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THE HISTORY OF SUPERHEATED STEAM

By FREDERICK H. MOODY, B.A.Sc.

The subject of superheated steam is so well known, and the savings obtained through its use so well recognized on nearly all sides, that any further introduction of the subject is unnecessary. Very few complaints are on record where superheated steam has not done all that was expected of it where intelligently applied in lines defined by considerable experimental work on the part of the principal exponents of the subject. In marked contrast to the present development of superheating in Canada and the United States, is the reported disfavor into which superheating appears to have fallen in Germany, where it is stated that much more economical operation may be obtained through compounding rather than superheating. Consequently, there is a material decrease in the number of locomotives being built that are equipped with superheaters, the compound locomotives growing proportionately greater in number.

This, however, is digressing from the historical phases of the subject, which are many and varied, for while, as will be noted in the following, many attempts have been made to introduce superheated steam into use in both stationary engine and locomotive practice, nothing of practical value in that direction was accomplished until within the last few years.

EARLY ATTEMPTS.

The earliest recorded attempt at using the principles of superheating was made in 1828 by Richard Trevethick at the Birnie Down Mines in Cornwall, on a condensing pumping engine, making 8 revolutions per minute, with a boiler pressure of 45 lbs. per square inch. At this slow speed, and with such lagging materials as were in use in those days, the condensation was very great. Trevethick conceived the idea of reheating the steam in the cylinder to re-evaporate the condensation. To attain this end, the cylinder and piping were surrounded with firebrick and heated from a fire on a grate beneath. A remarkable saving was noted; ordinarily 9,000 lbs. of coal were consumed per day, whereas with a fire under the cylinder, only 6,000 lbs. were required, including the coal for the superheating grate. This led to further experiments by Trevethick, resulting in his tubular boiler and superheater in 1832, which, it is claimed, is quite modern in appearance.

The same year saw another superheater produced, this one being invented by I. Howard, of Bermondsey; an economy of 30% was obtained. In 1835, Dr. Haycroft, of Greenwich, advocated the use of superheated steam, and in experiments which he conducted, practically the same savings as those noted by Howard were obtained. It will thus be seen that at a very early date, it was realized that as steam expanded, in order to prevent condensation, it was necessary to add heat; this is the superheat-

The period from 1835 to 1848 furnishes no records of any work having been performed on the principles of superheating. In the latter year, the first superheater ever applied to a locomotive was introduced by John Cockerill, of Serang, Liege, Belgium, so that this date is, so to speak, a very important landmark in locomotive development. This superheater consisted essentially of a shell in the smokebox, with an annular space around the stack, and, while nothing is known of its actual operation, it has been inferred that from its nature and position, it cannot have done more than dry the steam, naturally affecting the economy,

consisting of a drum on top of the boiler, in the top of the firebox; part of the gases ascended through a damper-regulated opening, and through a large pipe in the centre of the drum to the stack. The pipe passing through the drum longitudinally, formed an annular space for the superheating of the steam.

The next type was that devised in 1852 by Mr. Haswell, of the Vienna Locomotive Works. It consisted of a coil located in the firebox for the superheating; it is doubtful if one was ever constructed. Shortly after, in 1855, M. Montety, a French engineer, devised a new type, consisting of a coil in a large flame-tube, similar to one of the Moncheuil types, with the exception that the coils were secured to steam reservoirs corresponding to headers of the modern types.

EARLY SCIENTIFIC INVESTIGATIONS.

About this period, superheating was being investigated scientifically by the Alsatian engineers, who are known in engineering history for their discoveries in thermodynamics, laying down many of the underlying principles that are now in common use. In 1857, Mr. Hirn, the leading light of this group, issued a report of trials and experiments made by him on the value of superheating, which showed that a large gain might be expected. The boiler pressure used by him was 55 lbs. per square inch, with a temperature of from 410 to 490 degrees F., obtaining economies of from 20 to 47%, which would seem to be greater than those at present. This, however, is due to the fact that saturated steam engines are much more efficient now than at that time.

