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THE

Railway and Marine World

With which are incorporated The Western World and The Railway and Shipping World, Established 1890

Devoted to Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' interests

Old Series, No. 240. New Series, No. 158

TORONTO, CANADA, APRIL, 1911.

For Subscription Rates, See page 337.

TRANSITION CURVES.

By Henry K. Wicksteed B. A. Sc., M. Can. Soc. C. E., Chief Engineer of Surveys, Mackenzie, Mann and Co. Ltd.

Mr. Wicksteed has recently written an introduction to the transition curve for a new edition of instructions to assistant and resident engineers Canadian Northern Ontario Ry., which is being got out. At our request he has kindly placed the matter at our disposal, and in transmitting it to us has written as follows:—

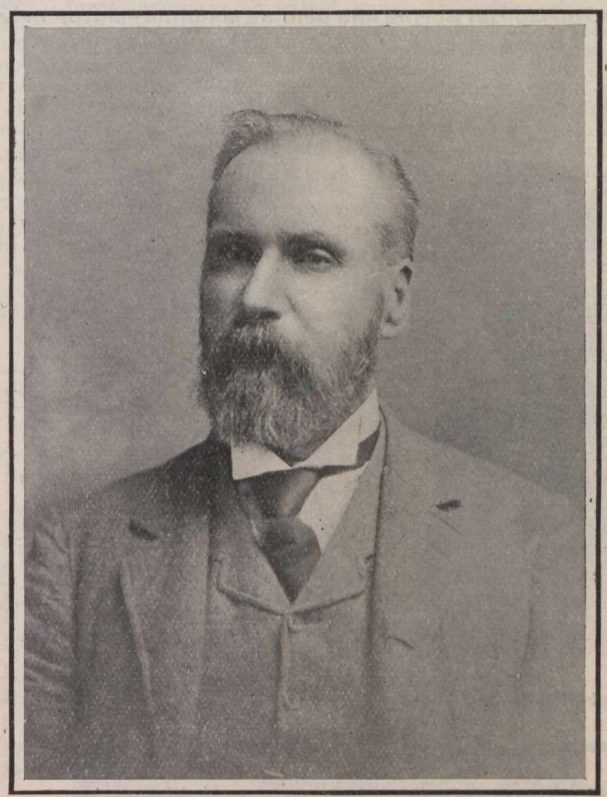
"We have tables and diagrams in our present little volume and most of the men have some idea of how to use and apply them, but in talking to them I find that not one in ten of them understands the underlying principles, the whys and the wherefores of the transition curve, and how he may work out the formulas himself, and on occasion do without the tables altogether. When one of them makes a mistake it is apt to be a very glaring and conspicuous one, and such as he would not have made if he had understood the raison d'etre of the curve, and in any case such an understanding is calculated to broaden his ideas and vastly increase his interest in his work and his efficiency.

"Mr. Howard's article in your February issue will, I think, do much to create an interest in the subject, but, even he assumes a considerable initial knowledge on the part of the reader and does not start from the beginning. I have endeavored to do so, and as we wish to make our little volume as useful as possible, I think we cannot do better than to invite your co-operation and ask through your columns for criticism and suggestions as to how we may best make the subject as clear and as simple as possible.

"It has been a hobby with me for nearly twenty years back, and I laid down then, and have since seen proved, the principle that 'the exact mathematical form of the curve used was of little consequence,' but that 'the form which would come into general use was that which could be most readily run on the ground with the least use of tables and formulæ.' That the curve which is the easiest to manipulate is also the most perfect theoretically, is a fortunate accident, but it is an accident nevertheless, and had it not happened so, we should have probably chosen some less perfect one on account of its greater simplicity.

"Just as the earlier railway engineers used the parabolic curve because the ordinates were easier to calculate than those of the circle, and they had no other method than that of ordinates to work with, when some inventive mind brought in the method of deflections, the circular curve immediately took its place, because easier to manipulate, and the parabola disappeared. Aside from the fact of its being a most useful, in fact, as we have come to believe, essential factor in railway alignment, the cubic parabola or quadratic curve is a very beautiful geometrical study in itself, and well worthy of a mathematician's attention."

In accordance with Mr. Wicksteed's suggestion, we will be pleased to receive criticisms or comments on it for publication in our columns. The paper follows:—



Henry K. Wicksteed, B.A.Sc., M.Can.Soc.C.E., Chief Engineer of Surveys Mackenzie Mann & Co. Ltd.

The object of the transition curve is to accomplish the super-elevation of the outside rail uniformly and gradually so that the elevation shall, at any and every point, be adapted to the curvature at that point. Inasmuch as the centrifugal force which the elevation is intended to offset is inversely proportional to the radius of the curve, it follows that if the rise of the outside rail over the inner is to be uniform throughout the transition, the radius of the curvature must diminish uniformly and regularly. In other words, the curve should be one of "uniform acceleration."

If the final curve into which we transide is a 5°, for example, and we divide the transition into five equal parts, the curvature at the ends of the several divisions should be 1°, 2°, 3°, 4° and 5° respectively. This has always been admitted, but it was not until the late A. M. Wellington investigated the properties of the ideal curve that it was deemed practicable to meet these requirements exactly and a number of more or less cumbersome substitutes were in use, so cumbersome and difficult of practical application that few engineers attempted to use or even understand them, and either nothing was done at all or a mere arbitrary allowance was made by offsetting the curve inwards so as to allow room for the flattening at the ends, the form which the flattening took being dependent altogether upon the artistic sense and eye of the section foreman.

Refer to figure 1.—Let A-B be a circular curve terminating at A in the tangent F-A. C is a parallel tangent, and C-B is the transition curve, and is such that it is bisected in length by the perpendicular A-G, and A-G is in its turn bisected by it. This is somewhat obvious and scarcely needs demonstration.

Another more remarkable property, which is not obvious, but is quite susceptible of demonstration, is that the angle B.D.E., representing the total angle of the transition, is always three times B.C.E., which is the tangential angle corresponding to the point B, at which D.B. is tangential to the curve. It follows that C.B.D.= B.D.E.—B.C.D. = 3 B.C.D.—B.C.D. =2 B.C.D.

Now, assuming as in our first suppositious case, that the constant curve A-B is 5°. By hypothesis our curve is uniformly accelerating from 0° to 5° at B, and the mean curvature must be 2° 30′. If we make C.B. 150 ft., then the total deflection B.D.E. must be 3° 45′, and the tangential angle B.C.E. ⅓ of this, or 1° 15′. Double the final curvature at B. to 10°, and B.C. proportionately to 300 ft., and we get B.D.E.=15° and B.C.E. =5°, or four times what we had in the first instance. In other words, the tangential angle to any point is proportional to the square of the distance of that point from the beginning or origin of the curve.

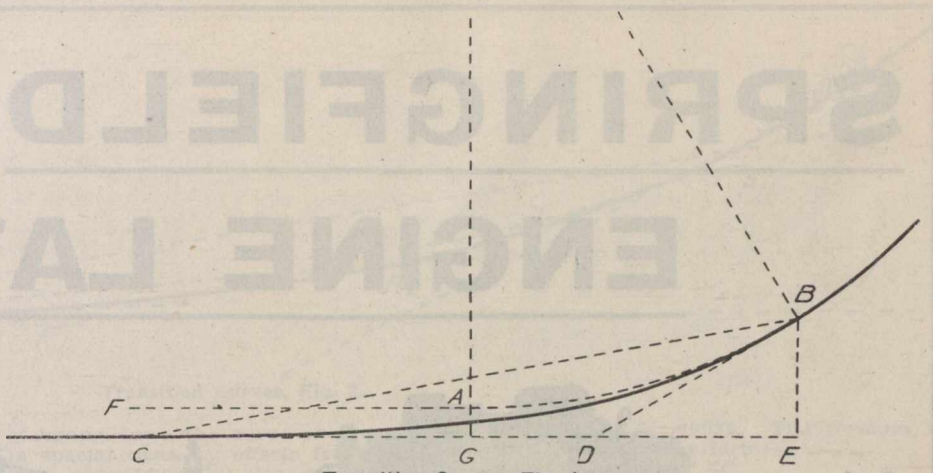
It will be further seen that as the curve accelerates uniformly the proper transition is got, not by scheming a separate curve for each degree or pitch of central circular curve, but by cutting off a standard transition at the proper point corresponding to the degree of the central curve. If we divide this standard into a number of equal chords, and designate the chord points P, P_1, P_2, P_3, etc., the transition for a 4° curve will be the same as that for a 10°, but we shall stop it in the one case at P_4, and run an ordinary 4° circular curve from

this point on, while in the other we shall continue it to P_{10}.

Now, as to the proper chord length. It has been found by experiment that in order to avoid any ill effects from an abrupt change in the position of the car body, from upright to inclined, the elevation of the outside rail should not gain on that of the inside more than about ¾ of an inch per second. At 60 miles an hour a train will travel 90 ft. (88 ft. exactly) in this time, and with our ordinary rule for elevating at ½ inch per degree of curvature, ¾ inch would correspond to a 1° 30′ curve. Proportionately, the distance for a 1° curve would be 60 ft., and this would be our chord length for a 60 mile speed. But this speed is not a safe one on curves of more than 3° or thereabouts. And as the longer chord length and resulting transition throws the curve inside its tangents much more than the short, consequently lessening its efficiency in avoiding an obstacle, it is desirable and quite permissible to use a shorter chord length in connection with the sharper curves and a corresponding less elevation of outer rail.

Following out this reasoning the writer suggested some years ago that inasmuch as the centrifugal force varied as to the square of the speed, and the permissible speed varied about in the inverse ratio of the degree of curvature, the proper formula for elevation should be one involving the square root of the degree of curvature, and that if E. represented the elevation in inches and D. the degrees of curvature, then the simple formula $E. = \sqrt{D}$ would give results not far from the best practice on curves between 1° and 10°. Engineering News commented very favorably on the suggestion, and it is believed to be in common use.

In view of these considerations, but in order to avoid unnecessary complication, three standard chord lengths, 60′, 45′ and 30′ will be used, the first for curves up to 3° or 4°, the second to 7°, and the third from 7° to 10°. Main line curves sharper than 10° are seldom used, and when they are resorted to are necessarily run over at very low speeds, and considerations other than centrifugal force, properly so called, make it desirable that the super-elevation should be still further reduced, hence, while it is still desirable to insert a transition of some kind, it is permissible to make it very short indeed. Our rule would give for a 16° curve, for instance, 4 ins. of elevation, while the older rule of ½ in. per degree would give 8 inches. This last is quite inadmissible, and the first more than will be found in good practice, and for the following reasons:—



Transition Curves, Fig. 1.

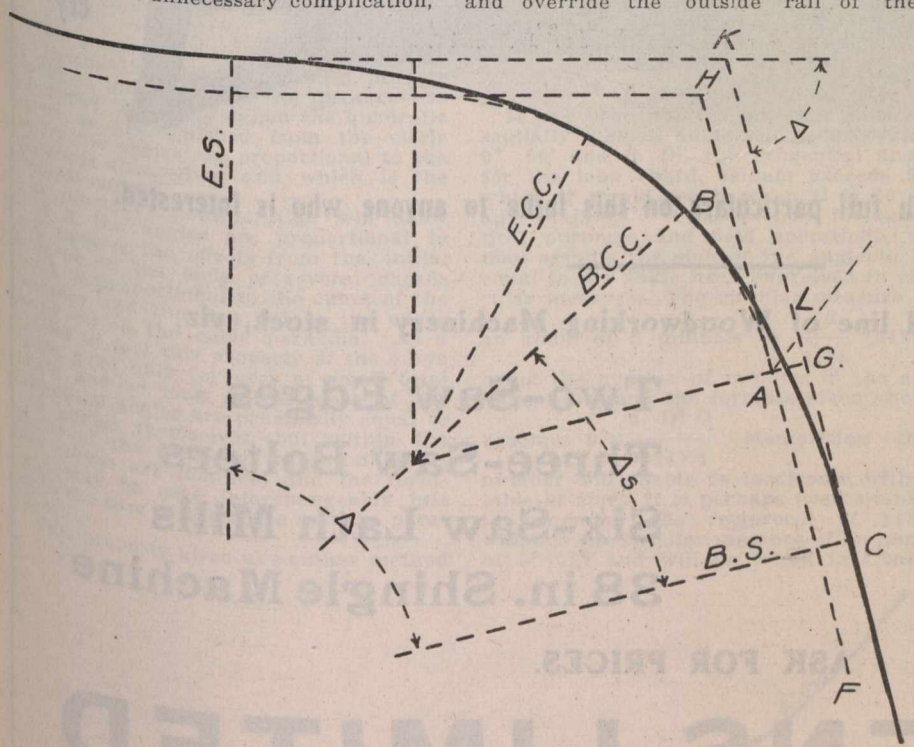
Super-elevation counteracts the dynamical centrifugal force due to velocity, but there is a tendency to thrust against and override the outside rail of the curve which, while it acts in the same direction, is quite independent of the centrifugal force. and is due to the obliquity of the car axles to the radius of the curve. At low speeds and on very sharp curves it is very much the most important component of the two, and no moderate amount of super-elevation will counteract it to any considerable extent, but rather the reverse, for the wheel is held on the track by contact of the outside flange against the head of the rail, and is constantly trying to climb up over it, and only prevented from doing so by the weight of the car upon its journal. Decrease this weight by tilting the car inwards until we throw all the weight on the inside rail, and the outside wheel will inevitably climb over and the car be derailed. It follows that on a sharp curve with excessive elevation it is safer to move at a speed sufficient to generate sufficient centrifugal force to equalize the weight on the two wheels, than it is to crawl around it, and actual experience proves the truth of this apparent paradox.

To return to our transition curve. We have established a 60 ft. chord for curves up to 3°, and for this curvature we shall have three chords terminating at points P_1, P_2, P_3.

Refer to Figure 2.—The mean curvature is 1° 30′, and the total length 180 ft., giving a total deflection 2° 42′ or 162′ and a tangential angle for P_3 of $\frac{162}{3}$ or 54′. As it has been shown that the tangential angle to any point is proportional to the square of the distance of that point from the beginning of the transition curve, then the corresponding angles for the intermediate points P_1 and P_2 will be $(\frac{1}{3})^2$ or 1-9 and $(\frac{2}{3})^2$ or 4-9 respectively of the tangential angle at P_3, thus giving an angle of 6′ at P_1 and 24′ at P_2. We have then for the 60 ft. chord transition the series of tangential angles:—

$$6\times1^2=6';\ 6'\times2^2=24';\ 6'\times3^2=54'.$$

To run the curve by the transit we set up on the initial point P. and turn off these successive angles from the tangent produced. Arrived at P_3, the end of the transition for a 3° curve, we put in a hub. Setting up over it we sight back at P. and turn off for the tangent at P_3 not 0° 54′, but double this or 1°, 48′ from which tangent we run in the 3° circular curve in the ordinary way. Arrived at the other end we simply reverse the process, or we may proceed as follows, still referring to fig. 2 At P_3 the 3° curve produced would swing inside the transition and leave it at exactly the same rate that the transition left the tangent at P. Our angles from the tan-

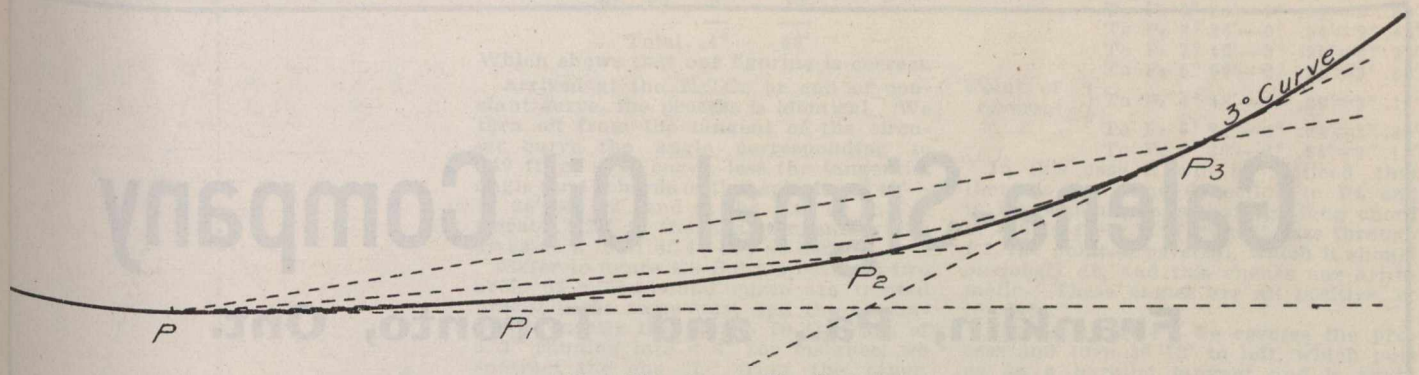


Transition Curves, Notation Diagram.

RECAPITULATION OF SYMBOLS AND FORMULAS.

Offset of Main Curve = O = A.G.
Length of Spiral = S = B.C.
Total Deflexion Angle of Spiral = Δs.
Total Deflection Ang e = Δ
Chord Length = c.
Deflexion Angle to 1st Chord Point = d. = $\frac{c}{10}$

Deflexion Angle to any Chord Point = dn = $\frac{c}{10} \times n^2$
Degree of Constant Curve = D.
Sub Tangent of Constant Curve = T. = A.H.
Sub Tangent of Spiralled Curve = T_s = K.C.
Correction for Sub Tangent = O tan. $\frac{1}{2}\Delta$ = G.L.



Transition Curves, Fig. 2.

gent at P_3 to P_2, P_1 and P are therefore those for the corresponding distances on a 3° curve minus the three initial spiral angles—

	P_2	P_1	P
Curve angles	0°54′	1°48′	2°42′
Spiral "	0°06′	0°24′	0°54′
Diff.	0°48′	1°24′	1°48′

By a similar train of reasoning we find the tangential angles for the 45 ft. chord to be—

4½′, 18′, 40½′, 1°.12′
1°.52½′, 2°.42′, 3°.40½′ &c.

And for the 30 ft. chord—

3′, 12′, 27′, 48′,
1°.15′, 1°.48′, 2°.27′,
3°.12′ &c.

We may express the above in a general formula in which C is the chord length, d. the tangential angle for the first chord, and N. the number of chord point. Then d (in minutes) $= \frac{C}{10}$ or generally the deflection angle for any chord point $d_n = \frac{C \times n^2}{10}$

This property of the curve in question of having its tangential angles proportional to the square of the distance has suggested that it be called the quadratic curve as distinguished from the circle where the angles are proportional to the distances themselves and which is the "simple curve."

A moment's consideration will show that if the angles are proportional to the squares the offsets from the initial tangent to the ends of several chords must be proportional to the cubes of the distance and this has led to the curve being styled the cubic parabola. As a matter of fact this property of the curve holds good only for arcs of small total angle and so long as the sines of the tangential angles are practically equal to the angles themselves, but within the limits of the ordinary transition curve, the curves are identical and the formulas may be used interchangeably just as in the case of the circle and the parabola.

This property gives us another method of laying down the curve on the ground in special cases by offsets from the initial tangent and also of calculating quickly the amount by which the tangent of the original circular curve will be displaced by the insertion of the transition ends. This displacement is the distance A—G in our original diagram (fig. 1).

By hypothesis A.G. is bisected by the transition, which in its turn is bisected by A. G.; C. E. is therefore twice C. G. and the offset B. E. 8 times (2^3) that at G. or 4 times A. G.

Suppose the central circular curve D to be 4°, the chord length C to be 45 ft., then the chord C.B. will be 180 ft., the tangential angle for B. will be $\frac{C}{10} \times 4^2 =$ 4.5×16=72′ or 1° 12′. The offset B.E. will be 180 ft. × Sin 1° 12′=180×.0209= 3.762 ft. and the displacement or offset A.G. which we will call $O = \frac{B.E.}{4} = 0.94$ ft

We may put this in the form of a general formula, thus ("d" being the deflection angle to the first chord point):

$$O = \frac{\text{Sin d.} \cdot D^2 \times D \times C}{4}$$

It has been pointed out that d. is essentially a small angle seldom exceeding 0° .06′ and d. D^2, the tangential angle for the long chord, seldom exceeds 5°, which it would reach when C is 30 ft. and D. is 10°. Consequently for practical purposes and field operations, w may assume the sine of the angle to be equal to the angle itself expressed in circular measure. The circular measure of an angle of d minutes is $\frac{d}{3438}$ (3438) being the number of minutes in the angular unit) and the formula given above becomes $O = \frac{d. D^3 C}{3834 \times 4}$. Memorizing this number will enable us to dispose with a table of sines, it is perhaps even simpler to remember the reciprocal of 3438, which is the circular measure of an angle of 0° 01′, and will be found in Chamber's tables as .00029. The formula in this case takes the form:—

$$O = \frac{.00029 \times d \times D^3 \times C.}{4}$$

It should be noted carefully that while d the tangential angle for the first chord is expressed in minutes, D, the degree of central circular curve, is in degrees and decimals of a degree.

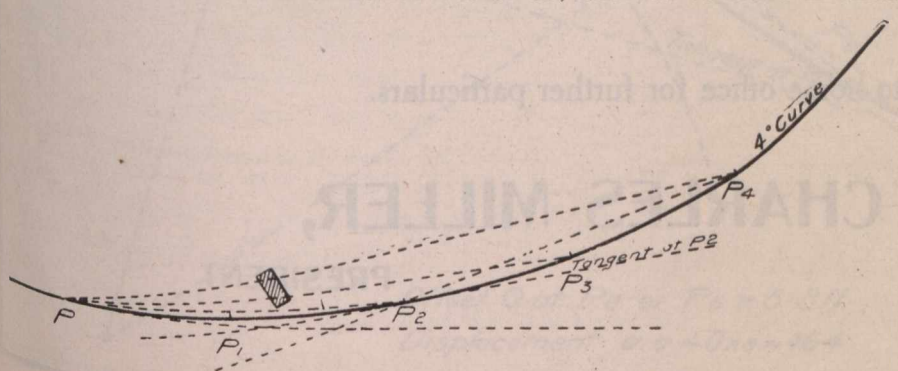
It will be seen from the foregoing that the offset for a 4° curve with 45 ft. chords is only 0.94 ft., which is quite insignificant on ordinary ground, but suppose the central curve D is doubled to 8°, the offset is then 8 times as much, or 7.5 ft., which on a steep side hill is very important indeed, but if we reduce C to 30 ft. d becomes 3′ and O=3.35 ft. It will be seen at once how much more freely we may indulge in long chords when dealing with flat curves. And in the preceeding discussion it has been shown that owing to the high speeds, which may be indulged in with the flatter curves it is there that the long transitions are most desirable.

In actual laying down of the transition or spiral on paper and subsequently on the ground, it will generally be sufficient to locate the B.S. or the beginning of the spiral further back by a distance equal to half the length of the spiral itself, in other words, the subtangent of the whole curve is longer than that of the unspiralled circular curve by this amount: this, however, is not mathematically correct, and in the comparatively rare cases where the two tangents are fixed exactly, and especially where the central angle is large and the displacement O considerable, it is necessary to add a correction which an ordinary trigonometrical construction will show amounts to—0 tan ½ Δ where Δ represents the angle of intersection between the initial and final tangents or the total deflection of the curve, including the spirals at either ends. The total distance from apex to beginning of spiral will then be

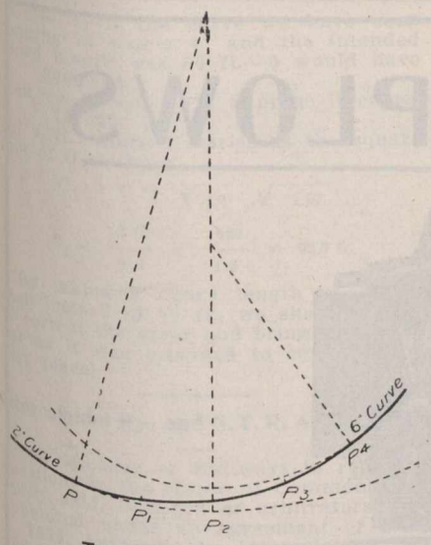
$$T_s = T + \tfrac{1}{2}S + O \tan \tfrac{1}{2} \Delta$$

The angles to the successive chord points to be turned off by an instrument set up at B.S. will be readily computed from the foregoing, but suppose we cannot see the B.C.C. or beginning of constant curvature, and have to set up at an intermediate point, as an example refer to figure 3.

Let us assume a 60 ft. chord spiral to a 4° curve; the spiral S. is 240 ft. and the total tangential angle to the B.C.C., which will be at P_4, will be $6_3 \times 16 = 1°$ 36′, but owing to an obstacle we cannot see so far and have to put in a hub at P_2 and sighting back at the B.S (P) we turn 48′ to the tangent of the spiral P_2; the curvature at this point is 2°, and the spiral from this point forward leaves the 2° curve at exactly the same rate as it left the initial tangent at P. If the 2° curve be continued the angle to P_3 and P_4 would be 48+36=1° 24′ and 48+72=2° 00′. With the spiral continued they will be 48+36+6=1° 30′ and



Transition Curves, Fig. 3.



Transition Curves, Fig. 4.

48+72+24 = 2° 24'. Arriving at and setting up at P4 and sighting back at P2, the angle to the tangent at P4 (where the curvature is 4°) will be that for 120 ft. of a 4° curve less the spiral deflection for two chords, or 2° 24'—24'= 2° 00', and from this we run in our circular curve in the ordinary way.

As these additions and calculations, although simple in themselves, are apt to confuse a novice, it will be well for him to keep his final deflections at each point on a separate column, so that he may add them up and check them with the proper total deflections at any point. In this case we have turned off

at P	0°	24'
at P2	2°	24'
at P4	2°	00'
Total..	4°	48'

If we had sighted through from P to P4 we should have deflected

at P	1°	36'
at P4	3°	12'
Total..	4°	48'

Which shows that our figuring is correct.

Arrived at the E.C.C., or end of constant curve, the process is identical. We turn off from the tangent of the circular curve the angle corresponding to 240 ft. of a 4° curve, less the tangential angle for 4 chords of the spiral; 4° 48'—1° 36'=3° 12', and at the E.S. or end of spiral 1° 36' to the final tangent, which gives us a total of 4° 48', as before.

Refer to figure 4.—Spirals between two arms of a compound curve are treated precisely the same way, and the reasoning is exactly the same. In the case of a 2° running into a 6° for instance, we subtract the one "D" from the other, leaving 4°, and run in four chords of say 60 ft. The angles are the same as before, except that as we start from a 2° instead of a tangent, we must add the equivalent angles for the 2° curve, and the series becomes for P1 6'+36=0° 42'; for P2, 24+1° 12'=1° 36'; for P3, 54'+1° 48'=2° 42', and for P4, 1° 36'+ 2° 24'=4° 00'. At P4 we are on a 6° curve, so that we turn off from our back sight on P, 7° 12'-1° 36'=5° 36' to our tangent at P4.

Checking up, our final deflections are

at P	4°	00'
at P4	5°	36'
Total ..	9°	36'

As our mean curvature between the two points is $\frac{2+6}{2} = 4°$, and the distance is 240 ft., our deflection should be 9° 36', which proves our work, as before.

Refer to figure 5.—The transition between two reverse curves can be treated in the same way, calling the angles to R+ and those to L—, and taking the algebraic difference between them. A 4° R merging into a 4° L would be equivalent to an 8° curve and require 8 chords..

The deflections will be for 60 ft. chords:—

To P1	1° 12'—	6'=1° .06'
To P2	2° 24'—0° .24'=2° .00'	
To P3	3° 36'—0° .54'=2° .42'	
To P6	7° 12'—3° .36'=3° .36'	
To P5	6° 00'—2° .30'=3° .30'	
Point of reversal — To P4	4° 48'—1° .36'=3° .12'	
To P7	8° 24'—4° .54'=3° .30'	
To P8	9° 36'—6° .24'=3° .12'	

In this case it will be noticed that there is the same deflection to P4 and to P8, which means that the long chord of 480 ft. from P to P8 will pass through P4, the point of reversal, which it should obviously do, and this checks our arithmetic. These angles are all positive, or to right.

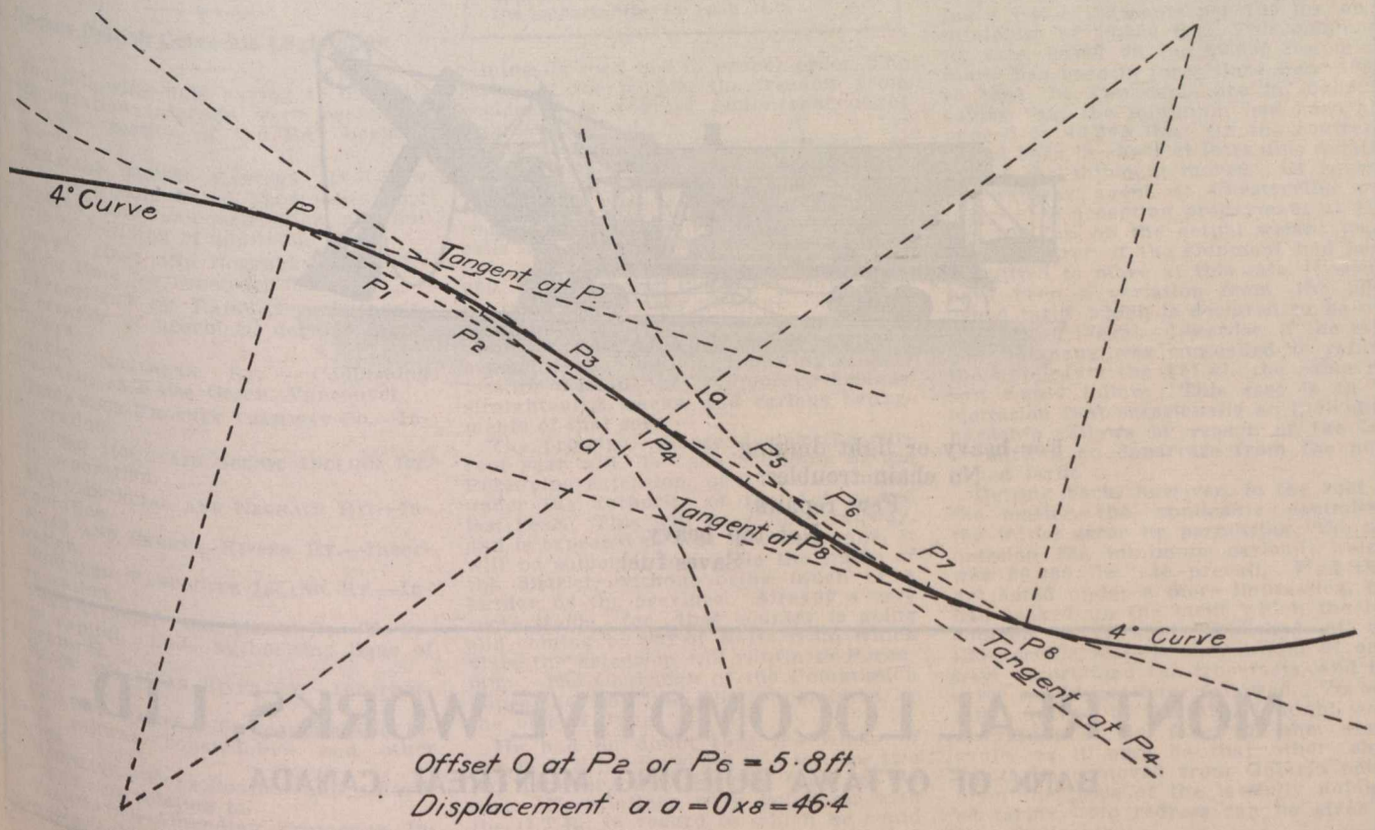
Setting up at P8 we reverse the process and turn 3° 12' to left, which puts us on a parallel tangent and is again obviously correct.

We have dealt in the preceding with a standard, or rather a series of standard chord lengths. It is sometimes convenient to depart a little from the standard. Suppose, for instance, we have schemed a long curve over rough ground to connect two existing tangents, but the end of the curve does not hit out just where it was intended to, but runs into a parallel tangent some feet away—we have no reason to suspect bad work, and we have fitted the ground as we intended. It is simply a case of subtangents being difficult to chain accurately on very rough ground, or perhaps we have merely scaled them from the paper plan and cannot expect precision. Using a simple circular curve we should have no alternative but to go back to the B.C. and run the whole thing over again, or else "fudge" the end to make it come in. The transition curve offers us a very neat way of adjusting such a discrepancy by merely altering the chord length. We evolved above the formulæ:—

$$0 = \frac{d.D^3C.}{4\times3438} \text{ and } d. = \frac{C}{10}$$

Substituting the above value of d we get

$$0 = \frac{C^2 D^3}{137520}$$ or if D be a constant, 0 varies as the square of C or C as the square



Transition Curves, Fig. 5.

root of 0—if the curve we have been running in was a 4° and the intended chord length was 60 ft.—0 would have been $\frac{3600 \times 64}{137520} = 1.67'$. Suppose it comes out 4 ft. Since C varies as the square root of O we have

$$C_1 : C :: \sqrt{4} : \sqrt{1.67}$$

$$C_1 = \frac{2\,C}{1.3} = \frac{120}{1.3} = 92.3 \text{ ft.}$$

By taking a chord length of 92 ft. then instead of 60 ft., we shall be able to correct the error and bring the curve out as it was intended to come in the first place.

Intercolonial Ry. and G.T.R. Arbitration.

The Minister of Railways in reply to questions in the House of Commons, recently said, a board of arbitrators was appointed under an agreement of Feb. 1, 1898, between the Intercolonial Ry. and the G.T.R., for the award and determination of questions arising under the agreement in June 1904. The questions before the arbitrators had reference to the issue of bills of lading, rating of freight, diversion of traffic, and disputed accounts.

The several matters were submitted for arbitration under the provisions of the agreement, either at the initiation of the Crown or of the G.T.R. and disposed of by the arbitrators, some in favor of the Crown, and others adversely. They were practically questions of interpretation of the provisions of agreement as applying to matters from time to time arising in connection with the operation of the respective railways, subject to the agreement. Other questions submitted were not disposed of by the board of arbitrators, owing to the death of the then chairman, the late A. C. Killam, and are now for the consideration of the board of arbitrators as at present constituted. The Intercolonial Ry. has paid the G.T.R. under the awards, already made, $49,737.97.

Recent British Columbia Legislation

The following acts having to do with transportation interests were passed at the recent session of the B.C. Legislature:—

CANADIAN NORTH EASTERN RY.—New title of Portland Canal Short Line Ry.; extending time for construction, and authorizing building of additional lines.

CROW'S NEST AND NORTHERN RY.—Extending time for construction.

DEPARTMENT OF RAILWAYS.—Authorizing creation of provincial department of railways.

GREAT NORTHERN RY. — Confirming agreement re False Creek, Vancouver.

GREENWOOD-PHOENIX TRAMWAY CO.—Incorporation.

GROUSE MOUNTAIN SCENIC INCLINE RY. —Incorporation.

MID-PROVINCIAL AND NECHACO RY.—Incorporation.

NAAS AND SKEENA RIVERS RY.—Incorporation.

NORTHERN VANCOUVER ISLAND RY.—Incorporation.

PACIFIC COAST COAL MINES CO.—To reduce capital, and authorizing issue of debentures.

PEACE AND NAAS RIVER RY.—Incorporation.

RAILWAY CAMPS.—To regulate and inspect railway construction and other camps.

RAILWAYS.—Consolidation and amendment of acts relating to.

TRAMWAYS.—Amending Tramways Inspection Act.

Temiskaming and Northern Ontario Ry.

Hon. A. J. Matheson, Treasurer of Ontario, in presenting the accounts for the year ended Oct. 31, 1910, in the Ontario Legislature recently referred to the revenue and cost of the T. and N. O. R. He said the revenue was estimated at $625,000, enough to pay the sinking fund and interest on the debt. The Government received $420,000; the line actually earned $436,000, but the Commissioners retained $16,000 in order to carry them along. While the adoption of compressed air in the Cobalt mines caused a decrease in the consumption of coal 53,000 tons being carried over the line, as against 105,000 tons in the previous year, the real factor causing the decrease in earnings was the large amount paid for maintenance of way. The total gross earnings were larger than in 1908-09, notwithstanding the decrease of nearly $30,000 on coal, but $164,000 more was expended on maintenance of way, and employes' wages were increased to practically the same standard as on the C.P.R. and G.T.R. The total increase on maintenance was $178,000, while the decreases were $14,000, leaving a net increase of $164,000. The result is that there is a good and safe roadbed, which was borne testimony to by the fact that while 670,000 passengers were carried, not one was killed. In this connection, he thought too much attention was sometimes paid by the Dominion Board of Railway Commissioners to reducing freight rates. The first care, he thought, of that and other similar boards, ought to be to see that every railway was maintaining its road bed in proper order. The safety of the people, the freedom from accidents, is a great factor that ought to be established.

The total expenditure charged to maintenance was $376,000, against $212,000 in the previous year. This increase was caused largely by the following items: ballast, $11,000; ties, $46,000; rails $12,000; roadway and track, $77,000; bridges, trestles and culverts, $12,000. All these increases have been charged to ordinary revenue. In addition, there had been advanced to the Commissioners $785,000 which had been expended upon buildings, putting in steel trestles instead of temporary bridges, straightening tracks, and various betterments of that sort.

The principal charge during the current year will be the building of the Porcupine extension, of 30 or 40 miles, under the authority of the Act passed last year. This will be a light railway, and is expected to cost $15,000 a mile. It will be sufficient to handle the traffic of the district, without being much of a burden on the province. Already a very large traffic for that country is going and coming by way of Kelso, from which place the extension will run in to Porcupine. The Chairman of the Commission hopes that the line will be complete by the end of June.

He had no doubt that the whole of the T. & N. O. R. would in a year or two pay interest and sinking fund on the cost. Negotiations were going on with the G.T.R., in regard to which he could not go into details, but he could say that the G.T.R. expected to send a very large traffic over the line.

The total cost of the line to date represented by money advanced by the Government is $16,123,338.69.

From the Superintendent of the Grand Trunk Railway Car Department.

J. Coleman, Superintendent Car Department, Grand Trunk Railway, Montreal, writes to the Railway and Marine World as follows:—

"I look forward with a great deal of pleasure to receiving your monthly publication. I am sure it is highly appreciated by everybody who has the opportunity to read it."

Minimum Car Load Weight on Evaporated Milk.

In the case of the Canadian Condensing Co., Ltd., vs. the C.P.R., Chief Railway Commissioner Mabee gave the following judgment Jan. 7, which was concurred in by Assistant Chief Commissioner Scott and Commissioner McLean:

The applicants allege that on Oct. 14, 1910, they loaded at Chesterville, Ont., a car of evaporated milk, destined to Vancouver. The following is an excerpt from their letter:—"Being under the impression the minimum carload weight was 30,000 lbs., we loaded 30,350 lbs., took our bill of lading to the C.P.R. agent marked 'prepaid,' who figured up the freight and we paid him $288.33. We heard nothing more of the matter until about the middle of November we had a debit note from the consignees, Little Bros., for $91.67, paid additional freight on car received Oct. 27. Enquiring into the matter, we ascertained that the minimum weight had been advanced to 40,000 lbs., and we made a claim on the C.P.R. for a refund of the $91.67, feeling that they had a perfect right to entertain the claim, since the error was clearly one of their agent's, and not ours."

The applicants no doubt feel that they have been injured to the extent of $91.67, alleging, as they do, that the car was shipped on a laid down price, and in fixing that price the freight was figured on the basis of the 30,000 lbs. minimum, and that the error, be whose it may, has put them to loss to the extent of $91.67. Now the facts are that the tariff rate in carload lots from Chesterville to Vancouver on evaporated cream is $1.75 per 100 lbs., classification minimum of 24,000 lbs. This would have made the charge upon the shipment in question $420. There is, however, a special commodity tariff showing a toll of 95 cents per 100 lbs. on a minimum of 40,000 lbs. This commodity rate, based on the 40,000 lbs. minimum, has been in force since Dec., 1909, so that the applicants are in error in saying that the minimum had been advanced to 40,000 lbs. On the contrary, it had been in effect at least nine months before the shipment moved. Of course, the railway agent at Chesterville was in error in accepting prepayment at 95c per 100 lbs. on the actual weight loaded. However, if the shipment had been permitted to move at this rate, it would have been a variation from the published tariff which is declared to be unlawful and illegal. Likewise, if the railway company was compelled to refund the applicants the $91.67, the same result would follow. This case is an illustration that occasionally an individual hardship follows by reason of the law permitting no departure from the published tariff.

Getting back, however, to the root of the matter, the applicants committed the initial error by permitting "the impression the minimum carload weight was 30,000 lbs." to prevail. Had they not acted under a mere impression, but had looked up the tariff which the law compels to be kept published at the Chesterville station, they would at once have ascertained the true facts, and the error would not have followed. To permit a refund of this $91.67 might work discrimination in favor of the applicants, as it may be that other shipments have moved from Ontario points upon the basis of the lawfully published tariffs. No redress can be given to the applicants.

G. T. P. R. Maintenance of Way Employes' Pay.

The Board of Conciliation and Investigation which was appointed by the Minister of Labor in connection with matters in dispute between the Grand Trunk Pacific Ry, and its maintenance of way employes, consisted of J. W. Dawsey, of Melville, Sask., appointed on the company's recommendation; W. T. J. Lee, of Toronto, appointed on the employes' recommendation, and Judge McGibbon, of Brampton, Ont., as Chairman, appointed on the first recommendation of the other two members. The Board met at Winnipeg and went over the line to Edmonton, and afterwards met in Toronto. The Board was unanimous in its finding, except the question of wages, for which two schedules were submitted, one by Mr. Lee, representing the employes, which was concurred in by the Chairman and one by Mr. Dawsey, representing the company. The Labor Department was subsequently informed that the report of the Board was satisfactory to the employes. Following is the principal portion of the report:—

The members of the Board have been able to agree upon all the articles of the following schedule except the rates of pay.

The following rules will govern the employes of the G.T.P.R., as set out further in sec. one thereof.

When additional positions of a like class are created compensation will be fixed in conformity with that of similar positions as shown by this schedule.

This schedule will become and be effective as of Dec. 1, 1910, and will not be changed unless on 60 days notice, by either party given between May 1, and Nov. 1, of any year.

These rules will not take away any privileges that are now in effect with employes.

The schedule of rates marked A. attached hereto are the rates offered by the representative of the Company, and which he considers fair. The schedule of rates marked B., attached hereto are the rates which the representative of the employes believes should exist and be paid by the Company, and which he considers fair. The Chairman concurs in the position and rates as recommended by the representative of the men, feeling that from the evidence adduced before the Board that there should be an increase in the rates recommended by the Company's representative.

Sec. 1.—By permanent maintenance-of-way employes is meant employes who take their orders from the Road Masters and Bridge and Building Masters, and who have been in the maintenance-of-way service continuously for nine months or more, or who have had nine months cumulative service during the two years immediately preceding, and same will hereinafter be referred to as employes. Laborers in extra gangs, unless those practically engaged all the year round will not be ranked as permanent employes.

Sec. 2.—Ten hours shall constitute a day's work, excepting for track and bridge watchmen, signal men (except when employed as telegraph operators), pump men and pump repairers. When required to work in excess of these hours, time will be allowed for such excess at the rate of time and a half. Time and a half will be allowed on Sundays, Christmas Day and New Year's Day. Employes called for duty after having been relieved at 6 p.m., shall receive a minimum of four hours, and shall not be required to suspend work in schedule working hours to equalize overtime.

(a) Twelve hours will constitute a day's work for bridge watchmen, signal men, pump men and pump repairers. When required to work more than 12 hours, straight time will be allowed.

(b) In emergencies, employes will not be required to work more than 24 hours continuously without a rest of eight hours.

(c) Employes detained when travelling on orders of the Company after regular working hours will be allowed straight time except when provided with boarding and sleeping cars.

(d) Foremen will be allowed straight time for wet days, provided they remain on duty.

(e) When the Company's interests do not suffer thereby, employes will be allowed, at their request, to quit work on Saturday during the summer months at 12 noon. If required to work after these hours, overtime will not begin until 6 p.m.

(f) Employes transferred by the Company to construction work will not lose their seniority standing as employes.

Sec. 3.—Employes will be promoted hereafter on their respective superintendents' division, in order of seniority, provided they are qualified. All employes shall be advised of vacancies or of any new appointments that may occur in the department in which they are employed, and their applications, if presented within ten days, will be considered. Employes may be transferred from one division to another for extra gang work, or on the opening of new lines, or when the necessary qualified men for maintenance-of-way work are not obtainable on the division.

(a) Employes refusing promotion become junior to employes accepting such promotion.

(b) An employe who is transferred to another department at his own request, or is transferred from the bridge and building department to the road master's department, or vice versa will lose his seniority standing, but an employe transferred without his consent shall have the right of appeal.

(c) Employes leaving the service of the Company when their services are required, in the event of re-employment will rank as new men.

(d) A list of all employes will be prepared for each superintendent's division, and such list will show seniority standing of each employe. The list will be revised from time to time to agree with length of service and promotions made and a copy will be furnished representatives of employes. They will be open for correction on proper representation by the employe to the head of his department.

(e) In the event of reduction in the number of men employed, those longest in service shall have preference of employment.

(f) The position of track and bridge watchmen and signal men at crossings not interlocked are not subject to the general rules for promotion, being intended to take care of men who become unfit for other service.

Sec. 4.—No employe shall be suspended (except for investigation), or discharged, until his case has been investigated and he has been proven guilty of the offence charged, the decision in such case to be arrived at within 10 days from date of suspension. If an employe be found blameless, he will be reinstated and paid at schedule wages for time lost, and will be reimbursed reasonable expenses, if away from home in such case. If detained more than ten days at Company's instance, awaiting decision, he will be paid schedule wages for all time lost in excess of ten days regardless of decision reached. An employe may have the assistance of another employe during investigation, should he so desire. A written statement setting forth the result of the investigation and the reasons therefor, will, if requested, be furnished by the Company to the employe or employes affected.

(a) Should an employe at any time consider himself unjustly treated for any cause whatsoever, he shall be entitled to a fair and impartial investigation within thirty days from date of complaint by him to his superior officer, and a decision shall be given him in writing within ten days thereafter.

Sec. 5.—Leave of absence and free transportation will be granted to employes who are witnesses and members of duly appointed committees for the adjustment of matters in dispute between the Company and the employes within ten days after request in writing has been made on the proper officer.

Sec. 6.—Employes taken off their regular sections temporarily to work on snow or tie trains, or other work, will be compensated for the boarding and lodging expenses they necessarily incur.

(a) Bridge and building employes taken from their place of residence or boarding outfits will be compensated for the extra expense they necessarily incur, not to exceed $1 a day.

(b) Section foremen or any other foremen taken from their gang for any reason for one or more days will be relieved of the duties of foremen during their absence, and the relieving foreman will be paid the rate of the foreman he relieves during the absence of the regular foreman, and be held responsible during the absence of the regular foreman.

(c) That a regular section foreman having his gang increased to over 20 men for 14 days or over shall receive extra gang foreman's rates.

Sec. 7.—Employes required to attend and light semaphore and switch lamps will receive schedule rate of section men. When lamps are located at more than half a mile from the station, they will be attended to in regular working hours. Employes required to walk track or attend lamps on Sunday will be paid at the regular rate and one-quarter for the time so engaged. A suitable place will be provided for tending to all lamps.

Sec. 8.—The company will keep the section house in good repair; the cost of repairs other than ordinary wear and tear will be charged to occupants. Regular section houses shall be for the use of section foremen and their families only.

(a) Where water is transported for use of section gang, good water will be provided. Where water is not supplied by the company it will be procured on the company's time.

(b) Employes shall not be required to do scavenger work, except such as pertains to their quarters and at such stations as cannot otherwise be taken care of.

(c) The Company will provide suitable houses for pumpmen; until such houses are provided pumpmen shall receive $5 extra per month.

Sec. 9.—The employes will be granted leave of absence when consistent with the carrying on of their work and be given transportation in accordance with the current pass regulations.

(a) As far as practicable, employes will be afforded the opportunity of visiting their place of residence, and furnished transportation when requested from proper authority, and when it will not interfere with the company's business.

(b) Employes will be granted free transportation and leave of absence to attend their meetings, but such free transportation will not extend over more than 300 miles, and leave of absence will not exceed two days, and will only be granted when it will not interfere with the service and when the Company will not be put to any expense thereby.

Sec. 10.—All bridges and building employes in the service of the Company at the date of this schedule becoming effective shall rank as permanent employes.

SHEDULE A.—RATES OF PAY.

Trackmen.

Sect. foreman at all points.....	$75.00	per month
Asst. sect. foreman in yards....	2.55	per day
Sect. men in all first and second class yards	1.75	"
Sect. men at all other points..	1.70	"
Foreman of extra gangs...$2.55-	3.55	"
1st asst.. foreman, extra gangs..	2.65	"

2nd asst. foreman, extra gangs.	2.55 "
Snow plough foreman and flanger foreman when called for duty.	.33 per hour
Employes working in snow plough or flanger when called for duty	.17½ per hour
Signal men at level crossings ..	1.50 per day
Bridge and building men:	
Yard and shop foreman	$3.50-$3.55 per day
Asst. yard foremen	2.75 per day
Foremen carpenters	.40 per hour
Carpenters	.25-.35 per hour
Bridgemen	2.25-$2.90 per day
B. & B. laborers	1.75 per day
Bridge watchmen	55.00 per month
Foremen painters	3.50-4.00 per day
Painters	2.50-3.00 per day
Pump repairers	85.00-100.00 mo.
Pumpmen (1, 2 or 3 pumps)	50.00-65.00 "
Single pumps where two men are employed	50.00 per month

NOTE:—Foremen charged no rent, and fuel with stoves for all purposes furnished free when occupying combination stations.

SCHEDULE B.—RATES OF PAY.

Trackmen:	
Sect. foremen at Westfort, Transcona, Edmonton & Melville	$3.20 per day
Sect. foremen at Rivers, Watrous, Biggar & Wainwright..	3.00 "
Sect. foremen at all other points	2.88 "
Asst. sect. foremen in yards...	2.88 "
Sect. men in all first and second class yards	2.00 "
Sect. men at all other points ..	1.90 "
Foremen of extra gang	3.55-3.95 per day
1st asst. foremen extra gangs..	2.85 "
2nd asst. foremen, extra gangs.	2.75 "
Snow plough foremen and flanger foremen when called for duty	.43 per hour expenses additional.
Employes working in snow plough or flanger when called for duty	.25 per hour expenses additional.
Signal men at level crossings..	1.65 per day
Bridge and building men:	
Yard and shop foremen	$4.15 per day
Asst. yard foremen	3.15 "
Foremen carpenters	4.00 "
Carpenters	3.00-3.50 per day
Bridgemen	2.40-3.00 per day
B. & B. laborers	2.05 per day
Bridge watchmen	60.00 per month
Foremen painters	4.00 per day
Painters	2.75-3.15 per day
Pump repairers	93.00 per month and expenses while away from headquarters, not to exceed $1.00 per day
Pumpmen (1 pump)	$55.00 per month
Pumpmen (2 pumps)	65.00 "
Pumpmen (3 pumps)	72.50 "
Single pumps where two men are employed	60.00 "

Railway Taxation in Ontario.—A resolution of the Ontario Legislature, passed Mar. 1, provides for the payment by railway companies of a tax of $60 for each mile of single track line, $40 for each mile of second track, and $20 for each mile of additional tracks, in territory without municipal organization, provided that for lines forming a system not exceeding 150 miles from terminus to terminus, the tax shall be $15 a mile for one track, and $5 a mile for each additional track, and on lines less than 30 miles long the tax shall be $10 a mile for a single track and $5 a mile for any additional track. The resolution is being given effect to in an act.

Steam Railway Track Laid in 1910.—In the details of track laid by the G.T. Pacific Ry. in our last issue, it was stated that 36 miles had been laid between mileage 17 and Canora, Sask., instead of 38 miles. The total given, 335 miles, is correct, so that the error in no way affects the totals given in the various tables.

R. S. Richardson, formerly Assistant Superintendent Canadian Northern Quebec Railway at Joliette, Que., who has been appointed by MacDonnell and O'Brien as Superintendent of operation of the portion of the National Transcontinental Ry., of which they are contractors, writes: "I have always enjoyed reading the Railway and Marine World."

C. P. R. Land Taxation in Alberta.

Following is a summary of Lord Macnaghten's judgment delivered in London, Eng., in the appeal of the Alberta Government, against the judgment of the Alberta Supreme Court, respecting the taxation of C.P.R. lands in the province:

The two actions which have given rise to these appeals were brought to enforce two separate claims by the province of Alberta to tax certain lands belonging to the C.P.R. Co. The lands in question formed part of the land subsidy earned by the company in the construction of its railway. In 1881, when the construction contract was ratified by the Dominion Parliament, the district in which the lands are situated was part of the Northwest Territories. The province of Alberta, which was carved out of the Territories, was not established until 1905. Though the questions involved in the two actions are quite distinct, they both turn on the wording of clause 16 of the construction contract, which says in part that the company's lands in the Territories, until they are either sold or occupied, shall be free from taxation by the Dominion or by any province hereafter to be established or by any municipal corporation therein for 20 years after the grant thereof from the Crown. In the appeal the question turns upon the meaning of the word "sold," as used in that clause. It seems that in Sept., 1902, the company agreed to sell three sections of land which had been conveyed to the company by letters patent, July 20, 1901. The price of one of the sections was $1,644, and of each of the others $1,920. On signing the agreements $320 was paid by the purchaser in respect of each section. The remainder was to be paid in five annual instalments at dates specified. In each case time was made of the essence of the contract. Beside the three sums of $320 paid on the execution of three agreements nothing was ever paid by the purchaser towards the purchase money, and on Nov. 1, 1905, the company declared the three agreements null and void.

It is admitted that the lands have never been occupied within the meaning of clause 16. The contention on the part of the province is that although there was no sale in fact, and although each of the three agreements for sale was duly voided and annulled in pursuance of authority contained in the agreement itself, yet the lands have been sold within the meaning of that expression in the construction contract. So strange a contention does not seem to require a serious answer. But an answer may be given in the language of Chief Justice Ritchie, who disposed of the point when it was raised in 1891 before the Supreme Court. He said:—"There must have been a completed sale, and the property must have passed out of the C.P.R. and vested in the purchaser before it could become liable to taxation."

The action which gave rise to the other appeal was brought by the Alberta Minister of Public Works to determine the date from which the period of exemption mentioned in the latter part of clause 16 is to be reckoned. in the case of the lands of the company in the Northwest Territories, which have not been sold or occupied, the period of exemption is defined as 20 years after the grant from the Crown. The proper meaning of the expression, grant from the Crown, in the case of a land grant is a conveyance by letters patent, and although, of course, Crown lands may be transferred to a subject by Act of Parliament, such a transfer would not ordinarily or properly be described as a grant from the Crown.

The respondent's contention is that in the case of lands proposed to be taxed the period of exemption must be reckoned from the date of the letters patent conveying those lands to the company. The earliest patent in the present case is dated April 6, 1903. The appellant's contention is that the period of exemption runs not from the date of the conveyance of the lands now proposed to be taxed, but from June 18, 1884, the date on which the survey of these lands was approved by the Surveyor General of Canada, and the lands were thus identified as part of the subsidy in land to which the company was entitled. It was one of the conditions of the construction contract that grants in respect of the land subsidy should be made in alternate sections of 640 acres extending back 24 miles on each side of the railway—the company receiving the sections bearing uneven numbers. It was, however, provided that if any of such sections consisted in a material degree of land not fairly fit for settlement, the company should not be bound to receive them as part of such grant. This provision led to prolonged discussion and negotiation between the company and the Government. Some lands which the company at first rejected were afterwards accepted, and some that were at first accepted were rejected afterwards. The result was that in a considerable number of cases the destination of lands appropriated to the land subsidy was not definitely fixed until long after the date when the survey was approved in the Surveyor General's office. As counsel for respondent pointed out, there would have been much complication and confusion if the construction contended for by the appellant had been adopted.

In point of fact, however, whenever the question has been argued in the Canadian courts the ordinary and proper signification of the expression "grant from the Crown" has been adopted. The leading case is the case of North Cypress vs. C.P.R. In deference to the decision of the Supreme Court of Canada in that case, formal judgments were only delivered by the trial judge, and by the judges in the Alberta Supreme Court, from which the second appeal is brought. It was argued that if the expression "grant from the Crown" was to have its proper and ordinary signification it would be in the power of the railway company, by delaying to accept Crown grants or even by simply abstaining from pressing for such grants, to defer their liability to taxation for an indefinite period. It must, however, be remembered that at the time when the construction contract was made lands in the Northwest Territories were the property of the Dominion, and that any delay in perfecting Crown grants would be the fault of Dominion officers. The circumstance that but for the contract the lands would now be liable to taxation for provincial purposes cannot alter the rights of the railway company, nor does that fact of itself necessarily lead to delay in perfecting the grants. The whole contract was subjected to a very close and critical examination, but their Lordships are satisfied that there is no reason for departing from the ordinary and proper signification of the expression, grant from the Crown. Their Lordships are therefore of opinion that in the case of lands not sold or occupied the period of exemption from taxation mentioned in clause 16 of the construction contract runs in each case from the date of the letters patent conveying the lands to the railway company, and will therefore advise His Majesty that both appeals should be dismissed. In accordance with an agreement between the parties, there will be no order as to the costs of the appeal.—Canadian Gazette.

Mrs. W. R. Baker, wife of the Secretary C.P.R., is visiting in Europe, where she expects to spend some months.

Can. Soc. C. E. Officers.

Three mistakes occurred in the list of officers of the Canadian Society of Civil Engineers in our last issue.

J. G. Sullivan, Assistant Chief Engineer C.P.R., Winnipeg, was included in the list of councillors. He is one of the vice presidents, holding office for three years.

J. H. Kennedy, Chief Engineer Vancouver, Victoria and Eastern Ry., Keremeos, B.C., was included in the list of councillors, instead of J. C. Kennedy, Vancouver, B.C.

H. M. Jaquays, M.A., M. Sc., Montreal, was omitted from the list of councillors.

Following are the standing committees:—FINANCE, J. M. Shanly, Chairman; C. N. Monsarrat, G. H. Duggan, W. J. Francis, E. Marceau, Treasurer. LIBRARY, and HOUSE, L. A. Herdt, Chairman; Jas. White, F. P. Shearwood, R. S. Lea, J. M. R. Fairbairn.

Following are the officers of some of the sections from June 1911, to June 1912:—General, P. Johnson, Chairman; H. M. Mackay, Vice Chairman. Electrical, L. A. Herdt, Chairman; R. M. Wilson, Vice Chairman. Mechanical, H. H. Vaughan, Chairman; W. J. Francis, Vice Chairman.

The society's branches are as follows:

QUEBEC: P. E. Parent, Chairman; S. S. Oliver, Secretary. Headquarters, City Hall, Quebec.

OTTAWA: A. A. Dion, Chairman; H. V. Brayley, Secretary. Headquarters, 177 Sparks St., Ottawa.

KINGSTON officers not yet appointed.

TORONTO: H. E. T. Haultain, Chairman; A. C. D. Blanchard, Secretary. Headquarters, Engineers' Club, King St. West, Toronto.

WINNIPEG: C. H. Dancer, Chairman; E. Brydone-Jack, Secretary. Headquarters, University of Manitoba, Winnipeg.

VANCOUVER: G. H. Webster, Chairman; H. K. Dutcher, Secretary. Headquarters McGill University College, Vancouver.

American Association of General Baggage Agents.

At the annual meeting in San Antonio, Texas, recently, the following officers were elected:—President, F. H. Jones, G.B.A. St. Louis Southwestern Ry., Texarkana, Tex..; Vice President, B. Quick, G. B. A., Missouri Pacific Ry., St. Louis, Mo.; Secretary-Treasurer, J. E. Quick, G.B.A., Grand Trunk Ry., Toronto; Executive Committee, G. F. Lee, G.B.A., Rock Island Lines, Chicago, chairman;G. L. Alley, G.B.A., Oregon Short Line Rd., Salt Lake, Utah; C. J. Wiggins, G.B.A., Boston & Maine System, Boston, Mass.

The fundamental rules of the Association as revised were adopted.

The most important action taken was that of determining the maximum weight of corpses and their caskets to be handled by the baggagemen. This aggregate maximum weight was determined at 500 lbs.

A committee of 11 to be appointed by the chairman, was assigned the task of drafting standard blanks, checks, and tickets for baggage. To this same committee was also referred the subjects of irregularities in the settlement of concealed losses, a special form of tickets for corpses, extra tickets for checking baggage, showing the condition of baggage on transfer bills to and from transfer companies and connecting lines, and disposition of uncollectable c.o.d. charges.

The matter of fumigating immigrants' baggage was left to the action of the health authorities of the different places where the immigrants arrive.

The matter of forwarding baggage on telegraphic request, regardless of transportation, was disposed of by the adoption of a form of telegram to be used in such connection.

The Association resolved to continue the practice of transfer companies receiving and checking through baggage handled by such transfer companies.

A method for dispatching to its proper destination improperly routed baggage was adopted.

In reference to the transmission through New York City of corpses checked to points beyond, the Association concluded to transmit them on the original death certificate instead of delaying shipment to obtain certificate in New York.

The practice of giving prepaid certificates was abrogated.

The requirement for showing form and number of ticket on inter-line checks was discussed at length and the provision to that end was lost when put to a vote.

The matter of showing weather conditions on waybills was also discussed and it was resolved to have the bills show such conditions.

A change in the form of c.o.d. checks was adopted, by which it was supposed that collections of that kind will be more feasible.

April Birthdays.

Many happy returns of the day to—

F. T. Anderson, Car Service Agent C.P.R. Western Lines, Calgary, Alta., born at Lambeth, Ont., April 1, 1878.

W. H. Ardley, General Auditor G.T.R. Montreal, born at London, Eng., Apr. 24, 1858.

J. A. Armstrong, Chief Train Dispatcher C.P.R., Ottawa, born at South Durham, Que., April 6, 1863.

F. J. Balch, General Freight and Passenger Agent Ottawa and New York Ry., Ottawa, born at Massena, N.Y., April 15, 1870.

Jas. Black, Freight Claim Agent, Saskatchewan Division C.P.R., Moose Jaw, born near Seaforth, Ont., Apr. 19, 1858.

C. G. Bowker, Assistant Superintendent G.T.R. Middle Division, London, Ont. born at Medford, N.J., Apr. 21, 1871.

G. Cobb, Chief Dispatcher, Reid Newfoundland Co., St. John's, Nfld., born at Coupar Angus, Scotland, Apr. 21, 1885.

W. A. Dube, Superintendent District 1, Intercolonial Ry., Levis Que., born at St. John's, Que., Apr. 21, 1864.

A. E. Edmonds, District Passenger Agent C.P.R., Detroit, Mich., born at Woodstock, Ont., April 8, 1866.

J. H. Flock, K.C., Honorary Counsel Canadian Ticket Agents' Association, London, Ont., born at Toronto, April 6, 1834.

B. W. Folger, Manager Niagara Navigation Co., Toronto, born at Kingston, Ont., April 8, 1872.

B. C. Gesner, Moncton N. B., formerly Air Brake Inspector I.C.R., now travelling representative Galena Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.

