 231, May 6, 1918, by striking out par. 4 of part 1, and substituting new paragraph.

General order 289. Mar. 24, 1920.—Approving, effective June 1, rules relative to inspection of locomotives and tenders by railway companies.

General order 290. Apr. 12.—Prescribing regulations for issue and recording of free transportation by railway companies.

General order 291. Apr. 7.—Amending standard conditions and specifications for wire crossings, as amended by general order 267, June 27, 1919.

29,479. Mar. 18.—Ordering C.P.R. to build standard car stock yard at Pritchard, B.C. by Sept. 1.

29,480. Mar. 22.—Approving revised general location of C.P.R. Rosetown Southeastly Branch from mile 9.8 to 20.2, and from mile 45.7 to 59.8.

29,481. Mar. 22.—Approving stress sheet of Canadian National Rys. bridge over St. Charles River, at mile 8.7 from Quebec, and amending order 29,342, Feb. 7, by substituting mile 9 for mile 8.7.

29,482. Mar. 23.—Approving revised location of C.P.R. Lanigan Northeastly Branch, mile 47.80 to 60.98, and from mile 60.98 to s.w. ¼ Sec. 32, Tp. 44, Range 18, west 2nd meridian at mile 80.

29,483. Mar. 24.—Authorizing Bloedel, Stewart & Welsh, Ltd., to carry logging railway overhead across Esquimalt & Nanaimo Rys., Vancouver Island, B.C.

29,484. Mar. 18.—Dismissing application of town of Laprairie, Que., for order requiring more regular train service by G.T.R.

29,485. Mar. 23.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Bell & Reynolds in Sec. 10, Range 6, Vancouver Island, B.C., at mile 6.17 Lake Cowichan Subdivision.

29,486. Mar. 19.—Approving Canadian Northern Saskatchewan Ry. revised location from mile 0 to 1.51L and 5.07 to 10.97L, and authorizing crossing of 7 highways.

29,487. Mar. 24.—Authorizing Canadian National Rys. to cross and divert highway in s.w. ¼ Sec. 29, Tp. 27, Range 28, west 3rd meridian, Sask.

29,488. Mar. 24.—Ordering Grand Trunk Pacific Ry. forthwith to appoint caretaker at Winter, Sask., to see that station is kept clean, heated and lighted for passengers.

29,489. Mar. 22.—Extending for four months from date time within which C.P.R. may build two sidings for Fraser Co., Edmundston, N.B.

29,490. Mar. 23.—Amending order 29,024, Nov. 15, 1918, re installation of two automatic bells at Munroe's crossing, Beachville, Ont., by G.T.R., and providing that 25% of cost be paid out of railway grade crossing fund.

29,491. Mar. 25.—Authorizing Kettle Valley Ry. to build bridge 1.7 on its Copper Mountain Branch, B.C.

29,492. Mar. 25.—Authorizing Grand Trunk Pacific Ry. to build spur for Kitsumkallum Timber Co., at mile 1,659.4, B.C.

29,493. Mar. 25.—Authorizing C.P.R. to build spur and sidings for Log Supply Co., Berthier, Que.

29,494. Mar. 24.—Ordering Canadian National Rys. to appoint caretaker at Colinton Station, Alta., by May 1, to see that station is kept clean, heated and lighted for passengers.

29,495. Mar. 23.—Rescinding order 28,618, Aug. 1, re joint freight tariffs to apply to interline traffic between points on G.T.R., C.P.R. and Canadian National Rys.

29,496 to 29,499. Mar. 24.—Approving Bell Telephone Co.'s agreements with Bethesda & Stouffville Telephone Co. in York and Ontario Counties, Ont., Feb. 27; Sebright Telephone Co., in Victoria and Ontario Counties, Ont., Mar. 6; East Grey Telephone Co., in Grey County, Ont., Mar. 12; and Derby Telephone Co., in Grey Co., Ont., Feb. 24.

29,500. Mar. 23.—Amending order 28,729, Aug. 27, 1919, re G.T.R. automatic bell at Martin St. crossing, Beachville, Ont., and providing that 25% of cost be paid out of railway grade crossing fund.

29,501. Mar. 25.—Dismissing application of United Grain Growers Ltd., Calgary, Alta., for order permitting use of siding at Fahler, Alta., on Edmonton, Dunvegan & British Columbia Ry.

29,502. Mar. 27.—Suspending until further order tariffs of C.P.R., G.T.R., C.N.R., Toronto, Hamilton & Buffalo Ry., Dominion Atlantic Ry.,

Quebec, Montreal & Southern Ry., Napierville Jct. Ry., Pere Marquette Rd., and Rutland Rd., which impose additional tolls on passenger traffic from Canada to United States, Cuba and other foreign countries, where tickets are routed directly through U.S. ports or gateways, the adverse rate of exchange and the requirements of the U.S. railways for settlement in U.S. funds being stated in the said tariffs as the reasons for said additional tolls.

29,503. Mar. 27.—Authorizing Canadian National Rys. to cross and divert highways in s. w. ¼ Sec. 25, Tp. 14, Range 9, west 2nd meridian, Sask.

29,504. Mar. 25.—Authorizing C.P.R. to build extension to spur for Canadian Connecticut Cotton Mills Co. at mile 68.5, Sherbrooke Subdivision, Que.

29,505. Mar. 26.—Extending to Sept. 1, authority granted Hydro Electric Power Commission of Ontario, by orders 28,341 and 28,591, May 20 and July 23, 1919, respectively, to build temporary spur across Niagara, St. Catharines & Toronto Ry. in Stamford Tp., Ont.

29,506. Mar. 25.—Approving Canadian Northern Western Ry. revised location through Tps. 19-20, Ranges 11-12, west 4th meridian, Alta., mile 75.35 to 77.47.

29,507. Mar. 25.—Approving agreement Dec. 5, 1919, between Bell Telephone Co. and Lake Megantic Pulp Co., Milan, to Pond Siding, Que.

29,508. Mar. 29.—Authorizing G.T.R. to use bridge carrying public road immediately north of Danville station, Shipton Tp., Que.

29,509. Apr. 1.—Suspending until further order Ottawa Electric Ry. special passenger tariff C.R.C. 6, effective Apr. 5.

29,510. Mar. 29.—Authorizing C.P.R. to divert road allowance on east boundary of Sec. 27, Tp. 18, Range 14, west 2nd meridian, Saskatchewan, and to close diverted portion.

29,511. Mar. 29.—Authorizing C.P.R. to rebuild bridge 16.8 over Little Saskatchewan River, on its Lenore Subdivision, Man.

29,512. Apr. 1.—Disallowing C.P.R., G.T.R., Canadian National Rys., Toronto, Hamilton & Buffalo Ry., New York Central Rd., Central Vermont Ry. providing for increased commutation fares and ordering that new tariffs be filed for commutation passenger traffic.

29,513. Apr. 1.—Authorizing Pointe aux Trembles Terminal Ry. and Canadian National Rys. to operate trains over interlocking plant in Pointe aux Trembles Parish without first stopping.

29,514. Mar. 20.—Suspending, until further order, tariffs of Quebec Central and Wabash Rys., effective Mar. 29, imposing additional tolls on passenger traffic from Canada to U.S. destinations, also Cuba and other foreign countries where tickets are routed directly through U.S. ports or gateways, the adverse rate of exchange and the requirements of U.S. railways, for settlement in U.S. funds being stated as the reason for additional tolls.

29,515. Mar. 25.—Authorizing Montreal Tramways Co. to cross C.P.R. on Park Ave., between Atlantic Ave. and Beaumont St.

29,516. Mar. 29.—Authorizing Canadian Northern Western Ry. to build spur for W. J. Anderson in s.e. ¼ Sec. 12, Tp. 29, Range 13, west 4th meridian, Alta.

29,517. Apr. 6.—Dismissing Toronto, Hamilton & Buffalo Ry. application for rescission of order 24,614, Dec. 28, 1915, for the construction of a new bridge carrying King St., Hamilton, Ont., over its tracks; also City of Hamilton's application to vary order 24,164 so as to impose the whole cost of bridge upon T.H. & B.R.

29,518. Apr. 6.—Amending order 17,774, Oct. 15, 1912, which authorized Barton Tp., Ont., and Hamilton City and Suburban Homes to carry Rosedale Ave. across Toronto, Hamilton & Buffalo Ry.

29,519. Apr. 6.—Authorizing Sherbrooke Ry. & Power Co. to build its tracks under C.P.R. at Galt St., Sherbrooke, Que.

29,520. Apr. 1.—Authorizing Alberta Government to make highway crossing over C.P.R. in north half of Sec. 3, Tp. 9, Range 26, west 4th meridian, Alta.

29,521. Apr. 3.—Authorizing G.T.R. to build spur for Tuttle & Bailey Mfg. Co. of Canada, Bertie Tp., Ont.

29,522. Apr. 3.—Relieving C.P.R. from providing further protection at crossing of Mountain Ave., 2.73 miles west of Westfort, Ont.

29,523, and 29,524. Apr. 3.—Approving Bell Telephone Co. agreements, Mar. 9, with Cie de Telephone St. Camille, Wolfe, Richmond and Sherbrooke Counties, Que., and Mar. 24, with Ardrea Telephone Co., Simcoe County, Ont.

29,525. Apr. 1.—Authorizing C.P.R. to build spur for Provincial Mental Asylum, Weyburn, Sask.

29,526. Apr. 7.—Authorizing G.T.R. to operate over interlocking plant where Niagara, St. Catharines & Toronto Ry. crosses Elm St., Port Colborne, Ont., without first stopping.

29,527. Apr. 12.—Approving route map showing general location of C.P.R. Leader Southeastly Branch mile 29.0 to 50.1, and mile 88.0 to 153.6.

29,528, 29,530. Apr. 12.—Approving Bell Telephone Co. agreements, Mar. 22, with The Victory Telephone Co., Grey and Bruce Counties, Ont.; Mar. 25, with La Cie de Telephone de Warwick,

Drummond and Arthabaska Counties, Que.; and Mar. 27, with Sandwich West Co-operative Telephone Co., Essex County, Ont.

29,531. Apr. 8.—Approving location of C.P.R. station at Insinger, Sask.

29,532. Apr. 12.—Approving agreement Mar. 17, between Bell Telephone Co., and Ayr Rural Telephone Co., of Waterloo, Brant, and Oxford Counties, Ont.

29,533. Mar. 29.—Authorizing C.P.R. to build extension of spur for Revelstoke Sawmill Co., Calgary, Alta.

29,534. Apr. 13.—Authorizing Canadian National Rys. to rebuild bridge over Moira River, Hungerford Tp., Ont.

29,535. Apr. 14.—Authorizing Chief Commissioner to approve revised location of C.P.R. Bassano Easterly Branch (Empress to Mildren) from mile 222.13 to 253.44.

29,536. Apr. 13.—Approving G.T.R. bylaw 37, Mar. 12, authorizing Vice President, Freight Traffic Manager or General Freight Agent to issue tariffs of tolls for freight traffic.

29,537. Apr. 9.—Authorizing C.P.R. to build its Swift Current Northwestly Branch at mile 311 at grade, across Grand Trunk Pacific Ry. near Torlea, Alta.

29,538. Apr. 15.—Approving C.P.R. location of semi-enclosed shelter at Robertson, Alta.

29,539. Apr. 15.—Dismissing complaint of Lake Lumber Co., J. C. Wilson Lumber Co., and merchants of Qualicum Beach, B.C., against alleged discrimination in differential of 3c a 100 lb. over rates from Vancouver on lumber from Qualicum Beach and Dashwood to destinations between British Columbia-Alberta boundary and Port Arthur, Ont., compared with differential of 1½c a 100 lb. from Victoria, B.C.

29,540. Apr. 10.—Authorizing C.P.R. to build spur for North Star Oil & Refining Co., Camrose, Alta.

29,541. Apr. 15.—Authorizing Canadian National Rys. to rebuild bridge over west channel of Moira River (Stoco Lake) at mile 32.9 from Yarker, Ont.

29,542. Apr. 15.—Authorizing Canadian Northern Western Ry. for four months from date to carry traffic over its Hanna-Medicine Hat Branch, from Bonar, mile 25.9 from Saskatoon to mile 47.

29,543. Apr. 15.—Authorizing Canadian National Rys. to carry traffic between Alpha St. and Point Ellice bridge, Victoria, B.C., speed not to exceed 8 miles an hour.

29,544. Apr. 15.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. to rebuild pile trestle and erect an 80-ft. plate girder at mouth of Campbell Creek, bridge 68, near White Rock, B.C.

29,545. Apr. 16.—Authorizing Michigan Central Rd. to build spur for Carbon Alloy Steel Co., Fraser station, Ont.

29,546. Apr. 16.—Authorizing G.T.R. to operate trains over spur serving Oakoak Co. (Canada), Toronto.

29,547. Apr. 19.—Authorizing C.P.R. to build spur for McGillivray Creek Coal & Coke Co., Coleman, Alta.

29,548. Ordering that crossing of G.T.R. Don Belt Line and C.P.R. spur on Eastern Ave., Toronto, be protected by watchman appointed by G.T.R. between 7 a.m. and 11 p.m.

29,549. Apr. 15.—Authorizing Canadian National Rys. to rebuild spur subway across Bowes St., Parry Sound, Ont.

29,550. Apr. 19.—Authorizing Ottawa Electric Ry. to file within seven days from date tariff effective Apr. 6, showing passenger fares between Holland Ave. and Britannia-on-the-Bay, and between Cloverdale Road and the Rifle Range, Ottawa, Ont.

D. B. Hanna Sues for Slander.—F. S. Cahill, M.P., for Pontiac County, Que., in addressing the Montreal Reform Club, April 17, is reported to have made certain charges against D. B. Hanna, President Canadian National Rys., among others that he is favoring Mackenzie-Mann interests and that they are making large profits out of the Canadian National Rys. Mr. Hanna has instructed his solicitor to institute proceedings for slander against Mr. Cahill, for unstated damages.

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

Canadian Northern Alberta Ry.....	1.34
Canadian Northern Ry.....	374.101
Canadian Pacific Ry. roadbed and station grounds	20.43
Grand Trunk Pacific Branch Lines Co.....	56.67
Nicola, Kamloops and Similkameen Ry.....	143.09
Total	595.631

C.P.R. Equipment Trust Certificates.

The following prospectus has been issued of the \$12,000,000 C.P.R. equipment trust 6% gold certificates, referred to in Canadian Railway and Marine World for April, which will be issued under Philadelphia plan, in denominations of \$1,000, to mature \$500,000 semi-annually Oct. 1, 1920 to April 1, 1932. Dividend warrants will be payable semi-annually April 1 and Oct. 1. Principal and dividends will be payable at New York, N.Y., and Pittsburg, Pa., in U.S. gold coin. The certificates will be specially secured by standard new railway equipment costing \$15,000,000 delivered. The title to this equipment is to be vested in the Union Trust Co. of Pittsburg, as trustee, and it will be leased to the railway company. Pending receipt of the equipment, which is to be delivered in Canada, the trustee will hold for the benefit of the certificate owners \$15,000,000 in cash at the Bank of Montreal, subject to the trustee's order.

The C.P.R. Co. controls a transcontinental railway system of about 18,500 miles extending from St. John, N.B., to Vancouver, B.C., penetrating the U.S. as far as Chicago and St. Paul, and connecting by its own steamship lines with European and Asiatic ports. Of the 8,300 miles of road directly owned, only about 180 miles, branch lines, are mortgaged. The C.P.R. has been able to maintain its earnings on a very substantial basis, in spite of increased operating costs, as evidenced by the following income accounts reported by the company:

Years ended Dec. 31:	1917	1918	1919
Gross earnings	\$152,889,335	\$157,537,698	\$176,929,060
Operating expenses	105,843,317	123,035,310	143,996,024
Net earnings	46,546,018	34,502,388	32,933,036
Other income	8,744,617	7,934,775	9,049,343
Total income	55,290,635	42,437,163	41,982,379
Fixed charges	10,229,143	10,177,513	10,161,510
Balance after charges	\$45,061,492	\$32,259,650	\$31,820,869
Times charges earned	5.40	4.17	4.13

The dividends on the \$12,000,000 6% equipment trust certificates will be \$705,000 in the first year. Had fixed charges in 1919 been increased by this amount, total charges would have been earned about 3.85 times, without allowing for any benefit from the proceeds of this issue. Dividends have been paid on the company's ordinary stock since 1883 and since 1910 the rate has been 10% a year. The equity junior to funded debt and equipment issues is represented by over \$80,000,000 of 4% preference stock and by ordinary stock having at present quoted prices an indicated market value of \$320,000,000.

The prices for the certificates range from 99% for those due Oct. 1, 1920, to 94% for those due April 1, 1932. The first 12 maturities yield approximately 6% and the last 12 maturities approximately 6%.

Grand Trunk Railway Acquisition Legislation.

A bill was introduced in the House of Commons, April 12, by the Minister of Railways, to confirm the agreement dated March 8, 1920, between the Crown and the Grand Trunk Railway Co., for the acquisition by the Crown of the company's capital stock, with the exception of the four per cent. guaranteed stock, and was read a first time.

The bill contained two sections and a schedule, the latter being the agreement dated March 8, 1920, executed under the powers of the Grand Trunk Railway Acquisition Act, 1919. The first section of the bill provided for the correction of the agreement in two particulars, viz.:—"By adding thereto, under the caption, "Companies directly controlled by the Grand Trunk Railway of Canada," the following:—Vermont and Province Railroad Co., controlled by stock owners' corp., 100 per cent.; Pembroke Southern Ry. Co., controlled by stock owners' corp., majority, and by striking out of the first schedule of the agreement under the caption "Companies controlled by the Grand Trunk Ry. Co., of Canada by lease," the words, "Pembroke Southern Ry. Co.,"

The second section of the bill was as follows:—"The said agreement, as corrected as aforesaid, is hereby declared to have been sufficiently ratified by the holders of stocks of the G. T. Ry. Co. as required by Sec. 7 of the said act, and to be binding and effective, and is hereby in all respects ratified and confirmed as the agreement authorized by the said act and for all the purposes thereof."

The bill was passed through its various stages up to the third reading without amendment, when on the motion to read it the third time, April 22, unanimous consent was given to the insertion of the following as section 3:—"Nothing herein contained shall be construed as authorizing any lending of money by the government to the managing committee, mentioned in the fourth section of the said agreement, without the specific authority of parliament."

Hon Mackenzie King, moved to return the bill to committee of the whole for the consideration and insertion of the following words:—"Any right or interest of any employe of the G. T. Ry. Co. existing in the pension system, prior to the strike of the company's employes which occurred in July, 1910, is hereby declared not to have been affected by the said strike or any circumstance or condition arising out of or in connection therewith."

This motion was defeated by 90 to 69, and the bill was then passed and sent to the Senate.

Standard Conditions for Wire Crossings Over Railways.

The Board of Railway Commissioners passed general order 291, April 7, as follows:—Re sec. 372 of the Railway Act, 1919, for carrying of wires and cables along or across railway tracks; and application of Canadian National Rys. for an order amending the Standard Conditions and Specifications for Wire Crossings, approved by general order 231, May 6, 1918, as amended by general order 267, June 27, 1919. Upon reading what is filed in support of the application, the Canadian Pacific and Grand Trunk Railways concurring therein. It is ordered that the said standard conditions and specifications, as approved by general order 231, be amended.

(1) By striking out paragraph 4 of part 1, and substituting therefor the following, viz.:—"4. The applicant, before any work is begun, shall give the railway at least 72 hours prior notice thereof in writing, and the said railway company shall be entitled to appoint an inspector, under whose supervision such work shall be done, and whose wages, at a rate not to exceed \$11 a day, shall be paid by the applicant, such payment to cover both wages and expenses. When the applicant is a municipality and the work is on a highway under its jurisdiction, the wages of the inspector shall be paid by the railway company."

(2) By striking out paragraph 4 of part 2 and substituting therefor the following, viz.: "4. Before any work of laying, removing, or repairing any pipe, conduit, wire, or cable is begun, the applicant shall give to the railway company at least 72 hours prior notice thereof in writing, accompanied by a plan and profile of the part of the railway to be affected, showing the proposed location of such pipe, wire or cable, conduit, and works contemplated in connection therewith; and the said railway company shall be entitled to appoint an inspector to see that the applicant, in performing said work, complies in all respects with the terms and conditions of this order, and whose wages, at a rate not exceeding \$11 a day, shall be paid by the applicant, such payment to cover both wages and expenses. When the applicant is a municipality, and the crossing is on a highway under its jurisdiction, the wages of the inspector shall be paid by the railway company."

And it is further ordered that general order 267, June 27, 1919, and general order 288, Mar. 23, 1920, made herein, be rescinded.

Telegraph, Telephone and Cable Matters.

The Oldtime Telegraphers and Historical Association will hold its 1920 meeting at Toronto, Sept. 1 and 2. G. D. Perry, General Manager, Great North Western Telegraph Co., is President.

The Pacific Cable Board announces the following staff changes: W. E. Lawson, from Bamfield, B.C., to Sydney, Australia; T. Aikins and J. Ritz, from Suva to Halifax, N.S., and F. C. Wilkins, from Montreal to Halifax, N.S.

The Great North Western Telegraph Co. has opened offices at L'Anse a Louise, Little Metis lighthouse, Que., Bankfield, Missonga and Penhurst, Ont., Runnymede, Sask., and Redland, Alta., and has closed its office at Shippegan, N.B., Riviere Ouelle Wharf, Que., and Larson and Minataree, Ont.

The daily press made the statement recently that, "all telegraphs in Canada except the C. P. R. are shortly coming under the Government's Great North Western system," which is not quite correct. The Great North Western Telegraph Co., came under Dominion Government control, through the taking over of the Canadian Northern Ry. by the Canadian National Ry. Co. The G. N. W. T. Co., in conjunction with the C. N. R., has about completed the erection of copper wires between Toronto and Montreal in the east, and Winnipeg in the west. The erection of wires has also been about completed between Edmonton, Alta., and Vancouver, B.C., and between Kamloops and Victoria, B.C. The company already has wire facilities be-

tween Winnipeg and Edmonton, and the erection of the new wires will give a through Canadian service between Montreal and Toronto and Vancouver. The G. N. W. T. Co. is negotiating with the Western Union Telegraph Co. for the transfer by the latter of its plant and business in British Columbia, but it is not yet certain that the transfer will be made. It has been suggested that the Dominion Government telegraph system should be transferred to, or operated by the G. N. W. T. Co. but no such arrangement has yet been considered.

Telegraph and Telephone Lines Estimates for 1920-1921.

The Public Works Department's estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the followings items, chargeable to income:—

NOVA SCOTIA.

Cape Breton Telegraph System—	
Renewal of poles between Port Hawkesbury and Port Hood and between Strathlorne and Inverness.....	\$ 3,000
Completion of renewal of poles between East Bay and Ball's Creek.....	800
Renewal of poles between Englishtown and Ingonish Ferry.....	2,600
Reconstruction of telephone line between Harvard Lake and N.E. Margaree.....	1,000
Pictou Island, telephone cable.....	8,000

QUEBEC.

Improvements to repair service.....	3,000
Grosse Isle quarantine telephone line, renewal of poles, etc.....	400

ONTARIO.

Bath—Amherst Island telephone line, to grant subsidy of \$1,200 to Amherst Island Telephone Co., and to provide cable.....	2,200
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SASKATCHEWAN AND ALBERTA.

Peace River line, office and dwelling at Grande Prairie.....	5,000
Repairs and improvements to office buildings.....	500

BRITISH COLUMBIA.

Mainland telegraph and telephone lines, to provide for second wire between Similkameen and Princetown.....	7,300
Vancouver Island, construction of branch telephone line from Vancouver Island to Port Harvey, Cracroft Island.....	7,500

CHARGEABLE TO COLLECTION OF REVENUE.

Prince Edward Island and mainland.....	\$ 7,000
Land and cable telegraph lines, Lower St. Lawrence and Maritime Provinces, including working expenses of ships required for cable service.....	210,000
Saskatchewan.....	70,000
Alberta.....	107,000
British Columbia, mainland.....	79,300
British Columbia, Vancouver Island District.....	110,000
Yukon system (Ashcroft-Dawson).....	246,000
Telegraph and telephone service, generally.....	10,000
	\$839,300

Among the Express Companies.

The Canadian National Express Co. has opened offices at Smoky Lake, Radway Center, and Ashmont, Alta.

The Canadian National Ex. Co. has opened offices at Runnymede, Sask., and Redland, Alta.

W. S. Stout, President, Dominion Express Co., returned to Toronto early in April, after spending some time at Pas Christian, Mississippi.

The American Railway Ex. Co. put into effect Apr. 15, a rule which requires that prepayment be made on all parcels shipped from Canadian to U.S. points, and that payment may be made in Canadian currency from the point of origin.

The Minister of Railways stated, in answer to questions in the House of Commons recently, that the Dominion Ex. Co. pays Canadian Government Rys. 50% of its gross earnings for the ser-

vice of C.G.R. agents and the use of offices and stations, and also for the privilege of operating over the C.G.R. The Canadian Ex. Co. operates over the C.G.R. on the same basis. Replying to a question as to the Canadian National Rys. taking over control of the Canadian Ex. Co. and whether it is the intention to give the latter company the exclusive privilege of the services of the agents and stations, the Minister said, that as this is a question of policy, it will be considered by the C.G.R. management.

The Dominion Ex. Co. was defendant in a suit brought by a Russian named Kosovsky, in the Court of Review at Montreal, recently, for loss sustained through a money transaction between Canada and Russia. The plaintiff arranged for the company to buy 1,165 roubles for dispatch to his wife in Russia, but owing to the unsettled state of that country, the party could not be found, and the money was returned. In the meantime the value of the rouble had dropped considerably, so that the 1,165 roubles were only worth \$148.50 in Canadian currency, which the company offered to pay the plaintiff. It was held that the company could not be held responsible for any loss caused through differences in the rate of exchange, and judgment was given in favor of the company, except that the plaintiff was given the option to demand payment in Russian money.

Board of Railway Commissioners' Jurisdiction Over Express Companies.

The Board of Railway Commissioners gave the following ruling Mar. 24: The board's powers in regard to express business are set out in the Railway Act, secs. 360-366, inclusive. The jurisdiction is concerned with tolls. The group of sections 360-363 is concerned with the formalities as to preparation, filing, etc., of tariffs. Sec. 365 requires that contracts, conditions, etc., limiting the liability of express companies are to be approved by Board. Sub-section 2 (b) of the same section provides that the board may prescribe the terms and conditions under which "goods may be collected, received, cared for or handled." This is a power in regard to the liability, not in regard to requiring the establishment of facilities. See in this connection Canadian and Dominion Express Co. vs. Commercial Acetylene Co., 9 Can. Ry. Case, 172, at p. 174. The only other section in the group referred to, 366, is concerned with returns by companies charging express tolls.

Sec. 364 gives the board power to define carriage by express. This was formerly sec. 352 of The Railway Act; and it was decided in Canadian and Dominion Express Cos., vs. Commercial Acetylene Co., May 20, 1909, 9 Can. Ry. Case, 172, that express companies were at liberty to exercise their own discretion in refusing to carry by express any particular commodity.

Sec. 364 of the present act differs from sec. 352 of the former act by the addition of the words "and may order that all such goods as the board may think proper shall be carried by express." The effect of this is to remove the discretion which the express companies formerly had. The express company may not discriminate between goods as to carriage, but this does not give power to direct the installation of facilities at stations. It may further be noted that in the group of

sections already referred to, there is no section which gives the board power to direct that facilities shall be afforded.

Subject to the change in sec. 364 as above referred to, the group of sections covering express business are, with minor exceptions as to amendments, the same as in the first express judgment given. In that judgment, the following position was laid down: "No applications have ever been made to the board to require railway companies in Canada to furnish either an express service, or any facilities connected with such a service. All applications have been made against the express companies. It is apparent that as the act now stands, orders for improved facilities for handling the express traffic can only be made against the railway company. By improved facilities is meant car service, shelters, and the like; and if express companies do not provide for these matters, with the railway companies over whose lines they operate, and remove all proper causes of complaint, then it will be the board's duty to deal directly with the railway companies as to these matters, and complaints from the public must be made against them." In the matter of express companies, etc., pp. 49-50.

At a later date, the board had before it an application of the Village of Cumberland, Ont., for reinstatement of express service which had for some time been rendered by the Canadian Northern Ry. and then taken out. In reply the Board stated on July 14, 1911: "The board's jurisdiction in the matter of express service is much more limited than it is in the matter of freight and passenger rates. Under the act the board has no jurisdiction to compel the Canadian Northern Express Co. to reinstall the express service which the board has been advised is withdrawn between Hawkesbury and Ottawa. If the freight department of the railway refuses to give proper facilities for the handling of traffic, complaint as to this should be put in form and submitted to the board, when the matter will be taken up with the railway company."

In dealing with an application of the Town of Sudbury for a direction that the Dominion Express Co. should establish an up-town office, to receive and deliver express parcels, it was pointed out that a direction, if any, as to the installation of an up-town express office must be a direction to the railway, not to the express company. A similar ruling, in regard to the same point, is to be found in connection with a complaint from the Town of Pincher Creek, complaining inter alia, against the closing of the Dominion Express Co.'s up-town office.

In summary form, the board's jurisdiction is as to tolls and contracts, etc., limiting liability, with the additional power, conferred by sec. 364 amended as already noted, of saying what may be carried by express. The board is given no power to direct an express company qua express company, to install facilities or to arrange that specific service shall be given at specific stations. It follows from this that so far as jurisdiction is concerned, the board has no power to direct an express company to restate at a station or stations express facilities which it has removed, nor has the board power, as a matter of jurisdiction, in the first instance to direct the installation of facilities at a station or stations. Its jurisdiction over telegraph, telephone and express companies is essentially a rate jurisdiction, and much more limited than in the case of railways.

Electric Railway Department

Increases in Electric Railway Freight and Passenger Rates.

British Columbia Electric Ry.—A press report states that Vancouver City Council is considering the advisability of asking the Board of Railway Commissioners for a rehearing of the company's application for a 6c fare, which was granted in Oct., 1919.

The Cape Breton Electric Co. is reported to have applied to the Nova Scotia Public Utilities Commission for permission to increase its car fare from the present rate of 6c to 7½. C. C. Curtis, Manager, addressed the Sydney Board of Trade, recently, on the company's financial position, with a view of showing why an increase of fare is necessary.

Edmonton Radial Ry.—The Edmonton, Alta., Bulletin, in a recent article, said:—"The flat rate is illogical. It defies the principle that the charge should be in proportion to the service rendered. Having found that we cannot defy that principle without bankruptcy of the street railway, why keep on trying?" The article claims that "the high fare kills short haul traffic," and that "there is no money in long haul traffic," and suggests that the fares should be in proportion to the distance a passenger is carried.

Hamilton St. Ry.—At a meeting of the Hamilton, Ont., City Council's Street Railway Committee, April 26, it was reported that the Hamilton St. Ry. Co. was preparing to ask for power to increase fares.

London Street Ry.—In July, 1919, the London, Ont., City Council passed a by-law authorizing the London St. Ry. to increase its fares for adults to 5c or 7 tickets for 25c, with limited tickets good from 6.30 to 8 a.m. and from 5 to 6.30 p.m., at 9 for 25c. This bylaw was quashed by Chief Justice Falconbridge. The case was then appealed to the High Court's Appellate Division, which in April 9 reversed the late Chief Justice's decision. We are officially advised, however, that at the period of eight months specified in the bylaw during which the higher fare provided for in it was to prevail had expired before the Appellate Division's decision was rendered, had expired, the higher fares cannot be put into effect again.