This scientific investigation begun by Hirn, was continued by John Penn, who, in a paper on superheating, presented before the Institute of Mechanical Engineers, referred to several cases of superheating then in successful use. In 1860 a total of 5,000 horse-power had been equipped with superheating devices, the surface employed being from 2.25 to 2.75 square feet per nominal horse-power; most of the experimenters were agreed on this particular, and obtained about the same efficiency.

In 1860, also, Parsons and Pilgrim's method of superheating, as applied to steamboats on the Thames, was explained in an Institute of Mechanical Engineer's paper. Their method was the first to embody the present-day principle of placing the superheater as near the fire as practicable to obtain a high degree of superheat, for in this case the superheater consisted of iron pipes in, and forming part of the fire-grate. This was a radical change, for all other cases of marine superheating used the waste gases.

Mr. Haswell devised still another locomotive type in 1862, using the waste gases, the superheater being concentric with the stack. Still another change occurred in 1863, when a Mr. Crawford invented a new type, in which part of



J. H. Black,

Ex-Superintendent, Temiskaming and Northern Ontario Railway.

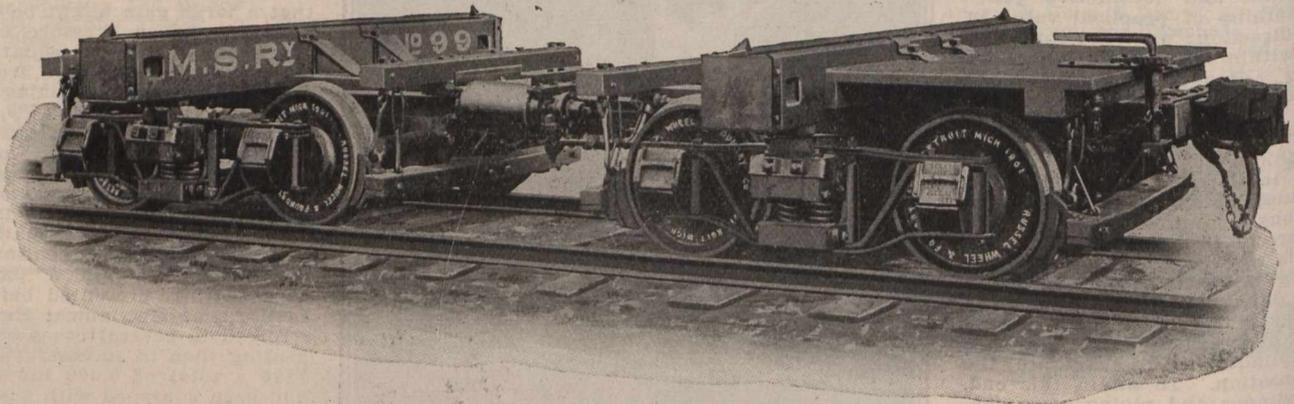
but slightly. Several more modern attempts at obtaining economy have failed from the same cause.

The next attempt made was by M. Moncheuil, for the Montereau and Troyes Railway, the types used being ones patented by M. A. De Quillacq in 1849. M. De Quillacq devised three types, all of which were used by M. Moncheuil. The first two types had the same principle, having flame flues containing the superheater tubes, the former, however, having only one flame-flue with coils for superheating, while the latter had several. These two kinds were applied to 2-2-2-type locomotives. The third kind was unique in design,

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the boiler is partitioned off, as in the modern Clench type. However, nothing is known of its value in service. Hit-
torf, in 1869, introduced a new type, in
which the superheater was in a drum on
top of the boiler, as with one of the
Moncheuil types mentioned before.