J. Murray Gibbon, Advertising Agent C.P.R., London, Eng., born at Udewella, Ceylon, April 12, 1875.

V. A. Harshaw, Superintendent District 2, Atlantic Division C.P.R., Woodstock, N.B., born at Mono, Ont., April 26, 1865.

J. M. Horn, District Freight Agent, Canadian Northern Ry.. Edmonton, Alta., born at Allanton Mills, Lanarkshire, Scotland, April 12, 1880.

B. S. Jenkins, General Superintendent C.P.R. Telegraphs. Winnipeg, born April 8, 1859.

J. Kyle, Assistant Master Mechanic Canadian Northern Ry.. Edmonton, Alta., born at Toronto, April 11, 1877.

D. McNicoll, Vice President C.P.R., Montreal, born at Arbroath. Scotland, April 7, 1852.

P. Mooney, General Freight and Passenger Agent Halifax and Southwestern Ry., Halifax, N.S., born at St. Catherines, Que., April 19, 1871.

G. D. Perry, General Manager Great North Western Telegraph Co., Toronto, born at Whitby, Ont., Apr. 19, 1858.

R. S. Richardson, Superintendent Macdonnell & O'Brien, contractors National Transcontinental Ry., La Tuque, Que., born at Napanee, Ont., April 9, 1865.

W. A. Ritchie, District Superintendent Pullman Co., Montreal, born at Edinburgh, Scotland, April 13, 1854.

E. W. Smith, Superintendent Dining and Parlor Car Service G.T.R., Toronto, born at North Bridge, Mass., April 21, 1869.

W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., April 14, 1877.

W. Wainwright, Second Vice President G.T.R., Montreal, born at Manchester, Eng., April 30, 1840.

W. Woollatt. Walkerville, Ont., ex-General Superintendent Buffalo Division Pere Marquette Rd., born at Weedon, Hertfordshire, Eng., April 2, 1855.

Victoria Rolling Stock and Realty Co. of Ontario Ltd.

Following are extracts from the report for the year ended Feb. 15, presented at the annual meeting in Toronto, March 1:

During the year the company has not issued any new debentures, and outstanding debentures against leases have been reduced by $215,000. All payments maturing during the year have been promptly met. The profit on the year's business, after charging up directors' fees and expense account is $28,062.81, out of which a dividend of 6% per annum on the paid up capital stock has been paid, amounting to $14,400.00, leaving $13,662.81 carried forward to profit and loss account, which now stands at $34,412.02.

ASSETS.

Obligations on leases	$1,227,008 33
Debentures held by company and accrued interest	158,359 72
Cash in bank	79,710 64
Call loans	100,000 00
	$1,565,078 69

LIABILITIES.

Capital stock subscribed....$600,000 00	
Capital stock paid up	$ 240,000 00
Debentures outstanding	1,280,000 00
Interest accrued on same	10,666 67
Balance at credit of profit and loss..	34,412 02
	$1,565,078 69

PROFIT AND LOSS ACCOUNT.

Balance at credit Feb. 15, 1910	$ 20,749 21
Rents received and accrued on leases, interest on advances and debentures held by company	87,560 90
	$108,310 11
Interest paid and accrued on debentures	$ 56,833 00
Expense account	1,365 09
Directors' fees last year	1,300 00
Dividend account	14,400 00
Balance carried forward	34,412 02
	$108,310 11
Original cost of rolling stock held under existing leases	$2,939,370 00
Amount paid in on account by railway companies in addition to interest	1,659,370 00
	$1,280,000 00
Total amount of company's debentures outstanding	$1,280,000 00

The board for the current year is as follows:—President, E. B. Osler; Vice President, W. D. Matthews; Managing Director, R. A. Smith; other directors, D. Coulson, F. G. Osler, D. R. Wilkie, Hon. J. S. Hendrie.

W. E. Fowler, formerly Master Car Builder, C.P.R., who is now living an outdoor life in California, writes: "I hope The Railway and Marine World may continue to be the success it has been in the past."

Fuel Economy.

By T. Duff Smith, Fuel Agent Grand Trunk Pacific Railway.

Some years ago it was thought that the coal fields of the U.S. were inexhaustible, but the cry today is for conservation and great efforts are being put forth by our neighbors on the south to economize fuel as much as possible. In Canada we can hardly estimate our resources in the way of fuel, as new fields are being opened up every year, but, although we have such large visible supplies, we have no right or reason to waste fuel to the extent we are now doing.

We find from latest statistics that during the year ended June 30, 1910, our Canadian railways used 6,252,054 tons of coal valued at $18,570,393, to which must be added the cost of transportation to point of consumption, handling to tenders, inspection and general supervision, so that we may safely estimate the cost of our annual coal bill at over $25,000,000. Next to labor, fuel is the greatest individual item of expense to a railway, averaging about 10% of the total expense.

I believe that the fuel proposition has been very much neglected. Whenever it becomes necessary to effect economies the first men called on to make a reduction are those in charge of maintenance, both mechanical and permanent way. We stop repairing cars and engines, reduce shop forces, stop putting in new ties, discontinue construction, but the fuel bill goes right along. The management of the average railway is never much surprised when the fuel bill jumps up a few thousand dollars, they look at it as a sort of "guess" proposition. My own experience is, that the more you learn about the fuel question the deeper you go into it, the more you discover how little you really know and how much there is to learn.

How can we further fuel economy? There are several ways, and I will touch briefly on those which have struck me as practicable. The coal producer is a factor in our economy. The railway official who does not recognize that fact is remiss in his duty to the company that employs him. Every railway passes in some section, through coal fields, and therefore by helping operators to develop the mines it reaps returns upon the commercial coal shipped, and as all coal is not of suitable size and character for commercial use, the railway could or should assist the operator to dispose of this coal by finding a use for it, I would question the wisdom of getting any great reduction in selling price by an organized attack, but would consider it better all around economy to pay him a living price and so foster an increased output, the benefit of which would be felt in increased traffic returns.

Here, in my opinion, is the place where all our endeavors are required. We all know that engineers will often resort to the excuse that "poor" coal was responsible for a delay, believing that it is the simplest method of preventing trouble for themselves or shielding other parties. Engine troubles occur more frequently during the busy season, because they are of more importance at that time, and are, therefore, noted more carefully. Good coal will frequently overcome leaky valves, leaky flues, leaky packing rings and other mechanical defects, but this does not relieve the motive power department from its responsibility to keep the engine in good repair, for had these defects not existed less fuel would have been consumed on the run. The man who uses the words "poor coal" should be in a position to define to you openly and frankly what constitutes "poor coal." The impurity in the coal is detrimental to the burning and will deteriorate the relative value of results, but that does not change the coal. It may be high grade coal, it may be low grade coal, and the difference, in my opinion, is that good coal contains the highest per cent. of carbon, the lesser per cent. of sulphur and the lowest per cent. of ash. Poor coal is the coal that contains the lower per cent. of carbon, the higher per cent. of sulphur, and also the higher per cent. of ash, and those two things are divided into classes by themselves and can only be determined by the actual work of each grade of coal, as no two grades of coal are supposed to perform the same identical work under the same conditions. Therefore, it rests with the motive power department and especially with road foremen of engines to see that their firemen use their fuel intelligently and economically, and this is the kernel of the whole question of fuel economy.

Allow me to quote a few remarks made by a road foreman of engines:—"In speaking of educating men how to use coal, it is the aim of every person here to do the very best he can for those we represent in general. It is a fact that good steam pressure on a locomotive is always very satisfactory to the men that handle the train, as well as to the management. but it is also a fact that we waste much high priced coal. Good coal costs more money than poor coal, and we are more apt to waste high priced coal by way of popping engines, etc., than we would by way of a poorer grade of coal, and while it is a question of economy today, is it not a fact that we could burn, possibly by putting our best efforts into it, a cheaper grade of coal and get almost as good results as we would with high priced coal? Now, if that is a fact, that we can do it, it seems to me that we should be willing to do it so far as lies in our power. Popping engines, we are told, are a great loss, and surely there are many things about our engines that if we had good coal we would be careless about. Pop valves may not get proper attention, it does not make any difference, the engine is making her time, she has made her run, she is making plenty of steam and of course we are buying the highest grade of coal. Might we not make some of our neighbors in the shops a little bit indifferent, a little bit careless. On the other hand, I believe the best results would be obtained by not being too particular as to the grades of coal, and if the management at all times would understand the kind of coal that we were using and in the event that we got into trouble, in trying to help along in a general way, it would be simple enough for us to say very little about it. Now, it is a fact that an engine will usually go over the road after the train has started, and suppose an engine carries 200 lbs of steam, it is not necessary that that engine should maintain 200 lbs of steam from one end of the road to the other. We would probably get just as good results from that engine with 190 lbs. steam, there are times when we would not need even that, and by having a medium grade of coal we would be all out with our sleeves rolled up and we would go through in time just the same."

So much for economy in quality. Now how are we to obtain results from engineers and firemen. The road foreman should see that the engineers and firemen understand their duties and follow the instructions given them in regard to the proper method of handling and firing their locomotives. He must also endeavor to have the locomotives kept in condition to give the best and most economical service.

The master mechanic should keep the locomotives in good condition for the service they perform, that they steam freely, that the injectors are of the proper size so that the boiler can be fed continuously, and that there are no burnt or broken grates for coal to fall through into the ash pan, that coal is not wasted at the terminals by hostlers, fireknockers or fire builders, and that they do not allow a locomotive to leave a terminal with a fire having clinkers, either caused by a badly cleaned fire or by engine waiting a long time after the fire was built before starting on a trip.

The superintendent should see that the locomotives in through freight service are loaded as far as possible to the economical limit and not beyond it. He should have the tonnage reduced when unfavorable weather conditions require it and increased when favorable weather conditions allow it. Failure to do this causes a great waste of fuel.

The dispatchers should endeavor to keep trains moving with as little delay as possible and not allow those that on account of having work to do or from other causes cannot make as good time as others, delay those behind them. I think dispatchers should be required to take as much interest in fuel economy as any other officials. On some roads this is done.

A performance sheet should be compiled monthly and a copy posted in each roundhouse. This should show the number of engine-miles made per ton of coal and the number of tons used per 1,000 ton-mile. The fact is that a road foreman who does not have any information to work on, cannot work intelligently. With this information he is in a position to compare results, he can dig out the men on the different districts that are in similar service, and if there is a big variation he is in a position to locate the man that is making the poor performance. If he could come down to the refinement of ton-miles per hour, we would get a closer and better performance, which we all hope to do, but if we are going to get the maximum amount of value out of our road foremen we will have to give them information to work on and the more information we give them, and the better information, the better and more valuable men they will be. The trouble is that we do not spend money enough to give our road foremen information to work on. If you get out a performance sheet and compare it monthly, the engineer also will take an interest in it, and if he has an engine that is not in condition, he will make an effort to get that engine put in condition, he will make a complaint to the roundhouse foreman or master mechanic and he will get those repairs made, otherwise he lets them go as long as he is able to make time. The performance sheet rouses the fireman's interest and as no man naturally prefers to have the worst performance, a healthy rivalry is promoted.

There is a general tendency, especially with western coal, for firemen to fire too heavily to get enough air to the fire. Then to admit air they go to extremes in shaking the grates, shaking live fire into the ashbox which is cleaned at intervals along the road and we have all seen in walking the tracks, how in this way the company's money is used for ballast.

FROM A MEMBER OF THE GOVERNMENT RAILWAYS MANAGING BOARD.

F. P. Brady, Member Government Railways Managing Board and General Superintendent Intercolonial Railway and Prince Edward Island Railway, writes from Moncton, N.B.

"I admire very much the Railway and Marine World on account of the remarkable correctness of the information and statistics it publishes, and anticipate its receipt with pleasure."

Coal is too expensive an article to use in place of gravel for ballasting.

Leaky tubes are another source of waste of fuel. Another thing which I believe demands attention along these lines is the care and attention given the inside of the boilers. An engine uses a great deal of water every day in service, and in so doing leaves the mud and scale-making properties affixed to the flues, and in fact all parts of the boiler occupied by the water, and, while we consider they are washed out, there is left that solid coating on the flue and elsewhere that will not come off. In a very short time the formation of this scale begins to thicken and acts as a non-conductor of the heat to the water and the gases pass through the flue having left but small portion of their heat to the water as there was an insulator between it and the water, hence a most decided waste of fuel.

Some U. S. Government statistics relative to boiler scale may be of interest:—"To produce 100 h.p. for 3,000 working hours, with clean flues and boiler, it would cost $1,269, with coal at $1.50 a ton. Scale 1-16 in. thick, same length of time, $1,459; ¼ in. thick, $2,030; ½ in. thick, $3,172.50."

Further economy may be made by utilizing the deposits of lignite we have in the west. We are not allowed, even if we cared, to use this class of coal for locomotive purposes, but there is a great quantity, which could be used and thus save the higher priced coal. During the whole of this winter I have been using lignite for heating all our station buildings on the prairie with satisfactory results.

I have briefly and in a rambling manner outlined a few of the ways in which we can economize and further thought along these lines will suggest others. If we wish for results it must be by a long pull, a strong pull and a pull together, every man, from general manager to the man at the coal chute, must be made to feel a personal interest, and it should be the aim of every fuel agent to create this interest by starting with his own department and getting into close touch with the mechanical officials, who are the actual consumers of the largest portion of his fuel. It means team work all along the fuel line, and if this is done in the proper spirit, I have no hesitation in saying that you will get the desired results.

The foregoing paper was read before the Western Canada Railway Club, in Winnipeg recently.

In the discussion which followed, W. H. Rosevear said that on the G.T.R., which he was connected with some years ago, a performance sheet was got out, and this created a sort of rivalry amongst the engineers and firemen, to bring out the very best results possible. A great many schemes had been tried in connection with this. Bonuses had been given the engineers and firemen for the best results, not only for fuel economy but also for oil economy. This worked very well, but it fostered a feeling among the different crews that was not conducive to the very best results. It was found that a freight train would be standing on a siding, and a passenger train would pull in. The driver of the passenger train would make it his business to pull in his train so that the two engines would be opposite each other, and when the crew of the freight train was busy the fireman would help himself to the oil and also get as many lumps of coal as possible. But the getting out of performance sheets, and giving credit marks to the crews which brought out the best results, worked out very satisfactorily indeed.

J. Hillis said that some months ago another paper on fuel economy was read before the Club which he thought gave the actual results as something like 10% going to actual fuel. To an outsider it seemed waste to throw away 90% at the very commencement. There seems to be a large field for economy just there.

In answer to questions Mr. Smith said the possibility of buying coal on the basis of chemical analysis had been considered. The U.S. Government was buying its coal on supply analysis, but the difficulty seemed to be in arriving at the standard of analysis. They make 100 samples and have each one analysed and then make a fair average. Some U.S. railways were working along similar lines, but the question of buying coal absolutely on analysis was not yet down to a set standard.

A. H. Eager having stated that the C.P.R. used a certain quantity of briquettes, Mr. Smith said there was not a briquetting plant in the west, but briquettes would be a great help. It was a subject that would have to be dealt with soon. He thought briquetted coal would be the thing of the future. Mr. Eager added that when in the C.P.R. service at Calgary he had considerable experience with briquettes. It was found that while they were injurious to the eyes, owing to the dust, during hot weather, still a certain quantity, say one-third, mixed with a poor grade of coal for locomotive purposes, gave satisfactory results. A poor grade of Crows Nest coal mixed with one-third of briquet gave better results. He thought that in the west and in B.C., where the coal is soft and fine, mixing with briquettes would be a very economical way of using it, on the smaller engines at least. Mr. Smith said that some of the largest engines running out of St. Louis, Mo., were using, and most of the European continental railways were using, briquettes—in Germany and France, at all events. There is a large quantity of lignite in this country, but he did not think the construction of the locomotives was adapted for this class of coal. The Board of Railway Commissioners will only allow its use three months in the year and that is during the busy and cold season when it is impossible to use it.

A. C. Frith referred to tests made in Washington State. They got on an engine specially constructed for burning lignite, and tested it against a standard engine burning bituminous coal, and the result was very much in favor of the lignite. In connection with the question of throwing fire, there were fewer sparks from the lignite coal than from the bituminous. Of course, the boiler and the smoke box had been specially arranged for the purpose. He thought this experiment showed that lignite could be burned without the excessive throwing of sparks, and he had no doubt that if this could be demonstrated to the Board of Railway Commissioners the restrictions on its use might be removed.

R. R. Neild pointed out that a great deal had been said about the commercial value of coal, but very little about the economy. As mentioned by Mr. Smith, a great deal could be done by the fireman, and also in seeing that the boiler is kept in proper condition. Every road running in the west passes through bad water districts, and all knew the formation of scale in the boilers during the time they are running through those districts. Eventually the economy which might be effected by the purification of the water may be very material. At the present time, of course, there was a great deal of expense in fuel, in running through these bad water districts, because, where scale has formed on the boiler more fuel is required. It was to be hoped, however, that there were no boilers in use with half an inch of scale. If firemen could be trained also in the method of firing coal, a great deal could be saved in that way. A great deal can be learned by firemen, in studying the engines which they are on, and also the class of power they use on the various divisions, and the most economical class of power to be put on the different divisions. The class of power that would be most economical in bad water districts and in good water districts could be watched. He thougnt that was where the economy would come in and not in the commercial value of the coal altogether.

A. H. Eager referred to Mr. Smith's suggestion that the chief dispatcher should be held responsible. He thought the superintendent of the division should be held equally responsible for fuel economy, as he was the man in charge. He had often been asked to turn out power, whether it was in condition or not. Until the time arrived when the superintendent was held responsible, the desired economy would not be got. When a superintendent asked a man in the locomotive department for an engine, it had to be furnished, if possible. When there was a rush of traffic, engines were often required when they were not in good repair, the result being a waste of fuel, as well as other things that the railways have to spend good money for. Mr. Smith had referred to engines left standing out of doors. There was not a road running west of Fort William that could house 50% of its engines, yet the mechanical department was asked to economize on fuel.

T. Duff Smith said he thought that would come under the team work. If they have not got the roundhouses in which to put the locomotives they should get them. He had seen the same thing. He had seen the dispatcher ask for an engine to be ready at a certain time, and then it would stand five or six hours without being used. If the dispatcher was fully conversant with the circumstances this would not be necessary; so that it came down to the old thing, it had to be team work from the very beginning.

A. H. Eager, Superintendent Shops Canadian Northern Ry., said that at Winnipeg they had last fall a 20 stall roundhouse, and made applications for 19 additional stalls. When they got into the cold weather they figured that they lost $150 a day for the want of the 19 stalls. At Rainy River they had 10 stalls for 50 engines. At Calgary the same conditions prevailed.

Mr. Young, of the C.P.R. Chemists Department, said that of course, one of the chief substances in water which caused scale was carbonate of lime. This was held in the water by carbonic acid gas, and when the water was evaporated the carbonate of lime was deposited in the form of soft mud. There was not so much difficulty arising from that however, as when the engine was washed out the mud was easily removed. There were other substances in water which cause scale; these are sulphate of lime and magnesia and sometimes chloride of magnesia. The chemist removes these substances by a process known as softening, in which the chemical agents used were lime and soda. There was a diversity of opinion as to the advantages of softening water. On the C.P.R. some engineers said that water softening was no good, and that they got better results before the softening was started. The reason of this was that the softening was not general. Soft water might be taken at one station, and when hard water was obtained at the next station reaction set in. He said it undoubtedly produced economy, perhaps not only in the economy of coal, but in the economy of the boiler, because there was not so much pitting and corroding of the boilers. Less coal would be required to generate heat from a boiler, the tubes of which were not coated with scale. If the scale forming constituents of water were removed by softening previously to putting the water in the boiler, they would not be deposited in the tubes, etc.

A. C. Frith said there was one direction in which economy might be effected, viz., in the question of design of the locomotive, and of late years a great deal had been done in that direction. The railways had been making efforts in that direction to get increased efficiency out of materials at hand, and in that way considerable improvements had been made in the design of locomotives in the direction of fuel economy. Some 15 years ago there was a great movement towards the use of compound engines, which gave very much increased fuel economy over that obtained with simple engines. More recently still there had been further improvements made by superheater engines, which had been found to give better results than with the compound engines, so that the designers were helping in the matter of fuel economy. With the engines of today they got more of the heat value of the fuel used than they did some years ago.

A. W. G. Clark said it appeared to him that Mr. Smith had hit at every other department but his own. The question of fuel economy begins at the mine itself. If you turn out 100% locomotives you are justified in expecting 100% work out of them. On the other hand, if you do not turn out 100% power you cannot look for that percentage of work. Now, if coal is supplied that runs from 20 to 25% ash, you cannot expect a fireman to do as well as he could with a better grade of coal. While no doubt the throwing of the blame to "bad coal" is sometimes resorted to as an excuse, his experience had been that in many cases it was justifiable. He thought there was a big field for a saving there. As he understood, the fuel department was also in charge of the contractors at the different terminals, and hence of the storing and distribution of coal, it was their duty to see that the coal was piled properly, for instance, not so high that a loss will be effected through spontaneous combustion, and that tenders are not coaled so high that the excess will spill over. He thought all these things added together should effect a saving.

T. Duff Smith said he recognized that they should buy the best quality of coal as far as the money lasted, but if the management cut down the expenditure to a certain figure they had to cut their coat according to the cloth. He believed that every railway should have its own inspector at the mine, so that he could see they were getting coal and not slate and rock. As far as buying the coal was concerned, every man had to stand by what his management said.

A. H. Eager said: "I think from what experience I have had there is one branch of fuel economy that is neglected more than any other—that is the education of the firemen. We hire a man; he is put in the roundhouse as a wiper, and the first thing he knows he is put out on a locomotive some night, and he is a fireman. Sometimes he turns out a good man, but more often he is a misfit. Mr. Smith spoke about a road foreman. I speak more strongly for a travelling fireman, which is one of the best investments the companies could make. I used to go out on the engines myself, but I could not get down and handle the scoop to show the new fireman. I think that is a point that should be brought before the management of the railways, i.e., the education of the firemen. I have in mind a man running out of Calgary who can fire a 1100 or C 2 class engine, run 180 miles, and never shake his grates nor clean out the ash pan. It is just because he knows how."

A member said: The coal dock has not been touched upon. You can go to any coal dock in Winnipeg and you will find a large quantity of coal in big lumps. You don't get the benefit of that coal when it goes in in big lumps. You can also go round these coal docks, and you will find in this coal they are getting, (you have got to watch the box cars for it), there is a quantity of sand. The first man responsible for economy is the fuel agent. Let him see that he gets a decent quality of coal. With reference to putting a country lad on the engines. Mr. Eager says he wipes in the roundhouse about three months; then he is put on an engine, and if he gets over the road it is all right. They throw as much coal into the firebox as they can get in. There is more coal being burned on locomotives today than there is any need for. The dispatcher issues an order for an engine, and you have got to turn it out. Very likely the man in the roundhouse knows that the engine should not be turned out. You cannot expect an engine to go over the road and be economical, if it is not in a fit condition to go.

Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1,, 1910, with increases over, or decreases from, those of 1909-10:

	Earnings.	Expenses.	Net. Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,900	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
Dec.	1,255,400	896,200	359,200	24,800
Jan.	822,600	720,900	101,700	20,800
	$8,869,200	$6,276,500	$2,592,700	$362,200
Inc.	$1,287,600	$925,400	$362,200	.....

Approximate earnings for Feb., $802,800, and for two weeks ended Mar. 14, $487,300, against $698,900, and $385,700, for same periods 1910.

C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10, from July 1, 1910:

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease.
July	$8,869,214.32	5,384,594.73	$3,484,619.50.	1,004,748.86+
Aug.	9,255,331.67	5,563,659.34	3,691,672.33	727,614.46+
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47+
Oct.	10,229,370.77	5,724,210.25	4,505,160.52	118,863.33+
Nov.	9,413,238.22	5,676,115.96	3,737,122.26	44,784,31+
Dec.	8,705,283.99	5,418,750.10	3,286,533.87	171,110.79−
Jan.	5,740,206.34	5,084,088.47	656,117.87	660,478.52−
	$61,527,858.98	$38,255,032.88	$23,272,826.10	$1,886,353.70+
Inc.	$5,497,920.66	$3,611,566.96	$1,886,353.70	.....

Approximate earnings for Feb., $6,180,000, and for two weeks ended Mar. 14, $3,625,000 against $5,813,000 and $3,212,000, for same period 1910.

At Feb. 28 the mileage operated was increased to 10,407.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Operating revenue for Jan., $200,508.73; expenses, $176,874.52; net revenue, $23,634.21, against $211,326.74 operating revenue; $165,778.20 expenses; $45,548.54 net revenue for Jan., 1910. Aggregate operating revenue for seven months ended Jan. 31, $1,935,456.45; expenses, $1,310,070.92; net revenue, $625,385.53, against $1,931,069.45 aggregate operating revenue; $1,314,960.87 expenses; $616,108.58 net revenue for same period 1909-10. Approximate gross earnings for Feb., $183,766, and for two weeks ended Mar. 14, $103,251, against $219,473 and $119,346 for same periods 1910.

MINERAL RANGE RD.—Operating revenue for Jan., $62,780.64; expenses $57,081.30; net revenue, $5,699.34, against $69,176.20 operating revenue; $61,767.71 expenses; $7,408.49 net revenue for Jan., 1910. Aggregate operating revenue for seven months ended Jan. 31, $442,656.16; expenses, $443,746.50; net revenue, $8,909.66, against $508,462.22 aggregate operating revenue; $428,419.96 expenses; $80,042.26 net revenue for same period 1909-10. Approximate gross earnings for Feb., $63,399, and for two weeks ended Mar. 14, $30,391, against $64,148, and $31,436 for same periods 1910.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Operating revenue for Jan., $901,445.02; expenses and taxes, $730,758.62; operating income, $170,686.40, against $1,213,323.38 operating revenue; $694,082.28 expenses and taxes; $519,241.10 operating income for Jan., 1910. Aggregate operating income for seven months ended Jan. 31, $8,060,917.04; expenses and taxes, $5,296,994.99; operating income, $2,763,922.05, against $9,805,527.02 aggregate operating revenue; $5,254,995.49 expenses and taxes; $4,550,531.53 operating income for same period 1909-10. Approximate earnings for Feb., $1,469,776, and for two weeks ended Mar. 14, $750,882, against $1,479,199, and $804,577 for same periods 1910.

CHICAGO DIVISION.—Operating revenue for Jan., $712,029.75; expenses and taxes, $599,507.77; operating income, $112,521.98, against $725,049.14 operating revenue; $533,270.07 expenses and taxes; $189,779.07 operating income for Jan., 1910. Aggregate operating revenue for seven months ended Jan. 31, $5,404,068.13; expenses and taxes, $4,132,615.21; operating income. $1,271,452.92, against $5,000,509.28 aggregate operating revenue; $3,527,314.50 expenses and taxes; $1,473,194.78 operating income for same period 1909-10.

Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings of the G.T.R., C.A.R., G.T. Western Ry. and D.G.H. and M. Ry. separately, for Jan., as compared with Jan., 1910:—

GRAND TRUNK RAILWAY.

	1911.	1910.
Earnings	$2,502,600	$2,385,700
Expenses	2,105,000	2,063,000
Net earnings	$ 397,600	$ 322,700

CANADA ATLANTIC RAILWAY.

	1911.	1910.
Earnings	$ 158,600	$ 142,900
Expenses	130,000	129,900
Net earnings	$ 28,600	$ 13,000

GRAND TRUNK WESTERN RAILWAY.

	1911.	1910.
Earnings	$ 550,800	$ 465,500
Expenses	433,500	381,200
Net earnings	$ 117,300	$ 84,300

DETROIT, GRAND HAVEN & MILWAUKEE RAILWAY

	1911.	1910.
Earnings	$ 169,1[illegible]	$ 158,700
Expenses	148,400	134,600
Net earnings	$ 20,700	$ 24,100

Approximate earnings for Feb., $3,103,166, and for two weeks ended Mar. 14, $1,672,085, against $2,965,729, and $1,601,797 for same periods 1910.

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate receipts from Jan. 1 to Feb. 28:—

	1911..	1910.
Grand Trunk Ry.	£ 992,346	£ 952,123
Canada Atlantic Ry.	57,585	53,253
G.T. Western Ry.	215,440	190,437
D.G.H. & M. Ry.	67,041	61,458
Totals	£1,332,412	£1,257,271

The Manitoba Legislature and Railway Bills.—The Railway Committee of the Manitoba Legislature called attention, Mar. 9, to the great difficulty which it had in dealing with the various railway bills before it. "owing to the most varied and extraordinary powers asked for in all the applications, nearly all the regulations and rules applying to such railway bills never having been enforced. Committee recommended that all the requirements of the rules of the House respecting this class of bill be strictly adhered to, and that the general Railway Act of the province be so amended as to cover the usual and ordinary requirements of railway companies, that is to say, railways and tramways. The committee also recommended that the model bill attached to the rules of the House be used for all railway companies' applications, and that no departure be permitted from the rules of House in future." The report was received, to be considered at a later date.

During Jan. 20 employes were killed, and 29 were injured in the course of their work in connection with Canadian railways. Of the fatalities, seven were due to premature explosions of dynamite, five were due to crushing, five to being run over, and three to collisions, while of the other accidents, 13 were due to collisions, five to derailments, three each to being run over and to explosions of coal oil, and one each to striking object in passing, to being struck by engine, to being struck by coal in passing tender, to a fall and to a premature explosion of dynamite.

Discussion on Report on Ties by Can. Soc. C. E. Committee.

The report of the committee on ties presented at the Canadian Society of Civil Engineers' annual meeting in Winnipeg recently, as published in our last issue, with additional matter in connection with the question which we exclusively secured, has excited considerable interest among railway engineers and other officials of the construction and maintenance departments. As pointed out in that issue, the letter from the Chairman of the committee transmitting the report, stated that W. B. Mackenzie, Chief Engineer, and T. C. Burpee, Engineer of Maintenance of Way, Intercolonial Ry., dissented from the part of the report about the use of 10½ ft. ties. Their letters of dissent were not submitted with the report and as we deemed it of great importance to give both sides of the question, we obtained copies of the letters from them and published the same.

We also gave a complete report of the remarks made on the question at the meeting by the Chairman of the committee, D. MacPherson, who wrote us that he was very incorrectly reported in the other reports of the discussion he had seen. Our report, therefore, we believe, is the only complete and correct one of the whole matter that has been published. We have since received the following letters in answer to requests for opinions on the question.

J. G. SULLIVAN, Assistant Chief Engineer, C.P.R. Western Lines, writes from Winnipeg: "I note from the reports that my name was given as approving of 10½ ft. ties. I may say that I dissented from this portion of the report in letters to Mr. MacPherson. I do not think the 10½ ft. tie either an economically or scientifically designed tie."

In accordance with our usual practice, we communicated the contents of Mr. Sullivan's letter to Mr. MacPherson, who has written us in reply as follows:—"I attach you copies of the correspondence between Mr. Sullivan and myself with regard to tie committee's report, from which you will see that, although he did at first object to the 10½ ft. ties, the only reason he gave for the objection was the cost, and that he finally said he would gladly subscribe to the report (which contained the recommendation about 10½ ft. ties), provided I would introduce the word 'if' in the paragraph referring to the cost of preservative treatment of ties."

As the correspondence referred to contains a lot of important information, we give it in full further on. Mr. Sullivan, at the outset, opposed the portion of the report favoring 10½ ft. ties, to which later he added that the principal objection was the extra cost. A careful reading of the correspondence will show that he did not withdraw his objection. The subsequent correspondence between him and Mr. MacPherson was devoted practically entirely to the preservative treatment of ties, in connection with which he agreed to the report as changed. We do not think he intended to approve the portion of the report relating to 10½ ties, and although Mr. MacPherson was undoubted'y justified in affixing Mr. Sullivan's name to the report, we think the latter did not intend to assent to the portion of the report dealing with the length of ties.

G. A. MOUNTAIN, Past President and Honorary Councillor of the Society and Chief Engineer Board of Railway Commissioners, writes from Ottawa: "When I was Chief Engineer of the Canada Atlantic Ry., I made a lot of tests for length of ties, and I am of the opinion that for a high class main line such as the Grand Trunk, Canadian Pacific, and Grand Trunk Pacific Rys., where heavy engines are used, and the rails from 80 to 100 lbs. that an 8 ft. tie is too short, and I would recommend that a 9 ft. tie, 7 ins. square, be used in these cases. On a secondary line, say a line somewhat equal to the old Grand Trunk line passing through Guelph and the Sarnia tunnel, which I claim to be a secondary line, and where rails are laid varying from 65 to 80 lbs., I think that the tie should be 8½ ft. long, 6½ ins. square. Then for branch lines where rails from 56 to 65 lbs. are used, I would hold the 8 ft. ties 6 ins. square. This gives, in my opinion, a better distribution of load, and is a decided improvement on the present practice. Where there is much creeping, particularly in swamps, I would use ties from 10 to 12 ft. long, depending on the softness of the swamp or muskeg. No creeping device that I have ever seen, and I have seen most of them, can compare with a long tie in resisting creeping track. I would add to these long ties, for track creeping, the clamp that goes on the base of the rail and catches hold of the tie. I am not of the opinion that it is good policy to bore a hole in the rail to put on an anti-creeping device."

C. M. ODELL, Resident Engineer, Sydney and Louisburg Ry., writes from Glace Bay, N.S.: "We are using ties of regulation specifications, 8 ft. long, 6 ins. face at the small end. These we are using on a road which as you know, carries very heavy traffic, some of our locomotives carrying 80 tons on a 15 ft. wheel base. Our road is laid with 80 lb. A.S.C.E. rails, and the ties are mostly hemlock, spaced 20 ins. centres. At the time the I.R.C. changed to a 9 ft. tie, we followed suit, mainly for the reason that manufacturers were then making 9 ft. ties, but I was never able to perceive any great benefit to the roadbed from the change, and we cheerfully returned to the 8 ft. ties. I would oppose any increase in length of ties, on account of the increase in cost, which I believe would be out of all proportion to the increased size of the tie, as not only would the tie getter have to go farther afield to find timber of sufficient size, but a stick of timber which would make two ties 8 ft. would make but one if the length were appreciably increased. For these reasons I would think it better, if necessary, to space the ties closer than to increase the length. We use tie plates on all curves on our main line. As an instance of the rapid increase in cost of ties, I may say that in 1894 I bought ties 8 ft. long, with 8 ins. face at the small end, delivered on right of way at 14c. each. To-day ties of same length, with 6 ins. face at small end, cost us 42c delivered on right of way. I am very glad to see so much interest being taken in this discussion, as the tie question is becoming a serious problem all over this continent."

T. J. KENNEDY, President Superior Construction Co., which is building 46 miles of the Manitoulin and North Shore Ry. from Crean Hill to Whitefish, Ont., who was until recently for many years General Superintendent of the Algoma Central and Hudson Bay Ry., and prior to that in the C.P.R. engineer and maintenance of way service, writes us from Espanola, Ont.:—"You ask for an expression of opinion on the use of a 10½ ft. tie instead of that now used which is eight feet. I beg to say that W. B. Mackenzie, Chief Engineer of the I.C.R., has so clearly outlined in his opinion, as given in your March issue., my own views in the matter that I find it hard to add anything to what he has said. I may, however, say that what is more required than anything else, in my opinion, to decrease cost of maintenance and increase life of ties is good ballast. Anyone at all familiar with the conditions as they now are on our Canadian lines will confirm the fact that the great weakness in our roadbed is caused by poor ballast, not 8 ft. ties."

S. B. CLEMENT, Chief Engineer, Temiskaming and Northern Ontario Ry., writes from North Bay, Ont.:—"In the report of the committee on ties, as presented at the recent meeting of the Canadian Society of Civil Engineers at Winnipeg, the use of 10½ ft. ties is strongly advocated. It is stated that 8½ ft. ties cannot be fully tamped at the centre for fear of breaking the ties, but that if 10½ ft. ties were used the ties could be fully tamped throughout their entire length. It is true that, if an 8½ ft. tie were fully tamped under its entire length, the maximum B Mt. would be at the centre of the tie, and that by lightly tamping the centre the B Mt. at the centre may be reduced until it is equal to or less than the B Mt. under the rails, but this light tamping of the centre is not only a protection to the tie itself, but it makes an easier riding track by increasing the stability of the track and preventing centre binding. The resultants of the pressures on each side of the centre of the tie fall within the rails. By lightly tamping the centre, these resultant pressures are kept closer to the rail and the stability is increased.

"A simple calculation will show that when the length of the tie is $5^1 (1+\frac{1}{\sqrt{2}}) = 8.54'$, and the tie is uniformly supported throughout its length, the B Mt. at the centre equals the B Mt. under the rails. When the tie is 10½ ft. long, as suggested by the committee, the B Mt. under the rails greatly exceeds the B Mt. at the centre of the tie.

"The committee on rails, in its calculation, assumes an axle load of 50,000 lbs. and allows 100% for impact, and also assumes that the rails, acting as continuous girders, distribute the axle load between three ties, the centre tie being an unstable support. With an axle over the centre tie, it is probable that only one-half of the axle load is transmitted to the adjacent ties and the centre tie carries one-half of the load, or 50,000 lbs., including impact.

"With a 7 ins. x 9 ins. x 8½ ft. tie and the above load, it is found that:

"The bearing area of tie on ballast equals 918 sq. in.

"Unit pressure on ballast equals 54.5 lbs. per sq. in.

"Max. fibre stress in tie equals 1,470 lbs. per sq. in.

"With a 7 ins. x 9 ins. x 10½ ft. tie:

"Bearing of tie on ballast equals 1,134 sq. in.

"Unit pressure on ballast equals 44.1 lbs. per sq. in.

"Max. fibre stress in tie equals 2,935 lbs. per sq. in.

"The fibre stress of 1,470 lbs. per sq. in. in the 8½ ft. tie is approximately one-third of the ultimate strength of the timbers ordinarily used for ties, giving the lowest factor of safety it is advisable to use. If the maximum fibre stress in the 10½ ft.. ties is not to exceed the above amount, it will be necessary to use ties 9.8 ins. thick, or the nearest commercial size, viz., 10 ins.

"The committee assumes that the same ballast section can be used for 10½ ft. ties as is used for 8½ ft. ties. This assumption is not entirely justified, as the track requires a shoulder of ballast at the end of the tie to give it lateral stability, and without this shoulder the ballast under the ends of the tie will not carry the same pressure as the ballast under the centre of the tie. It is more probable that the use of 10½ ft. ties would necessitate the widening of cuts and embankments.

"The committee suggests a minimum spacing of 20 ins. centre to centre of ties, which is the equivalent to 20 ties per 33 ft. rail. When ties have a 9 ins. face there will be 11 ins. between the ties. Applying Thos. H. Johnson's formula (Proceedings A.R.E. & M.W.A., vol. 7, pg. 104), it is found that 35 ins.

of gravel ballast or 17½ ins.. of stone ballast will be necessary to produce a uniform distribution of pressure over the surface of the roadbed. With but 12 ins. of gravel ballast under ties with 9 ins. face, spaced 20 ins. centre to centre, all the bearing area of the roadbed will not be utilized, and there will be a tendency for the ballast immediately under the ties to sink in the roadbed, forcing the material of which the roadbed is composed up between the ties. It will not be economical to widen the roadbed, as will be necessary for use with longer ties, until all the available bearing area of our present roadbed is fully utilized. We have seen that 10½ ft. ties require to be 10 ins. thick, and if they can be properly tamped when spaced 20 ins. centre to centre, ties 7 ins. thick can be tamped when 18 ins. centre to centre, or 22 ties per rail.

"To summarize, I believe the following conclusions are justified:—

"1. Increasing the length of ties beyond 8½ ft. to prevent breaking at the centre is unnecessary.

"2. A tie 10½ ft. long should be 10 ins. thick to be of the same strength as an 8½ ft. tie 7 ins. thick. A 7 ins. x 10 ins. x 10½ ft. tie contains 73.5 FBM, while the 7 ins. x 7 ins. x 8½ ft. tie of equivalent strength contains but 41.6 FBM.

"3. The 10½ ft. ties will require a wider spacing and wider roadbed and a greater width of ballast than the 8½ ft. ties.

"4. The 8½ ft. ties, with the permissable closer spacing and with the narrower but deeper bed of ballast will give the desired result more cheaply and satisfactorily than the 10½ ft. ties.

"5. As two 9 ft. ties can be sawn from an 18 ft. piece of timber, and as timber is not generally cut, except in the even feet, a 9 ft. tie can be obtained quite as cheaply and as readily as an 8½ ft. tie. I believe that the adoption of 9 ft. as the standard length of ties is advisable, but that at present there is no necessity for adopting a length in excess of 9 ft."

H. K. WICKSTEED, Chief Engineer of Surveys, Mackenzie, Mann and Co., Ltd., writes from Toronto:—"You ask for my opinion on the proposal to increase the standard length tie from 8 to 10½ ft. While I am quite of opinion that a longer tie is desirable and that the arguments adduced by the committee are in the main sound and good, the increase of 30% seems to me rather a radical change, and I think that there is a good deal to be said on the opposite side, and that 9 ft. would be a sufficient departure from existing practice for initial experimenting. If results were satisfactory a further increase might be tried. In any case the tie must of necessity be at least proportionately increased in thickness."

T. HICKEY, Roadmaster Michigan Central Rd., writes from St. Thomas, Ont.: "I have, with a great deal of interest, read the report of the Canadian Society of Civil Engineers' committee on ties, in your March issue. The length recommended by the committee, 10½ ft. is in my opinion, too great, and too much of a radical change in the length of track ties for general use. I fear that many of the 10½ ft. ties would break at point of rail bearing. My experience is that our 8 ft. ties, which are being used at present, break less than the 9 ft. ties, which we used some years ago; 75 per cent. of the breakages took place at the rail bearing. I think the best dimensions for track ties are 8½ ft. long 7 ins. thick, and 9 ins. wide."

F. CHISHOLM, Roadmaster, Halifax & Southwestern Ry., Bridgewater, N.S., writes:—"I have had considerable experience with the 9 ft. ties and some 14 years experience with the 8 ft. ties, and I find that the 9 ft. ties break very much more readily. I would suggest that if any change is made in the dimensions of ties, they should be made 7 ins. thick instead of 6 ins., which I believe is in general use at present in this province. On account of the heavier rolling stock, I think the thicker ties would give very much more satisfactory service. I would not approve of a longer tie than that in use at present, except in a boggy piece of road where they would make the track much firmer and lessen the tendency to roll."

E. BRAZEAU, Roadmaster G.T.R., writes from Richmond, Que.: "In my opinion 8 ft. ties are giving more satisfaction than 10½ ft. ties would, in this part of the country especially, on account of the frost. For instance, during the present spring the track is working very badly under the 8 ft. ties and I am of the opinion that the frost would work more under the 10½ ft. ties, having more surface to work under, thus making the track worse. The 10½ ft. ties would take up a great deal more ballast than the 8 ft. ties do and also almost all the cuts on the single track at least would have to be widened to allow for a ditch. In yards where there are lots of tracks with 14 ft. centres, they would be of no use at all and besides would take a lot more labor to put them in and take them out.

In handling the ties from station to station, at present, we put four tiers of 8 ft. ties per car and with the 10½ ft. ties we could only put three tiers, thus losing one car on every four. To my knowledge, the C.P.R. made a practical test of ties 9 ft. long between Montreal and Veudreuil, but they did not give satisfaction so they cut them all to the 8 ft. length. I entirely agree with the views of Mr. W. B. Mackenzie, Chief Engineer of the I.C.R. as published in your March issue."

S. J. FAUGHT, Supervisor Temiskaming & Northern Ontario Ry., writes from Englehart, Ont.: "I have read with much interest the matter in The Railway and Marine World for March respecting the proposal to increase the length of ties. I certainly agree that we should have longer ties in our roadbed. It is a well-known fact to all practical maintenance of way men that our ties and roadbed have not improved in comparison with the increase in weight of rolling stock during the past 25 years. The fact that we are still using the same 8 ft. tie goes to prove this. Of course, we are placing our ties closer, trying to overcome the difficulty with but slight success. When it is taken into consideration that our engines have not only increased over 100% in weight but more than 25% in width, also the cars, it is quite evident they are too heavy on the track on 8 ft. ties. No one knows as well as the roadmaster and the section foreman, the difficulty there is in keeping track in surface and line, especially in northern latitudes where the frost heaves and twists the track in all manner of shapes and forms. When the ties get loose in the spring and the frost is still in the roadbed, 8 ft. ties are not a good foundation for 200 ton engines running 50 miles an hour. No wonder that when the roadmaster is called out of bed at night to go with the auxiliary his first thought is spread track caused by bad surface or line, owing to lack of solidity of the roadbed. Then there is no excuse for the section foreman for allowing track to get out of gauge, although he is placed in the position that it is beyond the ingenuity of man to prevent it owing to the weakness of the roadbed and ties. My opinion is that 10½ ft. ties would improve the condition at least 50%.

"I cannot agree with Mr. T. C. Burpee that the breakage of ties would increase 75% or even 5%. Supposing it is in a cold country, all our 10½ ft ties would be tamped throughout and would have a solid bearing. Neither do I agree with Mr. W. B. Mackenzie that the cost of labor would be doubled. We do not expect one man to handle 8 ft. ties, and two men could handle the 10½ ft. ties almost as easily as they do the shorter ties. Because some writer said a long time ago that the 8 ft. tie was the best is no reason why it should be the best today when conditions have changed so much. The change from short to long ties would not appear so radical if brought about in the proper manner; that is to say if in running we first put in the long ties under joints and counters, or the weakest parts of the rail, then renew the other ties with long ties according as they decayed.

"I am also of the opinion that in using the 10½ ft. tie we could increase the space between ties considerably, as it is a well known fact that in trying to increase the strength of our roadbed we have placed our ties too close for proper tamping. Where we are now using from 20 to 23 8 ft. ties under a 33 ft. rail, our present standard, 18 10½ ft. ties would be sufficient. This would decrease the apparent lineal feet of 10½ ft. ties considerably. I say by all means, give us the longer ties and we will give you better track and will reduce the deficits by 50%."

ANOTHER ROADMASTER writes:—I think that the large increase of cost in material and labor would not justify the use of 10½ ft. ties. In the first place they would cost 25% more, and the cost of labor in putting them in and renewing and lining track would at least be 40%. It would be necessary to widen the ballast surface in order to have a shoulder of at least 9 ins. at end of ties to hold track in line; this would also incur an increased expenditure. I am also of the opinion that the longer ties would cause a more uneven surface by frost heaving, on account of the longer surface affected by frost. In winter, the tendency to breaking would not be diminished in the longer ties on account of the ends being exposed which would let the frost out at the ends before the centre, causing track to get centre bound and ties breaking. When ties are well down in ballast and a good shoulder of ballast at the ends, track is not liable to get centre bound, minimizing the breaking of ties. I would recommend ties to be 8½ ft. long. This would give about 19 ins. outside of rail tamped firmly, and 19 ins. inside of each rail also tamped firmly, this would leave about 15 ins. in centre of track which should be filled just enough to exclude water, but not tamped so firmly as the other parts. This prevents track getting centre bound and out of line, and gives a firm, equal bearing surface inside and out of rail. I am therefore strongly of the opinion that an 8½ ft. tie put in in this way is superior to ties 10½ ft. and 75% cheaper.—J. J. B."

CORRESPONDENCE BETWEEN D. MACPHERSON AND J .G. SULLIVAN.

Following is the complete correspondence between the Chairman of the Can. Soc. C.E.'s committee on ties and J. G. Sullivan, Assistant Chief Engineer C.P.R., referred to above:—

J. G. SULLIVAN to D. MACPHERSON, Nov. 24, 1910:—"Your circular letter of Nov. 18 received. I cannot subscribe to your assumption re saving by using treated ties. In the first place, the first cost of our ties at present is not 50c, but is between 40c and 45c. To this should be added the cost of freight and the cost of putting in track. Then this sum at compound interest for the life

of the tie, on our road over eight years, would be the total cost for the time given. Then, the cost of renewal, added to this sum taken at compound interest for the time that the treated tie would last, which I think would be about 16 years, would give the cost for the second period.

"The cost of treated ties would be the first cost of tie, freight, cost of treatment, and cost of putting in track, figured at compound interest for the life of the tie, I should say about 16 years.

"I think you will find that these two sums will very nearly balance, for the reason that you cannot treat ties for 12c. with creosote. It will be closer to 32c., somewhere between 30 and 35c.

"I do not like to subscribe to any particular method of treating the tie. I am perfectly willing to endorse creosoting for Canadian climates, in preference to other methods of treatment, but I am not willing to endorse any specific method of doing the work.

"Another part of the report that I would not care to subscribe to is the length of 10½ ft. for ties."

D. MACPHERSON to J. G. SULLIVAN, Nov. 28, 1910:—"Replying to your criticisms of the 24th inst., on proposed draft of tie committee report. You say that your ties only cost from 40 to 45c., but ours have been costing from 50 to 75c., and, of course, in our report, we only want to arrive at a fair average, and 50c. is the average price fixed by the Maintenance of Way Association for hewn ties in their last report. You are fortunate if you get an average life of eight years out of untreated ties, and, for the sake of comparison, I will accept that figure with 16 years for treated ties.

"My price of 12c. for creosoting was doubtless too low, but, on the other hand, I think yours of 32c. too high. It all depends, of course, on the completeness of the plant and the number of ties treated. The Atchison, Topeka and Santa Fe Ry. has gone into the matter pretty extensively, and reports the cost of creosoting pine ties to be 20c. In order to try and meet you half way, I will assume the following values for a basis of calculation:—First cost of untreated ties, 50c.; treated ties, 75c., with an addition of 15c. for freight and putting in track for all ties. Life of untreated ties, 8 years; treated, 16 years; rate of interest, 4%. Annual consumption of untreated ties, 12,000,000. On this basis the total capitalization necessary to buy an untreated tie and to produce in compound interest enough to renew it at the end of its life, would be $2.41, and, for a treated tie, $1.93.

12,000,000 ties at $2.41 ..... $28,920,000.00
12,000,000 ties at $1.93 ..... 23,160,000.00

Difference in capital expenditure ... $ 5,760,000.00

$5,760,000 at 4% = $230.000 a year.

"This same capital expenditure would have to be repeated for eight years until all the ties were treated and the renewing fund complete, which would make a total saving in capital of 8×$5.76 millions = $46,080,000, which at 4% = $1,842,000. Annual saving equal to $18,420,000 if annual consumption 120,000,000 ties.

"Would you be agreeable to substituting the above figures for paragraph 3 in the draft of report sent you?

"In regard to 10½ ft. ties, I did not expect any one to be very enthusiastic about it, but would be glad to have your full reasons for objecting."

J. G. SULLIVAN to D. MACPHERSON, Nov. 30, 1910:—"Your letter, Nov. 28, re tie committee report. I heartily agree with you that on account of conservation of timber we should go to the treated tie just as soon as we can afford to, and our company has carefully gone into this matter in the past four or five years, and has recently let a contract for treating several millions. The figures I gave in my previous letter were the honest results of our investigations. We went further and discounted the price we might have to pay for ties in the future in making the comparisons, and we could not figure out any place where we would be justified in treating ties, excepting Winnipeg, which is practically the eastern gateway for the ties used on a large portion of our prairie, and there is no great extra cost for freight to and from the works.

"I cannot follow your figures, and give you below a comparative statement that I would make up if I was making a report to my company, using the price of ties as 50c. for the present, and 56c. for eight years hence, as you do. You must remember that on a great many of our branch lines and unimportant main lines, ties rot out before they wear out. On these we are not compelled to put tie plates, excepting on curves. If we go to creosote, we will have to put tie plates on every tie in the track, or they will wear out before they rot.

"We have several tenders for treating ties, and they averaged from 9 to 12c. a tie, exclusive of creosote. The cost of unloading and piling that I give is actual contract price. The cost of piling and reloading, we are paying $1.25 per 100 ties, but in case we furnish cars in which they can be loaded direct, there is no charge. In the comparative statement I have put down half a cent for this, and I have figured that a plant would only have to supply a district with a radius of 300 miles. This, as you know, is too small for a Canadian road.

"Comparative statement of cost of treated and untreated ties:—

First cost of tie	50c	
Freight, 150 to 200 M. ⅓ ton	05c	
Putting in place	15c	
	—	70c
Interest compounded at 4% 16 years		61c
First renewal.		
Cost of tie (estimated increase 6c)	56c	
Freight, 150 to 200 M. ⅓ ton	05c	
Putting in place	15c	
	—	76c
Interest compounded, 4%, 8 years		28c
Total cost per untreated tie in track (for 16 years)		$2.35
$2.35 discounted at 4% compound interest, 16 years, equals $1.25½.		
First cost of tie		50c
Freight, 150 to 200 miles, ⅓ ton		05c
Unloading and piling		01c
Insurance and interest, one year		01c
Treating, exclusive cost of creosote		10c
Piling and loading		00½c
Freight, 175 to 300 M. at ⅓ ton		08¾c
Tie plates (⅓ ties extra)		12c
Putting in track		15c
Total		$1.03¼

"Leaving a balance of 22¼c. to pay for creosote and freight on same to works.

"As to the 10½ ft. tie, of course, the principal objection is the extra cost. We may have to come to a 9 ft. tie if we increase our axle loads very much more."

D. MACPHERSON to J. G. SULLIVAN, Dec. 3, 1910:—"Many thanks for yours of Nov. 30. It seems to me that we are pretty well agreed as to advisability of making a beginning at tie preservation, and, though there are doubtless many places where it would not pay to treat ties as yet, there are some places where it would, and the only way the public can be educated up to the necessity for beginning is to assume reasonable average data and figure out the possible saving. It is difficult to make an absolutely fair practical comparison of this saving, but, as nearly all the ties in use at present are untreated, and about 12,000,000 are used per year in Canada, the total number in track must be about 96,000,000, if we assume the average life eight years. Now, all these ties must be renewed within the next eight years, and capital must be provided for the purpose and for future renewals as well. It seems to me the fairest way to make this comparison is:—First, to estimate the amount of capital necessary to renew all the ties, without treatment, and provide for future renewals of the same kind. Second, to estimate the amount of capital to replace all the ties with treated ones, and provide for their future renewal. The interest on the difference between these two capital amounts will surely represent the annual possible saving, on the basis assumed for purposes of calculation. The basis of my calculations were:—Cost of untreated ties in track, 65c.; treated ties, 90c.; life of former, 8 years; latter, 16 years, and interest 4%; cost of treatment, 25c. On those assumptions the capital necessary to purchase and put an untreated tie in the track and furnish interest sufficient for its perpetual renewal would be $2.41, and $1.93 for treated ties. I do not quite see what figures of mine you do not follow, but our results would seem to be about the same, except for the difference in the data. There is something in what you say about tie plates, but to bring them into the question makes it still more difficult to make anything like an accurate comparison, for which reason I have omitted them. Your own figures, after allowing 12c. a tie for tie plates, show a balance of 43½c. for treatment, and, if that can be done for 25c. the saving would be 18½c. a tie, or 30½c. if tie plates are not considered.

"I agree with you that the principal objection to the 10½ ft. ties is the cost, and, of course, the practical difficulty of making the change from shorter ties, but there would not be much improvement in substituting 9 ft. ties for 8 ft., and the practical difficulties of bringing them into use would be almost as great as for 10½ ft.

"I propose to change paragraphs 3 and 4 to read as follows:—

"(3) Assume average cost of untreated ties at point of shipment at 50c.; freight and putting in tracks, 15c.; total, 75c.; average life, 8 years. Initial cost of treated tie the same as above, cost of treatment, including extra handling, 25c.; total, 90c.; average life, 16 years. If 12,000,000 untreated ties are being used annually, and their average life is 8 years, there must be about 96,000,000 in use, and the capital necessary to place these ties in the track and provide for their renewal every 8 years, on a 4% basis, would be $2.41 a tie. The capital necessary to place treated ties in the track and provide for renewal every 16 years would be $1.93 a tie. The total capital necessary:—

96,000,000 ties at $2.41 = $231.360,000 for untreated ties.
96,000,000 ties at $1.93 = 185,280.000 for treated ties.
Total difference in capital. $146,080,000 for treated ties.
$46,000,000 at 4% = $1,843,200 = eventual annual saving.

"(4) As the cost of untreated ties and the numbers used are increasing very rapidly, and the cost of treatment is likely to be reduced, surely no more need be said to prove the urgent necessity of beginning at once the introduction of treated ties, at all points where their capitalized values will show a fair saving on the investment, even if the question is only viewed from the standpoint of economy for the railways.

"As our report is intended only to point out how the best results might be attained, without putting any onus on the railway companies, I trust you will still see your way clear to concurrence in same. Kindly let me hear from you if you will sign report not later than Thursday, the 8th, and oblige."

J. G. SULLIVAN to D. MACPHERSON, Dec. 6, 1910:—"Your letter, Dec. 3. I will be very glad to sign the report as

you have it now, providing you will put the statement of the cost of treatment of ties, including extra handlings, 25c., in the subjunctive mood, as I do not like to sign a statement showing a cost of at least 50% less than my company are having to pay for the treatment of ties. However, if you will introduce an 'if' in that statement, I will gladly subscribe to the report."

D. MACPHERSON to J. G. SULLIVAN, Dec. 9, 1910:—"Replying to yours of the 6th inst. about tie committee report, I have introduced the word 'if,' as suggested by you, and am sending the report to the Council today. Please accept my thanks for the interest you have shown in the matter."

We would be pleased to hear from others on this important sbject.

In this connection we think a change in the method of submitting reports by the Society's Committees is very desirable. As already pointed out, the report of the committee on ties, to which the signatures of a considerable majority of the committee were appended, advocated the use of 10½ ft. ties, and suggested that tests be made. The Chairman's letter transmitting the report mentioned Messrs. Mackenzie and Burpee as dissenting, but did not give their reasons, which would probably have remained unknown, except to the chairman, had we not secured copies of their letters for publication. It is quite true the dissenting members did not submit any minority reports, but the value to the Society generally of the committee's report would undoubtedly have been considerably enhanced had the views of the members of the committee who dissented from the majority been appended to the report fully. We are told that it was assumed they would attend the meeting in Winnipeg or send to me written discussion. As they had already submitted their reasons in writing, it appears to us that it was hardly reasonable to expect them to send in a written discussion in addition, or to attend the meeting unless it was convenient for them to do so.

Prince Edward Island Railway.

In his transportation speech in the House of Commons Mar. 10, the Minister of Railways, referring to the P.E.I.R., said up to Dec. 31, 1909, there was a net loss of $53,294.11, representing a decrease in the loss for nine months of $11,114.93 as against the preceding year. It did not pay, never would pay, and no one need ever try to make it pay. It was not the Department's intention to try to make it pay. When the Island came into Confederation the Government took over the railway, and it is the duty of Parliament to give the P.E.I. people a good railway service so far as that is possible. Although it is a certain contribution from the Federal Government to the people of the Island, so long as he was a Minister, he was prepared to advocate a liberal treatment of the people there in reference to their transportation facilities. The capital expenditure on the line during the past financial year was $185,000. and there was a branch line being built on which there had been expended $206,297.

Train Dispatching by Telephone.—We are advised that the Michigan Central Rd. has installed telephones on its line between St. Thomas and Windsor, Ont., for train dispatching. It is hoped to complete the telephone system between St. Thomas, Niagara Falls and Buffalo by the end of the year. At present the company is dispatching trains by telephone on eight divisions west of the Detroit River, with satisfactory results. It is intended in time to extend telephone dispatching over the entire system.

British Columbia Railway Acts.

Two measures of importance affecting railway companies were passed at the recent session of the British Columbia Legislature. The first, "An Act respecting the Department of Railways," provides for the appointment of a permanent Deputy Minister of Railways, with such other officers as may be necessary, to work under the Minister of Railways whose duty it shall be "to exercise superintendence and control over all railways subject to the legislative control of the province," whether the company owning or controlling such line was incorporated under special act of the legislature or otherwise. The act is to be retro-active, but all such companies as are already in existence are given any new powers conferred upon companies by this new act. The reason for the creation of the department arises from the construction and operation of various lines under provincial charters, such as the Canadian Northern Pacific Ry., the Portland Canal Short Line Ry., and the Victoria and Sidney Ry. We are advised that the Department will be organized under the Minister of Public Works, the Hon. Thos. Taylor, and that it is the intention that F. C. Gamble, Provincial Public Works Engineer, shall act as Chief Engineer.

The second measure, "An Act respecting railways," amends and consolidates the previously existing acts relating to railways. The first part provides for the administration of the act by the Department of Railways subject to the approval of the Lieut.-Governor-in-Council, and enacts that the provisions of the act shall apply to all existing companies chartered within the province. Part two deals with the incorporation of railway companies. The eight sections in this part provide that any five or more persons may by subscribing their names to a memorandum of association, and complying with the various other requirements of the act become a body corporate for the purpose of building a railway wholly situate within the province, and no railway company may hereafter be formed in British Columbia except under the act. Within 30 days after the filing of the certificate of incorporation the company must deposit $15,000 with the Minister of Railways, which is to be returned on the completion of construction, or forfeited if the line is not built. If the money is not deposited the charter is automatically voided. The Minister is given power to define the company's borrowing powers, to fix the price of the securities to be issued and the purposes to which the proceeds are to be applied. Part three deals with the granting of permission to build branch lines and extensions; the acquirement of other similar companies, etc. Part four deals with the general powers usually conferred upon railway companies. Part five grants permission to companies to occupy unoccupied Crown Lands, and authorizes the Chief Commissioner of Crown Lands to fix the price of such lands. The sixth part provides that the companies incorporated must begin construction within 12 months after incorporation, expend at least 15% of the share capital within two years, and complete construction within five years. Extensions of time to complete the line may be given, but only if the provisions as to actual commencement of construction and initial expenditure have been faithfully complied with. The seventh part contains the provisions for the conduct and management of companies, and succeeding parts up to and including 23, deal with everything connected with the building of the railway. The operation of the line, in all its departments is dealt with in 24 and subsequent parts. These sections provide that standard tariffs are to be made for passengers freight, express, etc., and are subject to the approval of the Department. The company may, subject to the Department's approval, make bylaws, rules and regulations for the regulation of traffic, etc., and special constables may be appointed by the companies for the protection of property and the enforcement of its bylaws and regulations. Statistical returns, in accordance with forms to be prescribed by the Minister are to be sent in annually, and special returns may be asked for at any time. Various penalties may be enforced for non-compliance with the terms of the act.

The act repeals the following acts:—Chap. 163, 1897, "An act respecting railways; chap. 44, 1901; chap. 40, 1905; chap. 32, 1907, being acts amending chap. 163 of 1897; chap. 185, respecting the incorporation of Tramway, Telegraph and Telephone companies, of 1897, chap. 40, 1900, and chap. 51, 1901, being acts amending the same.

Transportation Conventions Etc. in 1911.