Montreal & Southern Counties Ry.—The Board of Railway Commissioners passed order 29,564, Apl. 24, authorizing the company to publish and file tariffs making an increase of 20% in its passenger fares, the tariffs to be effective within seven days from the date of the order. This order was cancelled by order 29,571, passed Apl. 26, as follows:—Re application of Montreal & Southern Counties Ry. for an order permitting it to file tariffs providing for an increase of 20% in its fares now charged for the carriage of passengers: Upon hearing the application at Montreal, Mar. 9, in the presence of counsel for and representatives of the applicant company, the South Shore Welfare League, the towns of St. Lambert and Longueuil, the City of Montreal, and other parties interested, and what was alleged, it is ordered that the company be authorized to publish and file tariffs making an increase of 20% in its present passenger fares; the said tariffs to become effective when

the standard tariffs are published, with a notice of their approval, in The Canada Gazette, in compliance with the provisions of the Railway Act 1919. That order 29,564, dated April 24, made herein, be rescinded.

The Nova Scotia Tramways & Power Co's directors' report, presented at the annual meeting recently, says that the average fare in Halifax is 4.3c a passenger. A bill was introduced in the Nova Scotia Legislature recently, providing for an increase of fares on the company's electric railway lines in Halifax. A press report states that the bill passed for the payment of three rates:—7c for a single fare; 4 tickets for 25c, or a strip of 16 tickets for 90c. The bill is also said to provide that the Public Utili-

ties Commission shall have jurisdiction over the fares to be charged on the lines after July 1, 1921.

that there should also be a zone east of Cloverdale road and that workmen's limited tickets should be issued on the interurban extensions, as on the city lines. The board passed order 29,550 accordingly on the same day in accordance with which the company filed Special Passenger Tariff C.R.C. 7, cancelling C.R.C. 4, effective April 26, and providing for separate fares on the two interurban extensions as follows:—

Between points within the area defined by Holland Ave. in the west, the City of Hull in the north, Cloverdale Road in the east, and Grove St. in the south; and between points therein and the Experimental Farm and intermediate points.

Also between Holland Ave. and Britannia Park, and intermediate points; and between Cloverdale Road and the Rockcliffe rifle range and intermediate points.

Between 5.30 a.m. and 12 midnight 5c. Children under 10, 3c.

To workmen and others, 33 tickets for \$1, or 8 tickets for 25c, good from first trip in morning until 7.30 a.m., and between 5 and 6.30.

Seven tickets for 25c, good only on Sunday. School children under 14 to and from school at the rate of 40 tickets for \$1, good between 7 and 9.30 a.m., 11.30 a.m. and 1.30 p.m., and 3.30 and 5 p.m.

Between 12 o'clock midnight and 5.30 a.m., 10c.

The above fares are of course in addition to fares on the city lines, for passengers travelling over both city and interurban lines and are additional to the city fares as charged formerly.

Peterborough Radial Ry.—A Peterborough, Ont., press dispatch of April 7 says:—"To meet the cost of extension of the street railway, a new schedule of fares is contemplated at 5c, 6c, 7c and 10c. The 10c fares will be for a service to Crawford's Grove and other points outside of the city.

Regina Municipal Ry.—A press report of April 20 stated that the Regina, Sask., City Council was to consider on April 21 the report by D. W. Houston, Superintendent, recommending the adoption of a 6c. fare unless the people are prepared to endorse the operation of one-man cars.

St. Thomas Municipal Ry.—The St. Thomas, Ont., City Council has decided to eliminate workmen's tickets, sold formerly 8 for 25c. The fares now are 5c cash; 6 tickets for 25c, or 24 for \$1; children from 5 to 12 years, 10 tickets for 25c.

Winnipeg Electric Ry.—The hearing of the Winnipeg Electric Ry.'s application for power to charge increased fares was resumed before the Manitoba Public Utilities Commissioner April 15.

A recent press report stated that an understanding had been reached between the company and the city on the fare question, but we were officially advised April 12 that there was no foundation for the report.

Chatham, Wallaceburg & Lake Erie Ry.'s Future.—The Chatham, Ont., Chamber of Commerce is reported to have invited Sir Adam Beck to visit the city to discuss with representative of the various municipalities served by the C. W. & L. E. R. the advisability of taking it over as part of the Hydro Electric Power Commission of Ontario's system of electric railways. Representatives from various municipalities met at Wallaceburg, Ont., Mar. 31, and appointed a committee to invite the C.P.R. to acquire the line and to extend it from Wallaceburg to Sarnia.

Canadian Electric Railway Association.

Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.

Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.

President, A. Gaboury, Superintendent, Montreal Tramways Co.

Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

Executive Committee, The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

Official Organ—Canadian Railway and Marine World, Toronto.

ties Commission shall have jurisdiction over the fares to be charged on the lines after July 1, 1921.

Ottawa Electric Ry.—Canadian Railway and Marine World for April contained a copy of the company's special passenger tariff C.R.C. 6, which it filed to become effective April 5, following the Supreme Court's judgment allowing the company's appeal against the Board of Railway Commissioners' judgment refusing it permission to increase fares on its suburban lines to Britannia-on-the-Bay and Rockcliffe. On April 1 the Board of Railway Commissioners, on the application of the City of Ottawa and Nepean Tp., suspended the tariff until further order. The tariff provided for three zones on the suburban lines, two west of Holland Ave. on the Britannia line and one east of Cloverdale Road on the Rockcliffe line. It also eliminated workmen's limited tickets on the extension. On April 19 Chief Commissioner Carvell gave judgment, deciding that there should be but one zone between Holland Ave. and Britannia-on-the-Bay, instead of two as asked by the company,

Auditor's Report on Hydro Electric Power Commission of Ontario's Electric Railway Projects.

G. T. Clarkson, F.C.A., who was appointed by the Ontario Government to audit and report upon the Hydro-Electric Power Commission of Ontario's accounts, was asked by the Premier, recently, to report on 1, The state of the affairs of each of the systems and companies controlled or operated by the commission; 2, The approximate amount of money which must be obtained by the province within the next two years and be loaned to the commission in order to allow it to complete works undertaken by it and now in course of construction, and to pay debts which become due within that period; 3, To express an opinion as to the soundness, from a business standpoint, of each of the undertakings now operated by the commission, and as to whether there are any reasons why, with the government sympathetic and desirous of supporting the commission, so far as it can be done with benefit to the municipalities and the province, the government cannot safely continue and extend support to the commission.

Following is the portion of Mr. Clarkson's report dealing with the Hydro-Electric railway lines:—

Under the provisions of the Hydro-Electric Railway Act, 1914, and amendments thereto, the commission is authorized to enter upon the construction or purchase and operation of electric railway lines when and so soon as (a) The Lieutenant-Governor in council shall have authorized the municipalities interested to enter into agreements with the commission for the construction and operation of any electric railway; and (b) The municipalities interested shall, in respect of any proposed line, have signed agreements containing terms and conditions laid down by the act, including the assumption on their part of liability for the costs of construction and operation of such a line.

Under sec. 6 of the act, it is provided that the commission may raise money for the construction and equipment of such a railway line by the issue of bonds secured upon the railway and all assets belonging thereto, and further, that it may from time to time increase the amount of the bonds so to be issued by any amount which it deems necessary to cover the costs of construction and equipment or to provide for extensions or improvements to the line.

Under sec. 7 of the act it is provided that neither the province nor the commission shall be liable for the payment of the bonds to be issued by the commission, except to the extent of the moneys which shall be received in connection with the operation of the railway line or from the sale of debentures to be deposited with the commission by the municipalities. Under sec. 8 of the act, however, it is provided that the Lieutenant-Governor in council may authorize the Provincial Treasurer to guarantee the payment of the bonds issued in respect of any radial line they cannot be sold by the commission to advantage without the guarantee of the province.

The municipalities on their part are required to deposit debentures to the amount of their respective shares of the costs of construction and equipment of the railway line, with the commission, and these debentures are to be held by the commission as collateral security for

the bonds issued by it, subject to the right on its part to sell or dispose of so much of them as may be necessary at any time to meet the payment of any amounts due by a municipality in default. The agreements with the municipalities are very rigid in character, in that the responsibilities assumed by each municipality are based upon the costs of construction and operation of a line, the exact location and character of which is definitely laid down in each agreement. Legal opinion is that there is doubt as to whether the obligations assumed by any municipality can be enforced in the event that a line shall be constructed and operated for a portion only of the distance prescribed in the agreement to which such municipality is a party; this is particularly the case if the portion constructed becomes a defined part of a new system comprised of the part of one system and the part or the whole of another system, leaving any part of either of the original systems unconstructed.

The commission has in contemplation the construction or purchase and operation of the following lines:—(a) Port Credit to St. Catharines Line, to run between the Village of Port Credit and the City of St. Catharines; (b) Toronto to Port Credit to London line, to run between the City of Toronto, to the Village of Port Credit, and the City of London; (c) The Toronto and Eastern line, to run from the City of Toronto to the Town of Bowmanville.

Necessary agreements have been executed with the municipalities in respect of the Port Credit to St. Catharines line, and such agreements have been approved of by the Lieutenant-Governor in council. Agreements have been voted upon by the municipalities interested in the Toronto to Port Credit to London line, but the same have to be signed, I am informed, by the municipalities between Toronto and Port Credit only. Agreements with the municipalities in respect of the Toronto and Eastern line have been executed and the approval of the Lieutenant-Governor in Council thereto has been obtained.

Costs of construction and purchase of the Port Credit to St. Catharines line are estimated by engineers of the commission at \$11,000,000, which amount it is proposed to raise when and as required by sale of bonds of the commission. Certain of these bonds have already been guaranteed by the province and are in the hands of the commission. The commission has entered upon certain obligations in connection with the acquisition of right of way and for supplies and materials, and these obligations amount to between \$250,000 and \$300,000.

In order to provide for connection of the Port Credit to St. Catharines line with the City of Toronto, the commission has made expenditures and incurred liabilities to the amount of upwards of \$650,000, and it states that these expenditures have been made as part of the costs of construction and purchase of the proposed Toronto to Port Credit to London line, in respect of which it intends to apply for legislation authorizing it to construct and operate the same in two divisions, to be located between Toronto and Port Credit, and Port Credit and London. Agreements have been executed by the municipalities between Toronto

and Port Credit, but not by those between Port Credit and London; accordingly the terms of the Hydro-Electric Railway Act have not as yet been complied with in respect of the Toronto to Port Credit to London line as voted on by the municipalities. The commission states that it received assurances from Sir William Hearst, when Premier of Ontario, that if it would obtain resolutions by the municipalities interested, requesting the government to introduce and pass amendments to existing legislation that may be necessary to validate the building of the Toronto to Port Credit section as a part of the Toronto to St. Catharines Hydro-Electric Railway (so as to make the same legal, valid and binding upon the municipalities), that the government would, with the presentation to it of such resolutions, support legislation to that effect. In such event Sir William Hearst is said to have expressed the opinion that no difficulty would be met with in carrying out the wishes of the commission to have the bonds necessary for the construction and equipment of such line guaranteed by the province. On the basis of these assurances, therefore, and with resolutions by the municipalities in its possession, the commission, although without statutory authority to do so, has felt justified in making expenditures amounting to \$550,000 out of the funds held by it under the terms of The Power Commission Act, in the belief that by so doing it would make a considerable saving in the cost of the Toronto to Port Credit line. Engineers of the commission estimate that the cost of construction of the Toronto to Port Credit line will be upwards of \$5,000,000 to \$6,000,000.

Estimates of the engineers of the commission indicate that the cost of construction of the Toronto and Eastern line will be about \$9,000,000, to be raised as and when required by sale or issue of the commission's bonds guaranteed by the province. The approval of the Lieutenant-Governor in council to the agreements with the municipalities has been obtained, and expenditures upon the line to this date amount to about \$10,000.

As the costs of construction or purchase and operation of the above mentioned electric railway lines are matters which engineers alone can estimate at this time, I am unable to make any further statement to you with reference to them. Engineers of the commission are of the opinion, however, that the revenues of such lines will be sufficient to meet costs of operation.

Niagara Falls, Wesley Park and Clifton Tramway Co.—We are officially advised that this company's franchise in Niagara Falls, Ont., expired Mar. 31, and that the city council had given notice that it would assume the ownership on the expiration of the franchise. The city council recently advised the Niagara, St. Catharines & Toronto Ry., which owns the N.F., W.P. & C.T. Co., that it was applying to the Ontario Railway and Municipal Board for a board of arbitration to decide upon a price for the line. In the meantime the line is being operated by the N.S.C. & T. Ry. as formerly, but without any agreement with the city.

British Columbia Public Utilities Commission Abolished.

In the British Columbia Legislature, April 8, a government bill to repeal the act of 1919 providing for the regulation of public utilities and establishing a Public Utilities Commission for the province was read a first time.

1. This act may be cited as the Public Utilities Act Repeal Act.

2. The Public Utilities Act is hereby repealed.

3. Where, because of the enactment or operation of the Public Utilities Act, it is deemed just, necessary, or expedient that any of the powers or duties conferred or imposed on the commission by the said act should be exercised, the Lieutenant-Governor in Council may authorize the commission to so exercise its powers or duties to the extent of such authorization as if the said act had not been repealed, or may appoint any other person for this purpose, and in either case may provide for remuneration for such services, or may himself make any order for the doing of anything provided for under and within the scope of the powers conferred on the commission by the said act, the doing or making of which may so become necessary or expedient, and he may make any order or regulation which may appear necessary or expedient because of the repeal of the said act or because of conditions arising or rights affected as a consequence.

4. The jurisdiction, rights, powers, duties, and authority of every person, city, municipality, minister of the Crown, public official, or public body divested, modified, or affected by the enactment of the act hereby repealed shall revive and be restored as if such act had not been enacted.

5. In the event of the British Columbia Electric Ry. Co. at any time coming under the jurisdiction of the Provincial Legislature or being declared by a court of appellate jurisdiction, whose decision is not overruled, to be under provincial jurisdiction and not a work for the general advantage of Canada, all agreements heretofore existing, statutory or otherwise, between the company and the City of Vancouver, or any other municipality shall become operative and binding according to the tenor thereof as if the Public Utilities Act had never been passed.

6. The moneys collected by the British Columbia Electric Ry. Co. and held as a trust fund under and by virtue of the provisions of subsec. (4) of section 11 of the Public Utilities Act from, on or after April 9, 1919, when the said trust first became operative, to July 7, 1919, shall be divided as follows: One-half to the British Columbia Electric Ry. and the other half to the Vancouver General Hospital; and the railway company shall forthwith pay to the hospital its share of the said money, which payment shall constitute a discharge of the trust as to the money collected between the two aforementioned dates to which the said trust applied.

7. All acts done by the Minister of Railways since the enactment of the Public Utilities Act purporting to be done under the provisions of the Railway Act are hereby declared to be valid as of their date, notwithstanding the provisions of the Public Utilities Act.

8. The Lieutenant Governor in Council may pay to the officials and servants appointed under the Public Utilities Act such amounts, not exceeding as to any official servant three months salary or

wages, as may be deemed proper in consideration of the termination of their employment, which is hereby terminated.

The legislature has voted \$24,360 for the expenses of the commission in winding up its affairs. When this vote was before the house, April 8, the Attorney-General stated that there were certain matters which the Commissioner had to clear up and it was estimated that this would take at least three months.

The Public Utilities Act was assented to Mar. 29, 1919, and shortly thereafter Major Retallack was appointed Commissioner. Practically the first work he took up was the question of increased fares on the B. C. Electric Ry. in Vancouver, which had been the subject of considerable controversy for some months prior to the passing of the act, and which formed the subject of special provisions in sub sec. 4, sec. 11, which provided that the excess of 1c being collected in Vancouver by the B. C. E. Ry. was after April 9, be paid into a special trust fund and retained there until the Commissioner fixed the fare to be charged, after full investigation. After the Commissioner had started the investigation, legislation was passed at Ottawa which placed the whole of the B. C. E. Ry. lines under the Board of Railway Commissioners for Canada, and that board sanctioned the company's fare schedules on the higher rate. The trust fund at the time this took place was approximately \$50,000, and the bill passed by the legislature will divide this equally between the city hospital and the company.

A Vancouver correspondent wrote us April 17 as follows:—The bill repealing the Public Utilities Act of 1919 has been passed by the Legislature, and only requires the signature of the Lieutenant Governor to become law. One of the reasons for the repealing of the act was that the railway lines of the British Columbia Electric Ry. Co. were, by an act of the Dominion Parliament, taken from the control of the province, and placed under the Dominion Board of Railway Commissioners. Then the Telephone Company of British Columbia was placed under Dominion control, which left, in the opinion of the British Columbia government, very little scope for the provincial commission.

The B.C. Legislature has provided in its repealing of the Public Utilities Act for the revival of all agreements binding the B.C. Electric Ry. Co., as if the act had never been passed. Just what effect this will have upon the 6c fare charged in Vancouver, New Westminster and other communities, is somewhat doubtful. The company's franchise provides for a 5c fare. The 6c fare was granted until Apr. 9, 1919, and consequently the British Columbia government, by the Public Utilities Act, extended this privilege until the Public Utilities Commission could investigate the necessity for such a fare. The B.C.E.R. Co. was removed from provincial jurisdiction, its fares were confirmed by the Dominion Board of Railway Commissioners, and it is under this confirmation that the present fares are being charged. If the Dominion Government should cancel its jurisdiction over the company, this would throw it back on original agreements, and it would then be without recourse to either Dominion or B.C. commissions.

Another curious feature of the B.C. repealing act, is a clause which might

be said to confiscate one-half of some \$48,000 held in trust by the B.C.E.R. Co. It was provided in the Public Utilities Act that the 6c fare be continued after April, 1919, and that the additional cent, over the 5c statutory fare, should be paid into a fund, until such time as the provincial commission could investigate the merits of the 6c fare. If it should have been decided that the company was not entitled to this additional cent, the fund was to go to the Vancouver General Hospital. The contributions to the fund up to July 7, 1919 were about \$48,000, when they stopped, owing to the company coming under Dominion Government jurisdiction and having its fares approved. The repeal act contains a clause to the effect that this fund shall be divided equally between the B.C.E.R. Co. and the Vancouver General Hospital, without providing for any investigation. Whether this is a confiscation or not, it is hard to say, but it is quite probable that the cost of giving service from April to July 7, 1919, warranted much more than a 6c fare, in which case the company would be entitled to the whole of the fund.

Responsibility for Fire Damage by Electric Wires.

The Imperial Privy Council gave judgment recently on the Quebec Ry., Light & Power Co.'s appeal against a decision of the Supreme Court of Canada in an action brought against the company by G. A. Vaudry et al to recover damages for fires caused by the company's wires. The five actions were consolidated for the purposes of the appeal, the principal object of which was to settle the true construction of article 1054 of the Civil Code of Lower Canada.

The company generates and distributes electricity in Quebec City. The respondents' houses are on the St. Foye Road, along which the company erected a pole line carrying a primary cable charged with electricity at 2,200 volts and a secondary cable from which electricity was supplied to the houses at 108 volts. During a winter storm a branch from a tree broke the primary cable and the high tension electricity found its way along the secondary cable into the houses, setting them on fire. For the damage caused the owners brought their actions, and obtained a favorable verdict in the first court, which was reversed by the Court of Appeal, and restored by a majority of one by the Supreme Court.

In the Privy Council judgment Lord Sumner held that two questions of law arose upon the case (1) whether the plaintiffs can succeed without proving negligence or fault against the company, and (2) whether even so the defendants would succeed if they proved that they could have prevented the fire. After discussing the law fully and its relation to the facts, their Lordships decided that the appeal should be dismissed with costs.

New Brunswick Electrical Development.—The N.B. Legislature is being asked to appropriate \$1,000,000 to develop water powers in the province and provide for the distribution of electrical energy. It is proposed to do this work in three districts, viz., St. John and vicinity; Fredericton and the upper St. John Valley and the North Shore, through a provincial commission.

Electric Railway Employes' Wages, Working Conditions, Etc.

The British Columbia Electric Ry. has granted its conductors and motormen an increase of wages of 4c an hour from Apl. 1, as follows:—

	City lines.	Interurban lines.
First 6 months	49c	49c
Second 6 months	54c	55c
Third 6 months	57c	59c
Thereafter	60c	62c

Pro rata increases have been made in all other lines represented in the Amalgamated Association of City and Electric Railway Employes. The new wage scale was the result of negotiations between the company and the men, in which the company's offer was accepted. The existing agreement was not opened up, but a supplementary agreement was entered into.

The Dominion Power & Transmission Co., Hamilton, Ont., has made a new agreement with the conductors and linemen on its interurban lines only until April 1, 1921. The following table shows the rates paid heretofore, the rates asked by the men and the rates agreed on per hour:—

	Old.	Asked.	New.
1st 6 months	30c	52c	35c
2nd 6 months	35c	55c	40c
2nd year	39c	58c	45c
3rd year	45c	60c	52c

Time and a half for overtime. Ten hours constitute a days work, to be completed in 11 consecutive hours. Nothing extra for Sundays or holidays. Uniforms supplied free to all trainman after two years service, company pays half cost of uniforms for first and second year men.

A Hamilton press report of April 27 says a board of conciliation has been appointed to investigate a wage dispute between the Hamilton St. Ry. and its employes. G. C. Kerr, K.C., represents the company, and F. Bancroft the men.

Edmonton Radial Ry.—A new wage schedule is reported to have been agreed on between the Edmonton, Alta., City Commissioners and the Street Railway Men's Union, for Edmonton Radial Ry. employes. Following are the rate reported for conductors and motormen per hour:—

	One man cars.	Two man cars.
1st 6 months	57½c	52½c
2nd 6 months	62½c	57½c
3rd 6 months	67½c	62½c
4th 6 months	72½c	.....

A 9 hour day is to be worked, time and a half will be paid after 9¼ hours have been worked, and time and a half will be paid for all statutory holidays.

London & Port Stanley Ry.—A board of conciliation has been authorized by the Minister of Labor to deal with the differences as to wages between the London & Port Stanley Ry. and its employes. B. W. Bennett, Sarnia, Ont., is the railway's representative, and J. W. Campbell, Kingston, Ont., is the men's representative. It was stated, April 22, that the chairman would be appointed a few days thereafter. The men ask a maximum rate of 65c an hour, and were offered 52c an hour.

London St. Ry.—London, Ont., press dispatch April 25.—At a mass meeting of London St. Ry. employes last night it was unanimously voted to strike on May 1 unless the company shall have by that time met their demand for an increase in wages of from 44 to 65c an hour. The company having repeated its declaration that on the present rate of fares it is unable to grant the increase, the men vot-

ed against asking for a conciliation board, as it was declared that, under the circumstances, the board could do nothing to avoid the strike. If the city council does not intervene and raise the fares, the strike appears an absolute certainty. No negotiations have taken place with the company.

Montreal Tramways Co.'s employes are negotiating for increased wages, and improved working conditions. The scale asked by conductors and motormen as compared with the present scale is as follows per hour:—

	Present.	Asked.
First year	37c	.....
First 3 months .....	.....	70c
Next 9 months .....	.....	73c
Second year	40c	75c
Third year	44c	.....
After third year	48c	.....

The demands of the men, it is reported, would involve, if granted, an addition of about \$3,000,000 a year to the pay roll.

Nova Scotia Tramways & Power Co. A press report states that an agreement has been arrived at between the company and its outside employes, under which an advance of wages has been given, the minimum rate for conductors and motormen being 52c an hour. The report adds that the increase is contingent upon the passing of an act by the Nova Scotia Legislature allowing the company to increase fares on its electric lines.

Ottawa Electric Ry.—Negotiations are reported to have been in progress for some time respecting a new wage agreement between the Ottawa Electric Ry. Co. and its employes. The men are said to be asking for a maximum rate of 65c an hour, the existing rate being 45c.

Quebec Ry., Light & Power Co.—A new schedule of wages on an increased scale is reported to have been arranged between the company and its Montmorency Division employes.

St. Thomas, Ont., Municipal Ry. conductors and motormen have been granted an all round increase of 5c an hour, making the wages as follows per hour:—1st month 43c, after 1st month 45c. Working hours 10.

Toronto Civic Ry.—Employes of the Toronto Civic Ry. are reported to have accepted April 12 the new wage scale offered by the city council, which gives rates running from 60c to 65c an hour.

Toronto Ry.—The question of increased wages for employes is expected to be discussed, and a new schedule drawn up, at a meeting of the employes union on May 1.

Winnipeg Electric Ry.—A new schedule is reported to have been presented to the management by the men on April 1, in which increases ranging from 25c to 35c an hour are asked. A. W. McLimont, Vice President and General Manager, is reported to have replied to the local union, which is not now affiliated with the international one, that the demands were so extreme that it was impossible for the company even to consider them as a basis of negotiation.

The Quebec Ry., Light & Power Co. is reported to have received 4 new cars for its city lines. Two have been placed on the Champlain line, two on the Palace Hill line, and one on the Crown St. line. They are reported to have cost \$18,200 each, against \$7,500 each for cars of the same type in 1914.

Electric Railway Situation in Detroit.

The street railway situation in Detroit, Mich., entered upon another phase April 6, when ratepayers voted on the Couzens plan under which the city will go extensively into street railway business. Of approximately 300,000 persons in the city entitled to vote, it is reported that only about 140,000 voted, and that 89,134, or 63.564% of these voted in favor of the proposal. The affirmative vote was therefore less than one-third of the possible vote. The proposal endorsed by the ratepayers provides for the issue of \$15,000,000 of bonds to finance and equip 101 miles of new tracks, and take over 55 miles of line now operated by the Detroit United Rys. The lines to be built and taken over are reported to include two into the heart of the city—one on Fort St. and one on Woodward Ave.—with north, south and cross town tracks.

We are advised that the plan, as it appeared in full on the ballot, cannot be read by itself to obtain the real intention or the operation requirements. While not so officially stated, the announcement was made repeatedly during the campaign,—and that is the intention—to take over parts of the Woodward and Fort lines on which franchises are claimed to have expired; also some of the other lines operated on a day to day basis; and the construction of additional lines. The estimate of cost made by the mayor of the price to be paid the company for the lines to be taken over is \$40,000 a mile, greatly under their depreciated value.

Following the vote the city council granted authority for the immediate issue of \$100,000 of public utility bonds, and work was reported to have been started April 7 on the Mack-Myrtle belt line. The franchises on the Ford and Woodward Ave. lines are reported to have expired, and it is stated that the present traffic arrangements will not be disturbed until the city is ready to provide cars and other equipment necessary to operate the lines.

Detroit's street railway situation has been under discussion since 1913, when the city was given authority to appoint a commission with power to acquire a railway. In 1915 a plan to purchase the Detroit United Ry.'s city properties at a price to be fixed by the Wayne County Circuit Judges was defeated, and in 1919 a plan to purchase the company's lines at a price agreed upon between the commission and the company was defeated on the ground that the price named was in excess of the value of the system. A service at cost plan was subsequently considered, but was not approved by Mayor Couzens. The present plan of building a city system, and the taking over of the lines operated by the D.U.R. on the day to day agreement, was then developed with the result stated above.

The Detroit United Ry. is reported to have stopped all construction work on its lines, and to have taken action to contest the constitutionality of the city ordinance. This, it is stated, will put a stop to any progress being made by the city until a decision is given by the U.S. courts, which a press report says will probably be some three years hence.

G. E. Waller, General Superintendent of Railways, Dominion Power & Transmission Co., is reported to have expressed the opinion that it would be impracticable for the company to operate cars in Hamilton.

Electric Railway Projects, Construction, Betterments, Etc.

Brantford Municipal Ry.—In connection with the construction by the Ontario Government of the provincial highway between Hamilton and Brantford, Ont., a question has been raised as to the Brantford Municipal Ry's rights from Brantford to Cainsville. An extension of the line to Cainsville, it is stated, will have to be made very soon, and provision will have to be made for the laying of tracks when the pavement is being put down. The matter is under consideration by W. A. McLean, the Ontario Engineer of Highways. (April, pg. 202.)

British Columbia Electric Ry.—Work was reported to have been started Mar. 30 on removing the tracks, etc., on the center of King Edward Ave., Shaughnessy Heights, Vancouver, between Granville St. and the Inter Island Ry. tracks. The tracks were originally laid for use in connection with one of the company's lines, but other arrangements were made subsequently and a boulevard is to be laid out to replace the tracks. (April, pg. 202.)

A press report states that the company will shortly build a new station at Marpole, at an estimated cost of \$10,000.

Cape Breton Electric Co.—A press report states that the company will not rebuild the car barn destroyed by fire recently, but will repair the old power station so as to provide accommodation for cars requiring to be stored overnight. (Dec., 1919, pg. 670.)

The Hamilton Radial Ry.—Is reported to have applied to the Burlington Beach Commission for permission to lay temporary switches from its line to the G. T. R. bridge over the canal for the operation of its cars between Hamilton and Oakville, Ont., during the construction of the highway bridge across the canal by the Dominion Government.

London & Port Stanley Ry.—The new station in St. Thomas, Ont., was opened April 23. Sir Adam Beck, Chairman London Railway Commission operating the railway, the mayor and other members of the London City Council, were present, and were subsequently entertained at luncheon by the St. Thomas City Council.

Moncton Tramways, Electricity & Gas Co.—We are officially advised that the rebuilding of the car barn and machine shops at Moncton, N.B., destroyed by fire recently, is being held in abeyance pending certain decisions by the city council. (Mar., pg. 145.)

Montreal Tramways Co.—The Montreal City Council has been advised that the Tramways Commission is prepared to order the company to build a line on Kelly St. from Ahunistic, Bordeaux station, to Lamonth St., as soon as the city opens the street, and the Montreal Administrative Commission has recommended that the money be voted to appropriate the property required.

A press report states a second track is to be laid on the line from Guy St. to Queen Mary Road, during this year, and that a second track will be laid on the Iberville line later. (April, pg. 202.)

Oshawa Ry.—We are officially advised that the company has ordered from Canadian Westinghouse Co. an additional 500 k.w. motor generator.

We are officially advised that the company proposes to rebuild the car barn and to replace the rolling stock destroyed

by the fire, immediately. The total loss is put at \$450,000, which is covered by insurance.

Ottawa Electric Ry.—The Hull, Que., City Council is reported to have instructed its solicitor to appear before the Board of Railway Commissioners and oppose the company's application for permission to lay a loop at the terminus of its line in Hull. (Mar., pg. 145.)

Peterborough Radial Ry.—We were officially advised April 13 that nothing had been definitely settled about any track extensions in the city, with the exception of lifting a piece of track and replacing it as soon as the city paves the street from the C.P.R. south to Romaine St.

Quebec Ry., Light & Power Co.—We are officially advised that negotiations are still pending in connection with the proposal to extend the electric railway from Quebec to Loretteville, Que., but that no decision has been reached as to whether the line will be built this year. (April, pg., 202.)

Winnipeg Electric Ry.—As the result of an explosion the company's Main St. car barns were destroyed by fire April 7, the loss being estimated at \$400,000, distributed as follows:—Buildings, \$50,000; 20 cars, \$300,000; 4 sweepers, \$32,000. A number of other cars were damaged, and are undergoing repairs. (Jan., pg. 34.)

The Rule of the Road in British Columbia.