COMPOUNDING SUPERSEDING SUPERHEATING.
In 1865, compounding first came into
prominence, and from that time on
superheating was rapidly abandoned, for
equally good results could be obtained
with compounding, without the evil ef-
fects that at first attended the use of
superheated steam. It was found that
with steam at 400 degrees F. or over,
which was the common practice, the
animal fats, at that time the only ones
procureable, it being before the day of
the mineral product, became desiccated
by the heat, leaving a hard product that
not only scored the wearing surfaces,
but also increased the friction. The at-
tendant high pressures used in multiple
expansion engines, was also a detriment
to superheating from the same cause,
owing to its high initial temperature,
which, while normally high, is much
greater by the superheating.

Nothing appears to have been done in
America along the lines of superheating
until in 1870 (when its use was being
given up on the European Continent
by all but Hirn and his followers), the
Chicago, Burlington and Quincy Rd. ap-
plied a type of its own, like the modern
Clench, to one of its locomotives. The
trials showed some economy, but not
sufficient to warrant its introduction in-
to actual service, as the maintenance
expenses were materially increased. For
that reason it was abandoned.

REASONS FOR RECENT NEW LIFE.

With the introduction of hydrocarbon,
mineral lubricating oils, balanced valves
and improved packing, the use of con-
siderably higher temperature became
possible, and in 1890, interest in the sub-
ject was again renewed by the results
obtained in Germany by Gehre,
Schwoerer, Uhler and others. Since that
date, the progress in England and Ger-
many in stationary practice has been
very marked.

The first man of recent times to use
highly superheated steam was Dr. Wm.
Schmidt, who in 1892 used a small sin-
gle-acting, stationary engine with steam
at a temperature of 650 degrees F. The
engine was purposely made single-act-
ing, for it was at first thought that, as
with gas engines, the temperatures
would be detrimental to the materials
of the engine; but Schmidt modified the
details so as to use superheated steam
double-acting without these deteriorat-
ing results.

This development by Dr. Schmidt was
carried forward to such an extent that
at present there are very few new plants
of any pretensions that are not using
superheated steam. The present develop-
ment in the application of superheaters
to locomotives is due to Tarbe and Mul-
ler, of the Prussian State Railways, who,
in 1898, arranged to have two locomotives
equipped with superheaters ac-
cording to Dr. Schmidt's design. From
that time on the spread has been very
rapid, with the exception of the pres-
ent compounding tendency in Germany,
previously mentioned.

In America the revival of superheater
locomotives was due to Roger Atkin-
son, Mechanical Superintendent of the
Canadian Pacific Ry., who, in 1901, ap-
plied a Schmidt smoke-box superheater
to a simple 10-wheel freight locomotive.
So satisfactory did this prove that fur-
ther locomotives were equipped, not only
with Schmidt, but also with the Cole
type. Numerous other roads, both in
Canada and the United States, have tried
superheater locomotives with varying
degrees of success. It still remains,
however, for the Canadian Pacific Ry.,
the pioneers in the field, to retain the

supremacy, H. H. Vaughan, as is well
known, being probably the strongest ex-
ponent of locomotive superheating in
America. The type used by this road
is the Vaughan-Horsey, designed by Mr.
Vaughan and A. W. Horsey, formerly Me-
chanical Engineer, Locomotive Depart-
ment, Angus shops, and now District
Master Mechanic at Farnham, Que.

Recent history with regard to super-
heater practice on locomotives is so fam-
iliar to all that no further comments
need be made on the subject. The one
conclusion that stands out the strong-
est is the fact that when properly de-
signed and operated a material net
economy can be, and is, effected.

Of the other roads in Canada, the
Canadian Northern is the only one that
has adopted the superheater policy.
This road has 20 now in service and 20
more on order. Neither the Grand
Trunk nor Intercolonial have as yet had
any locomotive equipped with super-
heaters.

Selection of Length of Transition Curve.

By Frank H. Carter A.M. Am. Soc. C. E.

In fixing the alignment of a projected
fast interurban electric railway, the
writer was confronted with a dearth of
information concerning either theory or

MECHANICAL SUGGESTIONS.