April 18 to 21.—International Association of Railway Special Agents and Police, Chattanooga, Tenn.

April 26.—Association of American Railway Accounting Officers, New Orleans, La.

May 15-18.—International Railway Fuel Association, Chattanooga, Tenn.

May 17.—American Railway Association, New York City.

May 22-24. — Railway Storekeepers' Association, Milwaukee, Wis.

May 23-26.—Air Brake Association, Chicago, Ill.

May 23-26—International Master Boiler Makers' Association, Omaha, Neb.

May 24-26.—Association of Railway Claim Agents, Montreal.

June 14-16.—American Railway Master Mechanics' Association, Atlantic City, N.J.

June 19.—Association of Railway Telegraph Superintendents, Boston, Mass.

June 19-21.—Master Car Builders' Association Atlantic City, N.J.

June 20.—American Association of Freight Agents, Kansas City, Mo.

June 20.—Train Dispatchers' Association of America, Baltimore, Md.

June 20-21.—Association of Transportation and Car Accounting Officers, Cape May, N.J.

June 21.—Freight Claims Association, St. Paul, Minn.

June 22.—American Association of Demurrage Officers, Niagara Falls, N.Y.

July 25-27.—International Railway General Foremen's Association, Chicago, Ill.

Canadian Ticket Agents Association.

At a meeting of the executive committee in Toronto, March 9, invitations for the holding of the annual meeting, etc., at Sault Ste. Marie, Ont., and Charlottetown, P.E.I., were considered. The question of meeting at Ottawa, Cleveland or Toronto, with a trip to Muskoka, was also talked over. W. B. Moorhouse, C.P.R. ticket agent, Sault Ste. Marie, advocated the claims of that place, presenting invitations from the mayor and board of trade, and it was decided to accept the same. It is probable that most of the members will go to Sault Ste. Marie by train and return by boat.

W. McIlroy, C.P.R. City Ticket Agent at Peterborough, Ont., was appointed to represent the Association at the American Association of General Passenger and Ticket Agents' convention at St. Paul, Minn.

RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Albert and Moncton Ry.—The provisional directors named in the application to the Dominion Parliament for the incorporation of a company with this title are: F. V. Wedderburn, T. M. Robinson, St. John N.B.; Hon. P. McSweeney, Moncton, N.B.; J. W. Domville, Rothesay, N.B.; J. W. Domville, W. S. Gardner, E Domville, Montreal; J. D. Mackenzie, J. C. D. Mackenzie, J. E. Hawkins, J. King, London, Eng. The company proposes to build a line from Hillsboro, N.B., to the Albert Mines, and thence to Moncton, obtaining entry into that city by means of a railway and general traffic bridge to be erected over the Petitcordiac River. The company asks authority to enter into agreements with the General Oil Shales Co., of Canada. (Feb., pg., 109.)

Alberta and Great Waterways Ry.—By a judgment of the Alberta courts the company and the Western Canada Construction Co., have been made co-defendants with the Royal Bank, in the case instituted by the Province to secure the proceeds of the bonds which were guaranteed by the province.

The Alberta Government has received a number of claims aggregating about $30,000 for work done upon this projected railway. Under the act cancelling the contract, the government undertook to investigate and discharge claims for work done under the contract. (Mar, pg. 205.)

Alberta Central Ry.—We are advised that the two spur lines at Rocky Mountain House, the route maps of which have been approved by the Board of Railway Commissioners are for industrial purposes. One line is to a coal mine in the vicinity and the other to a lumber yard at the mouth of the Clearwater River. Each of these branches is over a mile long. On the line under construction for 50 miles west of Red Deer, Alta., about 20 miles have been completed to grade. The Board of Railway Commissioners has approved location plans for a further distance of 40 miles, from mileage 80, sec. 19, tp. 33, range 17 to mileage 120, in sec. 15, tp. 32, Alta.

In the course of the passage of the bill through the House of Commons, the routes of three branch lines which it is proposed to build in the vicinity of the Big Horn Range were more particularly defined than in the original act. The first is a 30-mile branch starting from the main line between the North Saskatchewan and Brazeau Rivers, and the route as defined is "along or near the Wapiabi Creek, South Creek, and Chungo or Trail Creek respectively;" and two branch lines each 25 miles long northerly and easterly from near the north end of the Big Horn Range of Mountains through ranges 20, 21 and 22, tps. 43, 44, 45 and 46 west of the fifth meridian; and northeasterly from near the same point, along the Brazeau River to the mouth of its north branch, thence northerly up the Pembina River near where the already authorized line crosses the Brazeau River. (Mar., pg. 205.)

Algoma Central and Hudson Bay Ry.—It is proposed to start filling in all the trestle bridges on the line from Sault Ste. Marie to mileage 69, from which point the line is being extended to Hobon, on the C.P.R. transcontinental line. This extension is expected to be completed this year. A new station is to be built at Bruce St., Sault Ste. Marie, and a new terminal yard laid out north of the Tagoma section of the town, and it is also contemplated to extend the line along the river front as far as the ferry docks. (Mar., pg. 205.)

Atlantic, Quebec and Western Ry.—The Minister of Railway stated in the House of Commons recently that the audit department was making a complete audit of the company's books to ascertain the exact amount of money spent upon construction, and the chief engineer was making an inspection of the line in order to see how far it had been constructed. From papers which had been previously brought down it appeared that the total cost to date was reported to the Government to have been $2,451,550, and that a further sum of $769,902 was required to complete the 102 miles. The subsidy, amounting to $396,902 had been paid to the Bank of Montreal which held a power of attorney from the company. Of the 102 miles, 56 had been completed and considerable work had been done on the remaining 46 miles. The operations on the portions of the line opened to June 30, 1910, showed a deficit of $9,872. (Feb., pg. 109.)

British Columbia and Alaska Ry.—L. M. Rice, C.E., Seattle, Wash., who is in charge of the surveys for this projected line from Vancouver to Alaska, is reported as having stated Mar. 13, that the surveys are well in hand, and that they will be pushed to a completion at the earliest possible moment. The northern terminus has not been definitely selected. (Mar., pg. 205.)

Burrard Inlet Tunnel and Bridge Co.—A deputation from Vancouver, B.C., and surrounding places affected, waited on the Dominion Government, Mar. 14, and asked that a subsidy be voted towards the building of the proposed bridge. Consideration of the request was promised.

Negotiations are in progress with the Seymour Creek Indians, with a view of the company acquiring 100 acres of the waterfront lands of the reservation. (Mar., pg. 249.)

Canadian Coal and Coke Co.—A company with this title was organized Feb. 19, in Montreal, with a capital of $12,000,000 for the purpose of taking over and amalgamating the following companies: Western Coal & Coke Co.; Lethbridge Collieries; St. Albert Collieries, and the Pacific Pass Coal Fields Co. The following are the officers and directors: President, H. K. Lovett, K.C.; Vice President, E. B. Greenshields; other directors: Hon. R. Mackay, R. Forget, M.P.; C. H. Cohan, K.C.; J. N. Greenshields, J. W. McConnell, N. Curry, J. P. Ross and A. H. Cook.. Since the meeting a number of actions have been entered by sections of the shareholders of the Pacific Pass Coal Fields Co., to prevent the absorption of that company.

The Western Coal and Coke Co. controls the charter of the Kootenay and Alberta Ry.; the Lethbridge Collieries Co. and has a spur line under construction to connect its collieries with the C.P.R. Crow's Nest Pass branch, while the other companies named have power to build railway lines.

Canadian North Eastern Ry.—The British Columbia Legislature has changed the name of the Portland Canal Short Line Ry., as above, and authorized the building of an extension to the eastern boundary of the province near the Pine River Pass, and other lines.

A cargo of 40,000 ties has been delivered at Stewart in readiness for restarting work on the building of the line from Stewart to Bear River, B.C. The grading is reported to be completed, with the exception of a rock cut at the canyon, on which work is still in progress. Early in the spring a spur line is to be built to the Portland Canal concentrator. (Mar., pg. 249.)

The Caribou, Barkerville and Willow River Ry. Co., which was incorporated by the British Columbia Legislature in 1910, is asking the Dominion Parliament to declare that the line to be built is a work for the general advantage of Canada, and to authorize it to make a connection with the G.T. Pacific Ry., at Eagle Lake, B.C. Senckler, Spinks and Van Horne, Vancouver, B.C., are solicitors for applicants. (Mar., pg. 349.)

Crow's Nest and Northern Ry.—The British Columbia Legislature has extended the time within which this projected line may be built. (April 1909, pg. 247, and Jan., 1909, pg. 17.)

Dominion Development Ry.—In the course of the passage of the bill through the House of Commons objection was taken to the title of the company, and an arrangement was made by which it should be changed to the British Columbia and Central Canada Ry. This was carried out by resolution of the House of Commons in committee, Mar. 14. (Mar., pg. 249.)

Great Lakes and Hudson Bay Ry.—It was decided not to proceed with the application to the Ontario Legislature for the incorporation of a company with this title to build a railway from Peninsula Bay on Lake Superior, to Hudson Bay. (May, pg. 205.)

Grouse Mountain Scenic Incline Ry.—The British Columbia Legislature has incorporated a company with this title; the application of a second company for the incorporation with the title of the Grouse Mountain Scenic Ry. being withdrawn. (See Vancouver, North to Grouse Mountain, Mar., pg. 249.)

Hartland and Miramichi Ry.—Application is being made to the New Brunswick Government for a guarantee of bonds to aid in the building of the line authorized last session of the Legislature, from Hartland, on the St. John River, to Sparkle on the National Transcontinental Ry., 40 miles. S. S. Miller, is President, and M. L. Hayward Secretary of the company. Its office is at Hartland, N.B. (July, 1910, pg. 547.)

Howe Sound and Northern Ry.—Press reports state tenders will be called for at an early date for grading an additional 10 miles on this line, and for building a bridge across the Cheakamus River. This point is 10 miles from Newport on Howe Sound, B.C., and the reports say that track has already been laid between these two points. (Feb., p. 111.)

Hudson Bay, Peace River and Pacific Ry.—The provisional directors named in the bill, before the Dominion Parliament for the incorporation of a company with this title, are: J. Nairn, Edinburgh, Scotland; R. M. Simpson, R. McLennan, H. Ross, R. D. Waugh, W. M. Noble, H. W. Adcock, Winnipeg. In addition to the powers already mentioned as being asked for, the promoters are applying for power to build a branch line from Winnipeg, easterly and northerly to Fort Churchill, on Hudson Bay. H. W. Adcock, Winnipeg, is solicitor for applicants. (Feb., pg. 155.)

Intercolonial Ry.—Plans for the laying out of additional terminal facilities at Halifax, on plans, prepared by J. Kennedy, Consulting Engineer, Montreal, were discussed between the Government Railways Managing Board, and the Halifax Board of Trade, Mar. 12. They provide for an expenditure of about $2,000,000 and were approved by the Board of Trade.

With reference to press reports as to the early construction of a diversion of the line between Nelson and Derby Jct., N.B., we are officially advised that nothing has been decided.

Tenders are under consideration for the erection of a stone and brick passenger station at Campbellton, N.B., to replace the temporary structure used since the fire. The roundhouse and machine shop erected there to replace the build-

ings destroyed by fire are completed. (Mar., pg. 205.)

Intercolonial Ry.—Press reports state that it is proposed to build a new steel bridge over the Nashwack River, near Marysville, N.B., and another one near Doaktown, N.B. (Mar., pg. 205.)

International Ry. of New Brunswick.—We are omcially advised that this company has power under its act, of incorporation to build a bridge for railway traffic across the St. John River, at St. Leonards, N. B., in conjunction with any company incorporated for a similar purpose in the State of Maine. A number of citizens of Van Buren, Me., are considering the desirability of obtaining such a charter and undertaking the building of the bridge. At present a bridge for highway traffic is being built by a joint commission representing the State of Maine and Canada. Application was made to have this bridge made of sufficient strength to carry railway freight cars, drawn by electric motors, and it is said that both governments were agreeable. to make the necessary contributions towards the extra cost. The Maine Railway Commission either would not, or could not, agree to this being done, in the face of the act of the Maine Legislature which had appropriated money for the building of a highway bridge.

With regard to the proposed bridge over the Restigouche River, on the New Brunswick-Quebec boundary, at Campbellton, which would enable a connection to be made between the I.R. of N.B. and the old Atlantic and Lake Superior Ry., we are advised that there is a reasonable prospect of something being done. However, this depends on the Dominion Parliament granting aid towards the cost of construction. The construction of such a bridge would give to the Gaspe peninsula an outlet to New England points, especially in winter, for its fish, lumber, and farm products over the I. R. of N.B.

The I.R. of N.B. has paid into the Supreme Court of New Brunswick $3,000 and interest, the amount of the award in respect of land taken for right of way, and forming part of the lands subject to the provisions of the New Brunswick Ry. Act, in which the New Brunswick Ry. Co. has an interest. (Feb., pg. 111.)

Kettle Valley Lines.—The Board o Railway Commissioners has approved location plans of the extension of the line west and north of Midway, B.C., between Rock Creek, mileage 10.43, and Westbridge, mileage 20.91. Track was reported to have been laid to Cardiff, about 10 miles from Midway, when work was given over, owing to the uncertain weather. It is expected that work will be resumed April 1, both at the Midway and the Merrit ends of the extension. Press reports state a contract has been let to Macdonnell, Gzowski & Co., Vancouver, for a further 30 mile section of the extension, and that it is expected to have the 60 miles between Midway and Merrit completed in the fall. An arrangement is reported to have been completed for the purchase of 50 acres at Penticton, from which a spur will be built to a wharf which is to be built on the lake.

Application has been made to the Board of Railway Commissioners for approval of the location plans of the extension over the Hope Mountains, and notice of opposition has been filed by the Vancouver, Victoria and Eastern Ry., which has a route staked out through the same section of country. (Mar., pg. 205 and pg. 249.)

Kootenay and Alberta Ry.—We are advised that tenders for the building of a section of this projected railway are under consideration, and that a contract is expected to be awarded shortly. L. B. Merriam, 609 Builders' Exchange, Winnipeg, Man., is Chief Engineer. (See also Canadian Coal and Coke Co.)

L'Avenir and Melbourne Ry.—Application is being made to the Quebec Legislature for a subsidy in aid of this projected railway. (June, 1910, pg. 449.)

Lethbridge Collieries Co.—See Canadian Coal and Coke Co.

Manitoulin and North Shore Ry.—This contract for building the section of the line to connect the Sudbury-Krean Hill portions of the line, with the Whitefish Bay-Little Current portion has been let to tne Superior Construction Co. The length of the section, including the loop to Espanola, is 46 miles. The route is described on pg. 111 of our Feb. issue. T. J. Kennedy, formerly General Superintendent of the Algoma Central and Hudson Bay Ry., President of the construction company, is in charge of the work, with offices at Espanola, Ont. J. D. McArthur, Winnipeg, Man., is Vice President of the Construction Co. The work is estimated to cost $1,500,000, and the contract has been let on a percentage basis. (Mar., pg. 207.)

Mid-Provincial and Nechaco Ry.—The British Columbia Legislature has authorized the incorporation of a company with this title to build the railway mentioned in our last issue. (Mar., pg. 249.)

Michigan Central Rd.—The Board of Railway Commissioners has authorized the use of subways, as follows: Tecumseh and Dougall roads, Sandwich tp.; Charing Cross, Kent county; and Ross St., St. Thomas, Ont.; and to use the drawbridges at Chippewa Creek. (Feb., pg. 111.)

Montreal and Northern Colonization Ry.—In re-drafting the bill before the Quebec Legislature asking for the incorporation of a company with this title, the promoters have reproduced almost entirely the sections of the Canadian Eastern Ry., a company incorporated by the Quebec Legislature in 1906. In committee Mar. 10. the names of the provisional directors were changed to A. Bougevin, W. Williamson, O. S. Perrault, R. Bickerdike and O.Faucher. (Mar., pg. 209.)

Montreal Central Terminal Ry.—Application is being made to the Dominion Parliament to extend the time within which the company's projected works may be constructed. Hogg and Hogg, Montreal, are solicitors for applicants. (Mar., pg. 207.)

Naas and Skeena Rivers Ry.—The British Columbia Ry. has incorporated a company with this title. (March, pg. 249.)

Northern Vancouver Island Ry.—The British Columbia Legislature has incorporated a company with this title. (Mar., pg. 249.)

Ontario Railways Co.—The provisional directors named in the bill before the Dominion Parliament, for the incorporation of a company with this title are: J. H. Kittermaster, J. Newton, I. Newton, H. F. Holland, Sarnia, Ont.; A. W. McLimond, Jackson, Mich.; A. D. Bennett, M. W. Mills, Port Huron, Mich. (Mar., pg. 249.)

Pacific and Hudson Bay Ry.—The provisional directors named in the bill before the Dominion Parliament, for the incorporation of a company with this title, to build the railways specifically mentioned in our Feb. issue, are: W. D. Verschoyle, J. F. Bledsoe, S. R. MacClinton, W. F. Brougham, T. J. L. Peake and G. D. Eaton, Vancouver, B.C., (Feb., pg. 113.)

Peace and Naas River Ry.—The British Columbia Legislature has incorporated a company with this title. The title appearing in the notice of application was the Naas and Peace River Ry. (See Naas and Peace River Ry., Mar., pg. 249.)

Prince Edward Island Ry.—We are advised in connection with the reports as to the early construction of the North Shore branch to connect Kensington and New London, P.E.I., about 12 miles, that nothing has been decided.

Reid Newfoundland Co.—In the Newfoundland Legislature Mar. 2, the Premier said the branch line from Shoal Harbor to Bonavista would not be considered complete until the spur line at Trinity had been built. The surveys for the spur, which would be a mile and a half long, had been made and approved; a portion of the right of way, and the site of the station in Trinity had been acquired. (Jan., pg. 23.)

Simcoe, Bruce and Grey Ry.—The Minister of Railways, replying to a deputation recently, said the application for a subsidy in aid of construction would receive careful consideration. The particular piece of line which the company proposes to build is that from Owen Sound to Meaford, for which Parliament has on previous occasions voted a subsidy. (Mar., pg. 209.)

Southern Central Pacific Ry.—The routes of the two branch lines which the company is asking the Dominion Parliament to authorize it to build, were more explicitly described when the bill was in committee. As passed by the House of Commons, one branch will start from the point where the projected main line crosses the Blind Man, or the North Saskatchewan Rivers, northwesterly crossing the Athabasca River, to Dunvegan on the Peace River, thence to the Parsnip River, then southerly to the Nechaco River, and then southwesterly to Deans Channel or Gardiner's Canal, B.C.; and the other starting from the Elk River, B.C., and proceeding easterly to Pincher Creek, the Waterton River, and Cardston, reaching the International boundary at Milk River. (Dec., 1910, pg. 1027.)

Temiskaming and Northern Ontario Ry.—The Ontario Legislature has authorized the Government to raise $3,000,000 for construction on this railway. The Provincial Treasurer said the extension to the Porcupine country would absorb $600,000 of this, and a further sum would be utilized for building a connection between the T. and N.O. R., and the G.T.R. at North Bay. The connecting line, several miles in length, would cross the C.P.R. line without going into the North Bay yards.

Application is being made to the commission to arrange for the building of a spur line along the water front at Haileybury, Ont.

Tenders are under consideration for the erection of a passenger station at Matheson.

A decision is expected to be made at an early date in reference to the proposal to build a line to Elk City and Gowganda.

The final location map of the Porcupine branch shows a line branching off from the main line at Iroquois Falls, mileage 224.5, and proceeding southerly and westerly to the shore of Frederick House Lake, skirting the south of the lake for about five miles, thence in the same direction through Matheson and Whitney tps. to Porcupine Lake, passing to the south of the lake to Porcupine River in Tisdale tp., mileage 29. It is possible that it may be necessary to extend the branch further west, but this will depend upon the future development of the camp. The branch has been located with maximum gradient of 1%, and a maximum curvature of six degrees. In order to hasten the completion of the branch, temporary construction curves in excess of 1% have been

used in a few places. The principal structure on the route is a pile trestle, 900 ft. long, across the Frederick House River. Work on the line is being pushed rapidly, and it is expected that track will be laid on the first 11 miles early in April. The bridge timbers for the bridge at Frederick House River are being prepared, on which work is to be started at once. Considerable progress has been made with the clearing and grading beyond that point. (Mar., pg. 209, and also Charlton to Elk Lake, (Mar., pg. 249.)

Toronto, Hamilton and Buffalo Ry.—The Board of Railway Commissioners has authorized the company to take certain lands in Barton tp., to increase its yard facilities at Hamilton, Ont. (Mar., pg. 209.)

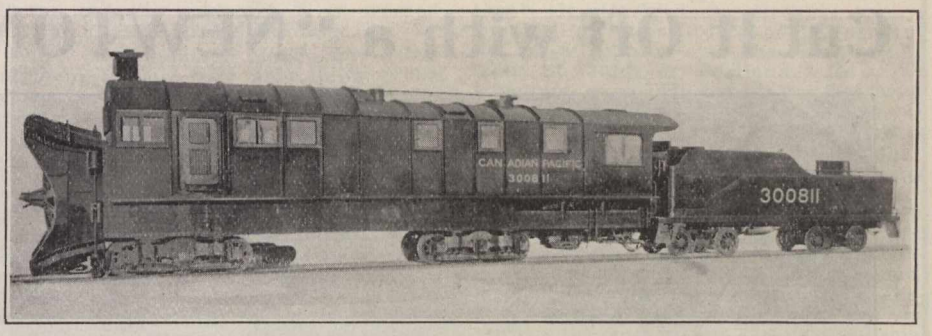
Toronto, Proposed Central Terminal Station.—Representatives of a New York syndicate propose to renew their application to the Toronto city council for permission to build a central terminal station in the city. The new proposal, press reports state, is to lease the tunnels connecting with the station to the railways, and to build the station on a block about 1,000 ft. square in the centre of the city. (Jan., 1910, pg. 23.)

Yellow Head Pass.—A press report states that "C. J. Leyland, Haggerstown Castle, Scotland, who owns a coal property near the Yellow Head Pass, B.C.," is having surveys made for "a 20 mile line to connect the mines with the G. T. Pacific Ry." Haggerston Castle is in Northumberland, Eng., and not in Scotland.

Winnipeg North Eastern Ry.—Application to the Manitoba Legislature to incorporate a company with this title, to build a railway from Winnipeg, easterly and northerly along the east side of Lake Winnipeg to the northern boundary of the province. H. P. Blackwood, Winnipeg, is solicitor for applicants.

Press reports from Winnipeg state that the surveys for the first section of this line, from Winnipeg to Fort Alexander, on the Winnipeg River, are being made by Canadian Northern Ry. engineers, and that a considerable portion of the right of way has been acquired by interests closely connected with Mackenzie, Mann & Co.

The British Columbia Legislature has passed an act authorizing the regulation of railway construction camps, and providing for the inspection of the same by medical officers.



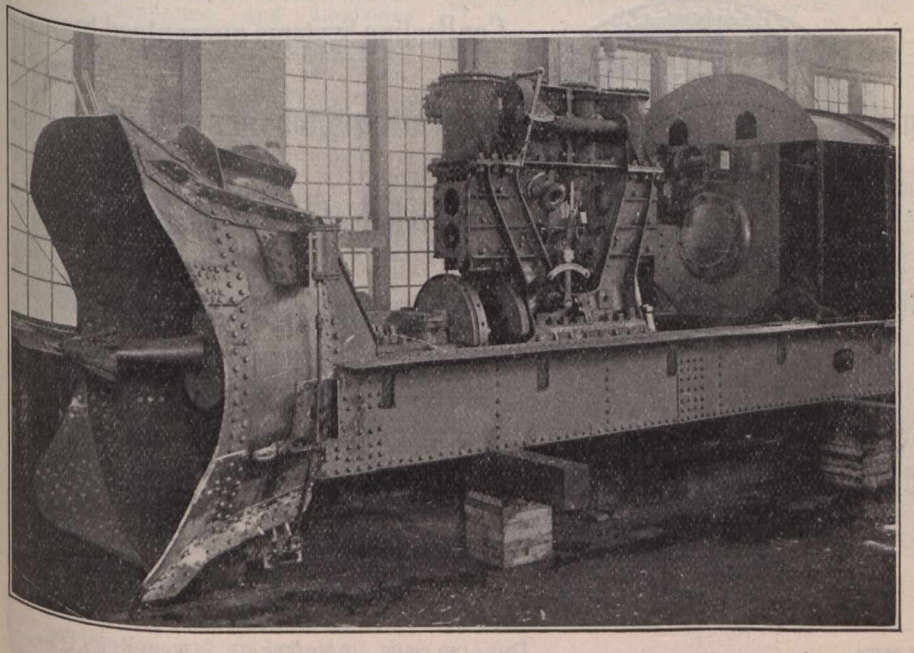
C.P.R. Rotary Snow Plough.

C. P. R. Rotary Snow Ploughs.

Two of the accompanying illustrations show the outside appearance of the two rotary snow ploughs which the C.P.R had built in the latter part of last year by the Montreal Locomotive Works. The other illustration shows the appearance of the plough before the cab was put on.

During the past few winters the C.P.R. experienced considerable delay and trouble on account of the older types of rotary snow ploughs, usually known as the Leslie, giving trouble by breaking down when working in heavy drifts, on account of the lack of stiffness in the frame, and the consequent springing and distortion of the engines, and the fact that the wheels being made of sheet steel were easily damaged in case of trees or rocks being present in the drifts, as occasionally occurs when track is obstructed by slides. Delays of any kind nowadays are so objectionable that it was decided to construct two ploughs which would in every way be as strong as it was possible to make them. The wheels, instead of being built of sheet steel, are made of steel castings, the blades being 1 in. thick at the edge and heavily ribbed. The framing, instead of being constructed of I beams, is made of two heavy box girders about 3 ft. deep for the greater portion of their length. The engines, instead of being placed by the side of the boiler in driving the wheel shaft through gearing, are vertical, and drive directly on the wheel shaft. The boiler is made of ample capacity to supply sufficient steam. The result is the plough shown in the accompanying illustrations. These ploughs weigh 260,000 lbs. each; the wheel shaft is driven by a 24 in. vertical engine, giving steam at 200 lbs. pressure; the boiler is 61 ins. diameter at the front end, and has a grate area of 34 sq. ft. The tender is made with 8,000 gallon capacity, and is specially long so as to separate the weight of the plough from the engines pushing it. A novelty is introduced in the way of a steadying device placed under the hood, which is lowered down on the track when the plow is running, thus taking all vibration off the springs. The results, we are advised, are entirely satisfactory, and the ploughs, which are employed on the mountain section in British Columbia, are doing all that can be expected.

We are indebted to H. H. Vaughan, Assistant to the Vice President C.P.R., for the foregoing data, and also for the photographs.



C.P.R. Rotary Snow Plough, showing interior construction.

The Quebec Bridge.

The Minister of Railways replying to questions in House of Commons, Mar. 7, said the contract for the building of the bridge had not been signed. There were details in connection with the contract that it would not be in the interest of the public to mention at present. In a very short time he expected to have the matter closed up so far as the wording of the contract was concerned, when all papers in connection with it would be laid before the House. On Mar. 8, he stated that the plans and specifications for the bridge had not been submitted to the Chief Engineer of the G.T. Pacific Ry., as the bridge is not comprised in the eastern division of the National Transcontinental Railway as covered by statute. The question of using the bridge, he added, had been discussed with the G.T. Pacific Ry., but it was considered premature to endeavor to make any arrangements with the railway companies until the construction of the bridge was further advanced.

Some days previously the Minister made a lengthy statement as to the bridge, in which he said that the estimated cost of the building including the loss on account of the old bridge would be $20,000,000. There had been only one proposal made for a suspension type of bridge, and that this had been unanimously condemned as unsuited for the purpose. It was estimated that the bridge would be completed in from three to five years, but in his opinion, five years would be required. Mr. Fitzmaurice had resigned from the Commission because of ill health in the first place, and because he did not altogether agree with the design which the other two Commissioners had favored. His resignation had been accepted, because it was desirable at that stage of the proceedings that there should be a man in his place who would be able to give more time to the work. Mr. Vautelet had

resigned because of his health, and as the design which he favored had not been adopted he (the Minister) thought that the work of carrying out the design should be in the hands of an engineer who was more in sympathy with the accepted plans. It was expected that the contract with the St. Lawrence Bridge Co., would be signed within a short time.

The question of the damage to one of the caissons used at the foundation work for the new bridge was the subject of a series of question in the House of Commons recently. The Minister of Railways in reply said one of the caissons was damaged owing to the breaking of a pump, and the consequent grounding of the caisson, on an uneven bottom. The caisson was strained, necessitating the removal of the concrete which had been placed in it, and the placing of the caisson itself in dry dock for repairs. The cost to date for labor and material in connection with repairs was $75,000. about 2,300 cubic yards of concrete had been placed in the caisson at the time of the accident, its approximate value in place being $14,000, and the cost of removal $7,000. The work of sinking the caisson stopped Aug. 31, 1910, and nothing more was done on that part of the work, while all work was stopped for the winter Dec. 23. The contractor was responsible for any loss on account of the accident to the caisson, and the Department was not aware of any claim having been made by him on account of any alleged loss. The plans for the caisson were made for the contractor by A. Noble of New York, and were approved by the Board of Engineers appointed by the Government to have charge of the reconstructing of the bridge. (Mar., pg. 215.)

Railway Commissioners' Traffic Orders.

Summaries of other traffic orders are given on another page under "Orders by Railway Commissioners":—

RATES ONTARIO TO MISSISSIPPI POINTS.

12854. Feb. 1.—Re application of J. P. Tucker, Chairman Central Freight Association, Chicago, as agent for the carriers parties thereto, for permission to postpone the effective date of his joint and proportional tariff on classes and commodities from points within the competitive territory in Ontario south of and including the G.T.R. line from Sarnia Tunnel to Suspension Bridge, via London and Hamilton, to Lower Mississippi River, Alabama, and Louisiana points, until Sep. 1, 1911. Upon its appearing that the said postponement has been ordered by the Interstate Commerce Commission with respect to the rates shown in the said tariff to the said territory from points south of the International Boundary; and in pursuance of the powers conferred upon the Board by sec. 329 of the Railway Act, it is ordered that permission be granted for the suspension of the freight rates from Ontario shown in the tariff of joint and proportional rates, C.R.C. 188, issued by J. P. Tucker, of Chicago, until Sept. 1, and for the reinstatement until and including Aug. 31, of the joint and proportional rates between the same points shown in J. F. Tucker's tariff C.R.C. 180, which tariff was superseded by C.R.C. 188, Nov. 1, 1910.

EXPORT RATES TO HALIFAX.

12882. Jan. 25 and 26.—Re application of Board of Trade of Halifax, N.S., complaining that the G.T.R. unjustly discriminates against the port of Halifax and in favor of other Atlantic ports in its differential rate of 1c per 100 lbs. on all traffic between Halifax and Montreal and points east of Montreal. Upon reading what has been filed in support of the application and on behalf of the railway; and upon hearing the application in the presence of counsel for applicant and the company, it is ordered that the application be dismissed.

Chief Commissioner Mabee gave oral judgment in this case as follows:—The matter is one of very great importance, we are fully alive to that, to the port of Halifax, and it is with regret that we feel we are not at liberty to enter into the merits of this contention. Perhaps, as we have not heard the merits, it would be unfair to the parties that we should give any indication of what we might think of them or as to what impression we have obtained from the statement of the case by counsel for the applicants.

The one short ground upon which the case must be put, in so far as this Board is concerned, is that of jurisdiction, and we are all of the opinion that in the peculiar situation this matter stands it is not a case in which we are at liberty to interfere. The matter lies within a brief compass. Parliament defines certain rules for railways to operate under and live up to. It says that railway companies shall not discriminate against persons or localities. Then it constitutes this tribunal and hands this act to us and says to us: "As far as you are able see that the regulations we have laid down there are lived up to." But in handing us this statute it says: "See that the provisions of this act are in force so long as they are not in conflict with some other statutes that we have put upon the books." It retains to itself power to incorporate a railway and insert in that act of incorporation anything it sees fit. And Parliament can tomorrow incorporate a railway and say that none of the provisions of the Railway Act, with reference to discrimination, shall apply to that road. If it did that it would paralyze the arm of this tribunal to the extent of preventing it from applying to that particular road the provisions in this law dealing with discrimination.

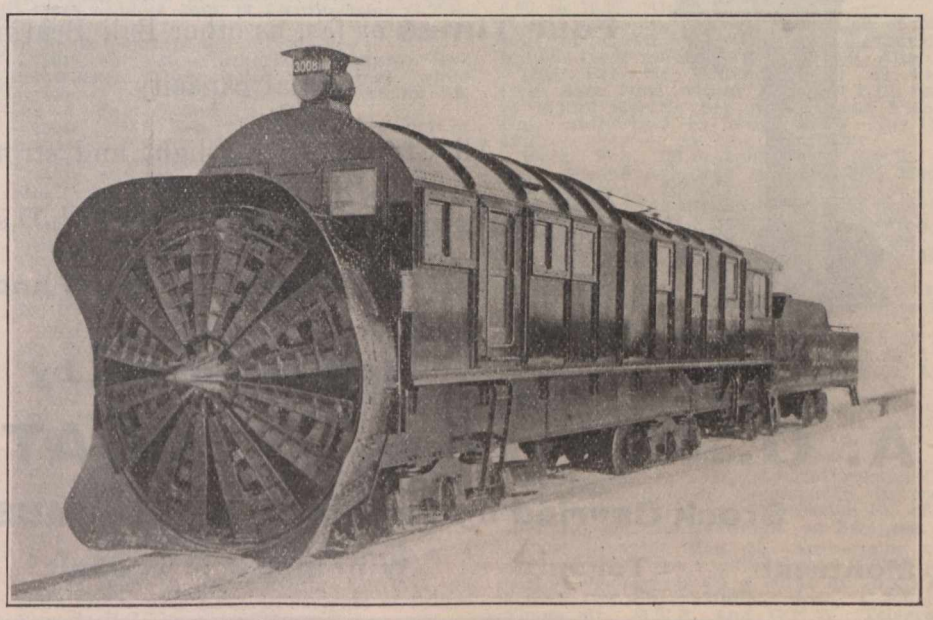
Parliament has said that, in so far as or wherever the provisions of the Railway Act and of any special act passed by the Parliament of Canada relate to the same subject matter, the provisions of the special act shall, in so far as is necessary to give effect to such special act, be taken to override the provisions of this act. Now, is there a special act? There clearly is: chap. 5, 62 and 63 Vic. Does it deal with the same subject matter? Now, one of the subject matters of the Railway Act is that respecting rates which carriers may charge. Does the special act deal with that? It clearly does. Because it says the Halifax rates are to be 1c. per 100 lbs. on all classes over the rates to and from St. John or Portland. Now, we have got a special act in conflict with the provisions of the Railway Act, to the extent of saying that the rates over these two roads to Halifax shall be 1c. per 100 lbs. more than the rates to Portland or St. John. So that, applying sec. 3 of the Railway Act to the special act we have got conflict, and the law says that where there is conflict with reference to the same subject matter, the provisions of the special act shall govern. Can there be any doubt about this being a special act and about this agreement really forming part of it? The special act deals with the agreement, it confirms it, and part of the thing that is confirmed is this 20c. a ton differential against Halifax.

The late Chief Commissioner Killam (for whose opinion, both in his lifetime and since his death the bar of this country have always had the greatest respect) held that this supplemental traffic agreement of Feb., 1898, must be considered to have been confirmed by statute. I think we would have come to the same conclusion as he did, even had we not had his well-considered opinion to guide us. So it seems to us to be perfectly clear that this tribunal cannot interfere and wipe out the arrangement that Parliament put into effect between these two roads. We do not put it upon the ground that the Intercolonial is owned by the Government. The situation would be the same, we think, if it were an agreement between the C.P.R. and the G.T.R., or between any two roads in Canada. If railway companies are able to get legislation of this character upon the statute book, we have no alternative but to be guided by what Parliament has said. We cannot undo this transaction, we cannot interfere with it. The only body that can interfere with it is the body that brought it into effect and made it law.

WHITE PASS AND YUKON RATES.

The White Pass and Yukon Route has applied to the Board of Railway Commissioners for leave to appeal against the Board's recent order directing it to file new freight tariffs showing reductions, to come into effect Apl. 1.

Mrs. Brown, wife of A. C. Brown, C.P.R. Agent at Guelph, Ont., died there, Mar. 11.



C.P.R. Rotary Snow Plough (See page 323).

Orders by the Railway Commissioners.

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

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them

12950. Feb. 11.—Approving revised location of C.P.R. Kipp to Aldersyde branch, previously approved by orders 6870 and 9278, from mileage 28 to 67.06, Alta.

12951. Feb. 11.—Authorizing C.P.R. to build spur to Diamond Coal Co.'s premises along and across Jarvis St. and lot 22, Toronto.

12952. Feb. 8. — Authorizing Vancouver, Victoria & Eastern Ry. to take whole of bed and foreshore of False Creek east of Westminster Ave., Vancouver, B.C., with exception of portion reserved by city.

12953. Feb. 10.—Prescribing forms of merchandise receipt, money receipt, collection receipt, limited liability livestock contract, livestock attendants' contract to be used by express companies, and ordering that the express classification for Canada C.R.C. 2, appended to judgment delivered Dec. 24, 1910, be approved and take effect Mar. 1.

12954. Jan. 23, 24.—Approving C.N.Q.R. Standard Tariff of Maximum Sleeping and Parlor Car Tolls C.R.C. S3.

12955. Feb. 10.—Approving Marconi Wireless Telegraph Co.'s tariff of rates C.R.C. 4 and 5.

12956. Jan. 16.—Authorizing G.T.R. to build spur to Massey-Harris Co.'s premises, Brantford, Ont.

12957. Feb. 7.—Authorizing T.H. & B.R. to take certain lands in Barton tp., Ont., to increase yard facilities at Hamilton, Ont.

12958. Feb. 13.—Authorizing Marx & Rawolle of Canada, Ltd., to lay water main under G.T.R. near St. Ambroise St., Montreal.

12959, 12960. Feb. 13.—Authorizing Ontario Hydro-Electric Commission to erect wires across G.T.R. at Main St., Norwich, and at Concession St., Tillsonburg.

12961. Feb. 13.—Authorizing Water Commissioners of London, Ont., to erect wires across G.T.R. at Talbot St.

12962. Feb. 13.—Ordering that G.T.R. trains do not exceed four miles an hour, and that standpipe and exhaust pipes be removed at Lyster station, Que.

12963. Feb. 13.—Approving location of G.T.P. station at Tofield, Alta.

12964. Feb. 13.—Authorizing C.N.O.R. to build across public road at con. 1, Grenville tp., Que.

12965 to 12996. Feb. 11, 13, 14.—Authorizing C.P.R. to build second track across public highways in Portage La Prairie and Rosser, Man., on Brandon subdivision, at 32 points.

12997. Feb. 11.—Approving C.N.O.R. revised location at Grenville, Que.

12998 to 13002. Feb. 10, 11, 13.—Authorizing C.P.R. to build additional second track across public highways in Portage la Prairie and Rosser, Man., on Brandon Subdivision, at five points.

13003. Feb. 13.—Authorizing C.P.R. to build spur to Macleod Quarrying & Contracting Co.'s premises in secs. 16 and 17, tp. 10, r. 24, w. 4 m., Alta.

13004. Feb. 7.—Authorizing Nepean tp. and Westboro village, Ont., to extend Victoria Ave. to Pacific Ave., across C.P.R.

13005. Feb. 13.—Authorizing D. J. Cyr, of Green River, N.B., to lay water pipe under C.P.R.

13006. Feb. 12.—Relieving C.N.R. from further protection at highway crossing at Lloydminster, Alta.

13007, 13008. Jan. 23, 24.—Approving Standard Tariff of Maximum Sleeping and Parlor Car Tolls of Maine Central Rd. and Central Vermont Ry.

13009. Feb. 7.—Authorizing C.N.O.R. to divert road on lots 5A and 4E, con. 1, Grenville tp., Que.

13010. Jan. 23, 24.—Approving Esquimalt & Nanaimo Ry. Standard Tariff of Maximum Sleeping and Parlor Car Tolls.

13011. Feb. 14.—Amending order 12949, Feb. 10, by adding, "It being understood that in engaging watchman, the M.C.R. is acting only as agent of the N. St. C. & T. Ry.

13012. Feb. 14.—Extending to May 15 time within which C.P.R. shall instal improved electric bell at Cote des Neiges road, Hochelaga Co., Que., as provided in order 12321, Nov. 18, 1910.

13013. Feb. 14.—Ordering that C.N.R. erect fences along right of way before June 15, 1911, under penalty of $25 a day, on complaint of Davidson, Sask., board of trade.

13014. Feb. 7.—Authorizing C.P.R. to divert highway between con.. A and con. 1, Ottawa Front, Nepean tp., Ont., portion of highway to be deeded to township by C.P.R.

13015. Feb. 7.—Providing that G.T.R. maintain interlocking plant ordered in connection with N. St. C. & T. Ry., by order 9646, Feb. 17, 1910, and varying order 10310, April 20, 1910, in regard to working of interlocker, method of rendering bill, etc.

13016. Feb. 15.—Authorizing G.T.P. Branch Lines Co. to cross highway between secs. 23 and 26, tp. 36, r. 27, w. 2 m., Saskatoon District, Sask.

13017. Feb. 14.—Authorizing C.P.R. to build spur to International Harvester Co.'s premises in lots 5 and 6, block 165, plan 97, Saskatoon, Sask.

13018 to 13021. Feb. 14. — Authorizing M.C.R. to use subways at Tecumseh Road and Dougall Road, Sandwich West tp., at Charing Cross, Kent Co., and at Ross St., St. Thomas, Ont.

13022, 13023. Feb. 14.—Authorizing M.C.R. to use drawbridges at Chippewa Creek, Ont.

13024. Feb. 15.—Providing for interchange tracks between G.T.R. and N. St. C. & T. Ry., in St. Catharines, Ont., and authorizing crossing of John and Page Sts., and an unopened street.

13025. Feb. 15.—Authorizing G.T.P. Branch Lines Co. to cross highway between sec. 33, tp. 34, r. 27, and sec. 3, tp. 35, r. 27, w. 2 m., Saskatoon District, Sask.

13026. Feb. 15.—Approving G.T.R. plans for change of location and details of construction of retaining wall at Exhibition grounds, Toronto.

13027. Jan. 21.—Authorizing C.N.O.R. to cross Cotsmore Ave., Cobourg.

13028. Feb. 15.—Authorizing South River Electric Co. to erect wires across G.T.R. track and wires near South River village, between Strong and Machar tps., Ont.

13029. Feb. 7.—Approving G.T.R. plans of Howard Ave. subway, Toronto, and Jane St. subway, York tp., Ont.

13030. Feb. 7.—Authorizing C.N.O.R. to build bridge over North River, St. Andrews parish, Que., mileage 13.5, from Hawkesbury Ont.

13031. Feb. 17.—Authorizing Ontario Hydro-Electric Commission to erect wires across Bell Telephone Co.'s wires at lot 2, con. 11. Downie tp.

13032. 13033. Feb. 16.—Relieving G.T.R. from further protection at crossings 1½ miles north of Paisley, Ont., and at Versaille St., Montreal.

13034. Feb. 18.—Approving C.N.O.R. location through unsurveyed territory, Algoma District, mileage 260 to 280, from Sudbury Jct., Ont.

13035. Feb. 18.—Approving location of C.P.R. Weyburn-Lethbridge branch from sec. 29, tp. 6, r. 13, w. 4 m., to the Lethbridge subdivision in sec. 4, tp. 9, r. 21, w. 4 m., from mileage 400 to 449.9.

13036. Feb. 16.—Correcting error in right of way plan registered as 678R of Calgary and Edmonton Ry. Lacombe branch (C.P.R.)

13037. Nov. 14.—Approving location of G.T.P. Branch Lines Co.'s station at Yorkton. Sask.

13038. Feb. 18.—Authorizing C.P.R. to build bridge over Eagle River, B.C.

13039. Feb. 16.—Authorizing G.T.R. to build spur to Thornbury Transportation and Reduction Co.'s premises, Thornbury, Ont.

13040 to 13044. Feb. 18.—Authorizing G.T.P. Branch Lines Co. to cross certain highways in Saskatchewan and Alberta.

13045. Feb. 20.—Authorizing Ontario Hydro-Electric Commission to erect wires across G.T.R. track and wires at lot 19, con. 2. East Oxford tp., Ont.

13046, 13047. Feb. 20.—Authorizing city of Nanaimo, B.C., to lay water pipes and sewer under Esquimalt and Nanaimo Ry.

13048. Feb. 20.—Authorizing city of Montreal to lay a sewer under G.T.R. on Etienne St., between Forfar and Mills Sts.

13049. Feb. 20.—Approving C.N.R. revised location, mileage 55.78-57.16 and 57.85-58.45, Thunder Bay District. Ont.

13050. Feb. 20. — Authorizing town of Bromptonville. Que., to lay sewer under G.T.R. on Bridge St.

13051. Feb. 22.—Authorizing Western Canada Power Co. to erect wires across C.P.R. on lot 17, n.w. bank of Pitt River, and rescinding order 12389. Nov. 25. 1910.

13052. Feb. 21.—Authorizing town of Galt, Ont., to erect wires across C.P.R. on Stone Road.

13053 to 13057. Feb. 21.—Authorizing Seymour Power and Electric Co. to erect wires across Bell Telephone Co.'s wires at various points in Darlington tp., Ont.

13058. Feb. 21.—Approving location of Alberta Central Ry. from sec. 19, tp. 33, r. 17, w. 4 m., to sec. 15, tp. 32, r. 12, w. 4 m., mileage 80 to 120.

13059. Feb. 21.—Authorizing G.T.P.R. to build bridge over Kyax River, east of Prince Rupert, B.C.

13060. Feb. 21.—Approving M.C.R. bylaws for parties authorized to issue tariffs, and rescinding order 10917, June 16, 1910.

13061. Feb. 20.—Authorizing C.N.O.R. to divert and cross public road on lot 230, St. Eustache parish, Que.

13062. Feb. 21.—Authorizing C.P.R. to open for traffic portion of its Macklin Southeast branch from Macklin to Kerr Robert, 46 miles.

13063. Feb. 20.—Authorizing C.P.R. to build bridge over Scugog River, near Lindsay, Ont.

13064. Jan. 10.—Authorizing C.P.R. to build spur to Ontario Wind Engine and Pump Co.'s premises, across Henry Ave., and block 27, Winnipeg.

13065. Feb. 20.—Authorizing C.N.O.R. to divert road at Deer Lake, lot 9, con. 1, Burton tp.

13066. Feb. 22.—Ordering that C.N.R. build crossing at Clark's Crossing, south of sec. 11, tp. 38, r. 25, w. 3 m., under penalty of $25 a day after May 15, on complaint of Penner School District 1340, Sask.

13067. Feb. 22.—Authorizing C.N.O.R. to build over and divert public road on lots 578 and 581, South Rouge River Range, St. Andrews parish, Que.

13068. Feb. 21.—Authorizing G.T.R. to replace with iron bridge, present bridge carrying Silver St., between cons. 1 and 2, South Dumfries tp., Ont.

13069. Feb. 20.—Authorizing G.T.R. to build spur to Ham and Nott Co.'s premises, north side of Elgin St., Brantford, Ont.

13070, 13071. Feb. 20.—Approving Standard Tariff of Maximum Passenger Tolls of Montreal Terminal Ry. and Montreal Park and Island Ry., providing for maximum toll of 2½c. a mile, in accordance with orders 12852 and 12853, Jan. 25, which were published in full in Railway and Marine World for March.

13072. Feb. 22.—Authorizing Seymour Power and Electric Co. to erect wires across Bell Telephone Co.'s wires at lots 6 and 7, Broken Front Concession, Darlington tp., Ont.

13073. Feb. 22.—Authorizing C.P.R. to build bridge 0.85 on its Timiskaming Branch, Lake Superior Division.

13074. Feb. 22.—Apportioning cost of gates to be installed at crossings authorized by order 12249, Oct. 12, 1910, in Hamilton, Ont., 20% to be paid out of the railway grade crossing fund, remainder to be paid by the railway companies interested, as follows: 20% by G.T.R. and 80% by T.H. & B. Ry.; gates to be operated day and night.

13075. Feb. 23.—Authorizing Red Mountain Ry., Nelson and Fort Sheppard Ry., and Vancouver, Victoria and Eastern Ry. to use forms of contract for transmitting and receiving messages as approved by order 9777, March 31, 1910, and approving same for four months from date.

13076. Feb. 20.—Authorizing C.P.R. to build spur from mileage 5.5 on Columbia and Western Ry. Phoenix Branch, to Wellington Camp, B.C., 3.15 miles.

13077. Feb. 22.—Authorizing C.P.R. to build spur to Dun Bros'. premises across block 44, Xante St., blocks 43, 42, 41, between Ross and Pacific Aves., Winnipeg.

13078. Feb. 23.—Authorizing Seymour Power and Electric Co. to erect wires across G.T.R. in lot 3, con. 2, Murray tp., Ont.

13079. Feb. 24.—Approving C.N.R. location through tp. 56, r. 25-24, w. 4 m., mileage 0.00 to 10.25, Alta.

13080. Feb. 24.—Approving location of portion of C.P.R. Weyburn to Lethbridge branch from mileage 316.78 to 400, Alta.

13081. Feb. 24.—Extending for 30 days from date time within which G.T.R. have to install electric bell near Mount Forest, Ont., authorized by order 12324, Nov. 18, 1910.

13082. Feb. .25.—Authorizing C.P.R. to cross Second Ave. and Manitoba St., Moose Jaw, Sask.

13083. Feb. 25.—Approving revised location of G.T.P. Branch Lines Co. from Regina to Moose Jaw, sec. 25, tp. 17, r. 20, to sec. 29, tp. 17, r. 20, w. 2 m., mileage 0.036 to 3.24, Sask.

13084. Feb. 25.—Authorizing C.P.R. to open for traffic second track of Brandon section from mileage 2 to 55, Man.

13085. Feb. 25.—Ordering that town of St. Louis, Que., complete subway at Park Ave. by Dec. 31, as required by order 10455, Apr. 28, 1910.

13086. Feb. 25.—Authorizing G.T.P. Branch Lines Co. to cross highway on its Yorkton extension, in s.w. ¼ sec. 24, tp. 26, r. 4, w. 2 m., Yorkton District, Sask.

13087. 13088. Feb. 25, 27.—Authorizing Ontario Hydro-Electric Commission to erect wires across C.P.R. at Concession St., Tillsonburg, and across G.T.R. at Swansea.

13089 to 13094. Feb. 27.—Authorizing city of Toronto to erect wires across G.T.R. and G.N.W. Telegraph Co.'s wires at Bloor St., across G.T.R. at Hanna Ave., C.P.R. at Yonge St., G.T.R. and G.N.W. Telegraph

Co.'s wires on Royce Ave., C.P.R. on Avenue Road, G.T.R. and G.N.W. Telegraph Co.'s wires on Queen St. east.

13095. Feb. 27.—Authorizing city of St. Catharines to lay water pipe under G.T.R. on lot 17, con. 8, Grantham tp., Ont.

13096, 13097. Mar. 2.—Authorizing city of Toronto to erect wires across Bell Telephone Co.'s wires at two points.

13098. Mar. 3.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across C.P.R. at lot 2, immediately south of public road between con. 11 and 12, Dereham tp.

13099 to 13103. Mar. 3.—Authorizing city of Toronto to erect wires across Bell Telephone Co.'s wires at five points.

13104. Mar. 3.—Authorizing S. W. McMullin, East Florenceville, N.B., to lay pipe under C.P.R.

13105. Feb. 27.—Approving revised location of C.P.R. Kipp to Aldersyde branch, from mileage 67.06 to 84.18; original location approved by order 9278.

13106. Feb. 24.—Approving Toronto Eastern Ry. location through Pickering, Whitby East, Whitby and Darlington tps., Ont.

13107. Feb. 24.—Authorizing Toronto Eastern Ry. to build along Wellington and across Scugog, Temperance, George, Liberty and Division Sts., Bowmanville, Ont.

13108. Feb. 25.—Dismissing application of Etobicoke municipality, Ont., for protection of Mimico Ave. crossing by G.T.R.

13109. Feb. 25.—Ordering Great Northern Ry. before Sept. 1, under penalty of $25 a day to make ditch to prevent flooding G. Gordon's lands at Port Kells, B.C.

13110, 13111. Feb. 24.—Authorizing Toronto Eastern Ry. to build along Brant St. and across Mechanic, Church, Prince, Simcoe, Mary and Division Sts., Oshawa, along Mary St., across public road at station 195+59, Grand Trunk Railway St., Ash, Perry, Brock, Byron, Centre, Kent and Euclid Sts. and public road at station 227-02, Whitby, Ont.

13112. Feb. 24.—Rescinding order 9611, Feb. 17. 1910, which authorized C.N.O.R., to divert Kingston and side roads in Hamilton tp., and to cross same overhead..

13113. Feb. 27.—Authorizing G.T.R. to build spur from Pacific Ave., Toronto, to premises of Hinde & Dauch Paper Co. of Canada, Ltd., within six months from date, compensation to be paid for properties injured, if any, on Pacific Ave.

13114. Feb. 24.—Authorizing T.H. & B. Ry. to build spur across Trolley St. and Stipe's Road, Hamilton, Ont.

13115. Mar. 1.—Dismissing application of J. B. Yourex, Toronto, re extra charge for telephone.

13116. Feb. 27.—Approving location of new C.P.R. station near northern corner of Weston Road and Royce Ave., West Toronto.

13117. Feb. 27.—Authorizing C.P.R. to build seven tracks across Weston Road, and to build trans-ship platform, and ordering it to pay city of Toronto $8.052 towards cost of bridge now being rebuilt.

13118. Mar. 3.—Authorizing C.N.O.R. to rebuild bridge over St. Esprit River, near St. Julienne station.

13119. Feb. 4.—Rescinding order 12551, Dec. 17. 1910, which authorized C.N.R. to build spur between Van Horne and College Aves., Brandon, Man.

13120. Feb. 27.—Authorizing city of Toronto to erect wires across C.P.R. at Hanna Ave. and Liberty St.

13121. Feb. 27.—Dismissing Powell Lumber & Door Co.'s application to rescind order of Oct. 12, 1903, which authorized G.T.R. to build spur across Front and John Sts., Toronto, or to amend same by ordering G.T.R. only to use spur at noon or night or that free egress or ingress be provided.

13122. Mar. 7.—Approving Kettle River Valley Ry. location west and north of Midway, B.C., between Rock Creek and Westbridge, mileage 10.43 to 20.91.

13123. Mar. 6.—Authorizing city of Winnipeg to lay sewer under C.P.R. where Pembina branch intersects Godfrey Ave.

13124. Mar. 6.—Authorizing Ontario Hydro-Electric Commission to erect wires across C.P.R. at Hurontario St., Cooksville.

13125. Mar. 6.—Authorizing city of Toronto to erect wires across G.T.R. and G.N.W. Telegraph Co.'s wires at Wallace Ave.

13126 to 13130. Mar. 6. — Authorizing Guelph, Ont., Light and Heat Commissioners to erect wires across Bell Telephone Co.'s wires on certain streets.

13131. Mar. 6.—Authorizing South River Electric Co. to erect wires across G.T.R. and Bell Telephone Co.'s wires at Main St., Sundridge, Ont.

13132. Mar. 6.—Authorizing town of Swift Current, Sask., to place wires under C.P.R.

13133, 13134. Mar. 6.—Authorizing Canadian Niagara Power Co. to erect wires across Bell Telephone Co.'s wires at two points in Niagara Falls, Ont.

13135. Mar. 6.—Extending to May 18 time within which Hamilton St. Ry. and G.T.R. shall provide half interlocking plant at King St. crossing, Hamilton, as provided by order 12747, Jan. 12.

13136. Mar. 6.—Authorizing C.P.R. to rebuild and change location of bridge leading from Peterboro Lumber Co.'s premises to George St., Peterboro, Ont.

13137. Mar. 6.—Authorizing C.P.R. to build spur to D. Ackland and Son's premises in D.G.S. 14, St. John, Winnipeg.

13138. Mar. 7.—Authorizing C.P.R. to build bridge at Forty-Mile Creek, Laggan subdivision, Alta.

13139. Mar. 6.—Authorizing C.P.R. to build spur for city of Calgary, fronting on 9th Ave.

13140. Mar. 6.—Approving M.C.R. plan of interlocking appliances for protection of drawbridge over Chippewa Creek, near Montrose, Ont.

13141. Mar. 7.—Approving C.N.O.R. revised location in unsurveyed territory, Sudbury mining division, Algoma District, mileage 65.9 to 68.5 from Sudbury Jct.

13142. Mar. 7.—Authorizing C.P.R. to build additional tracks across 15th St. East, 9th Ave and 17th Ave., East, Calgary, Alta.

13143. Mar. 6.—Approving C.N.O.R. plan for 20 ft. arch over Jones Creek, Sidney tp.

13144. Feb. 28.—Authorizing G.T.P.R to build spur to J. D. Clark & Co.'s premises, St. Boniface, Man.

13145. Mar. 6.—Authorizing G.T.P. Branch Lines Co. to cross highway on its Prince Albert Branch in s. w. ¼ secs. 32, tp. 40, r. 26, w. 2, m. Sask.

13146. Feb. 27.—Approving Quebec, Montreal & Southern Ry. Standard Passenger Tariff C.R.C. 162, for maximum fare of 3c. a mile.

13147. Mar. 6.—Extending to June 1, time for completion of three spurs in Calgary, Alta., by C.P.R., as authorized by order 11804, Sept. 27, 1910.

13148. Feb. 27.—Authorizing G.T.R. to build spur to Hagersville Constructing Co.'s premises, Walpole tp., Ont.

13149. Mar. 6.—Authorizing C.P.R. to divert highway on its Moose Jaw Northwesterly branch at mileage 103.3 and 110.6, Sask.

13150. Feb. 27.—Ordering G.T.R. to file new plans for subway at Brock Ave., Toronto within one month, question of division of cost to be deferred until filing of plans.

13151. Feb. 22.—Ordering Atlantic, Quebec & Western Ry., under penalty of $25 a day after May 1, to provide farm crossing for J. Collin, Cap d'Espoir, Gaspe, Que.

13152. Feb. 27.—Rescinding order 12849, Jan. 30. and authorizing C.P.R. to operate three sidings along and across Pardee Ave. and Liberty St., but not to connect with G.T.R. siding at lot 30, Toronto.

13153. Feb. 28.—Dismissing application of W. Kerley, St. Thomas, Ont., for order allowing him to sue London & Lake Erie Ry. and Transportation Co., for $1,200 for operating its railway on Sundays.

13154 to 13157. Mar. 7.—Authorizing G.T.P. Branch Lines Co. to cross certain highways on its Calgary branch, consent having been granted by Alberta Government.

13158. Mar. 1.—Dismissing application of York tp. for order directing G.T.R. to provide level crossing for road to be opened over old Belt Line Ry.

13159. Feb. 18.—Authorizing Cobourg Water and Electric Co. to lay pipe under G.T.R. at George St., Cobourg, Ont.

13160. Mar. 8.—Authorizing G.T.P.R. to divert road in n.w. ¼ sec. 22, tp. 44, r. 6, w. 4 m., Alta.

13161. Mar. 8.—Rescinding order 12188, Nov. 7, 1910, which authorized C.N.O.R. to build across road on lot 2, con. 1, Belleville.

13162. Mar. 7.—Ordering C.P.R. to remove a warehouse and grant a lease at a nominal rental of $12 a year with renewal rights, on application of M. Meagher, Debec Jct., N.B.

13163. Mar. 8.—Authorizing city of Fort William, Ont., to maintain culvert under C.P.R. at Sprague St.

13164. Feb. 21.—Granting leave to C.N.R. and C.P.R. to appeal to the Supreme Court of Canada, subject to certain conditions, against order 12520. Dec. 10, 1910, which ordered them to file by Apr. 1, new freight tariffs between Fort William, Port Arthur and points east to Regina and Moose Jaw, Sask.

13165. Mar. 9.—Authorizing G.T.R. and N. St. C. & T. Ry. to operate trains over interlocking plant between Clifton Jct., and Stamford, Ont.

13166. Mar. 9.—Extending to June 1, time for completion of installation of interlocking plant by G.T.P.R. at C.P.R. crossing, at Alix, Alta., as provided by order 10613, May 13, 1910.

13167. Mar. 7.—Authorizing G.T.R. to build spur to National Acme Mfg. Co.'s premises, St. Henri, Montreal.

13168. Feb. 24.—Confirming agreement between city of Guelph, Ont., and C.P.R., in regard to protection of certain crossings, etc.

13169. Feb. 25.—Authorizing G.T.R. to build subway at Salisbury Ave., Mimico, Ont., plans to be filed by April 1.

13170. Mar. 8.—Authorizing payment of $3,000 to G.T.R., deposited by provisions of order 7613, July 22, 1909, re building of station between Clinton and Louth tps., Ont.

13171. Feb. 24.—Approving plans of G.T.R. station at Guelph, Ont., with proviso that satisfactory lavatory accommodation be provided and floor not to be of wood.

13172 to 13184. Mar. 9.—Authorizing city of Toronto to erect wires across Bell Telephone Co.'s wires on various streets.

13185. Feb. 27.—Ordering, on application of J. and J. Taylor, Toronto, that note to item 35, page 47 Canadian Classification 15, be struck out, and that safes of 1000 lbs. each or over, be struck from the list of exceptions to tariffs of cartage charges of railway companies.

13186. Mar. 7.—Approving plans of proposed platforms and train shed for central union passenger station at Ottawa.

13187, 13188. Mar. 9.—Authorizing G.T.P. Branch Lines Co. to cross highways in Saskatchewan as approved by Provincial Government.

13189. Mar. 10.—Approving C.N.O.R. location through Lanark County, from mileage 29 to 37.8.

13190. Mar. 10. — Approving plans of C.N.O.R. Shannonville station.

13191. Feb. 27.—Authorizing G.T.R. to take certain lands near Jamieson Ave. and Empress Crescent, Toronto, to enable it to comply with orders 8487 and 10169, Oct. 15, and Dec. 8, 1909, relating to Toronto grade separation.

13192. Mar. 10.—Authorizing city of Winnipeg to lay water main under C.P.R. at Portage Ave.

13193. Mar. 9.—Authorizing C.N.R. to cross 35 highways in Saskatchewan as shown on location plan approved by order 8050, Sept. 8, 1909.

13194. Mar. 10.—Authorizing Ontario Hydro-Electric Commission to carry wires over Bell Telephone Co.'s wires between Port Credit and Brampton.

13195. Mar. 10.—Extending to Aug. 1, time for installation of interlocking plant at C.N.R. crossing at Dana, Sask., by G.T.P.R., as authorized by order 11307, July 26, 1910.

13196. Mar. 9.—Ordering G.T.P.R. to complete by May 1, under penalty of $25 a day, the deviation of highway near Greenshields, Sask., as authorized by order 12066, Oct. 22, 1910.