In the British Columbia Legislature on April 8 a bill to amend the Highways Act by changing the rule of the road in the province, to bring it into accord with that followed generally throughout the rest of Canada, was read a second time. The Minister of Public Works is reported to have stated that there is grave danger to the public in the retention of the "turn to the left" rule of the road, and with tens and even hundreds of thousands of motors arriving and leaving the province it is only a matter of time until the change would have to be made. The change is to become operative generally throughout the province July 15, but out of consideration for the street railways it has been decided to make the time of the change Dec. 31, 1921. This will mean that a small corner of the province would retain the present rule for a year and nine months; that is to say, that part of the Lower Mainland and Vancouver Island cut off by natural barriers from the interior and northern sections.

The B. C. Electric Ry., which operates all the electric railways in the district, had submitted a report showing that the changing of its rolling stock and tracks to comply with the new rule will cost over \$1,000,000. This had not been checked by the Department, but would be as soon as possible. The Minister proceeded to show that the change would cost more the longer it was left, chiefly because the company would be obliged in the near future to purchase new rolling stock. In the course of the discussion it was suggested that the province should bear part of the cost of the changes to be forced on the B.C.E. Ry. by the bill.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.

	Feb. 1920	Feb. 1919	8 months to Feb. 29, 1920	8 months to Feb. 29, 1919
Gross	\$746,030	\$645,415	\$5,796,655	\$4,740,999
Expenses	493,222	431,163	4,082,656	3,532,729
Net	\$252,808	\$214,252	\$1,713,999	\$1,208,270

Cape Breton Electric Co.

	Feb. 1920	Feb. 1919	2 months to Feb. 29, 1920	2 months to Feb. 29, 1919
Gross	\$45,113.83	\$42,963.90	\$94,195.81	\$95,154.14
Expenses	39,414.08	33,900.00	83,559.47	70,857.50
Net	\$5,699.75	\$9,063.90	\$10,636.34	\$24,296.64

Toronto Civic Ry.

	Feb. 1920	Feb. 1919	2 months to Feb. 29, 1920	2 months to Feb. 29, 1919
Passenger revenue	\$39,331.21	\$30,372.50	\$81,320.65	\$62,604.62
Passengers carried	2,334,286	1,818,434	4,827,582	3,768,895

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

	Feb. 1920	Feb. 1919	2 months to Feb. 29, 1920	2 months to Feb. 29, 1919
Gross	\$1,113,717	\$1,015,797	\$2,244,203	\$2,122,637
Expenses	754,994	620,200	1,505,472	1,255,493
Net	\$358,723	\$395,597	\$738,731	\$867,144

Winnipeg Electric Ry. and allied companies.

	Feb. 1920	Feb. 1919	2 months to Feb. 29, 1920	2 months to Feb. 29, 1919
Gross	\$39,331.21	\$30,372.50	\$81,320.65	\$62,604.62
Expenses	328,205	263,908	693,236	554,924
Net	\$116,668	\$107,254	\$250,474	\$206,777

The surplus after allowing for fixed charges for January was \$63,547.84, and for February, \$57,084.85.

Stops in Ottawa.—The Ottawa Electric Ry. is, we are officially advised, adopting a modified form of skip stops which will cut out about 25% of the present stops on its city lines. The city council has approved of the plan, which was put in operation April 5, and was reported April 15 to have resulted in a speeding up of the service. With regard to the matter of stopping cars on the near or far side of street intersections, we are advised that the Ottawa Motor Club requested the city Board of Control to adopt the near side stop. The company objected to this, and the city council decided not to make any change from the present far side stop. There are many reasons why the company object due to the climatic peculiarities, but the chief objection is that it slows up the car service, making it necessary to extend the time schedules. This is because when a car stops on the near side all the cross traffic has the right of way over it for the time being. When a car stops on the far side it has the right of way in crossing the street, and after its business is finished at that crossing, it gets away immediately without inconveniencing anyone. The near side stop system was in operation during 1913, 1914 and 1915.

STOREKEEPER AND PURCHASING AGENT WANTED.

An Electric Railway operating a City and Interurban service requires a man to act as Storekeeper and Purchasing Agent. Must have experience in Stores Department. Applicants will please state experience and salary expected.

Address Box 666, Canadian Railway and Marine World.

Mainly About Electric Railway People.

Jas. Anderson, heretofore Vice President and Purchasing Agent, and **S. S. Anderson**, heretofore General Manager, Sandwich, Windsor and Amherstburg Ry., have retired from that company's service, on it being taken over by the Hydro Electric Power Commission of Ontario. They are at present winding up matters connected with the old management for the Detroit United Ry.

H. Brooker, formerly dispatcher, Niagara & St. Catharines Ry., has been appointed Assistant Superintendent, Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, heretofore Sandwich, Windsor and Amherstburg Ry., Windsor, Ont.

Geo. Earl has been appointed Chief Electrician, Nipissing Central Ry.

F. E. Hayes, heretofore General Superintendent, Sandwich, Windsor & Amherstburg Ry., has retired from that company's service, on it having been taken over by the Hydro Electric Power Commission of Ontario, and has removed from Windsor, Ont., to Detroit, Mich.

Edward Jennings, heretofore Superintendent Overhead Construction, Sandwich, Windsor & Amherstburg Ry., is continued in the same position by the Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, Windsor, Ont., which has taken over the S.W. & A.R.

Jno. Lynch, heretofore Track Superintendent, Sandwich, Windsor & Amherstburg Ry., is continued in the same position by the Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, Windsor, Ont., which has taken over the S.W. & A.R.

W. H. MacAloney, who resigned his position as Superintendent of Rolling Stock, Winnipeg Electric Ry., recently, to return to Denver, Col., was entertained at dinner before leaving Winnipeg, by some 30 of the company's department heads, **F. L. Butler**, General Superintendent, presiding. **R. R. Knox**, Assistant to the General Manager, presented Mr. MacAloney with a handsome wrist watch from his friends, and his health was proposed by **R. D. Guy**, Solicitor.

Neil Maitland, heretofore Chief Power Engineer, Sandwich, Windsor & Amherstburg Ry., has been transferred to the Hydro Power Department at Windsor, Ont., on the railway being taken over by the Hydro Electric Power Commission of Ontario.

Harry R. Mallison, whose appointment as Purchasing Agent and Secretary to President, Montreal Tramways Co., was announced in our last issue, was born at Toronto, Nov. 14, 1873, and has been from Feb., 1893, to Mar., 1903, in various positions, finally as Comptroller, Montreal Street Ry., Montreal; Mar., 1903, to Apr., 1907, Comptroller, Mexican Light & Power Co., Mexico City, and Necaxa, Puebla; May, 1907, to Apr., 1914, Secretary-Treasurer, Canadian Light & Power Co., Montreal, Public Service Corporation, Imperial Trust Co., Montreal; Apr., 1914, to Dec., 1916, Assistant Secretary, Halifax Electric Tramways Co., Halifax, N.S.; Jan., 1917, to Dec., 1919, Managing Director and Secretary-Treasurer, Nova Scotia Tramways & Power Co., Halifax, N.S.

Walter L. McFarlane has been appointed Manager, Cornwall Street Railway, Light and Power Co., Cornwall, Ont., succeeding **C. U. Peeling**, who resigned

to enter the service of the Illinois Traction Co. at Peoria, Ill., in which the Sun Life Assurance Co. of Canada is largely interested, as it also is in the Cornwall Street Ry., Light and Power Co., and the Levis County Ry. **Mr. McFarlane** was born at Montreal, Dec. 1, 1871, and from 1888 to 1903 occupied various positions with Montreal Light, Heat & Power Co., ranging from wireman to Superintendent of stations, including the equipping of electric railway cars for the Montreal Street Ry. in the early days of street railway electrification; 1903 to 1916, Manager, St. Lawrence Power Co., Cornwall, Ont.; and from 1916 to 1920 in military service overseas, and in the Militia Department's Cornwall and Kingston, Ont., offices.

A. F. McGill, formerly Assistant Superintendent, Niagara, St. Catharines and Toronto Ry., has been appointed Superintendent, Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, heretofore Sandwich, Windsor and Amherstburg Ry., Windsor, Ont.

A. Montgomery has been appointed acting Superintendent of Transportation, Nipissing Central Ry., **K. McDonald**, Superintendent, having resigned.

Alexander Montgomery, whose appointment as acting Superintendent, Nipissing Central Ry., North Cobalt, Ont., was announced in our last issue, was born in Ontario, Mar. 12, 1867, and from Apr. 30, 1910, to Mar. 10, 1920, was conductor, N.C.R. at North Cobalt, Ont.

W. H. Moore, K.C., Chairman of the Public Utilities Commission, Peterborough, Ont., died there, April 23, aged 77.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., left Vancouver, April 4, for a trip to England, accompanied by Mrs. Murrin.

A. N. Pay, formerly Master Mechanic, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., has been appointed Master Mechanic, Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, heretofore Sandwich, Windsor and Amherstburg Ry., Windsor, Ont.

J. S. Richards, Manager, London & Port Stanley Ry., London, Ont., who underwent an operation recently, is reported to be recovering.

C. Stokes has been appointed Accountant, Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, heretofore Sandwich, Windsor and Amherstburg Ry., Windsor, Ont.

J. E. Watkins, heretofore with the British Columbia Electric Ry., has been appointed Superintendent of rolling stock, Winnipeg Electric Ry., vice **W. H. MacAloney**, who has resigned and returned to Denver, Col.

The British Columbia Electric Ry. gave notice recently that, beginning April 1, the rule against smoking on Vancouver city cars would be enforced strictly, in compliance with repeated requests from passengers, and a resolution passed by the city council.

The cost of removing snow from Montreal streets on which there are electric railway tracks during the past winter is reported to have been \$132,115.05 for the city's share; \$132,115.06 for the Montreal Tramways Co., and \$2,683.40 for the Montreal and Southern Counties Ry.

Sandwich, Windsor and Amherstburg Railway Transfer.

The Sandwich, Windsor and Amherstburg Railway, which operated under lease the Windsor and Tecumseh Electric Railway, both being owned by the Detroit United Railway, was transferred to the Hydro-Electric Power Commission of Ontario at midnight, March 31, and is now being operated as the Hydro-Electric Railway, Essex Division. The lines aggregate 41,342 miles and connect Tecumseh, Ford, Walkerville, Windsor, Sandwich, Ojibway and Amherstburg. The transfer is the culmination of an agitation started by the people of the border districts early in 1918, for better service and improved lines. The wage and fare questions also became acute, and a seizure of the lines by the Ontario Railway and Municipal Board resulted before a settlement of wages was effected. An appeal to the Hydro-Electric Power Commission of Ontario followed, with the result that an agreement for the sale of the properties was reached, which was approved by the electors Dec. 6, 1919. The Commission being authorized to issue bonds for 40 years guaranteed by the municipalities served.

The lines are being operated under **W. N. Robertson**, General Superintendent of the Hydro-Electric Power Commission's railway division. The principal officials of the S. W. & A. Ry. have left the service and new officials have been appointed, particulars of the appointments being given under "Mainly About Electric Railway People," on this page.

Increase of Winnipeg Electric Railway Co.'s Capital.

Winnipeg Electric Ry. shareholders will be asked at a meeting on May 3, to authorize the issue of \$3,000,000 of 7% cumulative preference stock. A circular issued by the company says in part:—"The reason for the issue of this stock is that the company desires to clear up its floating indebtedness, amounting to approximately \$3,000,000, and not materially increase its interest charges. This indebtedness would not have occurred had it not been for the war. Prior to 1914 the company had entered on a constructive programme, caused by the growth of the City of Winnipeg, and had financed up to that time by the sale of debenture stock which had been authorized to complete this programme, but the war rendered it impossible to sell any further securities in London, and the debenture stock having been created in a form to meet the requirements of the London market was not acceptable on this side. The construction programme had to be proceeded with, and was financed partly by the sale of short term securities, and partly by borrowing from the banks."

It is added that the company is rapidly improving its position as regards earnings. The new preferred stock is offered to shareholders at par, with a bonus of 20% of common stock, or one share of common for every five shares of preferred stock subscribed for. The company's outstanding common stock is \$9,000,000, in addition to which there is \$4,380,000 debenture stock and \$5,750,000 bonds. No dividends have been paid on the common stock since Oct., 1915.

Electric Railway Notes.

The Peterborough, Ont., Radial Ry. will, a press report states, put one-man cars on all its lines.

The Quebec Railway Light and Power Co. has received 5 cars from Ottawa Car Manufacturing Co.

The Hydro-Electric Power Commission of Ontario has ordered 3 bodies for 50-ton electric locomotives, from Canadian Car and Foundry Co.

The Windsor, Essex & Lake Shore Rapid Ry. has bought a steam shovel from F. H. Hopkins & Co., Montreal, for its gravel pit.

The Lake Erie and Northern Ry. is adding 3 steel passenger cars, 60 ft. long; 1 trailer passenger car, and 1 electric locomotive, 60 tons capacity, to its rolling stock.

The Grand River Ry. is adding 4 steel passenger cars, 60 ft. long; 2 trailer passenger cars, 1 baggage and express car and 1 electric locomotive, 60 tons capacity, to its rolling stock.

The Cape Breton Electric Co. has, it is reported, sufficient cars on hand to handle its traffic, notwithstanding the fact that two were destroyed in a recent fire at the car barns. The company may be in the market for additional cars later in the year.

The Nova Scotia Tramways & Power Co. has received 14 of its new one man p.a.y.e. cars, and has established a 4 minute service on the belt line in Halifax. It is stated that when additional cars are delivered the service will be approximately a 2½ minute one on this line during the rush hours.

The London, Ont., City Council, is reported to have under consideration the assessment of the London St. Ry. for city taxes. The company's statement for 1918 shows the value of road and equipment to Jan. 1, 1919, to be \$1,493,254. Allowing \$134,208 for depreciation, the value is placed at \$1,359,046. It was assessed for 1919 at \$156,275.

The Montreal Tramways Commission's new schedule of stops worked out for use on the Montreal Tramways Co.'s lines, is expected to be put in operation May 1. The Westmount City Council was asked to approve of the schedule so far as it affected the lines within that city, but was reported, April 14, to have suggested that the present stops within the city be continued.

The Premier of New Brunswick is reported to have informed the legislature, April 15, that the government had not yet made an appointment to the position of Chairman of the Public Utilities Commission in place of G. Otty, K.C., whose term has expired. Mr. Otty was appointed a Commissioner in 1910, and succeeded D. McL. Vince, K.C., as Chairman in 1912.

The New Brunswick Public Utilities Commission has decided that the New Brunswick Power Co. must restore the street railway service as regards bridge cars from Union St. to the end of the line at the foot of Rodney wharf, St. John. The company applied for permission to discontinue this service, and the St. John City Council asked that the company be compelled to operate its cars on Rodney wharf.

The British Columbia Electric Ry. has arranged for insuring all its male employees over 18 years old, and who have been a year or more in the service, for

\$1,000 each. Provision is made for the payment of the total amount insured by annual instalments should the employe become wholly and permanently disabled through accident or disease. It has also been arranged that any employe leaving the company's service may continue the insurance by paying his own premiums at the existing rates.

The Imperial Privy Council confirmed recently a decision of the Quebec Court of Appeal granting P. McAllister \$2,400 damages against the Montreal Tramways Co. for injuries to his son. The boy got off a west bound car opposite Westmount athletic grounds, and while crossing the tracks was struck by an eastbound car and sustained serious injuries. The jury found that both parties were at fault, the boy for rashness in attempting to cross the track, and the motorman on the eastbound car for not having it under control, and a verdict was given for reduced damages of \$2,400. This was confirmed by the Court of Appeal, and is now finally approved.

The Niagara, St. Catharines and Toronto Ry. is having 12 of its cars remodelled by Ottawa Car Manufacturing Co., to make them into double end one-man or two-man operated cars, to suit the prevailing conditions on the railway. The cars, at present, have omnibus sides, which will be made straight with steel panels, and the bulkhead at each end removed. Vestibules will be rebuilt throughout, extending them 18 in. beyond the present length, making a total length of 6½ ft. over bunter. The doors will be made double, of two leaves each, worked automatically, by National Pneumatic Co.'s automatic door and step control. Keystone signs will be placed at the right hand corner window of vestibules, and a railing of 1¼ iron pipe will be placed there from center of doors, taking a curve to the stanchions dividing bulkhead into entrance and exit, and another railing will enclose the conductor who will stand at the same end as the motorman, at the first corner window to body, when car is operated by two men. Sanitary hand straps will be placed in the cars at the longitudinal seats. The bolster will have ball center bearing and side roller bearings, and a buzzer system will be installed in each car. The cars will be painted the N., St. C. & T. R. standard gray color, and when completed will have the following dimensions:—length of body 28 ft., length of vestibule 6½ ft., length over bunter 41 ft., seating capacity 36.

Cars for Toronto Civic Ry.—The Toronto City Board of Control has under consideration tenders for the supply and delivery of 13 double truck, double end cars, specifications and details of which were given in a previous issue. Three tenders were received, no. 1 being for \$30,437 each, f.o.b., Montreal; no. 2 \$24,142 each, f.o.b., Toronto, subject to exchange, with an alternative proposition at \$12,555 each, plus \$10,973.10 each, f.o.b., Toronto, subject to exchange; No. 3, \$27,420 each, f.o.b., Toronto. It is stated that the Board of Control, owing to questions of exchange, etc., and the apparent lack of competition amongst Canadian car builders on account of heavy booking of orders, may consider the possibility of obtaining tenders from English car building companies.

Edmonton Radial Railway's Condition.

An Edmonton, Alta., paper says of the Edmonton Radial Ry., which is owned by the city: "In regard to the street railway a somewhat curious attitude seems to be growing up at the city hall, it being somewhat to the effect that the street railway has reached a state of senility or to put it in other words, that the street railway is a doubtful utility to handle for the reason that in a very short time it may be out of date altogether. At one time there used to be a considerable amount of talk to the point that as soon as the population came back to the city, and it began to grow again, the street railway would eventually become one of the best paying utilities. Not much of this sort of opinion has been heard of late. It is understood and generally admitted that tracks and rolling stock are in bad condition, and a large expenditure would be necessary to restore any degree of permanence. There seems to be a great reluctance to contemplate expenditure of this kind, or any more than needed to keep the street railway on its feet, or as it might be said, to maintain the cars on the rails."

Grand River and Lake Erie and Northern Railway Betterments, Etc.

We are officially advised that the total amount appropriated for betterments, etc., this year on the Grand River Ry. and the Lake Erie & Northern Ry., both of which are C.P.R. subsidiaries, is \$1,453,700, of which \$1,035,200 is for the Grand River Ry. and \$418,500 for the Lake Erie & Northern Ry. The amounts include renewals of appropriations granted in 1919, as well as for the purchase of generating and equipment, construction of substation to provide uniform 1,500 volt operation, by rebuilding and reinsulating existing overhead system, additional shop equipment, tie and rail renewals, etc.

Some of the work, including buildings, sidings, etc., will be done by the companies' own forces. Contract have been given to A. E. Rigley, St. Catharines, Ont., for the following:—Kitchener-Waterloo line revision, second track work between Preston and Hageys; revision of line in Galt; terminals in Galt; and other smaller works. These contracts have been let on the cost plus basis. Details in regard to some of them have already been given in Canadian Railway and Marine World. With regard to the Kitchener-Waterloo revision, we are advised that owing to the expiration of franchise rights in the City of Kitchener, it is necessary to provide service on a private right of way, on a greatly improved location. The new second track between Preston and Hageys, 0.50 mile, will be laid with 85-lb. rails.

The station and office buildings at Galt will probably be of brick and concrete construction, 40 x 120 ft.; the station on the ground floor and general offices above. The substation at Preston will be 56 x 48 ft. A 60 ft. extension to car barn and repair shop at Preston will be done by the company's own forces.

The equipment to be bought will consist of two 1,000 k.w. motor generator sets; six transformers; short-circuiting switches, lightning arresters, etc. The

rolling stock to be bought will be as follows:—Grand River Ry., one 60-ton electric locomotive, four 60-ft. steel passenger cars, two trailer passenger cars,

one baggage and express car. Lake Erie & Northern Ry., three 60-ft. steel passenger cars, two trailer passenger cars, one baggage and express car.

as well as relief from paving charges assessed against the street railway department. 3. The co-operation of every individual citizen in promoting the interests of the department and in this connection I could not do better than quote the Rotary Club's motto: 'He profits most who serves best.'

The Port Arthur Civic Railway's History and Present Position.

The history of the inception and development of the Port Arthur Civic Ry. was debated before the Port Arthur, Ont., Rotarian Club recently by M. M. Inglis, Manager of the city's public utilities commission. After having dealt with matters affecting public utilities in general, he gave the following information regarding the Port Arthur Civic Ry. The railway was inaugurated in 1891, it being not only one of the oldest electric railways in Canada, but the first municipally owned line. An issue of \$75,000 of 5%, 20-year bonds was made in that year to finance the project. At present the line is capitalized at \$795,633.02. The original line was laid in Port Arthur, and subsequently an extension was made, under Port Arthur ownership, to Fort William, and the operation of the line in the two cities was continued under Port Arthur's management until 1908, when an agreement was made under which Fort William bought the lines within its own boundaries, and the lines were placed under the management of a joint board. This continued until 1913, when the management of the Port Arthur line was taken over by the city council, and in 1915 the management was handed over to the then newly formed Public Utilities Commission. The line was financed by debentures, of two types—sinking fund debentures, and serial debentures, the total amount issued from 1891 to date being \$940,184.

Mr. Inglis continued:—"The assets comprise chiefly 20 miles of track computed as single track; car barns and shed; 22 convertible cars, of which 5 are single truck, and the remainder double truck; 2 trailers; 2 combination work cars and snow plows and sweepers; one baggage car; one open trailer; and power plant machinery of the capacity of 2,000 h.p., as well as overhead construction, feeders, tools and equipment for the operation of the system. Compared with other systems, every attention has been paid to providing the best and most comfortable equipment that could be obtained. Each double truck car similar to those used on the main line service is equipped with four 40 h.p. motors, geared to the car axles and capable of maintaining a car speed of 25 miles an hour should it be found necessary in operation."

Mr. Inglis then pointed out that the electric railway might be regarded as an industry, on consideration being given to the capital invested; the revenue derived; the number of employes and the wages paid, and to the material bought. The revenue for 1919 was \$196,000; the amount paid in wages in 1919 \$88,000 approximately. The amount paid for materials in 1919, including insurance and other such items was approximately \$19,000. Power cost for the year was approximately \$20,000.

He continued: "Pressing needs to make ends meet has also awakened us to the fact that our street railway is a commercial enterprise, and that its function is not merely to run cars, but to sell service, and that like any other manufacturing concern. While not the foremost industry in the city, from point of view of the wages paid and other items men-

tioned, it, in addition to these influential elements, fills a place in our social life and development that cannot be measured in a pecuniary way, and would be difficult, if not almost impossible, to supplant."

Considering the future of the system, Mr. Inglis said: "We know now, if we did not do so before, that service is being sold at less than cost. In this we cannot altogether blame the representatives whom we elected to office, because they were merely responding to the will of the ratepayers in general. With what has been happening during these past five years or more, and the trend of current events, it is not surprising that we have not re-established our equilibrium, but progress of a material kind has been made in connection with the street railway system that reflects at least some credit. Credit is due particularly to the commissioners for the policy they have inaugurated since coming into office, and in no less degree to the co-operation of all departments and employes connected with the system.

"Briefly, the commission's policy is as follows: To render service at cost, and in so doing to provide for interest charges on all capital expended. Sinking fund, to retire all debentures at maturity, and, in addition, depreciation to replace all plant and other assets at the end of their useful life. It has so far been inconvenient to carry out the entire policy as above quoted, but the goal has been set, and it is not beyond attainment, and that without great hardship if the citizens will realize their full responsibility and assist. Just as the merchant or manufacturer sells his product and bases his cost on the unit system, so it is with the street railway. Our basis is that of the car mile, or the car hour, depending upon which is the more convenient, and in order to eliminate as far as possible the many variables that enter into the matter of costs."

Mr. Inglis claimed that the operating cost of the system compares very favorably with that of any other system in Canada. This is primarily due to the fact that the Port Arthur system lends itself to fast service when compared with other city systems. Port Arthur and Fort William have one of the fastest street railways in the Dominion; the main line cars make on an average 11¼ miles an hour. This is a desirable feature to retain, if it cannot be improved upon. After touching on the question of the cost of frequent stops, the cost of labor, the proposal to combine the ownership of the two lines in connection with the Hydro Electric Power Commission of Ontario's railway plans; one-man cars, and zone system of fares, which he did not discuss in detail, Mr. Inglis concluded by saying: "To my mind three very essential things are necessary and should precede any of the aforementioned suggestions in order that the transportation system of these two cities can develop and keep pace with the future growth which we all anticipate. These essentials are: 1. Joint ownership. 2. Relief for the car rider from paying for those extensions which are inoperative

Valuation of New Brunswick Power Co.'s Plant.

A judgment of the New Brunswick Court of Appeal, prepared by Sir Douglas Hazen, Chief Justice, in the New Brunswick Power Co. plant valuation case, was delivered at Fredericton, Mar. 1. The Currier Commission appointed in 1918, fixed the original cost of the plant used for street railway and other purposes, on which a return of 7% was to be earned, at \$2,800,000, and this sum was inserted in the act passed by the Legislature in 1919. As the city of St. John, contended that the value should be fixed at \$2,000,000, while the company contended for \$5,000,000, provision was made for a review of the valuation by the Court of Appeal. The arguments were concluded in January and the court took advantage of the power given it to employ expert assistance before reaching a decision as to the value. The judgment is a very lengthy one, reviewing the whole matter, and fixes the original cost of the plant at \$2,577,665.56. This amount, the judgment says, does not take into account any allowance for depreciation nor include any amount representing the proposed water power development on the Lapreaux and Magaguadavic Rivers, or any amount representing working capital, including materials and supplies. The amount of which should not be in excess of the company's financial needs in carrying on the railway, electric and gas services.

Calgary Municipal Ry. Results for 1919.

A press summary of the Calgary, Alta., City Treasurer's report for 1919 contains the following information as to the Calgary Municipal Ry.: The surplus for 1919 was \$42,232.95, against a surplus of \$74,656.87 for 1918. There was a total capital expenditure to Dec. 31, 1919, of \$2,462,051.14 on track and roadway, equipment, etc. Holdings acquired otherwise than by the bylaw, such as Bowness Park improvements, land, sub-base and other items add another \$103,915.59 to the capital assets. Taking from this \$788,413.13 for sinking fund, reserve and depreciation reserve gives a total of \$1,777,553.99 to which is to be added the sinking fund bank account of \$370,726.08, and depreciation bank account of \$87,264.81, making the net capital assets \$2,492,476.97. During 1919 \$583,098.88 was expended for maintenance on ways and structures, equipment, transportation and general expenses, \$6,541.41 was expended for taxes, rental of land and conduits, and for debenture interest there was laid aside \$110,182.85, for sinking fund, \$4,507.87, for depreciation, \$31,652.44, for reserve against accidents and damages, \$15,447, bad debts, \$750, and surplus carried to net revenue accounts \$42,232.95, making the total expenditure for the year \$834,413.40. Against this were \$772,349.98 in passenger earnings, \$42,607.90 in miscellaneous earnings, and \$19,455.52 in bank interest.

Marine Department

Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

Orders for Steamships.—In answer to questions asked in the House of Commons, Mar. 31, by L. Cannon, M.P. for Dorchester, Que., the Minister of Marine gave the following information: The government has contracted to build 63 steamships, of which 19 were delivered to Canadian Government Merchant Marine Ltd., for operation, during 1919. Those delivered were built as follows: Canadian Vickers, Ltd., Montreal, 7; Collingwood Shipbuilding Co., Collingwood, Ont., 4; Port Arthur Shipbuilding Co., Port Arthur, Ont., 4; Wallace Shipyards Ltd., North Vancouver, B.C., 3; Tidewater Shipbuilders, Ltd., Three Rivers, Que., 1. The following voyages were completed, and accounts closed, during 1919: Canadian Voyageur, 4 trips; Canadian Pioneer, 1 trip; Canadian Warrior, 3 trips; Canadian Ranger, 3 trips; Canadian Recruit, 3 trips; Canadian Volunteer, 2 trips; Canadian Leader, 3 trips; Canadian Sailor, 2 trips; Canadian Trooper, 1 trip; Canadian Seigneur, 2 trips; Canadian Signaller, 2 trips; Canadian Miller, 1 trip; Canadian Adventurer, 1 trip. The other 6 ships were delivered late in the year, and did not complete trips by Dec. 31, 1919. The total gross revenue from the 13 ships was \$3,448,030.25. The total operating expenses were \$2,041,262.87, giving a surplus of \$1,406,767.38, for only a portion of the year, as most of the ships were delivered during the latter part of the year. It is not considered in the public interest to state the cost of maintenance of each ship.

Very full information about orders will be found in the Minister of Marine's speech in the House of Commons on the government's shipbuilding programme, which is given in full further on in this issue.

Names of Steamships.—The Minister of Marine, in answer to questions in the House of Commons recently, by L. Cannon, M.P. for Dorchester, Que., gave the names chosen for steel cargo steamships for Canadian Government Merchant Marine Ltd., as published in Canadian Railway and Marine World from time to time, and stated that the Marine Department was responsible for the choice of them.

The Marine Department has officially advised us of the following names, which have been decided on, for steel cargo steamships being built for Canadian Government Merchant Marine Ltd., in addition to those published in Canadian Railway and Marine World for April.

Canadian Challenger; Marine Department contract 60; builder's yard no. 476; approximately 8,390 d.w. tons; Davie Shipbuilding & Repairing Co., Lauzon, Que.

Canadian Coaster; Marine Department contract 58; builder's yard no. 16; approximately 3,890 d.w. tons, Collingwood Shipbuilding Co., Kingston, Ont.

Canadian Freighter; Marine Department contract 63; builder's yard no. 21; approximately 8,390 d.w. tons; J. Coughlan & Sons, Vancouver, B.C.

Canadian Highlander; Marine Department contract 55; builder's yard no. 103; approximately 8,390 d.w. tons; Wallace Shipyards, Ltd., North Vancouver, B.C.

Canadian Racer; Marine Department contract 54; builder's yard no. 10; ap-

proximately 3,990 d.w. tons; Midland Shipbuilding Co., Midland, Ont.

Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.

Canadian Skirmisher; Marine Department contract 56; builder's yard no. 7; approximately 8,390 d.w. tons; Wallace Shipyards, Ltd., North Vancouver, B.C.

Canadian Transporter; Marine Department contract 62; builder's yard no. 8; approximately 8,390 d.w. tons; J. Coughlan & Sons, Vancouver, B.C.

Canadian Pathfinder; Marine Department contract 48; builder's yard no. 10; approximately 3,500 d.w. tons; Dominion Shipbuilding Co., Toronto; instead of Canadian Artificer, as selected originally.

Canadian Winner; Marine Department contract 29; builders' yard no. 1; ap-

proximately 2,800 d.w. tons; Nova Scotia Steel & Coal Co.; April 3, 1920.

S.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4; approximately 3,575 d.w. tons; British American Shipbuilding Co., Welland, Ont. This hull was built in two sections, the aft one being launched Mar. 25, and the forward one Apr. 13. They will be taken through the Welland and St. Lawrence Canals separately, to be joined together, probably at Montreal.

The s.s. Canadian Runner; Marine Department contract 32; builder's yard no. 43; and the s.s. Canadian Carrier; Marine Department contract 33; builder's yard no. 44; each approximately 4,575 d.w. tons; being built by Port Arthur Shipbuilding Co., for Canadian Government Merchant Marine, Ltd., and the keels of which were laid Aug. 29, 1919, are expected to be launched on May 1 and 15, respectively.