It is a time-honored saying that
"familiarity breeds contempt." Those
few words sum up briefly the view
held by many of our most valued
readers, who have access to funds of
invaluable information and data that
would prove of great assistance to
the railway fraternity if only disse-
minated through the medium of the
technical railway press. What is in
mind at present is the dearth of good
shop information. Each shop, in ad-
dition to having the standard tools
and equipment necessary to good pro-
duction, has been compelled from time
to time to exercise native ingenuity
in devising ways and means in the
form of tools, methods, etc., to cope
with the problem in hand. Every
shop is full of such ideas—ideas that
would likely prove of value to others.
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them at a liberal rate. Send them in,
whether or not you consider them
worthy of publication, and we will
make the necessary suggestions if
they do not prove satisfactory.

practice for rigorously selecting proper
lengths of easement or transition curves.
The only line of thought or suggestion
on the subject which could be found was
that outlined by Prof. Talbot in his work
on the transition curve, and that ap-
peared to be more or less specially ap-
plicable to his particular spiral. As spirals
of the Searles type had been adopt-
ed and were in use on the road in ques-
tion, it seemed inadvisable to make any
radical change in the type of easement
curve. None of these standard easement
curves, however, were of a length great-
er than 100 ft., while the theory which
is presented herewith demands lengths
up to and in some cases exceeding 300
ft.

While the writer was engaged in an
attempt at a rigorous solution of the
problem, there appeared a very credit-
able report of the Committee on Track
of the American Railway Engineering
Association (Bulletin 108) with a prin-
ciple, new to the writer, from several
of the roads; namely, a length of curve
dependent upon the rate of rise of the
outside of a train on a curve (at the
rail) in inches per second.

The rate of rise of super-elevation on
easement curves is largely, if not en-
tirely, a question of its effect on pas-
sengers as to whether the rapidity of
vertical rise of one side of the train

produces a disagreeable sensation. An
attempt to formulate the proper length
of transition curve from the rate of rise
of rail in inches per 100 ft., without re-
gard to the speed of the train, is ap-
proaching the problem from the wrong
standpoint. In any formula of type
 $I = C D V^2$ the constant C, as will be
shown, fixes the rate of rise of super-
elevation of rail; therefore, but one
curve and one speed will satisfy this
equation in regard to rapidity of rise of
train in inches per second. All other
curves or speeds will convey different
sensations of ease of riding to the pas-
senger. The average rate of rise of the
outside of the train (at the rail) in
inches per second should be the gov-
erning function for the determination
of the length of transition curve, as
will be discussed a little later. In fixing
alignment, smoothness of riding is all
important for comfort; hence, the same
rate of rise of super-elevation on curves
in inches per second should govern for
the entire road, where a schedule can
be predicted with any degree of cer-
tainty, a difficult matter, of course, in
most cases for new roads, but almost al-
ways capable of realization in re-align-
ment, when time tables are established.

It appears to the writer that the pro-
vision that "the length of the curve
should not be less than 30 times the ele-
vation in inches for the ultimate speed"
(literally meaning that no rise of super-
elevation shall be greater than 1 in. in
30 ft.) is a wise one for places where
the speed cannot be predicted, but that
is not the best practice, in that the rate
of rise of transition will not in that case
depend upon the speed of the train.

The last clause of the paragraph for
the Manual of Recommended Practice
of the American Railway Engineering
Association, concerning the length of
easement curve: "that the curve should
not be less than two-thirds the ultimate
speed in miles per hour times the ele-
vation in inches," places a more rapid
rate of rise of the car in inches per sec-
ond than has been considered best prac-
tice for steam roads, according to avail-
able information in the hands of the
writer. By this rule the rate of rise
would amount to about 2.17 ins. per
sec., while practice appears to be from
1 1/4 to 1 1/2 ins. per sec. rise.

The length of easement curves used
on the Cleveland, Cincinnati, Chicago &
St. Louis Ry. is apparently based on an
assumed rate of rise of 1 1/4 ins. per sec.,
and the practice of the Delaware,
Lackawanna & Western Ry. is given as
1 1/2 ins. per sec.