13197. Mar. 7.—Authorizing C.N.Q.R. to cross Notre Dame St. and Montreal St. Ry., overhead and join Harbor Commission, tracks, Montreal.

13198. Mar. 13.—Authorizing C.N.R. to cross nine highways in Saskatchewan, as shown on location plan approved by order 8590, Nov. 5, 1909.

13199. Mar. 11.—Authorizing B.C. Government to carry highway over B.C. Southern Ry., near Hosmer station.

13200. Mar. 11.—Authorizing Georgian Bay and Seaboard Ry. to cross by a subway Trespass Road, in Thorah tp., Ont.

13201. Mar. 13.—Authorizing G.T.P. Branch Lines Co. to cross highway on its Prince Albert Branch in n.w. ¼ sec. 29, tp. 37, r. 26, w. 2 m., Sask.

13202 to 13204. Mar. 11. — Authorizing C.N.O.R. to cross public roads in Nepean tp.

13205. Mar. 10.—Authorizing C.P.R. to build spur to Virden Brick and Tile Co.'s premises near Virden, Man.

13206. Mar. 10. — Authorizing Dominion Natural Gas Co. to lay pipe under C.P.R. in Bayham tp., Ont.

13207. Mar. 10.—Authorizing city of Toronto to erect wires across Bell Telephone Co.'s wires at Wolfrey and Bowden Sts.

13208. Feb. 24.—Authorizing T.H. & B.R. to build spur to Canadian Westinghouse Co.'s premises, and across certain streets and lanes in Hamilton, Ont.

13209. Mar. 13.—Authorizing C.N.R. to cross highways in Alberta with consent of Provincial Government.

13210. Feb. 25.—Ordering G.T.R. to file by Apr. 1, plans for subway at Church St., Mimico, Ont.

13211. Mar. 13.—Authorizing C.N.Q.R. and N.T. Ry. to operate trains over crossing near Tawachiche station, authorized by order 1945, Nov. 12, 1906, without being brought to a stop.

13212. Mar. 13.—Approving revised location of C.P.R., Regina, Saskatoon and North Saskatchewan branch from mileage 77.95 to 95.8 from Regina, and from mileage 95.8 to 132.69, on the Pheasant Hills branch, bridges 57.8 Teeswater branch, and 84.1 Toronto section.

13213. Mar. 13.—Authorizing C.P.R. to use

13214. Mar. 13.—Approving location of C.N.O.R. through unsurveyed territory, Al-

goma District, mileage 240 to 560 from Sudbury Jct.

13215. Feb. 27.—Ordering G.T.R. on application of Thos. Miles Sons, Ltd, Hamilton, Ont., to restore rates on gas-house coke from Buffalo, Black Rock and Suspension Bridge, N.Y., to Ontario points shown in its special tariff C.R.C. E.2105, which were in effect Dec 11, 1910, not later than April 24.

13216. Mar. 13.—Dismissing application of Kelly & Close, Port Arthur, Ont., re minimum rates on carloads of logs and piling alleged to be excessive as compared with minimum rates charged on carloads of lumber.

13217. Mar. 13.—Authorizing village of North Hatley, Que., to build highway crossing over B. & M. Rd., question cost of protection being reserved.

13218. Mar. 14.—Authorizing G.T.P. Branch Lines Co., to cross highways on its Calgary branch between mileage 50 and 99, Alta.

13219. Mar. 14.—Approving G.T.P.R. revised location from sec. 8, tp. 45, r. 2, to sec. 21, tp. 45, r. 3, w. 6 m., mileage 119.53 to 124.94, Alta.

13220. Mar. 13.—Authorizing B. C. Government to carry highway over C.P.R. near from Michel Station.

13221. Mar. 11.—Authorizing C.P.R. to build spur to R. D. Lindsey's premises, Vancouver, B.C.

13222. Mar. 13.—Authorizing C.P.R. to open for traffic, without speed limitations, its Moose Jaw Branch from mileage 14.5 to 118.75, Sask.

13223. Mar. 13.—Authorizing Trenton Electric & Water Co., to erect wires across G.T.R. near Belleville, Ont.

13224. Mar. 14.—Dismissing application of Canadian Piano and Organ Manufacturers' Association respecting classification on musical instruments.

13225. Mar. 13. Dimissing application of H. E. Ledoux Co., Winnipeg, for carload classification on cigars.

13226. Mar. 14.—Authorizing city of Lethbridge, Alta., to build overhead bridge across C.P.R. yards on Coutts St., produced north of Baroness Road.

13227. Mar. 14.—Authorizing G.T.P.R. to divert road in n.e. ¼ sec. 8, tp. 35, r. 3, w. 3 m., East Saskatchewan District.

13228. Jan. 17.—Ordering on application of Battle Creek Toasted Corn Flake Co., London, Ont., that Canadian Classification 15 be amended to provide minimum carload weight of not more than 24,000 lbs. for flaked or cooked cereals.

13229. Feb. 7.—Approving deviation of G.T.R. from Lindsay to Port Hope, Ont., as already built between Reaboro, on lot 10, con. 10, Ops tp., near Rice Lake Summit, on lot 16, con. 9, Hope tp., Ont.

13230. Feb. 24.—Ordering that 20% of cost of work at M.C.R. crossing at Fletcher's station, Ont., less expense of moving of Bell Telephone Co.'s poles, be paid out of railway grade crossing fund.

13231. Mar. 14.—Authorizing C.N.O.R. to build spur to National Bridge Co.'s premises, on lots 325 and 326, Longue Point Parish, Que.

13232. Mar. 14.—Approving Maine Central Rd. bylaw of Mar. 8, authorizing W. K. Sanderson, General Freight Agent and F. E. Boothby, General Passenger Agent to prepare and issue tariffs of tolls.

13233 to 13235. Mar. 15.—Approving London and Lake Erie Ry. and Transportation Co.'s Standard Passenger Tariff C.R.C. 1, at 2½c. a mile, and Standard Freight Tariff C.R.C. 1, to take effect March 27, and approving bylaw 3, authorizing S. W. Mower, General Manager, to prepare and issue all tariffs.

13236. Mar. 15.—Authorizing G.T.P.R. to cross highway on its main line from mileage 61, sec. 26, tp. 53, r. 7, to mileage 90, sec. 8, tp. 54, r. 11, w. 5 m., Alta.

13237 to 13242. Mar. 15.—Authorizing city of Toronto to carry wires across G.T.R. and C.P.R., and G.N.W. Telegraph Co.'s wires at various streets.

Following are the officers and directors of the Montreal Warehousing Co., for the current year: President, C. M. Hays; Vice President, E. H. Fitzhugh; other directors, W. M. Ramsay, J. W. Loud, Wm. Wainwright; manager and secretary G. H. Hanna.

The Cowan Construction Co., which recently applied for an authorization from the Manitoba Legislature to change its name to the Union Construction Co., will retain its old name, the application having been refused on the ground that there is already a company carrying on business under a Dominion charter as the Union Construction Co.

National Transcontinental Railway.

Replying to questions in the House of Commons recently, the Minister of Railways said the general standard of the railway through New Brunswick comprised a single track railway with necessary sidings of the standard gauge on a roadbed constructed and ballasted in accordance with the general specifications for the entire line, on which is laid 80-lb steel rails on first class cross ties, with steel fastenings. The bridges have concrete or stone substructures with steel superstructures, built in accordance with the general specifications of the Department of Railways, issued in 1908. The line is constructed with gradients not in general exceeding 0.4% adverse to east bound, and 0.6% adverse to west bound traffic, and with curves of a minimum radius of 955 ft. Near Tobique River, owing to the physical character of the country, a gradient of 1.1% is allowed. The present estimated cost per mile by contract divisions is as follows: No. 1, from Moncton westerly for 50 miles, $49,190 per mile; no. 2 eight miles to Chipman, $89,710 per mile; no. 3, Chipman to Intercolonial Ry., 39.7 miles, $35,333 per mile; no. 4, from Intercolonial Ry. to crossing of Tobique River, 67 miles, $46,920 per mile; no. 5, from Tobique River to mileage 2.5 west of Grand Falls, 31.5 miles, $133,518 per mile; no. 6, from last mentioned point to New Brunswick-Quebec boundary, 67 miles, $46,484 per mile. The cost per mile on no. 2 is high on account of the heavy grade; at the east end of the contract there is a cut about two miles long and 18 ft. deep at the highest point; there is also a heavy fill at the crossing of the Salmon River at mileage 57, and a viaduct of 1,200 ft. The cost per mile on no. 5 is high on account of the grading being unusually heavy and there is a steel viaduct nearly 4,000 ft. long, with a maximum height of 250 ft. across the Little Salmon River. The work provided for in the estimated cost includes clearing, excavation, culverts, substructures of bridges, tracklaying, ballasting, ties, signals, interlocking appliances, telegraph lines, fencing, water supply, track scales, temporary trestles, and extra work, also pumps and pumphouses, rails and fastenings, including frogs, switches and diamond crosses, and the steel superstructures and flooring of bridges.

The Minister of Railways in the course of a speech in the House of Commons Mar. 10, upon transportation matters, said with regard to the portion of the N.T.R. being built by the Government from Moncton, N.B., to Winnipeg, presented a statement prepared by the Commission as to the various contracts. This shows districts, mileages, etc., percentage of work done on each contract, miles of grading done, miles of track laid, miles of telegraph line completed, percentage of steel bridge superstructures completed, and total percentage of work done on all these 21 contracts up to Dec. 31, 1910. The total quantity of work done to that date was 67.62%. The statement, signed by D. MacPherson, Assistant Chief Engineer, is given below.

Mileages are given in the statement for 24 contracts the reason for this being that in three cases adjacent contracts are being carried out by the same contractor. The total mileage given is for the line to the west bank of the Red River at Winnipeg, while the percentage of contracts completed covers only to the east bank of the river.

An itemized statement of the cost of the work done to Dec. 31, 1910, and an estimate of the cost of the work required to complete the line, is as follows:

Items.	Work done.	Required to complete.
Grading, contract items	$69,176,400	$28,175,800
Right of way, expenses, etc.	1,629,900	1,910,100
Rails and fastenings, etc.	8,534,900	4,037,100
Buildings	664,800	3,644,200
Steel superstructures of bridges	3,342,100	2,242,900
Surveys and expenses	3,987,000	26,000
Engineering and expenses	4,398,500	2,712,000
Springfield shops	1,117,800	1,227,200
" car shop plant, etc.	nil	1,300,000
Terminals at Quebec, including connecting lines	19,000	4,419,000
Rentals joint terminals, Winnipeg	105,000	95,000
Headquarter expenses	1,605,100	969,900
Total	$94,580,500	$50,759,200

This statement, the Minister said, did not include the interest charged, but there was a question on that subject on the order paper, which would be answered in due course by the Finance Department. The statement now made was more complete than any that he had been able to give the House. He might mention that the section of the line from east of Winnipeg to Superior Jct., had been operated during the past few months in assisting to carry the wheat crop of the west, joining with the G.T. Pacific Ry.'s own line at Superior Jct., and the traffic being carried thence to

Contractor.	Through Mileage of Contract.	Per cent. of contract completed.	Miles of grading completed in district.	Miles of track laid in district.	Miles of telegraph completed in district.	Per cent. steel bridges completed in district.
Grand Trunk Pacific Con. Co.	0. 50	99.50				
J. W. McManus & Co., Ltd	50. 58	98.43		*50.6		
Grand Trunk Pacific Con. Co.	58. 96.42	99.04	251.8	†249.92	206.49	81.1
" " "	96.42. 163.80	99.36		300.52		
W. Kitchen Co., Ltd	163. 8. 195.58	89.87				
Lyons & White	195.58. 256.61	88.71				
M. P. and J. T. Davis	256.61. 310.22	62. 8				
" " (East Que. Bridge	310.22. 460.45	75. 7		*28.05		
" " (West "	460.45. 510.31	88.02	419.6	†302.21	186.6	73.9
Macdonald & O'Brien	510.31. 610.41	94.04		330.26		
Grand Trunk Pacific Con. Co	610.41. 656.83	92.93		*2.0		
Macdonald & O'Brien	656.83. 763.83	28.10		†15.8		
" "	763.83. 878.80	Nil.	74.3		Nil.	.....
Grand Trunk Pacific Con. Co.	878.80. 956.74	66.46		17.8		
" " "	956.74.1028.80			*28.5		
E. F. & G. E. Fauquier	1028.80.1128.77	73.04	197.4	†174.4	92	
M. P. & J. T. Davis	1128.77.1172.85	12.49				71.2
" "	1172.85.1232.85			202.9		
" "	1232.85.1332.85	Nil.	76.9	Nil.	Nil.	
E. F. & G. E. Fauquier	1332.85.1407.85	63.45				
O Brien, Fowler & Macdougall Bros.	1407.85.1428.04	55.54				.....
" " "	1428.04.1534.04			*87.2		
" " "	1534.04.1557.46	84.76	346.5	†298.4		
J. D. McArthur	1557.80.1804.13	95. 5			366.9	54.1
				385.6		

* Sidings, † Main.

the company's elevators at Fort William. It is being operated as a contractors' line rather than as a finished line, and the arrangement made with reference to its operation would be laid on the table in the near future. He had no information as to the rates being charged, but presumed they were the same as those charged on the C.P.R. and the C.N.R., between the same points.

In further explanation of figures given as to the cost of the N.T.R., to Dec. 31, 1910, the Minister of Railways stated Mar. 18, that $89,553,740.32 represented the amount of money paid out, and $93,920,956.16 the cost of work done. The estimated amount required to complete the line was $55,785,909.68. The equipment is to be found by the G.T.P.R. the operating company under the lease. In the figures given nothing was included for interest during construction, or for the seven years period after the line is handed over to the company, during which time no rental is collectable

In connection with the settlement of disputes between the G.T.P.R. and the Commissioners as to over classification and over break, on the Moncton-Winnipeg line, the Minister said: The inspecting engineers of the G.T.P.Ry. and the engineers of the N.T.R. Commissioners met and adjusted some of the differences. These settlements involved reductions from the contractors' estimates as follows: District "F"—Contractor J. D. McArthur, $73,022.20; District "A"—Contractors Lyons and White, $16,219.10; District "B"—Contractors M. P. and J. T. Davis, $1,714.60; Contractors Macdonnell and O'Brien, $22,116.02. Total, $113,071.92. The chief engineer of the company and the chief engineer of the commission were also able to agree in the determination of a portion of the disputes with respect to overbreak on the McArthur contract, which involved a deduction from the contractor's estimates of the sum of $173,667.09. The other point, which is not yet determined, is in reference to 106 cuttings on the McArthur contract. On this the engineers could not agree and they called in the arbitrator, C. Schreiber. Mr. Schreiber has made a report which was concurred in by the chief engineer of the Grand Trunk Pacific Company, and the chief engineer of the commission. It is difficult for a layman like myself to arrive at the exact meaning of the report on account of its technical language; but in discussing the matter with the Chief Engineer, I find that, in order to ascertain definitely the result of the award in regard to these 106 cuttings, the engineers are now figuring it out, and I hope to have their report at an early date. .... These 106 rock cuttings and overbreaks with the items in reference to over classification, covered all the objections raised by the G.T.P.R. as to classification and overbreak and practically will form a settlement of all the differences between the two bodies."

Press reports state that contracts have been placed with the Lake Superior Corporation for 35,000 tons of steel rails, and with the Dominion Iron and Steel Co., for 26,000 tons.

In answer to questions the Minister of Railways stated Mar. 13, that the figures he had given as to the cost of the line to Dec. 31, 1910, did not include anything for interest, or anything on account of the Quebec Bridge. The money was provided partly from revenue and partly from the proceeds of loans. No loans had been raised exclusively for the railway. Two 3% loans had been raised, one dated Feb. 1908, for £3,000,000, to provide for maturing obligations, the construction of the line, and general purposes; and the second dated Oct. 1908, for £5,000,000 for the railway and other purposes. Interest on these loans was paid out of revenue, and charged to interest on public debt. The total amount of interest paid to date on these two loans was $3,534,366.65, and $947,689.50 had been paid for expenses in placing them. The Commissioners had drawn by letters of credit on the Government through the Department of Railways and Canals for $89,553,740.32 to Dec. 31, 1910, and from that date to Mar. 6, an additional amount of $3,863,244.82.

Tenders were received to Mar. 28 by the Commissioners for the building of a coal handling plant at the Winnipeg shops power house, and for coaling stations, ashpits and cinderhoists at Transcona, Man.; Redditt, Ont., and Graham, Ont.

GRAND TRUNK PACIFIC RY.

The Minister of Railways presented the following general statement respecting the G.TP.R. in the House of Commons, Mar. 10:

MOUNTAIN SECTION.

Total expenditure as certified to by Chief Engineer	$18,765,330 20
Total payments made to the company	11,763,509 61

PRAIRIE SECTION.

Total expenditure as certified to by Chief Engineer	$34,436,168 48
Total payment made to the company upon guarantee	$10,735,482 92
Total payment made to the company on account of special loan	10,000,000 00
	20,735,482 92

The amount spent by the G.T.P.R. for rolling stock, locomotives, etc., up to date is $14,744,253.14.

The following memorandum had been given him with regard to the progress of the work on the Mountain section:—"The road is progressing from the terminus of the prairie division west, and from Prince Rupert eastward. During the last few months I had the privilege with the Prime Minister and others, of visiting Prince Rupert and going out on this line for a number of miles towards the mountain pass. It may seem peculiar to those who are not in a position to know, when I say that there are sections of the Transcontinental east of Winnipeg much more difficult of construction than any section through the mountains from Prince Rupert east. Going along the Skeena River there are distances of several miles absolutely level and the difficulty the contractors have is not to overcome obstacles of grade so much as to overcome the difficulty of draining the railway owing to the level country. We went out for a good many miles over this section, and I believe it will be found in the years to come that this portion of the road running from Prince Rupert east, will tap many fertile valleys of British Columbia, and of course, we do not know what it will open up in the way of mineral and timber wealth. From Wolfe Creek west the road is ballasted as far as Edson for several miles; track laying has been completed to the 57th mile, and grading, etc., has been completed to the 65th mile, and at intervals as far as the 117th mile. The contract for the work has been let as far as the 180th mile, and at Edson there is under construction a station house, engine house and a machine shop. Tracklaying has been completed to mile 102 east from Prince Rupert, and grading is completed at intervals beyond mile 102 to mile 184. The contract has been let to mile 240, dating from Nov. 1, 1909. At Zanadri Rapids, mile 8, a 625 ft. steel bridge has been completed; at mile 147 the portals of a 700 ft. tunnel have been completed, and at mile 135 a 180 ft. tunnel has been completed." The total percentage of work done, added the Minister, is not nearly so large as he would like it to be, but he hoped at a later date to be able to give a definite statement on this matter. The contractors believe that the work will be completed in three years, although they state that there is great difficulty in obtaining labor. It was certain that the contractors were offering very high wages, and the reason they gave for not getting on more rapidly was the difficulty of finding labor.

The G.T. Pacific Branch Lines Co. has been authorized to build the following lines in addition to those mentioned in the bill now under consideration by the Dominion Parliament:—From Calgary southwesterly to Medicine Hat, Alta.; from east of range 18 or west of range 19, west first meridian, northwesterly to a junction with the western division of the G.T. Pacific Ry. between the easterly limit of range 28, and the westerly limit of range 29, west of the first meridian.

The G.T. Pacific Ry. has removed its offices from the Somerset Block, Winnipeg, to the south wing of the new station at Fort Garry, in which wing the company will occupy three floors. E. J. Chamberlin, Vice President and General Manager, is reported as having stated, Mar. 11, that the company will begin the work of erecting a big hotel on Broadway, between Fort and Garry streets, this year. The preliminary plans, he stated, had been prepared, and the specifications were being prepared. The hotel would be built of stone, and would not have less than 400 rooms.

Negotiations are reported to have been completed for the building of a branch from Harte to Brandon, Man., about 30 miles. The company, it is said, has received an assurance from the Dominion Government that a subsidy on the usual terms will be granted, and that a further grant of 25% of the cost of a bridge across the Assiniboine River will be given. The company's estimate of the cost of this bridge is $200,000. It is said that the branch will be built this year, and that in the near future it will be extended southerly to the International boundary.

The Board of Railway Commissioners has approved the location of the station to be built at Yorkton, Man., on the branch from Melville northerly towards Hudson Bay.

The grading of the line southwesterly from Melville to Regina is reported to have been 75% completed, and it is expected to finish the grading and the tracklaying into Regina this season.

Some grading has been done southerly from Regina towards the International boundary, and more work will be done on it this season.

A line is projected from Regina westerly to Moose Jaw, Sask., and the Board of Railway Commissioners has approved location plans, from sec. 25, tp. 17, range 20, mileage 0.036 from Regina, to sec. 29, tp. 17, range 20, mileage 3.24.

The branch line northerly from Young to Prince Albert, Sask., upon 25 miles, of which track has been laid, and about 70% of the grading completed, will be pushed forward to completion this year.

The Board of Railway Commissioners has approved the location of station at Tofield, Alta., the point on the main line from which the line under construction, southerly to Calgary, starts. The grading of this branch is reported to be practically completed, and track laid to the Red Deer River. The branch is expected to be completed this year.

From Edson, the first divisional point west of Edmonton, right of way has been cleared for a branch to the Brazeau River coal fields, and some grading has been done. Further progress is expected to be made with construction during this year.

A contract is reported to have been let to Collins Brothers, Hamilton, Ont., and Heatherwood, Alta., for the erec-

Creek, where a large bridge is being built by the Dominion Bridge Co. This is expected to be completed by the end of May, when tracklaying will be resumed. It is expected that steel will be laid to Tete Jaune Cache, at the head of navigation on the Fraser River, about 50 miles west of Yellow Head Pass, by the end of the year.

In connection with the proposed branch from Fort George to Vancouver, D'Arcy Tate, the company's solicitor, is reported to have stated in Victoria, Mar. 8, that arrangements had been completed by which the company would obtain the land held by the Indians at Fort George, for townsite purposes. The final location of the branch is reported to have been completed by a party under M. A. Roby and W. F. Graham, and a press report states that a contract is likely to be let for building this branch at an early date. Another report from Vancouver states that a large area of water front land has been acquired at the northern end of Main St., sometimes called Westminster Ave., and that the site will be used for building an hotel.

In the prospectus a recent issue of bonds for the building of the Mountain section of the line, A. Smithers, Chairman of the G.T.R. Board, who is also Chairman of the London Committee of the G.T. Pacific Ry., said considerable progress had been made in the construction of the mountain section, both westward from Wolfe Creek, Alta., and eastward from Prince Rupert, B.C., and there only remained about 400 miles of line to be contracted for, tenders for which would be invited within a couple of months or so. When the contracts for the construction of this section have been let, the whole of the line from Prince Rupert to Edmonton, Winnipeg and Fort William, 2,188 miles, will be either under construction or completed.

In connection with the line easterly from Prince Rupert, B.C., the Board of Railway Commissioners has authorized the building of a bridge over Kyax River.

It was stated in Winnipeg Mar. 16, that the company expected to build 140 new station buildings on its lines during the current year. (Mar., pg. 283.)

Eye and Ear Tests for Railway Employes.

The Board of Railway Commissioners issued the following circular Mar. 16: "In accordance with secs. 5 and 6 of order 12225, Nov. 9, 1910, railway companies within the Board's jurisdiction are required to have their employes engaged in the operation of trains undergo a satisfactory eye and ear test by a competent person. In view of the diversified methods employed by such railways in the making of these tests the Board directs that a conference be held between the various railways subject to its jurisdiction and a uniform code of regulations drawn up governing the testing of hearing and eyesight of employes required to take such tests, these uniform regulations to be filed with the Board for approval within 90 days from the date of this circular."

Railway Taxation in Saskatchewan.—It was stated in the Saskatchewan Legislature recently that there had been contributed to the provincial revenues under the Railway Taxation Act the following amounts:—

	1910.	1909.	1908.
C.P.R.			
Canadian Northern Ry.	$54.000	$50,000	$50,000
G.T. Pacific Ry.	9,972	9,972	9,972

The C.P.R. contributed $25,000 for 1907.

...tion of the concrete piers for a bridge across the McLeod River, near Edson, Alta., on the branch line to the Brazeau River coal fields.

On the main transcontinental line steel has been laid as far as Prairie

A Railway to Hudson Bay.

The question of the opening up of what was described as "the new route between the great west and the European markets," was referred to at some length in the House of Commons, Mar. 10, by the Minister of Railways in his general speech on transportation. The route, he said, had been used for many years, in so far as the waterway was concerned, but the project of the building of a railway to Hudson Bay was, although not new, something modern. About 1882, Hugh Sutherland, now Executive Agent Canadian Northern Ry., began discussing the project, and in 1885 he obtained from the Manitoba Legislature a bonus of $1,000,000 towards building such a railway. It was found to be impossible to raise the capital, so in 1886, the offer of aid was altered to a guarantee of 4% for 25 years, on a bond issue of $44,500,000, but even this failed to enable the promoters of the company to raise the necessary capital. About 1890, or a little later, the Government offered to give 12,800 acres of land and $6,400 a mile of a subsidy. That also failed, and he thought he might safely say that all private effort having failed to get the railway to Hudson Bay, the Dominion Government showed wisdom and courage in taking up the matter itself. In regard to the navigation, the Dominion Government had sent four or five different expeditions up to the bay and the straits. The ice difficulty on the route was not in the bay but in the straits.

At present, he did not think there was any land grant subsidy available for a railway to Hudson Bay, but he was not giving away secrets when he said that before the end of the session Parliament would be asked to discuss and consider a vote for the building of this line. The Hudson Bay railway route would afford an outlet for the products of the farmers of western Canada in the old country, the distance from Winnipeg to Fort Churchill being 945 miles, and from Fort Churchill to Liverpool, 2,946 miles, while the distance from Winnipeg to Montreal is 1.422 miles, and the distance from Montreal to Liverpool by the Belle Isle route is 2,761 miles and by the Cape Race route 2,927 miles. The Government proposed to proceed with the building of the railway. It was not a small task, and it was estimated that it would cost well in the vicinity of $25,000,000 to $30,000,000, which would, he believed, include elevators, wharves, etc. To this he was prepared to add another $5,000,000 or $6,000,000 because in working out the enterprise, an arrangement would have to be made with a steamship company, for without a steamship service the railway would not be of much use. One matter in connection with the steamship service was that Sydney, N.S., could be made a port of call, and a coal cargo taken on there for Hudson Bay. The present season of navigation in the bay was from three to four months, but there were those who believed that with the advances which were being made in science, it would not be many years before a way would be found to keep the Hudson straits open for a great deal longer than four months in the year. (Mar., pg. .207.)

A recent press report from Moncton, N.B., stated that as a result of the development of the coal oil fields in Albert County, N.B., the oil may be utilized for fuel on I.C.R. locomotives. We have reason to believe that this report has no foundation. Oil would be too expensive on the I.C.R. Coal is much cheaper. We may add that G. R. Joughins, Superintendent of Motive Power, I.C.R., had a lot of experience with oil fuel when he was in the Santa Fe Rd. service a few years ago.

G.T.R. Betterments, Construction, Etc.

Lachine, Jacques Cartier and Maisonneuve Ry.—In passing through Parliament the company's bill was amended by the addition of clauses providing that proceedings for the expropriation of lands in Montreal shall be completed within three months of the passing of the act; that the Board of Railway Commissioners shall be deemed to be substituted for the Provincial Commission of Public Utilities mentioned in certain agreements to which the company is a party; and authorizing the making of agreements with the C.P..R., the Canadian Northern Quebec Ry., and the Montreal Terminal Ry.

Round House, Ottawa East.—We are advised that plans are being prepared for some changes at the round house and machine shop at Ottawa East, but that at present it is impossible to state definitely what the changes will be, or when they will be made.

Ottawa Station, Etc.—The Board of Railway Commissioners has approved plans for the platforms and train shed for the central union passenger station.

Rideau Canal Bridge, Ottawa.—The company has in course of renewal the swing bridge over the Rideau Canal, which is situated west of Rideau Jct., where the line branches westward. The present bridge was built about 25 years ago. It consists of a single track plate girder span of equal arms and swings by hand power. The length over all is 106 ft. 9 ins., seven feed deep at centre, and two feet deep at the ends. This bridge was designed for a uniform live load of 3,000 lbs., per lineal foot. The new structure will be a similar kind of bridge, 120 ft. over all, 7½ ft. deep at centre, and 3½ ft. deep at the ends with a sustaining capacity double that of the present bridge, and it will be operated by an electric motor. On account of the heavier concentrated loading both the pivot and rest piers are being entirely rebuilt in concrete. The Dominion Bridge Co., is the contractor for the new superstructure, and the entire work is under the supervision of H. G. Kelley, Chief Engineer.

Canada Atlantic Division.—During the current construction season it is proposed to do considerable work in the way of filling in trestles, and to build several new bridges. The work of filling in trestles has been in progress ever since the G.T.R. took over the line, and it is expected that the whole work may be completed this year.

Brock Ave Subway.—The Board of Railway Commissioners has ordered the company to file new plans for the projected subway under the tracks at Brock Ave., Toronto, the question of the division of cost to be deferred until new plans are filed and approved.

Hamilton Improvements.—Press reports, Mar. 13, state that the company is seeking to secure a block of land on Ferguson Ave., and that it is possible other property may be acquired in the vicinity for station and terminal purposes.

Galt and Elmira Branches.—U. E. Gillen, Superintendent Middle Division, informed a deputation representing Galt, Waterloo and Berlin, Ont., recently that he was favorably impressed with the suggestion that the Galt and Elmira branches should be electrified, and promised to have the whole matter looked into. (Mar., pg. 217.)

Recent Manitoba Legislation.—An act regulating the taxation of railways, and another incorporating the Central Canada Rd. and Power Co. were assented to by the Lieutenant-Governor, among a number of general acts, Mar. 10.

THE RAILWAY & MARINE WORLD

With which are incorporated The Western World and The Railway and Shipping World, Established 1890.

An Illustrated Periodical devoted to Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' Interests.

Official Organ of the various Canadian Transportation Associations.

ACTON BURROWS LIMITED, - Proprietors
70 Bond Street, Toronto, Canada.
Local and Long Distance Telephone, Main 3201.

ACTON BURROWS, - Managing Director and Editor-in-Chief.
AUBREY ACTON BURROWS, - Secretary and Business Manager.

U. S. Representative, - A. Fenton Walker, 140 Liberty Street, New York City.
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TORONTO, CANADA, APRIL, 1911.

Alphabetical List of Advertisers.

*Advertisements marked with an asterisk appear in alternate issues.

PROFESSIONAL CARDS.

C.P.R. Betterments, Construction, Etc.

St. John Improvements.—In an interview at St. John, N.B., Mar. 4, General Superintendent Downie is reported to have said that plans had been prepared for a warehouse about 400 by 40 ft., running parallel with Main St. In connection with this there would be six delivery tracks for teams, and track accommodation for 200 cars. It is also proposed to carry out some improvements at the Carleton elevator and wharves, and to make a beginning with the new yard accommodation in that section.

Atlantic Division Betterments.—General Superintendent Downie, in an interview at St. John, Mar. 4, is reported to have said that very considerable betterments will be carried out on the Atlantic division during the year. On the main line, in addition to the general work of ballasting, pile driving and filling, which had been in progress, the remaining wooden bridges will be replaced by steel structures; wooden culverts will be replaced by concrete ones; and 45 miles of light rails will be replaced by heavier ones. On the New Brunswick Southern Ry. new ties will be laid, concrete culverts put in, a good deal of riprap work will be done along the shores of Ludgate and Spruce lakes, and steel bridges will be put in at Linton, Pokologan, Didgeguash and Lancaster rivers. Additional sidings will be provided at Fredericton. On the St. Stephen branch some new bridges will be built, ballasting done, and sidings extended; 11 miles of track on the St. Andrews branch will be relaid with heavier rails; on the Woodstock branch six miles of track will be relaid with heavier rails, and two new steel bridges will be built; two new steel bridges will be put in on the Gibson branch; the Tobique branch will be diverted for a short distance at Rowena, and some miles of heavier rails laid; six miles of the Edmundston branch is to be relaid with heavier rails, a new steel bridge to be put in, and a 65 ft. turntable is to be put in at Edmundston; and on the Aroostook branch five miles of track is to be relaid with heavier rails. In addition to this a good deal of other work of a minor character is to be done.

Place Viger Improvements.—Press reports state that practically the whole of the steel work for the viaduct on Notre Dame St., Montreal, between Montcalm and Berri Streets, has been completed. As soon as the flooring and tracks are laid the bridge will be opened for traffic. When this is done the embankment over which the traffic is now being carried will be removed, and the land on both sides of the bridge laid out for yard purposes.

Ottawa Improvements. — An Ottawa press report states that a new 16-stall roundhouse is to be built at Hintonburg, Ont., west of the present one, a portion of which was burned down in the summer of 1910. The new building will be of concrete, and will, it is said, be started at once. Some rearrangement of the yards will also be made, and, it is also reported, tenders will be asked for the erection of a 500 ft. concrete bridge at Graham's station.

Timiskaming Branch. — The Board of Railway Commissioners has authorized the building of a bridge at mileage 0.85 on the branch line from Mattawa, Ont.

Smiths Falls to Bathurst, Ont.—A contract is reported to have been let to Jonas and Girouard, Ottawa, for the building of a second track from Smiths Falls to Bathurst, Ont., about 19 miles. Bathurst is the point on the Montreal-Toronto line from which it is said the new lake shore line to Locust Hill, near Toronto, also on the Montreal-Toronto line, will be built under the Campbellford, Lake Ontario and Western Ry.'s charter.

Georgian Bay and Seaboard Ry.—The Board of Railway Commissioners has authorized the building of a subway at Trespass road, lot 6, concession 11, Thorah tp., and the building of a bridge over the Scugog River, near Lindsay, Ont. The G.B. and S. Ry., and the Lindsay, Bobcaygeon and Pontypool Ry. effect a junction near where this bridge is to be built.

South Ontario Pacific Ry.—We are advised that tenders have been asked for the building of a line from Hamilton to Guelph Jct., Ont., and it is expected that a contract will be let at an early date.

The location plans show a line entering Hamilton south of the G.T.R. line, running westerly, and connecting with the Toronto, Hamilton and Buffalo Ry. In leaving Hamilton the line, after crossing the G.T.R., proceeds northerly, passing to the east of Waterdown village, and on to the 10th concession line of East Flamboro tp., where it passes into Nelson tp., and then on to Guelph Jct., where a junction is effected with the main line from Toronto to Windsor, and the line through Guelph to Goderich. The distance between Hamilton and Guelph Jct. is about 16 miles, and between Hamilton and Guelph 33.9 miles. J. E. Beattie is engineer in charge of the work at Guelph Jct., and he is reported as saying, Mar. 8, that the work would be started in about a month. W. J. Grant, C.P.R. agent in Hamilton, appeared before the Hamilton board of control recently, when it was arranged that the line should connect with the present C.P.R. line west of the Desjardins canal.

London, Ont.—Tenders were received to Mar. 25 for the building of a 22-stall engine house, with machine and boiler shops adjoining, at London, Ont. The new roundhouse will be built on Quebec St., near Elias St. Application is being made to the council for permission to change the location of Central Ave., and to exchange some pieces of land, so that the company may round out the area it has acquired in the vicinity for yard purposes, and to provide a suitable approach to the new roundhouse.

Toronto-Sudbury Line. — About two miles north of Bala, Ont., the line is carried across a muskeg by means of a trestle bridge, the safety of which is threatened by a creek running through the muskeg. Tenders are being asked for the boring of a tunnel 135 ft. long, five feet wide and six feet high, in order to divert the creek, and so enable the trestle to be replaced by an embankment.

Fort William Station.—The new station at Fort William, Ont., is reported to be completed, and the laying of tracks into it is being gone on with. It is expected that the business will be transferred from the old station at an early date.

Subway at Kenora, etc.—Tenders were received to Mar. 27 for the building of a subway at Kenora, and for bridges and culverts at various points on the Manitoba division.

Winnipeg-Brandon Second Track.—The Board of Railway Commissioners has authorized the opening for traffic of the second track from Rugby Jct., mileage two from Winnipeg, to Portage la Prairie, mileage 55. The grading for the extension from Portage la Prairie to Brandon has been practically completed, and the Board of Railway Commissioners has authorized the laying of the second track on this across the public highway at 37 points. Surveys are being made at the crossing of the Assiniboine river east of Brandon, with a view of determining whether it will be necessary to build a new bridge to carry the double track, or whether an addition will be made to the present bridge.

Brandon Station.—F. W. Peters, Assistant to the Vice President, informed the Brandon city council, Mar. 4, that an appropriation had been made for the building of a new station, and that work would be proceeded with this year.

Estevan to Forward, Sask.—Press reports say contract has been let to J. D. McArthur for 35 miles of grading to complete the branch from Estevan northwesterly to a junction with the line westerly from Weyburn, the junction point being at Forward, Sask.

Weyburn-Lethbridge Branch. — The Board of Railway Commissioners has approved the location of this line from mileage 316.78 to 400, and from mileage 400 to 449.9, Alta. A Lethbridge press report, Mar. 15, states that the location of mileage 449.9 is Montana Jct., on the Crows Nest Pass branch.

A contract has been let to Foley, Welch and Stewart for grading 20 miles westerly from the present terminus of the branch from Weyburn, Sask., towards Lethbridge, Alta.

Saskatchewan Division Buildings. — Tenders were received to Mar. 20 for the erection of the following buildings on this division:—Standard car repair shop, baggage and express building at Moose Jaw; freight shed at Regina; extension to machine shop, six stall addition to enginehouse, and six double cottages for employes at Sutherland; dining car stores building at Saskatoon, class A station buildings at seven points, and class 4 section houses at five points.

Qu'Appelle Valley.—Press dispatches state that the company has decided to build a branch line through the Qu'Appelle River valley, for a distance of 150 miles, and to erect a summer hotel at Fort Qu'Appelle, Sask.

Regina, Saskatoon and North Saskatchewan Branch.—The Board of Railway Commissioners has approved the revised location of this branch from mileage 77.95 from Regina to the north boundary of sec. 33, tp. 26, range 25, at mileage 95.8, and thence to sec. 1, tp. 35, range 28, mileage 132.69, where a junction is effected with the Pheasant Hills branch.

Swift Current, Sask.—Contracts have been let to Foley, Welch and Stewart for the building of two lines starting out of Swift Current, one for 45 miles southeasterly, and the other for 35 miles northwesterly.

Moose Jaw, Sask.—We are advised that a contract has been let to the J. G. Hargrave Co., Winnipeg, for the building of a second track from Moose Jaw east to Pasqua, seven miles, and from Moose Jaw west to Caron, 16 miles. In an interview, J. W. Hargrave stated that a small portion of the work would be sublet, but the main portion would be done directly by the firm.

Moose Jaw Branch.—The Board of Railway Commissioners has authorized the company to open for traffic without limitation of speed, the extension of this branch from mileage 14.5 (near Tuxford, Sask.) to mileage 118.75 (near St. Aldwyn, Sask.). A contract has been let to Foley, Welch and Stewart for the extension of this line from its present terminus for 35 miles. This will carry the line to a junction with the extension of the Lacombe branch.

Wilkie, Sask.—Contracts have been let to Dutton and Timson for the building of 50 miles of line northerly and southerly from Wilkie, on the Pheasant Hills branch. The northerly branch will be 25 miles long, and will be in the direc-

tion of the Cutknife district, while the southerly branch will be built into the Tramping Lake district for 25 miles.

Macklin to Kerr Robert.—The Board of Railway Commissioners has authorized the company to open for traffic the line from Macklin southeasterly to Kerr Robert, Sask., 46 miles. Macklin is a station on the Pheasant Hills branch line, and Kerr Robert is on a branch of the Moose Jaw-Lacombe line. A contract is reported to have been let to F. W. Downs for building a six-stall roundhouse at Kerr Robert.

Alberta Division Buildings.—Tenders were received to Mar. 22 for the erection of the following buildings at various points on this Division.—One six-stall addition to standard no. 2 engine house, and locomotive fireman's cottage at Red Deer, Alta.; standard no. 4 section houses at 24 points; standard no. 5 section houses at five points, one to have a 50 ft. freight shed attached; standard no. 10 stations at three points; standard no. 1 bunkhouses at two points; standard plan A stations and 50 ft. freight sheds at two points.

Medicine Hat Station.—Tenders are under consideration for the erection of a brick and stone addition 116 ft. long to the station at Medicine Hat, Alta.

Bridges on Alberta Division.—Following are some particulars of a number of the more important bridges on the western lines to be erected this year:—The bridge across the South Saskatchewan River, about three miles west of Medicine Hat, Alta., will have a total length of 1,010 ft., and will consist of three through steel trusses on the west, each being 217 ft. over all, carried upon masonry piers 8 ft. 10 in. wide. On the east there is a swing span, on a masonry pier 30½ ft. wide. The trusses are 20 ft. centres, and 31 ft. 9 in. above the bed of the river, the base of rail being 3 ft. 3 in. above the bottom chords. At each approach to the bridge there is a deck plate girder 30 ft. long on masonry abutments.

The bridge at the first crossing of the Bow River, 3.5 miles east of Calgary, will consist of two through steel spans, with a total length of 420 ft., built upon a centre pier of concrete with masonry abutments, the pier and abutments being built on a skew of 58 degrees. Each truss is 201 ft. over all, 29 ft. in height, and has an average depth of 17 ft. above the bed of the river. The base of rail is 3 ft. 3 in. above bottom laterals.

A bridge across the Elbow River, about one mile east of Calgary, will consist of a single span of 157 ft. 11 in., on masonry abutments. The trusses are 18½ ft. centres, 26 ft. 3 in. high, and the rail level is 22 ft. above the bed of the river. The base of the rail portal is 22 ft. 10 in., and the bridge is on a three degree curve.

About seven miles west of Calgary a single truss single span 214 ft. 9 in. centre to centre of end pins, on masonry abutments, will be built across the Bow River. The east and west approaches of the truss will be deck plate girders, each 17 ft. 4 in. long. The base of rail is 3 ft. 5 in. above bottom chords, and the trusses are 14 ft. above the bed of the river. Almost adjoining this bridge is a second bridge across the Bow River, to be built on concrete piers and abutments, and consisting of an east approach 24 ft. 10 in. deck plate girder, a through steel truss span of 214 ft. 9 in., and a west approach of 17 ft. 4 in. deck plate girder; the base of rail is 3 ft. 6 in. above bottom chords, and the trusses are 17 ft. 2 in. above the bed of the river. These are called the "Twin Bridges."

The third crossing of the Bow River is 25.5 miles west of Calgary, and the bridge to be erected will consist of two through trusses, each having a span of 198 ft. 6¾ in., on masonry pier and abutments. The pier and abutments are built on a skew. The base of rail is 3 ft. 3 in. above bottom chords, and the trusses are about an average height of 28 ft. 2 in. above the bed of the river.

Kipp-Aldersyde Branch.—The Board of Railway Commissioners has approved revised location plans of this branch from mileage 28 to 63.06. Mileage 28 is at Carmangay, the present terminus, and mileage 63 is near Aldersyde, Alta. A further order has been issued approving of a revised location from mileage 67.06 to 84.18.

Lacombe Branch.—A contract has been let to Foley, Welch and Stewart for the building of a 60 mile extension of this branch, which now has its terminus at Castor, Alta. This extension will carry the line to a junction with the branch from Moose Jaw, the contract for the extension of which has been let to the same firm.

Old Man River Bridge.—A contract is reported to have been let to Digby and Grenier, Fernie, B.C., for the erection of a bridge across the Old Man River, near Fernie. The work includes 2,000 cubic yards of excavation, 500 piles, 1,000 cubic yards of concrete, and 1,500,000 ft. of timber. The structure will be 800 ft. long and 137 ft. above high water mark.

Kootenay Central Ry.—A contract has been let to Janse and McDonald for the building of an additional section of 25 miles of this line, southerly from Golden, B.C. Ten miles of grading has been completed out of Golden, and the 25 miles now contracted for will make altogether 41 miles under construction southerly. From Galloway, on the Crow's Nest Pass branch, about 30 miles have been graded northerly under a contract let in 1910 to Foley, Welch and Stewart, and a contract for an extension of this section for 12 miles to Baynes Lake has been let to Janse and McDonald.

Pacific Division Betterments, etc.—A good deal of work in the way of betterments is to be done during the current year on the Pacific Division. An additional mileage is to be relaid with heavier rails; side tracks and station switches are to be extended, and considerable ballasting done. Tenders have been asked for a new station building at Field, B.C., and a number of buildings are to be built at different points. The station at New Westminster is to be remodelled; additional freight facilities are to be provided at Vancouver, and other work is to be done in the yards near Beatty St. in that city.

New Westminster Jct.-Coquitlam.—We are advised that the C.P.R. has bought several hundred acres of land in the vicinity of New Westminster Jct., but to what purpose it will be devoted, whether for yard purposes, or for the storing and sorting of cars, has not yet been announced. The land is not needed at present, but owing to the development of business at Vancouver, and throughout the country, the company made the purchase to meet future requirements. It is most likely that the land will be laid out as a yard for sorting and storing cars.

Esquimalt and Nanaimo Ry.—Grading is reported to have been completed into Alberni, on the extension of this line, and the bridge work is being pushed forward. Rails are on hand for the tracklaying, and it is expected that work will be started at Cameron Lake, the present end of steel on the extension early in April. The contractors for the bridge work are Culliton Bros., while the general contractors for the extension are Janse, McDonald and Timothy. (Mar. pg. 227.)

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Tate Jones & Co., Inc., Empire Building, Pittsburg, Pa., has issued circular 134, respecting its new portable fuel oil burner, compressed air type, copies of which will be sent on request.

The Detroit Lubricator Co., Detroit, Mich., has issued an illustrated pamphlet describing the Detroit no. 22 Bullseye Locomotive Lubricator, the special feature of which is the oil control valve, which starts and stops all feeds.

McCord & Co., Inc., Peoples' Gas Building, Chicago, Ill., has published in booklet form "Locomotive Lubrication," by W. J. Schlacks, which covers the subject very thoroughly and also describes the McCord system of force feed locomotive lubrication. A copy will be sent to anyone interested on request.

The American Vanadium Co., Frick Building, Pittsburg, Pa., has brought out the first issue of "American Vanadium Facts," a house organ which is to be published periodically in the interest of Amervan Ferro Vanadium. This issue described what Vanadium is and gives a lot of interesting information about Vanadium steel forgings, governor pins, steel castings and machinery castings.

Burton W. Mudge & Co., 122 South Michigan Boulevard, Chicago, have issued a beautifully printed booklet "Garland Car Ventilation," in which its application to passenger and refrigerator cars is very fully described and illustrated. This system of ventilation is the invention of one of the company's vice presidents, T. H. Garland, who was for many years in charge of the Burlington Rd.'s refrigerator system.

S. & F. Bowser Co., Ltd., 66 Fraser Ave., Toronto, has issued a comprehensive booklet "Bowser Railroad Oil Storage," in which its pumps, tanks, etc., are fully described and illustrated; the systems, including a wide variety of styles from signal tower oil outfits, to the largest and most complex systems designed for the storage and handling of thousands of gallons of oil of different natures, under the most varying conditions.

The Montreal Steel Works, Ltd., report for the year 1910 shows net earnings of $230,069.96, exclusive of dividends, directors' and auditors' fees and after providing for depreciation; $50,000 has been placed to the credit of reserve account, bringing the account up to $250,000; $10,000 has been added to special reserve account to provide for contingencies, bringing it up to $40,000; quarterly dividends of 7% per year on the preferred stock, and 10% per year on the common stock were paid, amounting to $126,000; profit and loss account was increased by $2,444.72, bringing it up to $164,091.27. Of the $1,000,000 first mortgage bonds authorized in August 1910, $750,000 were sold, principally to shareholders who had the first right to subscribe. The new works at Longue Pointe were commenced in October last and the foundations being put in and the construction and equipment will proceed early in the spring.

The Kingston and Pembroke Ry. locomotive drivers and firemen recently sent a deputation to the management to request that consideration be given to the question of wage increases. It is stated that the matter is under consideration, and that it is likely that an increase will be granted.

Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—Approximate net profits from all sources, exclusive of land sales, for Jan., $25,340, against $40,375 for Jan. 1910. Cumulative net profits, exclusive of land sales, for seven months ended Jan. 31, $214,610. Railway traffic receipts for Feb. $18,214, against $25,851 for Feb., 1910. Cumulative railway traffic receipts for eight months ended Feb. 28, $220,101.

Canadian Northern Ry.—An issue was offered in London, Eng., Mar. 15, of a little over £1,000,000 of 3½% debenture stock at 94½, principal and interest guaranteed by the Dominion Government. The stock is made up of two different issues, viz., C.N.R. Co., £358,888, and Canadian Northern Alberta Ry. Co., £647,260.

Caraquet and Gulf Shore Ry.—Application is being made to the New Brunswick Legislature to authorize the Caraquet Ry. and the Gulf Shore Ry., to become consolidated with the title of the Caraquet and Gulf Shore Ry. and to issue bonds for $10,000 a mile. The Caraquet Ry. extends from Bathurst via Grand Anse to Caraquet, and thence to Sheppigan, 5 miles, and the Gulf Shore Ry., extends from Pokemouche Jct. to Tracadie Mills, eight miles. The two lines have always been operated under one management and for some years past have been under the same control. Bicknell, Bain, Strathy and Mackelcan, Toronto, are solicitors for the company.

Crow's Nest Pass Coal Co.—The profit and loss account for the year 1910 totalled $334,950.28, including $156,025.12 brought forward from the previous year and $18,054 dividends on securities owned. After paying dividends $210,734.28 was carried forward to the current year's account. The directors' report states that the Morrissey, Fernie and Michel Ry., which the company owns, carried forward from 1909, a deficit of $26,227.67. This loss was made up during the year, and on Dec. 31, 1910, there was at credit of profit and loss account of this company $11,296.81. Following is the board for the current year: President, E. Rogers, Toronto; Vice President, E. C. Whitney, Ottawa; other directors: Col. W. P. Clough, New York; H. B. McGivern, Ottawa; W. H. Robinson, Granby, Que.; Dr. Howland, Toronto; J. P. Graves, Spokane, Wash.

Dominion Atlantic Ry.—Gross earnings for Feb., $75,600, against $81,421 for Feb., 1910. Aggregate gross earnings for eight months ended Feb. 28, $896,606, against $964,004 or same period 1909-10.

The Grand Trunk Pacific Ry. Co. issued in London, Eng., Mar. 10, a prospectus of an issue of £696,000 4% mortgage sterling bonds due 1955, balance of a total authorized amount of £2,050,000 series B. (Mountain Section) bonds, principal and interest unconditionally guaranteed by the G.T.R. Co., the issue price being 92.

Grand Trunk Ry.—The Michigan State Commisioners, Mar. 22, authorized the G.T.R. Western Rd., the G.T.R.'s subsidiary company operating lines west of Detroit, to issue mortgage bonds for $30,000,000 for the purpose of buying the Pontiac, Oxford and Northern Rd. The acquirement of this line has been previously referred to, and the matter is now before the courts in an action arising out of the two-cent a mile fare law. It was ascertained in the course of the hearing that the majority of the company's stock was held by C. M. Hays in trust. Of the $30,000,000 bond issue, the company will control $23,000,000, the expenditure of the remaining $7,500,000 being subject to the approval of the State Railroad Commission.

Kaslo and Slocan Ry.—A press report from Nelson, B.C., states that a syndicate of Kaslo men has secured an option on the K. and S. R. from the Great Northern Ry. Co.

Manitoulin and North Shore Ry.—At a special meeting of shareholders of the Lake Superior Corporation at Camden, N.J., Mar. 1, a plan for the reorganization of the Manitoulin and North Shore Ry., one of the subsidiary companies, was approved. The reorganization plan provides for the sale of the line, 24 miles, under the powers given in the mortgage for $250,000, the amount of the bonds, and such bonds will be cancelled. The new capital will consist of $2,000,000 of common stock, $1,000,000 of 5% non-cumulative preferred stock, and $3,000,000 of 50 year 5% first mortgage redeemable gold bonds, the amount to be issued being equal to $30,000 a mile of completed railway. The Lake Superior Corporation guarantees the principal and interest of the bonds, receiving in return therefor $1,000,000 of common stock, and $8,000,000 of preferred stock, thereby having the controlling power, as preferred and common stock have equal voting powers.

Maritime Coal, Ry. and Power Co.—The Nova Scotia Legislature is being asked to amend the company's act of incorporation and amending acts, by authorizing the issue of $1,000,000 in shares bearing fixed cumulative, or non-cumulative dividends, at the discretion of the shareholders, at 7 per cent., preferred as to dividend and capital, and authorizing the directors to pledge or sell such shares; that four directors shall form a quorum, and also authorizing the sale or disposal of the plant and property and to acquire shares in any other company.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—A mortgage for $1,358,866 bearing interest at 4½ % was filed Mar. 7, with the Secretary of State at St. Paul, Minn., the proceeds of which are being devoted to the purchase of additional all-steel rolling stock.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—An increase of 21% of the capital stock has been authorized by the directors, and it has been announced that the present stock holders will have the right to subscribe at par, in the proportion of seven shares of preferred and 14 shares of common stock for each 100 shares now held.

Morrissey, Fernie and Michel Ry.—The annual meeting was held, Mar. 10. The company does not publish any annual report. Following is the board for the current year:—President and Chairman, Elias Rogers; Vice President, E. C. Whitney; other directors, H. B. McGiverin, W. P. Clough, A. E. Stovel.

Ontario Sault Ste. Marie Ry.—Following is the board for the current year, elected Mar 14:—President, C M. Hays; Vice President, W. Wainwright; Secretary-Treasurer, F. Scott; other directors, M. M. Reynolds, W. H. Biggar, K.C., E. J. Chamberlin, R. S. Logan, J. Hobson.

Pacific Coast Coal Mines Co.—The British Columbia Legislature has authorized the company to reduce its capital stock to $2,000,000, and to create debenture stock for $1,500,000 and to validate an agreement made between J. Arbuthnot J. M. Savage, J. C. McGarvin and the Vancouver Island Timber Co., of the first part; J. P. Hartman and C. C. Michener, of the second part; the P. C. C. M. Co., of the third part; E. Hodson and D. S. Spencer of the fourth part, and S. H. Reynolds of the fifth part. The company owns a railway at Fiddicks, Vancouver Island, and has power to build lines at other points in B. C.

The suit against J. Arbuthnot and others, brought by E. Hudson to recover 2,250 shares of the company has been settled by a reorganization of the company. The reorganization meeting was held in Victoria, Mar. 4, when the following officers and directors were elected: Chairman of the board, J. P. Hartman. President and Managing Director, C. C. Michener, Victoria; Vice President, L. D. Wishard, New York; Second Vice President, Dr. C. C. Kimball, New York; Secretary-Treasurer, J. F. Mosley, New York; other directors, C. H. Robertson, Victoria; R. N. Thompson, Seattle, Wash.

Quebec and Lake St. John Ry.—At a meeting of the prior lien, first mortgage and income bond holders, held in London, Eng., Mar. 17, an agreement of Feb. 16, 1911, with the Canadian Northern Ry., to exchange the whole of the bonds for new 4% debenture stock, guaranteed as to principal and interest by the C.N.R., was adopted and confirmed.

Earnings for Feb., $35,541.35, against $32,339.17 for Feb., 1910. Aggregate total earnings for two months ended Feb. 28, $76,314.78, against $69,994.01 for same period 1910. Mileage operated, 285.4, against 280 for same period 1910.

Quebec Central Ry.—Gross earnings for Jan., $63,771.66; expenses $57,057.02; net earnings $6,714.64, against $61,197.90 gross earnings; $54,944.93 expenses; $6,252.97 net earnings for Jan. 1910. Aggregate gross earnings for seven months ended Jan. 31, $684,608.31; expenses $469,817.82; net earnings $214,790.50, against $641,824.35 aggregate gross earnings; 443,306.69 expenses; $198,17.66 net earnings.

Temicouata Ry.—The profits on operation for 1910, were $47,184.

Victoria and Sidney Ry.—The city council of Victoria, B.C., has for some time past had under consideration, its position under the agreement as to the guarantee of the company's bonds. In 1892 an agreement was made jointly between the company, the city and the province, whereby the company issued bonds for $300,000, the interest of 5% being guaranteed by the city, as to 3% and by the province as to 2%. Under this guarantee the city has paid $162,000 and the province $103,000, the company never having paid anything. The city solicitor, in reporting on the matter, states that all money paid by the city under the guarantee is, by the agreement, made a debt due from time to time to the city and the province respectively, and a charge on the company's assets ranking after the bond issue. During the earlier years of the company's existence there was no doubt of its inability to pay the interest, but of late years it has earned quite enough to pay the interest. He had been led to believe that earnings had been considerably understated, and that a large portion of what should have gone to the V. and S. R. has been absorbed into other lines and companies belonging to the contracting company (the Great Northern Ry.). It is said that the matter will be brought before the courts at an early date.

White Pass and Yukon Ry.—Gross earnings for seven months ended Jan. 31, $800,919.

Railway Viaduct For Toronto.

The Judicial Committee of the Privy Council in London, Eng., has dismissed the C.P.R. Co.'s appeal against the Board of Railway Commissioners' order requiring the railway companies entering Toronto to build a viaduct along the Esplanade.

The Canadian Northern Ry. hotel, Prince Arthur, was officially opened at Port Arthur, Ont., Mar. 14, when the company gave a dinner to a number of the city offifficials and other citizens. G. H. Shaw, General Traffic Manager, presided.

Canadian Northern Ry. Construction, Etc.

Speaking in the House of Commons, Mar. 10, the Minister of Railways said the C.N.R. would soon have a through line to Montreal and Quebec, and it must get to the seaboard in some way. He might be wrong, but he thought the Intercolonial Ry., if it lost the exchange of traffic with the G.T.R., should be linked up with the C.N.R.

Canadian Northern Quebec Ry.—It is generally thought that the company has definitely decided to abandon the Moreau St. terminal at present in use, and to erect a large terminal in the centre of Montreal. In a recent interview Sir Donald Mann said all he would say about the matter was that the C.N.R. was going into Montreal.

The Board of Railway Commissioners has authorized the company to carry its tracks by an overhead bridge across Notre Dame St., and the Montreal St. Ry. and to connect its tracks with the Montreal Harbor Commission tracks, on the harbor front. The company will bear the entire cost of this crossing and is to complete it by Aug. 1. The company has also been authorized to rebuild the bridge over the St. Esprit River, near Ste. Julienne station.

Canadian Northern Ontario Ry.—In a recent interview Sir Donald Mann is reported to have stated that the new line from Ottawa to Montreal would be completed this year, but it was not likely that it would be opened for passenger service. The line between Ottawa and Toronto would also be completed this year. The grading was well forward, and the engineers were getting within sight of the finish.

In connection with the building of these two lines the Board of Railway Commissioners has issued a number of orders as to the diversion of roads, crossing of highways, bridges and buildings, and approving location of line through Lanark county, mileage 29 to mileage 37.8. It is expected that the first portion of the Toronto-Ottawa line to be opened will extend from Toronto to Belleville, 120 miles.

The question of the approval of the company's plans for its line across North Toronto came before the Board of Railway Commissioners Feb. 26, and opposition was withdrawn by the C.P.R., whose line will be paralleled. The city authorities favored the C.N.O.R. plans, and the Commissioners decided to go over the route before giving any decision.

After having considered for some time the plans for the company's proposed lines in Hamilton, the city council, Mar. 9, decided not to recede from the position it had assumed that no more level crossings would be allowed. It was stated on Mar. 10 that the company's engineers would be withdrawn at once, and nothing in the way of construction considered for a couple of years. The land agents are reported to be closing out the options on the property acquired, the tenants being notified that possession will not be required for at least two years. The city engineer stated Mar. 10 that he had been informed by H. K. Wicksteed, the company's Chief Engineer of Surveys, that when the plans for the route in the city were filed nothing objectionable would be found in them.

Press reports state that it is expected that construction will be started during the current year on the building of the line between the present end of track, on the line from Toronto, now terminating at Gowganda Jct., and Port Arthur, Ont. It is stated that work will be gone on with from both ends, and that it will be completed within three years. The Board of Railway Commissioners has approved revised locations on this line between mileage 65.9 and 69.5 from Sudbury Jct.; approved location from mileage 240 to 560 from Sudbury Jct., and approved revised locations between mileage 55.78 and 57.16, and between mileage 57.85 and 58.45 in Thunder Bay district.

Press reports Mar. 21 stated that the company proposed building a line of some sort from the line near Gowganda Jct., into the Porcupine country, surveys for which had been completed by the company's engineers. This report is premature, as, while consideration is being given to the proposal to build such a line, nothing has been decided.

Canadian Northern Ry.—We are advised that nothing is likely to be decided for some time with reference to the erection of a hotel at Fort Frances, Ont., which press reports stated was to be undertaken immediately. The reports stated that the hotel would be built at Pither's Point, at a cost of $200,000.

Press reports from Cook, Minn., state that engineers are making a survey from the main line of the C.N.R., near that town, to Pine Island, and easterly through the Vermillion range to a junction with the Duluth, Rainy Lake and Winnipeg Ry., and the extension of the same, now under construction, to Duluth.

The Manitoba Legislature passed an act Mar. 16, guaranteeing bonds to the extent of $13,000 a mile for the building of the following lines:—Extension of Dale Point line 50 miles northerly; extension of Deloraine branch westerly to the provincial boundary, 60 miles; a line from Ste. Rose du Lac to Lake Winnipegosis, 50 miles.

Sir Wm. Mackenzie, President C.N.R., stated in an interview in Winnipeg, Mar. 17, that the work proposed to be done during the current year will include additional grading on the Wakopa branch, which will be extended to Deloraine, and in future years will be carried through to a junction with the Maryfield branch, near Bienfait. In Saskatchewan the Maryfield branch will be extended to Moose Jaw; additional grading will be done on the Rossburn branch, which will ultimately be extended to the main line near Canora; additional grading will be done on the Thunderhill branch, which, starting at the Swan River, will ultimately be connected with a line running into Prince Albert; the branch from Prince Albert to Battleford will be completed; additional work will be done on the Battleford-Jackfish Lake line; further progress will be made with the line under construction from Delisle, which is to be continued through Swift Current to a junction with the Maryfield-Lethbridge line. In Alberta, two lines will be completed into Calgary, the one the Goose Lake line, from Saskatchewan, and the other the branch southerly from Vegreville through Red Deer, the line from Stettler crossing the C.P.R. at Red Deer, will be continued towards the Brazeau River Coal fields, and further progress made with the lines westerly from Edmonton. On some of the lines mentioned by the President a considerable mileage of grading is ready for tracklaying, and additional mileage is under contract, and tenders have been received for the grading of a considerable additional mileage, the President stating that it was hoped to build 600 miles of line this year.

Press reports from Winnipeg, Mar. 21, stated that contracts had been let to the Cowan Construction Co. for the building of 200 miles of main line towards the Yellowhead Pass, and 205 miles on three branch lines, and to the Northern Construction Co. for 200 miles of main line, and 100 miles to complete the branch line from Vegreville to Calgary, Alta. We were officially informed by telegraph Mar. 24 that this report was incorrect, as no contracts had been let, nor would any be let for a couple of weeks thereafter.