The s.s. Canadian Victor; Marine Department contract 50; builder's yard no. 77; approximately 8,390 d.w. tons; being built by Canadian Vickers, Ltd., Montreal; will be launched about the end of May.

The s.s. Canadian Conqueror; Marine Department contract 51; builder's yard no. 78; approximately 8,390 d.w. tons; being built by Canadian Vickers, Ltd., Montreal; will be launched about the middle of July.

The s.s. Canadian Pathfinder; Marine Department contract 48; builder's yard no. 10; approximately 3,500 d.w. tons; being built by Dominion Shipbuilding Co.; will probably be launched in June; and a sister ship, Canadian Engineer; Marine Department contract 49; builder's yard no. 11; being built by the same builders, will probably be launched in July.

Oil Fuel Equipment.—The Marine Department has arranged for the installation of oil fuel burning apparatus in the following steel cargo steamships which are being built for Canadian Government Merchant Marine, Ltd.

Canadian Highlander and Canadian Skirmisher, each approximately 8,390 d.w. tons, Wallace Shipyards, North Vancouver, B.C.

Canadian Freighter and Canadian Transporter, each approximately 8,390 d.w. tons, J. Coughlan & Sons, Vancouver, B.C.

Canadian Challenger, approximately 8,390 d.w. tons, Davie Shipbuilding & Repairing Co., Lauzon, Que.

Refrigerating Space on Steamships.—The Marine Department has arranged for the installation of refrigerating space in the following steel cargo steamships being built for Canadian Government Merchant Marine, Ltd.

Canadian Exporter, Canadian Inventor and Canadian Prospector, each approximately 8,390 d.w. tons, J. Coughlan & Sons, Vancouver, B.C.

Canadian Commander, Canadian Conqueror, Canadian Leader and Canadian Victor, each approximately 8,390 d.w. tons, Canadian Vickers, Ltd., Montreal.

Canadian Highlander and Canadian Skirmisher, each approximately 8,390 d.w. tons, Wallace Shipyards, North Vancouver, B.C.

Dominion Marine Association.

President, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

Second Vice President, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

Executive Committee, E. H. Beazley, Union Steamship Co. of British Columbia, Vancouver; W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

General Counsel, Francis King, M.A., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

proximately 8,390 d.w. tons; Harbour Marine Co., Victoria, B.C.; instead of Canadian Armourer, as selected originally.

Canadian Traveller; Marine Department contract 30; builder's yard no. 2; approximately 8,390 d.w. tons; Harbour Marine Co., Victoria, B.C.; instead of Canadian Composer, as selected originally.

Keel Laid.—Since our last issue we have been advise of the laying of the following keel:

Steel Cargo Steamship, Marine Department contract 61; builders, yard no. 45; approximately 3,890 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.; Mar. 30.

Launching of Steamships.—We have been advised of the following launchings of steel cargo steamships for Canadian Government Merchant Marine, Ltd., in addition to those mentioned in previous issues:—

S.s. Canadian Miner; Marine Depart-

Canadian Traveller and Canadian Winner, each approximately 8,390 d.w. tons, Harbour Marine Co., Victoria, B.C.

Canadian Constructor and Canadian Cruiser, each approximately 10,500 d.w. tons, Halifax Shipyards, Halifax, N.S.

Costs of Steamships.—W. Duff, M.P. for Lunenburg, asked the following questions in the House of Commons April 7: For what steel cargo steamships built under the Dominion Government's programme have settlements been made with the builders? What was the finally ascertained deadweight capacity of each of such ships? What was the contract price per deadweight ton for each of such ships? What was the total amount paid for each of said ships? The Minister of Marine gave the following information in reply:

Canadian.	D. w. tons	Price per ton.	Total paid.
Adventurer	3,408	\$210	\$ 715,652.49
Pioneer	8,408	180	1,519,459.99
Ranger	8,382	188	1,575,816.00
Recruit	3,964	205	812,897.62
Sailor	3,357	205	690,409.84
Seigneur	8,391	188	1,587,643.15
Sower	3,405	210	715,649.13
Spinner	8,393	188	1,589,700.00
rader	3,341	205	686,762.88
Voyageur	4,575	207	948,660.75
Warrior	3,995	205	819,385.58

59,619 \$11,662,037.43

Operation of steamships. The Minister of Railways, in answering a question, in the House of Commons, recently, as to ships being operated by the Canadian National Rys., said that this was provided for by order in council. Canadian Railway and Marine World has been supplied with a copy of the order referred to, no. 575, passed Mar. 16, 1920, as follows:

The committee of the Privy Council have had before them a memorandum, dated Mar. 11, 1920, from the Minister of Marine, submitting a report from the Deputy Minister of Marine, which states as follows: That contracts have been placed with ship-building firms in Canada, by the Department, for the construction of 62 ships, of a total tonnage of approximately 376,725 tons, at an average cost of \$192.04 a ton, of which 23 have been completed and delivered to the department. That several plans for the dispositions and operation of these ships have been considered, viz.: By the regular steamship operators on a basis of hire or commission to be agreed upon; by an organization to be formed within the department, subject to and under instructions from the Minister; by the Canadian National Rys.; by sale to private interests, on terms to be agreed upon, and subject to the condition that they should be available for Canadian trade, so long as any such trade is offering. That it has been determined by the government to operate some, or all, of these ships, by the directors from time to time operating the Canadian National Rys., and it having been represented that in order to avoid the full effects of collision liabilities each individual ship should be owned by a separate company incorporated for that purpose.

The Minister, therefore, recommends: that he be authorized, upon the completion and delivery, whether heretofore or hereafter, of the ships so contracted for, to transfer or cause the same to be transferred to individual companies (hereinafter called the owning companies) to be incorporated for that purpose under the Dominion Companies Act, with names similar to those of the respective vessels transferred. That the permanent directors of such owning companies shall be five or more of the directors from time to time operating the Canadian Na-

tional Rys. That the terms of transfer with respect to each ship shall generally be the same or similar to the terms of transfer of the Canadian Voyageur as set forth in the draft agreement hereto attached, the necessary variations in description and price being made to suit each individual case, such terms being in effect as follows:—The owning company will agree to repay to His Majesty the whole of the expenditure made by His Majesty on the vessel affected, such expenditure to be represented by 5½% notes of the owning company in favor of His Majesty, secured, if desired, by a statutory mortgage on the vessel. As a part of the consideration for such transfer, the Minister of Finance will also receive the whole of the capital stock of the owning company, fully paid, except the qualifying shares of directors (one share each) which will stand in their respective names. All net earnings of the owning companies, after due

said agreements, being paid or otherwise fully discharged, the Minister of Finance is hereby authorized to transfer to the Canadian National Ry. Co., without further compensation, all shares of stock in the holding company, so received in exchange as aforesaid. It is understood that the permanent directors of the holding company shall be five or more of the directors from time to time operating Canadian National Rys.

The Minister observes, in connection with the foregoing, that the result of his recommendations will be that the title to the several ships will stand in the name of the respective owning companies, bearing the ships name, subject to notes for the ships cost, secured by statutory mortgage on each ship in favor of His Majesty. The whole of the stock of the owning companies (less qualifying shares of directors—one share each) will be held by the holding company, and the whole of the issued capital stock of



Steel Cargo Steamship, Canadian Exporter, approximately 8,390 d.w. tons, built for Canadian Government Merchant Marine Ltd., by J. Coughlan & Sons, Vancouver, B.C.

allowances for working expenditure, renewals, repairs and other costs and charges incidental to operation, will be applied either by the owning company or the holding company hereinafter mentioned in payment of the interest on the said promissory notes and in reduction or discharge of any unpaid principal thereof.

The Minister further recommends that the Minister of Finance be authorized to transfer any capital stocks in the owning companies, received by him under the terms of any of the said agreements, to Canadian Government Merchant Marine, Ltd., (hereinafter called the holding company), receiving in exchange therefor shares in the capital stock at par, fully paid, of the holding company. Upon the whole of the promissory notes and mortgages made by the respective owning companies, and held by His Majesty under the terms of the

the holding company (less qualifying shares of directors) will, until all expenditures made by His Majesty in respect of the said ships are fully reimbursed to His Majesty, be held by the Minister of Finance on behalf of His Majesty. The permanent directors of both the holding and owning companies will be elected from the directors operating the Canadian National Rys.

The Minister also recommends that order in council of June 2, 1919 (no. 1022), authorizing the turning over of the said ships to Canadian National Rys., be cancelled. The committee concur in the foregoing recommendations and submit the same for approval.

Unit Companies Incorporated.—In accordance with arrangements made at the time of the incorporation of Canadian Government Merchant Marine, Ltd., separate companies are being incorporated for each ship. Under order in council,

575. passed March 16, the stock of the separate ship companies is owned by C. G. M. M., Ltd., the latter company's stock being owned by the Dominion Government. The following companies have been incorporated with a nominal capital of \$40,000 each:—Canadian Warrior, Ltd.; Canadian Ranger, Ltd.; Canadian Recruit, Ltd.; Canadian Volunteer, Ltd.; Canadian Trader, Ltd.; Canadian Sailor, Ltd.; Canadian Trooper, Ltd.; Canadian Seigneur, Ltd.; Canadian Signaller, Ltd.; Canadian Miller, Ltd.; Canadian Adventurer, Ltd.; Canadian Gunner, Ltd.; Canadian Aviator, Ltd.; Canadian Settler, Ltd.; Canadian Spinner, Ltd.; Canadian Trapper, Ltd.; Canadian Sower, Ltd.; Canadian Navigator, Ltd.; J. A. McKee, Ltd.; Thomas J. Drummond, Ltd., and Sheba Ltd. The incorporators are:—D. B. Hanna, A. J. Mitchell, G. Ruel, R. C. Vaughan, all Canadian National Rys., and C. G. M. M. officials; and G. A. Bell, C.M.G., Deputy Minister of Railways and Canals.

Officers of Steamships.—The following officers have been appointed by Canadian Government Merchant Marine, Ltd. The first column contains the name of the ship, the second that of the captain, and the third that of the chief engineer: Canadian Inventor A. B. Watson W. Britton

Canadian Vickers, Ltd., Montreal, has orders for 4 steel cargo steamships of 8,390 d.w. tons each, for Canadian Government Merchant Marine, Ltd., as follows:—

C.s. Canadian Victor; Marine Department contract 50; builder's yard no. 77; keel laid Dec. 10, 1919; to be launched about the end of May.

S.s. Canadian Conqueror; Marine Department contract 51; builder's yard no. 78; keel laid Jan. 17; to be launched about the middle of July.

The keels for the s.s. Canadian Commander; Marine Department contract 52; builder's yard no. 79; and the s.s. Canadian Leader; Marine Department contract 53; builder's yard no. 80; will be laid as berths become vacant, and delivery will be made about Nov., 1920.

The Collingwood Shipbuilding Co., advised us, April 19, that the s.s. Canadian Farmer, Marine Department contract 46, builder's yard no. 65, approximately 3,990 d.w. tons, would run her trial trips on Apr. 23, and then be delivered to the Marine Department.

The Collingwood Shipbuilding Co. advised us Apr. 19, that the s.s. Canadian Observer, Marine Department contract 47, builder's yard no. 66, approximately 3,990 d.w. tons, would be launched during the first week in May, and be delivered to the Marine Department about the end of May.

The Collingwood Shipbuilding Co's last order from the Marine Department is for a steel cargo steamship, Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons. The keel had not been laid up to Apr. 19, delay having been caused by U.S. railway strikes.

Collingwood Shipbuilding Co., Kingston, Ont., advised us, April 5, that it expected to deliver the s.s. Canadian Beaver; Marine Department contract 31; builder's yard no. 15; approximately 3,990 d.w. tons; about the end of April, or early in May. The company has another contract for the s.s. Canadian Coaster; Marine Department contract 58; builder's yard no. 11; approximately 3,890 d.w. tons; the laying of the keel of which has been delayed waiting for material, but we are, advised, April 10,

that it was expected to be laid before the end of April.

Davie Shipbuilding and Repairing Co., Lauzon, Que., is building 2 steel cargo steamships for Canadian Government Merchant Marine, td., approximately 5,100 d.w. tons each, viz.: Canadian Trapper; Marine Department contract 17; builder's yard no. 459; and Canadian Hunter; Marine Department contract 18; builder's yard no. 460. The company advised us April 13 that it expected to deliver Canadian Trapper early in May, and to launch Canadian Hunter about the end of April.

Halifax Shipyards, Ltd., Halifax, N.S., is building 4 steel cargo steamships for Canadian Government Merchant Marine, Ltd., viz.: Canadian Mariner and Canadian Explorer, each approximately 8,390 d.w. tons; and Canadian Cruiser and Canadian Constructor, each approximately 10,500 d.w. tons. The company advised us April 8 that it expected to launch the first one in May. It has encountered considerable difficulty, owing to delay in delivery of material, also labor conditions.

Harbor Marine Co., Victoria, B.C.—The boilers for the s.s. Canadian Winner, approximately 8,390 d.w. tons, being built for Canadian Government Merchant Marine, Ltd., were received at the shipyard towards the end of March, and were placed in the hull in sections. The shell plating of the hull was reported at that time to be practically completed, and considerable progress had then been made on the hull of the sister ship, Canadian Traveller.

Midland Shipbuilding Co., Midland, Ont., which has a contract for a steel cargo steamship, Canadian Racer; Marine Department contract 54; builder's yard no. 10; advised us, April 6, that the laying of the keel had been delayed and that it had practically to close down operations owing to lack of steel.

Nova Scotia Steel & Coal Co., New Glasgow, N.S., launched the s.s. Canadian Miner, Marine Department contract 41; builder's yard no. 6; approximately 2,800 d.w. tons, April 3; the christening ceremony being performed by Mrs. Levy McMillan, wife of the company's superintendent of shipbuilding. It also has a contract for another steel cargo steamship; Marine Department contract 59; builder's yard no. 8; respecting which it advised us April 8, that the keel would be laid a few days thereafter.

Port Arthur Shipbuilding Co., Port Arthur, Ont., laid the keel of a steel cargo steamship, Marine Department contract 61; builder's yard no. 45; approximately 3,890 d.w. tons, for Canadian Government Merchant Marine, Ltd., Mar. 30.

The Port Arthur Shipbuilding Co. expects to launch 2 steel cargo steamships, of approximately 4,575 d.w. tons each, for Canadian Government Merchant Marine, Ltd., in May, viz.: Canadian Runner; Marine Department contract 32; builder's yard no. 43; about May 8; and Canadian Carrier; Marine Department contract 33; builder's yard no. 44; about May 15. Their keels were laid Aug. 29, 1919.

Prince Rupert Drydock & Engineering Co.—Prince Rupert, B.C., has about 400 men engaged at its shipyard and drydock, and more could be employed but for lack of housing accommodation. The two steel cargo steamships, Canadian Reaper and Canadian Thrasher, of approximately 8,390 d.w. tons each, under construction for Canadian Government

Merchant Marine, Ltd., are reported to be progressing satisfactorily.

Tidewater Shipbuilders, Ltd., Three Rivers, Que., which has a contract for 2 steel cargo steamships, for Canadian Government Merchant Marine, Ltd., viz.: Canadian Fisher and Canadian Forester, advised us, April 12, that work on the hulls was progressing very favorably, the Canadian Fisher being completely plated, and that the plating of Canadian Forester would be finished by the end of April.

The Dominion Government's Naval Policy.

Replying to questions in the Senate Apr. 14, regarding the present conditions at the Esquimalt naval yard and its future, and also in regard to certain Dominion Government's steamships which have been utilized for war purposes, Sir James Loughheed said that the government had had under consideration for some time the question of Canada's naval defence. In view of Canada's heavy financial commitments, and the fact that Great Britain had not decided on her permanent naval policy, and of the approaching Imperial conference, at which the question of Imperial naval defence would come up for discussion between the Imperial and Dominion Governments, it had been decided to defer action in regard to a permanent policy for Canada. The Canadian Naval Service will be carried on on pre-war lines and the Dominion Government has accepted Great Britain's offer of one light cruiser and two torpedo boat destroyers to take the place of the present obsolete and useless training ships, Niobe and Rainbow. The Minister of Naval Service, in order to be free to reorganize the present service and place it on an economical and efficient basis, has ordered the demobilization of all officers and naval ratings, and for the discontinuance of civilian help at headquarters and at the naval dockyards at Esquimalt, B.C., and Halifax, N.S. The Canadian officers who are in the Imperial fleet and who are being paid by the Dominion Government, will be recalled, and placed on duty with the Canadian naval service. The Naval College will be continued. After reorganization has been completed, only those officers, and other ratings, and civilian help, will be taken on who are absolutely necessary and possess the qualifications desired.

Drydock at Sydney, N.S.—In connection with the proposed construction of a drydock at Sydney, N.S., by interests associated with the Sydney Foundry & Machine Works, F. Clark of that company applied recently to the city council for concessions in the way of tax exemptions, re water, etc., for the construction of a large retaining wall on the esplanade, above the site of the proposed drydock. He is reported to have stated that some change in the original dock plans will have to be made, and additional equipment to what was originally intended must be provided. An application for a grant under the Dominion Drydock Subsidies Act is before the Dominion Government.

Importation of Shipbuilding Materials. In response to a question in the House of Commons Apr. 12, the Minister of Marine stated that the Naval Service Department had paid \$94,489.96 for material imported from the U.S. between Jan. 1, 1918, and Jan. 1, 1920, to be used in the construction of Canadian ships.

Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w." and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with the finally ascertained deadweight tons multiplied by the price per ton, the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

Contract	Contract date	Name	Builder	Yard no.	Long tons d.w.	Price per ton d.w.	Total price	Type	Classification	Speed knots	Keel laid	Launched	Delivered.
1	Mar. 4, 1918	Canadian Voyageur	Canadian Vickers Ltd.	66	*4,575	\$207.	\$ 948,660.75	S.d., p., b. and f'c's'le.	Lloyd's	11	June 11, 1918	Nov. 23, 1918	Feb. 22, 1919
2	May 22, 1918	Canadian Pioneer	"	67	*8,408	180.	1,519,459.99	2.d., p., b. and f'c's'le.	"	11	July 17, 1918	Dec. 3, 1918	May 9, 1919
3	May 18, 1918	Canadian Warrior	Collingwood Shipbldg. Co., C'wood.	61	*8,595	205.	819,385.58	Lake, s.d., p., b. and f'c's'le	Bri. Corp.	9	Not stated	Dec. 21, 1918	Apr. 26, 1919
4	Mar. 15, 1918	Canadian Volunteer	Wallace Shipyards Ltd.	100	4,485	207.	928,395	S.d., p., b. and f'c's'le.	Lloyd's	11	Oct. 1, 1918	Apr. 5, 1919	June 19, 1919
5	Nov. 25, 1918	Canadian Trooper	"	106	4,540	217.	985,180	S.d., p., b. and f'c's'le.	"	11	Nov. 15, 1918	May 31, 1919	Aug. 7, 1919
6	Nov. 25, 1918	Canadian Aviator	"	101	5,100	210.	1,071,000	S.d., p., b. and f'c's'le.	"	11	Apr. 5, 1919	Oct. 9, 1919	Nov. 15, 1919
7	Nov. 25, 1918	Canadian Raider	"	102	5,100	210.	1,071,000	S.d., p., b. and f'c's'le.	"	11	May 31, 1919	Dec. 11, 1919	Jan. 17, 1920
10	July 5, 1918	Canadian Recruit	Collingwood Shipbldg. Co., C'wood.	62	*3,964	205.	813,252.07	Lake, s.d., p., b. and f'c's'le	Bri. Corp.	9	Jan. 3, 1919	May 3, 1919	June 7, 1919
11	Oct. 17, 1918	Canadian Signaller	"	63	3,990	205.	817,950	Lake, s.d., p., b. and f'c's'le	"	9	Jan. 16, 1919	June 28, 1919	Aug. 30, 1919
12	Oct. 17, 1918	Canadian Gunner	"	64	3,990	205.	817,950	Lake, s.d., p., b. and f'c's'le	"	9	Feb. 10, 1919	Oct. 4, 1919	Nov. 6, 1919
13	Aug. 9, 1918	Canadian Settler	Tidewater Shipbuilders Ltd.	5	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.	Lloyd's	11	Jan. 8, 1919	Sept. 20, 1919	Dec. 2, 1919
14	Aug. 9, 1918	Canadian Rancher	"	6	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.	"	11	Jan. 10, 1919	Nov. 1, 1919	Dec. 27, 1919
15	Jan. 24, 1919	Canadian Fisher	"	7	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.	"	11	Sept. 20, 1919		
16	Jan. 24, 1919	Canadian Forester	"	8	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.	"	11	Nov. 1, 1919		
17	Sept. 4, 1918	Canadian Trapper	Davie Shipbuilding & Repairing Co.	459	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.	"	11	Mar. 11, 1919	Oct. 9, 1919	
18	Sept. 4, 1918	Canadian Hunter	"	460	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.	"	11	Mar. 28, 1919		
19	Sept. 4, 1918	Canadian Trader	Port Arthur Shipbuilding Co.	39	*3,341	205.	686,762.88	Lake, s.d., p., b. and f'c's'le	"	9	Dec. 9, 1918	May 5, 1919	July 18, 1919
19a	Mar. 1, 1919	Canadian Adventurer	"	41	*3,408	210.	715,652.49	Lake, s.d., p., b. and f'c's'le	"	9	Mar. 31, 1919	Sept. 8, 1919	Oct. 29, 1919
20	Sept. 4, 1918	Canadian Sailor	"	40	*3,357	205.	690,409.84	Lake, s.d., p., b. and f'c's'le	"	9	Dec. 10, 1918	May 31, 1919	Aug. 7, 1919
20a	Mar. 1, 1919	Canadian Sower	"	42	*3,405	210.	715,649.13	Lake, s.d., p., b. and f'c's'le	"	9	Mar. 31, 1919	Oct. 9, 1919	Nov. 18, 1919
21	Sept. 13, 1918	Canadian Mariner	Halifax Shipyards Ltd.	1	8,390	195.	1,636,050	2.d., p., b. and f'c's'le.	"	10	Feb. 24, 1919		
22	Sept. 13, 1918	Canadian Explorer	"	2	8,390	195.	1,636,050	2.d., p., b. and f'c's'le.	"	10	Mar. 15, 1919		
23	Oct. 11, 1918	Canadian Navigator	Canadian Vickers Ltd.	73	4,575	215.	988,625	S.d., p., b. and f'c's'le.	"	11	Jan. 22, 1919	Oct. 18, 1919	Nov. 22, 1919
24	Oct. 11, 1918	Canadian Ranger	"	68	*8,382	188.	1,575,816.00	2.d., p., b. and f'c's'le.	"	11	Aug. 26, 1918	Apr. 19, 1919	May 23, 1919
25	Oct. 11, 1918	Canadian Seigneur	"	69	*8,391	188.	1,587,643.15	2.d., p., b. and f'c's'le.	"	11	Nov. 30, 1918	May 7, 1919	Aug. 14, 1919
26	Oct. 11, 1918	Canadian Miller	"	70	8,390	188.	1,577,320	2.d., p., b. and f'c's'le.	"	11	Dec. 2, 1918	Aug. 16, 1919	Sept. 24, 1919
27	Oct. 11, 1918	Canadian Spinner	"	71	*8,393	188.	1,589,700.00	2.d., p., b. and f'c's'le.	"	11	Apr. 23, 1919	Nov. 8, 1919	Dec. 6, 1919
28	Oct. 11, 1918	Canadian Planter	"	72	8,390	188.	1,577,320	2.d., p., b. and f'c's'le.	"	11	May 10, 1919	Nov. 22, 1919	Dec. 27, 1919
29	Jan. 24, 1919	Canadian Winner	Harbor Marine Co. Ltd.	1	8,390	198.	1,661,220	2.d., p., b. and f'c's'le.	"	11	July 14, 1919		
30	Jan. 24, 1919	Canadian Traveller	"	2	8,390	198.	1,661,220	2.d., p., b. and f'c's'le.	"	11	Aug. 9, 1919		
31	Dec. 11, 1918	Canadian Beaver	Collingwood Shipbldg. Co., Kingston	15	3,990	205.	817,950	Lake, s.d., p., b. and f'c's'le	Bri. Corp.	9	Apr. 7, 1919	Dec. 10, 1919	
32	Mar. 1, 1919	Canadian Runner	Port Arthur Shipbuilding Co.	43	4,575	215.	988,625	S.d., p., b. and f'c's'le.	Lloyd's	10½	Aug. 29, 1919		
33	Mar. 1, 1919	Canadian Carrier	"	44	4,575	215.	988,625	S.d., p., b. and f'c's'le.	"	10½	Aug. 29, 1919		
34	Nov. 22, 1918	Canadian Importer	J. Coughlan & Sons	11	8,390	198.	1,661,220	2.d., p., b. and f'c's'le.	"	11	Apr. 26, 1919	Dec. 6, 1919	Feb. 5, 1920
35	Nov. 22, 1918	Canadian Exporter	"	12	8,390	198.	1,661,220	2.d., p., b. and f'c's'le.	"	11	May 3, 1919	Dec. 27, 1919	Mar. 6, 1920
36	Nov. 22, 1918	Canadian Inventor	"	13	8,390	198.	1,661,220	2.d., p., b. and f'c's'le.	"	11	July 24, 1919	Jan. 24, 1920	
37	Nov. 22, 1918	Canadian Prospector	"	14	8,390	198.	1,661,220	2.d., p., b. and f'c's'le.	"	11	Sept. 26, 1919	Feb. 24, 1920	
38	Dec. 10, 1918	Canadian Cruiser	Halifax Shipyards Ltd.	3	10,500	197.50	2,073,750	3.d., p., and f'c's'le.	"	12	Oct. 2, 1919		
39	Dec. 10, 1918	Canadian Constructor	"	4	10,500	197.50	2,073,750	3.d., p., and f'c's'le.	"	12	Oct. 6, 1919		
40	Mar. 31, 1919	Canadian Sealer	Nova Scotia Steel & Coal Co.	5	2,800	210.	588,000	S.d., p., b. and f'c's'le.	"	8½	Mar. 27, 1919	Oct. 8, 1919	Dec. 20, 1920
41	Mar. 31, 1919	Canadian Miner	"	6	2,800	210.	588,000	S.d., p., b. and f'c's'le.	"	8½	Mar. 31, 1919	Apr. 3, 1920	
42	Feb. 21, 1919	Canadian Reaper	Prince Rupert Dry Dock & Eng. Co.	1	8,390	198.	1,661,220	2.d., p., b. and f'c's'le.	"	11	Sept. 27, 1919		
43	Feb. 21, 1919	Canadian Thrasher	"	2	8,390	198.	1,661,220	2.d., p., b. and f'c's'le.	"	11	Oct. 20, 1919		
44	Jan. 23, 1919	Canadian Otter	British American Shipbuilding Co.	4	4,575	215.	988,625	S.d., p., b. and f'c's'le.	Bri. Corp.	10	Mar. 29, 1919	Apr. 13, 1920	
45	Jan. 23, 1919	Canadian Squatter	"	5	4,575	215.	988,625	S.d., p., b. and f'c's'le.	"	10	July 14, 1919		
46	Sept. 11, 1919	Canadian Farmer	Collingwood Shipbldg. Co., C'wood.	65	3,990	180.	713,200	Lake, s.d., p., b. and f'c's'le	Lloyd's	11	Sept. 3, 1919	Dec. 27, 1919	
47	Sept. 11, 1919	Canadian Observer	"	66	3,990	180.	713,200	Lake, s.d., p., b. and f'c's'le	"	11	Sept. 12, 1919		
48	Sept. 2, 1919	Canadian Pathfinder	Dominion Shipbuilding Co.	10	3,500	180.	630,000	Lake, s.d., p., b. and f'c's'le	"	11	Nov. 8, 1919		
49	Sept. 2, 1919	Canadian Engineer	"	11	3,500	180.	630,000	Lake, s.d., p., b. and f'c's'le	"	11	Nov. 8, 1919		
50	Sept. 18, 1919	Canadian Victor	Canadian Vickers Ltd.	77	8,390	170.	1,426,300	2.d., p., b. and f'c's'le.	Lloyd's	11	Dec. 10, 1919		
51	Sept. 18, 1919	Canadian Conqueror	"	78	8,390	170.	1,426,300	2.d., p., b. and f'c's'le.	"	11	Jan. 17, 1920		
52	Sept. 18, 1919	Canadian Commander	"	79	8,390	170.	1,426,300	2.d., p., b. and f'c's'le.	"	11			
53	Sept. 18, 1919	Canadian Leader	"	80	8,390	170.	1,426,300	2.d., p., b. and f'c's'le.	"	11			
54	Feb. 26, 1920	Canadian Racer	Midland Shipbuilding Co.	10	3,990	180.	713,200	Lake, s.d., p., b. and f'c's'le	Lloyd's	11			
55	Mar. 18, 1920	Canadian Highlander	Wallace Shipyards Ltd.	108	8,390	167.50	1,405,325	2.d., p., b. and f'c's'le.	"	11			
56	Mar. 18, 1920	Canadian Skirmisher	"	104	8,390	167.50	1,405,325	2.d., p., b. and f'c's'le.	"	11			
57	Mar. 13, 1920	Canadian Rover	Collingwood Shipbldg. Co., C'wood.	67	3,890	182.50	709,925	Lake, s.d., p., b. and f'c's'le	Lloyd's	11			
58	Mar. 13, 1920	Canadian Coaster	Collingwood Shipbldg. Co., Kingston	16	3,890	185.50	709,925	Lake, s.d., p., b. and f'c's'le	"	11			
59			Nova Scotia Steel & Coal Co.	8	2,800	190.	532,000	2.d., p., b. and f'c's'le.	"	8½			
60	Feb. 2, 1920	Canadian Challenger	Davie Shipbuilding & Repairing Co.	476	8,390	167.50	1,405,325	2.d., p., b. and f'c's'le.	"	11			
61	Feb. 26, 1920		Port Arthur Shipbuilding Co.	45	3,890	182.50	709,925	Lake, s.d., p., b. and f'c's'le	"	11	Mar. 30, 1920		
62	April 7, 1920	Canadian Transporter	J. Coughlan & Sons	20	8,390	167.50	1,405,325	2.d., p., b. and f'c's'le.	"	11			
63	April 7, 1920	Canadian Freighter	"	21	8,390	167.50	1,405,325	2.d., p., b. and f'c's'le.	"	11			

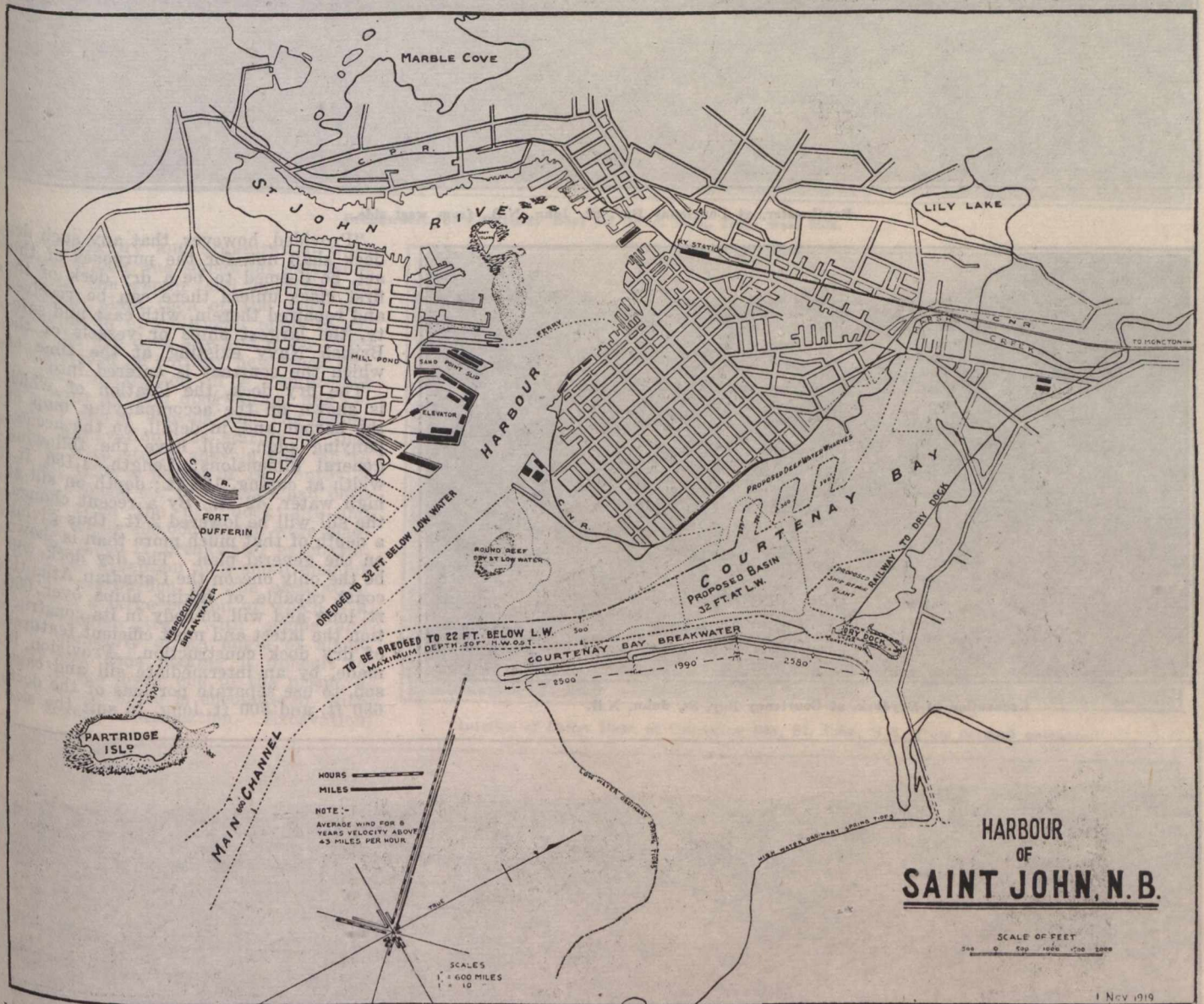
Harbor Development, and Drydock and Ship Repairing Plant Construction, at St. John, N. B.