It is true that cases may be cited
where faster rates of rise have been
used; notably, a local fast urban elec-
tric railway has several spirals where
the rate of rise is 1 in. in 20 ft., corre-
sponding to 2.20 ins. per sec. vertical
rise at 30 m.p.h.

These curves are said to be easy rid-
ing from the standpoint of electric road
practice, but jolts and roughness of rid-
ing which might be tolerated by passen-
gers on an urban electric road or an
elevated road, would not be considered
good practice for steam roads.

The foregoing is taken from the ap-
pendix to the reports of the American
Railway Engineering Association's com-
mittee on track, as presented at the last
meeting.

The city of Montreal has purchased
from the C.P.R., for \$309,911, an area
of land in Verdun, for a site for the
civic filtration plant.

The Canadian Pacific Land Co., hav-
ing agreed to insert in future advertise-
ments the words "not connected with
the C.P.R.," the C.P.R. has withdrawn
the action entered in the Court of
Chancery, London, Eng., for an injunc-
tion to restrain the company using the
words "Canadian Pacific" in its title.

The Principal Features of the Walschaerts Gear.

The Walschaerts valve gear, while in extensive use during the past half century or more in Europe, has only come into general use in America since 1905. Previous to that date, some few roads had made attempts at its use, the most notable example being that on the Boston, Revere Beach and Lynn Ry., a short narrow-gauged line. In this particular case the principal reason for its use was the cramped space due to the narrow gauge. The gradual evolution of the locomotive to its present geometric proportions has developed the same cramped conditions that this narrow gauge road encountered in the early eighties, so that at present it is more

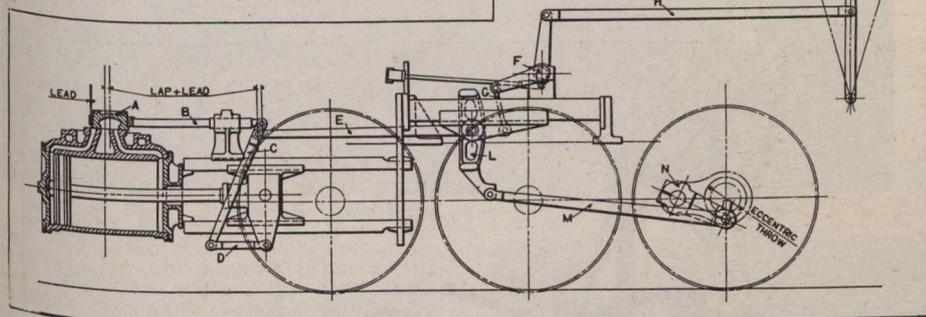


Fig. 1. Walschaerts Valve Gear for Outside Admission.

generally employed than any other form of motion, especially for heavy road service.

The principal advantage of this gear lies in the accessibility of its parts, placed as they are outside the driving wheels. This makes oiling, inspection, and cleaning simpler than with the Stephenson gear. Also, in heavy engines equipped with the latter gear, the eccentrics must be made of large diameter to give the desired throw, thereby increasing the rubbing surface velocity, causing the surfaces to heat and consequently wear. The Walschaerts gear, being entirely pin-connected, eliminates this difficulty.

Referring to figs. 1 and 2, it is seen the Walschaerts motion is of the radial type, employing a link L trunnioned at its middle point, this link being rocked by an eccentric rod M, actuated from a return crank N, secured to the main crank pin. The movement of the link is transmitted to the valve A by a radius rod E of the length of the link radius. This radius rod has a sliding pin connection in the link block, and can be raised or lowered by the reverse lever F, the upper position being for one direction of motion, while the lower is for another, as will be subsequently explained.

The eccentric return crank is set exactly quartering with regard to the main crank, so that if the radius rod were directly attached to the valve stem B, for the end position of the piston, the valve would be in its middle position. For middle position of piston, the valve should be displaced an amount equal to the steam lap plus the lead. In the Walschaerts gear the lead is given by a combining lever C, attached to both the valve stem and radius rod, and also connected through a suitable link D to the crosshead. The combining lever is so proportioned that if a point of its connection to the radius rod be kept a stationary fulcrum, and the piston moved a distance equal to the stroke, the valve will be moved a distance equal to twice the lap, plus the lead. This displaces the valve, the amount of load for the end position of piston.