The Board of Railway Commissioners has approved location of line through tp. 6, ranges 25 and 24, west of the fourth meridian, Alta., mileage 0 to 10.25.

Edmonton and Slave Lake Ry.—A duplicate of the original agreement for the amalgamation of the E. and S.L. Ry. with the Canadian Northern Ry., as sanctioned by the Governor-in-Council, has been filed with the Secretary of State at Ottawa.

The Canadian North Eastern Ry. is the name by which the railway originally started as the Portland Canal Short Line will be known, the British Columbia Legislature having authorized the change of name, and the building of extensions.

We are advised that during the winter the work done has been confined entirely to rock cutting, and this is expected to be completed by the end of April. The grading of the entire line to Bear River should be completed by the end of June. Track was laid last year for a distance of about three miles, and this work will be resumed in May, in the expectation of completing the line by the end of July. The work still remaining to be done includes about 1.75 miles of grading, 450 lineal feet of pile bridging, and 10.25 miles of tracklaying, together with the erection of the following buildings:—Freight shed and coal handling plant on the wharf at Stewart; small freight sheds at Glacier Creek, Bitter Creek and Red Cliff; turntables at Stewart and Red Cliff, a machine shop storehouse at Stewart. It is also intended to build spurs and track accommodation for the Red Cliff and Portland Canal Mines this year. (Mar., pg. 249.)

Canadian Northern Pacific Ry.—F. C. Gamble, Inspecting Engineer for the British Columbia Government, returned to Victoria, Mar. 11, from an inspection trip over the section of the line under construction from Port Mann to Sumas. It is reported that about 75% of the grading on the first 55 miles to Popkum, about 10 miles east of Chilliwack, has been completed, and that considerable grading has been done on the remaining distance to Hope Mountain, to which point the clearing had been completed. About seven miles east of Popkum there is a big rock cut, of about 50,000 cubic yards. It is expected that this section will be completed and in operation by the end of the year.

At Port Mann, the wharf has been completed, and the first steamer with steel rails for the new line arrived and landed its cargo Mar. 7. The townsite is being laid out on an extensive scale, under the direction of T. Darling, Manager C.N.R. Townsites.

Press reports state that an arrangement has been effected between the company's representatives and the Vancouver, Victoria and Eastern Ry., under which the Canadian Northern Pacific Ry. will build the line between Sumas and Hope, the V.V. and E. Ry. being given running rights over it.

C. F. Harrington, is in charge of an engineering party making a survey for the line from Spence's Bridge in the direction of Ashcroft, from which place a party under J. Handy, is working towards Spence's Bridge.

The company's plans for the entry into Kamloops are being prepared, and will shortly be submitted to the civic authorities, according to a report made to the council Mar. 7, by Mayor Robinson, after an interview with T. G. Holt, the company's executive agent in Vancouver.

Vancouver Island.—The contract let to Grant, Smith & Co., for the first portion of the C. N. Pacific Ry., on Vancouver Island, covers 40 miles, extending from 4.7 miles from Victoria to the

vicinity of Shawinigan Lake, at mileage 44.7 The contract includes clearing, grubbing, fencing, trestle, concrete work and grading. The work on the first 20 miles has already been sublet in sections of from one to four miles and a good part of the second 20 miles has also been sublet. Clearing has been commenced at several points, and excavation on two or three of the heavier cuts are under way. It is expected that the balance of the first hundred miles will also be put under contract as soon as the weather will permit of the completion of the location surveys. Construction was officially started Feb. 20, when the Lieut.-Governor of the Province, accompanied by the company's engineers, contractors' representatives and representatives of the Government went to Portage Inlet, and the Lieut.-Governor cut the first sod. D. O. Lewis is in charge of the work as construction engineer, with headquarters at Victoria, and G. B. Hughes, is assistant engineer in charge of surveys. Mr. Hughes was at Port Alberni, Mar. 10, arranging for placing a survey party in the field along Alberni Canal.

Duluth, Winnipeg and Pacific Ry.—We are advised that the grading and bridging on the extension of the Duluth, Rainy Lake and Winnipeg Ry., being built under this title, from Virginia to Duluth, Minn., is about 80% completed, and that track has been laid for 24.5 miles southerly from Virginia. The tunnel at Short Line Park is progressing favorably, but the rock is very hard, and progress has been somewhat slower than was hoped for. It is expected to have the line completed by Sept. Nothing has been done as yet in regard to ore docks at Duluth.

G. H. Shaw, General Traffic Manager, and other C.N.R. officers were in Duluth, Mar. 15, when the question of terminals was discussed, but no definite plans for the same were announced. (Mar., pg. 231.)

Alberta Railway and Irrigation Co. Ltd.

At the special meeting of shareholders in London, Eng., Feb. 22, to authorize the sale, conveyance, or lease of the company's property to the C.P.R., to which reference was made in our last issue, the proposal was described, at the request of the President, E. T. Galt, by the company's Solicitor, C. Bischoff. He pointed out that for the purpose of convenience, the agreement was divided into two parts, 1. for the long lease of the railway itself in consideration for a rental; 2. for a contemporaneous sale of the assets, other than the railway and that the combined effect of the lease and sale, for all practical purposes, was, that the shareholders would be parting with the whole of the assets, in exchange for an annuity.

The lease is to comprise all the company's existing lines, and any lines which it may be authorized to build, together with stations, shops, rolling stock and equipment, and it will be for 999 years, from Jan. 1, 1912, without prejudice to the rights of the debenture holders under the trust deed. The lessor is restrained from issuing, without the lessee's consent, any new stock, as an encumbrance on the leased properties, but with the consent, and at the request of the lessee, will make future issues of capital for purposes of the leased property up to the legal limits. The lessee binds itself to pay an annual rent equal to a dividend of 6% on the outstanding ordinary capital stock, viz:—$3,250,000, by half-yearly payments, on Jan. 1, and July 1, in each year, the first payment to be made July 1, 1912, direct to the ordinary stock holders, and by way of additional rent will pay enough to cover the interest on any new debenture stock it may require to be issued in future. The interest guarantee will be endorsed on the certificates, or otherwise properly evidenced. If any rent is in default 90 days, or the lessee fails to meet the obligations it undertakes, the lesor may resume possession. The second part of the agreement relating to the sale of all lands, irrigation works and generally all the assets of the lessor, except the property leased, provides that the sale is subject to the rights of the debenture holders, and a sufficient sum will be reserved out of the sale, to provide the debenture interest due Jan. 1, 1912, and an ordinary dividend for the half year ending Dec. 31, 1911, at the rate of 5% per annum.

The President then explained that the C.P.R. holds 13,750 shares, or about 57% of the total shares of the company and he also outlined the reasons which had led the directors to adopt the course of submitting the resolution to the shareholders. The view held by the directors was that to meet the requirements of the company's business the lines would have to be improved in the near future, by laying heavier rails, ballasting the roadbed, etc., extensions would have to be undertaken to cover the territory tributary to the company's business, and the irrigation system would have to be extended at heavy cost to meet the requirements of the increasing population. Under these heads, several million dollars would have to be spent and it was considered injudicious to absorb the liquid assets of the company is undertaking these expenditures. He also stated that he was authorized to announce that the C.P.R. will purchase any shares at $150 each, plus an allowance of $3 a share for dividend since July 1, provided the holders of 8,000 shares notify the Secretary that they accept this option, which will remain open to May 1.

A. M. Nanton, Managing Director, in response to questions, stated that the company's lands had almost all been disposed of, and that future dividends would have to be largely derived from its ordinary business. The remaining assets consist mainly of the cash in hand, and the balances due to the company, which would, within a few thousand dollars, pay off the present indebtedness. The only remaining assets that can be used in conection with the common stock are, the balance of the lands, the railway, the colliery and the canal. The irrigable lands on hand, consist of from 25,000 to 30,000 acres, which, with the remaining non-irrigable lands, cannot be valued at more than $2,000,000, and only at that after a considerable expenditure for enlarging and extending the canal works. The railway consists of a line of about 120 miles long running from Lethbridge, Alta., to points of no great importance, and there is no doubt that with the business that is being done, the railway must be extended. The colliery is a paying concern, but growing competition may possibly reduce the future profits from this source. The canal cannot be considered as a cash asset, and altogether, the remaining assets do not aggregate more than about $200,000 of the $5,000,000, which is practically the offer made.

There was a certain amount of opposition to the resolution, which in view of the explanations made, was subsequently withdrawn, and the resolution was carried unanimously. The President undertook to request that the C.P.R. reduce the minimum number of shares which it had stipulated was necessary to have offered before it would pay cash for them.

The C.P.R. has, according to press reports, granted increases of 10% in wages to the trainmen on its Western lines, dating from Mar. 1, and it is said that an agreement on these lines has been signed by representatives of both sides.

Great Northern Ry. Lines in Canada.

Manitoba Great Northern Ry.—At a meeting of the Winnipeg city council held Mar. 15, an amended agreement with the company providing for its entry into the city was approved. The new plans provide that the line will come into the city on the level as far as Vera St., where a subway is to be built when ordered by the Board of Railway Commissioners on the request of the city; on to Isabella St., where there will be a subway; on to Ellen St., which is to be closed between Ross and Pacific streets, except that provision must be made for a footbridge; and that the company will build a station facing Paulin St. The plan shows a passenger station facing Paulin St., with the mail, baggage and express buildings along Ross Ave., to Ellen St., with four sets of double tracks and one set of single tracks, between which are to be covered platforms. Along Ross Ave., from Ellen to Isabel streets store buildings are shown. The area bounded by Isabel and Vera streets, and Ross and Pacific Avenues to be given over to freight tracks, with a freight house 1,000 ft. in length along Ross Ave., and 50 ft. deep to the tracks.

Considerable improvements are, it is said, to be made this year on the roadbed of the line from the International boundary near Gretna to Portage la Prairie, as well as on the connecting line south of the boundary to Neche and Grand Forks, N.D.

Vancouver, Victoria and Eastern Ry.—Grading had been completed westerly from Princeton, for 16 miles to Tulameen, B.C., when operations were suspended at the beginning of the winter. It is expected that start will be made with the grading early in April, and that about a month later tracklaying will be resumed. The route from Tulameen westerly will touch the coal fields being developed by the Columbia Coal and Coke Co., Coalmount. Nothing has been announced as to the route over the Hope Mountains, but local reports state that an arrangement is being made by which the company will have running rights over a section of the Canadian Northern Pacific Ry., line west of the Hope Mountains.

Grading is being pushed forward on the section of the line from Abbotsford to Sumas River, which is reported to be over 60% completed, and is expected to be finished in a couple of months.

The British Columbia Legislature has passed the necessary acts to enable the city of Vancouver to acquire certain lands and interests in certain lands at False Creek, and to make improvements on the same. These lands are being acquired in connection with the reclamation of False Creek, under agreements with the V., V. and E. Ry. Co., as ratified and confirmed by the Great Northern Ry., and now finally confirmed by the B.C. Legislature. Following on the confirmation of these agreements, work was started at the head of the creek, Mar. 13. Two steam shovels and a pile driver, are being operated, and a large sized gang of men are at work. The Board of Railway Commissioners has authorized the company to take certain lands in Vancouver, being the whole bed and foreshore of False Creek, east of Westminster Ave., with the exception of a portion reserved by the city.

Tenders are under consideration for the removal of the buildings on Pinder St., Vancouver, on the site of which an extension to the company's freight sheds is to be built. (Mar., pg. 219.)

The Niagara, St. Catharines and Toronto Railway and Navigation Co., has been admitted to membership in the Eastern Canadian Passenger Association.

Railway Rolling Stock Notes.

The Brompton Paper and Pulp Co. has received one Columbia locomotive from the Montreal Locomotive Works, details of which were given in our last issue.

The Toronto, Hamilton and Buffalo Ry. has received one ten wheeled locomotive from the Montreal Locomotive Works, details of which we gave in a previous issue.

The Temiskaming and Northern Ontario Ry. has received from the Canadian Locomotive Co., Kingston, Ont., four Pacific type locomotives, Nos. 133 to 136, details of which we gave in our Sept., 1910, issue.

The Canadian Northern Ry. has ordered 200 steel underframe flat cars, similar in design to those being built for the C.P.R., details of which are given in this issue, from the Canadian Car and Foundry Co., Montreal.

The Algoma Central and Hudson Bay Ry. has ordered 175 steel underframe flat cars from the Canadian Car and Foundry Co., Montreal, to practically the same specifications as those being built for the C.P.R., details of which are given in this issue.

The Canadian Northern Ry., between Feb. 15 and Mar. 15, received the following additions to rolling stock:—315 box cars and five baggage cars, from the Canadian Car and Foundry Co., Montreal, and 65 box cars from the Crossen Car Manufacturing Co., Cobourg, Ont.

The C.P.R., between Feb. 13 and Mar. 15, received the following additions to rolling stock:—23 first class cars, 24 automobile cars, two horse cars, one flanger and two snow plows from its Angus shops, Montreal, and seven G.1 and G.2 locomotives from the Montreal Locomotive Works.

The Laprairie Brick Co. has ordered one four-wheeled locomotive from the Montreal Locomotive Works, of which the following are the chief details:

Weight in working order	39,000 lbs.
Wheel base	4 ft. 9 in.
Driving wheel, diar.	33 in.
Cylinders	11 by 16 in.
Boiler, type	Straight top
Boiler pressure	165 lbs.
Tubes, no. and diar.	85 2 in.
Tubes, length	8 ft. 3½ in.
Tank capacity	750 U.S. gals.

The Intercolonial Ry. has ordered four shunting locomotives and three passenger locomotives from the Canadian Locomotive Co., Kingston, Ont.; 70 standard box cars, 60,000 lbs. capacity, and 21 Hart-Otis steel dump cars from the Canadian Car and Foundry Co., Montreal, and a further 30 standard box cars of 60,000 lbs. capacity. It has received one first class coach from the Preston Car and Coach Co., Preston, Ont.

The C.P.R., between Feb. 13 and Mar. 15, ordered the following rolling stock:—two G.1 locomotives, six compartment sleeping cars, one steel passenger car, one stores supply car, one freight refrigerator car, 82 box cars, 505 stock cars, five flat cars, two vans, one ballast car, at its Angus shops, Montreal; two steel flat cars from the Canadian Car and Foundry Co., Montreal; two Lidgerwood unloaders from Allis-Chalmers-Bullock, Ltd., two steam shovels from Montreal Locomotive Works, and two wrecking cranes in the U.S.

The Victoria Harbor Lumber Co. has ordered one four wheeled locomotive from the Montreal Locomotive Co., of which the following are the chief details:

Weight in working order	56,000 lbs.
Wheel base	6 ft. 3 in.
Driving wheel, diar.	36 in.
Cylinders	13 by 18 in.
Boiler, type	Straight top
Boiler pressure	165 lbs.
Tubes, no. and diar.	100 2 in.
Tubes, length	10 ft.
Tank capacity	1,000 U.S. gals.

Following are the chief dimensions of one Columbia locomotive (2-4-2-T-80), which the C.P.R. has ordered from the Montreal Locomotive Works:

Weight in working order	80,000 lbs.
Weight on engine truck	9,000 lbs.
Weight on drivers	56,000 lbs.
Weight on trailer	13,000 lbs.
Wheel base, driving	7 ft. 0 in.
Wheel base, engine	22 ft. 6 in.
Driving wheel, diar.	44 in.
Cylinders	14 by 22 in.
Boiler, type	Straight top
Boiler pressure	165 lbs.
Tubes, no. and diar.	106 2 in.
Tubes, length	11 ft. 8 in.
Tank capacity	1,200 U.S. gals.

The Nova Scotia Steel and Coal Co. has ordered one six coupled switching locomotive from the Montreal Locomotive Works, of which the following are the chief details:

Weight in working order	124,000 lbs.
Weight of tender	67,000 lbs.
Wheel base, engine	11 ft. 6 in.
Wheel base, engine and tender	35 ft. 6 in.
Driving wheel, diar.	59 in.
Cylinders	19 by 26 in.
Boiler, type	Straight top
Boiler, pressure	180 lbs.
Tubes, no. and diar.	259 2 in.
Tubes, length	11 ft.
Tank capacity	3,000 U.S. gals.

Macdonnell and O'Brien, railway contractors, National Transcontinental Ry., La Tuque, Que., have ordered two mogul locomotives from the Montreal Locomotive Works, of which the following are the chief details:

Weight in working order	130,000 lbs.
Weight on engine truck	17,000 lbs.
Weight on drivers	113,000 lbs.
Weight of tender	115,000 lbs.
Wheel base, driving	12 ft. 6 in.
Wheel base, engine	20 ft. 6½ in.
Wheel base, engine and tender	49 ft. 4 in.
Driving wheel, diar.	50 in.
Cylinders	19 by 26 in.
Boiler, type	Extended wagon top
Boiler pressure	180 lbs.
Tubes no. and diar.	275 2 in.
Tubes, length	10 ft. 5¼ in.
Tank capacity	5,000 Imp. gals.

Following are the chief details of the 11 D. 10 locomotives, which the C.P.R. is building at its Angus shops, Montreal, as mentioned in previous issues:

Weight on drivers	142,000 lbs.
Weight, total	193,000 lbs.
Cylinder	21 in. by 28 in.
Valves	11 in. piston
Boiler, type	Extended wagon top
Boiler, pressure	200 lbs.
Heating surface, tubes	2,238 sq. ft.
Heating surface, firebox	180 sq. ft.
Heating surface, total	2,418 sq. ft.
Heating surface, superheater	409 sq. ft.
Equivalent heating surface	3,032 sq. ft.
Tubes, no. and diar.	240 2 in., 24 5 in.
Tubes, length	14 ft. 2⅞ in.
Firebox	8 ft. 6⅛ in. by 5 ft. 9⅞ in.
Grate area	49 sq. ft.
Capacit water	5,000 gals.
Capacity coal	10 tons
Axles. Main 9½ in. by 12 in., others 9 in. by 12 in	
Brakes	Westinghouse ET6
Headlight	Pyle National Electric
Valve gear	Walschaert
Superheater	Vaughan-Horsey

The 750 steel underframe flat cars, which the C.P.R. has ordered from the Canadian Car and Foundry Co. are practically of the standard design, using the deep fish belly girder sills at the centre, with 10 in. rolled steel channels for the side sills. There is, however, one detail which is somewhat different from the general run of similar cars, in that, for the intermediate floor stringer, a 3 in. rolled steel Z bar is being used, to which the floor is bolted at certain intervals. In previous cars this member was usually composed of timber, to which the floor was nailed. Following are general details:—

Length over deadwoods	42 ft. 2 in.
Length, centre to centre of trucks	31 ft. 2 in.
Width over side sills	8 ft. 10 in.
Width over floor	9 ft.
Height top of rail to top of flooring	4 ft. 2¾ in.
Flooring	2⅝ in., ship-lapped
Couplers	Simplex
Bolsters	Simplex, C.P.R. standard for 40-ton cars
Brake beams	Simplex, 6 in. I beams, inside hung
Side bearings	Susemihl frictionless
Air brakes	Westinghouse K.C. 812
Wheels, cast iron	C.P.R. Standard
Journal boxes	McCord M.I.
Journal bearings	Canadian Bronze Co.
Axles	Open hearth steel, 5 by 9 ins.

The Algoma Central and Hudson Bay Ry. has ordered five consolidation and five 10-wheeled passenger locomotives from the Canadian Locomotive Co., Kingston, Ont. Following are the chief details:—

	Consolidation.	Ten-wheeled
Weight on drivers	175,000 lbs.	141,000 lbs.
Weight, total	197,000 lbs.	190,000 lbs.
Wheel base, engine, rigid	15 ft. 10 in.	14 ft. 10 in.
Wheel base, engine, total	24 ft. 4½ in.	26 ft. 1 in.
Wheel base, engine and tender	55 ft. 3½ in.	54 ft. 10¼ in.
Heating surface, firebox	161 sq. ft.	180 sq. ft.
Heating surface, tubes	2,218 sq. ft.	2,233 sq. ft.
Heating surface, total	2,379 sq. ft.	2,413 sq. ft.
Driving wheel, diar.	56 in.	63 in.
Driving wheel, centres	Steel and iron	Cast steel
Driving journals—	Main, 9½ in. by 12 in., others 9 in. by 12 in.	
Cylinders	22 in. by 28 in.	22½ in. by 28 in.
Boiler, type	Extended wagon top,	wide firebox
Boiler pressure	200 lbs.	180 lbs.
Tubes, no. and diar.	224 in., 24 5 in.	240 2 in., 24 5 in.
Tubes, length	14 ft. 2½ in.	14 ft. 4 in.
Brakes	Westinghouse	American
Weight tender, loaded.	175,000 lbs.	127,000 lbs.
Capacity, water	5,000 gals.	5,000 gals.
Capacity, coal	10 tons	10 tons
Truck, type	4-wheeled with outside equalizer	
Wheel, diar.	34 in.	34 in.
Wheel, type	Steel tires and retaining rings	
Journals	5½ in. by 10 in.	5½ in. by 10 in.
Brake beam	Simplex high speed	

Following are the chief details of the cabooses and Pintsch gas car, when the Intercolonial Ry. is building at its Moncton, N.B., shops, as mentioned in our last issue:—

Six Cabooses.

Length over platform sills	35 ft. 6 in.
Length over nailing strips on end sills	30 ft. 0 in.
Width over nailing strips on side sills	9 ft.
Height, top of nailing strips to under side of plates	6 ft. 8 in.
Length inside	29 ft. 6⅛ in.
Width inside	8 ft. 6⅛ in.
Height inside, top of floor to under side of carlin	7 ft. 1¼ in.
Outside of end sill to centre of body bolster	5 ft.
Centre to centre of cross frame braces	6 ft. 4 in.
Height top of rail to centre of drawbar	2 ft. 10½ in.
Wheel base of truck	5 ft.
Door opening, side	2 ft. 10 in.
Door opening, end	2 ft. 3 in.
Distance between truck centres	20 ft.
Platforms, steel	Standard Coupler Co.
Brake equipment	Canadian Westinghouse Co.
Brake beams, simplex	Canadian Car & Foundry Co.
Journal boxes, McCord	The Holden Co., Ltd.
Couplers, Janney	Canadian Car & Foundry Co.

One Pintsch Gas Car.

Length over end sills	40 ft.
Width over side sills	9 ft.
Length over floor	40 ft. 1½ in.
Width over floor	10 ft. 2 in.
Outside of end sill to centre of body bolster	5 ft.
Centre to centre of cross frame tie timbers	9 ft.
Height, top of rail to centre of drawbar	2 ft. 10½ in.
Wheel base of truck	5 ft. 6 in.
Distance between truck centres	30 ft.
Length of gas tank	35 ft. 9¾ in.
Diar. of tank, outside	8 ft. 2 in.
Capacity of tank	1,724 cu. ft.
Body and truck bolster	Simplex, Canadian Car & Foundry Co.
Brake beams, Simplex	Canadian Car & Foun. Co.
Couplers, Janney	Canadian Car & Foundry Co.

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

	Acres.
Canadian Northern Ry.	252.57
Canadian Pacific Ry. grants	1.32
Canadian Pacific Ry. Souris Branch	673.80
Grand Trunk Pacific Ry.	457.26
Total	1,384.95

The Board of Railway Commissioners will take up at Ottawa on April 4 the question of limiting the height of freight cars and an opportunity will be given railway companies under its jurisdiction to discuss the subject fully.

MAINLY ABOUT PEOPLE.

P. Whelen, director Ottawa Electric Ry., died at Ottawa, Mar. 17, after several weeks illness.

Sir Wm. C. VanHorne, sailed from Halifax, N.S., on the s.s. Empress of Ireland, for a business trip to Great Britain.

E. H. Fitzhugh, First Vice President G.T.R., was expected to return to Canada, at the end of March, from a trip in the Mediterranean.

T. Henry, Traffic Manager, Richelieu and Ontario Navigation Co., left Montreal, Mar. 12, on a business trip through the U.S.

D. B. Hanna, Third Vice President Canadian Northern Ry., has removed to his new house, 36 Castle Frank Road, Toronto, which he has named Thornliebank, after his native place in Scotland.

Capt. G. E. Royce, Manager Toronto Suburban Ry., has been appointed Major Second Battalion Queen's Own Rifles, Toronto.

Mrs. George Hannah, wife of the Passenger Traffic Manager Allan Line, Montreal, died there, Mar. 12, after a long illness.

W. I. Gear, Vice President Robert Reford Co., Ltd., and Miss Gear, returned to Montreal Mar. 18, after a holiday of some weeks in Europe.

The wife of Arthur Hall, Superintendent Western Railway Association and Inspection Bureau, formerly of Toronto, died at Denver, Col., recently.

Hugh A. Allan, of the Allan Line, who has been seriously unwell for some time, was recruiting at Bournemouth, Eng., during March.

R. G. McNeillie, District Passenger Agent, C.P.R., Calgary, Alta., returned there, early in March, from California, after a three weeks holiday.

W. H. C. Mussen, of Mussens Limited, and Mrs. Mussen, are spending a few weeks in England, and will return to Montreal shortly after Easter.

W. T. Payne, Manager C.P.R. Trans-Pacific Steamship Service, Yokohama, Japan, arrived in Montreal, Mar. 9, on business connected with his department.

A. A. Allan, of the Allan Line, and President Shipping Federation of Canada, with Mrs. Allan, sailed on the s.s. Virginian, Mar. 8, for Great Britain.

Miss F. H. Macdonald, eldest daughter of C. A. Macdonald, Assistant Manager Northern Navigation Co., was married at Collingwood, Feb. 28, to H. Stalker.

Lady Mann and her son left Toronto March 5 for sailing from Halifax on the s.s. Royal George for Bristol, Eng. They will probably be away most of the summer.

R. Marpole, General Executive Assistant C.P.R., Vancouver, B.C., and Mrs. Marpole, returned to Canada early in March, after a holiday trip in Great Britain.

J. B. McDonald, a well known railway contractor, who died in New York, Mar. 17, aged 67, was a contractor on the construction of the Georgian Bay section of the C.P.R.

Mrs. Hugh Sutherland, wife of the Executive Agent, Canadian Northern Ry. left Winnipeg at the end of February, to spend some little time at Seabreeze, Florida.

The marriage of Miss Isobel Creelman, daughter of A.R. Creelman, K.C., director and General Counsel C.P.R., to H. S. Ambrose, of the Bank of Montreal, took place at Montreal, Mar. 22.

W. B. Lanigan, Assistant Freight Traffic Manager C.P.R. Western Lines, Winnipeg, returned there, about the middle of March, from California, the he had been spending a short holiday.

A recent issue of Mayfair, a London, Eng., magazine, contained a full page portrait with biographical sketch of H. A. Allan, Chairman of the Allan Line, and formerly President of the Shipping Federation of Canada.

Sir Thos. G. Shaughnessy left Montreal, Mar. 6, for New York, whence he sailed on the s.s. Celtic, for a holiday in the Mediterranean. He will subsequently visit England, and is expected to return to Canada about the end of April.

J. G. Sullivan, Assistant Chief Engineer C.P.R. Western Lines, left Winnipeg, Mar. 11, on an inspection trip over the lines to the Pacific coast, to look over the ground in connection with the work that is to be undertaken this year.

Mrs. G. Mc. L. Brown, wife of the European Manager of the C.P.R., who has been staying in Hamilton, Ont., for some time, left for England early in March, with her sister, Miss Crerar.

H. J. Wicksteed, B.Sc., M. Can. Soc. C.E., Chief Engineer of Survey for Mackenzie, Mann & Co., returned to Toronto March 13, after a fortnight's ocean trip from New York to Palm Beach, Fla., and intermediate points.

H. R. Mathewson, excursion clerk C.P.R. District Passengers Agent's office Toronto, was presented with a suit case by the staff there Mar. 16, on his leaving for Chicago, Ill., on his appointment as chief clerk to the General Agent C.P.R., there.

J. S. Dennis, Manager Irrigation Department, Alberta and British Columbia Land Departments C.P.R., was entertained to dinner by the staff of his department at Calgary, Alta., recently, on his return from a European trip extending over two months.

L. Sherwood, M. Can. Soc. C.E., Principal Assistant Engineer Trent Canal Construction, Peterboro, was recently announced as the successful candidate for the position of Principal Assistant Engineer Subdivision A of the Department of Railways and Canals.

Sir William Mackenzie arrived at Halifax, N.S., Mar. 4, on his return from England, and was entertained to dinner by the city. On Mar. 8 he left Toronto for Winnipeg, accompanied by a number of officials, and returned to Toronto a week later.

Howard S. Folger, of Kingston, Ont., who sold out his interests in and retired from the management of the St. Lawrence River Steamboat Co., and the Thousand Islands Steamboat Co., recently, is reported to have sold his yacht Caprice, to A. E. Knopf of New York.

Count Jacques de Lesseps, who recently married Miss Grace Mackenzie, daughter of Sir Wm. Mackenzie, President Canadian Northern Ry., has been awarded the $10,000 prize in connection with the recent aviation meet at New York, two other competitors being disqualified.

In announcing the resignation of G. W. Vaux, General Passenger Agent, G.T.R., in our last issue, it was stated that it was owing to ill health. We have been advised that he resigned for purely personal reasons, that he is in very good health and that he is immediately available should his services be required.

W. W. Butler Vice President Canadian Car and Foundry Co., entertained some 70 friends at dinner at the Windsor Hotel, Montreal, March 17. Among the speakers were Hon. G. P. Graham, Minister of Railways and Canals; T. Drummond, President Lake Superior Corporation, and D. B. Hanna, Third Vice President Canadian Northern Ry.

Unconfirmed press reports say that Count de Lesseps, who married one of Sir William Mackenzie's daughters recently, will settle in Canada and join R. J. Mackenzie in Winnipeg in connection with Canadian Northern Ry. work. The Count and Countess are spending their honeymoon in Egypt, where Lady Macenzie and her other daughter are also at present.

J. D. McDonald, formrely District Passenger Agent G.T.R. Toronto, was entertained to dinner at the Albany Club, Toronto, Mar. 17, by a number of transportation officials and others, and was presented with an engraved gold watch and address, and a travelling bag for Mrs. McDonald, on his leaving for Chicago, Ill., where he has been appointed Assistant General Passenger Agent G.T.R.

Sir Wm. Mackenzie, who arrived at Halifax, N.S., on March 4 on the s.s. Royal George, from Bristol, Eng., was entertained at dinner that evening at the Halifax Hotel by the Board of Trade and other citizens. Among the speakers were the Mayor, who presided, Sir Wm. Mackenzie, D. B. Hanna, Third Vice President C.N.R., and G. Shaw, General Traffic Manager C.N.R.

H. M. Tait, who has been appointed General Agent Passenger Department Atlantic Service, at Minneapolis, Minn., is a son of Sir Melbourne Tait, Chief Justice of the Quebec Superior Court, and a brother of Sir Thomas Tait, who recently resigned the chairmanship of the Victorian Railway Commission, Australia, and who was formerly Master of Transportation C.P.R.

J. D. McDonald, whose appointment as Assistant General Passenger Agent G.T.R., Chicago, Ill., was announced in our last issue, was born at Toronto Aug. 27, 1855, and entered G.T.R. service in 1868, since when he has been, to 1870, messenger at Toronto; 1870 to 1875, assistant ticket agent, Toronto; 1875 to 1896, ticket agent at Buffalo, N.Y.; 1896 to May, 1902, City Passenger and Ticket Agent, Buffalo, N.Y.; May 1902 to Mar. 1, 1911, District Passenger Agent, Toronto.

Osborne Scott, whose appointment as Assistant General Passenger Agent Canadian Northern Ry., Winnipeg, was announced in our last issue, was born at St. Andrews, Man., July 6, 1882, and entered C.N.R. service June, 1901, since when he has been, to Feb., 1903, in Audit Office Passenger Department; Feb., 1903, to Feb., 1910, in Traffic Department, in charge of baggage, ticket, stock and advertising; Feb. to Oct., 1910, Travelling Passenger Agent, Toronto; Oct., 1910, to Mar. 1, 1911, chief rate clerk Passenger Department, Winnipeg.

Sir Thomas and Lady Tait and Miss Tait are proceeding leisurely on their trip from Australia to Canada. Leaving Melbourne on November 30, they spent a week in Ceylon, a month in India and a fortnight in Egypt, and then went to St. Moritz, Switzerland, for a few weeks of cold weather and winter sports. From there they intended to go to the Riviera, thence to Paris, and about the middle of May to London, where they will remain until after the coronation, and then sail for Canada, which they expect to reach about the middle of July.

G. W. Vaux, whose resignation from the position of General Passenger Agent G.T.R., we announced in our last issue, was born at Montreal, Mar. 21, 1866, and entered G.T.R. service, July 13, 1881, since when he has been, to June 13, 1885 office boy General Passenger Department, Montreal; June 13 1885 to Feb. 1, 1897, clerk same department, Montreal; Feb. 1, 1897, to Aug. 1, 1889, chief clerk, same department, Montreal; Aug. 1, 1899, to May 1, 1900, Assistant General Passenger and Ticket Agent, Montreal; May 1, 1900 to May 1, 1909, Assistant General Passenger and Ticket Agent, Chicago, Ill.; May 1, 1909 to Mar. 1, 1911, General Passenger Agent, Montreal.

A. S. Dawson, who has been appointed Chief Engineer C.P.R. Irrigation Department, Calgary, Alta., was born at Pictou, N.S., Sept. 6, 1871. He graduated B.A. Sc. from McGill University, Montreal, in 1893, and from 1894 to 1898 was engaged in hydraulic engineering in the U.S.;

1898 to 1903, engineering work on C.P.R. Western Lines; 1903 to 1911, engineering work C.P.R. Irrigation Department, Calgary; in Jan. 1908, he was appointed Assistant Chief Engineer of the Department, which position he held to Jan. 1911, when he was appointed Chief Engineer. He became a student of the Canadian Society of Civil Engineers in 1889, associate member in 1895, and member in 1909.

A. E. Duff, whose appointment as District Passenger Agent, G.T.R., Toronto, we announced in our last issue, was born at Sherbrooke, Que., May 1, 1872, and entered G.T.R. service in 1887, since when his record has been: Winter, 1887, shovelling snow on section at Danby, Que.; summer of 1888, water boy on train between Richmond and Montreal, Que.; Feb. 1889, to Aug. 1889, switchman at St. Bruno, Que.; Aug. 1889 to April 1890, switchman, St. Isidore Jct. Que.; April, 1890, to Aug. 1890, night telegraph operator, Upton, Que.; Aug. 1890, to Aug. 1892, night telegraph operator, Actonville, Que.; Aug. 1892, to May, 1895, night telegraph operator, South Durham, Que.; June, 1895, to Mar., 1898, agent, Belœil, Que.; Mar. 1898, to Oct., 1901, agent, North Stratford, N.H.; Oct., 1901, to Aug., 1904, agent, St. Lambert, Que.; Aug., 1904, to Jan. 1907, Travelling Passenger Agent, Montreal; Jan. 1907 to Sept. 1908, General Agent Passenger Department, Winnipeg, all in G.T.R. service; and Sept. 1908 to Mar. 1, 1911, General Agent Passenger Department and also District Passenger Agent G.T.P.R. lines west of Lake Superior, Winnipeg.

TRANSPORTATION APPOINTMENTS.

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

Algoma Central and Hudson Bay Ry., Manitoulin and North Shore Ry.—G. A. Montgomery, heretofore Superintendend Michipicoten Division, A.C. & H.B.R. Michipicoten Harbor, has been appointed Superintendent A.C. & H.B. and M. & N.S. Rys, performing all duties heretofore handled by the General Superintendent and Traffic Manager, excepting construction. Office, Sault Ste. Marie, Ont. The office of General Superintendent and Traffic Manager, heretofore held by T. J. Kennedy, who resigned to become President of the Superior Construction Co., has been abolished.

H. J. Herrold, has been appointed General Agent in charge of all matters pertaining to freight and passenger traffic. Office, Sault Ste. Marie, Ont.

Canadian Northern Ontario Ry.—C. Price Green, heretofore Passenger Agent, Toronto, has been appointed District Passenger Agent. Office, Toronto.

Canadian Northern Pacific Ry.—D. O. Lewis, of Mackenzie, Mann & Co.'s staff, who has been acting engineer on the construction of the Portland Canal Short Line Ry., with headquarters at Stewart, B.C., has been appointed Division Engineer of C.N.P.D. lines on Vancouver Island. Office, Victoria, B.C.

G. B. Hughes, District Engineer, continues in charge of surveys on Vancouver Island.

W. Tuxford, heretofore Secretary to Third Vice President C.N.R., Toronto, has been appointed chief clerk to Division Engineer of C.N.P.D. lines on Vancouver Island, Victoria, B.C.

Canadian Northern Ry.—C. Price Green, heretofore Passenger Agent, Toronto, has been appointed District Passenger Agent. Office, Toronto.

J. C. O'Donnell, heretofore Trainmaster at Dauphin, Man., has been appointed Trainmaster at Winnipeg, vice M. B. Murphy, transerred to Duluth, Rainy Lake and Winnipeg Ry. service.

G. W. Chapman, heretofore conductor District 4, west of Kamsack, has been appointed Trainmaster at Dauphin, Man., vice J.C. O'Donnell, transferred.

Canadian Northern Steamships Ltd.—W. A. Mason, heretofore Soliciting Passenger Agent G.T.R., Toronto, has been appointed City Ticket Agent C.N.S. Ltd., Toronto.

Canadian Pacific Ry.—V. A. Harshaw, heretofore Superintendent District 1, Ontario Division, Toronto, has been appointed Superintendent District 2, Atlantic Division, vice R. King, transferred. Office, Woodstock, N.B.

J. K. McNeillie, heretofore Superintendent District 2, Ontario Division, London, has been appointed Superintendent District 1, Eastern Division, vice A. L. Smith, transferred. Office, Farnham, Que.

J. H. Sheldon, acting Trainmaster District 1, Eastern Division, Farnham, Que., has resumed his former position as conductor on that district.

A. L. Smith, heretofore Superintendent District 1, Eastern Division, Farnham, Que., has been appointed Superintendent District 3, Eastern Division, vice G. Hodge, transferred. Office, Montreal.

R. King, heretofore Superintendent District 2, Atlantic Division, Woodstock, N.B., has been appointed Superintendent District 1, Ontario Division, vice V. A. Harshaw, transferred. Office, Toronto.

E. Davis, heretofore rate clerk, has been appointed chief excursion clerk, District Passenger Agent's office, Toronto., vice H. R. Mathewson, transferred to Chicago.

A. McMillan has been appointed rate clerk in District Passenger Agent's office, Toronto, vice E. Davis, promoted.

G. Hodge, heretofore Superintendent District 3, Eastern Division, Montreal, has been appointed Superintendent District 2, Ontario Division, vice J. K. McNeillie, transferred. Office, London.

J. Scott, heretofore Trainmaster District 2, Saskatchewan Division, Saskatoon, has been appointed Trainmaster at Kenora, Ont., vice A. R. Holland, acting Trainmaster, transferred to Saskatoon, Sask.

W. A. Mather has been appointed Resident Engineer District 2, Manitoba Division, Winnipeg, vice P. R. Gransaull, resigned.

V. J. Melsted, heretofore transitman at Winnipeg, has been appointed acting Resident Engineer at Brandon, Man., vice T. Lees, Resident Engineer, transferred to Vancouver.

A. R. Holland, heretofore acting Trainmaster, Kenora, Ont., has been appointed Trainmaster District 2, Saskatchewan Division, vice J. Scott, transferred. Office, Saskatoon.

W. McGimpsey, heretofore storekeeper at Sutherland, Sask., has been appointed Storekeeper at Swift Current, Sask., vice W. J. Wood, transferred to Medicine Hat, Alta.

A. Burke has been appointed Storekeeper at Sutherland, Sask., vice W. McGimpsey, transferred to Swift Current, Sask.

H. J. Cardell has been appointed Superintendent of Agencies in charge of all matters pertaining to the agents of the Canadian Pacific Irrigation Colonization Co., vice A. B. Braddick resigned. He will report to J. S. Dennis, President C.P.I.C. Co. Office, Calgary, Alta.

W. J. Wood, heretofore Storekeeper at Swift Current, Sask., has been appointed Storekeeper at Medicine Hat, Alta., vice A. W. Gleaves, resigned.

D. Condell has been appointed Car Foreman at Nelson, B.C., vice W. Fowler resigned.

T. Lees, heretofore Resident Engineer, Brandon, Man., has been appointed Resident Engineer District 2, British Columbia Division, vice F. P. Wilson, resigned to enter private business. Office, Vancouver.

E. L. McCrea has been appointed Local Freight Agent, Vancouver, B.C., vice A. L. Clements, resigned.

J. McCreery, formerly wharf agent at Vancouver, B.C., has not, as mentioned in our last issue, been transferred, but has left the company's service.

H. Vollans, heretofore Roadmaster, Cascade Section, British Columbia Division, has been appointed Roadmaster of Vancouver Terminals.

F. G. Frieser has been appointed Assistant Foreign Freight Agent, vice H. D. Annable, deceased. Office, 1 Broadway, New York.

H. M. Tait, heretofore Travelling Passenger Agent Atlantic Service, Seattle, Wash., has been appointed General Agent Passenger Department Atlantic Service, vice T. J. Burns, resigned. Office, 232 Nicollet Ave., Minneapolis, Minn.

H. R. Mathewson, heretofore chief excursion clerk, District Passenger Agent's office, Toronto, has been appointed chief clerk to General Agent Passenger Department, Chicago, Ill.

J. J. Forster, heretofore City Passenger Agent Atlantic Service, Seattle, Wash., has been appointed Travelling Passenger Agent Atlantic Service, vice H. M. Tait, promoted to Minneapolis. Office, 609 First Ave., Seattle, Wash.

Chicago and North Western Ry.—J. M. Copeland, heretofore Travelling Freight and Passenger Agent, Chicago, Milwaukee and St. Paul Ry., Toronto, has been appointed Travelling Agent C. and N.W. Ry., vice F. H. Terry, who has entered the Great Northern Ry. service. Headquarters, Toronto.

Chicago, Milwaukee and St. Paul Ry.—J. M. Copeland, heretofore Travelling Freight and Passenger Agent, Toronto, has resigned to enter the Chicago and North Western Ry. service.

Duluth, Rainy Lake and Winnipeg Ry.—M. B. Murphy, heretofore Trainmaster Canadian Northern Ry., Winnipeg, has been appointed Superintendent D.R.L. & W. R., vice D. T. Murphy, resigned. Office, Virginia, Minn.

Grand Trunk Ry.—J. W. Farrell, heretofore Trainmaster District 3, Eastern Division, Richmond, Que., has been appointed Trainmaster District 1 Eastern Division. Office, Island Pond, Vt. Reports for District 1, heretofore made to Trainmaster Connolly are made to J. W. Farrell at Island Pond. J. J. Connolly continues as Trainmaster, District 2.

R. P. Smallhorn, heretofore Freight Agent at Quebec and Point Levi, has been appointed Trainmaster District 3, Eastern Division, vice J. W. Farrell, transferred to Island Pond, Vt. Office, Richmond, Que.

W. J. Nixon, heretofore Chief Dispatcher Districts 4 and 5, Montreal, has been appointed Trainmaster District 5. Office, Montreal. Reports for District 5, heretofore made to Assistant Superintendent Coyle, Montreal, will be forwarded to Trainmaster's Office, Montreal.

E. S. Waterson, has been appointed Chief Train Dispatcher Districts 4 and 5,, vice W. J. Nixon, promoted to Trainmaster. Offiffice, Bonaventure station, Montreal.

B. Chown has been appointed Soliciting Passenger Agent, Toronto, vice W. A. Mason, resigned to enter other service.

W. R. Davidson has been appointed Trainmaster Districts 16, 17 and 24, Districts 18 Komoka to Glencoe, District 19 Glencoe to Kingscourt Jct., Port Colborne to Welland, Jct., Port Robinson to Port Dalhousie District 20 Tillsonburg Jct., to Harrisburg, reporting to the Assistant Superintendent. Office, Hamilton, Ont.

J. Leys has been appointed foreman erecting shop, Battle Creek, Mich, vice A. G. McLellan.

W. G. Spencer has been appointed foreman machine shop, Battle Creek, Mich., vice M. H. Westbrook, resigned.

Great Northern Ry.—F. H. Terry, heretofore Travelling Agent Chicago & Northwestern Ry., has been appointed Travelling Agent succeeding F. A. Nancekivell, who has been appointed General Agent, Minneapolis, St. Paul and Sault Ste. Marie Ry., at Toronto as announced in our last issue.

Manitoulin and North Shore Ry.—See Algoma Central and Hudson Bay Ry.

Northern Pacific Ry.—W. Adamson, heretofore Contracting Freight Agent, Winnipeg, has been appointed Travelling Freight Agent, Detroit, Mich., covering Ontario territory, vice W. E. Belcher, resigned.

Ottawa and New York Ry.—F. J. Balch, heretofore General Freight Agent, has also been appointed General Passenger Agent, vice H. K. Gays, resigned. Office, Ottawa.

Quebec and Saguenay Ry.—J. F. Guay heretofore Chief Engineer, has been appointed Manager. Office, Richelieu Bldg., Quebec.

A. H. N. Bruce, has been appointed Chief Engineer, vice J. F. Guay, appointed Manager. Office, Richelieu Bldg., Quebec.

Richelieu and Ontario Navigation Co.—J. E. Cookson has been appointed Baggage and Claims Agent, vice R. McEwen, deceased. Office, Montreal.

Rutland Rd.—W. M. Skinner having resigned as General Baggage Agent, all station and train baggage reports and correspondence relating to baggage and baggage claims are addressed to C. Hartigan, General Passenger Agent, Rutland, Vt.

Temiskaming and Northern Ontario Ry.—J. Drinkwater, District Roadmaster, North Bay, has been transferred, temporarily, to construction work on the Porcupine branch, in charge of tracklaying and steam shovel work.

S. J. Faught, Supervisor, is acting as District Roadmaster, North Bay, vice J. Drinkwater, temporarily transferred to the Porcupine branch.

Wabash Rd.—The title of Jas. Gass, New York State Passenger Agent, has been changed to District Passenger Agent. He will report to J. Maloney, General Passenger Department, Buffalo, N.Y.

White Pass and Yukon Route.—W. Taylor has been appointed Superintendent River Division vice P. F. Scharschmidt, resigned. Office, White Horse, Yukon.

Railway Building in Saskatchewan.—A return presented to the Saskatchewan Legislature showed that during 1910, grading was completed on 817.92 miles, and track laid on 475.04 miles on lines for most of which the Government had granted aid. This mileage was divided among the following companies:

	Grading.	Track laid.
C.P.R.	337.43	168.30
C.N.R.	267.24	239.69
G.T. Pacific R.	213.25	67.05

Of the mileage of track laid, trains were being operated over 185.59 miles by the companies anr over 289.45 miles by the contractors.

A Cornwall. Ont., dispatch says that in the county court there recently D. Monroe, of that place, sued the G.T.R. for damages for loss of time, inconvenience and injury to health consequent upon a train not stopping when signalled at a flag station. He was awarded $50 damages and costs.

The Minister of Railways on the Intercolonial Railway.

The Minister of Railways, in the course of a speech on transportation in the House of Commons Mar. 10, referred at considerable length to the Intercolonial Ry. He said it was not a small railway, its main tracks were 1,490.67 miles long and its sidings 446 miles. The capital expenditure to Mar. 31, 1910, was $82,819,218.52, while the capital expenditure for the year ended Mar. 31, 1911, will show about $1,000,000, the smallest amount expended for many years, notwithstanding the fact that a good deal of money is being expended on special works at Chatham, Sydney Mines and North Sydney. The net revenue which the I.C.R. was able to hand back to the Receiver General during the last financial year was $623,164.66. The total train mileage for the year ended June 30, 1910, was 6,762.53, an increase of 19,624 miles over the previous year. This increase was all in freight trains, as there was a decrease in the passenger train mileage owing to the decrease in the number of trains run. Notwithstanding the decrease in passenger train mileage there was an increase in the number of passengers carried.

The operating expenses of the line will compare very favorably with those of any other line in Canada, when everything is taken into consideration. The distribution of the operating expenses is as follows, the figures in brackets being those for the year ended June 30, 1909:—Maintenance of Way and Structures, 19.91%, (18.39%), maintenance of equipment, 21.19%, (22.24%), traffic expenses, 2.07%, (2.08%); transportation expenses, 54.49%, (54.84%); general expenses, 2.34%, (2.45%). The I.C.R. has to contend with the keenest competition, particularly with water transportation, and this will always keep the rates low. At Montreal the railway had to compete with water transportation during a long season of open navigation, and the rates for the entire year, on some commodities, had to be made on the basis of water borne competition. Then the I.C.R. had to carry freight as between Montreal and St. John at the same rate as the C.P.R., although the latter's haul line was 250 miles shorter, and there was water competition between Halifax and Cape Breton points all the year. Then again the I.C.R. was never built as a straight commercial proposition or it would not have been located in the peculiarly meandering way in which it has been built. Further, there was no line in Canada that gave so good a service to the people all along the line as the I.C.R. Coming to the question of rates, the Minister stated that better freight and passenger rates were given on the I.C.R. than on other lines. The rate per ton per mile worked out for the I.C.R. at .553 of a cent., against .778 of a cent. for the C.P.R., .672 of a cent. for the G.T.R., and .734 of a cent. for the Canadian Northern Ry., while the rate per passenger per mile was 1.691c on the I.C.R., against 1.821c on the C.P.R.; 1.767c on the G.T.R., and 2.184c on the Canadian Northern Ry. If the C.P.R. had been operated on the I.C.R. basis for the year ended June 30, 1910, it would have earned $17,035,236 less for freight, and $1,743,918 less for passengers than it did; while if the I.C.R. had been operated on the C.P.R. basis, its earnings would have been increased by $2,485,000 from freight and by $203,968 from passengers. The cost of running a train one mile on the I.C.R. was during the year ended June 30, 1910, $1.300, against $1.504 on the C.P.R., $1.817 on the G.T.R., and $1.581 on the Canadian Northern Ry. These observations brought him back to the original proposition that the I.C.R. did not earn a large surplus, despite its position and location as a product of confederation, simply because its freight and passenger rates are the lowest in the Dominion.

The Minister then stated that during the nine months ended Dec. 31, 1910, the I.C.R. had out of revenue, laid 55.66 miles of 80 lb. rails; ballasted 135.5 miles of track, put in 627,711 new ties, and 314 sets of switch ties, in addition to expending $153,446.16 on heavy repairs; a large sum on locomotive repairs; an excess of $96,000 had been paid for rolling stock repairs over the same period of 1909; of $236,000 for maintenance of way and structures, and from the maintenance of equipment fund there had been provided within the same period, three Pacific type locomotives, 50 steel frame 30 ton box cars, 21 steel dump 50 ton coal cars, 100 box cars, 30 tons capacity, and 50 wood cars 30 tons capacity, at a cost of $320,670. This expenditure was met out of a fund created by setting aside $25,000 a month out of revenue, and for a rail renewal fund $12,500 a month was created out of revenue. The balance from these funds was not handed back to the Receiver General, but was retained towards future expenditures. He proposed to establish another fund, in the nature of an insurance fund. The value of the property destroyed at Campbellton by fire was estimated at $76,000 He proposed charging this amount to revenue, and to make a further appropriation from net revenue of $100,000, and put it into renewal equipment. If necessary, he proposed to obtain parliamentary sanction for this and the other special accounts, and to settle on definite principles what should be charged to revenue account, and what to capital. It was estimated that at the end of the financial year, Mar. 31, the I.C.R. would show a net revenue of $700,000.

Referring to the relations between the I.C.R. and the G.T.R., the Minister said a few years ago an arrangement was made for the Intercolonial to run into Montreal, and by agreement with the G.T.R., its terminals are used, and its line run over from Ste. Rosalie to Bonaventure, and there is an arrangement for the interchanging of traffic. The G.T.R. gathered traffic mainly in Ontario, and handed it to the I.C.R. at Montreal during 1910, on which the I.C.R. earned $908,066.35 in freight, and during the same period the I.C.R. handed to the G.T.R. at Montreal, traffic, on which it earned $753,452.28. The arrangement has been a good one; it was to hand over to the G.T.R. at Montreal, all traffic which was not otherwise routed, the G.T.R. being bound to hand over unrouted traffic to the I.C.R. It would not be very long before the G.T.R. and the G.T. Pacific would come to the Government or to the I.C.R. management and ask to be relieved from their arrangement to hand over this traffic at Montreal. The G.T.R. will want to carry this traffic on to Levis, and hand it over there to the G.T. Pacific. He was not prepared to say what would happen when this request was made; but he did not think it would be granted unless the terms were right. "I believe," he went on to say, "the future of the I.C.R. is bound up in getting an exchange of traffic with a western through line that runs from the Pacific to the Atlantic, and from the Pacific to the St. Lawrence at least. I believe that is what will make the I.C.R. of still greater benefit to the people of Canada than it has been in the past. The Canadian Northern must shortly have a through line from the Pacific ocean down to Montreal and Quebec. It must get down to the seaboard in some way. I have an idea that in years to come, perhaps before long, the I.C.R. ought to get traffic from the Canadian Northern Ry., its through traffic as well as its local traffic; and if the time ever comes when we have to release our arrangement with the G.T.R., which may

not be for many years, then I think the proper thing for the I.C.R. would be to link up with the Canadian Northern Ry., and hand its traffic from Montreal and Quebec, its through as well as its local traffics, over to the Canadian Northern as far as possible for transportation west."

U. S. Freight Rate Advances Refused.

Following are the official summaries of the Interstate Commerce Commission's two recent decisions refusing applications by railway companies to advance freight rates:

THE EASTERN CASE.

In re investigation of advances in rates by carriers in official classification territory.

Carriers in official classification territory filed tariffs with this Commission naming increases upon all class rates and upon one-half of the commodity rates within that territory. The Commission, under provisions of the Mann-Elkins law, instituted proceedings of inquiry into the reasonableness of such increased rates, and, pending such investigation, the carriers voluntarily postponed the effective dates of the tariffs filed. After full hearing and investigation of the matter and upon all the facts and circumstances disclosed by the record; Held, That there is no evidence before the Commission which establishes the necessity for higher rates. The probability is that increased rates will not be necessary in the future. In view of the liberal returns received by these carriers in the past 10 years, they should be required to show, with reasonable certainty, the necessity before the increase is allowed. If actual results should demonstrate that the Commission's forecast of the future is wrong, there might be grounds for asking a further consideration of this subject.

The act to regulate commerce, as amended in regard to increased rates, should not receive exactly the same interpretation which has been put upon the English act in regard to advanced rates. The English act creates a presumption that the rates in effect on Dec. 31, 1892, were reasonable rates, and the justice of any increase must be tried by that standard, whereas the act to regulate commerce as amended does not intend to enact that all rates in effect on Jan. 1, 1910, are just and reasonable. Upon the contrary, it is open to any shipper or to this Commission to attack such a rate as unjust and unreasonable. The only effect of our statute is to cast, in certain cases, the burden of proof upon the carrier.

Before any general advance in rates can be permitted it must appear with reasonable certainty that carriers have exercised proper economy in the purchase of their supplies, in the payment of their wages and in the general conduct of their business.

The Commission has been compelled to dispose of this case upon the evidence available, but there is no testimony tending to show the cost of reproducing these properties. It is plain that a physical valuation would introduce in the calculation a new element which might lead to a different conclusion. Congress ought to authorize a reproductive valuation of those railroads subject to Federal jurisdiction. The interest of the public ought not to depend upon a valuation made entirely by the owners of these properties, no matter how honestly the work may be prosecuted.

These class rates have been continuously in effect for the last 30 years, and less complaint with respect to the adjustment of rates has been received from this territory than from any other with which this Commission has to do. During this long period business has adjusted itself to this scheme of rates, and the Commission is not disposed upon the mere suggestion that some better scheme might have been originally devised, to subvert the conditions which have become established.

Commodity rates stand somewhat different. An examination of the schedules shows that most of these commodity rates were carried under the classification when tariffs were first filed with this Commission in 1887, and that the present commodity rates are from 10 to 25% lower than the class rates then applicable. Carriers have frequent occasion to vary their commodity rates with varying conditions. While earnest objection has been made to the advance in class rates, in only three or four instances has the increase in commodity rates been especially attacked.

For these reasons the Commission dislikes to tie up, by hard and fast order, these commodity rates, and has concluded, as to all the rates involved in this proceeding, to simply require the defendants to cancel on, or before Mar. 10, 1911, their advanced tariffs an file and to restore their former rates, which are the rates now in effect. If this requirement is not complied with the proposed rates will be suspended, the necessary findings of fact made, and the usual two-years' order issued as to all the tariffs involved.

THE WESTERN CASE..

In re investigation of advances in rates by carriers in Western Trunk Line, Trans-Missouri, and Illinois Freight Committee territories.

The principal carriers in Western Trunk Line, Trans-Missouri, and Illinois Freight Committee territories filed with the Commission tariffs increasing their rates upon some 200 commodities in that territory, but, pending investigation involving the reasonableness of such increased rates, the carriers voluntarily suspended the effective dates of the tariffs. After full hearing and investigation of the matters involved and upon all the facts and circumstances disclosed by the record; Held, That the proposed rates are beyond the limitations placed by law upon the carriers, and should not become effective..

The distinction between the English act as to increased rates and the act to regulate commerce upon that subject is clear. The effect of the English statute was to cast upon the railway company the burden of proving that the increase of the rate was reasonable, whereas the act to regulate commerce as amended requires the carrier to show the reasonableness of the increased rate. Under the act of Parliament the carrier is called upon to justify the difference between its previously existing rate and the rate established, while under the act of Congress the carrier is called upon to prove that the new rate as a whole is reasonable.

The phrase, "the burden of proof shall be upon the common carrier," in the Mann-Elkins Act, means that the railroad which increases its rates, if challenged, must assume to prove to this Commission that the increased rates are within the words of description and limitation used in the act; that is, that they are just and reasonable. They must satisfy the mind of this Commission of this fact.

It is doubtless true that in its control over the charges which the railroads make this Commission exercises a power so extensive as to justify the broadest consideration of the economic and financial effects of its orders, but the Government has not undertaken to become the directing mind in railroad management. This Commission is not a general manager of railroads, and no matter what the revenue the carriers may receive there can be no control placed by the Commission upon its expenditure, no improvements directed, and no economies enforced.

The strength of the carriers' case is in these two contentions: (1) That the roads are not earning a fair return upon the valuation of their property; 2) That the cost of operating has increased because of increased wages. While it is true that cost of operation has increased by the amount shown as allowed to labor and addition to wages, it is also true that operating revenues have increased so as to more than absorb increased operating expenses. Moreover, cost figures furnished would indicate that under skilful management an additional tonnage may be handled under a higher wage schedule without increasing the cost of the service given.

It appears that these commodity rates already paid their due share of the value of the service rendered by the carriers. Many of them, in fact, are now twice as high for the haul immediately west of Chicago as corresponding rates for a similar haul immediately east of Chicago.

Our laws do not seek to establish dominion over private capital for any other purpose than to make sure against injustice being done the public, and thereby to make such capital itself more secure. The Commission is dealing here with a difficult problem, involving multitudinous facts and an infinite variety of modifying conditions, which make the establishment of principles and the framing of policies a matter of slow evolution. Congress has laid down a few rules. These rules the Commission is attempting to apply. It is not for the Commission to say that it represents the Government and may have a policy of its own which in any degree runs counter to the power granted to the Commission or the duty imposed upon the Commission. The railroads may not look to this tribunal to negative or modify the expressed will of the legislature. They have laid before the Commission the facts and law which would make for a justification of their course in the increasing of rates, but to the mind of the Commission their justification has not been convincing.

The carriers herein are requested to withdraw the proposed tariffs forthwith. If such action is not taken on or before Mar. 10, 1911, the Commission will further suspend these rates, make appropriate finding, and issue an order directing the maintenance of the present rates for a period of two years from that date.

Early Maritime Province Railways.

Prior to Confederation, according to answers to questions in the House of Commons by the Minister of Railways, recently, the province of Nova Scotia built 145 miles, and the province of New Brunswick 108 miles of railway lines, which now form part of the Intercolonial Ry. The mileage in Nova Scotia was built between 1854 and 1858, and extended from Halifax via Truro to Pictou, and the Windsor branch, the cost of construction being $6,124,241.15. The mileage in New Brunswick was built between 1856 and 1860, and included the following lines: Moncton to Shediac; St. John to Rothesay, Rothesay to Hampton; Hampton to Sussex, and Sussex to Moncton; the total cost being $4,642,484.39. These amounts were assumed as provincial debt account in 1874, 1875 and 1876.

Prior to Confederation the Prince Edward Island Government built 198½ miles of railway between 1871 and 1875 as follows: From Charlottetown to Royalty Jct.; from Royalty Jct, to Summerside; from Summerside to Tignish; from Tignish to Mount Stewart; from Stewart to Souris; from Mount Stewart to Georgetown. The amount expended was $3,114,731.11, which was assumed as provincial (P.E.I.) debt account, 1874, 1875 and 1876.

Hon. G. P. Graham on Railways.

Transportation, said the Minister of Railways, in a speech in the House of Commons Mar. 10, has as much to do with the success of a country as tariff has. These two may be said to be interwoven in a measure, but, if the methods are not provided by which the wealth producers can get the products of their labors to market at a reasonable rate, with fair speed and in good condition, there is little use in tariffs, and less use in hunting for markets for these products. It is no exaggeration to say that in the matter of perfecting transportation facilities by aid from various sources, Canada, possibly leads the world in the courage she has shown. There is a difference of opinion as to the propriety of further encouraging these great transportation companies by cash subsidies, by land grant or by guarantee. It was not the policy of the present government to any more give aid by way of land grants for the extension of transportation facilities. The land of the Dominion had become too valuable to give in this way, and the potentialities of increase in that value were so great, on account of the rapid development of the country, that it was more practical to give in dollars and cents any aid proposed. And besides when it is given in this way, the people know exactly what they are paying for the benefit received. He had no fear of the success, present or future, of the railway companies of Canada, and continued: "If there be north-and-south lines we must not forget that a line running south that can take traffic from Canadian roads also runs north, and can bring traffic to Canadian roads. And Canada having the geographical position on this continent that she enjoys ought to be able to more than hold her own in the carrying trade of the continent, other things being at all equal Our rail routes are shorter, and we own the largest portion of the waterways that lead from the west to the east. Under these conditions, it rests, I think, with the people of the Dominion of Canada themselves to say whether they shall maintain their carrying trade, and also to say whether they shall, in the future, do their own carrying trade, and also a portion of the carrying trade of the great country to the south of us."

He next referred to the work of the Board of Railway Commissioners, stating that it was admitted in Canada, as he believed it was admitted outside Canada, that the Board as now constituted was doing better work than any similar body in the world, and it was the most popular tribunal for the settlement of difficulties in which the people are concerned that exists to-day. It had been suggested that counsel should be engaged to protect the interests of the public in cases coming before the Board. That was done in special investigations, but he did not think it was necessary in every case. There had been added to the staff of the Board, an operating department, at the head of which there was a practical railway man, to advise the Board. The working of that department had proved very beneficial, and it was much easier to get a decision as to cases, involving operation matters, than formerly.