The Dominion Government has under construction in Courtenay Bay, St. John, N.B., a large and comprehensive scheme of harbor development, the object of which is to cope with the increasing demands of Canada's large export and import trade. In conjunction with these improvements, there are also under course of construction a dry dock and ship repair plant.

By reason of its location on the Atlantic coast, with the shortest rail haul to the interior, and the terminus of two

	Exports.		
	Domestic.	Foreign.	Total.
Montreal	\$345,947,511	\$4,058,545	\$350,006,056
St. John	120,410,256	2,270,161	122,680,417
Halifax	51,818,554	1,577,925	53,396,479
Vancouver	37,507,511	2,182,651	39,690,162
	Imports entered for consumption.		
	Dutiable.	Free.	Total.
Montreal	\$166,248,134	\$60,954,584	\$227,202,718
Vancouver	35,889,159	10,568,604	46,457,763
St. John	20,529,659	4,675,787	25,205,446
Halifax	18,532,278	5,975,517	19,507,795
	Combined exports and imports.		
Montreal	\$577,208,774		
St. John	147,885,863		
Vancouver	86,147,925		
Halifax	72,904,274		

to St. John and the Canadian National Rys. Courtenay Bay is particularly well adapted to the further expansion in harbor and terminal facilities required by St. John. It has a considerable area, an advantage over the present main harbor, and it is free from objectionable currents that make navigation and berthing of vessels difficult. There is ample room for industrial, railway and terminal development at the head and on the east side of the bay. Easy access is afforded the Canadian National Rys. which



large transcontinental railway lines, St. John is Canada's chief winter port and, as regards volume of trade, is the second ocean port of Canada. The total values of exports and imports during recent years were as follows:

	Imports.	Exports.	Total.
1915	\$ 8,887,049	\$ 43,081,929	\$ 51,928,978
1916	11,057,022	119,490,813	130,547,840
1917	14,956,948	186,259,101	201,216,049
1918	16,787,150	200,783,647	217,570,797
1919	15,702,446	149,986,167	165,688,613
	\$67,350,615	\$699,601,662	\$766,952,277

Following is a comparison of the trade of Canada's four principal ports for the 12 months ended Feb. 29, 1920:—

The facilities to take care of the trade, in St. John's main harbor, are inadequate. During the recent winter there were as many as 17 ships at anchor awaiting berth space. Similar conditions in previous waters led to the consideration of the advantages of Courtenay Bay and to the final adoption of the scheme of improvements that is being carried on.

Courtenay Bay.—The accompanying map of St. John harbor shows the present deep water wharves and accommodation in the main harbor, and the location of Courtenay Bay and its relation

have lines on both sides, one of which terminates at the dry dock now under construction.

Two Contracts.—The works under construction are comprised in two contracts, known as the Harbor Works Contract and the Dry Dock Contract. These contracts were taken over in July, 1918, by the St. John Dry Dock & Shipbuilding Co., Ltd., which is incorporated under the Dominion Companies Act, the principals in which have been engaged for some years in harbor developments on the Great Lakes and in transportation and shipbuilding. The

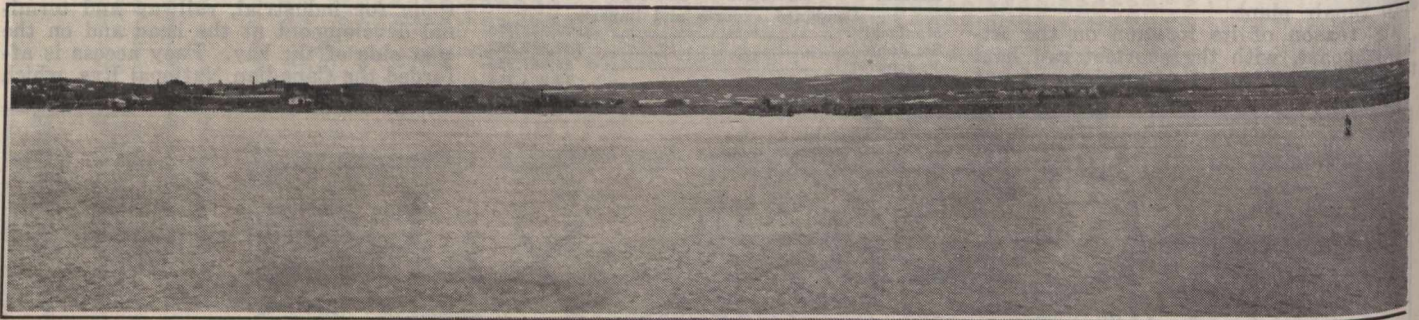
Harbor Works Contract provides for the construction of a breakwater, entrance channel and basin and deep water wharves, the location of which is shown on the accompanying plans. This contract includes the following works: 2,500 lin. ft. of breakwater extension. The dredging of an entrance channel 500 ft. wide, with 22 ft. depth at lowest water (maximum tide 28 feet), involving the removal of about 2,500,000 cu. yd. of sand, gravel and clay. The dredging of a large turning basin to a depth of 32 ft. at lowest water, requiring the removal

stones of from 2 to 25 tons cover the slopes. The last extension of 2,500 ft. has been under construction since Dec., 1918, and is now at its ultimate length and almost completed.

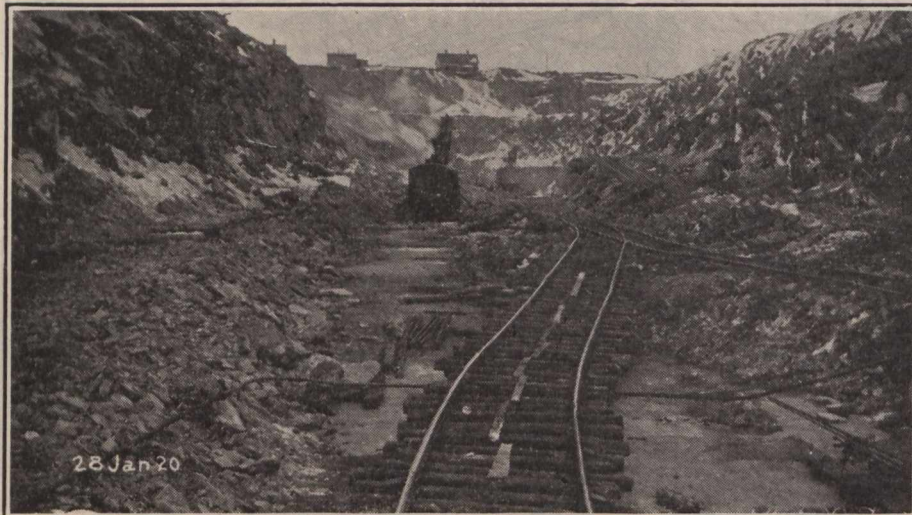
Entrance Channel and Basin.—Navigable access to Courtenay Bay will be afforded by an entrance channel 500 ft. wide, with a depth of 22 ft. at lowest water (maximum tide 28 ft.). With the range of tide that obtains, the depth in this channel at high water will vary from 43 ft. to 50 ft. The entrance channel enlarges into a turning basin, shown

Dock and Shipbuilding Co. has undertaken to build and operate a dry dock of the first class for naval and general purposes. The act specifies a first class dry dock as:

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



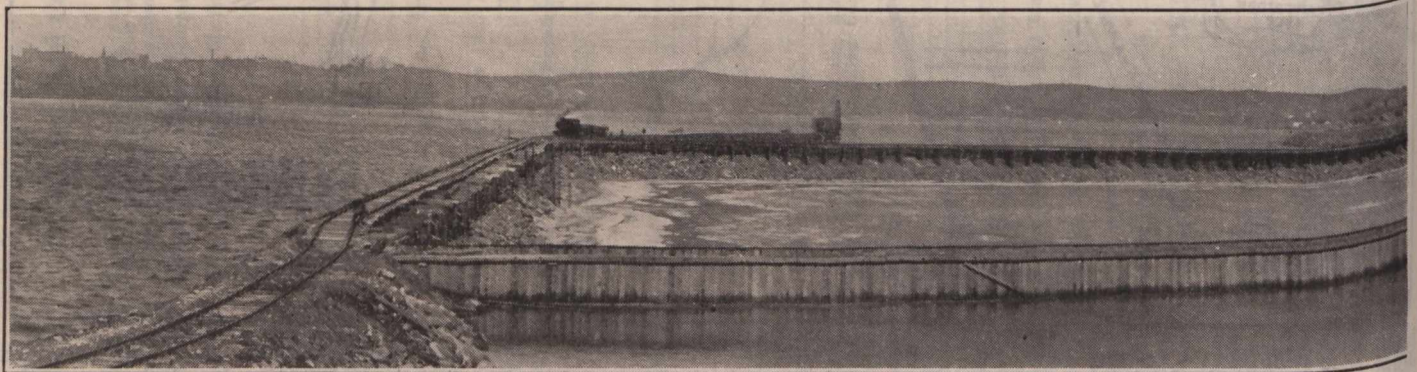
Breakwater, at Courtenay Bay, St. John, N.B., from west side.



Excavation of Drydock, at Courtenay Bay, St. John, N.B.

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

The dry dock, the location of which is shown on the accompanying map of the harbor and, in detail, on the accompanying plan, will have the following general dimensions: Length, 1,150 ft.; width at coping, 133 ft.; depth on sill at high water, 42 ft. By a recent change, the sill will be lowered 2 ft., thus giving a depth of that much more than is shown on the general plan. The dry dock will be the only one on the Canadian Atlantic coast capable of taking ships over 600 ft. long and will embody in its construction the latest and most efficient features of dry dock construction. Provision is made, by an intermediate sill and caisson, to use separate portions of the dock 650 ft. and 500 ft. long, to suit the size



Coffer Dam, at entrance channel to Drydock, Courtenay Bay, St. John, N.B.

of about 4,500,000 cu. yd. of sand, gravel and clay. The removal of some 140,000 cu. yd. of submarine rock, leading into the entrance to the dry dock. The construction of a series of deep water piers.

The breakwater is of the rubble mound type, 7,070 ft. long, with a top width of 20 ft., outer slope, 1 on 2 horizontal, and inner slope, 1 on 1½ horizontal. The outer end, or head, has both outer and inner slopes of 1 on 3 horizontal. Large

on the accompanying map, which will have a depth of 32 ft. at lowest water.

Deep Water Wharves.—On the west side of Courtenay Bay there will be built a series of deep water wharves, affording some 6,500 ft. of berth space, with a depth of 32 ft. at lowest water.

Dry Dock and Ship Repair Yard.—Under the terms of The Dry Docks Subsidies Act, 1910, and The Dry Docks Amendment Act, 1917, the St. John Dry

of ships to be accommodated. The inner and outer entrances will be closed by floating caissons, two of these being provided. The pumping equipment will consist of three 52 in. vertical centrifugal motor driven pumps, capable of unwatering the dock in 2½ hours. The dock will be equipped with a travelling crane capable of lifting 40 tons at a reach of one-half the width of the dock.

To the north of and immediately ad-

joining the dock, on a reclaimed area, there will be established an extensive ship repair yard which will include the following buildings: Main offices, boiler, engine and machinery shops; steel and brass foundries; joiner shop, plater and framer shops, blacksmith shop, pattern shop, stores and molding loft, power house.

The estimated cost of the dry dock is \$5,500,000, of which the ship repair equipment will cost \$1,100,000.

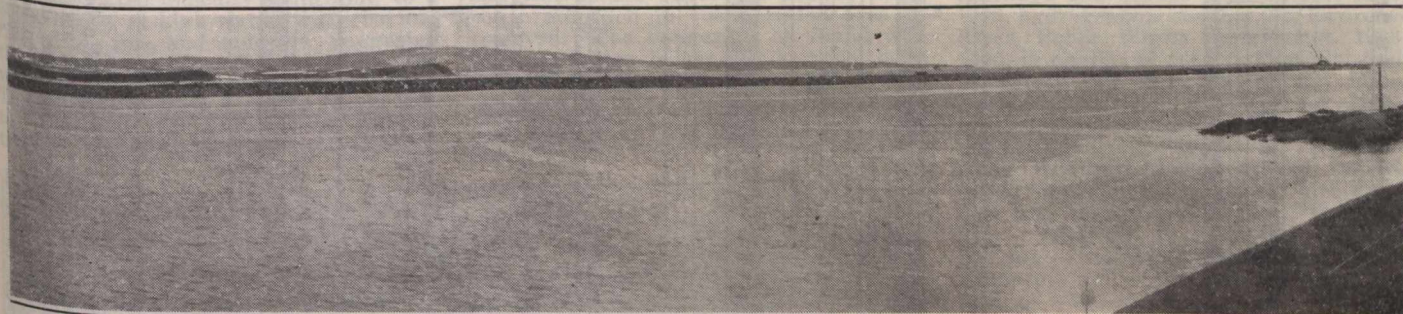
Progress of Work.—The contract for these works was awarded in July, 1918,

been reached over a considerable portion, is El.—21.5 (extreme low water-zero datum) and the coping level is El. +36.0, the most difficult problem was one of tracks and grades to get over the 57.5 ft. lift in a pit only 1,150 ft. long. This was accomplished by a switch-back along the south side of the excavation. The excavation is remarkably free from water, few springs having been encountered, and the pit is kept dry by intermittent pumping of a 4 in. centrifugal pump.

It is expected that the excavation will

and form an integral part of the lower north wall of the dock and will house in the three large submerged 52 in. centrifugal main pumps and the two 12 in. drainage pumps. All pumps will be direct electric motor driven. Power for operating all pumping equipment, cranes, shops and lighting, will be generated in a central power station, by three turbo generator sets, developing about 4,000 h.p., the equipment for which is on hand.

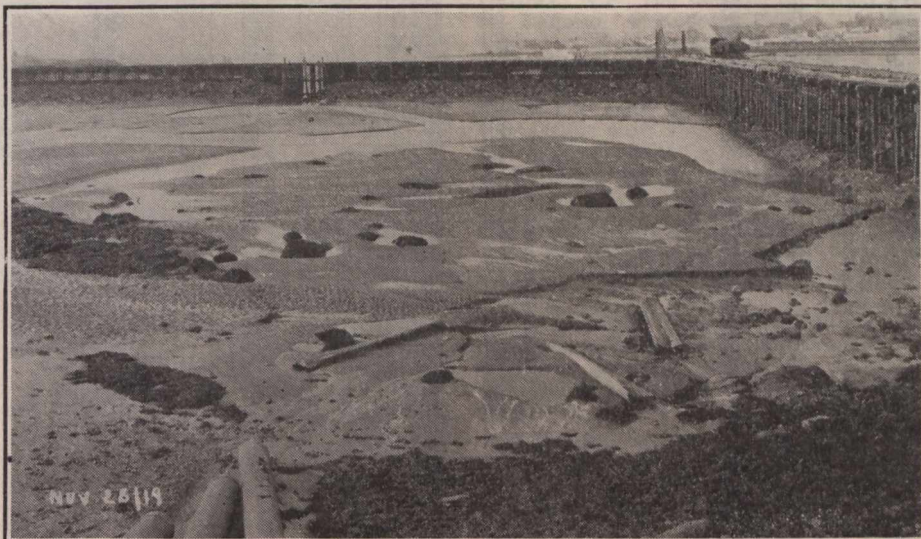
The work resulting from the dry dock excavation has been transported, in 6 and 15 yard dump cars, to the break-



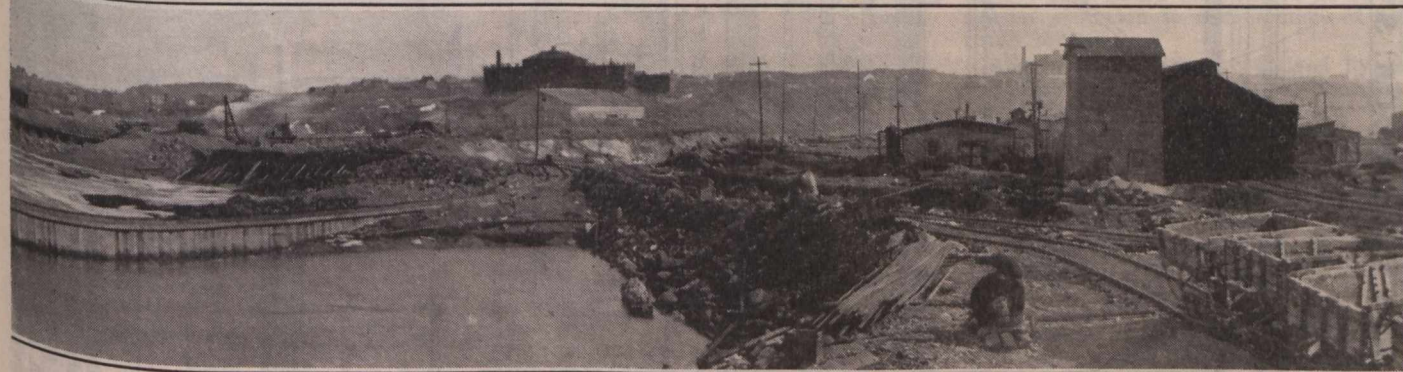
Breakwater, at Courtenay Bay, St. John, N.B., from west side.

and preparatory and organization work followed which was somewhat extensive, requiring the repair and outfitting of excavation plant then on the work and the taking in of additional plant to excavate the dry dock site and prism. This work involved an entirely new track layout, the installation of a compressor plant, with air line distribution, and repairs to steam shovels and car equipment. Excavation was started on Dec. 1, 1918, with steam shovels and, up to Mar. 31, 1920, a period of 16 months, a total of 575,000 cu. yd. of rock had been removed from the dry dock site and prism of which 490,000 cu. yd. were placed in the 2,500 ft. breakwater extension.

With the exception of a small amount of earth overburden, all the excavation is in rock, a large portion of which is a hard, greenish trap, with seams and faults, generally at an angle of about 45 degrees, thus making it difficult to drill. In the lower end of the prism, a carboniferous shale is encountered, with a 45 degree stratification. Excavation



Interior of Cofferdam, at Courtenay Bay, St. John, N.B., from drydock entrance.



Cofferdam, at entrance channel to Drydock, Courtenay Bay, St. John, N.B.

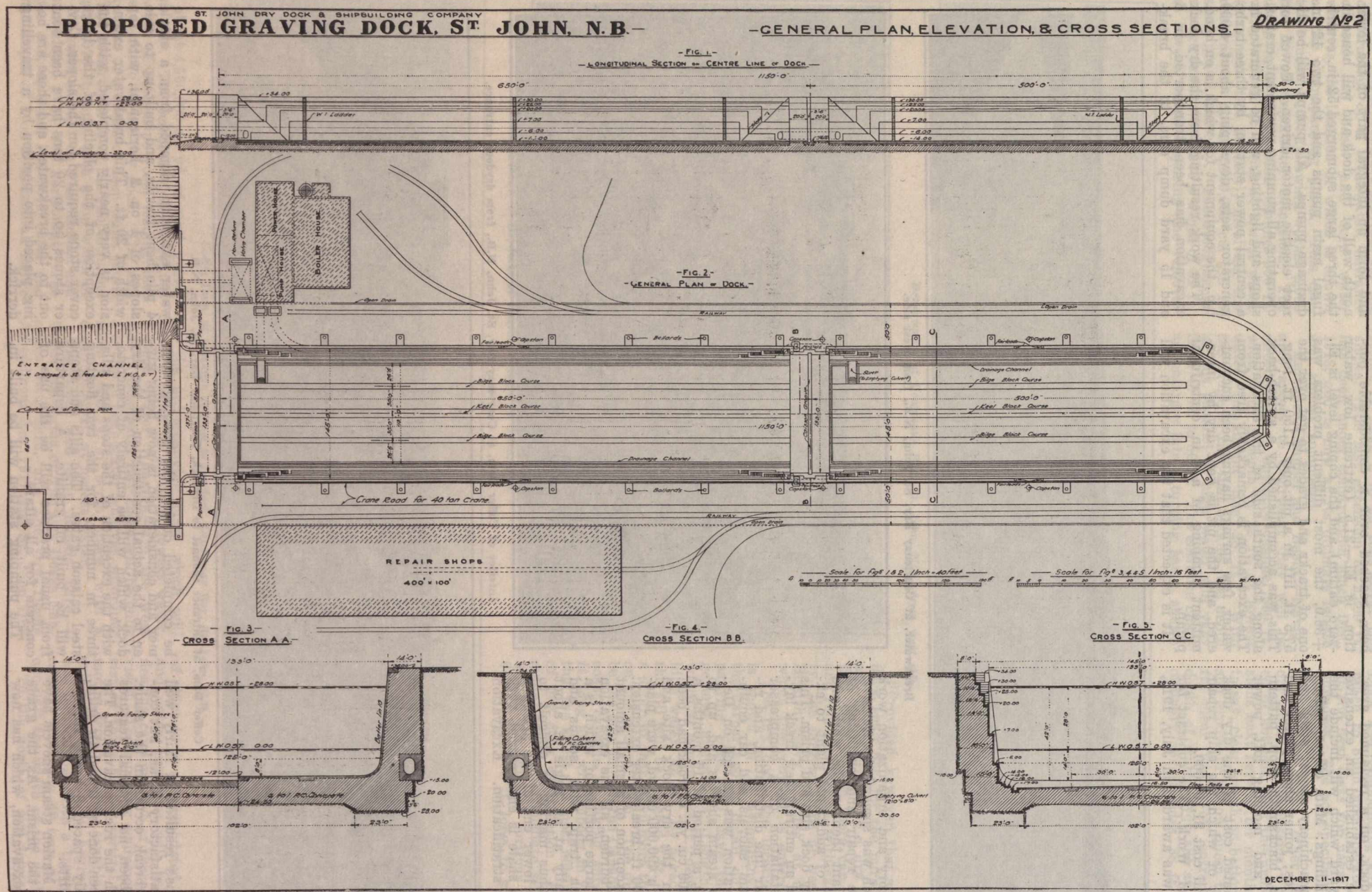
in the trap has resulted in fairly well defined and satisfactory break, but considerable overbreak occurs in the shale. There have been no unusual features connected with the rock excavation. The drilling has been done by tripod air drills, holes, generally spaced 8 to 10 ft., for 12 to 15 ft. lifts.

Three large Marion steam shovels have been used in the prism. As the grade depth of the excavation, which has now

be completed during the ensuing summer and consideration is now being given to the actual construction of the dry dock, which will be entirely of concrete, with the exception of the stops and sills, three in number, for the two floating steel caisson gates. The sills and stops will be built of granite. A departure from usual practice will be the use of concrete for all altars.

The pumping station will be built in,

water extension, dumped from a single 4 pile bent trestle, and built up to side slopes of 1 on 2 horizontal, with top width of 20 ft. This breakwater extension is very nearly completed, with the exception of the placing of the large cover stone required for the slopes. Cover stones up to 20 tons have been sent out to the breakwater, and these are being placed into position by a travelling derrick.



A 20 in. pipe line discharge hydraulic dredge was operated in the basin last year, the material being pumped 1,800 ft. to a spoil ground south of the break-water. At extreme low water the ma-

terial was pumped against a head of 36 ft. The accompanying map shows the site of the proposed ship repair plant, which will be an area reclaimed by means of

about 1,700,000 cu. yd. of material pumped from the excavation of the basin. The company will this ensuing summer have a large hydraulic dredge for this reclamation work. For dredging the entrance

channel a bucket ladder dredge has been bought and will be placed at work loading the dredged material into hopper scows to be towed to dumping ground. A very interesting engineering feature

of the whole work is the scheme that has been adopted to remove some 140,000 cu. yd. of rock in the immediate entrance channel to the dry dock. The grade of the excavation in this channel is El.—32, which, with a 28 ft. maximum tide, gives 60 ft. at highest water. The depth of rock at the entrance to the dock is 48 ft. and the rock dips below grade 500 ft. out from this point. The width of the entrance channel is 250 ft. The customary method of submarine drilling and blasting and dredging was at first considered for the removal of this rock, but the anticipated difficulty of drilling to a 60 ft. depth, at high water, with rise and fall, of the tide, and undertow, suggested the possibility of coffer damming the whole area and excavating in the dry. This scheme also appeared to assure better results in the excavation of foundations for the lay to and fitting out berths.

dam was completed in Dec., 1919, and the water let out at low tide period, the succeeding high tide being kept out by making a closure in a sluice left for that purpose. The sheet piling has been found to be tight, but leaks have developed at the inner end of both side walls, necessitating cutting off where these walls make contact with the bank. Unusually severe weather conditions this winter have interfered with further work on the cofferdam, but work will soon be resumed and no difficulty is anticipated in making a satisfactory closure. The crucial test of the cofferdam will be when the overburden in the enclosed area is removed. The danger to be found will be from water in sand and gravel beds coming underneath the sheet piling. Dependence is being placed on the continuity of certain beds of clay, which, it is expected, will form an impenetrable seal.

Ont.; D. L. White, Jr., Midland, Ont. The local staff at St. John consists of A. R. Dufresne, Chief Engineer and Manager; E. J. Cameron, Principal Engineer; V. S. Chestnut, B. Allen, J. T. Turnbull, engineer, F. M. Ross and S. M. Telfer, general office.

Alex. Ritchie Dufresne, B.A.Sc., C.E., Chief Engineer and Manager, was born at Ottawa, Dec. 18, 1872, and graduated in civil engineering at McGill University, Montreal, in 1896, since when his record has been as follows: 1896-1900, construction, St. Lawrence River canals, Railways and Canals Department; 1900-1903, hydrographic surveys, St. Lawrence River, Public Works Department, 1903-1906, in charge of construction, St. Andrews lock and dam, Red River, Man.; 1906-1910, District Engineer for Manitoba, Dominion Public Works Department, Winnipeg; 1910-1918, Assistant Chief Engineer, Public Works Department, Ottawa; 1918 to date, Chief Engineer and Manager, St. John Drydock & Shipbuilding Co., St. John, N.B. He is a member of the American Society of Civil Engineers and of the Engineering Institute of Canada.

The rock excavation is being done by the Bedford Construction Co., Ltd., of Halifax, N.S., the officers of which are: P. Pagano, President; V. J. Cavicchi, Vice President; and J. J. Herbert, Secretary-Treasurer. Carlo Carniel is Superintendent of the works in Courtenay Bay. The other portions of the work in connection with the main contracts are being done direct by St. John Drydock & Shipbuilding Co.

United States Shipping and Shipbuilding Notes.

The Atlantic Coast Shipbuilders' Association states that, exclusive of U.S. Shipping Board tonnage, U.S. shipyards had in hand recently 263 steel vessels of 1,250,573 gross tons for private account.

A U.S. Senate sub committee, on April 14, completed a merchant marine policy bill, containing a provision that merchant ships owned by the government shall be disposed of to private interests within 10 years. It also provides for a permanent shipping board of 7, instead of 5, members, which would be directed to devote special attention to development of new trade routes.

According to returns received by the U.S. Bureau of Navigation, merchant steel ship building on a commercial basis in the U.S. shows steady progress. On Jan. 1, shipyards were building, or under contract to build, for private ship-owners, 165 steel ships of 679,170 gross tons. On Feb. 1, the total had increased to 183 steel ships of 791,911 gross tons, and on Mar. 1, the total was 247 of 947,193 gross tons.

Esquimalt Dry Dock. We are officially advised that the Dominion Government has acquired a site for the construction of a dry dock at Skinners Cove, Esquimalt, B.C. The proposed drydock will be of the first class as specified under the Drydocks Subsidy Act and will have the following general dimensions,—length 1,150 ft., breadth 125 ft., depth 38 ft. It was anticipated that tenders for the construction of the dock would be invited about the end of April.

Shipping figures for the world, published recently in London, Eng., are reported to show that Canada comes first after the great powers.



Looking along top of Breakwater at Courtenay Bay, St. John, N.B.

A decision having been arrived at, a cofferdam, enclosing an area about 600 x 600 ft. has been built. The cofferdam consists of a single row of 6 inch B. C. fir, tongue and groove, sheet piling, driven from a substantial 4 pile bent trestle, with stone and earth fill on both sides. On the location of the outer cross wall of the cofferdam, there is an average depth of 45 ft. of silt, gravel, sand and clay, overlaying the rock, and the sheet piling is driven to an average penetration of 14 ft. in this material, fetching up in a bed of what appears to be stiff clay. From this it will be seen that contact has not been made with the rock. The general elevation of the ground surface within the enclosed area is El.+10 (10 ft. above lowest water). The coffer-

The Harbor Works Contract calls for the construction of a series of three deep water piers on the west side of Courtenay Bay, in the position shown on the accompanying map. Work on these has not been started.

The contracts call for completion of all works, with the exception of the deep water wharves, by July, 1922, and, based on the present rate of progress, the conditions in this respect will be fulfilled.