The railway mileage in Canada, that is, the mileage of main track in operation, in 1910, was 24,731, against 24,104 in 1909, and 18,140 in 1901. In this mileage the G. T. Pacific Ry. was not included, it being yet operated as an uncompleted road. The mileage under construction on June 30, 1910, was 4,500 miles. The capital invested was $1,410,297,687. Aid had been granted towards the building of these railways by the Dominion, the several provinces and by municipalities to the amount of $190,753,062, of which $1,789,723 was given last year, while in addition last year the Dominion made a loan of $10,000,000 to the G.T. Pacific Ry. The Dominion had granted 32,040,378 acres of land in aid of railway construction and the province 23,251,943 acres. The number of passengers carried last year was 3,211,267 greater than in the previous year, and 17,508,853 greater than in the year ended June 30, 1901, while there was an increase of 7,640,608 tons of freight carried over the total for the year ended June 30, 1909, and of $37,483,495 tons over the year ended June 30, 1901. The gross receipts of the railways last year totalled $173,956,217, against $143,956,336 in the preceding year, and $72,898,- while the operating expenses were last 749 for the year ended June 30, 1901; year $120,405,440 against $104,600,084, and $50,368,726 for the year ended June 30,1909. The available rolling stock at June 30, 1910, consisted of 4,079 locomotives, 119,713 freight cars, and 4,330 passenger cars, there having been added during the year 110 locomotives, 138 passenger cars, 1,934 freight cars, and 789 company cars. There were in the service of Canadian railways on June 30 last 123,768 employes, whose wage bill amounted to 67,167,703. In addition, there were 16,709 employes engaged in outside operations such as steamers and hotels, whose remuneration amounted to $5,169,923. The aggregate would therefore be 140,477 employes, with a total wage bill of $72,337,626. Assuming that each railway employe represents five persons, it is obvious that about one individual in 10 of the total population finds a livelihood from the railways of Canada.

"Now," said the Minister in conclusion "to put it briefly, these figures show, I think, these facts: The year 1910, measured by the increased volume of traffic measured by the earnings, economic administration, satisfactory maintenance, and swelling mileage, and measured by every proper standard, appears to have been the best year in the history of Canadian railroads."

Railway Development.

The following matter was too late to be included with the other matter under this heading on pages 319 to 323:

Brandon Transfer Ry.—A letter was received by the President of the Brandon, Man., Board of Trade, Mar. 15, from H. A. K. Drury, of the engineering staff of the Board of Railway Commissioners, Winnipeg, stating that he would reach the city Mar. 23, to make the necessary surveys of the route for the proposed transfer railway, to connect all the railway lines reaching the city. (Mar., pg. 205.)

Cobalt Range Ry.—Application is being made to the Dominion Parliament to extend the time within which the company may build the lines authorized by chap. 73 of the statutes of 1909. MacCracken. Henderson, McDougal and Greene, Ottawa, are solicitors for applicants. (July, 1909, pg. 475.)

Quebec and New Brunswick Ry.—The charter for the construction of a line of railway, to be known as the Q. and N.B. Ry., from Quebec city to St. John, N.B., has been secured by T. Malcolm, President of the International Ry., of New Brunswick. The route of this proposed line is from the south side of the St. Lawrence River near the site of the Quebec Bridge right across the country, entering New Brunswick near Connors, thence to St. Leonards, the terminal of the International Ry., of New Brunswick, on the St. John River, thence to Grand Falls, Aroostook Jct., and the South shore of the St John River, via Woodstock, and Fredericton to St John. The distance from Quebec to St. John by this route is 402 miles against the 552 miles by the National Transcontinental Railway route, made of 462 miles Quebec to Moncton, and 90 miles from Moncton to St. John, via I.C.R. (Feb., pg. 113. See also St. John Valley Ry.)

Reid Newfoundland Ry.—The surveys for the Trepassey branch line have been completed. Engineer Powell, who was working at the main line end of the branch has returned to St. Johns, and Engineer Joyce, with his party, completed the location into Trepassey. It is expected that work will be started on the line during the summer. (Mar., pg. 207.)

St. John Valley Ry.—There was a lengthened debate in the House of Commons, Mar. 20, on a resolution proposed by the Minister of Railways, that the Dominion Government should lease the proposed line from Grand Falls to St. John, N.B., towards the building of which the New Brunswick Government has offered a subsidy of $25000 a mile. The lease, if made, will be for 99 years, and the rental will be 40% of the gross receipts from operation. The resolutions were adopted with some slight amendments, the most important one being that the necessary equipment was to be provided by the Intercolonial Ry.

The report of the engineer in charge of the surveys was presented to the New Brunswick Legislature Mar. 17. After describing the Fredericton-St. John section, which has been under survey during the year, and for which several routes were gone over, D. F. Maxwell, the Chief Engineer, submits estimates showing the cost of the whole line. This is given in sections, and where alternative surveys have been made, the cost of each has been estimated. No one definite route is suggested for the line as a whole and consequently, until the route is finally determined upon, it is impossible to name any total sum as the estimated cost of the whole work. The estimated cost for the lightest section is $30,473 a mile, and for the heaviest, $123,00 a mile. This latter estimate covers the 23 miles from Evandale to St. John, and includes $528,000 for a bridge over the St. John River, and $1,317,625 for a bridge over the Kennebecasis River.

T. Malcolm, President of the International Ry. of New Brunswick, wrote the N.B. Government offering, on behalf of the Quebec and New Brunswick Ry., which has a charter to build a line from Quebec to St. John, to enter into a contract to build the proposed St. John Valley Ry., from Grand Falls to St. John, such line, when completed, to be leased to the Canadian Government and operated as part of the Intercolonial Ry. To this letter the Government replied that as soon as the act of the Legislature granting aid for the line becomes operative by proclamation, and the Dominion Legislation is passed the Government would be prepared to discuss the matter of a contract with Mr. Malcolm. See also Quebec and New Brunswick Ry. (Mar., pg. 207.)

Grand Trunk Pacific Railway.—A Winnipeg press dispatch of Mar. 24 says contracts were let that day for $17,000,000 of work on lines in the west, and that the contracts include 143 miles on the Calgary branch, 59 miles on the branch to Battleford, Sask.; 68 miles on the Melville-Regina branch, 72 miles on the Alberta coal branch, and 50 miles on the line from Biggar to Calgary. "Arrangements," says the dispatch, "are also being made for the erection of 140 station buildings and 100 hotels." The branch lines referred to are already under construction, and the contracts reported let are apparently for extensions, but there is undoubtedly something wrong about the reported erection of 100 hotels.

Large Orders For Steel Rails.

Mackenzie, Mann and Co. have ordered recently 90,000 tons of steel rails, as follows:—From the Dominion Iron and Steel Co., 10,000 tons 80 lbs., for Ontario lines; 35,000 tons for lines in Northwestern Provinces, and 10,000 tons 80 lbs. for British Columbia lines. From the Algoma Steel Co., 25,000 tons for lines in the Northwest Provinces, and 10,000 tons 80 lbs. have been ordered in the United States for the line between Duluth and Virginia, Minn.

The National Transcontinental Railway Commissioners have ordered 34,927 gross tons from the Algoma Steel Co., and 26,273 tons from the Dominion Iron and Steel Co., all 80 lbs.

The Grand Trunk Ry. has ordered 37,500 tons of 100 lbs. rails, divided between the Algoma Steel Co. and the Dominion Iron and Steel Co.

An unconfirmed Montreal press dispatch states that the C.P.R. has ordered 100,000 tons from the Algoma Steel Co., and 10,000 tons from the Dominion Iron and Steel Co., and that it is in the market for an additional 20,000 tons.

Additional Railway Contracts Awarded.

The Kootenay and Alberta Ry. has let a contract to Grant, Smith & Co., of Spokane, Wash., for the construction of 13 miles of line from about a mile west of Pincher, Alta., southwesterly to the Western Coal and Coke Co.'s mines at Beaver Creek.

Press reports state that the Alberta Central Ry. has let a contract to Janse, McDonald and Co. for grading and ballasting 100 miles, 64 west of Red Deer, Alta., and 36 east of it.

Among the Express Companies.

The Ontario Legislature has provided for the taxation of express companies operating in the province, at the rate of $500 for each 100 miles, or part thereof, of line operated over.

W. Bradshaw, who was recently arrested in London, Ont., on charges of raising the amounts of several Canadian Ex. Co.'s money orders to the limit mentioned on the stubs, was sentenced recently at Ingersoll, Ont., to five years in Kingston penitentiary.

The Dominion Ex. Co., incorporated under the Dominion Companies Act. has been licensed under the act respecting provincial corporations, to hold and dispose of real estate in Ontario, as if it had been incorporated under the Ontario Companies Act.

The bill which was recently before the House of Commons to compel all express companies to make returns of unclaimed balances to the Government was again considered by the Railway Committee Mar. 14 and it was decided that the companies must make such returns, but that, for the present, they would not have to hand over unclaimed amounts to the Government and the bill was reported as amended.

Saskatchewan Legislature. — Among the acts assented to Mar. 14, were the following:—Incorporating the Shaw Lumber and Ry. Co.; Respecting the City of Regina's Street Railway system; Amending the Railway and Telephone Department Act; Incorporating the Moose Jaw Electric Ry.; Incorporating the Saskatchewan Co-Operative Elevator Co.

The International Association of Ticket Agents, which has its headquarters in Philadelphia, Pa., met at Norfolk, Va., March 14 and 15, and afterwards went for a trip through Florida and Cuba.

Grain Elevator Notes.

The C.P.R. is reported to have the construction of an elevator at Port Burwell, Ont., under consideration, with other improvements.

Negotiations are proceeding in Calgary, with a view to the erection of an elevator at Delburne, Alta., and it is hoped to have the work under way very shortly.

Three men have been sentenced to five years each in the Manitoba penitentiary, for the theft of about 1,200 bush of wheat from the Empire elevator at Fort William, Ont.

The Taylor Milling and Elevator Co., Ltd., of Lethbridge, Alta., has been licensed to carry on its business in British Columbia, with office at Nelson, and A. M. Johnson as its attorney.

The charges against the Thunder Bay Elevator Co. for making incorrect returns to the Warehouse Commissioner, were dismissed, at Winnipeg, Mar. 15, on the ground that the prosecution had not acted in conformity with the act, in view of the dates of the alleged offences, and the information given.

The Saskatchewan Legislature has amended the Grain Growers' Elevator Co.'s bill, in its passage through committee by providing that the Government may aid in the erection or acquisition of any local elevator by loaning up to 85% of the estimated cost of the same, such sum to be repayable in 20 equal annual instalments of principal and interest, the loan to be secured by a first mortgage on the elevator.

The appeals of the Grand Trunk Pacific Terminal Elevator Co., as owner of the G.T.P. elevator at Fort William, Ont., and of the Grand Trunk Pacific Elevator Co., as lessees, against the assessments made by the city, on the property, and for a business tax, were allowed by the Ontario Railway and Municipal Board, Mar. 15, and the assessments set aside. For the companies it was held that there was an agreement between the G.T.P.R. and the city, ratified by the Ontario Legislature, exempting the company from all taxes, except school taxes, on all lands, buildings, structures and property acquired and held for railway purposes for 15 years, from May 1, 1905, and that the elevator properties were part of the necessary terminal properties incidental to the traffic of the railway.

The Dominion Government's grain elevator bill was dealt with during March by a special committee of the Senate, and evidence was heard dealing with the matter, from the point of elevator owners. The clause forbidding stock holders in terminal elevators, having an interest in the handling of grain or being dealers in grain, was objected to by interests from Port Arthur and Fort William. Ont., and it was stated that, apart from eight, owned by the C.P.R., all the terminal elevators at the dual ports were controlled by the Line Elevators Co. and, if the clause were passed, they would be forced to abandon the terimnal elevators, without which they could not carry on their business profitably. Other interests from the same quarter objected to their elevators being dealt with under this section, as they were really wheat hospitals.

The Manitoba Government has decided to petition the Dominion Government to amend the Railway Act so as to compel railway companies to place telephones in their stations. The Manitoba Premier in speaking on the subject, is reported to have stated that his Government had installed telephones in stations at its own expense, but he did not consider this fair.

Telegraph and Cable Matters.

The Department of Labor, has, upon the request of the Great North Western Telegraph Co.'s operators, agreed to the appointment of a board of conciliation to enquire into the matter of wages and hours. D. Campbell, Toronto, has been named as the men's representative.

The Board of Railway Commissioners will sit at Toronto, Apr. 24, to proceed with the general enquiry into the tariffs and tolls of telegraph companies, and the settlement of proper forms for them to use. The Dominion Government has retained I. Pitblado, K.C., Winnipeg, and W. S. Buell, Brockville, Ont., to conduct the further proceedings before the Board in this enquiry.

The recommendation of the various boards of trade in the West Indies concerning the future of cable communication between Canada and the West Indies, have been received by the committee having the matter in hand. The proposals cover the public ownership and operation of the cables in the British West Indies, and possibly the system northward to Halifax, N.S., with the duplication, or supplementing, of the line from Halifax to Jamaica by a wireless installation.

G. D. Perry, appointed General Manager G.N.W. Telegraph Co., vice I. McMichael, Vice President and General Manager, deceased, was born at Whitby, Ont., Apr. 19, 1858, and educated at Trinity College School, Port Hope. After some time with the Standard Bank of Canada, he entered Credit Valley Ry. service, being appointed cashier, Feb. 1880, and on the absorption of that railway by the C.P.R., he entered Dominion Telegraph Co.'s service, Feb. 1881, and remained with the G.N.W. Telegraph Co., when it leased the Dominion Telegraph Co.'s lines, grapher, accountant, secretary and auditor, Secretary-Treasurer and Superintendent of Supplies, the two last named positions having been held since 1902.

The following general circular has been issued in connection with appointments in the Great North Western Telegraph Co., consequent on the death of I. McMichael, Vice President and General Manager:—Geo. D. Perry has been appointed General Manager. All correspondence for the General Manager's Department should now be addressed to him. Cable registrations, enquiries and information as to tariffs and rates will continue to be sent to him as General Manager.

A. C. McConnell has been appointed Secretary and Auditor of the company.

D. E. Henry has been appointed Treasurer. All remittances should hereafter be addressed to him, and he will also have charge of the money transfer service, and all advices regarding this service should be addressed to him, and he will, when necessary, authorize bank drafts for payment of transfers.

Geo. Watt has been appointed Superintendent of Supplies. All requisitions and correspondence in connection with supplies should be addressed to him. Offices in New York State will continue to send requisitions for supplies to A. R. Porte, Superintendent, Ogdensburg, N.Y. Railway Agents who have been sending requisitions through their Superintendent of Telegraph will continue to do so.

A London, Eng., cable, March 12, says:—Parr's Bank and the Western Canada Trust Co. offer £410,900 sterling 6% first mortgage bonds of the Canadian Steel Foundries, Ltd., at 102. The prospectus states that provision is made for acquiring the remaining shares and for the retirement of the outstanding bonds of the Montreal Steel Works, Ltd.

ELECTRIC RAILWAYS

Canadian Street Railway Association.

PRESIDENT, D. McDonald, General Manager Montreal St. Ry.; VICE PRESIDENT, J. Anderson, Manager Sandwich, Windsor and Amherstburg Ry.; SECRETARY-TREASURER, Acton Burrows, Managing Director Railway and Marine World. ASSOCIATION'S OFFICE, 70 Bond St., Toronto. EXECUTIVE COMMITTEE.—C. E. A. Carr, General Manager Quebec Ry. Light, Heat and Power Co.; P. Dubee, Secretary Montreal St. Ry.; H. M. Hopper, Secretary-Treasurer, St. John Ry.; J. E. Hutcheson, Superintendent and Purchasing Agent Ottawa Electric Ry.; C. B. King, Manager London St. Ry.; W. R. McRae, Superintendent Motor and Truck Department Toronto Ry.

ASSISTANT SECRETARY, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

OFFICIAL ORGAN, THE RAILWAY AND MARINE WORLD.

Winnipeg Electric Ry., Co's Report.

Following are extracts from the report for the year 1910. The net earnings were $934,769.53, after providing for all operating expenses, taxes, the city's proportion of earnings, and other fixed charges. Out of these net earnings were declared four quarterly dividends amounting to $600,000, leaving a surplus of $334,769.53, which has been transferred to the credit of profit and loss, making a total credit to this acount at Dec. 31, of $1,196,199.56.

In accordance with the plan of extensions adopted at the last annual meeting, the following improvements and additions to the equipment and system have been made in the various departments:

Track and Roadbed,—10.157 miles of track was laid as follows: 4,803 miles, with concrete foundation and asphalt pavement; 4.422 miles with broken stone foundation and gravel pavement; and .931 mile surface track; Rolling Stock.—26 large double-truck closed motor cars with wide vestibules, equipped with air brakes, electric heaters both in the body of the car and the motorman's vestibule, and many other modern appliances to ensure the safety of passengers and operators were constructed in the company's shops and put into service. Three new snow sweepers of latest modern design were purchased and are also in service; Electric Lighting and Power Distribution System,—791 new poles were erected, and 209,340 lbs. of wire with 135 transformers put up, in extension of the light and power distribution system; Gas Distribution System,—38,729 ft. of new gas main were laid, and 827 new gas services installed in extension of the gas distribution system; Construction, 1910.—Six new Babcock-Wilcox boilers at power house, Assiniboine Ave., boiler settings, steel smoke stack, etc. Capacity of boilers, 3,000 h.p.; addition to pump room; gas holder, capacity 1,000,000 ft., partly erected; the whole of the tank, inner lift, and portion of the middle lift set on piles and concrete base; new retort house and chimney at gas works, with 10 benches of 6 retorts each bench; new brick and steel 5-track car barn at Main St., North.

ASSETS.

Cost of property: street railway, electric lighting, electric power, gas		$14,612,222 68
Stores		142,456 39
Accounts receivable		186,277 10
Cash on hand and in bank		235,629 47
Conductors' working fund		4,463 70
Subsidiary companies		317,830 64
		$15,498,879 98

LIABILITIES.

Capital stock		$ 6,000,000 00
Bonds 5% payable Jan. 1, 1927		1,000,000 00
Bonds 5% payable Jan. 2, 1935		4,000,000 00
Debenture stock 4½% perpetual	£ 500,000 00	2,434,602 62
Accounts payable	195,362 07	
Dividend paid Jan. 2, 1911	150,000 00	
Wages for Dec.	26,625 90	371,987 97
Interest on bonds paid Jan. 2	125,000 00	
Accrued interest on debenture stock	27,175 00	152,175 00
Car license due Feb. 1, 1911	4,600 00	
City percentage due 1st Feb., 1911	63,293 70	67,893 70
Unredeemed tickets		2,055 61
Suspense		273,965 52
		$14,302,680 42
Surplus		1,196,199 56
		$15,498,879 98

CONTINGENT LIABILITY.

Suburban Rapid Transit Co.'s bonds	$500,000
Winnipeg, Selkirk & Lake Winnipeg Ry. Co.'s bonds	400,000
	$900,000

Interest and principal guaranteed.

REVENUE AND EXPENDITURE.

Gross earnings		$3,284,341 83
Gross expenses		1,654,833 60
Net earnings		$1,629,508 23
Fixed charges	$ 694,738 70	
Dividends	600,000 00	1,294,738 70
Surplus		$ 334,769 53

PROFIT AND LOSS ACCOUNT.

Balance at credit Dec. 31, 1909	$ 861,430 03
Net earnings	334,769 53
Balance at credit Dec. 31, 1910	$1,196,199 56

The following increases were made during 1910, over 1909: Gross receipts, $660,610.42 or 25.18%; operating expenses, $334,168.51 or 25.31%; net earnings, $326,441.91 or 25.05%. The net income per cent. of capital was 15.58 against 14.30 in 1909. The number of passengers carried was 31,369,421, an increase of 4,968,648 over 1909. The operating expenses for the year were 50.39 of the earnings, and the earnings per capita, were 10.02.

WINNIPEG, SELKIRK AND LAKE WINNIPEG RY. CO.

ASSETS.

Cost of property		$842,179 96
Stores		575 86
Cash on hand in bank		6,248 91
Agents' balances:		
Winnipeg	$224 11	
Selkirk	25 00	249 11
Accounts receivable		568 79
		$849,822 63

LIABILITIES.

Capital stock	$500,000 00	
Less unpaid	388,500 00	111,500 00
Bonds		400,000 00
Accounts payable		313,369 49
Suspense		6,272 80
		$831,142 29
Surplus		18,680 34
		$849,822 63

Interest and bonds guaranteed by Winnipeg Electric Ry. Co.

REVENUE AND EXPENDITURE.

Gross earnings		$75,725 16
Gross expenses		35,641 95
Net earnings		$40,083 21
Fixed charges:		
Interest on bonds	20,000 00	
Taxes, etc.	12,643 86	32,643 86
Surplus		$ 7,439 35

PROFIT AND LOSS.

Surplus for year ended Dec. 31, 1910	$ 7,439 35
Balance at credit Dec. 31, 1909	11,240 99
Balance at crdeit	$18,680 34

SUBURBAN RAPID TRANSIT CO.

ASSETS.

Cost of property	$407,939 59
Cash on hand	28 60
Cash in bank	1,500 44
W.E.R. Co. loan	201,257 47
Accounts receivable	1,345 70
	$612,071 80
Balance	2,694 26
	$614,766 06

LIABILITIES.

Capital stock	$100,000 00
Bonds	500,000 00
Accounts payable	13,841 79
Ticket account	485 07
Suspense	439 20
	$614,766 06

Bonds and interest guaranteed by Winnipeg Electric Ry. Co..

REVENUE AND EXPENDITURE.

Gross earnings		$56,016 46
Gross expenses		34,107 78
Net earnings		$21,908 68
Fixed charges:		
Interest on bonds	25,000 00	
Taxes, etc.	1,209 16	26,209 16
Deficit		$ 4,300 48

PROFIT AND LOSS.

Balance at credit Dec. 31, 1909	$1,606 22
Deficit for 1910	4,300 48
Balance at debit Dec. 31, 1910	$2,694 26

The boards for the current year, are as follows:

Winnipeg Electric Ry.:—President, Sir Wm. Mackenzie; Vice President, Wm. Whyte; Secretary-Treasurer, F. M. Morse; other directors, Sir Donald D. Mann, Sir Wm. C. VanHorne, D. B. Hanna, A. M. Nanton, Hugh Sutherland, R. J. Mackenzie.

Winnipeg, Selkirk and Lake Winnipeg Ry.:—President, F. M. Morse; Vice President, D. H. Laird; other directors, Wm. Whyte, A. M. Nanton, L. J. Loader, J. H. Munson, Hugh Sutherland.

Suburban Rapid Transit Co.:—President A. M. Nanton; Secretary, F. M. Morse; Wm. Whyte, D. B. Hanna, Hugh Sutherland.

Dominion Electric Railway Charters.

The Minister of Railways, replying to questions in the House of Commons recently, gave a list of electric railway companies which have been chartered by the Dominion Parliament since 1896, together with a statement as to the extensions of time granted to some of them. There were, he said, a number of other electric railway companies incorporated under provincial acts, and under provincial jurisdiction, of which his department had no knowledge.

The following list gives all the information contained in the answers to the questions, all the facts given in relation to each company being brought together:

QUEBEC.—Hull Electric Ry., La Compagnie du Chemin de Fer Electric, was granted an extension of time by chap. 167 of the statutes of 1905. Montreal and Southern Counties Ry., Montreal Park and Island Ry., Montreal Terminal Ry., Quebec Ry., Light and Power Co.

ONTARIO.—Berlin, Waterloo, Wellesley and Lake Huron Ry. Brantford and Hamilton Ry.; an amending act was passed in 1904, but it only came in force Jan. 1., 1905, by proclamation. Chatham, Wallaceburg, and Lake Erie Ry. Essex Terminal Ry. Grand Valley Ry. Hamilton Radial Electric Ry. Hespeler, Galt and Guelph Ry. Niagara, St. Catharines and Toronto Ry. Oshawa Ry. Nipissing Central Ry. Oshawa Electric Ry., an amending act, chap. 82, was passed in 1899 granting an extension of time for construction. Windsor, Essex and Lake Shore Rapid Ry.

ALBERTA.—Edmonton St. Ry., with an amending act passed in 1904.

YUKON.—Dawson City Electric Ry.

MEXICO.—Mexico Consolidated Electric Ry. Co., with amending acts, chapters 125 and 146 of the statutes of 1906. Monterey Electric and Gas Co., with an amending act, chap. 126 of the statutes of 1905.

Dominion Power and Transmission Co.

The report for 1910, presented at the annual meeting at Hamilton Ont., Feb. 14, shows that the gross earnings were $1,922,398, and the net earnings, $533,757. The amount paid in dividends was $124,521, and $327,566 was paid for interest. The assets are placed at $19,355,247, and there is $1,019,689 to the credit of profit and loss. It was announced that dividends on the preference stock for the two years ended July, 1910, were unpaid, and though some of the shareholders did not concur in it, the directors thought it advisable to withhold payment at that time. A dividend at the rate of 7% was paid for the last half year, and it was expected that the back dividends would be paid before long. Hon. J. M. Gibson, in referring to some of the improvements and betterments that had been made, said that the proposed extensions of the street railway would be made, but that they would have to be carefully thought out. It was decided that the salary of the President, at $2,400 a year, be paid, dating from 1908, and that the directors be paid $400 a year each, and the Secretary $600 a year, from the same date. The company controls the Hamilton St. Ry. and the various electric lines radiating from Hamilton. Following is the board for the current year:—President, J. R. Moodie: Vice President. J. Dixon; other directors. J. W. Sutherland, W. O. Greening, L. Harris, W. Southam and Hon. J. M. Gibson.

Halifax Electric Tramway Co.

Following are extracts from the report for the year 1910:—

An encouraging increase in the volume of business has marked the operations of the year. In view of the general condition of the company, the directors decided during the year to make a substantial reduction in the rates for electric light—the general consumers being allowed a further discount of 10% from Oct. 1. This additional concession to consumers is equivalent to something over 1% on the capital stock. The proportion of operating expenses to income was reduced to 51.94. In addition to other improvements during the year, the sprinkler system, was installed, thus reducing the risk of loss by fire and enabling the company to obtain insurance at greatly reduced rates.

ASSETS.

Property	$2,389,032 88
Accounts receivable and securities	72,771 02
Supplies	19,963 83
Suspense accounts	8,413 06
Cash on hand and in bank	98,010 06
	$2,588,191 85

LIABILITIES.

Capital stock	$1,400,000 00
Mortgage bonds	600,000 00
Accounts payable	27,745 32
Tickets outstanding	2,898 23
Coupons payable	15,000 00
Dividend payable Jan. 1, 1911	24,500 00
Surplus account	518,048 30
	$2,588,191 85

INCOME ACCOUNT.

Passenger receipts	$214,183 72
Light and power earnings	200,196 81
Gas earnings	59,070 45
Sundry earnings	3,658 08
	$477,109 06
Operating expenses	246,634 45
Interest on bonds	30,000 00
Net earnings to surplus account	200,474 61
	$477,109 06

SURPLUS ACCOUNT.

Balance, 1909	$437,802 35
Net earnings, 1910	200,474 61
	$638,276 96
Dividends	98,000 00
Renewals and betterments	21,125 22
Accounts written off	1,103 44
Balance forward	518,048 80
	$638,276 96

Following are comparative general statistics:

	1910.	1909.
Railway earnings	$214,183.72	$198,422.96
Electric light and power earnings	203,854.89	191,322.89
Gas and products	59,070.45	57,833.99
Total earnings	477,109.06	447,579.84
Operating expenses	246,634.45	239,606.05
Bond interest	30,000.00	30,000.00
Net earnings	200,474.61	177,973.79
Dividends and interest	98,000.00	85,129.94
Surplus	102,474.61	92,843.85
Operating expenses per cent. of income	51.94	53.54
Passengers carried	4,848,767	4,465,308
Car mileage	907,498	888,024

Following is the board for the current year:—President, Hon. D. MacKeen; Vice Presidents, J. Y. Payzant and W. B. Ross; other directors, A. Kingman, J. Hutchinson, J. C. Mackintosh, C. C. Blackadar, F. B. McCurdy, M. C. Grant.

St. John Ry. Co's Report,

Following are extracts from the report submitted at the annual meeting recently:—

It having been considered advisable to have the fiscal year terminate with the calendar year, the report covers a period of eight months ended Dec. 31, 1910, and shows a net profit, after providing for interest on bonds and all other charges, of $34,840.27, out of which a half yearly dividend of 3% has been declared, amounting to $24,000, leaving a balance of $10,840.27, which has been transferred to profit and loss.

During the year replacements have been made in the power house, of a 500 k. w. mixed pressure turbine and alternating generator, and a 750 k.w. motor generator set, the cost of which has been charged to contingent and depreciation account.

The directors recommend that the tracks be extended from the foot of Brussels St. to Kane's Corner, and to Fernhill Cemetery on Westmoreland Road, also out Crouchville Road, in all 1¾ miles; and that they be authorized to extend the electric lighting service into Kings county.

ASSETS.

Cost of property	$1,905,584 14
Accounts receivable	47,054 28
Stores	41,463 52
Cash on hand	1,300 00
Cash in bank	15,858 51
	$2,011,260 45

LIABILITIES.

Capital stock	$ 800,000 00
Bonds	1,000,000 00
Accounts payable	37,738 68
Accrued interest on bonds	8,333 33
Outstanding tickets	2,104 67
Contingent and depreciation account	39,383 18
Profit and loss	123,700 59
	$2,011,260 45

INCOME ACCOUNT.

Dividends paid Dec. 13, 1910	$24,000 00
Transferred to profit and loss	10,840 27
	$34,840 27
Profits for eight months after, providing for interest on bonds and all other charges	$34,840 27
	$34,840 27

Following is the board for the current year:—President, Jas. Ross; Vice President, Col. H. H. McLean, K.C.: other directors. R. B. Emerson, Jas. Manchester. J. J. Tucker, W. Downie, H. B. Robinson, F. E. Sayre.

B. C. E. R. Vancouver Terminal.

Our February issue contained an illustration of the general offices and interurban station to be built by the British Columbia Electric Ry. at Vancouver. The location is at the corner of Columbia and Eighth Sts., in close proximity to the C.P.R., New Westminster branch station.

The structure will be 132 ft. square, with an elevation of 36 ft. above the sidewalk, with basement for baggage storage equipped with electric elevator. Provision has been made in the foundation and walls to carry an additional storey. The foundation is made up of piles driven in clusters to a depth of 25 ft. to 40 ft. capped with steel reinforced concrete 3 ft. thick by 9 ft. square, carrying reinforced beams which in turn support the side walls. The walls will be of pressed brick belted with concrete. An abundance of leaded glass windows will furnish light to the outside offices, while the inside rooms will be lighted by skylights.

The ground floor will contain the general waiting room, ladies' waiting room, ticket office, dispatchers' office, baggage room, lavatories, etc., and will have concrete floors throughout. The walls will be panelled in quarter sawn fir. All the lavatories will be strictly sanitary with mosaic tile floors and modern fixtures. The first floor will contain the department offices, conductors' and motormen's rooms, offices of Division Manager, Local Manager, accounting, light and power, engineering, Auditor, Trainmaster, Building Superintendent, etc., the space covered by offices totalling nearly 3,000 sq. ft. A generous portion will be reserved for bedrooms, clubroom, locker and changing room for conductors and motormen. Although the danger from fire will be reduced to a minimum in the building, each floor will be equipped with a 2½ in. hose of sufficient length to reach any point on the floors and fed by a 4 in. main tapping the city system.

The tracks will be arranged to facilitate the rapid handling of traffic over a loop system, the cars running through the station, which will mean a great saving of time over the old method of changing ends at terminal points.

Toronto and York Radial Railway.

H. Waddington, of North Toronto, and H. M. Winter, of Toronto, complained to the Ontario Railway and Municipal Board recently that the T. & Y. R. Ry. was operating its Metropolitan division in an inefficient and unsatisfactory manner, that the cars were overcrowded and insufficient to accommodate the passenger traffic, and that the service was inefficient owing to delays in passing cars or vehicles and moving freight. The applicants asked for an order that the company furnish a sufficient number of cars; provide a sufficient number of switches and change the tracks so as to give an adequate service.

The Board gave a unanimous judgment on Mar. 8, in which the incorporation of the original company, subsequent legislation and the agreements with municipalities were fully reviewed.

On Dec. 11, 1908 the Board's engineer reported that the only permanent remedy for the complaints then made against the traffic conditions on Yonge St. was to double track through North Toronto and to substitute large double truck cars for the ones then in use. On Feb. 19, 1909, the Board not having the power, made no order for double tracking, but ordered the company, among other things, to remove the Glengrove cars then in use and substitute four large double truck cars by May 1, 1909. This order was complied with as to the cars, but an appeal to the Court of Appeal is still

pending as to the macadamising between the rails and 18 ins. on the outside.

The Board is still of opinion that the railway should be double tracked up Yonge St., through North Toronto, and conditions having changed, on to the Golf Links. If it had the power the Board would order this to be done, but in view of the franchise agreements between the company and the County of York, under which the company has no right to lay double track unless with the county's approval, it does not consider that it has such power.

The Board therefore orders the company to extend its Glengrove service to the golf links, to construct a sufficient number of switches and turnouts and put a sufficient number of suitable cars in commission to enable it to give a 10 minute service from April 15 to Nov. 1, and a 15 minute service during the rest of the year. The Board also thinks the traffic should be regulated so that south bound cars have right of way up to noon, the north bound cars to take the switches and that after noon north bound cars have right of way, also that the system of car dispatching which has been adopted on the Newmarket line be extended to the line between Toronto and the golf links.

London Street Railway History.

The London, Ont., St. Ry. Co. was incorporated by Ontario Legislature in 1873, with a capital of $40,000, and empowered to construct, maintain and operate a street railway in the city of London and townships of London and Westminster. On Mar. 8, 1875, the city granted the company the right to construct, maintain and operate a street railway, by animal power, for 50 years from that date.

An amendment to the act incorporating the company was obtained in 1889, authorizing an increase of the capital stock to $250,000, and authorizing the issue of debentures to a like amount. In 1895 the original agreement with the city was amended, and the company was granted exclusive rights to construct, maintain and operate an electric street railway for the remainder of the 50 years, at the expiration of which, or any fifth year thereafter, the city has the right to purchase the property (except the Springbank line), on an arbitration basis by giving one year's notice in advance. This agreement was ratified by the Legislature in 1895, and in 1896 the Incorporation Act was further amended, authorizing the increase of the capital stock up to $750,000, and the issue of debentures to a like amount, and that the same might be secured by mortgage upon the railway, its equipment and franchise. A mortgage was accordingly executed in 1896 to the Toronto General Trusts Co., and provides that the company shall pay off and redeem on March 8 in each of the 10 years commencing 1915, five per cent. of the debentures outstanding, so there shall be left at the expiration of the franchise 50% only of the total amount of debentures issued—the debentures being in denominations of $1,000 each, payable in gold, with interest at five per cent. per annum, payable semi-annually.

CAPITAL AND DEBENTURE ACCOUNTS DEC. 31, 1910.

Stocks, subscribed	$600,000.00
" paid up	552,000.00
Debentures, issued	600,000.00
" sold	575,000.00

The property consists of 33.25 miles of single track, covering about 26 miles of territory; 20.8 miles in the city and 5.2 miles out of the city, and the following buildings: one power house, capable of generating about 1,150 h.p.; one storage battery plant of 320-ampere capacity; two car houses; one car shop and machinery; one office building. Following is the equipment:—Single truck motor cars, closed 34, open 5; double truck motor cars, 5 closed, 5 open; single truck trailers, 4 open; sweeper, 1; work car and snow plow, 1; wreck car, 1; line wagon, 1.

Montreal Tramways Company.

The Quebec Legislature has had under discussion for some time an application for the incorporation of a company with this title, to construct and operate an underground railway throughout the Island of Montreal, and Iles Jesus and Bizard, and other railways or tramways, and to acquire, either in whole or in part, the property, franchises, etc., of the Montreal Street Ry., the Montreal Park and Island Ry., the Montreal Terminal Ry., and the Public Service Corporation. The application was made by E. A. Robert, President of the Montreal Street Ry., F. H. Wilson, and J. M. Wilson, Montreal. The important part of the bill is that covering the absorption of the several companies mentioned, which are owned or controlled by the Montreal Street Ry. Co. Of these companies, the Montreal Park and Island Ry. was declared to be subject to the legislative authority of Canada as to capital stock and general corporate powers by chap. 84 of the statutes of 1894; the Montreal Terminal Ry. is the title given by the Dominion Parliament by chap. 76 of the statutes of 1899 to the old Montreal Island Belt Line, while the other lines are operated under acts passed by the Quebec Legislature.

Prior to the introduction of this bill the M.S. Ry. had been in negotiation with the Montreal city council for a rearrangement of its franchises, and for the adoption of a new contract with the city which would cover the whole of the lines. The question was discussed at great length between the company's representatives and the board of control, as far back as Feb. 18, and there were set out ten propositions, to which the company was asked to accede to in return for the franchise asked. As there did not appear to be any possibility of an agreement being reached, the bill for the incorporation of the new company was introduced, one of its clauses providing that in the event of an agreement as to the franchise not being reached within a certain period after its passing, the Quebec Public Utilities Commission would have power to arrange one. The negotiations were continued with the city council through its board of control, and the corporation officers opposed the passage of the bill in the Legislature. The negotiations finally resulted in an agreement by which existing contracts, with certain modifications, will be extended, the details of which are being worked out. The agreement necessitated the making of a number of amendments in the bill, which, at the time of writing (March 24) had not been passed by the Railway Committee of the Legislature.

Sydney and Glace Bay Railway.

The Sydney and Glace Bay Ry., which runs between those Nova Scotia towns, 19 miles, was owned jointly by the Cape Breton Electric Co., Ltd., and the Dominion Coal Co. We are officially advised that the Cape Breton Electric Co. has secured all of the Sydney and Glace Bay Ry. Co.'s common stock, the Dominion Coal Co. taking Cape Breton Electric Co.'s common stock in exchange thus becoming a large holder in the Cape Breton Electric Co. The Cape Breton Electric Co. has taken over the Sydney and Glace Bay Ry. on a long term lease, and the latter line is now being operated with the Cape Breton Electric Co.'s railway department as one department.

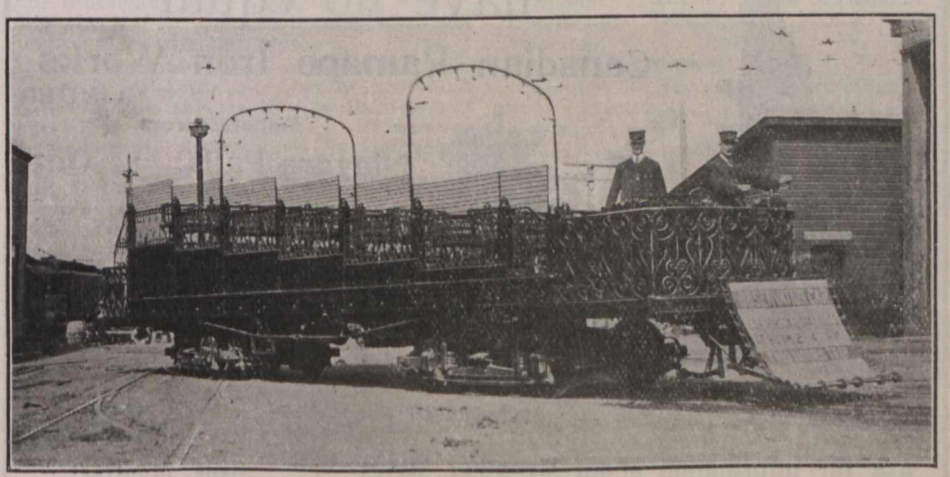
The operating officials of the Cape Breton Electric Company and the Sydney and Glace Bay Ry. have been practically the same for over a year, and under the new arrangements this will be continued.

The Cape Breton Electric Co. is controlled and managed by the Stone & Webster Management Association of Boston, Mass., and has 12.5 miles of equivalent single track. Its officials at Sydney are:—H. C. Foss, Manager; W. G. Ross, General Superintendent. Purchasing Agent and Electrical Engineer; Mr. J. Bulley, Assistant Superintendent and Master Mechanic; W. P. Stubbert, Engineer of Power Station. The company does the entire electric lighting and electric railway business in Sydney, the entire electric business in North Sydney the ferry business between Sydney and North Sydney, and operate an interurban line between North Sydney and Sydney Mines. It owns $220,000 of the $415,000 outstanding first mortgage bonds and the capital stock of the Sydney & Glace Bay Ry., which is operated under a lease of 99 years from June 1, 1911.

B. C. Electric Railway Observation Car.

The illustration on this page shows one of the observation cars built by the British Columbia Electric Ry. for service in Vancouver and Victoria. Following are the general dimensions, etc.:

Length over end sills	34 ft. 2½ in.
Length over bumpers	45 ft. 9½ in.
Width overall	8 ft. 4½ in.
Height of floor above rails at front end	3 ft. 4 in.
At rear end	5 ft. 11 in.
Floor raised in 4 steps of 5½ ins. each.	
Height of step from rail	15-9-9 ins.



British Columbia Electric Railway Observation Car.

Seating capacity .....52 passengers
Trucks .....27 E-1, with 33 in. wheels
Motors .....Westinghouse 101 B2

The cars are illuminated by two arches of colored lights over the centre, and there are also lights under the steps. As noted above, each car has a seating capacity for 52 passengers, but on frequent occasions knock-down chairs have to be used in the aisle. These, when not required, are stored in the front vestibule.

Last year the Vancouver car made three trips daily, leaving the corner of Robson and Granville Sts. daily at 9.30 a.m., 2 p.m., and 4 p.m., running via Granville and Hastings Sts. to the Grandview and Cedar Cottage suburban districts, to English Bay, to Stanley Park entrance, and to Kitsilano, a two hours trip for 50 cents. We are advised that when the weather was not unfavorable the car was comfortably filled. It is also often chartered by societies for evening excursions.

Electric Railway Notes.

The Montreal St. Ry., will shortly be in the market for 15 additional cars. The specification has not been settled.

The Ottawa Electric Ry. has received three p.a.y.e cars, 33½ ft. bodies, 45 ft. over all, mounted on 27-FE-1 trucks, from the Ottawa Car. Co.

P. Verner, is reported to have been appointed General Superintendent of the Grand Valley Ry., with offices at Bramtford, Ont.

The Edmonton Radial Ry., has received two p.a.y.e. cars, 28 ft. bodies, 44½ ft. over all, mounted on 27-G-1 trucks, from the Ottawa Car Co.

The Sandwich, Windsor and Amherstburg Ry. is adding six p.a.y.e. cars to its equipment, three for the Walkerville section and three for the Sandwich line.

C. F. Beams, of the Cobalt Power Co., is reported to have been appointed Manager of the Nipissing Central Ry., by the new owners. It is said that this is the only change being made.

Arrangements are being made for the operation of the Grand Valley Ry., and the Galt, Preston and Hespeler Ry., by electric power supplied from the Hydro Electric Power plant.

The new rules for the regulation of tramways, and other operation, made by the British Columbia Government, became effective Mar. 1.

A St. John's Nfld., press report states that the city council holds that the Reid Newfoundland Co. has not kept up to its contract as regards clearing Water St., and that the council started the clearing of the snow. Mar. 8, expending the deposit made by the company.

Aldermann Trott, a member of the St. Thomas, Ont., city council, will act as supervisor of the municipal electric railway, for the present, consequent on the retirement of L. B. Gillett. Alderman Trott will not be a salaried officer, but an electrician wil be appointed to look after the mechanical work.

The Calgary Municipal St. Ry. is adding to its power house equipment, one 1,500 k.w. turbo-generator set with condenser, etc.; one 100 k.w. exciter and switchboards, three 1,000 k.v.a. single phase transformers, 12,000 to 2,300 volts, with switching gear.

The Mount McKay and Kakabeka Falls Ry., has ordered six Simplex self clearing cars from the Canadian Car and Foundry Co., Montreal. These cars are similar in all respects to those made by the same company for the Montreal St. Ry., which were illustrated and fully described in our Aug., 1910, issue.

The Siagara, St. Catharines and Toronto Ry. has ordered four semi-convertible, double truck, four motor equipment cars in the U.S., each 46 ft. long over all, with seating capacity for 44 persons. They will be operated on the local lines in St. Catharines and Niagara Falls, Ont.

The electric locomotive which the Guelph Radial Ry., has ordered from the Canadian Westinghouse Co., Hamilton, Ont, as mentioned in our last issue, is a 27 ton Baldwin Westinghouse locomotive of the double truck type with four motor equipment. It has a steel frame and is about 23 ft. long over sills. The electric equipment consists of four 101-B motors.

The Superior Court rendered judgment, Mar. 13, in favor of the Quebec Ry Light and Power Co., in the action relating to the running of its observation car It was contended that the company had no right to operate such a car, according to its contract with the city, but the Court held that not only had the company a right to run the car, but it could also charge a 25c. fare on it. The same case had previously been dismissed in the Recorder's Court.

The Board of Railway Commissioners recently heard an application for permission to proceed against the London and Lake Erie Ry. and Transportation Co., for operating cars on Sundays, in alleged contravention of the law. In dismissing the application, the Chief Commissioner pointed out that the act referred to was a provincial one, while the company was under Dominion jurisdiction, and stated that the applicant did not require the Board's permission to prosecute the company for an infringement of the law, if such took place.

The Winnipeg Electric Ry. has increased the scale of pay to its motormen and conductors, by 2c an hour, making the schedule for the first six months, 23c.; for the second six months 25c.; for the second year, 26c.; for the third year, 28½c.; and for periods beyond three years 29c. on hour. The increase will, it is said, mean an addition of $50,000 a year to the expense. The circular announcing the increase states that in view of this increase being unsolicited on the part of the men, the directors expect the hearty co-operation of the motormen and conductors in rendering the public the most efficient and complete service possible.

The Toronto board of control, Mar. 14, considered the question of providing a motor 'bus service in the districts not served by the street railway. It was reported that, after some investigation single deck electric vehicles were best suited for the requirements, and with accommodation for 30 passengers, and suited for a speed of fifteen miles an hour, and assuming that each vehicle ran 80 miles a day, they would cost, to operate, from $15 to $20 a day, including 15% for depreciation. The matter was deferred, until some investigation into the qualities of storage battery cars had been completed.

The Pay-as-you-enter Car Corporation and the Pay-Within Car Co., have been merged and a central organization exclusively authorized to issue licenses under the numerous patents owned and controlled by the two companies has been created under the title of the Prepayment Car Sales Co., with headquarters at 50 Church St., New York City, and offices in Philadelphia and Chicago. The officers of the new company are:—President Duncan McDonald of Montreal; Vice President A. H. England, of the Electric Service Supplies Co., Philadelphia; Treasurer, H. Rowntree, of Chicago, who has invented most of the door devices controlled by the company; General Manager, T. W. Casey, formerly of the Montreal St. Ry.

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for Jan., $368,754; working expenses $218,428; net operating earnings $150,326; renewal funds $29,770; net earnings $120,556; approximate income from investments $20,000; net income $140,556, against $250,274 gross earnings; $144,069 working expenses; $106,-205 net operating earnings: $15,443 renewal funds; $90,726 net earnings; $16,-500 approximate income from investments; $107,262 net income for Jan. 1910. Aggregate gross earnings for seven months ended Jan. 31. $2,360,402; net income $970,452, against $1,731,145 aggregate gross earnings; $764,628 net income for same period 1910.

Cape Breton Electric Co.—Gross earnings for 1910, $326,010.11; operating expenses, $170,187.23; net earnings, $155,-822.88; interest and taxes, $60,134.88; balance, $81,988; dividends, preferred stock 6%, $14,040, common stock 1½%, $16,875; total dividends, $30,915; surplus, $51,073. These figures include the earnings, etc., of the line between North Sydney and Sydney, N.S., and the whole of the earnings of the Sydney and Glace Bay Ry., whereas in former years only half of the earnings of the S. & G.B.R. was included. The C.B.E. Co. now owns the entire capital stock of the S & G.B.R.

Dominion Power and Transmission Co.—Following is the board for the current year as elected recently:—President, J. R. Moodie; Vice President, J. Dixon; Treasurer, J. Knox; Secretary, W. C. Hawkins; other directors, J. W. Sutherland, S. O. Greening, L. Harris, W. Southam, and Hon. J. M. Gibson.

Halifax Electric Tramway.—Railway receipts for Feb., $14,675.01. and for two weeks ended Mar. 14, $6,916.11, against $14,018.69, and $7,044.29 for same periods 1910.

A dividend of 2% for the quarter ended Dec. 31, 1910, has been declared, payable Apr. 1, to shareholders of record, Mar. 20.

Hamilton, Grimsby and Beamsville Electric Ry.—Following is the board for the current year as elected recently: President, J. Dixon; Vice President, J. Dickinson; Treasurer, J. Knox; other directors, W. C. Hawkins, J. W. Sutherland, S. O. Greening and J. R Moodie.

London St. Ry.—Gross earnings, for Feb. $19,309.23; expenses $14,512.71; net earnings $4,796.52; deductions $2,-205.55; net income $2,590.97, against $17,349.23 gross earnings; $13,126.91 expenses; $4,222.32 net earnings; $2,205.55 deductions; $2,016.77 net income for Feb. 1910. Aggregate gross earnings for two months ended Feb. 28, $39,905.06; expenses $29,695.21; net earnings $10,-210.45; deductions $4,647.30; net income $5,563.15, against $35,712.94 aggregate gross earnings; $26,705.13 expenses; $9,007.81 net earnings; $4,647.30 deductions; $4,360.51 net income for same period 1910.

Montreal St. Ry.—Passenger earnings for Jan., $363,147.35; miscellaneous earnings $6,977.25; total earnings $370,-124.60; operating expenses $239,982.64; net earnings $130,141.96; city percentage

on earnings $18,352.08; interest on bonds and loans $15,495.86; rental leased lines $607.50; taxes $4,700; total charges $39,-155.44; surplus $90,986.52; expenses per cent. of earnings 64.84, against $323,-045.07 passenger earnings; $2,575.89 miscellaneous earnings; $325,620.96 total earnings; $205,059.74 operating expenses; $120,561.22 net earnings; $16,863.87 city percentage on earnings; $14,273.67 interest on bonds and loans; $552.90 rental leased lines; $4,000 taxes; $35,-690.44 total charges; $84,870.78 surplus; 62.98 expenses per cent. of earnings for Jan. 1910. Aggregate total earnings for four months ended Jan. 31, $1,500,184.-77; operating expenses $908,383.96; net earnings $591,800.81; total charges $140,-808.67; surplus $450,992.14; expenses per cent. of earnings 60.55, against $1,352,-062.36 aggregate total earnings; $791,-938.71 operating expenses; $560,123.65 net earnings; $132,035.28 total charges; $428,088.37 surplus; 58.57 expenses per cent. of earnings, for same period 1909-10.

Nipissing Central Ry.—D. Fasken Toronto, is representative of a syndicate which has purchased the property rights and franchises of this company, the purchase price, it is stated, being about $250,000. The company's railway extends from Haileybury to Cobalt, Ont., and a franchise has been granted for an extension to New Liskeard. The company has not earned a profit since it began operating its lines.

Ottawa Electric Ry.—Negotiations are reported to be in progress for an amalgamation of the Ottawa Electric Ry., and the Ottawa Light and Power Co.

Port Arthur and Fort William Electric Ry.—Total earnings for 1910, $143,653.-92; expenditures $83,430.38; reserve for accidents, $7,352.85; total expenses $90,-783.85; net earnings $52,870.68. Car mileage 567,250; gross earnings per car mile $24,959; operating expenses per car mile $14,208; net earnings per car mile, $10,251.

Quebec Railway, Light, Heat, and Power Co.—Bonds for $2,600,000 are reported to have been sold in Paris, France. The directors have declared a dividend of 1% payable April 15 to shareholders on record March 31.

Toronto and York Radial Ry.—The Ontario Legislature has authorized the council, among other things, to expropriate the section of the Toronto and York Radial Ry., from Sunnyside along the Lake Shore within the city limits. The council desired to have power to expropriate the line as far as Long Branch.

Toronto Ry.—Gross earnings for Jan. $258,844; working expenses $189,437; net earnings $169,407, against $326,708 gross earnings; $175,074 working expenses; $151,634 net earnings for Jan. 1910.

Winnipeg Electric Ry.—Gross earnings for Jan., $346,144; working expenses $188,349; net earnings $157,795, against $297,543 gross earnings; $151,197 working expenses; $146,346 net earnings for Jan. 1910.

Winnipeg Electric Ry.—Sir Wm. Mackenzie, President, on Mar. 13, submitted the following proposals to the Winnipeg city council:—The company will sell its street railway, gas, power and electric light outfit to the city as a going concern, or the company will purchase from the city 15,000 horse-power as soon as the city is in a position to deliver it, at a price which will pay interest on the city's entire investment in the municipal plant at Point du Bois on condition that the company be given the exclusive right to engage in commercial lighting. The price at which the company would sell; added Sir William, would be on the basis of $250 a share, and it is calculated that this would amount to over $15,-000,000. At a meeting of the city council, Mar. 14, the mayor referred to the proposition, and said it should be seriously enquired into. After some discussion a resolution was passed authorizing the city solicitor to apply to the Legislature for power for the city to acquire "any or all public utilities, not owned by the city." When this has been obtained the city will be in a position to submit a bylaw to the ratepayers authorizing the purchase, upon such terms as may have been arranged, of the street railway system.

Projects, Construction, Betterments, Etc.

Aroostook Valley Electric Ry.—The application for authority to extend the line westerly to the Maine-Quebec boundary, and to acquire the C.P.R. Aroostook Jct.-Presque Isle branch, has been approved by the Railway Committee of the Maine Legislature, and the measure will become law in due course. (Mar., pg. 257.)

Bird's Hill and Springfield Ry.—The Manitoba Legislature has under consideration a measure for the incorporation of a company with this title for the building of an electric railway from St. Boniface to Bird's Hill, Man., with authority to develop water powers and to distribute electricity.

The bill before the Legislature providing for the incorporation of a company with this title provides for the building of a line to be operated by electricity, gas or gasoline from or near Winnipeg, or from St. Boniface, through St. Paul, Kildonan and Springfield municipalities, with branch lines. The provisional directors are:—N. Macgregor, St. Paul; J. W. McKinley, Springfield; S. R. Henderson, Kildonan; J. E. Meredith, A. E. Hoskin, Winnipeg.

Brandon Electric Ry.—The applicants to the Manitoba Legislature for the incorporation of a company with this title are associated with the Reese-Muir Syndicate, which in turn works in connection with the recently organized Manitoba Power Co. (Mar., pg. 257.)

Brantford St. Ry.—P. Verner, who has been appointed General Superintendent, recently stated that work had so far progressed upon the Holmedale switch that he expected it would be ready for opening early in April. Work on rebuilding the line in the city would be resumed, and it was expected to finish the work this season. (Mar., pg. 257.)

British Columbia Electric Ry.—We were recently advised that it was expected to have the new line between Vancouver and New Westminster completed and ready for operation by the end of March. The line commences at the intersection of Sixth St. and Park Drive, Grandview section of Vancouver, passes through Grandview near the intersection of Nanaimo Road and First Ave., runs through Hastings tp. and Burnaby municipality, just south of Burnaby Lake, and enters New Westminster at the Sapperton end of the city. The total mileage of this line is 9.69 miles, distributed as follows:—Vancouver city, 0.73 miles; Hastings townsite, 1.53 miles; Burnaby, 7.10 miles; New Westminster, 0.33 mile. It is intended, when the line is in operation, to begin with an hourly service and to improve it as conditions warrant. This line has been built under the Vancouver, Fraser Valley and Southern Ry.'s charter. Its completion gives the company three lines between Vancouver and New Westminster, the others being the original direct line through South Vancouver, and the long route over the Vancouver and Lulu Island Ry. and its Eburne extension.

On the old direct line, a considerable sum has already been expended on reducing gradients, and in laying a second track. The line is now a double track one as far as Keefer station, mileage 6.35 from Vancouver. It is intended to extend the second track during the present season, but just what length will be completed it is impossible to say. A portion of the line, from Highland Park station into New Westminster, has been re-located in order to avoid the heavy gradient entering New Westminster. Surveys have been completed and part of the new right-of-way cleared. This work will be carried on from time to time, but just when it will be completed cannot be definitely stated. (Mar., pg. 257.)

Campbellford, Ont.—In consequence of the fact that the C.P.R. has secured the right to build the projected Campbellford, Lake Ontario and Western Ry. on a different route from that first surveyed, the residents of Campbellford and vicinity are taking steps to have an electric railway built through Northumberland county. A charter is reported to be available, but to Mar. 24 the owners of the charter and the municipal authorities of the points interested had not been brought together.

Central Canada Ry. and Power Co.—An act passed by the Manitoba Legislature provides that the company may issue bonds for $25,000 a mile in respect of the railways authorized to be built by sec. 13, chap. 56, of the statutes of 1905, viz., from the eastern boundary of Win-

nipeg to Selkirk; from either Winnipeg or Selkirk to the Winnipeg River, and to Lake Winnipeg. The amending act gives power to build an additional line from St. Boniface northeasterly to the Winnipeg River, in tps. 17, 18 or 19, and thence to the northerly boundary of the province. The provisional directors named in the original act are: J. D. McArthur, J. Tees, J. S. Gray, W. A. Ducker, H. E. Carstens, W. M. McLeod, I. Pitbiado, G. C. Mills, and A. N. McPherson. (Feb., pg. 167.)

Charlesburg, Que.—An application has been made to the municipal council of Charlesburg, Que., for a franchise for an electric railway from Domaine Lauret to Charlesburg, Que. E. Caron stated that the promoters were ready to proceed with the organization of a company as soon as a franchise was granted, and to proceed with construction as soon as letters patent were obtained.

Chatham, Wallace and Lake Erie Ry.—The Dominion Parliament is being asked to authorize the company to build the following additional lines:—From Charing Cross to Blenheim and Rondeau Harbor, Ont.; from Wallaceburg to Dresden, and on to Ridgetown and Erie Eau Park; from Dresden North to Petrolia, and on to Sarnia, Ont. It is also desired to have an extension of time for the building of other lines, for which previous parliamentary authority was obtained. (Mar., pg. 257.)

Development Co. of Canada.—The Quebec Legislature has incorporated a company with this title to build certain railways, to develop electric energy on the Ottawa River, and to use the same for the operation of its railways, or to dispose of the same. The water power proposed to be developed is the Des Quinze rapids, Pontiac county, Que. (Mar., pg. 205.)

Dunnville, Wellandport and Beamsville Electric Ry.—The Ontario Legislature is being asked to extend the time for the building of the lines previously authorized to be built, and to give power for the building of an extension from Fenwick to Welland, Ont. (Feb., pg. 167.)

Hamilton Street Ry.—As a result of a conference upon street railway matters an arrangement has been made between the company and the city council by which the tracks on Main and King St. east will be relaid during this year. The question of the extension of several of the lines is being considered, the council committee having, Mar. 16, submitted several proposals to the company. (Mar., pg. 257.)

Hamilton, Waterloo and Guelph Ry.—J. Patterson, the principal promoter of this projected electric railway, left Hamilton, Ont., Mar. 15, for London, Eng., in connection with plans for the financing of construction. (Feb., pg. 167.)

London and North Western Ry.—In passing through the Dominion Parliament the title of this company was amended by adding the words " of Canada" after railway. (Jan., pg. 71.)

Manitoba Radial Ry.—Application is being made to the Manitoba Legislature to incorporate a company with this title to build railways along the public highways or otherwise, to be operated by electricity, steam or gasoline as follows: From Winnipeg to Portage la Prairie; from Rosser southerly to Headingly, thence easterly to Winnipeg; from Winnipeg northerly to Stony Mountain, Stonewall and Balmoral. Authority is also being asked to obtain running powers over existing lines, and also to have power to run along any of the Winnipeg streets, subject to the approval of the city council. The provisional directors are: G. A. Glines, J. Dichmond, J. B. Henderson, J. O. Newton, J. C. Kyle, Winnipeg.

A company with the same title was incorporated by the Dominion Parliament in 1907, the provisional directors being: C. Hoffeman, A. Wagner, R. D. Fletcher, J. A. Munro, W. J. Donovan, Winnipeg, for the purpose of building a railway from Winnipeg to Clandeboye Bay on Lake Manitoba, thence northerly to Lundar, Man., and on to Grand Rapids, on the shore of Lake Winnipeg in Keewatin district, and a branch line through Stonewall to Lake Francis, Man. (Feb., pg. 168.)

Moncton Tramway, Electricity and Gas Co.—Surveys have been made recently by E. A. Mitchell and W. G. Ritchie for the building of the proposed electric railway in Moncton, N.B. Tenders have been invited for the grading of the permanent way, and the putting up of the overhead work, and the contracts were expected to be let Mar. 31. (Feb., pg. 168.)

The Montreal and Southern Counties Ry. has made application to the Montreal city council for permission to extend its lines on a number of streets in the city. (Mar., pg. 257.)

Moose Jaw Electric Ry.—The Saskatchewan Legislature has incorporated a company with this title. The company may not operate cars of the pay-as-you-enter type without first obtaining the city council's consent. (Mar., pg. 259.)

Niagara Frontier Electric Ry.—The provisional directors named in the bill introduced in the Ontario Legislature recently for the incorporation of a company with this title, to build an electric railway from Niagara-on-the-Lake to Fort Erie, and for other purposes, are: W. E. D. McKenzie, T. Flummerfelt, W. C. Perkins, Chippewa, Ont.; E. Garrett, Niagara Falls, Ont.; G. H. Pettit, Welland, Ont. (Mar., pg. 259.)

Niagara, St. Catharines and Toronto Ry.—The Board of Railway Commissioners has authorized the providing of interchange tracks between the G.T.R. and the N. St. C. and T. Ry., and also the crossing of three streets in St. Catharines. (Mar., pg. 259.)

Ontario West Shore Ry.—Press reports state that the control of this electric railway, which is under construction from Goderich to Kincardine, Ont., has been acquired by the C.P.R. One of the contractors working at the Kincardine end of the line is quoted as stating that he had received notice that he was to look to the C.P.R. for further orders. (Mar., pg. 259.)

Ottawa Electric Ry.—It is reported that the line will be extended down Preston St. to Dow's Lake, during the current year, and that possibly extensions in other parts of the city will be built. (Mar., pg. 259.)

Ottawa, Smith's Falls and Kingston Electric Ry.—The measure providing for the incorporation of a company with this title, which is under consideration by the Ontario Legislature, has been amended in committee by striking out the word "electric" from the title, leaving it as the Ottawa, Smith's Falls and Kingston Ry.

A map showing the projected route of the line from Ottawa to Montague tp. has been submitted for approval to the municipalities interested. The map shows a line running on the north side of the Rideau River from Ottawa, through Nanotic, Kars, North Rideau, Merrickville and Kilmarnock to Smiths Falls. A branch is proposed to be built from Smiths Falls to Perth, and plans for this, as well as for the extension to Kingston, are being prepared. (Mar., pg. 259.)

Port Arthur and Fort William Electric Ry.—The Port Arthur city council is asking the Ontario Legislature, in addition to the powers referred to in our last issue, for authority to extend the electric railway into the municipalities of Shuniah, Oliver and any other adjoining municipalities, and to authorize such municipalities to enter into agreements to aid by way of bonus or otherwise the building of such additional lines. (Mar., pg. 259.)

Quebec Ry., Light and Power Co.—Tenders were received to Mar. 25 for the construction of about 3.5 miles of double track line, extending from Beauport to Kent House Park. (Feb., pg. 169.)

Quebec and Saguenay Ry.—Tenders are under consideration for the building of the first section of this line from Cap Tourmente to the wharf at Murray Bay, Que., and it is expected that contracts will be let in a short time. Contractors were asked to submit prices for ten-mile sections of 10 miles of the line. A. H. N. Bruce, of Ottawa, has been appointed Chief Engineer, and J. F. Guay, heretofore Chief Engineer, has been appointed Manager. (Mar., pg. 259.)

Regina Electric Ry.—The Saskatchewan Legislature has passed the measures referred to in our last issue, and the city is now in a position to finance the construction of the lines.

Reference was made last year to certain contracts made with R. S. Bloins and Co. These contracts were for paving on the streets on which it was proposed to lay electric lines, but the work was not gone on with. We have been advised that the contracts will likely be renewed this year. (Mar., pg. 261.)

Rural Ry. Co. of Manitoba.—Following a decision of the courts dismissing a motion for an injunction restraining the St. Vital, Man., municipal council from entering into an agreement with the company respecting the building of an electric railway in the municipality, the council met Mar. 15 and signed the bylaw.

St. John Ry.—The committee of the St. John, N.B., city council has drafted an agreement setting out the conditions upon which the company may extend its lines to the old Loch Lomond Rd. The company's representatives state that the conditions are such that it would be impossible to operate the extension at a profit. (Mar., pg. 261.)

Sherbrooke Ry. and Power Co.—Power was turned on at the new power house Mar. 6, (Mar., pg. 261.)

Stratford Ry.—On the company's application for incorporation coming before the Ontario Legislature recently it was found that due notice by advertisement had not been given in the county of Huron, and it was recommended that the portions of the bill referring to power to build lines in that county be omitted. (Mar., pg. 261.)

Toronto Civic Street Railway.—The Toronto board of control, Mar. 10, directed the city engineer to ask for tenders for the necessary plant for use in the construction of the proposed civic car lines in the city. The estimated cost of the plant is $95,374, and the city engineer says at the end of the three years, during which construction will be in progress, the plant should be worth $38,575. The specifications, which are in course of preparation, show that there will be 160,000 cubic yards of material to be moved, and 140,000 cubic yards of material to be filled in. The work will be done by day labor. Tenders have been asked for the rails and fastenings required. (Feb., pg. 169.)

Toronto Eastern Ry.—The Board of Railway Commissioners has approved the location plans of the line through Pickering, Whitby, Whitby East and Darlington tps., and authorized building along and across certain streets in the towns of Whitby and Bowmanville, Ont. (Jan., pg. 73, and Oct., 1910, pg. 877.)

MARINE DEPARTMENT

Dominion Marine Association.

PRESIDENT, F. Plummer, Toronto; COUNSEL, F. King, Kingston, Ont.

Great Lakes and St. Lawrence River Rate Committee.

CHAIRMAN, E. E. Horsey, Kingston, Ont.
SECRETARY, Jas. Morrison, Montreal.

International Water Lines Passenger Association.

PRESIDENT, W. M. Lowrie, New York.
SECRETARY, M. R. Nelson, New York.

The Shipping Federation of Canada.

PRESIDENT, A. A. Allan, Montreal; MANAGER, AND SECRETARY, T. Robb, 526 Board of Trade, Montreal.

Ship Masters' Association of Canada.

GRAND MASTER, Capt. J. H. McMaugh, Toronto, Ont.; GRAND SECRETARY-TREASURER, Capt. H. O. Jackson, 376 Huron St., Toronto.

Coast Lake and River Officers, 1911.

The following appointments have been made by the principal navigation companies engaged in Canadian navigation, for their various steam vessels and tugs, for the current year. In the first column is given the name of the vessel, in the second that of the captain, and in the third, that of the chief engineer.

ALGOMA CENTRAL STEAMSHIP LINE, SAULT STE. MARIE, ONT.

Agawa		
Leafield	W. C. Jordan	J. L. Smith
Paliki	A. McIntyre	G. Sylvester
Thomas J. Drummond	J. A. Brown	W. Harman
	R. H. Boyle	J. Cameron

BOSCOWITZ STEAMSHIP CO., LTD., VICTORIA, B.C.

Vadso	E. C. LeBlanc	J. Mowat
Venture	W. Moorehouse	C. Arthur

BOUCHARD BROS., QUEBEC, QUE.

Lady of Gaspe	A. Couillard	R. Casey

BRAS D'OR STEAMBOAT CO., LTD., NORTH SYDNEY, N. S.

Marion	L. A. Moore	W. R. Coleman

THE CALVIN CO., LTD., GARDEN ISLAND, ONT.

Chieftain	C. E. Phelix	T. Gray
Frontenac (tug)	J. Harris	T. Compeau
India	C. Coons	T. C. Smith
Parthia	D. Lefeave	G. Sauve
Prince Rupert	P. Sullivan	R. H. Veech
Simla	J. Ewart	D. Simons

CANADA ATLANTIC TRANSIT CO., LTD., MONTREAL.

Arthur Orr	J. Simons	D. E. Mance
Geo. N. Orr	H. Jaenke	J. B. Wellman
Kearsarge	W. Baxter	A. P. Williams
Newona	W. J. Moles	W. Paus

CANADIAN LAKE AND OCEAN NAVIGATION CO., LTD., TORONTO.

Scottish Hero	P. McIntyre	J. W. Taylor
Turret Cape	R. D. Simpson	J. Urquhart
Turret Chief	J. Wharry	G. Adams
Turret Court	R. McIntyre	G. Fryer

CANADIAN LAKE TRANSPORTATION CO., LTD., TORONTO.

Arabian	T. H. Johnston	J. E. Readman
Corunna	W. J. McKay	W. McLaren
Kenora	W. Brian	W. Byers
Nevada	J. E. Mann	W. Linton
Regina	P. McKay	C. J. McSorley
Tagona	J. S. Moore	W. H. Taylor

CANADIAN NORTHWEST STEAMSHIP CO., LTD., TORONTO.

Neebing	J. Ewart	R. R. Foote

CANADIAN PACIFIC CAR AND PASSENGER TRANSFER CO., PRESCOTT, ONT.

Charles Lyon	W. Henry	G. M. Hazlett

C.P.R. BRITISH COLUMBIA COAST SERVICE, VICTORIA, B.C.

Amur		
Beaver		
City of Nanaimo	L. P. Locke	W. Oliver
Czar	C. E. Seymour	A. Beadle
Joan	D. Brown	W. Allen
Manoose	—. Springhall	W. Harris
Otter	J. Ritchie	J. Greenshields
Princess Adelaide	T. S. Guns	J. E. Hill
Princess	J. G. Hawes	A. Alexander
	R. A. Hunter	T. Moffatt
Beatrice	W. H. Whiteley	A. Pendola
Princess Charlotte	T. O. Griffin	J. A. Heritage
Princess Ena	C. Campbell	S. Kerasley
Princess Mary	D. Brown	J. Thaw
Princess May	J. McLeod	J. McGraw
Princess Royal	C. D. Neroutsos	J. Petticrew
Princess Victoria	P. J. Hickey	J. A. Wallace
Queen City	G. D. Robertson	B. Osbon
Tees	E. Gillam	R. Moffatt

C.P.R. DETROIT RIVER CAR FERRIES, WINDSOR, ONT.

Michigan	C. R. Brown	F. Merrill
Ontario	J. Carney	A. McDonald

C.P.R. UPPER LAKE SERVICE, OWEN SOUND, ONT.

Alberta	F. J. Davis	C. Butterworth
Assiniboia	L. Pyette	A. Cameron
Athabasca	J. McCannal	W. Lockerbie
Keewatin	M. McPhee	W. Lewis
Manitoba	J. McIntyre	J. Gregg

H. CANN AND SON, MULGRAVE, N.S.

John L. Cann	W. E. Morris	J. Moray
Malcolm Cann	J. R. Durkee	D. E. Read
Percy Cann	J. B. Scott	F. Anderson

CAPE BRETON ELECTRIC CO., SYDNEY, N.S.

Hygeia	A. McLeod	.....
Pawnee	J. Brown	A. Campbell
Peerless	I. H. Lewis	C. Campbell

CENTRAL CANADA COAL CO., LTD., BROCKVILLE, ONT.

Sam. Marshall	W. A. Tulloch	W. H. Kerr

CHARLOTTETOWN STEAM NAVIGATION CO., LTD., CHARLOTTETOWN, P.E.I.

Empress	A. Cameron	J. A. Rowe
Northumberland	A. MacLeod	C. Cuming

A Marine Authority's Opinion.

C. Arthur Jaques, of G. E. Jaques & Co., General Forwarders, Montreal, who is a prominent member of the Dominion Marine Association and a large vessel owner, writes:—

"I have been a subscriber to the Railway and Marine World since its inception, and I look upon it as one of the best mediums for information that we have in our country. The information is very accurate. The different topics are expressed very clearly and correctly, and I have yet to hear of any person who does not approve of your paper."

CRYSTAL STREAM STEAMSHIP CO., LTD., ST. JOHN, N.B.

Sincennes	F. Mabee	B. Evans

G. T. DAVIE AND SONS, LEVIS, QUE.

Lord Strathcona	P. Menard	C. Samson

DOMINION ATLANTIC RY., YARMOUTH, N.S.

Boston	A. Simms	Jas. Ross
Prince Albert	D. W. Holmes	A. McInnis
Prince Arthur	E. J. Kinney	D. Ferguson
Prince George	A. W. MacKinnon	L. C. Newall
Prince Rupert	.....	J. M. Pendrigh
Yarmouth	A. G. Potter	W. E. Sutherland

DONNELLY SALVAGE AND WRECKING CO., LTD., KINGSTON, ONT.

Donnelly	L. Spencer	R. Vince
Saginaw	J. Clark	D. Sinclair

EASTERN MANITOULIN ROYAL MAIL STEAMSHIP LINE, LITTLE CURRENT, ONT.

Agnes Smith	S. Smith	J. W. Needler
Bon Ami	E. Mackie	R. A. Johnston

FARRAR TRANSPORTATION CO., LTD., COLLINGWOOD, ONT.

Collingwood	F. Scott	D. McLeod
Meaford	J. N. Sheats	J. Smith

CAPT. A. FOSTER, SMITHS FALLS, ONT.

Ventura	R. Mylne	T. Timlin

GEORGIAN BAY NAVIGATION CO., LTD., COLLINGWOOD, ONT.

Soo City	H. Cleland	L. Crawford

GRAND MANAN STEAMSHIP CO., LTD., GRAND MANAN, N.B.

The Grand Manan	J. A. Ingersoll	W. Gray

GRAND TRUNK PACIFIC COAST STEAMSHIP CO., LTD., VANCOUVER, B.C.

Henriette	O. Buckholtz	R. Grey
Prince Albert	C. W. Wearmouth	G. W. Wilson
Prince George	G. E. L. Robertson	T. O. Handy
Prince Rupert	B. L. Johnson	J. R Drysdale

G.T.R. DETROIT RIVER CAR FERRIES, WINDSOR, ONT.

Great Western	M. Bausette	W. Jannison
	F. Bausette	
Huron	A. Baillargeon	J. Ladds
	O. Lalonde	
Lansdowne	J. Jackson	W. Belsom
	H. Oldenberg	

HALIFAX AND CANSO STEAMSHIP CO., LTD., HALIFAX, N.S.

Scotia	A. Reid	J. G. Clark

HALIFAX AND INVERNESS STEAMSHIP CO., LTD., HALIFAX, N.S.

Strathlorne	W. Murphy	W. Day

F. E. HALL AND CO., MONTREAL.

Carleton	E. Groulx	E. Scott
Iona	B. Bowen	F. Patterson
R. T. Holcomb	M. Hicks	F. A. Collier

HAMILTON STEAMBOAT CO., LTD., HAMILTON, ONT.

Macassa	J. Henderson	O. Flumerfelt
Modjeska	P. Walsh	W. Noonan

W. HANNA AND CO., PORT CARLING, ONT.

Mink	J. J. McCulley	.....
Numinko	W. Board	S. W. Lambert

HOME STEAMSHIP CO., LTD., SYDNEY, N.S.

Morine	C. M. Burchell	.....

HUDSON'S BAY CO., WINNIPEG, MAN.

Grahame	E. B. Huight	W. Johnston
Hazleton	C. H. Gradner	P. Hickey
Mackenzie River	J. W. Mills	.....
Mooswa	F. Couch	J. M. Shanks

HUNTSVILLE, LAKE OF BAYS AND LAKE SIMCOE NAVIGATION CO., LTD., HUNTSVILLE, ONT.

Algonquin	W. Sangster	E. Goldthorpe
Iroquois	R. Parsons	J. Smith
Mohawk Belle	A. Phillips	J. Logan
Ramona	J. T. Burke	M. Thompson

INLAND LINES, LTD., HAMILTON, ONT.

Donnacona	R. Alexander	J. Dee
Dundee	J. Woolner	E. Shaw
Dundurn	R. Cooney	J. Morris
Emperor	G. W. Pearson	G. Smith
Empress of Fort William	C. R. Albinson	J. Murphy
Empress of Midland	J. W. Mawdesley	A. Abbey
Glenellah	G. Mackey	A.E.D.Mackay
Midland King	W. Cunningham	J. McGregor
Midland Prince	J. Tindall	J. Pickard
Midland Queen	W. Lavigne	G. E. Wilson
Neepawah	W. W. Allan	J. C. Carr
Rosedale	G. Motley	F. Goodwin
Stadacona	J. Cannally	C. H. Menmuir
Strathcona	H.C.Mawdesley	A. J. Fisher
Wancondah	W. E. Linton	W. McWilliams
Winona	B. Garvie	J.A.McLaughlin

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A.E.McKinistry	A. E. Stinson	A. E. Leitch

INTERNATIONAL STEAMSHIP CO., LTD., TORONTO.

D. A. Gordon	R. F. Pyette	P. Bonham

INTERNATIONAL STEAMSHIP CO., LTD., VICTORIA, B.C.

Iroquois	H. Carter	J. Manning

ISLAND TUG CO., LTD., CHARLOTTETOWN, P.E.I.

Fred. M. Batt	C. E. Myers	W.A.McEachern
Harland	J. T. McLaine	R. McPherson
Islander	G. E. Batt	F. Payne

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C. A. Jaques	O. Patenaude	F. Hamelin

KEEWATIN LUMBER CO., LTD., KEEWATIN, ONT.

Mather	W. G. Richmond	B. Nelson
Shamrock	M. Hickey	.....

KELOWNA SAWMILL CO., LTD., KELOWNA, B.C.

Kelowna	D. L. Jones	J. Fletcher

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Keyport	J. Murray	R. T. Muchmore
Keystorm	H. Chestnot	J. Robertson
Keywest	H. Esford	J. Boak

THE KILKEEL CO., LTD., TORONTO.

Kilkeel	J. T. Elworthy	.....

LA HAVE STEAMSHIP CO., LTD., WEST LA HAVE, N.S.

Samson	G. D. Ross	.....
Trusty	J. Crouse	A. Zwicker

LAKE ERIE NAVIGATION CO., LTD., WALKERVILLE, ONT.

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LAKE ONTARIO AND BAY OF QUINTE STEAMBOAT CO., LTD., KINGSTON, ONT.

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North King	J. J. Jarrell	G. Boyd

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Cascade	H. Bilton	.....
Forager	E. Parsons	.....
Leebro	J. Hunter	A. Lees
Oscar	A. McDonald	E. Fletcher

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W. McLURE, PICTOU, N.S.

Lady Sybil	R. D. Burns	H. Webster

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Champlain	C. J. Wasson	B. C. Estabrook

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Haddington	J. Cavanagh	M. Johnson

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F. MILLS, BEAUMARIS, ONT.

Arrahwannah II.	F. G. Mills	.....

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Bartlett	L. Mallan	L. E. Spencer
D. G. Thomson	T. O'Connor	J. B. Lappan
Emerson	A. Lepine, Jr.	G. Henderson
Fairmount	P. C. Telfer	G. Fleming
Glenmount	H. Peters	T. G. Bisnop
Glide	W. Phelix	R. Knight
H. F. Bronson	J. B. Degroseillier	M. Dorey
Kinmount	J. Wood	R. Taylor
Mary	A. Renaud	J. Lamoureaux
Mary P. Hall	A. Lepine	C. A. Stillso
Rosemount	J. Keoch	W. S. Greenhill
Stormount	H. N. McMaster	H. McClyment
Westmount	C. Milligan	W. C. Spencer
Windsor	J. Doyle	R. W. Hepburn

MUTUAL STEAMSHIP CO., LTD., TORONTO.

Acadian	N. Morrison	J. Duguid
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NIAGARA NAVIGATION CO., LTD., TORONTO.

Cayuga	C. J. Smith	G. M. Arnold
Chippewa	W. Malcolm	H. Parker
Corona	H. W. King	A. J. Woodward
Chicora	B. W. Bongard	J. Findlay
Ongiara	H. J. McIntyre	H. Hawkins

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And. J. Smith	And. Roque	Alf. Roque
W. H. Seymour	A. LaHaye	J. E. Angus

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Hebron	A. Clarke	H. Seguin
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Oxberval	P. Eligh	N. Contois
Scotsman	E. Francoeur	H. Desjardins

PEMBROKE NAVIGATION CO., LTD., PEMBROKE, ONT.

Victoria	W. Huckabone	E. Letellier

ONTARIO CAR FERRY CO., LTD., MONTREAL.

Ontario No. 1	F. D. Forrest	J. A. Nicoll

NOVA SCOTIA STEEL AND COAL CO., LTD., NEW GLASGOW, N.S.

Wasis	J. Ritcey	J. D. Cameron
Wobun	J. Meikle	J. S. Somers

NORTH SHORE STEAMSHIP CO., LTD., SYDNEY, N.S.

Aspey	D. M. McDonald	J. S. Jackson

NORTHERN NAVIGATION CO., LTD., COLLINGWOOD, ONT.

City of Midland	M. A. Livingston	S. Burgess
Doric	S. Hill	F. Norris
Germanic	F. G. Moles	J. Asten
Hamonic	R. D. Foote	S. Brisbin
Huronic	A. L. Campbell	H. Myler
Ionic	M. Ironsides	W. King
Majestic	W. G. Cox	G. Bigger
Saronic	A. M. Wright	W. Whipps
Waubic	W. Carson	.....

PENINSULA TUG AND TOWING CO., LTD., WIARTON, ONT.

Crawford	W. M. Tyson	J. G. Simpson
Thos K. Scott	F. Wood	W. C. Fox

PORT HURON AND SARNIA FERRY CO., PORT HURON, MICH.

Grace Dormer	C. Hill	J. Kinine
Hiawatha	E. M. Thomas	H. Meyers
James Beard	G. Waugh	O. Durant
Omar D. Conger	W. S. Major	W. F. Oakes

PRESCOTT AND OGDENSBURG FERRY CO., LTD., PRESCOTT, ONT.

City of Belleville	D. A. Kian	S. Wells
Miss Vandenburg	J. L. Brian	C. Van Arnam

J. RICHARDSON AND SONS, LTD., KINGSTON, ONT.

City of New York	M. Robinson	J. Brotorchand
Glengarry	A. Robinson	A. Legenare
Navajo	W. Tulloch	W. McCabe

THE RENWICK CO., LTD., TORONTO.

Renwick	J. Chapman	.....

REVELSTOKE NAVIGATION CO., LTD., REVELSTOKE, B.C.

Revelstoke	A. Forslund	H. Colbeck

RIDEAU LAKES NAVIGATION CO., LTD., KINGSTON, ONT.

Rideau King	W. Scott	G. Shannon
Rideau Queen	E. Fleming	.....

ST. JOE ISLAND AND SAULT LINE, LTD., SAULT STE. MARIE, ONT.

City of Chatham	S. J. Carson	T. McMurray

ST. LAWRENCE AND CHICAGO STEAM NAVIGATION CO., LTD., TORONTO.

Algonquin	F. R. Johnson	H. W. Fletcher
E. B. Osler	W. H. Wright	E. J. O'Dell
G. R. Crowe	P. J. Shaw	W. Robertson
Iroquois	C. E. Robinson	W. Harwood
W. D. Matthews	J. Williams	C. Robertson

SPARROW LAKE STEAMER LINE, SPARROW LAKE, ONT.

Glympse	A. F. Stanton	A. Heye
Lakefield	F. Stanton	E. Silley

TEMISKAMING NAVIGATION CO., LTD., HAILEYBURY, ONT.

City of Haileybury	J. Ladouceur	A. Morrissette
Jubilee	J. Burns	P. Lanctot
Meteor	A. J. Gant	J. B. Seguin
Silverland	D. Burns	C. M. Lloyd
Temiskaming	McC. Burns	O. Croteau
Ville Marie	T. Dunbar	J. Hunter

LA CIE TRANS-ST. LAURENT LTEE., FRASERVILLE, QUE.

Mahone	J.B.Deslauriers	Th. Breton

TURRET CROWN, LTD., TORONTO.

Turret Crown	J. N. Foote	W. H. Carefoot

UNION STEAMSHIP CO., LTD., VANCOUVER, B.C.

Comosun	—.Dickson	H. Foster
Capilano	—.Edwards	J. Rutherfoord
Cassiar	—.Gaisford	G. Mathews
Cheslakee	—.Cockle	R. Whyte
Comox	—.Brown	O. Dragolovitch
Coquitlam	—.Parkes	H. Houlbourn
Cowichan	—.Moody	F. Beattie

VALLEY STEAMSHIP CO., LTD., ANNAPOLIS ROYAL, N.S.

Granville	C. W. Collins	J. McCollough

VANCOUVER TOWING AND LIGHTERAGE CO., LTD., VANCOUVER, B.C.

Burrard	A. Heim	A. Dahey
Constance	F. Robertson	L. Larsen
Etta White	B. Dunhama	J. Frenzen

VICTORIA STEAMSHIP CO., LTD., NORTH SYDNEY, N.S.

Blue Hill	D. Mackae	J. Blesdale

WELLAND CANAL TUG CO., LTD., PORT COLBORNE, ONT.

Alert	F. C. Mahaffey	.....
Escort	W. Junan	J. O. Armstrong

WESTERN NAVIGATION CO., LTD., FORT WILLIAM, ONT.

Kaministiquia	E. L. Stephens	H. Young

WESTMINSTER TOWING AND FISH CO., LTD., NEW WESTMINSTER, B.C.

Dauntless	J. Keenan	J. Wigton
Faultless	W. Somerville	L. Ransom
Peerless	W. Ballagh	F. Somerville
Wireless	D. Balcom	T. Yieldings

WHITE PASS AND YUKON ROUTE, VANCOUVER, B.C.

Canadian	C. Bloomquist	J. Gaudin
Dawson	J. O. Williams	T. K. Young
Gleaner	Jas. Roberts	Jas. Lauderdale
Scotia	J. McDonald	D. Sullivan
Selkirk	G. H. McMasters	W. T. Vey
Whitehorse	W. Turnbull	P. Larssen

W. J. WILLOUGHBY, WINDSOR, ONT.

John Harper	W.J.Willoughby	R. Baxter

YALE COLUMBIA LUMBER CO., LTD., NELSON, B.C.

Hercules	W. W. West	J. Page
Yale	T. Hansen	J. McKinnon

Canadian Fishing Vessel Subsidies.

An order in council has been passed rescinding sec. 5 of the act to encourage the development of sea fisheries and the building of fishing vessels, and substituting the following:

"5. Canadian registered vessels, owned and fitted out in Canada, of 10 tons and upwards (up to 80 tons), by whatever means propelled, contained within themselves, which have been exclusively engaged not less than three months in catching sea fish, other than shell fish, salmon or shad, or fish taken in rivers, or mouths of rivers, shall be entitled to a bounty calculated on the registered tonnage, which shall be paid to the owner, or owners, provided that vessels known as steam trawlers, operating beam, otter, or other such trawls, shall not be eligible for any such bounty."

Thomson Line Steamship Gerona.

The s.s. Gerona, which is being built for the Cairn Line Steamships Ltd., owners of the Thomson Line, was launched at Wallsend-on-Tyne, Eng., Mar. 4, being christened by Miss Gear, elder daughter of W. I. Gear, Vice President of the Robt. Reford Co., Montreal, Canadian agents of the line. The Gerona is built to the classification of Lloyds, 100 A.1. and will comply with all the requirements of the Board of Trade, the U. S. laws for carrying passengers and the Italian emigration laws.

She is rigged as a two-masted fore and aft schooner and has two funnels. There is a complete shelter deck from stem to stern and about it a poop, a long bridge and a topgallant forecastle. Deep web frames have been provided instead of hold beams, giving not only increased strength, but also leaving the holds clear for carrying bulky cargo such as large machinery. Amidships there will be luxurious accommodation for about 140 first class passengers, the cabins will be spacious and comfortable, a certain number of them on the bridge deck being in sets of two with a communicating door to be used by family parties. The dining saloon extends right across the vessel and is surmounted by a handsome dome. On the deck above the dining saloon is the music room. At the after end of the deckhouse on the promenade deck is the smokeroom, abaft of which is a verandah cafe. Throughout the vessel there is ample provision of fire extinguishing pipes with a complete outfit of hose pipes. Electric installation gives lighting throughout the ship and also serves the wireless telegraph apparatus.

The planning of the catering department has been carefully studied, the galleys, bakeries, pantries and storerooms all being elaborated to comprise the most improved modern appliances. There are three separate galleys, for first class passengers, for emigrants and for the crew respectively. On the shelter and in the upper 'tween decks there are berths for about 1,500 third class passengers, together with ample dining accommodation. There are hospitals for ordinary and infectious cases, an operating room and a dispensary. A special feature of the emigrants' living quarters is a complete installation of the thermotank ventilation and heating plant. The fans will be sufficient to renew the air eight times an hour. The fans can be reversed at will, so as either to draw the air out of the different parts of the ship or to inject fresh air either cool or warm. The captain, officers and engineers will have accommodation on the boat deck. The seamen and firemen, instead of having their living quarters in the forecastle, as is usual, will be more comfortably installed on the shelter deck at the after end of the vessel. The Gerona has twin screw triple expansion engines. The boilers will be worked with forced draught. She has a large cargo capacity, an ample equipment of winches and derricks being provided to handle goods expeditiously. A considerable portion of cargoes from Canada will be food suplies and refrigerated holds will be provided for these, the necessary low temperature being maintained by the carbon-dioxide process.

The addition of the Gerona to the Thomson Line will enable a fortnightly passenger service to be maintained during the season of open navigation between the north east coast of England, Southampton and Montreal, returning to London. The other vessels in the service will be the Tortona, and the Cairnrona. In the winter and early spring these vessels will be employed in carrying emigrants between Italy and Canada.

The Cunard Co. has purchased the steamships Gerona, Tortona and Cairnrona, which it will operate in Canadian service during this season, but which, we are advised, will be continued under the name of the Thomson Line.

The Gael Shipping Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $27,000, and office at Montreal, to own and operate steam and other vessels, and to carry on a general navigation business on the high seas and within inland navigation. The provisional directors are: G. I. Dewar, Ottawa; W. A. Taft, Arlington, Mass.; W. H. Chandler, Newton, Mass.; J. W. Bucknam, Quincy, Mass.; W. McKissock, Brookline, Mass.

G. T. P. Steamship Terminal at Seattle.

In our issue of June, 1910, we gave an illustration and brief description of the Grand Trunk Pacific Dock Co.'s buildings at Seattle, Wash., for the special use of the G.T. Pacific Coast Steamship Co. Following is a fuller description:—

The problem of selecting the principal terminal for the water lines in the United States was solved by the purchase of centrally located property in Seattle, Wash., and the beginning of a big dock at which to berth the steamers. The result is that the company probably has the finest wooden structure of its kind completed. As the company will handle passenger business primarily from the pier it is admirably adapted for its intended use, and the combination of stores and offices under its roof is a unique feature in structures of this kind, as space has been utilized which heretofore has produced no revenue.

In designing the pier the latest and most modern ideas of wharf construction were embodied and the structure will set the pace for pier building in the northwest. The building is fireproofed to as great a degree as possible, considering the style of material used. The adoption of a design in which wood figured as the only material was due, of course, to the fact that the dock was built on the edge of the greatest timber producing section of the country and that it was the cheapest kind of material. Figures have been brought forward to prove that trussed steel-concrete construction is the most economical in the long run, even in this section, but wood was used nevertheless.

The dock is 625 by 120 ft., although an oblique frontage gives it an inshore width of 208 ft. where most of the offices and a warehouse are located. The building is supported by creosoted piles, the specifications for which called for piles to be first growth fir, a minimum of 9 in. in diameter at the tip and 14 in. at the butt, with the penetration of oil fixed at from 1 to 1¾ in.. under a 12½ lb. treatment. The length of the bearing piles varied from 55 to 90 ft., with the brace piles running up to 110 ft. in length. The bents were driven 10 ft. apart and the piles spaced along the bents at distances varying from 6 ft. centres to 3 ft. centres at the outer end, with clusters of from four to six under posts of trusses where extra loads occur. Brace piles were driven at every bent and in addition the dock is braced both laterally and longitudinally with 4 by 12 in. creosoted bracing. Caps are 12 by 12 ins., with stringers 4 by 12 ins. spaced 30 ins. apart, and 12 by 12 ins. material under posts and at the sides. The caps are drift bolted to every pile with ¾ by 22 ins. drifts and 12 by 12 ins. stringers, two lines of 10 by 12 ins. down the centre, and every third 4 by 12 ins. stringer bolted to the caps. The span of the trusses is 90 ft. and the building is extended on the north side an additional 14 ft., giving warehouse space 104 ft. wide. On the south side of the building there is an 8 ft. space to the edge of the dock, and on the north side is a 16½ ft. space where the railway tracks are located. The dock is equipped with five adjustable loading slips, worked by a worm, with the railway track carried over those on the north side by bascule bridges. At each slip is located a power plug for use of electric conveyors. The openings in the building, 8 ft. wide on each side of the slips and 14 ft. wide midway between the slips, are closed by rolling steel doors or shutters.

The passengers from the G.T.P. steamships which ply in the north coast trade are landed directly on the second floor of the dock by means of a platform supported by a pontoon which bears up the incline so that it is always at the level of the ship's deck. The incline will lead the passengers direct to the waiting and customs examination rooms and to the over-head walk to the street, which takes the passengers direct to a business avenue and does away with the usual dodging of wagons and freight cars on the water front streets.

The roof of the main warehouse is supported by a diamond truss of 90 ft. span on 12 by 12 pieces spaced 20 ft. apart, with purlins 4 by 10 in. and cross braced between trusses for wind pressure. On the ground floor inshore are six stores with an average floor space of 1,000 sq. ft. each. On the second and third floors inshore are offices, and also on the second floor suspended from the trusses down both sides of the warehouse. There is a gallery 10 ft. wide in front of these offices, leaving an open well 30 ft. wide, over the main floor. The total number of offices in the building is 69. In addition, on the sea end a tower 20 by 20 ft. and 106 ft. high above the first deck has been built, in which are four offices especially suitable for harbor officials because of the fine view of the port.

At the extreme sea end the dock is laid out to accommodate the steamboat Flyer, which carries passengers between Seattle and Tacoma. Baggage and bonded rooms are provided on the lower deck and on the second floor level are the waiting rooms, ticket office, parcel check room and restaurant, which are reached by separate inclines for incoming and outgoing passengers. A gallery for a band stand overlooks the waiting room and a stairway leads to

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING JAN. AND FEB., 1911.

Name	No.	Where and When Built	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Call Creek's Pride	126,796	New Westminster, B.C , 1910	Screw 8 n. h. p.	44.4	11.3	4.3	21	11	NewWestminster. B.C	H. C. Northcote, Cracroft, B.C.
Camosun	121,204	Paisley, Scotland, 1905	" 124 "	192.7	35.2	14.9	1369	794	Vancouver, B.C	G. T. Legg, M.O., Vancouver, B.C.
Chakawana	130,441	Vancouver, B.C., 1910	" 9 "	62.0	13.8	9.0	45	30	" "	F. B. Turner, Vancouver, B.C.
Cheslakee	130,309	Dublin, Ireland, 1910	" 65 "	126.0	28.1	17.0	526	261	" "	Union Steamship Co., of British Columbia, Vancouver
Dan Patch	126,824	Tancook, N.S , 1909	" 3 "	41.2	10.8	5.6	12	12	Lunenburg, N.S	R. Levy, Lunenburg, N.S
Enetai	126,949	Ballard, Wash., 1906	" 2 "	35.4	8.8	3.2	12	7	Victoria, B.C	J. O'Donahoo, Victoria, B.C.
Fire Queen (1)	130,422		" 2 "	31.3	7.0	3.8	8	5	Vancouver, B. C	A. K. Cape and H. C. Lamont, Vancouver, B.C.
Gooding	130,267	Sturgeon, Falls, Ont., 1904.	Paddle 1 "	29.0	8.6	3.0	10	8	Ottawa	F. E. Clark, Sturgeon Falls, Ont.
Halley's Comet	112,194	Chatham, Ont., 1906	Screw 1 "	68.4	16.2	4.0	50	34	Chatham, Ont	H. E. Crow, Chatham, Ont.
Hazel S.	126,666	Allendale, N.S., 1910	" " "	39.6	11.4	4.7			Shelburne, N.S	Union Fish Co., Little Harbour, N.S.
Inlet Queen	130,308	Vancouver, B.C., 1910	" 2 "	49.0	10.8	4.9	21	14	Vancouver, B.C	H. C. V. Hall, Halldene, B.C.
John R. Moore	130,233	Port Stanley, Ont., 1911	" 6 "	68.0	16.6	9.0	63	43	Port Stanley, Ont	J. R. Moore, Port Stanley, Ont.
Nellie Lyon(2)	126,229	South Rockwood, Mich.,1880	" 13 "	145.0	29.0	9.3	384	198	Sarnia, Ont	O. E. Fleming, Windsor, Ont.
Nerka	126,616	Claxton, B.C., 1910	" 7 "	52.0	15.0	5.3	32	22	Prince Rupert, B.C	Wallace Fisheries, Ltd., Vancouver, B.C.
Oldmaid	126,798	Steveston, B.C., 1910	" 20 "	35.0	10.3	5.0	14	7	NewWestminster, B.C	Butterfield, MacKie & Co., New Westminster, B.C.
Prospective	130,310	Vancouver, B.C., 1910	" 16 "	62.7	11.3	8.2	66	45	Vancouver, B.C.	Progressive Steamboat Co., Vancouver, B.C.
Sadie J. Risser	126,826	Lunenburg, N.S., 1910	" 3 "	39.9	10.8	5.3	11	11	Lunenburg, N.S.	E. Risser, M.O., La Havre Islands, N.S.
St. Alice (3)	130,305	Seattle, Wash., 1890	" 11 "	74.8	16.3	5.5	56	38	Vancouver, B.C.	C. V. Henson, Vancouver, B.C.
Weasel	126,797	New Westminster, B.C., 1910	" 10 "	26.6	7.9	2.8	4	3	New Westminster, B.C	J. Henley, Chilliwack, B.C.

(1) Foreign name, Queen. (2) Foreign name, Reliance. (3) Foreign name, Blanche.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING JAN. AND FEB., 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Breton	126,927	Lotbiniere, Que., 1906	Schr.	68.8	22.5	5.8	47	Quebec, Que	Z. Castonguay, Riviere Blanche, Que.
Corporal Trim	97,258	Essex, Mass., 1860	"	68.6	19.9	7.3	57	Charlottetown, P.E.I.	P. McNutt, Malpeque, P.E.I.
Ethel McLeod (4).	103,261	Long Beach, N.B., 1896	"	76.2	26.4	7.4	96	St. John, N.B	C. E. Brewster, Harvey, N.B.
Gordon M. Hollet	126,664	Shelburne, N.S., 1910	"	100.0	24.0	10.5	99	Shelburne, N.S	W. H. Hollett, Burin, Nfld.
Joseph Earle	126,825	Tancook, N.S., 1910	"	54.0	14.2	7.6	29	Lunenburg, N.S	A. Slaunwhite, M.O., Terence Bay, N S.
Jennie E. Ritcey	126,822	Shelburne, N.S., 1910	"	112.0	25.8	10.6	97	" "	A. Ritcey, M.O., Riverport, N.S.
Lloyd George	126,821	" " "	"	108.0	26.0	10.5	99	" "	G. Himmelman, M.O., Riverport, N.S.
Marion Mosher	126,820	Lunenburg, N.S., 1910	"	105.0	25.3	10.5	93	" "	M. Rodenheizer, M.O., Lunenburg, N.S.
Nobility	126,827	LaHave, N.S., 1910	"	97.5	25.8	10.5	99	" "	H. Ritcey, M.O., Riverport, N.S.
P. A. No. 3	130,306	New Westminster, B.C., 1910.	Scow	62.6	26.1	5.5	82	Vancouver, B.C	W. F. Brougham, Vancouver, B.C.
P. A. No. 4	130,307	North Vancouver, B.C., 1910.	"	73.4	28.2	6.7	125	" "	" " "
Rosie L.	126,823	Tancook, N.S., 1910	Schr.	47.6	13.2	6.7	20	Lunenburg, N.S	G. Little, Terence Bay, N.S.
Stanley & Frank	126,665	Shelburne, N.S., 1911	"	82.0	23 0	9.0	74	Shelburne, N.S	G. T. Bond, Fortune Bay, Nfld.

(4) Formerly Rowena.

the open air promenade and roof garden at the sea end.

Counting out the space allotted to offices, boiler and fuel rooms and a 30 by 25 ft.. garage, the deckage available for the handling of freight is about 440 by 104 ft. There are firewalls distributed freely through the dock, in which the openings are closed by automatic steel shutters of exceptional size, some being 14 ft. wide and 14.8 ft. high, with the widest 24 ft. Ship hydrants along both sides every 80 ft. and scattered on the inside of the building, furnish further fire protection.

The engineer in charge of construction and much of the planning was F. T. Lucas, who was born at Hamilton, Ont., in 1883. After passing through the Royal Military College at Kingston, Ont., and McGill University, Montreal, he graduated in 1905, spent a year in G.T.R. maintenance of way service at Allandale, Ont., then went west on G.T.P.R. mountain surveys, and afterwards was given charge of laying out the Prince Rupert, B.C., townsite and the harbor works there.—Abridged from Marine Review.

Notices to Mariners.

The Department of Marine has issued the following:

20 Feb. 23. 47. British Columbia, Vancouver island, west coast, Nootka sound, Friendly cove, lighthouse established.

21. Feb. 24. 48. Quebec, River St. Lawrence, ship channel between Quebec and Montreal, Lake St. Peter, lightship to be replaced by gas buoy.

22. Mar. 2. 49. New Brunswick, River St. John, Glenwood, light established on wharf. 50. Prince Edward Island, south coast, Hillsborough bay, St. Peters island light station, explosive fog signal, erratum. 51. Quebec, River St. Lawrence, Crane island, character of light.

23. Mar. 9. 52. British Columbia, Johnstone strait, Helmcken island, gas lighted beacon established. 53. British Columbia, Lama passage, Camp island, gas lighted beacon established.

24. Mar. 10. 54. British Columbia, northern waters between Vancouver island and mainland, slack water in passes.

25. March 11. 55. British Columbia, Johnson strait, rock point, Ripple point, and West Thurlow island, day beacons erected. 56. British Columbia, Lama passage, Denny island, day beacon erected. 57. British Columbia, Seaforth channel, Regatta rock, beacon rebuilt.

26. Mar. 13. 58. British Columbia, Malaspina strait, Welcome pass, and Pender harbor, existence of rocks.

27. Mar. 16. 59. Nova Scotia, south coast, Lunenburg bay, Halifax harbor, lights of gas buoys placed for testing purposes showing irregularly. 60. Nova Scotia, south coast, submarine bell attached to Sambro gas and whistling buoy not to be relied on. 61. Nova Scotia, south coast, Island harbor, buoy established north of Harbor island. 62. Quebec, Gulf of St. Lawrence, Aylmer sound, existence of a rock. 63. Quebec, Gulf of St. Lawrence, Point Peter, buoy to be established.

28. Mar. 16. 64. Ontario, Lake Huron, Goderich, bearing of range lights. 65. Manitoba, Lake Winnipeg, Gull harbor, change in character of light. 66. United States of America, St. Lawrence river, Comfort island shoal, gas buoy to be established. 67. United States of America, Lake Erie, Cleveland harbor entrance, intended change in lights.

The Reid Wrecking Co., is building an extension of 600 ft. to its dry dock at Port Huron, Mich. The work will be carried on throughout the summer, and when completed, it is said that the dock will be large enough to accommodate any vessel operating on the lakes.

G. T. P. Coast Steamship Co.

We are officially advised that the Grand Trunk Pacific Steamship Co., has purchased the s.s. Amethyst, in England, for its Prince Rupert and Queen Charlotte Islands service, and has decided to re-name her Prince John. She was built at Bowling, Eng., in 1910, and has accommodation for 50 first-class and 150 steerage passengers. The accommodation also includes a smoke room on the main deck, opening from the shade deck, decorated in Flemish oak, a dining room occupying the full width of the vessel immediately aft, with a seating capacity of 44, furnished in mahogamy with leather upholstering, lavatories, chief steward's office, pantries and galley all complete with the most modern equipment for a comfortable service. The principal first class staterooms are situated on the shade deck, all decorated in white enamel and gold, and forward of these is a circular fronted observation room enclosed by plate glass, while the texas and pilot house are placed on the deck above, which also affords ample promenade space. The machinery consists of triple expansion engines with cylinders 17, 28 and 45 ins. diar., by 33 ins. stroke, supplied with steam by single ended Scotch boilers, 12 ft. long by 12 ft. diar., and equipped with well arranged bunkers containing about 100 tons of coal. The steerage accommodation is arranged on the lower deck with entrance from the quarter deck aft of the galley. Cargo space is provided on the main deck, with capacity of about 450 tons. It is anticipated that she will make 12 knots an hour on a consumption of about 12 tons of coal a day. Her dimensions are, length 185 ft. between perpendiculars; beam, 29½ ft.; depth, 13 ft.; tonnage, 622 gross, 446 register. A number of minor changes are being made at Port Glasgow, Scotland, after which she will sail on her voyage to the coast, by way of the Horn, and it is anticipated that she will be in service some time in June.

Vessels Removed from the Register.

During Jan. and Feb., the following vessels were removed from the register, for the reasons assigned:—Steam—Ethelwold, Montreal, 533 tons, transferred to London, Eng.; Gordon McDonald, Kenora, Ont., 14 tons, sold to foreigners; Hawywa, Ottawa, 3 tons, broken up; Jean, Port Burwell, Ont., 14 tons, burnt; Lillian B., Ottawa, 3 tons, dismantled; Stella, Vancouver, B.C., 13 tons, broken up; Strathcona, Vancouver, B.C., 376 tons, broken up; W. J. Strong, Southampton, Ont., 28 tons, burnt. Sailing—Arkona, Lunenburg, N.S., 144 tons, transferred to West Indies; Audacieux, Weymouth, N.S., 99 tons, broken up; Blanche, Barrington, N.S., 24 tons, sunk; Brookside, Yarmouth, N.S., 672 tons, sold to foreigners; C. W. Bangs, Ottawa, 152 tons, broken up; Elfreda May, Shelburne, N.S., 78 tons, missing; Ellen A. Read, Yarmouth, N.S., 18 tons, broken up; Genesta, Barrington, N.S., 32 tons, wrecked; Greenwood, Shelburne, N.S., 71 tons, transferred to Newfoundland; Henry Swan, Sackville, N.S., 63 tons, broken up; J. A. McLean, Lunenburgh, N.S., 80 tons, transferred to Newfoundland; L. C. Larned, Chatham, N.B., 43 tons, broken up; Lone Star, Halifax, N.S., 29 tons, wrecked; Novelty, Lunenburg, N.S., 246 tons, transferred to West Indies; Roseway, Shelburne, N.S., 244 tons, stranded; S. A. Fownes, Dorchester, N.B.M., 123 tons, wrecked; Shannon, Lunenburg, N.S., 63 tons, transferred to Newfoundland; Thomas Beckett, Ottawa, 151 tons, broken up; Tormentor, Halifax, N.S., 15 tons, wrecked; Utowana, Lunenburg, N.S., 71 tons, transferred to Newfoundland.

Atlantic and Pacific Ocean Marine.

The Allan Line is reported to have granted increases of pay to officers of its fleet, with shore subsistence allowances, and certain privileges, not hitherto allowed.

W. McK. Roden has been appointed General Passenger Manager Allan Line Steamship Co., for Great Britain and Europe, with office at 14 Cockspur St., London, Eng.

The contract with Pickford and Black for a fortnightly steamship service from St. John, N.B., and Halifax, N.S. to the West Indies, has been renewed, subject to the concurrence of the British Government. The contractors are required to use vessels on the British register.

The s.s. Henley, which has been under charter to the Canadian Mexican Pacific Steamship Co., for some time, arrived at Vancouver, from Salina Cruz, Mexico, Mar. 6, on her last trip for that company. The next sailings are being taken by the s.s. St. Ronald.

Prior to sailing from New York, Mar. 8, for a combined business and holiday trip to Europe, Sir Thos G. Shaughnessy is reported to have stated that he expects to place orders for the building of two steamships for the Pacific service, of a tonnage of about 15,000 each.

The Canada Line, which inaugurated a steamship service between Germany and Canada, last season, will it is announced, extend the service, this year, by operating a weekly service, with six vessels. The first sailing was announced to be the s.s. Barcelona, from Hamburg, Mar. 24.

The Thomson Line's s.s. Gerona was launched at Wallsend-on-Tyne, Eng., Mar. 8. She is to be an up-to-date vessel, equipped with Marconi wireless telegraph apparatus, submarine signal system, refrigerating and cooling appliances, and with a capacity for 10,000 tons of cargo and 200 saloon and 1,500 third class passengers.

The Australian Government which recently decided to withdraw from the arrangement whereby it paid a portion of the subsidy for a steamship service between Canada, New Zealand and Australia, has announced its intention to reopen the question and to negotiate for a continuance of the service to Australia.

In connection with the recent reports as to the proposed establishment of a steamship service by the C.P.R., between Canada and the West Indies, it is reported that a deputation of business men from the West Indies, is coming to Canada to interview the Government and the C.P.R. on the matter, especially with regard to subsidies, and the possible amount of business.

A London, Eng., cablegram of Mar. 1› says:—"The Cunard Steamship Co. today purchased the Cairn Line steamships operating between London and Canada under the name of the Thomson Line. In addition to the vessels now being operated, the Cunard Co. takes over three new passenger liners now in course of completion on the line, and will institute a weekly service."

On his arrival in Montreal, Mar. 9, W. T. Payne, Manager C.P.R. Trans-Pacific Steamship Service, Yokohama, Japan, is reported to have said, that rumors have been freely circulated as to what the company intends doing with regard to the Pacific service, but that it is for the management to make its announcement on this point, in its own time. He is also reported to have stated that the present service, though very good, is not of a character to do justice to the traffic, and that Canadian interests should be protected by a more efficient service.

Maritime Provinces and Newfoundland.

The Newfoundland sealing fleet, consisting of 19 vessels, sailed on its annual cruise in the Gulf of St. Lawrence, Mar. 13.

The returns for the past fiscal year of the Nova Scotia Legislature, show that $66,798, was paid in steamboat and ferry subsidies.

The P.E.I. Public Works Department received tenders. Mar. 28, for leasing any, or all of the public wharves and bridges, owned by the Government, from Apr. 1 to Mar. 31, 1912.

The P.E.I. Public Works Department received tenders, Mar. 27, for carrying passengers, baggage, vehicles, cattle, etc., across the Cranberry and Poplar Point ferries, for three years, from Apr. 1.

A petition has been presented to the Nova Scotia Legislature, from the residents of Little Harbor and vicinity, asking for an increased subsidy for transportation by water, between Port L'Hebert and Lockeport.

The French steam trawler Baleine is to be sold by public auction, to satisfy claims against her. She is of the latest type, fitted with patent steam capstans, hoisting gear and with an acetylene light plant for night work.

The affairs of the Star Line Steamship Co., Ltd., are being investigated in the New Brunswick courts, as the result of an auditor's examination of the books, which were stated to be in an unsatisfactory and deplorable condition.

The Dominion Coal Co., is reported to have chartered the Norwegian steamships Storstad and Sandefjord, and the British steamship Batiscan, for its coal service during the forthcoming season. These vessels were all built in England recently.

The Government ice breaking steamship Stanley was towed into Halifax, N.S., Mar. 12, by the Government s.s. Montmagny, with a broken propeller. It is not anticipated that the replacement can be made to enable her to resume operations before the early part of April.

A correspondent at Charlottetown P.E.I., writes us that the s.s. Earl Grey, which is now perfoming her second winter's service between Pictou, N.S., and Georgetown, P.E.I., is doing excellent work. Last winter there was but little ice but this winter it has been very heavy, and she has proved herself a good boat.

Application is being made to the New Brunswick Legislature to incorporate the Clair and Fort Kent Bridge Co. to build a bridge across the St. John River, between Clair and Fort Kent, to be not less than 24 ft. wide, with sufficient passage ways for boats, etc. Slipp and Hansom are solicitors for applicants.

A cable dispatch from England, Mar. 18, states that the Sydney, Cape Breton and Montreal Steamship Co., has been registered in London, Eng., with a capital of £70,000. Amongst those named as interested in the scheme, are E. F. and W. Roberts, Liverpool, Eng.; Bowring and Co., Liverpool, Eng., and St. John's, Nfld., and the Dominion Coal Co.

The Bridgetown Steamship Co., has been organized with headquarters at Bridgetown, N.B., to operate a vessel between Bridgetown and St. John, with calls at intermediate points. It is stated that an order has been placed in Yarmouth, N.S., for the construction of a steamship for the purpose, delivery to take place by July 15.

The N.B. Government has made an appropriation for the repair of the public wharf at St. Stephen, and it is announced that the work will be commenced as soon as the weather conditions are favorable. It is stated that the C.P.R. is also undertaking some improvement work there, and that some dredging work will be undertaken in the river.

The Eastern trust Co., and H. McInnes, trustees under the will of the late M. Dwyer, Halifax, have deposited with the Public Works Department at Ottawa, plans and description of a proposed wharf extension in Halifax harbor, from Lower Water St., 200 ft. into the harbor, thence southerly at right angles for 81 ft. 7 ins., and westerly for 200 ft., and thence northerly for 81 ft. 7 ins.

The Steamship Senlac So.'s s.s. Senlac, is being offered for sale by Wm. Thomson and Co., St. John, N.B., and, unless disposed of by private treaty, will be sold by public auction at Dalhousie, N.B., Apr. 5. She is a screw driven vessel, with engine of 66 n.h.p., capable of a speed of 11 knots an hour, and she was built at St. John in 1904. Her dimensions are, length 182.4 ft., breadth 33 ft., depth 16.1 ft.; tonnage, 1,011 gross, 615 register.

The Imperial Dredging and Construction Co., Ltd., has been incorporated under the New Brunswick Companies Act, with a capital of $40,000, and offices at Oromocto, to own and operate dredges, dredging steamers, etc., and to build wharves, docks, bridges, terminals and other shipping facilities. The provisional directors are: W. J. McMulkin, Upper Gagetown; R. B. Smith, Oromocto; H. B. Bridges, Gagetown; P. J. Smith, Blissville; and G. C. Currier, Upper Gagetown, N.B.

The Eastern Transportation Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $20,000 and office at Bathurst, N.B., to build, own and operate steam and other vessels, docks, warehouses and other terminal facilities; to carry on a general towing, wrecking and salvage business, and to carry on the business of carriers of passengers and freight, etc. The provisional directors are A. E. Loosen, O. Page, C. M. Mersereau, A. Hains and A. McLean, Bathurst, N.B.

At a recent meeting of the Dartmouth Ferry Commission, to consider the question of the provision of a new ferry steamboat, it was decided that the mayor be authorized to go to Great Britain to place a contract for the construction of a steel steamer for the service. Tenders were recently invited for a vessel, and negotiations were entered into with a British firm which submitted a tender, but the commission has been unable to satisfactorily close the contract with the firm, as the commission's plans were not acceptable to the tenderer.

The Dominion Department of Public Works is having a dipper dredge built at Pugwash, N.S., for use in the smaller bays and harbors of Prince Edward Island. The contract has been awarded to Burns and Waters, Ottawa. The dimensions are, length 65 ft., breadth 25 ft., depth 6ft., with a maximum working depth of 16 ft. The capacity of the dipper is to be one cubic yard, with a daily output of 400 cubic yards. The hull is being built of B.C. fir or white pine, except the corner posts, transom pieces, spud casing, overhead beams, engine keelsons, foundations for boom base plate and bow planking, which are of white oak. The main engines will have cylinders 8½ ins. diar by 12 ins. stroke, flat valves, locomotive type link motion and hand reversing gear to be operated from the engineer's platform. The main hoisting drum is to be 2¾ ft. long between the flanges and 15 ins. diar. Deck house 47 by 17 ft., with accommodation for 12 men. The construction is being carried on under the supervision of the Department's engineers, and it is anticipated that the dredge will be ready for operation by May 7.

Province of Quebec Marine.

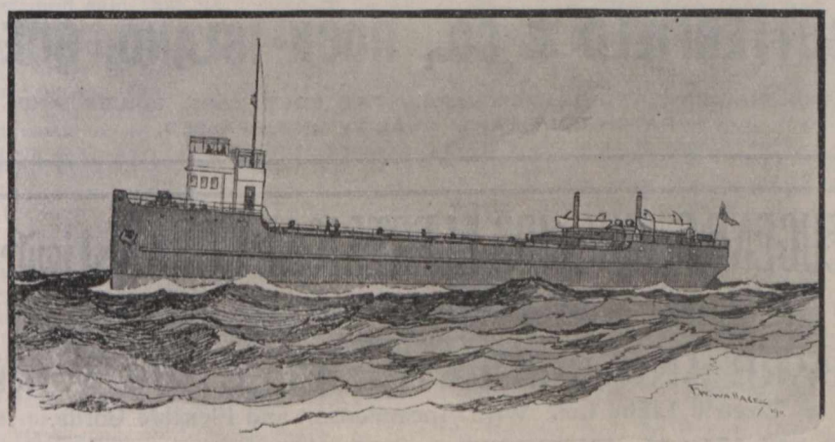
The Dominion Public Works Department will receive, to Apr. 4, tenders for the construction of a wharf at Chateauguay.

The Montreal Harbor Commissioners received tenders, Mar. 29, for the construction of a ferry wharf and approaches to be built in the harbor on the west side of St. Helen's island.

The contract for the erection of a bascule span bridge across the St. Charles River, near Quebec, has been awarded to Lemoine and Co., Montreal, at a cost of about $156,200. The bridge will be 150ft. long, and it is understood that the work will be undertaken at once.

The Marine Department has awarded the contract for the construction of a twin screw survey inspection steamboat for the St. Lawrence ship channel service below Quebec, to the Kingston Shipbuilding Co., Kingston, Ont. The vessel, which is to be named Bellechasse, will be 130ft. long, 27ft. beam and 13½ft. molded depth.

The Quebec city council ferry committee, at a meeting, Mar. 9, agreed to grant berthing facilities for the steamships Cascapedia and Gaspesian at the Champlain market wharf, at a yearly rental of $700 for the former and $400 for the latter. A letter was read from the Minister of Marine to the effect that if all parties were agreed he would



The Steamship Toller.

The above is a somewhat crude illustration, but the best available of the s.s. Toller, which is being built in England for the Canadian canal and lake trade, and which was fully described in our last issue.

send an expert to report on the question of horse power of the engines on the ferry boats. The matter has been referred to the city council for advice.

The steamship Canada, formerly owned and operated by the Fraserville Navigation Co., recently liquidated, which was sold by order of the Admiralty Court, has been purchased by G. A. Binet, and a considerable sum has been spent on overhauling it. It is stated that it will be placed in service on the Baie des Chaleurs route on the opening of navigation, and that the Dominion Government has promised a subsidy of $15,000 a year for two years for such service.

Judgment was delivered, Mar. 8, in a case, which was tried about six months ago, to decide whether a captain of a vessel is also entitled to act as its pilot. The case was brought by Capt. J. J. Riley, master of pilots for the port of Montreal, against Capt. B. St. Denis, for having piloted the s.s. McCormick within the pilotage district of Montreal, he not being a licensed pilot within that district. It was held that the master's certificate held by Capt. St. Denis does not authorize him to act as a pilot, and he was fined $1 and costs.

It is reported that the negotiations between the interests which have undertaken to build a dry dock at Montreal, and the Dominion Government, regarding the subsidy agreement, are about concluded, and that a subsidy of 3½% for 35 years, on an expenditure of $3,000,000 will be paid, dating from the completion of the work. The floating dock, which will be of the first class, to accommodate the largest St. Lawrence vessels, will be built in England, and towed across the Atlantic. The preparation of the site at Molson's Creek is well advanced.

At a meeting of the Canadian Society of Civil Engineers, at Montreal, Mar. 16, a paper was read on the Upper St. Lawrence, its navigation and future possibilities, with regard to both navigation and power purposes, by H. Holgate, C.E. As a result of the discussion which followed, the following resolution was carried: "That the council of the Canadian Society of Civil Engineers be requested to take up and study the suggestions made that the Dominion Government be urged to make a study of the River St. Lawrence and its possibilities, and that a comprehensive report be submitted before any commitment be made by the Government for the damming of the St. Lawrence at any point, or the carrying out of any other great scheme of canal transportation, and that the council be requested to take this matter up, and, if advisable, make a report to the Dominion Government."

Ontario and the Great Lakes.

In the House of Commons, Mar. 13, an attempt to raise a discussion as to the advisability of commencing the construction of the proposed Georgian Bay Canal forthwith, was ruled out of order.

The Montreal Board of Trade, Mar. 15, decided to request the Minister of Marine to order that the St. Lawrence canals, from Montreal to the west, be opened not later than Apr. 25.

A deputation, representing the city council of Toronto, waited on the Minister of Marine, recently, and obtained a promise that the Gibraltar Point lighthouse would not be discontinued, as had been proposed.

H. Holgate, M. Can. Soc. C.E., spoke before the Canadian Club, Montreal, Mar. 6, on some facts regarding the Upper St. Lawrence, and dealt, at some length, with the international aspect of the proposed Longue Sault dam.

It is reported that the work of widening the Livingstone channel in the lower Detroit River, is to be proceeded with at once and carried on to completion, the necessary authority having been received by Col. McD. Townsend, the U.S. Engineer in charge of the work.

The disused lighthouse at the south end of the International bridge at Sault Ste. Marie, was burned, Mar. 13, by order of the U.S. Lighthouse Department, it having been rendered useless, and it being found cheaper to destroy it in this way than to remove it otherwise.

A resolution was introduced into the U.S. House of Representatives, Mar. 3, authorizing the President to investigate, as in his discretion may seem best, the advisability of entering into a treaty with Canada, providing for a deep waterway between the Great Lakes and the Atlantic, by way of the St. Lawrence River.

A press report from New Liskeard states that a company is being organized to acquire the steamboat Aileen, formerly operating on the Montreal River, and to run her in the passenger and freight traffic, between White River, North Timiskaming, Gigue and New Liskeard. The Aileen is stated to be 80ft. long, with 12½ft. beam.

In addition to the companies mentioned in our March issue, pg. 267, the following have joined the Canadian Lake Protective Association; Algoma Central and Hudson Bay Ry. Co., Forwarders, Ltd., International Steamship Co., Jaques Transportation Co., Montreal, and Great Lakes S. S. Co., Montreal, and Lake Erie S. S. Co., Western Navigation Co.

In connection with recent press reports to the effect that the Northern Navigation Co., intended to equip its vessels with wireless telegraph apparatus this year, we are officially advised that as there are no receiving stations on the Canadian side of the lakes, it would be useless to so equip the vessels at present.

The Buffalo, Lockport and Rochester Ry. will operate a steel steamboat this season, between Olcott Beach, N.Y., and Toronto, in conjunction with its electric railway having a connection with Buffalo, Lockport and Syracuse. The vessel to be utilized has a carrying capacity for 700 passengers, and formerly plied on Lake Erie between Cleveland, Ohio and Port Stanley.

The Minister of Railways and Canals, in the House of Commons, Mar. 10, speaking on the Welland canal, stated that the total cost to the present was $28,338,616. He also stated that during the session he intended to explain a definite proposal to widen and deepen the river, and said that he desired to do all he could to aid the proposed Welland and Georgian Bay canal schemes.

An order in council has been passed, changing the limits of the ferry across the Rainy River, between Ontario and Minnesota, so that they shall be co-terminous with the town of Fort Frances, and the land adjacent on the north bank of the river between the west boundary of the town and Pither's Point, where the rivers join the lake, and such points on the Minnesota side as may be arranged by competent authority there.

The Dominion Public Works Department is considering the question of inviting tenders for the construction of a dock at New Liskeard. Preliminary work in connection with the proposal has been carried out and estimates made. The matter of acquiring the Temiskaming Navigation Co.'s dock there, to incorporate with the new work, is being considered, if it can be obtained at a reasonable figure, but if not, the new dock will be built immediately to the south of it.

The Grant Cartage and Forwarding Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of $40,000 and office at Hamilton, to carry on a general business of warehousing, wharfinger, transportation and forwarding company, and act as ocean and inland carriers; to acquire similar companies, and to build, own and operate steam and other vessels, wharves, docks, and other transportation facilities. The provisional directors are, R. S. Rider, W. J. Shaw, P. Grant, C. K. Armstrong and C. Morin, Hamilton.

A deputation of Owen Sound citizens waited on the Ontario Government, Mar. 21, in support of a bill before the Legislature to empower the city to take $50,000 of stock in the company which proposes to build a dry dock and ship building plant at Owen Sound. The proposals include a dry dock 600 ft. long, 20 ft. deep, and sufficiently wide to accommodate lake vessels of the broadest beam; and the shipbuilding yards will have ways for three 600 ft. vessels, one of 400 ft., and two of 200 ft. An application has already been made to the Dominion Government for a 3% subsidy, under the act granting aid to dry docks.