The Organization.—The St. John Drydock & Shipbuilding Co.'s officers are: Jas. Playfair, Midland, Ont., President; D. S. Pratt, Midland Ont., Vice President and Managing Director; Thomas A. Duff, Toronto, Secretary-Treasurer; J. B. Craven, New York, N.Y.; W. E. Phin, Hamilton, Ont.; W. J. Sheppard, Waubashene,

General Shipbuilding Matters Throughout Canada.

Bridgewater Shipping Co., Bridgewater, N.S., launched the knockabout trawler R. M. Symons, April 7. Her dimensions are,—length over all 126 ft., breadth 26 ft., depth of hold 10½ ft.

Canadian Vickers, Ltd., Montreal, is building two steel cargo steamships for Norwegian owners, each 400 ft. long, 52 ft. broad, 31 ft. deep and 8,300 d.w. tons. The first, the s.s. Tatjana, was launched April 24; the second, s.s. Loch Tay, will be launched early in May.

Canadian Vickers, Ltd., will complete, before the close of navigation this year, two steel cargo steamships, of 6,300 d.w. tons each, for the Norwegian-Amerika Line.

Collingwood Shipbuilding Co., Collingwood, Ont., has received an order from the Standard Oil Co., of New Jersey, for a steel self propelling ship, specially designed for carrying oil in bulk, on the River La Plata. Its length will be 170 ft., beam 35 ft., depth moulded to main deck 10½ ft., deadweight capacity 650 long tons.

Collingwood Shipbuilding Co., Kingston, Ont., intends building a 750 ft. drydock at Kingston, to be ready for business at the opening of the Welland Ship Canal, but as the canal may not be completed for five years, the building of the dry dock will not be started for probably two years, which would leave ample time to have it completed ready for operation concurrently with the opening of the new canal. Arrangements will have to be made with the City of Kingston to remove a portion of the waterworks pumping station from the site desired.

J. Coughlan & Sons, Ltd., Vancouver, B.C.—The first steamship built by this company for private owners, was launched Mar. 25, and named Braheholm by Mrs. S. D. Scott, President of the Women's Canadian Club. The keel was laid early in Dec., 1919, and was originally intended for use by a subsidiary company of the builders, but was sold to the Swedish-American-Mexican Line, Gothenburg, Sweden. She is of steel with cargo capacity of 8,800 tons, and is equipped with triple expansion engine, developing 3,000 i.h.p., for a speed of 11½ knots an hour. Her dimensions are,—length overall 427 ft., beam moulded 59 ft., depth moulded 28 ft. 9 in., draft 24 ft. 2 in.

J. Coughlan & Sons, Ltd. has been incorporated under the Dominion Companies Act, with authorized capital of \$3,000,000, and office at Vancouver, B.C., to take over the business and property of J. Coughlan & Sons, Ltd., incorporated under the British Columbia Companies Act, with power to build, own and operate drydocks, marine railways, shipbuilding plants, etc. The incorporators are: J. J. Coughlan, D. A. McDonald, A. C. Desbrisay, H. A. Bourne and E. M. Williams, Vancouver, B.C. The object of this Dominion incorporation is to place the company in a position to be able to build and operate a drydock under the Dominion Drydock Subsidy Act, it being necessary that a company in receipt of a subsidy shall be incorporated under the Dominion Companies Act.

Davie Shipbuilding & Repairing Co., Lauzon, Que.—Canada Steamship Lines, Ltd., which was a creditor of the Davie Co., for some \$600,000, has taken over the plant for a year, has guaranteed all outside liabilities, amounting to approximately \$2,500,000, and has taken a mort-

gage on the plant. It is said that if, by the end of the year, the Davie Co. is not able to make new financial arrangements, the Canada Steamship Lines will take over the plant. The directors are: J. W. Norcross, President; A. A. Wright, Vice President and Managing Director; Sir David Watson, Vice President; F. S. Isard, Treasurer; C. A. Barnard, K.C., F. H. Markey, K.C., and C. A. Sara. The other officers are: W. L. Murray, Secretary; L. H. Taylor, Assistant Treasurer; J. T. Boissinet, Assistant Secretary; G. D. Davie, General Manager.

The Davie Shipbuilding & Repairing Co. has received an order from Capt. A. Donaldson, Roberval, Que., for the steel framing for a steamboat 90 ft. long over all, for service on Lake St. John, between Peribonka and Roberval.

Foundation Co. of British Columbia, Ltd., Victoria, B.C., is offering for sale the whole or any part of its plant and equipment at its wooden shipbuilding yard on the old Songhees Reserve, comprising shipbuilding equipment, wood working machinery, machine tools, donkey engines, hoists, compressors, derricks, buildings, general lumber and fire equipment.

Freeman & Giffin, Isaacs Harbor, N.S., have completed the tern schooner Ena Moulton for R. Moulton, Burgeo, Nfld. Her dimensions are,—length 127 ft., beam 28.5 ft., depth 11.4 ft.

New Westminster Construction & Engineering Co., New Westminster, B.C. It is reported that a deal has been practically concluded for the sale of this company's shipbuilding plant at Poplar Island, to Haley and Christian. The yard is at present in possession of the latter parties, who are overhauling the s.s. Comox for service in the Mexican coasting trade. This steamship, it is stated, is being practically rebuilt, much of the hull plating, framing and decks being replaced and new engines installed. The work will, it is said, be completed during June. This shipbuilding plant is one of those which was equipped for the construction of wooden steamships during the war.

Prince Rupert Drydock & Engineering Co., Prince Rupert, B.C. The litigation between the Erb and Mullen interests in connection with the control of this property, have been concluded and an agreement made whereby Newman Erb, of New York, has acquired all the rights and interest owned by J. L. Mullen, of Pittsburgh, Pa., and his associates, for \$75,000. This gives him complete control of the lease of the drydock and shipbuilding plant at Prince Rupert, from the Grand Trunk Pacific Ry. We are advised Mr. Erb is negotiating with several oil companies in New York and Holland for the building of 20 oil tank steamships at an approximate cost of \$36,000,000. As soon as this matter is arranged, work is to start on the construction of 2 additional ways at Prince Rupert. These will have about 75 ft. centres, and the company expects to employ about 1,500 men. It will also build at least 200 houses each to accommodate a man, wife, and two children.

T. Thurston & Son, Port Stanley, Ont., launched a fishing tug, Demijohn, for H. Woolatt and J. Anderson of Windsor, Ont., Mar. 27.

Tidewater Shipbuilders Ltd., is reported to have closed down its shipbuilding plant at Three Rivers, Que., Apr. 19, on

account of a strike. Laborers are demanding 70c an hour, machinists 90c an hour, and double time for over time.

Ocean, Coast, Lake and River Steamship Officers for 1920.

The following appointments made by Canadian companies engaged in navigation, for their various steamships and tugs, have been reported to Canadian Railway and Marine World, in addition to those given in our last issue. The first column contains the names of the ships; the second those of the captains, and the third those of the chief engineers:

Butler Freighting & Towing Co., Victoria, B.C.		
Grainer	W. B. McCartney	A. Pike
Canada Steamship Lines, Ltd., Montreal.		
Cape Diamond	W. Gagne	O. Bonin
Cape Eternity	M. McKay	N. Crepeau
Cape St. Francis		A. Chayer
Cape Trinity		J. A. Boulanger
Modjeska	J. Henderson	C. Kniffen
Quebec	N. McGlenon	J. Matte
Rapids Queen		J. E. Kane
Three Rivers	A. Mondor	G. Gaynon, Jr.
Toronto	E. A. Booth	E. McDonald
White Star		T. Crossby
Canadian National Rys. Car Ferries Service, Moncton, N.B.		
Prince Edward Island	J. L. Read	J. A. Sutherland
Scotia No. 2	L. R. Maguire	J. Anderson
	A. Keating	J. Campbell
	W. Brophy	E. Morrison
Coast Steamship Co., Vancouver, B.C.		
Celtic	J. Finlay	T. Devereux
Clansman	R. W. H. Lloyd	G. Williams
Coaster	M. F. MacDonald	W. Snowdon
Coastwise Steamship & Barge Co., Vancouver, B.C.		
Amur	S. Snoddy	R. Middlemass
Anyox	W. F. Spormen	W. E. Tarbox
Baroda	A. Cameron	G. Nutter
Coquitlam City	H. Dexter	W. Allison
John Fairchild	A. McCartney	S. Bridge
Granby No. 1	J. E. Moore	J. Reid
Granco	H. A. Neddin	T. Hardy
Henry Villard	C. B. Hughes	C. Carlson
John C. Potter	E. Fulton	T. Hughes
Louisiana	R. B. MacRae	R. Bruce
Marmion	J. McNaughton	A. Findlay
Tartar	T. Thomson	E. Equist
Consolidated Whaling Corporation, Victoria, B.C.		
Black	W. Balcum	— Hornibrook
Blue	J. Anderson	— Martinson
Brown	K. Halvorsen	J. Brice
Green	S. J. Sivertsen	— Atkins
Orion	J. Andersen	A. Pepler
St. Lawrence	J. R. Arvesen	J. McCrae
White	J. Christian	J. S. Parker
William Grant	W. Heater	— Hampton
Grand Manan Steamship Co., Grand Manan, N.B.		
Grand Manan	W. W. Hersey	J. Cowie
Keenan Towing Co., Owen Sound, Ont.		
Keenan	G. Hindman	A. Kenny
Maritime Salvage & Wrecking Co., Montreal.		
Eleanor	J. Norman	A. McDonald
Maggie Marshall	J. A. Williams	J. Anderson
Province	T. Bare	J. Boyd
Sarnia City	J. Livingston	G. Eisner
Niagara, St. Catharines & Toronto Navigation Co., St. Catharines, Ont.		
Dalhousie City	G. W. Blunck	J. H. Brown
North Vancouver Municipal Ferries, North Vancouver, B.C.		
North Vancouver No. 2	R. R. Spicer	D. Becker
	W. Fatke	
North Vancouver No. 3	W. J. Spracklin	W. McLaren
	I. B. King	
Peninsula Tug & Towing Co., Wiaraton, Ont.		
Crawford	J. Preston	R. H. Isbester
Pennsylvania-Ontario Transportation Co., Cleveland, Ohio.		
Ashtabula	C. F. Meyers	S. M. Sylvester
La Traverse de Lachine Ltee, Lachine, Que.		
Hebron	J. B. Couillard	E. Marchand
Rob G. Weddell, Trenton, Ont.		
Aurelia	M. Palmeter	Jas. Norris
M. Sicken	B. Bowen	Jas. Robertson
Minitaga	H. Davidson	W. McInnes
Rob G. Weddell	J. Pratt	John Urquhart
West Vancouver Municipal Ferries, West Vancouver, B.C.		
Doncella	A. N. Edwards	J. A. Davis
Sonrisa	D. O. Lunn	R. W. Pine
West Vancouver No. 5	J. Watson	H. L. Thomson
Terminal Steam Navigation Co., Vancouver, B.C.		
Ballena	J. A. Cates	A. Pirie
Bowena	F. W. Gilbert	W. Williamson

Navigation Regulations for Lower Detroit River.

While the Livingstone channel is being widened, the following rules and regulations will go into effect on the opening of navigation, 1920, and will remain in effect until further notice. Rules 1 to 5, below, cover the regulations, which may be summarized as follows:—

Amherstburg channel is to be used by all downbound vessels, all upbound loaded freight vessels, all upbound light vessels with more than one vessel in tow, optional for upbound passenger vessels, optional for vessels under 100 gross tons and for vessels making local stops.

Livingstone channel is to be used by all upbound light vessels when alone or with but one light vessel in tow, optional for upbound passenger vessels, but such vessels are subject to the rules governing this channel, optional for vessels under 100 gross tons and for vessels making local stops; time interval of five minutes required between vessels, and no vessel to pass another between Bar Point light vessel and Ballards Reef.

All vessels using Amherstburg channel will enter or leave Lake Erie via channel to the east of Detroit River lighthouse. All vessels upbound for Livingstone channel will leave Lake Erie via the channel to the west of Detroit River lighthouse.

Upbound vessels using Livingstone channel will keep well to its westerly side where said channel unites with Amherstburg channel north of Detroit River lighthouse.

Upbound vessels leaving Livingstone channel must cross the path of downbound vessels in the vicinity of Ballards Reef. Downbound vessels have the right of way, but masters of both downbound and upbound vessels using Amherstburg channel should be unfailingly watchful for upbound vessels from Livingstone channel. All vessels in this locality should navigate under complete control and with the utmost caution.

Rule 1. No vessel of 100 gross tons or over shall navigate the Livingstone channel at a greater speed than 12 statute miles an hour between its junction with the Amherstburg channel at Ballards Reef and the Bar Point light vessel; nor the Amherstburg channel at a greater speed than 12 statute miles an hour between the south end of Bois Blanc Island and the North gas buoys at Ballards Reef, and where the width of either of these channels is restricted by improvements in progress the speed through such restricted width of channel shall not exceed 8 statute miles an hour.

Rule 2. No loaded freight vessel, whether alone or in tow, shall pass through Livingstone channel, in either direction. All downbound vessels, all upbound loaded vessels, and all upbound light vessels with more than one vessel in tow, shall pass through the Amherstburg channel and the channel to the east of Detroit river lighthouse. All upbound light vessels, whether alone or with a single vessel in tow, shall pass through the channel to the west of Detroit river lighthouse and through the Livingstone channel, except as stated in rule 3. Vessels under 100 gross tons, and vessels making local stops along these routes, are exempt from this rule.

Rule 3. Upbound passenger vessels may use either the Amherstburg channel or the Livingstone channel, but if they use the latter they shall be subject to the rules governing that channel.

Rule 4. All light draft passenger and freight vessels using the Amherstburg channel in either direction shall pass through the auxiliary channel (280 ft. wide and 14½ ft. deep), to the eastward of the improved channel at Ballards Reef.

Rule 5. No vessel shall pass another vessel bound in the same direction in that portion of Livingstone channel between its junction with Amherstburg channel at Bar Point light vessel and at Ballards Reef, nor at any other portion of either Livingstone and Amherstburg channels where the width of the channel is restricted by improvements in progress. Between any two upbound vessels navigating that portion of Livingstone channel from Bar Point light vessel to Ballards Reef, there shall be a time interval of not less than five minutes. Tugs without tows and vessels under 100 gross tons are exempt from this rule.

Mainly About Marine People.

W. A. Bowden, B.A.Sc., Chief Engineer, Railways and Canals Department, Ottawa, has been appointed Consulting Engineer to the Dominion Government, in connection with the reference, to the International Joint Waterways Commission, of the question of the further improvement of the St. Lawrence River, between Montreal and Lake Ontario, full particulars of which were given in Canadian Railway and Marine World for April, page 210.

C. Duguid, Naval Architect, Marine Department, has returned to Ottawa, from Great Britain, where he went on official business.

H. S. Durkee, heretofore in the Grand Trunk Pacific Ry. Freight Department, Vancouver, B.C., has resigned to enter Cunard Line Steamship Co.'s service as Contracting Freight Agent, at Vancouver.

Harold E. A. Hawken, Chief Registrar of Shipping, Marine Department, Ottawa, is acting as Assistant Deputy Minister of Marine, Cameron Stanton having been superannuated.

Commander B. L. Johnston, D.S.O., who was appointed Superintendent of the British Columbia, Pilotage District, at Victoria, Jan. 1, has resigned, and Charles Eddie, Supervising Examiner of Masters and Mates, Western Division, Vancouver, is acting until another appointment is made.

Francis King, M.A., General Counsel, Dominion Marine Association, addressed the London, Ont., Chamber of Commerce, Apr. 8, on the proposed legislation to place the control of inland shipping under the Board of Railway Commissioners.

Jas. Playfair, President, Great Lakes Transportation Co., and Mrs. Playfair, returned to Midland, Ont., recently, after spending some weeks in California.

H. B. Smith, President, Collingwood Shipbuilding Co. and Northern Navigation Co., has paid off the balance of mortgage on St. George's Anglican Church, at Owen Sound, Ont., as a thank offering for the conclusion of peace.

Cameron Stanton, Assistant Deputy Minister of Marine, after having been on leave in California since early in Dec., 1919, retired from the service, Mar. 31, and was placed on the superannuation list. He was born July 12, 1861, and received his first permanent appointment in the government service, June 1, 1879.

W. J. Stewart, Chief Hydrographer,

Naval Service Department, is granted an allowance of \$1,000 in the estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, for services performed during 1919-1920 in relation to questions under consideration by the International Joint Commission.

R. B. Teakle, General Manager, Canadian Government Merchant Marine, Ltd., left Montreal Apr. 5, for a business trip to the Pacific coast.

Wm. Tremblay has been appointed captain of the Naval Service Department's patrol boat Loos.

Capt. R. Winter, master of Canadian Government Merchant Marine's s.s. Canadian Raider, is reported to have been lost overboard, while on a voyage between Melbourne and Sydney, Australia.

Proposed Dominion Government Control of Ships Trading with Canadian Ports.

H. H. Stevens, M.P. for Center Vancouver, B.C., moved the following resolution in the House of Commons Apr. 14:—"That it is expedient to amend the Water Carriage of Goods Act, Statutes of 1910, chap. 61, by providing that the act shall also apply to ships carrying goods from any port outside of Canada, to any port in Canada, and to goods carried by such ships or received to be carried by such ships."

In introducing the motion, he stated that it has been the custom for owners and charterers to insert clauses in bills of lading, contracting themselves out of liability for damage to goods carried, and this practice has been the cause of considerable complaint, shippers contending that it has not been possible for them to obtain justice in regard to claims for damaged goods. He pointed out that responsible lines operating regularly between various ports, seldom try to contract themselves out of liability, but tramp ships of small lines, making irregular calls, simply picking up cargo and carrying it here and there as opportunity offers, frequently take advantage of these special clauses in their bills of lading, and cause loss to the shippers. After discussion, the motion was withdrawn, on the understanding that a bill will be introduced to cover the point raised.

Proposed Drydock at Louisburg, N.S.

—J. W. Maddin, K.C., one of the promoters of the proposed drydock at Louisburg, N.S., on his return there from Ottawa, recently, where he has been seeking a Dominion subsidy in aid of building the dock, is reported to have stated that although the company had not been refused a subsidy it could be gathered from the government's attitude that it will not subsidize any drydock for Nova Scotia, during this year, and probably not next year. He is also reported to have stated that it was not likely that his company would proceed with the construction of a drydock without subsidy.

Lists of Lights and Fog Signals. The Marine Department, Ottawa, has issued the following lists of lights and fog signals corrected to April 1. (1) On the Atlantic coast, including the Gulf of St. Lawrence, to head of ocean navigation. (2) West of Montreal and east of British Columbia. (3) On the Pacific coast, and British Columbia rivers and lakes

Halifax Graving Dock Questions Answered in the Senate.

The following questions were asked in the Senate April 6, by Senator Dennis, of Halifax, N.S., the answers given by Sir Jas. Loughheed:

As the government taken possession of the property of the Halifax Graving Dock Co., Ltd.? Answer. Yes.

If so, on what date, and was it by lease, tender, purchase, expropriation, or by order in council under the War Measures Act? Answer. Expropriated by order in council May 27, 1918.

Has any sum been paid for or on account of the property, and if so how much and on what date or dates? Answer. No.

Is the Halifax graving dock and adjunct ship repairing plant being operated by any department of the government? If so, for how long has it been so operated? Answer. No.

If not now operated as a public work by the government, has it been rented, sold, loaned, or given to a private company? Answer. Leased to Halifax Shipyards, Ltd.

If so (a) on what date, (b) on what terms and conditions, and (c) for what period? Answer. (a) Order in council June 10, 1918; (b) Annual rental of \$62,500. The company agree and bind itself to buy the dock property and plant outright, by giving notice to that effect at any time during the term of the lease, for \$1,250,000; (c) For one year computed from June 24, 1918, but in case notice is not given within the year then the lease shall continue from year to year, upon the same terms and conditions, until such notice is given.

The name of the private company to which the Halifax graving dock property has been so transferred, its capitalization, and the names of its directors. Answer. Halifax Shipyards, Ltd (b and c) No information in departmental records.

How much, if anything, has been paid to Mr. 1, 1920, by said private company on account of the rental, or purchase, or for the use of said graving dock property? Answer. \$96,750 rental.

The amount paid by the government to the Halifax Graving Dock Co. for its property at Halifax, taken possession of by the government, and if nothing, the reason for withholding payment; and has any effort been made, and if so, what, to effect an amicable settlement with the Halifax Graving Dock Co.? Answer. Nothing paid; an offer of \$1,100,000 was made for the property, but refused, when proceedings to expropriate were instituted.

The number of square feet of land and land covered with water taken by the government from the Halifax Graving Dock Co. on (or in connection with) which the dock and plant was located. Answer. 7.5 acres.

Was any land, and land covered with water, additional to that taken from the Halifax Graving Dock Co., sold, leased, or given to Halifax Shipyards, Ltd.? If so (a) how many square feet, (b) was it acquired by purchase thereof to the government, and (d) if sold or leased to Halifax Shipyards, at what price? Answer. Yes; (a) 38,280 ft.; (b) By expropriation; (c) \$11,484 was offered the Lorne Yacht Club for this property but refused; (d) Halifax Shipyards, Ltd., to pay 5% on award and costs, if any, with right to purchase.

Has the government expended any

money upon the property taken from the Halifax Graving Dock Co., or upon any land or other property acquired in connection therewith, since its acquisition? If so, state the amount so expended and the nature of the work done. Answer. The government has paid out 53,960 for the erection of buildings, wharves, etc., to replace those destroyed by the explosion. This amount includes \$23,485.93 worth of materials handed over to Halifax Shipyards, Ltd., which is to be reimbursed by that company, thereby leaving government expenditure at \$30,474.07.

Has the government been asked to make any further expenditures in this connection? If so, how much, and does it propose to do so. Answer. No.

Is the government to be fully reimbursed for all its expenditures for the Halifax graving dock property and in connection therewith by Halifax Shipyards, Ltd., and if not all, what proportion and upon what conditions; and whether or not any deferred payments carry interest charges? Answer. Answered by answers to previous questions.

United States Navigation Wages on the Great Lakes.

The following agreement was drawn up Apr. 6, at Detroit, Mich., by the Great Lakes Passenger Lines Association and agreed to by its members and also by some of the independent passenger steamship lines, with the firemen, oilers, water tenders and seamen's unions:

"There shall be an advance in wages to the members of the said unions employed on boats of the Passenger Steamboat Lines of 25% over last year's scales, and the said unions shall have an opportunity to put into operation an 8-hour day, as to their members, if it can be done without the employment of additional men, and without additional expense to the passenger steamboat lines, the same to be under the supervision and subject to the approval of the officers of the ships, the said officers to have orders to co-operate in establishing said 8-hour day; provide, however, that it is understood that on certain steamers one or two additional coal passers may have to be employed."

We were advised April 14 that the agreement had not then been assented to by the unions.

C. G. S. Champlain.—The Minister of Railways stated in the House of Commons, Mar. 24, in answer to questions, that five tenders had been received for the purchase of this ship, viz.: Gulf of St. Lawrence Shipping & Trading Co., Quebec, Que., \$61,050; R. T. Sainthill and Co., North Sydney, N.S., \$55,000 (subject to inspection and approval, and received after other tenders opened); Thomas A. Duff, Toronto, \$31,500; J. C. Hearn, Quebec, Que., \$4,500; W. J. Thomson, Quebec, Que., \$4,250. No sale of the ship had been made up to that date (Mar. 24). The conditions of payment are cash.

C.P.R. Steamships Sold and Bought.—The C.P.R. annual report for the calendar year 1919 states that, during the year, the following steamships were sold, viz.: Prince George, Princess May, Princess Margaret, Monmouth and Virginian. The steamships War Beryl and War Peridot, each 10,500 d.w. tons, were bought.

Shipbuilding and Ship Channel Estimates for 1920-1921.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items under Public Works, chargeable to capital, Marine Department:—

River St. Lawrence ship channel, maintenance and operating dredging fleet	\$ 478,000
Maintenance and improvements of Sorel shipyard, shops and offices, as well as operating expenses	65,000
Government shipbuilding programme, amount required for the construction of ships in accordance with government programme	20,000,000
Construction of icebreaking steamship, to be used on River St. Lawrence	2,000,000
	\$22,543,000

Steamship Merger Suits.—Two actions have been entered in the Superior Court at Montreal in connection with the formation of Canada Steamship Lines, Ltd., a few years ago. One of these is by James Playfair, President, Great Lakes Transportation Co., Midland, Ont., who claims \$511,725, and the other by James Carruthers, formerly President Canada Steamship Lines, Ltd., for \$168,283, the defendants in each case being W. Grant Morden, M.P., London, Eng., and C. A. Barnard, K.C., Montreal. The plaintiffs claim that in 1912 and 1913 the defendants incorporated a company known as Canada Transportation Lines, Ltd., changed subsequently to Canada Steamship Lines, Ltd., that plaintiffs were individually large stockholders of the Richelieu & Ontario Navigation Co. Ltd., that they were induced to use their influence with other stockholders, to consent to the transfer of their holdings to the new company, and that they (plaintiffs) were to receive a certain percentage on their holdings in the R. & O. N. Co. The plaintiffs claim that they performed their share of the contract, but that defendants failed to carry out the transfer of the shares in the new company as agreed, and they now sue for the transfer of the shares and payment of accrued dividends.

The s.s. War Isis, which was built by the Port Arthur Shipbuilding Co., Port Arthur, Ont., in 1918, for the British Government, under order from the Imperial Munitions Board, was offered for sale by auction in London, Eng., recently, to any person entitled to own a British vessel. She is of steel, single deck type, about 2,231 tons gross, 1,343 tons registered and 3,230 tons d.w., on about 20 ft. draft. She was built under Lloyd's special survey and classed A1. She is equipped with triple expansion engines, and two single ended boilers, for a speed of about 9½ knots an hour, on 24 tons of fuel. The hull is divided into 2 holds, with 4 hatches. Her dimensions are,—length 251 ft., breadth 43.8 ft., depth 21.6 ft.

British Columbia Pilotage.—A press report states that a message was received in Vancouver early in April from the Deputy Minister of Marine to the effect that unless the B.C. pilots accept the government terms regarding wages and working conditions, open pilotage will become effective on the British Columbia coast, May 6. The pilots are asking a minimum of \$325 a month, including 5% superannuation, and the valuation of their equipment to be settled by arbitration. In addition they ask their fare, including room and board, when traveling to or from pilotage duty.

Atlantic and Pacific Ocean.

The Cunard Steamship Co. has announced that its Atlantic steamships will call at Halifax, N.S., on their westward voyage, making one call a month, until the end of September.

Furness, Withy & Co. announce the inauguration of a steamship service between Montreal and Sweden, on the reopening of St. Lawrence navigation, the s.s. Gunborg making the first sailing.

The Red Star Line announces the commencement of a steamship service between Montreal and Antwerp, Belgium, the first sailing to take place early in May. The steamships Aledo and Chalenger, which will be used in the service, are on their way from Antwerp.

Elder Dempster and Co.'s new steamship service between Canada and the west coast of Africa, will be commenced with the s.s. Gaboon, leaving Montreal early in May, calling at Dakar, Freetown, Sekondi, Accra, Lagos, and other ports should sufficient inducement offer.

The British War Office s.s. Petrel has been transferred from the Canadian to the British register. She was built at Port Richmond, N.Y., in 1915, and is screw driven by engine of 65 h.p., her dimensions being,—length 123.7 ft., breadth 26.3 ft., depth 15.3 ft., tonnage 504 gross, 367 registered.

The White Star Lines' s.s. Megantic arrived at New York, Apr. 15, via the Panama Canal, from Australia, and sailed for Liverpool, Eng., Apr. 21, having completed all her war transport service. On her arrival in England, she will be put on the Canadian route again and is expected to sail for Montreal about May 8.

Canadian Pacific Ocean Services Ltd. has sold the s.s. Virginian to Swedish interests. She was built at Glasgow, Scotland, in 1905, for the Allan Line Steamship Co., and is screw driven by engines of 12,000 i.h.p. Her dimensions are,—length 520.4 ft., breadth 60.3 ft., depth 38 ft.; tonnage 10,757 gross, 6,827 registered.

The Swedish-American Line, Ltd., and the Trans-Atlantic Steamship Co. have arranged to commence an ocean service between Montreal and Swedish ports, on the reopening of St. Lawrence navigation. It is expected that the first sailing will be early in May, and that other sailings will be made at intervals of three weeks.

The s.s. War Charger, one of the steel steamships built by J. Coughlan & Sons, Vancouver, for the British Government, under orders from the Imperial Munitions Board, and sold recently to Greek parties for, it is reported, \$1,800,000, has, since 1918 been in service on the Pacific and Atlantic Oceans and the Mediterranean Sea.

Canadian Pacific Ocean Services' s.s. Empress of Canada will, it is announced, be launched at Govan, Scotland, about Aug. 17, and it is anticipated that she will be completed and ready to sail from Liverpool during March, 1921, for Vancouver, B.C., when she will be placed in the trans-Pacific service. She will be 644 ft. long, by 77 ft. beam, and approximately 22,000 tons. She will be equipped with all the latest improvements, including gymnasium, swimming baths, dark rooms for photography, etc., and the whole promenade deck will be given up to social and amusement purposes.

Canadian Pacific Ocean Services, Ltd is booking through passages to various

points, until recently in the war area, including Hamburg, Danzig, Vienna, Antwerp, etc. Passengers for Hamburg must have passports vised by the Swiss Consul, representing German interests; those to Danzig must hold Polish passports, no visa being necessary. Passengers to Vienna, Buchs, Havre and Antwerp must be booked via Liverpool, or by the direct continental service. Germans must apply for passports to nearest Swiss Consul, and Austrians and Hungarians to the nearest Swedish Consul, but when the destination is Buchs or Vienna, both French and Swiss visas are required, and for Antwerp a Belgian visa also. Germans booking through France or Belgium must appear personally before the nearest French or Belgian Consul to secure visas. The first of the company's sailings on the St. Lawrence route this year will be made by the s.s. Victorian from Quebec, May 7, followed by the s.s. Corsican from Montreal, May 8.

Maritime Provinces and Newfoundland.

The s.s. Edmund Donald is reported to have been bought by St. John's, Nfld., parties for service on the St. John's-Halifax-Boston route. The Edmund Donald was formerly named David C, and was built at Shad Bay, N.S., in 1919.

A bill will be presented in the New Brunswick Legislature shortly, to enable the City of St. John, N.B., and the City and County of St. John municipality, to issue bonds to buy, or build a ferry steamship, to be operated between In-diantown and Pleasant Point.

Eastern Steamship Line, Inc., announces, that until the International Line service is resumed between Boston, Mass., and St. John, N.B., miscellaneous freight shipments will be handled by the s.s. North Land, to Yarmouth, N.S., and thence by the s.s. Keith Cann to St. John, giving a weekly service.

The s.s. Robert G. Cann, owned by Hugh Cann & Sons, Yarmouth, N.S., which grounded at the entrance to Canso harbor during March, was released about the end of that month by the Atlantic Salvage & Wrecking Co.'s s.s. La Canadienne, and towed into Canso for temporary repair, to allow her being taken to Halifax, where permanent repairs were undertaken.

The French s.s. Barr was destroyed by fire at Dartmouth, N.S., Apr. 17. She was a wooden ship of 1,500 tons, valued at approximately \$400,000, and is regarded as a total loss. She was built recently by the National Shipbuilding Corpora-

tion, Three Rivers Shipyards Division, Three Rivers, Que., and was to have sailed from Halifax for Newport, Eng., Apr. 19.

The master of the sealing steamship Terra Nova has entered action, in Newfoundland, against members of his crew, for a breach of the Merchant Shipping Act, in refusing to remain on the sealing grounds longer than the time provided for when they signed articles. Generally, the sealing season has been somewhat of a failure, the catch being exceedingly poor, being less than 35,000 seals for nine ships. It was hoped to better the catch by making a longer stay on the sealing grounds, but the crews refused.

Province of Quebec.

The Dominion Public Works Department has received tenders for repairs to dredge no. 1 (Quinlan & Robertson), which is lying in the Montreal dry dock.

An order in council has been passed disbanding the Quebec Harbor Commission, following on the resignation of the chairman, Hon. D. O. L'Esperance, and providing for the constitution of a new commission. It is reported that Sir David Watson will be chairman, and General Tremblay and A. S. Gravelle, members, of the new commission.

The St. Lawrence channel was reported to be practically clear of ice from the Victoria Bridge, Montreal, to the sea, Apr. 12, and it was expected that the Marine Department would commence laying buoys between Montreal and Quebec during the third week of April. The department's steamships Dollard and Shamrock, with their attendant scows, and steam barges, were being held at Sorel in readiness for the work.

The longshoremen at Montreal have made an agreement with the Shipping Federation of Canada for this year, providing for an increase of 10c an hour in wages for day work, and time and a half for night work. The working day consists of 10 hours, with a 9 hour shift at night. For day workers the new rate is 70c an hour. For handling nitrate and bulk sulphur the rate is 85c an hour, and also for grain trimming and packing. Coal handling is to be paid at the rate of 75c an hour.

Trawler Sales.—The Anderson Co. of Canada has sold the Admiralty trawlers T. R. 41 to Percheries et Armements La Rachelle Ocean, Havre, France, and the T. R. 44 to Anglo-Newfoundland Development Co., Grand Falls, Nfld. The first named trawler was sent to Boulogne, France, in January, as an exhibit ship.

Vessels Added to and Deducted From the Canadian Register During January and February, 1920.

	Steam.		Sailings.	
	No.	Tonnage— Gross. Registered.	No.	Tonnage— Gross. Reg'd
Added.				
Built in Canada	15	18,622 11,897	17	3,070 2,875
Purchased from foreigners.....	8	9,125 6,142	6	3,157 3,044
Transferred from United Kingdom.....	2	9,133 5,332	—	—
Transferred from British Possessions	2	470 205	—	—
New registers	4	179 107	3	604 604
Totals	31	37,529 28,183	26	6,881 6,523
Deducted.				
Wrecked or otherwise lost.....	10	4,828 2,932	47	5,215 4,705
Broken up or unfit for use.....	22	1,094 683	51	2,081 2,064
Sold to foreigners.....	5	14,004 9,076	2	440 440
Transferred to United Kingdom.....	2	793 459	—	—
Transferred to British possessions.....	2	650 560	6	1,147 951
New registers	4	634 428	2	43 40
Totals	45	21,498 14,138	108	8,926 8,200

Ontario and the Great Lakes.

The Welland Canal was opened for traffic Apr. 19.

The Sault Ste. Marie canals were opened for traffic Apr. 19, the s.s. Harvester being the first ship to lock through.

A Dominion order in council has been passed approving regulations for operation of ferry service across the Niagara River, between Fort Erie, Ont., and Buffalo, N.Y.

An action brought by F. Torno to determine the ownership of the s.s. Chicora, formerly owned by Canada Steamship Lines Ltd., was dismissed at Toronto, the plaintiff having to pay costs.

The name of the Ontario Government's s.s. Captain Visger, registered at Kingston, no. 137,983, and operated by the Ontario Game and Fisheries Department, has been changed to Gray Bird.

The Detroit and Windsor Ferry Co. is being asked by the Windsor Council for a more adequate service, and if some improvement is not made, it is intimated that a municipal ferry line will be started.

The s.s. H. M. Pellatt, which, as announced in our last issue, has been sold by Canada Steamship Lines, Ltd., to Belgian parties, is now owned by the Societe Belge d'Arment Maritime, Antwerp, Belgium.

A committee representing the Rochester, N.Y., chamber of commerce, has asked Canadian Steamship Lines, Ltd., that steamships running between Hamilton, Toronto, Kingston, and Montreal, call at Rochester, each way.

Canada Steamship Lines, Ltd., has changed the names of its steamships, Murray Bay, Rochester, Syracuse, and St. Irene, to Cape Diamond, Cape Eternity, Cape Trinity and Cape St. Francis, respectively.

A press report stating that the Northern Navigation Co. will dock its steamships at Point Edward this year, instead of at Sarnia, is to some extent misleading. The company has used Point Edward as a terminal for its steamships since 1913, they only going to the Sarnia dock occasionally. The company calls its terminal, Sarnia, (Point Edward dock).

The Dominion Government steamships Grenville and Lambton arrived at Parry Sound, Apr. 20, from Midland, thus opening navigation between these points. The Great Lakes Transportation Co.'s s.s. Glenorchy cleared from Goderich on the same date for Cleveland, Ohio, to load coal. Considerable ice was encountered between Midland and Parry Sound, but Goderich harbor was reported to have been clear of ice for several days.

The Great Lakes Transportation Co.'s s.s. Glenfoyle, registered at Midland, Ont., has been removed from the Canadian register, and her register closed, she having been lost while in Admiralty service. She was built at Londonderry, Ireland, in 1913, and was screw driven by engine of 97 h.p., her dimensions being,—length 250 ft., breadth 42.5 ft., depth 17.4 ft.; tonnage 1,680 gross, 1,051 registered.

The s.s. Empress, owned by the Central Railway Co. of Canada, has been sold by the receiver for the company to W. H. Dwyer, Ottawa, Ont. She was built at Montreal, in 1873, and was originally named Peerless. She was rebuilt in 1886, when she was renamed Empress. Her dimensions are,—length b.p. 185 ft. 3 in., breadth moulded 27 ft. 6 in., depth

moulded 16 ft. 1 in. She is paddle wheel driven by engine of 152 n.h.p.

The acting Minister of Public Works is reported to have stated to a deputation from London, St. Thomas, Elgin and Middlesex, Ont., Apr. 15, that the deepening and widening of the outer harbor at Port Stanley will be commenced as soon as possible, the programme including extensive dredging and the removal of the submerged east pier, which has been a menace to navigation there for some years.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above mean sea level for March as follows:—Superior, 601.92; Michigan and Huron, 580.00; St. Clair, 574.00; Erie, 570.85; Ontario, 245.05. Compared with the average March stages for the past 10 years, Superior was 0.28 ft. above; Michigan and Huron, no change; Erie, 0.90 ft. below, Ontario 0.62 ft. below.

The Northern Navigation Co.'s s.s. Noronic is to be taken to Detroit, Mich., May 1, where she will be utilized as an hotel until June 9, when she opens her summer service by taking members of the Detroit Board of Commerce on their annual lake trip. If the Noronic is a success as an hotel in the early part of the season, the company will probably again place her at Detroit, for similar purposes, from the close of the summer season until the end of November.

Canada Steamship Lines, Ltd., which, as announced in a previous issue, has bought the steamships Nipigon and Wyoming from U.S. owners, has transferred them to the Canadian register, the former under the name of Maplehill and the latter as Wyoming. The Maplehill was built at St. Clair, Mich., in 1883, and is screw driven by engine of 79 h.p., her dimensions being,—length 194.2 ft., breadth 33.9 ft., depth 13.7 ft., tonnage 925 gross, 560 registered. The Wyoming was built at Buffalo N.Y., in 1887, and is screw driven by engine of 109 h.p., her dimensions being,—length 250.4 ft., breadth 40.1 ft., depth 14.6 ft.; tonnage 1,492 gross, 911 registered.

It is reported that Belleville business men are negotiating with Canada Steamship Lines, Ltd., for the purchase of the s.s. Brockville, to be operated in passenger service between Belleville and Montreal, during the forthcoming season. The s.s. Brockville has an oak hull and was built at Toronto in 1898. Her dimensions are,—length 105 ft., breadth 21 ft. 5 in., depth 5 ft. 7 in., tonnage 191 gross, 88 registered. She is equipped with fore and aft compound engine with cylinders 9 and 18 in. diam., by 14 in. stroke, 140 i.h.p., at 165 r.p.m., supplied with steam by one firebox boiler 4 ft. 9 in. diam. by 8 ft. long, at 165 lb., by Polson Iron Works Ltd., Toronto.

The s.s. Oceanica, has been bought from U. S. owners by W. Ziff, Montreal. She was owned formerly by Tonawanda Iron and Steel Co., Tonawanda, N.Y., and has an oak hull, with diagonal strapping on the frames, steel boiler house, steel arches, bow sheathed for navigation in ice, windlass between decks, with no efficient bulkhead abaft. She was built at West Bay City, Mich., in 1881, when she was named Sevona. She underwent considerable repairs in 1913. Her dimensions are,—length b.p. 263 ft., breadth moulded 37¼ ft., depth moulded 21 ft., tonnage 1,409 gross, 1,241 net. She is equipped with fore and aft compound engines, with cylinders 27 and 50 in. diam. by 40 in. stroke, 600 h.p., at 80 r.p.m., supplied with steam by two firebox boilers at 95 lb.

The Kingston Navigation Co. is being formed at Kingston, Ont., by a number of members of the Board of Trade, for the operation of a steamship between Kingston and Ogdensburg, N.Y., during the summer. It is stated that the s.s. St. Lawrence has been bought from Canada Steamship Lines, Ltd., and that she will be transferred from U.S. to Canadian register. She was built at Clayton, N.Y., in 1884, and is of composite construction, of the single deck type, with the following dimensions,—length b.p. 154 ft., breadth moulded 21 ft., depth moulded 7 ft., tonnage 312 gross, 188 net. She is equipped with beam condensing engine having cylinder 32 in. diam. by 72 in. stroke, 350 i.h.p., at 38 r.p.m., supplied with steam by a single fire box boiler 8 ft. diam. by 16 ft. 2 in. long, at 87 lb.

The s.s. Viking, which was bought some time ago by interests associated with the Mathews Steamship Co., Toronto, from U. S. owners, has been transferred to the Canadian register, and to Mathews Steamship Co.'s ownership, under the name of Cylaton. She was built at Buffalo, N.Y., in 1889, and is a steel ship of the well deck type, with double bottom for watertight ballast, 3 watertight bulkheads, steel boiler house, steam pump wells, electric lighting, and hatches spaced 24 ft. centers. Her dimensions are,—length b.p. 217 ft., breadth moulded 37 ft., depth moulded 18 ft. She is equipped with fore and aft compound engines, with cylinders 23 and 48 in. diam. by 42 in. stroke, 365 i.h.p. at 85 r.p.m., supplied with steam by two firebox boilers, each 8½ ft. diam. by 14 ft. long, at 125 lb.

Dredging operations are being carried on in Toronto harbor by Canadian Stewart Co. in connection with the harbor improvements. This necessitates the maintenance of a pipe line across the western entrance channel, from the opening of navigation until about May 21, with the exception of such days as weather conditions prevent the use of the eastern entrance channel. In the event of a heavy easterly wind making the approach through the eastern entrance difficult, the pipe line will be broken temporarily to provide an opening for vessels at the western entrance, the harbor master deciding as to the necessity for such break. Signals, for the use of the western entrance during heavy weather, are 2 long and 2 short blasts of the whistle at 3 minutes intervals, at least 10 minutes before reaching the piers. The pipe line, through which dredge material is discharged, will be kept well lighted at night by the contractors.

The barge Arthur, owned by Connelly Bros., Buffalo, N.Y., was sold recently to Webster Steamship Co., Montreal, who have traded her for the barge Valencia, owned by Sincennes-McNaughton Line, Ltd., Montreal, and the last mentioned company has bought the barge Nellie Redington from Connelly Bros., Buffalo, N.W. The Arthur was built at Detroit, Mich., in 1871, and was originally the schooner D. P. Rhodes, and underwent large repairs in 1912. Her hull is of oak and she has the following dimensions,—length b.p. 216 ft., breadth moulded 35 ft., depth moulded 16 ft., tonnage 891 net. The barge Valencia was built at Garden Island, Ont., in 1888, and has an oak hull of the following dimensions,—length b.p. 178 ft., breadth moulded 30 ft. 8 in., depth moulded 13 ft. 2 in., tonnage 443 net. She was at

one time owned by Montreal Transportation Co., and is classified for service on Lake Ontario and St. Lawrence River and canals. The barge Nellie Redington was built of oak, at Cleveland, Ohio, in 1872, and underwent large repair in 1914. Her dimensions are,—length b.p. 205 ft., breadth moulded 33 ft., depth moulded 16 ft., tonnage 775 net.

Manitoba, Saskatchewan and Alberta.

It is reported that a waterways association is being formed in Winnipeg, to encourage the development of waterways in the Prairie Provinces. It is stated that one object is to make the Saskatchewan River navigable for the transportation of coal from the western mines.

Lamson and Hubbard Canadian Co., Ltd. has been granted supplementary letters patent decreasing its capital stock to 10,000 shares of preferred stock of \$100 each, and 15,000 shares of common stock without nominal or par value, and increasing its preferred capital stock to 15,000 shares of \$100 each, and its

common capital stock to 33,750 shares without nominal or par value, provided that it carry on business with a capital of \$1,668,750. The company is engaged chiefly in the fur trade, and operates steamboats on the Athabasca, Slave and Mackenzie Rivers.

British Columbia and Pacific Coast.

The Consolidated Whaling Corporation's 8 steamships have all been overhauled and refitted at the company's headquarters at Point Ellice, Victoria, and are in readiness for the opening of the Whaling season early in May.

The Vancouver Harbor Commissioner's agreement with the Great Northern Ry. Co. for the acquisition of land as a site for a pier to be built on Burrard Inlet, and to be known as the Ballantyne pier, has been submitted to the Dominion Government for approval.

The s.s. Tactician, which was docked at Yarrows yard, Esquimalt, Apr. 10, to have her rudder repaired by electric welding, cleared from the yard again,

Apr. 13, this being the first large electric welding job carried out there since the installation of a complete new electric welding equipment.

The s.s. Robert Dunsmuir, owned formerly by Ocean Falls Co., Vancouver, B.C., has been dismantled and removed from the Canadian register. She was built at New Westminster, B.C., in 1883, and was screw driven by engine of 18 h.p., her dimensions being,—length 105 ft., breadth 17.5 ft., depth 6.7 ft.; tonnage 152 gross, 96 registered.

The C.P.R. British Columbia Coast Service recently declined to put any ships in the ferry service between Port Angeles and Victoria during the coming summer, as all its available ships will be heavily engaged on the regular routes. The Puget Sound Navigation Co. has, however, announced that it will put on a ferry service between these points.

The Kingsley Navigation Co.'s s.s. E. D. Kingsley arrived at Victoria, B.C., Apr. 10, after a voyage from Fort William, Ont., through the Great Lakes, the St. Lawrence River, Gulf, Atlantic Ocean, occupying about 4½ months. She was built by Canadian Car and Foundry.

Vessels Registered in Canada During January and February, 1920.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing vessels of less than 100 tons register.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	N.h.p.	Owners or managing owners
141568	Canadian Importer(1)	Vancouver, B.C.	Vancouver, B.C. ....1919	400.0	52.4	28.8	5465	3400	282 Sc.		Minister of Marine, Ottawa.
141585	Canadian Trapper(1)	Montreal	Lauzon, Que. ....1919	331.3	46.3	23.3	3600	2183	231 Sc.		" " "
141482	Canadian Planter(1)	Montreal	Montreal1919	400.3	52.4	28.6	5399	3333	266 Sc.		" " "
141564	Canadian Raider(1)	Vancouver, B.C.	North Vancouver, B.C. ....1919	331.0	46.7	23.2	3384	2052	231 Sc.		" " "
137983	Captain Visger	Kingston, Ont.	Alexandria Bay, N.Y. 1895	78.1	12.4	4.4	39	11	13½ Sc.		Hon. F. G. Macdiarmid, Toronto.
108769	Celestial Empire(2)	Vancouver, B.C.	Hull, Eng. ....1897	121.2	21.0	11.3	204	80	58 Sc.		The Canadian Fishing Co., Vancouver, B.C.
140998	Conestoga	Toronto	Cleveland, Ohio1878	252.0	36.0	15.0	2008	1531	96 Sc.		Lake Ports Navigation Co., Sarnia, Ont.
91527	Flamingo	Vancouver, B.C.	Hull, Eng.1885	137.0	21.5	11.2	266	125	80 Sc.		The Canadian Fishing Co., Vancouver, B.C.
141574	Herbert Green	Weymouth, N.S.	Gilberts Cove, N.S. ....1919	116.0	28.4	10.6	283	205	16¼ Sc.		B. Melanson, Gilberts Cove, N.S.
137447	Lord Strathcona(1)	Montreal	Sunderland, Eng. ....1915	455.0	58.0	31.0	7335	4184	613 Sc.		Lord Strathcona Steamship Co., Montreal.
141454	Maggie Marshall	Halifax, N.S.	Manistee, Mich.1873	150.0	30.0	11.3	570	385	54 Sc.		Maritime Wrecking & Salvage Co., Montreal.
141588	Maplehill(3)	Montreal	St. Clair, Mich. ....1883	194.2	33.9	13.7	925	560	79 Sc.		Canada Steamship Lines, Ltd., Montreal.
138860	Richard B.	Port Arthur, Ont.	Vermillion, Ohio.1901	75.0	17.0	8.5	73	40	16 Sc.		Russell Timber Co., Port Arthur, Ont.
141505	Saskatoon	Montreal	Sunderland, Eng.1919	250.2	42.8	16.4	1798	1148	122 Sc.		Canadian Maritime Co., Montreal.
141354	T. R. 41	Ottawa	Port Arthur, Ont. ....1918	125.0	23.4	13.5	290	105	61½ Sc.		Minister of Naval Service, Ottawa.
138859	Vinmount(4)	Port Arthur, Ont.	Cleveland, Ohio.1889	260.0	38.0	21.0	1887	1107	107 Sc.		Montreal Transportation Co., Montreal.
141589	Wyoming	Montreal	Buffalo, N.Y.1887	250.4	40.1	14.6	1492	911	109 Sc.		Canada Steamship Lines, Ltd., Montreal.

SAILING.

No.	Name	Port of Registry	Big	Where and when built	Length	Breadth	Depth	Gross Tons	Tons Reg.	Owner or Managing Owner.
141557	A.F.P. 2	Vancouver, B. C.	Scow	Vancouver, B. C. ....1911	79.7	26.0	7.0	119	119	H. Rendell, Vancouver, B.C.
141558	A.F.P. 3	"	"	" " " "1911	80.3	26.0	7.1	125	125	" " "
141599	A.F.P. 4	"	"	" " " "1911	79.7	26.2	7.0	125	125	" " "
141500	A.F.P. 5	"	"	" " " "1911	80.6	26.3	7.0	129	129	" " "
141561	A.F.P. 6	"	"	" " " "1911	80.8	25.8	6.9	116	116	" " "
141562	A.F.P. 7	"	"	" " " "1911	84.0	26.2	6.5	123	123	" " "
130277	Athabasca River(1)	Winnipeg	"	Athabasca Landing, Alta. ....1912	136.0	28.0	3.6	341	341	Hudson's Bay Co., London, Eng.
141584	B. Huber	Montreal	Barge	Tonawanda, N.Y.1887	96.2	17.9	7.4	125	125	R. J. Lough, St. Hilaire, Que.
141506	Challand 25	Quebec, Que.	Scow	Quebec, Que.1919	80.2	30.4	6.6	140	140	Lachance, Ltd., Quebec, Que.
141507	Challand 26	"	"	" " " "1919	80.2	30.4	6.6	143	143	" " "
1415	Chas. F. Gordon	Halifax, N.S.	Schr.	Weymouth, N.S. ....1919	147.0	34.8	13.0	493	453	R. G. Beasley, M.O., Halifax, N.S.
141417	Enid E. Legge	Lunenburg, N.S.	"	Mahone Bay, N.S. ....1919	118.1	27.6	10.9	272	233	J. T. Moulton, Burgeo, Nfld.
141565	General Fairchild	Vancouver, B.C.	Barge	Freeport, Me.1874	203.4	38.8	24.3	1341	1312	Coastwise Steamship & Barge Co., Vancouver, B.C.
141258	J. Duffy	La Havre, N.S.	Schr.	Saulnierville, N.S.1919	115.0	26.9	10.6	115	115	J. L. Spindler and J. E. Backman, La Havre, N.S.
141556	Louisiana	Vancouver, B.C.	Barge	Bath, Me.1873	202.4	40.0	23.8	1346	1309	Coastwise Steamship & Barge Co., Vancouver, B.C.
141567	M.W.W. No. VI	Vancouver, B.C.	Scow	New Westminster, B.C. ....1919	96.3	34.0	8.3	234	234	McNeill, Welch & Wilson, Ltd., Vancouver, B.C.
141582	Maggie J. Brett	Montreal	Barge	Whitehall, N.Y.1901	96.4	17.8	7.4	120	106	Richelieu Transportation Co., Montreal.
121772	Marvyl(1)	Winnipeg	"	The Landing, Man. ....1905	120.0	26.0	8.0	225	225	Northern Fish Co., Selkirk, Man.
141390	Maxwell R.	LaHavre, N.S.	Schr.	Chested Basin, N.S. ....1919	118.2	27.6	10.4	153	106	C. H. Ritey, M.O., Riverport, N.S.
141622	Minas Emperor(2)	Parrsboro, N.S.	"	" U.S.1889	48.0	23.5	4.6	89	89	M. Blenkhorn, Parrsboro, N.S.
141889	Mona Marie	LaHavre, N.S.	"	Shelburne, N.S. ....1920	126.6	26.6	10.5	170	170	L. Ritey, M.O., Riverport, N.S.
141583	O. L. Bourdon	Montreal	Scow	Durhamville, N.Y.1894	95.8	17.8	8.5	136	123	Richelieu Transportation Co., Montreal.
141563	Spraydrift	Vancouver, B.C.	Sloop	Vancouver, B.C.1912	30.0	8.9	3.3	5	5	G. B. Warren, Vancouver, B.C.
138656	Susan Cameron	Pictou, N.S.	Schr.	Tusket, N.S.1919	163.7	36.3	13.1	601	558	W. McNeil, New Glasgow, N.S.
161060	Thunder Bay	Montreal	Barge	Cleveland, Ohio1895	302.0	40.2	25.0	2144	1951	H. B. Smith, Owen Sound, Ont.

dry Co. at Fort William, last year, and will be used in the British Columbia coasting trade.

The U. S. Federal Court at Seattle, Wash., dealt with claims recently, covering personal effects of persons lost with the C. P. R. s.s. Princess Sophia, which founde in the Lynn Canal Oct. 24, 1918. The effects were recovered by the Deep Sea Salvage Co., and many of the items were unclaimed. The Dep Sea Salvage Co. is offering stock for sale, in a company to be formed for salvaging the wreck.

The Canadian Fishing Co., Vancouver, B.C., has transferred its steamships Celestial Empire and Flamingo, from the British to the Canadian register. The Celestial Empire was built at Hull, Eng., in 1897, originally named Jupiter, and lengthened there in 1902. She is screw driven by engine of 58 h.p. and has the following dimensions,—length 121.2 ft.; breadth 21 ft.; depth 11.3 ft.; tonnage 204 gross, 80 registered. The Flamingo was built at Hull, Eng., in 1885, and is screw driven by engine of 80 h.p., her dimensions being,—length 137.9 ft.; breadth 21.5 ft.; depth 11.2 ft.; tonnage 266 gross, 125 registered.

The Grand Trunk Pacific Coast Steamship Co. inaugurated a bi-weekly steamship service between Seattle, Wash., and Prince Rupert, Apr. 21, with the steamships Prince Rupert and Prince George, the former leaving Seattle at 11 p.m. Sundays and the latter 11 p.m. Wednesdays, returning there 4 p.m. Sundays and 4 p.m. Wednesdays, respectively. Calls will be made at Victoria, Vancouver, Ocean Falls, and Swanson Bay. The s.s. Prince Albert is operating between Prince Rupert and Queen Charlotte Island ports.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John was damaged and beached off Deadtree Point, Graham Island, towards the end of March in a collision with the company's s.s. Prince Albert. She was subsequently floated and taken to Prince Rupert by the salvage steamship Algerine. It is stated that tenders have been asked for the repairs, which will include the straightening of several plates, relaying of a new upper deck, and the replacing of all cabin work. There appears to have been no damage to machinery, but the cargo was practically a complete loss.

The auxiliary powered schooner Laurel Whalen arrived in Vancouver, Apr. 10, after an absence of two years, during which she had considerable adventure. She was one of 12 similar ships built by Cameron-Genoa Mills Shipbuilders Ltd. for Canada West Coast Navigation Co. Ltd. She sailed from Victoria about 2 years ago for Australia, with lumber, and later cleared from Adelaide with wheat for British Columbia, but off New Zealand broke her crank shaft and put into Auckland for repairs. On again sailing she ran into heavy storms, and on Aug. 25, 1919, was compelled to put into Paapeete, in leaking condition, and as she could not be repaired there, her cargo of wheat was discharged, and arrangements were made for towing her back to her home port. The towing was done by the tug Hercules, and lasted from Mar. 3 to Apr. 10, at an approximate cost of \$35,000.

Steamboat Inspection.—The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain an item of \$105,470 for steamboat inspection.

Dominion Government Aid for Wooden Shipbuilding in British Columbia.

Canadian Railway and Marine World for February contained an order in council of Dec. 24, 1919, granting aid for the construction of four wooden sailing ships in British Columbia, to the extent of \$700,000. This order has been supplemented by an agreement, dated Mar. 16, between the Dominion Government and Victoria (B.C.) Shipowners, Ltd., a company incorporated under the British Columbia Companies Act, by which the company agrees to build and equip in the Cholberg shipyard, Victoria, or such other shipyard as may be approved by the Finance Minister, and to have completed within 12 months of the commencement of construction, 4 sailing ships of barkentine rig, each with a cargo capacity of 2,400 d.w. tons, or 1,500,000 ft. b.m. firm lumber, at an estimated cost of \$250,000 each. Contracts, plans, specifications, etc., are all subject to the Minister's approval, or of a marine architect to be named by him. Advances on account of the cost of construction, not exceeding \$175,000 for each ship, will be made from time to time on the architect's certificate that the expenditure and payment has been provided for to the extent of at least \$75,000 on the construction of the ship, and that in his judgment the further expenditure incurred for material and labor, and the progress of the work, are sufficient to justify the advances named in his certificate. These advances will be secured by a first mortgage, or mortgages, on the ships, with interest at 6% per annum. The owners shall expend in construction and equipment of these ships, not less than \$75,000 each, or \$300,000 in all, the intention being that the company shall assume the cost to that extent, the government to advance the balance of cost, not exceeding \$175,000, for each ship, and if the cost of the building and equipping any one of the ships shall exceed \$250,000, such excess shall be paid by the company. It is agreed that for determining the amount of the advances, if any portion of the cost be represented by the delivery of lumber required, the prices shall not exceed the following, f.o.b. cars at Victoria:—

Framing grade	\$28 per m.
Merchantable	30 "
Planking	50 "
Ship decking	65 "
Additions as per Standard Fir Timber list no. 2	
B.C., average length 30 ft.	

Payment for other materials to be allowed at not exceeding lowest prices available, as ascertained by competitive bids, all material to be delivered and accepted in good condition. It is also provided that the net operating revenue from the operation of the ships when completed, shall first be applied in payment of interest on the government advances, and when sufficient has been set aside for this purpose in any year, the company may appropriate out of the revenue earned by each ship in that year, \$4,500, and the balance of the net earnings of each ship in any year shall be paid on account of money advanced by the Government, and interest shall be chargeable only on the balances remaining unpaid. It is agreed that returned soldiers shall be given employment on the building of these ships to the fullest extent practicable, and that at least 60% of the total number of men engaged at any time thereon, shall be returned sol-

diers. All men required shall be employed through the Dominion representative in B. C. Government Employment Agency, and as soon as the work is sufficiently advanced, at least 235 men shall be employed on each ship.

If the company, by reason of bankruptcy, fire, or any other causes, fails, or is unable to complete the ships, or, if in the opinion of the architect it is guilty of unreasonable delay, the government may take immediate possession of the ships, and all material intended for them, and the mortgages shall become due any payable, and all powers in connection therewith shall be transferred to the government. The agreement is signed on behalf of the company, by Clarence Hoard, Vice-President, and Edwin Tomlin, Secretary-Treasurer.

Mariners' Certificates of Service Requirements Amended.

A bill to amend the Canada Shipping Act was passed by the House of Commons, Apr. 8, repealing R.S.C. 1906, chap. 113, secs. 85 to 89 and sec. 91 containing the conditions relative to the issuing of certificates of service to masters and mates of seagoing and inland waters shipping, and substituting therefor the following:—

"85. Every British subject who, (a) served as a master or mate of a seagoing or coasting sailing vessel of over 75,000 gross tons, before Jan. 1, 1920, for a full period of 12 months within 10 years immediately next preceding the date of his application for a certificate of service; (b) produces satisfactory evidence of his sobriety, experience, ability and general good conduct on board ship; and, (c) passes the sight test and the prescribed examination in signalling; shall be entitled, on payment of the prescribed fee, to a certificate of service as a master or mate of a square rigged or fore-and-aft rigged seagoing or coasting sailing vessel not exceeding 750 registered tonnage, according as his service has been (a) as master or as mate, (b) on a seagoing or on a coasting sailing vessel, (c) on a square rigged sailing ship or on a fore-and-aft rigged sailing vessel.

"91. In every such certificate of service the name, place and date of birth of the person to whom the same is issued shall be stated, and each certificate shall specify whether the holder is entitled to act as master or mate, whether the certificate is for seagoing vessels or for vessels in the coasting trade, and whether for square rigged sailing vessels or for fore-and-aft sailing vessels, and that it is not for any vessel exceeding 750 registered tonnage."

Black Star Line of Canada, Ltd., has been incorporated under the Dominion Companies Act, with authorized capital of \$1,000,000, and office at Montreal, to own and operate steam and other ships and to carry on a general navigation and transportation business. The incorporators are: F. H. Markey, K.C.; W. W. Skinner, K.C.; G. G. Hyde, K.C.; R. C. Grant, and R. J. Forester, Montreal.

Concrete Ships Failures.—Sir G. B. Hunter, Managing Director, Swan Hunter, and Wigham Richardson Ltd., London press cablegram, is reported, in a London press cablegram, to have stated that concrete ships are a complete failure, that they cost twice as much as steel ships, and take twice the time to build, and that his company has discontinued their construction finally.

The Minister of Marine on the Government's Shipbuilding Programme.

When the House of Commons went into committee of supply on Mar. 23, on the estimates for the year ending Mar. 31, 1921, on the item Marine Department Government shipbuilding programme, amount required for the construction of ships in accordance with Government programme, \$20,000,000, the Minister of Marine, Hon. C. C. Ballantyne, said:— This amount, \$20,000,000, is being asked for in order to complete the Government merchant marine shipbuilding programme, and part of the appropriation is a re-vote from last year. If Parliament gives its consent to this appropriation, then the government have no further estimates to bring down in connection with the building of steel freight ships. I will refer briefly to the condition of the shipbuilding industry from 1875 up to 1919 and give a comparative statement showing the number and tonnage of ships on the Canadian registry books on Dec. 31 as follows:—

Year.	Number.	Net tonnage.
1875	6,952	1,205,565
1885	7,315	1,231,856
1895	7,262	825,776
1905	7,325	669,825
1915	8,757	929,312
1919	8,573	1,091,780

Members will note the great shrinkage in shipbuilding in Canada over the periods which I have just mentioned. During the last 10 years, while the quantity is small, the ships built were of both classes, wood and steel. In 1919, the business revived again, on account of the war, and 8,573 ships were built with a net tonnage of 1,091,780.