At the annual meeting of the Temiskaming Navigation Co., at Haileybury, Mar. 9, a dividend of 5 per cent. was declared, making the third dividend paid. In 1908 and 1909 dividends of 10% were paid, but owing to an accident to one of the company's vessels last year the profits were considerably reduced. The steamboat Temiskaming is being partially remodelled, and some additional cabins are being placed on the upper deck. The steamboat City of Haileybury is having another deck added, and the other vessels are being thoroughly overhauled. Following are the officers and directors for the current year: President, G. H. Rochester; Vice President, M. J. Malone; other directors, S. McChestney, A. Ferland, J. M. Wood, and A. E. Way.

Manitoba, Saskatchewan and Alberta.

The Hyland Navigation and Trading Co., Ltd., Winnipeg, has been granted supplementary letters patent increasing its capital stock from $200,000 to $1,000,000.

The Gainsford Coal Co., ltd., has been incorporated under the Manitoba Companies Act, with a capital of $750,000, and office at Winnipeg, with power, among other things, to own and operate steam and other vessels, docks, warehouses, wharves, etc., and to carry on a general transportation business in passengers and freight. The provisional directors are: W. Pace, H. McLennan, J. Osborne, T. B. Campbell and W. Thorburn, Winnipeg.

The Lake Winnipeg and Red River Navigation Co., Ltd., has been incorporated under the Manitoba Companies Act, to carry on the business of carriers of passengers and freight, the construction of wharves, the acquisition and operation of steamboats and ferries, and generally such business as is usually carried on by a navigation company. The company has deposited with the Dominion Public Works Department, plans of a dock, which it proposes to build on the bank of the Red River, extending along the water frontage from Water St., to Broadway bridge.

The survey of the Saskatchewan River, which was partly done last season, is to be completed this year, and an estimate made of the cost of making the river navigable from Edmonton to Grand Rapids. The survey is in charge of L. R. Voligny, and he is reported to have stated that the work will chiefly consist of sounding and the taking of levels. What was done last year was more to see if the scheme to make the river navigable were feasible. It having been decided that it is so, an estimate of the cost is the first consideration.

B.C. and Pacific Coast Marine.

The C.P.R. recently received tenders for the erection of a wharf, including material, at Nanaimo.

The North Vancouver ferry receipts for Feb. were $4,319.40, of which $251.75 was for freight.

The Esquimalt and Naniamo Ry. has filed plans with the Dominion Public Works Department for a proposed wharf to be built in Stamp harbor, Port Alberni, Vancouver Island.

During 1910, over 300 ocean going vessels with a tonnage of about 325,000 and 1,200 coasting vessels with a tonnage of 450,000, were reported to have called at Prince Rupert.

The Dominion Public Works Department, received tenders, Mar. 23, for the charter of a steam tug boat, to tend the elevator dredge working at the First Narrows, Vancouver.

The Department of Marine is preparing plans for the erection of a lighthouse of the first order of the re-inforced concrete type, near Cape Cook, similar to those at Estevan and Triangle.

Evans, Coleman and Evans, Ltd., has added to its docking facilities at Victoria, by taking in the Victoria Dock Co.'s wharf, adjoining the G.T.P. wharves, which are also operated by it.

Reports from Prince Rupert state that a company is being formed with the object of operating a steamship service between Canada and Chinese ports, with Prince Rupert as the Canadian headquarters.

The G.T.P. Coast Steamship Co.'s s.s. Prince George, owing to a recent breakdown of her starboard engines, is being thoroughly overhauled, in preparation for the summer work, and her place has been taken by the s.s. Prince Rupert.

The Grand Trunk Pacific Coast Steamship Co. has received, at its Vancouver offices a model, 7ft. long, of its steamships Prince Rupert and Prince George, which is complete in every detail.

Evans, Coleman and Evans, Vancouver, announce that they have chartered the British barque Gulf Stream for a trip from Glasgow, Scotland, to Vancouver, with general cargo. She is expected to sail about Apr. 1.

The Dominion Government survey steamboat, Lilooet, which has been lying up at Esquimalt, is preparing for a summer cruise in the neighborhood of Hecate Strait, where it is anticipated, she will remain until about November.

It is reported that an application will shortly be made to the Dominion Government for a subsidy for the establishment of a shipbuilding plant at Port Mann., B.C. A. P. Gillies, Toronto, and N. Thompson, Vancouver, B.C., are reported to be interested in the matter.

The C.N.R. is reported to have decided to increase the dock accommodation at Port Mann, in an eastward direction. The s.s. Fitzpatrick recently unloaded the first consignment of steel rails at the port, without difficulty, a depth of 35 ft. being reported at the dock, so that the largest ocean going vessels can be accommodated.

The C.P.R. barge Robert Kerr, conveying coal for the Empress of India, was wrecked on Danger reef, near Ladysmith, Mar. 5. It is stated that she will be a total loss, but that the coal can be salved. The barge was built at Quebec in 1866, her dimensions being: Length, 190.6 ft.; breadth, 38.4 ft.; depth, 23.7 ft.; 1,123 tons register.

The Scandia Trading Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $25,000 to carry on a general mercantile business in the province, and in connection therewith to own and operate steam and other vessels, for the transportation of passengers and merchandise, and to act as general carriers by land and water.

The All Red Line, Ltd., which was recently incorporated under the B.C. Companies Act, as mentioned in our last issue, has acquired the s.s. Selma, formerly a steam yacht, which was purchased in England recently and taken to the Pacific coast. She has been put into service between Vancouver and Powel River points, making three trips weekly.

The Queen Charlotte Cold Storage and Black Cod Fishing Co., Ltd., has been incorporated under the B. C. Companies Act, with a capital of $300,000, to carry on a general fishing and fish dealing business, and in connection therewith to own and operate steam and other vessels, and other shipping facilities, and to act as forwarders, warehousemen, etc.

The Kitsumkallum Timber Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $1,500,000, and office at Toronto, to carry on a general lumbering business; and in connection therewith to own and operate steam and other vessels, wharves, docks, etc. The incorporators are W. J. Rooney, G. F. Morrison, R. F. Pack, P. Davies and R Nevitt, Toronto.

The C.P.R. s.s. Charmer is being thoroughly overhauled and repaired at Victoria, prior to being replaced in the B.C. Coast Service, as a relief vessel. A considerable amount of heavier framing has been fitted, and 75 new plates have replaced the old ones. She is also being equipped with new boilers and the necessary installation is being made to convert her into an oil burner.

The B.C. Public Works Department, recently invited applications for a charter for a ferry to ply across the Skeena River, above Kitsequecla Creek, the limits to extend for 1½ miles below the Beaver dam and half a mile above Kitsequecla Creek, and the ferry to be operated whenever required between 7 a.m., and 7 p.m., each day, except Sundays. The charter will be for two years ending Mar. 31, 1913.

The North Vancouver ferry steamboat North Vancouver No. 3, was launched there, Feb. 27. She is 165 ft. long, with a beam of 45 ft. over guards, and has fore and aft compound inverted engines of about 600 h.p. It is claimed that she is the first steel hull to be built on the Burrard Inlet, others having only been put together there. It was anticipated that she would be completed and ready for service by the end of March.

The G.T.P. Coast Steamship Co. is reported to have purchased the old schooner North Bend, which it intends to alter somewhat, and utilize in carrying unwieldy cargo to little known ports, where it would not be wise to risk more expensive vessels. The North Bend was built at Coos Bay, Ore., in 1877, her dimensions being: Length, 152.6 ft.; breadth, 32 ft.; depth, 11 ft.; tonnage, 392 register. She was formerly owned by Mackenzie Bros.

The interests which have acquired the Fort George Lumber and Navigation Co., are reported to have decided to place a steamboat service on the Fraser River between Fort George and Tete Jaune Cache, this summer. The first time such a trip was undertaken, was in July last.

The Grand Trunk Railway Company of Canada.

NOTICE is hereby given that the Ordinary General Half-Yearly Meeting of the Grand Trunk Railway Company of Canada will be held at the City Terminus Hotel, Cannon Street, London, E.C., on Thursday, the 20th April, 1911, at twelve o'clock noon precisely, for the purpose of receiving a report from the Directors, for the election of Directors and Auditors, and for the transaction of other business of the Company.

Notice is also given that a resolution will be submitted to the Meeting to assent to and accept an Act of the Parliament of Canada, entitled "The Grand Trunk Act, 1911," and to authorize the Directors to exercise the powers conferred by the said Act.

Notice is also given that the Transfer Books of the Company in London and Montreal will be closed from Saturday, the 18th day of March, to the day of the Meeting, both days inclusive.

By Order,

Alfred W. Smithers, Chairman.
H. H. Norman, Secretary.

Dashwood House, 9 New Broad Street, London, E.C.
March 10th, 1911.

CITY OF TORONTO

TENDERS WANTED
For Construction Equipment.

Separate or bulk tenders, on prescribed forms, will be received, by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, Canada, up to noon on Tuesday, April 11th, for the delivery of the following:—

(1) Two (2) full circle swing traction steam shovels, one and a quarter (1¼) yard dipper.
(2) Six (6) saddle tank locomotives, 36 in. gauge.
(3) Forty (40) four yard (4 yd.) dump cars, or fifty-four (54) three yard (3 yd.) dump cars, 36 in. gauge.
(4) Four (4) double track flat cars, 36 in. gauge.
(a)
(5) Two hundred (200) tons 30 lb. steel rail.
(b)
Twenty-four (24) No. 5 switch leads.
(c)
Seventy-five (75) kegs of spikes.
(d)
Eighteen hundred (1800) pair of fish plates.
(d)
Twenty (20) kegs bolts and nuts.

Envelopes containing tenders must be plainly marked on the outside as to contents.

Specification and form of tender may be obtained upon application from Department of Railways, Bridges and Docks, City Engineer's Office, Toronto.

The lowest or any tender not necessarily accepted.

G. R. GEARY (Mayor),
Chairman Board of Control.
City Hall, Toronto, March 27th, 1911.

when Capt. J. H. Bonser took the steamboat Fort George beyond the Grand Canyon, to Tete Jaune Cache, with ten tons of freight and 18 passengers, without encountering any special difficulties.

The North Vancouver Ferry Co.'s ferry boat which was recently launched there, was given a trial trip, Mar. 14, when everything passed off satisfactorily.

The Columbia River Lumber Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $5,500,000, and office at Toronto, to conduct a general lumbering and timber business, and in connection therewith to own and operate vessels of every description, wharves, docks, piers, etc. The incorporators are, F. H. Phippen, K.C., G. G. Ruel, G. F. Macdonnell, R. H. M. Temple and R P. Ormsby, all of whom are connected with the Canadian Northern Ry. legal department, Toronto.

The Public Works Department's twin screw bucket dredge, no. 508, which was recently built at Glasgow, Scotland, and ordered through John Reid and Co., Montreal, arrived at Victoria, Mar. 9, and created considerable interest there on account of her somewhat strange appearance. She sailed from Glasgow, Nov. 16, 1910, and maintained a speed of about 6½ knots an hour, calling at seven ports for coaling and supply purposes. The machinery is of the latest type, each bucket having a capacity of 28 cub. ft., while the dredge will be able to handle about 1,200 tons an hour and dredge to a depth of 50 ft.

The Dominion Public Works Department has awarded a contract to the Wallace Shipyards Co., North Vancouver, for the construction of a steel dredge tender, to be attached to the new dredge, which recently arrived on the coast from Scotland, and which is to be used in dredging at the First Narrows. She is to be named Trojan. Another dredge tender, to be named Achilles, is, at present, under construction, and it is anticipated that she will be ready for operation by the end of June, in connection with the dredge Ajax, replacing the tender Petrel. A third tender, gasoline driven, to be named Satellite, for the dredge King Edward, is also being built at Vancouver.

We are officially advised that the G.T.P. Coast Steamship Co., which recently purchased the Albion Iron Works site at the foot of Westminster Ave., Vancouver, with a water frontage of about 470 ft., will proceed rapidly with the carrying out of the improvements contemplated, which include wharves with accommodation for vessels of any tonnage, and warehouses fully equipped for the expeditious handling of passengers and freight. The plans for this work are being prepared, and the erection of a suitable terminal building, with offices and stores, with railway and steamship offices, waiting rooms, ticket offices, etc., fronting on the end of Westminster Ave., is also under consideration, but no plans have, as yet, been undertaken.

The Northern Navigation Co., of Vancouver's steamship British Empire, which is laid up at St. Vincent, owing to damage sustained while on her way from England to Vancouver, will, it is reported, have to await the arrival of new parts to replace the defective machinery, from England. The company recently purchased two steamships in England, one of 1,200 tons, and one of 800 tons carrying capacity. The latter one is the British Empire, which left Liverpool, Jan. 21, but, owing to the delay, it is expected that the former vessel will arrive first. The British Empire, on her arrival, will be put on the run between Prince Rupert and Vancouver, in connection with the S.S. Cetriana, and the other vessel will be operated between Vancouver, Queen Charlotte, Portland Canal, Ketchikan and Skagway.

The C.P.R. tow car float, which is to be operated in the Proctor-Kootenay Landing service, as mentioned in our February issue, is being built at the Polson Iron Works, Toronto, and on completion, it will be taken to pieces and shipped to Nelson, re-erected there and completed for launching. It will be built entirely of steel, and be of the following dimensions: length, 224 ft.; beam 42 ft.; depth 7¾ ft. It has no sheer, but the beams are cambered, bilges rounded with 18 ins. radius, channel floors and angle side frames and beams, plating, generally ⅜ in. thick and all seams joggled, thereby avoiding liners for the outside strakes. The longitudinal strength is maintained by two longitudinal bulkheads, running all fore and aft, and three angle and plate trusses. There are also nine transverse bulkheads; all bulkheads are water tight and sub-divide the hull into 30 separate water tight compartments. Three tracks of rail are to be laid on the deck, resting on steel casting stools about 4 ft. apart. The capacity of the float will be 18 loaded freight cars. The weight of the total shipments will be about 500 tons, and it is expected to be completed about the end of July.

Northern Navigation Co. Ltd.

Very full particulars of the terms under which Jas. Playfair, of Midland, Ont., and his associates proposed to acquire control of this company, which has its headquarters at Collingwood, Ont., were given in our last issue. The offer of 125 for the stock met with the approval of a considerable majority of the shareholders. On March 12 some 7,600 shares out of 10,000 had been deposited in the bank in accordance with the offer, and the buyers had in addition secured considerable stock by buying in the market, so that they now have control of over 90% of the total capital.

Cheques for the stock deposited in the bank were mailed to the shareholders March 20, with interest at 6% on par value from Dec. 31 to Mar. 18. Some of the shareholders have objected to interest being paid only on the par value of the stock, as the N.N. Co.'s directors' circular apprising them of Mr. Playfair's offer and advising its acceptance said that it was at "the uniform price of $125 per share, together with interest thereon at the rate of 6% from Dec. 31, 1910, to date of payment." We understand that the balance of interest on $125, instead of $100, is to be paid.

The last list of shareholders prepared on Jan. 16 showed a total of 358 shareholders. The directors' holdings were as follows:—W. J. Sheppard, President, 270 shares; H. Y. Telfer, Vice President, 85; C. E. Stephens, Secretary Treasurer, 40; H. B. Smith, 100; F. A. Lott, 77; C. D. Warren, 20; Hon. J. S. Hendrie, 50; W. D. Matthews, 40; W. E. Davis, 10. The Manager, H. H. Gildersleeve, held 190. The following were the other principal individual holdings of 100 shares and over, the addresses being Toronto, unless otherwise mentioned:—Estate H. C. Hammond, 350; S. F. McKinnon, 200; W. H. Knowlton, 198; Jas. Henderson, 100; E. W. Langley, 100; E. B. Osler, 100; F. F. Telfer, Collingwood, 100; R. W. Leonard, St. Catharines, 100; T. McNamara, Peterboro, 100.

The brokers and banks having 100 shares in their names were:—Osler and Hammond, 742; Colonial Investment and Trust Co., 724; Bank of Nova Scotia, 185; Imperial Bank, 158; National Trust Co., 137; Union Bank, 136; Manufacturers Life Assurance Co., 115; Bank of Hamilton, 100; Merchants Bank, 100.

At a meeting of the N.N. Co.'s board in Toronto, Mar. 24, all the directors retired except W. E. Davis, P.T.M. Grand Trunk Ry., and H. B. Smith, Owen Sound, and it having been decided to increase the directorate from 10 to 11, the following were also elected:—President, Jas. Playfair, Midland, Ont.; Vice President, J. R. Binning, Manager Furness, Withy and Co., Ltd., Montreal; Secretary, F. A. Magee, Hamilton, Ont. Other directors: J. E. Dalrymple, Assistant Freight Traffic Manager, G.T.P.R., Winnipeg; E. Bristol, M.P., Toronto; W. G. Morden, director Canada Securities Corporation, Montreal; T. P. Birchall, General Manager Canada Securities Corporation, Montreal; H. W. Richardson, vessel owner, Kingston, Ont.; F. F. Pardee, M.P., Sarnia, Ont. H. H. Gildersleeve was reappointed Manager, and C. A. Macdonald, heretofore Assistant Manager, was appointed Treasurer and Assistant Manager.

It was decided to invite tenders for an additional vessel to comply with the G.T.R. Co.'s request that another one of the Hamonic type be place on the Lake Huron-Lake Superior run.

As stated in our last issue, Lord Furness, of Furness, Withy and Co., is largely interested in the purchase of the N.N. Co.'s stock, and the others associated in it with Mr. Playfair are principally in Montreal. The financial arrangements were carried through by the Canada Securities Corporation.

While a merger between the Northern Navigation Co. and the Inland Lines Ltd., of which Mr. Playfair is President, has been discussed, nothing appears to have been definitely settled, but it is probable that a holding company to control them may be decided on. In this connection a larger merger, to include the Richelieu and Ontario Navigation Co., is also much talked of.

Welland and Georgian Bay Canals.

In referring to inland marine transportation in the House of Commons, Mar. 10, the Minister of Railways said, while Canada must of necessity increase her railway facilities, she must not lag behind in keeping her waterways transportation as fully developed as possible. It was a curious coincidence that the greater the increase in railway traffic the greater the increase in canal and waterbourne traffic. That arose from the fact that the volume of traffic is greater and that the regulating force of the waterways on the rates of railways attracts traffic to those particular routes that are so governed. Following is a statement of tons of freight passed through the various canals during the years 1909 and 1910:—

	1909.	1910.	Increase.
Sault Ste. Marie	27,861,245	36,395,687	8,534,442
Welland	2,025,951	2,326,290	300,399
St. Lawrence	2,410,629	2,760,752	350,123
Chambly	752,117	669,299	82,818
Ottawa	336,938	385,261	48,322
Rideau	91,774	134,881	43,107
St. Peter's	78,850	85,951	6,101
Murray	102,291	177,941	75,650
Trent Valley	59,952	46,263	13,699
St. Andrews	.....	8,283	8,283
Total	33,720,748	42,990,608	9,269,860
1901		5,665,259	
1910		42,990,608	

Increase for 10 years..... 37,325,349 tons.
Equal to 660 per cent.

If we are to continue to have this traffic, he went on, we must develop this branch of our transportation system. The figures show that traffic on these waterways has increased more rapidly than the railways, of which they are the regulators, and consequently, if Canada is to maintain her hold on the carrying trade she must be alert to the greater improvement of her waterways.

In connection with the Welland Canal, he gave a detailed description of the present canal and a statement of its total cost, and went on to say that while surveys for improvements had been in progress for some years, it was

AMALGAMATION NOTICE.

NOTICE is hereby given that a duplicate original of an agreement between the Canadian Northern Railway Company and the Edmonton and Slave Lake Railway Company, dated 4th January, 1911, amalgamating the said companies under the name of the Canadian Northern Railway Company, as sanctioned by the Governor General in Council under the provisions of section 361 of The Railway Act, was filed in the office of the Secretary of State of Canada on the 20th day of February, 1911, and the Secretary of State of Canada on the 20th day of February, 1911.

Toronto, 21st February, 1911.

GEO. F. MACDONNELL, Assistant Solicitor.

only within the last two or three years that there had been any great activity shown. Surveys had been made in order to find, if possible, a route for a better and bigger canal, if it is deemed better to build a new one rather than to deepen the old one. He could not define the policy of the Government on this matter, more especially as to the time at which any work would be done, but he could say that three routes had been surveyed, and since Oct. 8, 1910, survey work had been practically confined to the third route, and the location had been determined and plotted on the plan. This route commences at Lake Erie, east of Morgan's point, thence across the marsh to Chippewa Creek, east of Marshville, thence curving to the west in the vicinity of Boyle, through the divide by a deep cut to the rocky gorge on Twenty Mile creek, near Jordan. Borings had been made to rock between Lake Erie and Boyle, and another boring machine was being used in determining the surface of the rock in the gorge between Jordan and Lake Ontario. The starting point on Lake Erie for this route would be several miles from Port Colborne, and he would say, personally, that the advantages of this route would have to be very great to justify the Government in giving up the work done at Port Colborne. Before finality was reached upon the matter the Government would gather the best opinions upon the subject.

It had been stated that the Georgian Bay Canal was the route which should be developed. That project did not come before his department, but he believed that it would be in the interests of Canada from one end to the other to enter upon the construction, not only of the Georgian Bay Canal, but also of a new Welland Canal, at a not very distant date. He believed that no greater interest would accrue from any investment that the people could make than would result from the development of these two waterways.

The Progressive Steamboat Co. recently ordered new machinery in England for its tug Progressive, the displaced engines being transferred to the recently built tug Prospective. The latter, which was launched at False Creek, is 72 ft. long, with 17 ft. beam.

The Vancouver Insurance and Vessel Agency, Ltd., has been incorporated under the B.C. Companies Act, with a capital of $50,000, to carry on a general insurance business and vessel agency; to own and operate steam and other vessels, wharves, docks, etc., and act as wharfingers, warehousemen and general carriers.

The Hastings Mill Co.'s steam tug Haro, which has been built at Vancouver and recently put into service towing log booms for the company, is of the following dimensions. length over all, 116 ft.; beam, 24¾ ft.; depth, molded, 13½ ft. She has a keel 16 by 18, all in one length, and clamp streak 9 by 17 by 95 ft. long, all in one piece. She is equipped with triple expansion engines, built in Glasgow, Scotland, of 300 n.h.p., supplied with steam by a Scotch marine boiler at 180 lbs. pressure.

The Purchasing Agents' Guide

To the Manufacturers of and Dealers in Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' Supplies, &c.

Acetylene
Commercial Acetylene Co.....Toronto.
Aerated Waters
E. L. Drewry .....Winnipeg.
Air Brakes and Fittings
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canadian Westinghouse Co. Hamilton, Ont.
Ales
E. L. Drewry .....Winnipeg.
Alloys
American Vanadium Co....Pittsburg, Pa.
Angle Bars
Nova Scotia S. & C. Co., New Glasgow, N.S.
Steel Co. of Canada, Ltd., Hamilton, Ont.
Anti Rail Creepers
The Holden Co., Ltd.....Montreal.
Asbestos
Canadian H. W. Johns-Manville Co., Ltd. .....Toronto
Automobiles
Preston Car & Coach Co...Preston, Ont.
Axes
James Smart Mfg. Co.....Brockville, Ont.
Axles
Canadian Car & Foundry Co....Montreal.
James Hutton & Co. .....Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Jas. W. Pyke & Co.....Montreal.
Steel Co. of Canada, Ltd., Hamilton, Ont.
Babbit Metal
Tallman Brass & Metal Co., Hamilton, Ont.
Beacons
International Marine Signal Co....Ottawa.
Bearings, Side
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.
Blankets and Bedding
The Hudson's Bay Co. .....
Blasting Powder
Curtis & Harvey (Canada) Ltd...Montreal
Boiler Checks
Nathan Manufacturing Co.....New York.
Boilers
Babcock & Wilcox, Ltd.....Montreal.
Poison Iron Works, Ltd.....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers, Portable
Babcock & Wilcox, Ltd.....Montreal.
Poison Iron Works, Ltd.....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers, Stationary and Marine
Babcock & Wilcox, Ltd.....Montreal.
John Inglis Co., Ltd. .....Toronto.
Poison Iron Works, Ltd.....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boiler Staybolt Iron or Steel Bars
Falls Hollow Staybolt Co..Cuyahoga Falls.
Boilers, Steam
Babcock & Wilcox, Ltd.....Montreal.
John Inglis Co., Ltd. .....Toronto.
Poison Iron Works, Ltd.....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers, Water Tube
Babcock & Wilcox, Ltd.....Montreal.
John Inglis Co., Ltd. .....Toronto.
Poison Iron Works, Ltd.....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers
Canadian Car & Foundry Co....Montreal.
Canadian Ry. Equipment Co., Welland, Ont.

Bolt Cutters
London Machine Tool Co., Ltd., Hamilton.
Bolts, Track
Nova Scotia S. & C. Co., New Glasgow, N.S.
Borers, Car Wheel
John Bertram & Sons Co....Dundas, Ont.
Boring Mills
London Machine Tool Co., Ltd., Hamilton.
Brake Beams
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.
Brake Shoes
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
The Holden Co., Ltd.....Montreal.
Brake Shoes, Locomotive Driver
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
Dorner Railway Equip. Co....Chicago, Ill.
Railway Materials Co. .....New York.
Brasses, Car
T. McAvity & Sons .....St. John, N.B.
Bridge Numbers
Acton Burrows, Limited .....Toronto.
Bridges
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.....Montreal.
Bronze
American Vanadium Co....Pittsburg, Pa.
Buckets, Coal, Ore and Concrete
M. Beatty & Sons, Ltd....Welland, Ont.
Brown Hoisting Machinery Co., Cleveland.
Williams & Wilson, Ltd .....Montreal.
Buildings, Steel
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.....Montreal.
Bumping Posts
Dominion Equip. & Supply Co., Winnipeg.
The Holden Co., Ltd.....Montreal.
McCord & Co. .....Chicago, Ill.
Whyte Railway Signal Co. .....Toronto
Buoys
International Marine Signal Co....Ottawa.
Cables, Electric and Feeder
Chapman & Walker, Ltd.....Toronto.
E. F. Phillips Electrical Works.Montreal.
The Wire and Cable Co.....Montreal.
Capstans
Dake Engineering Co..Grand Haven, Mich.
Caps, Uniform
W. H. Coddington .....Hamilton, Ont.
Car Furnishings
Guilford S. Wood.....Chicago, Ill.
Car Loaders, Box
Mussens, Ltd. .....Montreal.
Car Movers
F. H. Hopkins & Co.....Montreal.
Mussens, Ltd. .....Montreal.
Cars
Crossen Car Mfg. Co.....Cobourg, Ont.
Canadian Car & Foundry Co....Montreal.
Dorner Engineering Co.....Chicago, Ill.
J. T. Gardner .....Chicago, Ill.
Hart-Otis Car Co., Ltd.....Montreal.
The Males Co., ... Cincinnati, O.
Ottawa Car Co., Ltd.....Ottawa.
Pay-As-You-Enter Car Co....New York.
Preston Car and Coach Co., Ltd..Preston.
Russel Wheel & Fdry Co..Detroit, Mich.
Western Wheeled Scraper Co. Aurora, Ill.

Cars, Logging
Peteler Car Co. .....Minneapolis, Minn.
Russel Wheel & F'dry Co...Detroit, Mich.
Castings
American Vanadium Co....Pittsburg, Pa.
Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co.....Cobourg, Ont.
John Inglis Co., Ltd. .....Toronto.
Lumen Bearing Co.....West Toronto, Ont.
Russel Wheel & F'dry Co...Detroit, Mich.
Standard Steel Works Co..Philadelphia, Pa.
Castings, Brass
Canadian Bronze Co. .....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co. .....Walkerville, Ont.
Lumen Bearing Co.....West Toronto, Ont.
Tallman Brass & Metal Co., Ltd.Hamilton.
Castings, Car
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Castings, Iron
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co.....Walkerville, Ont.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Castings, Iron and Steel
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Castings, Malleable
Taylor & Arnold .....Montreal.
Castings, Manganese Steel
Lumen Bearing Co.....West Toronto, Ont.
Montreal Steel Works, Ltd.....Montreal.
Castings, Steel
American Vanadium Co....Pittsburg, Pa.
Canada Iron Corporation, Ltd..Montreal.
W. Kennedy & Sons, Ltd., Owen So'd, Ont.
Montreal Steel Works .....Montreal.
Chains
B. J. Coghlin & Co.....Montreal.
Chisels for Pneumatic Chipping Hammers
Edgar Allen & Co., Ltd. ..... Montreal.
Cleveland Punch & Shear Wks., Cleveland.
Closets, Car
Duner Co. .....Chicago, Ill.
Coal
Nova Scotia S. & C. Co., New Glasgow, N.S.
Compressors, Air
Allis-Chalmers-Bullock Ltd. ....Montreal.
The American Well Works...Aurora, Ill.
Canadian Rand Co. .....Montreal.
The Holden Co., Ltd.....Montreal.
John Inglis Co., Ltd. .....Toronto.
Concrete Mixers and Rock Crushers
F. H. Hopkins & Co.....Montreal.
Mussens, Limited .....Montreal.
Contractors' Supplies
American Hoist & Der. Co.St. Paul Minn.
F. H. Hopkins & Co.....Montreal.
Rice Lewis & Son.....Toronto.
Peteler Car Co. .....Minneapolis, Minn.
Russel Wheel & Fdry.. Co.:Detroit, Mich.
Western Wheeled Scraper Co..Aurora, Ill.
Williams & Wilson, Ltd .....Montreal.
Conveyors, Coal and Ash
Babcock & Wilcox, Ltd.....Montreal.
Williams & Wilson, Ltd .....Montreal.
Copying Presses
James Smart Mfg. Co.....Brockville, Ont

Couplers, Car and Locomotive
Canadian Car & Foundry Co...Montreal.
McConway & Torley Co....Pittsburg, Pa.
Montreal Steel Works, Ltd.....Montreal.
Taylor & Arnold .....Montreal.

Couplers, Steam
Consolidated Car Heating Co., Albany, N.Y

Cranes
Brown Hoisting Machinery Co..Cleveland.
Northern Engineering Wks..Detroit, Mich.
Williams & Wilson, Ltd .....Montreal.

Cranes, Electric
Babcock & Wilcox .....Montreal.
Dominion Bridge Co. .....Montreal.
Mussens, Limited .....Montreal.
Northern Engineering Wks, Detroit, Mich.

Cranes, Locomotive
American Hoist & Derrick Co., St. Paul, M.
The Males Co., ...Cincinnati, O.

Cranes, Wrecking
Mussens, Limited .....Montreal.

Crowbars
B. J. Coghlin & Co.....Montreal.

Curtains and Fixtures, Car
The Holden Co., Ltd.....Montreal.
Preston Car & Coach Co...Preston, Ont.

Cuts
Acton Burrows, Limited .....Toronto.

Cylinders
American Vanadium Co....Pittsburg, Pa.

Derricks
American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons .....Welland, Ont.
Mussens, Limited .....Montreal.

Derricks, Car
American Hoist & Der. Co.St. Paul Minn.

Diaphragms, Vestibule
Guilford S. Wood.....Chicago, Ill.

Dies
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. .....Hespeler, Ont.

Ditchers
American Hoist & Der. Co.St. Paul, Minn.
M. Beatty & Sons .....Welland, Ont.

Diving Outfits
John Date .....Montreal.
Mussens, Limited .....Montreal.

Doors, Steel Rolling
Mussens, Limited .....Montreal.

Door Signs
Acton Burrows, Limited .....Toronto.

Draft Gear
The Holden Co., Ltd.....Montreal.
McCord & Co. .....Chicago, Ill.
Standard Coupler Co.....New York City.
T. H. Symington & Co.....Baltimore, Md.

Draughtsmen's Supplies
John A. Hart & Co .....Winnipeg.

Dredges
M. Beatty & Sons .....Welland, Ont.
Polson Iron Works, Ltd.....Toronto.

Drills, Air
Canadian Rand Co.....Montreal.

Drills, Flat Twisted
Cleveland Punch & Shear Wks., Cleveland.

Drills, Radial
London Machine Tool Co., Ltd., Hamilton.

Dry Goods
The Hudson's Bay Co.....

Dump Cars, Contractors'
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co.....Montreal.
Peteler Car Co. .....Minneapolis, Minn.
Western Wheeled Scraper Co..Aurora, Ill.

Dump Cars, Hand
Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.

Dynamos
Northern Electric & Mfg. Co.....Montreal.

Dynamo and Electric Castings
Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Economizers
Babcock & Wilcox, Ltd.....Montreal.

Electric Apparatus
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd.....Toronto.
Northern Electric & Mfg. Co.....Montreal.

Electric Car Route Signs
Acton Burrows, Limited .....Toronto.
Preston Car & Coach Co...Preston, Ont.

Electric Light Plant
Allis-Chalmers-Bullock Ltd. ....Montreal.

Elevators, Grain
John S. Metcalf Co. .....Chicago, Ill.

Enameled Iron Signs
Acton Burrows, Limited .....Toronto.

Engines, Automatic
Polson Iron Works, Ltd.....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Russel Wheel & Fdry Co..Detroit, Mich.

Engines, Corliss
Allis-Chalmers-Bullock Ltd. ....Montreal.
John Inglis Co., Ltd. .....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Gas
Allis-Chalmers-Bullock Ltd. ....Montreal.
Williams & Wilson, Ltd .....Montreal.

Engines, Gasolene
Canadian Fairbanks Co., Ltd...Montreal.
Ontario Wind Engine & Pump Co. Toronto.

Engines, Hoisting
Allis-Chalmers-Bullock Ltd. ....Montreal.
American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons .....Welland, Ont.
Dominion Equip. & Supply Co., Winnipeg.
John Inglis Co., Ltd. .....Toronto.
Polson Iron Works, Ltd.....Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Williams & Wilson, Ltd .....Montreal.

Engines, Pumping
John Inglis Co., Ltd. .....Toronto.

Engines, Stationary and Marine
John Inglis Co., Ltd. .....Toronto.
Polson Iron Works, Ltd.....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Stationery, Appliances
Nathan Manufacturing Co.....New York.

Engines, Steam
Allis-Chalmers-Bullock Ltd. ....Montreal.

Engineers, Consulting
Alfred Lovell .....Philadelphia, Pa.

Explosives
Curtis & Harvey (Canada) Ltd...Montreal

Express Office Signs
Acton Burrows, Limited .....Toronto.

Fencing
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Ferro-Vanadium
American Vanadium Co. ..Pittsburg, Pa.

Flags
The Hudson's Bay Co.....

Flour
The Hudson's Bay Co.....

Forgings
American Vanadium Co. ..Pittsburg, Pa.
Canadian Car & Foundry Co...Montreal.
Cleveland City Forge & Iron Co., Cleveland.
Crossen Car Mfg. Co.....Cobourg, Ont.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Standard Steel Works Co., Philadelphia, Pa.
Steel Co. of Canada, Ltd. ..Hamilton, Ont.

Foundry Appliances
Goldschmidt Thermit Co. .....Toronto.
Ont. Wind Eng. & Pump Co., Ltd., Toronto.

Frames, Steel for Cars
Canadian Ry. Equip't Co., Welland, Ont.

Frogs
Canadian Ramapo Iron Wks.Niagara Falls.
Johnson, Wrecking Frog Co..Cleveland, O.
Peteler Car Co. .....Minneapolis, Minn.

Furnaces, Corrugated
Continental Iron Works....Brooklyn, N.Y.

Furnaces, Oil
Railway Materials Co. .....New York.

Furnaces, Shop
Railway Materials Co. .....New York.

Fuse Batteries
Curtis & Harvey (Canada) Ltd...Montreal

Fuse Detonators
Curtis & Harvey (Canada) Ltd...Montreal

Fuses, Electric
Curtis & Harvey (Canada) Ltd...Montreal

Gaskets
The Holden Co., Ltd.....Montreal.
McCord & Co. .....Chicago, Ill.

Gates
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Gates, Crossing
The N. L. Piper Ry. Supply Co...Toronto.
Whyte Railway Signal Co. .....Toronto

Gauge Cocks
Nathan Manufacturing Co.....New York.

Gauges, Locomotive
Taylor & Arnold .....Montreal.
Utica Steam Gauge Co.....New York.

Gauges, Water
Nathan Manufacturing Co.....New York.

Gears
American Vanadium Co. ..Pittsburg, Pa.

Generators, Electric
Dorner Railway Equip. Co....Chicago, Ill.
Northern Electric & Mfg. Co.....Montreal.

Graders and Ditchers
Western Wheeled Scraper Co..Aurora, Ill.

Grates, Shaking
Babcock & Wilcox, Ltd.....Montreal.
Polson Iron Works, Ltd.....Toronto.

Groceries
The Hudson's Bay Co.....

Hammers, Cast Steel
American Brake Shoe & Fdry Co.Mahwah.
James Smart Mfg. Co....Brockville, Ont.

Handcars
Canadian Fairbanks Co., Ltd...Montreal.
Crossen Car Mfg. Co.....Cobourg, Ont.
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co.....Montreal.
Mussens, Limited .....Montreal.
Rice Lewis & Son.....Toronto.
Whyte Railway Signal Co. .....Toronto

Hardware
The Hudson's Bay Co.....
Rice Lewis & Son.....Toronto.

Hats
W. H. Coddington.....Hamilton, Ont.

Headlights
Commercial Acetylene Co.....Toronto.
The N. L. Piper Ry. Supply Co...Toronto.
Pyle National Elec. Headlight Co..Chicago.

Headlinings
Crossen Car Mfg. Co.....Cobourg, Ont.

Heaters, Feedwater
Robb Engineering Co., Ltd..Amherst, N.S.

Heaters, Oil-burning
Tate, Jones & Co. Inc. ..... Pittsburg, Pa.

Heating, Car
Canadian Gold Car H'g & L'g Co..Montreal.
Consolidated Car Heating Co., Albany, N.Y.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat. Co.New York

Hoists
Dake Engineering Co..Grand Haven, Mich.

Hoists, Electric
American Hoist & Derrick Co., St. Paul, M.

Hoists, Pneumatic
Taylor & Arnold .....Montreal.

Hoppers, Car, Wet or Dry
Duner Co. .....Chicago, Ill.

Hose, Air Brake and Steam
Guilford S. Wood.....Chicago, Ill

Hydrants
Canadian Fairbanks Co., Ltd...Montreal
Kerr Engine Co.....Walkerville, Ont.

Illustrations
Acton Burrows, Limited.....Toronto

Injectors
T. McAvity & Sons .....St. John, N.B.
Nathan Manufacturing Co.....New York.

Inspections
R. W. Hunt & Co.....Montreal.
Alfred Lovell .....Philadelphia, Pa.

Insurance, Accident
Can. Casualty & Boiler Ins. Co...Toronto.
Canadian Ry. Accident Ins. Co...Ottawa.
Imp. Guarantee & Acc. Ins. Co..Toronto.
London Guar. & Accident Co., Ltd.Toronto.

Insurance, Boiler
Can. Casualty & Boiler Ins. Co...Toronto.

Interlocking Plant and Signals
Montreal Steel Works, Ltd.....Montreal.
Railway Signal Co. of Canada....Montreal.
Saxby & Farmer, Ltd.....Montreal.

Iron, Pig
Nova Scotia S. & C. Co., New Glasgow, N.S.

Iron Signs
Acton Burrows, Limited.....Toronto.

Iron Staybolt Bars
Falls Hollow Staybolt Co..Cuyahoga Falls.

Jacks
Canadian Fairbanks Co., Ltd...Montreal.
Dominion Equip. & Supply Co., Winnipeg.
H. & E. Lifting Jack Co..Waterville, Que.
F. H. Hopkins & Co., Ltd.....Montreal.
Montreal Steel Works, Ltd.....Montreal.
Mussens, Limited .....Montreal.
A. O. Norton .....Coaticook, Que.
James Smart Mfg. Co....Brockville, Ont.
Whyte Railway Signal Co. .....Toronto
Williams & Wilson, Ltd .....Montreal.

Japans
The Dougal Varnish Co., Ltd...Montreal.

Journal Bearings
Canadian Bronze Co. .....Montreal.
Crossen Car Mfg. Co. .....Cobourg, Ont.
Kerr Engine Co. .....Walkerville, Ont.
Jas. W. Pyke & Co. .....Montreal

Journal Boxes
The Holden Co., Ltd.....Montreal.
McCord & Co. .....Chicago, Ill.

Lager Beer, &c.
E. L. Drewry .....Winnipeg

Lagging and Covering, Locomotive
Canadian H. W. Johns-Manville Co., Ltd. .....Toronto
Taylor & Arnold .....Montreal.

Lamps, Arc
Northern Electric & Mfg. Co.....Montreal.

Lamps, Gas
Commercial Acetylene Co.....Toronto.

Lamps, Incandescent
Canadian Westinghouse Co..Hamilton, Ont.

Lamps and Lanterns
The Hudson's Bay Co.....Montreal.
The Hiram L. Piper Co.....Toronto.
The N. L. Piper Ry. Supply Co..Toronto.

Lamps, Switch
The N. L. Piper Ry. Supply Co..Toronto.

Lathes
John Bertram & Sons Co.....Dundas, Ont.
Williams & Wilson, Ltd .....Montreal.

Lighting, Buoy
Blaugas Co. of Canada, Ltd.....Montreal
International Marine Signal Co. ..Ottawa.
Safety Car Htg. & Ltg. Co.....New York.

Lighting, Car
Blaugas Co. of Canada, Ltd.....Montreal
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co.....Toronto.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat. Co.New York

Lighting, Signal
Commercial Acetylene Co.....Toronto.

Lights, Contractors' and Wrecking
F. H. Hopkins & Co., Ltd.....Montreal
Mussens, Limited .....

Locomotives, Compressed Air
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co..Kingston, Ont.
International Marine Signal Co..Ottawa.
Montreal Locomotive W'ks (Ltd.).Montreal.

Locomotives, Contractors'
Dominion Equip. & Supply Co., Winnipeg.

Locomotives, Electric
Baldwin Locomotive Works..Philadelphia.
Montreal Locomotive W'ks (Ltd.).Montreal.

Locomotives, Logging
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co..Kingston, Ont.

Locomotives, Rack
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co..Kingston, Ont.
Montreal Locomotive Works.....Montreal.
Locomotives, Steam
Baldwin Locomotive Works...Philadelphia.
Canadian Fairbanks Co. Ltd...Montreal.
Canadian Locomotive Co. ..Kingston, Ont.
J. T. Gardner .....Chicago, Ill.
The Males Co., ... Cincinnati, O.
Montreal Locomotive Works.....Montreal.
Vulcan Iron Works .....Wilkesbarre, Pa.
Lorries, Tracklaying
Crossen Car Mfg. Co.....Cobourg, Ont.
F. H. Hopkins & Co.....Montreal.
Lubricators
McCord & Co. .....Chicago, Ill.
Nathan Manufacturing Co.....New York.
Taylor & Arnold .....Montreal.
Lumber
Imperial Timber & Trading Co., Vancouver.
Parry Sound Lumber Co. .....Toronto.
Machines and Plant, Contractors'
American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons .....Welland, Ont.
Canadian Fairbanks Co., Ltd...Montreal.
J. T. Gardner .....Chicago, Ill.
F. H. Hopkins & Co. .....Montreal.
Mussens, Limited .....Montreal.
Machines and Tools, Prospecting
The American Well Works...Aurora, Ill.
Machines and Tools, Well Drilling
The American Well Works...Aurora, Ill.
Machines, Boring and Turning
John Bertram & Sons Co.....Dundas, Ont.
Machines, Car Shop
John Bertram & Sons Co., Ltd.Dundas, Ont.
Greenlee Bros. & Co. .....Chicago, Ill.
Machines, Cement
James W. Pyke & Co. .....Montreal.
Machines, Drilling
John Bertram & Sons Co. ..Dundas, Ont.
Machines, Earth and Stone Handling
Western Wheeled Scraper Co..Aurora, Ill.
Machines, Hoisting
American Hoist & Derrick Co. St. Paul, M.
Brown Hoisting Machinery Co..Cleveland.
Machines, Logging
Russel Wheel & Fdry. Co..Detroit, Mich.
Machines, Milling
John Bertram & Sons Co. ..Dundas, Ont.
Machines, Planing and Shaping
John Bertram & Sons Co. ..Dundas, Ont.
Cleveland Punch & Shear Wks., Cleveland.
Machines, Radial Drilling
John Bertram & Sons Co. ..Dundas, Ont.
Machines, Rivetting
Long & Allstatter Co. .... Hamilton, Ohio.
Machines, Slotting
John Bertram & Sons Co. ..Dundas, Ont.
Machines, Straightening
Cleveland Punch & Shear Wks.Cleveland.
Machines, Tire Welding
Long & Allstatter Co. .... Hamilton, Ohio.
Machines, Track
Greenlee Bros. & Co. .....Chicago, Ill.
Machines, Tracklaying
F. H. Hopkins & Co. .....Montreal.
Machines, Wood and Iron Working
Canadian Fairbanks Co., Ltd...Montreal.
Williams & Wilson, Ltd .....Montreal.
Machine Tools
John Bertram & Sons Co. ..Dundas, Ont.
Pratt & Whitney Co. .....Dundas, Ont.
Manhole Frames and Covers
American Brake Shoe & F'dry Co.Mahwah.
Canada Iron Corporation, Ltd...Montreal.
Marine Repairs
Goldschmidt Thermit Co. .....Toronto.
Marine Supplies
Rice Lewis & Son.....Toronto.
Metal, Babbit
Tallman Brass & Metal Co., Hamilton. Ont.
Metals
Goldschmidt Thermit Co. .....Toronto.
Metal Work, Structural
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.....Montreal.
Montreal Locomotive Works.....Montreal.
Jas. W. Pyke & Co. .....Montreal.
Milepost Numbers
Acton Burrows, Limited.....Toronto.
Motors
Canadian Fairbanks Co., Ltd...Montreal.
McCord & Co. .....Chicago, Ill.
Motors, Electric
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd.....Toronto.
Northern Electric & Mfg. Co.....Montreal.
Motor Generator Sets
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd.....Toronto.
Motors, Turntable
Taylor & Arnold .....Montreal.
Nickel
The Orford Copper Co. .....New York.
Nickel for Nickel Steel
The Orford Copper Co. .....New York.
Numbers
Acton Burrows, Limited .....Toronto.
Nut Locks
Positive Lock Washer Co. ..Newark, N.J.
Nuts, Clevis
Cleveland City Forge & Iron Co.Cleveland.
Oakum
The Hudson's Bay Co.....
Office Fittings
Can. Office & Sch'l Furn. Co....Preston.

Office Signs
Acton Burrows, Limited .....Toronto.
Oil Cups
Nathan Manufacturing Co.....New York.
Oils
Galena Signal Oil Co..Franklin & Toronto.
Packing
Anchor Packing Co. of Can., Ltd..Montreal
Greene, Tweed & Co. .....New York.
The N. L. Piper Ry. Supply Co...Toronto.
Pile Drivers, Railway
F. H. Hopkins & Co. .....Montreal.
Mussens, Limited .....Montreal.
Pinch Bars
The N. L. Piper Ry. Supply Co..Toronto.
Pipe, Culvert, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.
Pipe, Gas, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.
Pipe, Sewer, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.
Pipe Stocks
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co.....Hespeler, Ont.
Pipe, Water (Cast Iron)
Gartshore-Thompson Pipe Co...Hamilton.
Planers
John Bertram & Sons Co. ..Dundas, Ont.
Platforms, Steel
Standard Coupler Co. ....New York City.
Ploughs, Contractors'
Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.
Mussens, Limited .....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.
Porter
E. L. Drewry .....Winnipeg.
Preservative for Hose
Guilford S. Wood.....Chicago, Ill.
Printing
Southam Press .....Toronto.
Propellor Wheels
W. Kennedy & Sons, Ltd., Owen So'd, Ont.
Pumps
Canadian Fairbanks Co., Ltd...Montreal.
S. F. Bowser & Co., Ltd.....Toronto.
Ontario Wind Engine & Pump Co..Toronto.
James Smart Mfg. Co....Brockville, Ont.
Pumps, Centrifugal
The American Well Works...Aurora, Ill.
M. Beatty & Sons .....Welland, Ont.
John Inglis Co., Ltd. .....Toronto.
Pumps, Deep Well, Steam and Power
The American Well Works....Aurora, Ill.
Pumps, Fire Pressure
The American Well Works....Aurora, Ill.
Pumps, Irrigating
The American Well Works....Aurora, Ill.
Pumps, Reclamation
The American Well Works....Aurora, Ill.
Pumps, Sprinkler Systems
The American Well Works....Aurora, Ill.
Pumps, Underwriters' Fire
The American Well Works....Aurora, Ill.
Punches and Shears
Cleveland Punch & Shear Wks., Cleveland.
Long & Allstatter Co. .... Hamilton, Ohio.
Williams & Wilson, Ltd .....Montreal.
Rail Benders, Roller
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co. .....Montreal.
Montreal Steel Works .....Montreal.
Whyte Railway Signal Co. .....Toronto
Rail Drilling Machines
A. B. Jardine & Co. .....Hespeler, Ont.
Whyte Railway Signal Co. .....Toronto
Rails, new
Dominion Iron & Steel Co....Sydney, N.S.
Drummond, McCall & Co.....Montreal.
J. T. Gardner .....Chicago, Ill.
J. J. Gartshore .....Toronto.
F. H. Hopkins & Co. .....Montreal.
Peteler Car Co. .....Minneapolis, Minn.
Rails, for relaying
F. H. Hopkins & Co. .....Montreal.
J. J. Gartshore .....Toronto.
Mussens, Limited .....Montreal.
Provincial Steel Co., Ltd. .. Cobourg, Ont.
Jas. W. Pyke & Co. .....Montreal.
Rail Joints
Goldschmidt Thermit Co. .....Toronto.
The Rail Joint Co. of Canada...Montreal.
Whyte Railway Signal Co. .....Toronto
Rails, Re-rolled
Provincial Steel Co., Ltd. .. Cobourg, Ont
Railway Supplies
Canadian Fairbanks Co., Ltd..Montreal.
Canadian H. W. Johns-Manville Co., Ltd. .....Toronto
T. McAvity & Sons .....St. John, N.B.
Burton W. Mudge & Co.....Chicago, Ill.
The Hiram L. Piper Co.....Montreal.
The N. L. Piper Ry. Supply Co..Toronto.
Rice Lewis & Son.....Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Whyte Railway Signal Co. .....Toronto
Williams & Wilson, Ltd .....Montreal.
Reamers
Butterfield & Co.....Rock Island, Que.
Cleveland Punch & Shear Wks.Cleveland.
A. B. Jardine & Co. .....Hespeler, Ont.
Rivet Snaps
Cleveland Punch & Shear Wks., Cleveland.
Rock Crushers
Allis-Chalmers-Bullock Ltd.....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.
Rope
F. H. Hopkins & Co.....Montreal.
The Hudson's Bay Company .....

Ropes, Derrick
Dominion Wire Rope Co. .....Montreal.
Ropes, Switch
F. H. Hopkins & Co., Ltd.....Montreal
Rubber Goods, Mechanical
Guilford S. Wood.....Chicago, Ill.
Scales
Canadian Fairbanks Co., Ltd., Montreal.
Safes
J. & J. Taylor.....Toronto.
Scows, Dump and Deck
M. Beatty & Sons.....Welland, Ont.
Scrapers, Wheel and Drag
F. H. Hopkins & Co.....Montreal.
Meaford Wlbarrow Co., Ltd., Meaford, Ont.
Mussens Limited .....Montreal
Western Wheeled Scraper Co...Aurora, Ill.
Screw Plates
Butterfield & Co.....Rock Island, Que.
A. B. Jardine & Co.....Hespeler, Ont.
Seats, Station
James Smart Mfg. Co. ....Brockville, Ont.
Semaphore Arms
Acton Burrows, Limited .....Toronto.
Semaphores
The N. L. Piper Ry. Supply Co., Toronto.
Saxby & Farmer, Ltd. .....Montreal
Shapers
London Machine Tool Co., Ltd., Hamilton.
Shears, Angle, Bar and Plate
Cleveland Punch & Shear Wks.Cleveland
Shingles
Imperial Timber & Trading Co. Vancouver.
Ships
Polson Iron Works, Ltd .....Toronto
Shop Equipment, Car and Locomotive
London Machine Tool Co., Ltd., Hamilton.
Shops
The Hudson's Bay Company .....
Signal House Numbers
Acton Burrows, Limited .....Toronto.
Signals
Railway Signal Co. of Canada..Montreal.
Hall Signal Co. .....Chicago, Ill.
The Hiram L. Piper Co., ...Montreal.
The N. L. Piper Ry. Supply Co...Toronto.
Saxby & Farmer, Limited .....Montreal.
Union Switch & Signal Co., Swissvale, Pa.
Whyte Railway Signal Co. .....Toronto.
Signals, Fog
International Marine Signal Co....Ottawa.
Signs
Acton Burrows, Limited .....Toronto.
Sills, Steel for Cars
Canadian Ry. Equip't Co..Welland, Ont.
Skidders and Loaders
Russel Wheel & Fdry Co...Detroit, Mich.
Slack Adjusters
Chicago Railway Equipment Co...Chicago
Sledges
James Smart Mfg. Co....Brockville, Ont.
Snow Ploughs
Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co .....Cobourg, Ont.
Solder
Tallman Brass & Metal Co. Hamilton Ont.
Spikes, Railway, Ship or Pressed
F. H. Hopkins & Co.....Montreal.
Nova Scotia S.& C. Co. New Glasgow, N.S.
Standard St'l Co. of Can. Ltd. Hamilton, Ont.
Spreader Cars
F. H. Hopkins & Co.,.....Montreal.
Western Wheeled Scraper Co .Aurora, Ill.
Spring Dampeners
McCord & Co., ...Chicago, Ill.
Springs
American Vanadium Co. ....Pittsburg, Pa.
B. J. Coghlin & Co. .....Montreal.
F. H. Hopkins & Co.,.....Montreal.
Montreal Steel Works .....Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.
Sprinklers, Electric .
Preston Car & Coach Co...Preston, Ont.
Stand Pipes
John Inglis Co., Ltd. .....Toronto.
T. McAvity & Sons .....St. John, N.B.
Steam Traps
Consolidated Car Heating Co., Albany, N.Y.
Station Name Signs
Acton Burrows, Limited .....Toronto.
Staybolt Bars, Charcoal Iron
Falls Hollow Staybolt Co..Cuyahoga Falls.
Staybolt Iron
Tayor & Arnold .....Montreal.
Staybolt Iron or Steel Bars, Hollow
Falls Hollow Staybolt Co..Cuyahoga Falls.
Staybolts, Flexible
Flannery Bolt Co. .....Pittsburg, Pa.
Staybolts, Locomotive
Falls Hollow Staybolt Co..Cuyahoga Falls.
Flannery Bolt Co. .....Pittsburg, Pa.
Staybolt Taps
Butterfield & Co. .....Rock Island, Que.
A. B. Jardine & Co., ...Hespeler, Ont.
Steam Couplers
Safety Car Heating & L'ting Co. New York.
Steam Hammers
John Bertram & Sons Co. ..Dundas, Ont.
Steam Shovels
F. M. Beatty & Son .....Welland, Ont.
F. H. Hopkins & Co.,.....Montreal.
The Males Co., ...Cincinnati, O.
Mussens, Limited .....Montreal.
Steamship Signs
Acton Burrows, Limited .....Toronto.

Steel
Hermann Boker & Co. .....Montreal.
Nova Scotia S. & C. Co. New Glasgow, N.S.

Steel, Fire Box
Tayor & Arnold .....Montreal.

Steel for Axes
Montreal Steel Works .....Montreal.

Steel for Saws
Montreal Steel Works .....Montreal.

Steel for Springs
Jas. Hutton & Co., ...Montreal.

Steel Shafting
Nova Scotia S. & C. Co. New Glasgow, N.S.

Steel, Nickel for Nickel
The Orford Copper Co. .....New York.

Steel Plates
Jas. W. Pyke & Co., ...Montreal.

Steel, Tool
Montreal Steel Works .....Montreal.

Steering Gears
Dake Engineering Co..Grand Haven, Mich.

Stokers, Mechanical
Babcock & Wilcox, Ltd .....Montreal.

Stoves
James Smart Mfg. Co....Brockville, Ont.

Superheaters
Babcock & Wilcox, Ltd .....Montreal.

Switches
Can. Ramapo Iron Wks. Ltd. Niagara Falls
Montreal Steel Works .....Montreal.

Switch Stands
Can. Ramapo Iron Wks. Ltd. Niagara Falls

Switch Targets
Acton Burrows, Limited .....Toronto.

Tanks and Tank Fixtures
John Inglis Co., Ltd. .....Toronto.
Ontario Wind Engine & Pump Co.Toronto.
Polson Iron Works .....Toronto

Tanks, Oil
S. F. Bowser & Co., Limited.....Toronto.

Tanks, Portable Acetylene, for Welding
Commercial Acetylene Co. .....Toronto.

Tapes, Measuring
Lufkin Rule Co. .....Saginaw, Mich.

Taps
Butterfield & Co. .....Rock Island, Que.
A. B. Jardine & Co., ...Hespeler, Ont.

Telegraph and Telephone Apparatus
Northern Electric & Mfg. Co. ...Montreal.

Telegraph and Telephone Office Signs
Acton Burrows, Limited .....Toronto.

Thermit
Goldschmidt Thermit Co. .....Toronto

Ticket Cases
Can. Office & School Furniture Co.Preston.

Tie Plates
B. J. Coghlin & Co. ....Montreal.
Hamilton S. & I. Co., Ltd., Hamilton, Ont.
Nova Scotia S. & C. Co. New Glasgow, N.S.
Guilford S. Wood .....Chicago, Ill.

Ties
Parry Sound Lumber Co. .....Toronto.

Tires, Steel
Jas. Hutton & Co., ... Montreal.
Jas. W. Pyke & Co., ...Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.

Tools and Supplies
Canadian Fairbanks Co., Ltd....Montreal.
Jas. Smart Mfg. Co. .....Brockville, Ont.
A. B. Jardine & Co., ...Hespeler, Ont.
Pratt & Whitney Co. .....Dundas, Ont.
Williams & Wilson, Ltd .....Montreal.

Tools, Track
John Bertram & Sons Co. ..Dundas, Ont.
B. J. Coghlin & Co. .....Montreal.
F. H. Hopkins & Co.,..... . .Montreal.
Montreal Steel Works .....Montreal.
Mussens, Limited .....Montreal.

Tools, Pneumatic
The Holden Co., Ltd. .....Montreal.

Tools, Cast Steel Track
American Brake Shoe & Fdry. Co. Mahwah

Track Equipment
Can. Ramapo Iron Wks. Ltd. Niagara Falls

Tramway Equipment
J. J. Gartshore .....Toronto.

Transformers
Allis-Chalmers-Bullock Ltd .....Montreal.

Transmission Appliances
Canadian Fairbanks Co., Ltd ..Montreal.
Williams & Wilson, Ltd .....Montreal.

Trolley Poles, Steel
Dorner Engineering Co.....Chicago, Ill.

Trolley Wheels
Tallman Brass & Metal Co..Hamilton, Ont.

Trucks
Jas. Smart Mfg. Co. .....Brockville, Ont.

Trucks, Electric Car
Baldwin Locomotive Works..Philadelphia.
Montreal Steel Works .....Montreal.

Trusses, Roof
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. .....Montreal.

Tubes, Boiler
Jas. W. Pyke & Co., ...Montreal.

Turbines, Steam
Allis-Chalmers-Bullock Ltd .....Montreal.

Turnbuckles
Cleveland City Forge & Iron Co..Cleveland.
Montreal Steel Works .....Montreal.

Turntables
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. .....Montreal.

Typewriters
Royal Typewriter Co. .....New York

Valves
Consolidated Car Heating Co. Albany, N.Y.
Williams & Wilson, Ltd. .....Montreal.

Valves, Angle and Globe
Kerr Engine Co. .....Walkerville, Ont.
Nathan Manufacturing Co. ....New York.

Valves, Brass Gate
Kerr Engine Co. .....Walkerville, Ont.

Valves, Check
Nathan Manufacturing Co. ....New York.

Valves, Iron and Brass
Canadian Fairbanks Co., Ltd....Montreal.

Valves, Iron Gate
Kerr Engine Co. .....Walkerville, Ont.

Valves, Locomotive Pop
T. McAvity & Sons .....St. John, N.B.
Taylor & Arnold .....Montreal.

Valves, Steam
Nathan Manufacturing Co. ....New York.

Vanadium Steels
American Vanadium Co ....Pittsburg, Pa.

Varnishes
Berry Bros. .....Walkerville, Ont.
The Dougal Varnish Co., Ltd....Montreal.

Ventilators, Car
Burton W. Mudge & Co. ....Chicago, Ill.

Vessels
Polson Iron Works, Ltd .....Toronto

Wagons, Dump
Western Wheeled Scraper Co..Aurora, Ill.

Waste
B. J. Coghlin & Co. .....Montreal.
N. L. Piper Railway Supply Co...Toronto.

Water Softeners
Babcock & Wilcox, Ltd .....Montreal.
L. M. Booth Co. .....Chicago, Ill.
Dearborn Drug & Chemical Co., Chicago.

Water Towers
John Inglis Co., Ltd. .....Toronto.

Welding
Goldschmidt Thermit Co. .....Toronto.

Wheelbarrows
F. H. Hopkins & Co.,.....Montreal.
Meaford Wheelba'ow Co. Ltd. Meaf'd, Ont.

Wheels, Car
Canada Iron Corporation, Ltd.,..Montreal.
Canadian Car & Foundry Co....Montreal.
Peteler Car Co. .....Minneapolis, Minn.
Jas. W. Pyke & Co., ...Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.

Wheels, Locomotive
Canada Iron Corporation, Ltd.,..Montreal.

Wheels, Rolled, solid Forged
Standard Steel Wks. Co.,Philadelphia, Pa.

Wheels, Steel Tired
Standard Steel Wks. Co.,Philadelphia, Pa.

Windlasses
Dake Engineering Co..Grand Haven, Mich.

Windmills
Ontario Wind Engine & Pump Co.Toronto.

Wire and Wire Rope
Dominion Wire Rope Co. .....Montreal.
Mussens, Limited .....Montreal.
The Wire & Cable Co. .....Montreal.

Wire, Copper
E. F. Phillips Elec. Works, Ltd .Montreal.
The Wire & Cable Co. .....Montreal.

Wire, Electric
Chapman & Walker, Ltd ... .Toronto.
E. F. Phillips Elec. Works, Ltd..Montreal
The Wire & Cable Co. .....Montreal.

Wire, Insulated, Copper
E. F. Phillips Elec. Works, Ltd..Montreal.
The Wire & Cable Co. .....Montreal.

Wire Rope Clips
American Hoist & Der. Co.St. Paul, Minn.

Wire, Telegraph and Telephone
Chapman & Walker, Ltd .....Toronto.
E. F. Phillips Elec. Works, Ltd..Montreal.
The Wire & Cable Co. .....Montreal.

Wire, Transmission and Trolley
Chapman & Walker, Ltd .....Toronto.
The Wire & Cable Co. .....Montreal.

Wire
American Vanadium Co. ....Pittsburg, Pa.

Wrenches, Cast Steel
American Brake Shoe & Fdry. Co. Mahwah

Yachts
Polson Iron Works, Ltd .....Toronto