Before the war the world's merchant shipping was roughly 43,000,000 tons, of which Great Britain owned approximately 23,250,000 tons. Owing to the great destruction by submarines during the war, the total world tonnage lost by enemy action was 15,000,000 tons gross, and of these losses British merchant tonnage comprised 2,479 ships with a gross tonnage of 7,759,090 tons, and 14,287 lives were lost. 675 fishing ships were lost, with a gross tonnage of 71,765 tons, and in addition 1,885 British ships, with a total tonnage of 8,007,967 tons were damaged and temporarily put out of commission, involving the loss of 592 lives. May I be permitted to pay a tribute—which I am sure will be concurred in by all members and in which I am sure I am expressing the opinion of Parliament—to the heroic men who manned the merchant marine, and so many of whom gave up their lives during the recent war?

I wish to state very briefly, too, the reason why the government decided to enter upon a shipbuilding policy. In a word, the reason was simply this, that owing to the great loss of world tonnage and the imperative need of Canada creating, owning and operating a merchant marine of her own, and also in view of the fact that the government owned a very large system of railways which, when the Grand Trunk is formally taken over, will comprise some 22,000 miles, it was a matter of very urgent importance that Canada should own her own merchant marine, to do work in conjunction with our large transcontinental railway system, and also for the purpose of expanding Canada's export business. Later on, I shall have something more to say in this regard, but I will now pass on to the contracts that have been let. The following table shows the several classes

of vessels built and in course of building, they being divided into six types, as follows:

Type.	Tonnage.	No.
1	10,800	2
2	8,300	25
3	5,100	8
4	4,500	8
5	3,400 to 3,900	17
6	2,800	3
Total		63

The total net tonnage is 380,435. The contracts are spread over a period from March or April, 1918, up to within a few weeks ago. The average cost of these 63 ships, including the contracts that were let during the war and since the armistice was signed, is \$191.92 a ton. During the war contracts were let at from \$180 a ton for the large ships to \$215 a ton for the lake size. Since the armistice has been signed, we have been able to contract for the large size at \$167.50 a ton and for the lake size at \$180. The contracts have been placed with the following yards:

Canadian Vickers, Ltd.—	Ships.	Tons.	Tons.	Tons.
	2	4,575	9,150	
	10	8,390	83,900	
				93,050
Harbour Marine Company, Victoria—	2	8,390		16,780
Collingwood Shipbuilding Co., Collingwood—	7	3,890		27,230
Collingwood Shipbuilding Co., Kingston—	2	3,890		7,780
Port Arthur Shipbuilding Co.—	4	3,400	13,600	
	2	4,375	8,750	
	1	3,890	3,890	
				26,240
Halifax Shipyards, Ltd.—	2	10,800	21,600	
	2	8,390	16,780	
				38,380
Tidewater Shipbuilders Ltd.—	4	5,100		20,400
Davie Shipbuilding & Repairing Co.—	2	5,100	10,200	
	1	8,390	8,390	
				18,590
British American Shipbuilding Co.—	2	4,575		9,150
Midland Shipbuilding Co.—	1	3,890		3,890
Dominion Shipbuilding Co.—	2	3,500		7,000
J. Coughlan & Sons—	6	8,390		50,340
Wallace Shipyards, Ltd.—	2	4,575	9,150	
	2	5,100	10,200	
	2	8,390	16,780	
				36,130
Prince Rupert Shipbuilding Co.—	2	8,390		16,780
Nova Scotia Steel & Coal Co.—	3	2,800		8,400

Seven ships have been completed of type no. 2, 8,300 tons; 4 have been completed of type no. 3, 5,100 tons; 4 have been completed of type no. 4, 4,500 tons; 8 have been completed of type no. 5, 3,400 to 3,900 tons, and 1 has been completed of type no. 6, 2,800 tons. Of the 8,300-ton type, 5 are being equipped with oil fuel apparatus and 13 of the same type are being fitted with refrigerating space.

The expenditure to date is as follows: Payments to April, 1919, \$19,510,322.35; payments from April, 1919, to Mar. 1, 1920 \$24,194,639.78, total, \$43,704,962.13. Balance available on Mar. 1, 1920, from vote for current year, \$15,505,361.22.

There has been some little criticism in the press, in regard to the cost of the government ships, and I wish to take advantage of this occasion to make a comparison between our cost and the cost of ships contracted for in Canada by the Imperial Munitions Board for Great Britain, also the cost of ships built for Great Britain in foreign countries, and the cost of similar types of steel ships

built in the United States. From information available it is learned that the ships constructed by the U.S. Emergency Fleet Corporation varied considerably in cost. Most, if not all, of the contracts placed by them during the war contained a provision that the price agreed upon in the contract was to increase or decrease according as wages and the cost of materials increased or decreased. Inasmuch as there was a steady increase in wages, there was a consequent increase in the cost of materials, with the result that it was not possible for them to determine the cost of their ships until after they were completed. It was then found that the price ranged very considerably over \$200 a ton.

In placing contracts, we had our own technical officers figure up the cost. Then we called for bids and made the very closest and best arrangement we could with the various yards with which we have placed contracts. We made our price and our contracts at so much per ton deadweight. It will be noted that the U.S. policy differed entirely from that pursued by the Canadian Government. They took a base price, and then had a clause in their contract to the effect that as wages and the cost of materials varied up or down—and it was always up—an increase in price would be allowed from the time the contract was let until the ship was completed. Consequently, until the ship was ready to be put into commission, they could not tell what the actual cost was. I believe I am making a very conservative statement when I say that the large amount of steel tonnage built in the U.S. for the Emergency Fleet Corporation cost \$200 a ton or over. Skinner and Eddy, of Seattle, are building a standard ship of 8,800 tons capacity, and Mr. Skinner, giving testimony before the U.S. Senate last month, declared that these ships were being built at present at a price of \$188 a d.w. ton. Ships somewhat similar in size, but more exacting in the matter of equipment, etc., are being built in British Columbia at present under the Government programme for \$167.50 a ton.

Cost of Shipbuilding.

I wish to refer to the cost of ships built in this country by the Imperial Munitions Board, and I offer no criticism whatever of the way in which the board let contracts: on the contrary, I think they deserve a great deal of credit for getting the steel shipbuilding industry in this country started in the manner they did. My figures are taken from the report of the National Committee on Expenditure appointed by the British Government, and are therefore official and authentic. The Imperial Munitions Board ordered 44 steel ships in Canada at £39.10s. a ton, which would be equivalent to \$190. When they placed their contracts in 1916, the cost of labor, of ship plates, and of all other material entering into a ship was not nearly as high as when this government entered on its shipbuilding programme about May, 1918. The Imperial Munitions Board also built in Canada 16 wooden ships at a cost of £42 a net ton d.w., equivalent to \$204.

Some criticism has been levelled at this government for intervening at the time we did instead of allowing the Imperial Munitions Board to proceed with their shipbuilding programme, but I am sure members must see the wisdom of

the government entering upon our very large shipbuilding programme at that time, because the ships built by the Imperial Munitions Board were built for Great Britain. They were put under British registry, and could not be used in conjunction with our transcontinental railway system, or in opening up new trade routes and expanding our export business. I consider, therefore, that this government acted wisely in informing the representative of the Imperial Munitions Board here that Canada would no longer advance loans to the British Government to have ships built for England, in Canadian yards and under British registry, but rather that it was the Canadian Government's policy to build their own ships, pay for them with their own money, and operate them for the national benefit of Canada. I will mention the ships that were built for England in other countries during the war, because I conceive that this information may be of much interest to the house. England ordered to be built in the U.S. 13 steel ships at £41,710, equivalent to \$200 a ton; in Japan, 19 at a cost of \$44,178, or \$214 a ton; to be built in China, or at least to be assembled there, 3 ships at £41, or \$199, a ton.

Since the beginning of this year, Norwegian interests placed orders for cargo ships of 9,500 tons deadweight, with shipbuilding firms on the Clyde, at \$162 a ton, as compared with the price in this country, for the same size of vessel, of \$167.50 a ton; and a cargo ship of 7,750 tons d.w., 11 knots, oil fuel, was contracted for recently by one of the companies engaged in transatlantic business, at \$220.35 a ton.

Operation of Steamships.

The routes on which the Canadian Government Merchant Marine Ltd. has placed its ships now in service are: Canada to Liverpool; Canada to Glasgow; Canada to London; Canada to Brazil and Buenos Aires, calling at Pernambuco, Santos and Rio; Canada direct to Havana, three sailings through the present month; Canada to Barbadoes, Trinidad and Demerara; Canada to Havana, Cuba and Kingston; Vancouver to New Zealand and Australia. These are the routes on which our ships are already sailing, and the proposed additional routes on which the Canadian Government Merchant Marine will place our other vessels as they are ready to be put into commission are: Canada to other United Kingdom ports such as Manchester, and looking into the possibility of moving traffic to Ireland via Queenstown; extending the Jamaica service to Venezuela; weekly or fortnightly service from Montreal to St. John's, Newfoundland, calling at Charlottetown, when traffic offers during the season of open navigation, and the rest of the season from Halifax; considering a service to the Orient when vessels are available; looking into the possibilities of a service to India and, if conditions warrant, such a service will be established; considering a service from Vancouver to South Africa and return via Singapore and Hong Kong; investigating conditions regarding a service from British Columbia ports to the west coast of South America.

I should like to make a public appeal to Canadian manufacturers to bestir themselves and to show more interest in Canada's export trade than they have shown during the past years. If Canada is to throw off her great financial burden it is indispensable that this country should have a larger export trade than

we enjoy at present. The government have done their part by building up this large and efficient merchant marine. We have railway connection, and I have had placed on board these vessels, with accommodation for luggage and samples, additional staterooms in order that our manufacturers may be able to send their commercial travellers to these foreign countries on board Government ships. Our Government Merchant Marine is a great advertising medium for Canada, and for our products generally. As members are aware, the name of every one of our ships has the prefix "Canadian" before it; for example, "Canadian Pioneer," "Canadian Voyageur," "Canadian Seigneur," etc. When our ships are in port they fly from the top mast the house flag, a white flag with a red cross and a beaver in the corner. Any one will at once recognize a Canadian ship, first by the name, and also by the house flag she flies while in port. I do not know of any better way in which Canada could advertise her own interests and develop the possibilities of the country than through the instrumentality of the Canadian Government Merchant Marine, the ships of which will shortly be sailing the seven seas of the world. These ships will prove of the greatest assistance to this country in the matter of imports. They were not built to carry manufactured products only. They are intended to carry the products of the mines, the fisheries, the forests and the field. They will prove of the utmost importance and value to Western Canada, which has such vast quantities of grain to ship. These products will travel first of all over the government railways, and our merchant marine will distribute them to the various ports of the world to which they are destined. Continuity is maintained, the grain being handled by the government system of railways until it reaches the seaboard, where it is transferred to the Canadian Government ships. And if the time should ever arrive when Canada will be discriminated against in any way, although I trust that such a possibility is very remote, then she has within her grasp the right to regulate the rates of freight on the products of the farm, the manufacturers of the country, and all our natural products, from the point of shipment right through to the point of destination. Under all the circumstances, therefore, the Canadian Government Merchant Marine is filling a long felt national want. It may be of interest to members to know what kind of cargoes our vessels have so far been carrying. They are as follows from Pacific ports.

Canadian Volunteer—Genoa Bay to Garston, Eng., 2,085,569 ft. of lumber.

Canadian Trooper—Vancouver to London, 1,956,216 ft. of lumber.

Canadian Aviator—Vancouver to Garston, Eng., 1,934,938 ft. of lumber.

Canadian Raider—Genoa Bay to Melbourne, 2,005,857 ft. of lumber.

Canadian Importer—Vancouver to Melbourne, general cargo, consisting principally of corsets from Dominion Corset Company, Quebec; sewing machines from Cleveland; rubber tires from Goodyear Rubber Co., Toronto; underwear from Hamilton; bicycles from Western Ontario; newsprint from Canadian Export Paper Co.; chocolates from Toronto; newsprint from Powell River Co., B.C.; canned herrings from Canadian Fishing Co.; mantles, lumber, laths, whitelead, etc., from various shippers. This will give some idea of what a general cargo means.

Referring to our smaller ships that are on the West Indian route, members will be interested to know the vast quantities of raw sugar that were brought from the West Indies to Montreal, Halifax, and St. John, N.B. If it had not been for the Canadian Government ships there would have been a sugar shortage in this country. The sugar carried from the West Indies to St. John and Halifax was 47,266 tons. The total tonnage at present loaded and en route to St. John and Halifax is 14,155 tons. In addition to the above these ships have undertaken to load before the end of April and deliver at Canadian ports 28,400 tons, making a grand total of 89,821 gross tons, valued at \$13,164,160.40.

The number of voyages that our ships have made to Feb. 6, 1920, is as follows:

To West Indies	27
To Buenos Aires	4
To London	5
To Liverpool	9
To Glasgow	1
To United Kingdom, from Vancouver, via Panama Canal	3
To Bordeaux	1
To Havre	1
To Australia and New Zealand	1
To St. John's, Newfoundland	4
	56

It is not often that ships, railways or other things are managed and operated by governments in such a way as to show a balance on the right side, but I am happy to say that from the figures I will give in a moment you will see that although 19 of these ships have only been in service for a short time, not one of them having been in service for a full year, the balance is on the right side. I wish to explain how the net earnings are arrived at. The Canadian Government Merchant Marine follows good business practice. It had to put on a new organization and to open up new trade routes. After providing for organization, overhead expenses, operating expenses, depreciation, insurance and 5½% on cost, the ships have made a remarkably good showing. I think it is only fair that as Minister of Marine, and on behalf of the government, I should pay a tribute to D. B. Hanna and his board of directors of the Canadian Government Merchant Marine for having accomplished such a fine result as I am going to refer to in a moment, notwithstanding all the difficulties inseparable from new routes and a new organization. I am immensely pleased, as the minister responsible, so is the government, and I am sure that members and the Canadian people will also be pleased.

The profit statement is as follows: Up to Dec. 31, 1919, there were delivered 19 ships. Many of these were received during the late summer and autumn, so that only 13 had completed voyages by the end of the year. Routes were opened to South America, West Indies and the United Kingdom. By Dec. 31, 28 voyages had been completed. The total gross earnings of all boats amounted to \$3,448,030.25, and the net earnings to \$1,406,000. This net will provide interest at 5½% on the government's investment, full reserve for depreciation and a handsome margin in addition. These earnings are held by the company in the shape of bank balances, Victory Loan bonds and accounts receivable. In view of the fact that many of the ships were only in service for a portion of the year, and also as the initial expenses in placing ships in service are extremely heavy, I think you will agree with me that the operations of the Government's Merchant Marine present an exceedingly satisfactory

showing. The government ships enabled the exportation of Canadian products in 1919 to the value of \$21,362,000, much of which would not have been shipped if the shipping facilities had not been provided by the government.

Since Jan. 1 shipyards on the Pacific Coast have delivered three ships, Canadian Raider, Canadian Importer, and Canadian Exporter, all of which will be employed in the Canadian-Australian trade. The Canadian Raider and Canadian Importer have sailed with a full cargo of lumber in the one case, and a full cargo of confectionery, newsprint, lumber, rubber tires, etc., in the other. The Canadian Exporter is loading at present. It is expected that with the service which the Canadian Government Merchant Marine will be able to provide between Canada, Australia and New Zealand very important business will be established.

By order in council these ships were transferred to Canadian Government Merchant Marine at contract price. In lieu of that Canadian Government Merchant Marine issued notes payable to the Finance Minister bearing interest at 5½%. It is incumbent upon Canadian Government Merchant Marine not only to meet the interest on the cost of construction on these ships at 5½%, but also to pay the principal from time to time out of earnings. I am very happy to announce that, notwithstanding only 19 ships were in service for a portion of the year, yet, out of earnings Canadian Government Merchant Marine has issued a cheque to the consolidated revenue fund of Canada for \$500,000 which meets the interest at 5½% to Dec. 31, 1919. Members will see that the Canadian Government Merchant Marine is paying its way although it has hardly got started.

Australian Shipbuilding.

It may interest members to know what our sister Dominion of Australia is doing. Australia has half our population but is still a nation of great vision, energy and capability. In the early days of the war, Australia acquired by purchase 15 second hand British ships with a tonnage of approximately 100,000 tons. In addition the Commonwealth Government undertook a local building programme. The original programme provided for building 24 steel ships of about 5,500 tons deadweight each and 24 wooden ships of about 2,600 tons d.w. each. A second programme was subsequently undertaken which provided for building 14 steel ships of about 6,000 tons d.w. each. In addition contracts were placed by the Australian Government for building 6 vessels in United Kingdom yards of about 12,000 tons d.w. When Australia completes her programme she will possess a total of 348,400 tons net, a very good merchant marine for our overseas dominions to have.

Steel Plates for Shipbuilding.

I now come to an important adjunct of shipping, viz., the establishment of a steel plate mill and the contract entered into by the Dominion Steel Corporation with the government which calls for 250,000 tons of ship plates, the government obligating itself to take 50,000 tons a year for five years with the option of increasing that quantity up to 75,000 tons if it should think fit to do so. The contract was made when the war was on. The government had entered upon a shipbuilding programme and the only country that Canada could get ships plates from was the U.S. We placed a large order in that country for 80,000

tons, but notwithstanding all our efforts to get delivery of steel we were only able, after 12 months, to get 6,000 tons. At that time no one knew how long the war was going to last, and the necessities of shipping were very pressing upon the government. Therefore we decided that Canada should be self contained, as far as shipbuilding was concerned, and entered into the contract referred to. The government made this contract at a price of \$4.15 per 100 lb. That was during the war, but after the armistice had been signed I summoned the Dominion Steel Corporation's officials to Ottawa and told them that while the contract was binding upon both parties and I could not force them to reduce their price, at the same time the government would appreciate it if they could see their way clear to make a reduction. The officials received the proposal in a very broad and generous spirit, and after several weeks of negotiation, I was able to prevail upon them to reduce the price from \$4.15 per 100 lb. to \$3.65, equal to \$11.20 a gross ton, a saving on the entire contract of \$2,800,000. The mill commenced operations on Feb. 17 last, and from the first, ship plates measuring up to the high standard required by Lloyds were being successfully turned out. Within a month after the actual commencement of operations at the mill, the total commitments for the first year were practically disposed of. Thirty-four thousand tons will be required for shipbuilding purposes; 9,300.59 tons have been sold to outside powers; at the present moment 6,000 additional tons are under option. In addition the government is in negotiation with the New South Wales Government for the sale of some 15,000 tons, which it is hoped to conclude successfully within the next 30 days. Further enquiries are being received almost daily for steel, but until such time as the department ascertains the quantity of plates that the mill will be able to produce in the first year it will not be possible to take any further commitments.

There will be no difficulty on the government's part in fulfilling its part of the contract by taking its part of the contract by taking 50,000 tons, and I am almost certain that we will have to ask the Steel Corporation, under the terms of our contract, for a maximum quantity of 75,000 tons. I do not want to make any statement that will not prove to be accurate later on, but as far as I can tell from the contracts that we have taken, and the contracts that we expect to take, I think I am safe in saying that the government will not make any loss after accepting the maximum quantity that it has to take under the terms of the contract, and there is a fair possibility that a year hence, if I am spared, I may be able to inform members that there has been a profit in the matter of ships' plates as well as ships.

Our competitor in ships' plates in the world is not the United Kingdom, but in Australia, and elsewhere our competitors are our neighbors to the south, the United States. The price of ships' plates in England is, if my memory serves me right, £27.10 a ton, which is very much higher than is our price from the Steel Corporation, so much so that we could ship Canadian plate, turned out at the Sydney mill, to any part of the United Kingdom and meet the competition there and still have a good profit. It is not to be wondered at that the price of plates

has advanced in the old country. There has been a rise in wages over there and the price of materials of all kinds that enter into shipbuilding has gone up. No one expects that the United Kingdom will ever return to pre-war prices for steel freight ships or passenger ships either. The price of building steel ships in the United Kingdom, of similar size and design, is just as high as in this country. But there will come a time when the yards in the United Kingdom will not be as fully occupied as they are now. Every yard in England, Ireland and Scotland has more contracts than it is able to turn out for some time to come; but when the pressure on those yards eases off, competition is bound to become keener; and if nothing is done for the shipbuilding industry in this country, when that time arrives it is difficult for one to forecast what may happen to our magnificent shipbuilding industry, which as it is established at present has bright prospects of becoming very much bigger and greater.

Subsidies for Shipbuilding.

That brings me to the question of subsidies. I am not going to say anything in that regard, further than that the government has the matter under its careful consideration. The Finance Minister, when he brings down his budget, will state, in the government's behalf, whether or not it can see its way clear to do anything to aid the shipbuilding industry in Canada. However, it will be gratifying to members to know that notwithstanding the fact that Canadian shipbuilders have absolutely no protection of any kind they have been able under existing conditions to secure foreign orders in competition with shipbuilders in the old land. The National Shipbuilding Co. of Three Rivers, Que., is building six ships of 5,000 tons d.w. each, three of 3,200 tons each and two of 6,500 tons each for foreign registry. These orders were secured from France by the National Shipbuilding Co. in competition with the world. Canadian Vickers, Ltd., of Montreal, also in competition with the world, secured a contract from Norway for the construction of two steel vessels of 8,000 tons d.w. each. The Collingwood Shipbuilding Co. has secured the contract for a canal size ship for the Standard Oil Company of New Jersey, to be employed in foreign waters. That may seem to indicate that our shipbuilders can now compete with the world, on account of the conditions that I have referred to. But I am not so optimistic as to say that one or two years from now they would be able to do so without any assistance whatever.

I desire to pay a tribute to those of our Canadians who have had to do with the building of these ships. They were not skilled in the building of ships when steel shipbuilding was commenced on a large scale some two or three years ago. But although the designs of the ships which are being turned out in the yards from Halifax to Prince Rupert are British, the materials and workmanship are Canadian, and Canadians have demonstrated their skill in shipbuilding as they have in other walks of life, just as when the call of their country came they displayed their adaptation to military life, and their bravery in the field of battle. Our ships are equal in design, workmanship and efficiency to any ships of the same kind that are built in the old land. I have covered the programme as fully as I have been able to; if members desire to ask any questions I shall be only

too pleased to answer them.

In the debate which followed, the Minister of Marine stated, in answer to a question, that in making a comparison of costs of ships in Canada and Great Britain, sterling exchange had been figured at \$4.86. W. Duff, M.P. for Lunenburg, N.S., contended that it should have been figured at the current rate of exchange, which six months ago was \$3.60.

Why Tenders Were Not Asked.

Hon. Mackenzie King, leader of the opposition, having contended that public tenders should have been asked for building the ships, the Minister of Marine said:—Public tenders are as a rule called for, and quite properly so, but we could not follow that policy in ordering ships. Suppose I had called for public tenders for six ships of 8,400 tons. Suppose that Canadian Vickers, Ltd., of Montreal, and five or six other shipbuilders had tendered, and that the Davie Shipbuilding & Repairing Co., of Lauzon, which has not the facilities for turning out that number of ships, except after a very long time, were the lowest tenderers. The government would have no option but to award them the contract. We would not be able to distribute the orders. I quite understand the point of the leader of the opposition, viz., the desirability of safeguarding the public interest. The statute from which he has quoted makes it plain that the minister has power to use his best judgment, and the government to purchase by the best means what it requires. I do not know of any method that would so well safeguard the public interest as the course we followed. I believe we got lower prices than we should have obtained by public tender. When the government asked for prices on ships, it did not necessarily take the prices that were quoted. If a price was considered satisfactory it was accepted, and if it was too high it was of course refused. By the method we followed we were in a position to distribute the business evenly over 17 yards at a cost probably lower than if we had called for public tenders in the way suggested. It must be borne in mind also that time is an important feature of the programme, and we could not allow one yard to take more business than it was capable of turning out. Some yards have two berths, some four and some six, and all these facts have to be taken into consideration in allotting the work. It was desirable to distribute the contracts in such a way that labor would not be concentrated in one particular place, but that workers would be evenly employed throughout the 17 yards from Halifax to Prince Rupert. I have already said that the government is at the end of its steel shipbuilding programme. If I thought that the suggestion of the leader of the opposition was of any practical importance I would gladly recommend it to the government, but from the business experience that I have gained during the last 30 or 35 years, I am bound to say that I think the government has followed the best possible course.

When the debate was resumed on Mar. 1 30 the Minister stated that the total payments for steel cargo steamships up to April, 1919, were \$19,510,322.35. The total payments from April, 1919, to Mar. 1, 1920, were \$43,704,962.13. The balance available on Mar. 1, 1920, from the vote for the year ending Mar. 31, 1920, was \$15,505,361.22. In addition to this balance the government was asking for another vote of \$20,000,000, part of it being a revote from the year ending Mar. 31, 1920.

He also said:—"I made the statement before, and I make it now, that the government has finished its shipbuilding programme. The reason the government has ceased placing contracts for freight ships is because we consider that with 63 steamships, with a net tonnage of 380,000 tons, we have ample tonnage to take care of whatever export trade the ships might be called upon to carry, or whatever other service they might be called upon to perform in conjunction with the government railways."

The item was then carried.

Canal Estimates for 1920-1921.

The Railways and Canals Department's estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items for canals:—

Chargeable to Capital, \$5,900,000.	
Welland Ship Canal, construction.....	\$5,500,000
Trent Canal, construction and betterments	400,000
Chargeable to Income, \$735,400.	
Chambly, improvements	\$ 17,000
Carillon and Grenville, improvements	13,100
Lachine, dredging	26,000
Soulanges, improvements	30,000
St. Anne's lock, improvements	10,300
Lake St. Francis, protection works.....	2,500
Ontario-St. Lawrence, improvements	39,500
Trent, improvements	377,000
Welland, improvements	150,000
Surveys and inspections, including salaries and expenses of experts employed temporarily.	
Chargeable to Collection of Revenue.	
Staff and repairs	\$1,860,000
Statistical officers	42,500

Mail Subsidies and Steamship Subventions.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items for steamship services between the points named:—

ATLANTIC OCEAN.	
Canadian Atlantic ports and Australia and New Zealand	\$140,000
Canada and Newfoundland	35,000
Canada and West Indies or South America or both	340,666
Canada and South Africa	146,000
PACIFIC OCEAN.	
Canada and Australia or New Zealand, or both, on Pacific Ocean	130,509
Canada, China and Japan	200,000
Prince Rupert, B.C., and Queen Charlotte Islands	21,000
Victoria and San Francisco	3,000
Victoria, Vancouver, way ports and Skagway	12,500
Victoria and West Coast Vancouver Island	5,000
Vancouver and Northern ports of British Columbia	16,800
Vancouver and ports on Howe Sound..	5,000
LOCAL SERVICES.	
Baddeck and Iona	\$ 6,825
Charlottetown, Victoria and Holliday's Wharf	2,500
Grand Manan and mainland	12,500
Halifax, Canso and Guysboro	5,000
Halifax and Newfoundland via Cape Breton ports	5,000
Halifax, LaHavre and LaHavre River ports	4,000
Halifax and Spry Bay and ports in Cape Breton	4,000
Halifax, South Cape Breton and Bras d'Or Lake ports	6,000
Halifax and West Coast Cape Breton	4,000
Halifax and West Coast Cape Breton, calling at way ports	4,000
Mulgrave and Canso	9,500
Mulgrave and Guysboro, calling at intermediate ports	7,500
Newcastle, Neguac and Escuminac, calling at intermediate points on the Miramichi River and Miramichi Bay	3,000
Pelee Island and the mainland	3,000
Petit de Grat and the Canadian National Ry. terminus at Mulgrave	7,000
Pictou and Montague, calling at Murray Harbor and Georgetown	6,000
Pictou, Mulgrave and Cheticamp	7,500
Port Mulgrave, St. Peter's, Irish Cove, Marble Mountain and other ports on Bras d'Or Lakes	6,500

Quebec and ports on north and or south shores of Gulf of St. Lawrence, and or between ports in Prince Edward Island, Nova Scotia, Newfoundland and the Magdalen Islands	70,000
St. John and St. Andrew's, N.B., calling at intermediate ports	4,000
St. John and Bridgetown	2,000
St. John and Digby	10,000
St. John, Digby, Annapolis and Granville, along west coast of Annapolis Basin	2,000
St. John, N.B., and ports on Bay of Fundy and Minas Basin, and Margarettville, N.S.	5,000
St. John, Westport and Yarmouth and other way ports	10,000
Sydney and Bay St. Lawrence, calling at way ports	9,000
Sydney and Whyococmagh	4,000
Sydney and Bras d'Or Lake ports, and ports on east and west coasts of Cape Breton	14,000
Supervision of subsidized steamship services, expenses in connection with..	4,000
	\$1,294,300

AUTHORIZED BY STATUTE.

Canada, China and Japan

121,666

Ocean and River Service Estimates for 1920-1921.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items:—

Maintenance and repairs to Dominion steamships and icebreakers	\$1,500,000
Examiners of masters and mates	18,000
Investigations into wrecks	12,300
Expenses of schools of navigation	8,000
To provide for temporary relief of distressed seamen and to cover expenses of shipping forms	3,000
Registration of shipping	6,000
Removal of obstructions in navigable waters	5,000
Inspection of live stock shipments	3,000
To continue subsidies for wrecking plants, Quebec and British Columbia	35,000
Unforseen expenses	5,000
Two motor patrol ships for buoy and lighthouse service in British Columbia	50,000
	\$1,645,300

Contracts for Marine Public Works.—The Dominion Public Works Department has let the following contracts,—renewal of superstructure and part of eastern breakwater at Collingwood, Ont., York Construction Co., Feb. 27, schedule of prices; construction of grain conveyors, St. John, N.B., Grant & Horne, St. John, N.B., schedule of prices; overhauling and repairing of dredge Ajax, B. C. Marine Ltd., \$4,938; alterations to detention building Partridge Island, St. John, N.B., J. P. McPharland & Sons, \$2,840; repairs to coal wharf, Quarantine station, William Head, B.C., R. Moncrief, March 20, schedule of prices; rebuilding of Ell to main breakwater, Meteghan, N.S., A. Girroir and W. F. MacKinnon, Mar. 26, schedule of prices; construction of wharf, Schenacadie, N.S., E. N. Dickson, Apl. 1, schedule of prices; repairs to wharf, Bamfield, B.C., McDonald, Watson and Wither, Mar. 25, schedule of prices.

Sales of War Steamships—The steel steamships War Company and War Storm, built by J. Coughlan and Sons, Vancouver, B.C., and Wallace Shipyards, North Vancouver, B.C., and the wooden s.s. War Haida, built by Cameron-Genoa Mills Shipbuilders, Victoria, B.C., for the British Government, under orders from the Imperial Munitions Board, are reported to have been sold to Italian interests. The name of the War Storm is stated to have been changed to Laura, and that of the War Haida to Rodosto.

The Baddeck Steamship Co's s.s. Bluehill is running between Iona and Baddeck, N.S., connecting at Iona with Canadian National Rys. trains 5 and 5 daily except Sundays.