For outside admission, the valve rod is connected to the combining lever

above the radius rod connection; and the eccentric crank leads the main pin if the block is in the lower half of the link in forward gear, and vice versa.

For inside admission, the valve rod is connected to the combining lever below the radius rod connection, and the eccentric crank follows the main pin if the block is in the lower half of the link in forward gear, and vice versa.

Inasmuch as the position of the valve when the piston is at the end of its

stroke is dependent on the combining lever only, it is evident that the lead given by the Walschaerts gear is the same for all points of cut-off. This is the principal feature which distinguishes this gear from the Stephenson motion as far as steam distribution is concerned. All parts of the Walschaerts motion should be correctly laid out and constructed from a diagram, and the gear designed to give the lead most desirable for the usual running speed. The parts

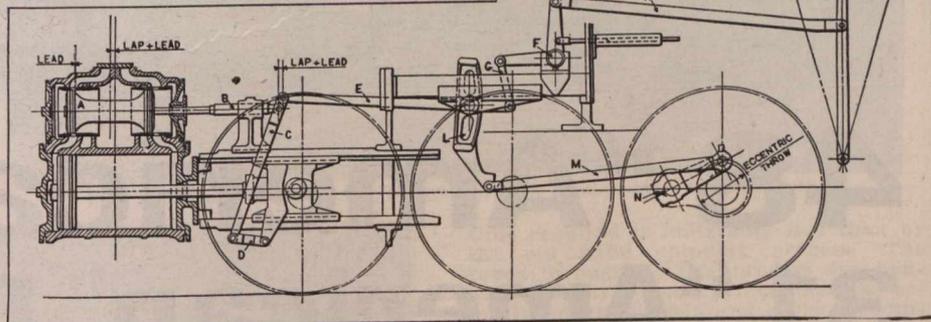


Fig. 2. Walschaerts Valve Gear for Inside Admission.

having been correctly made, it is impossible to alter the lead without seriously deranging the motion. In this respect, the Walschaerts gear is less flexible than the Stephenson, but when the correct steam distribution is obtained it is less liable to derangement.

There are numerous possible arrangements of the gear, and many of these modifications of the original gear are in successful use. The general design of the engine influences to a large extent the arrangement of the motion.

As previously mentioned, all parts of the gear must be laid down on a diagram in order to insure correct steam distribution. If all the details could be made and assembled exactly to drawing, any further setting of the valves would be unnecessary. Such accuracy is impossible in practice, so that after assembling, some adjustment is necessary.

The information contained in this article is abstracted from Record no. 70, published by the Baldwin Locomotive Co., Philadelphia, Pa.

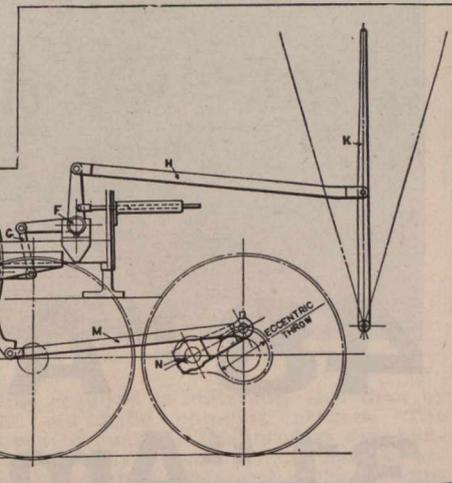
The Classification of the Graduation on Railway Construction.

By J. M. Shanly, M. Can. Soc. C. E.; M. Am. Soc. C. E., Montreal.

Referring to the very interesting article on "The Classification of Graduation on Railway Construction," by Professor Dalton, published in your August number.

As Professor Dalton says, the question of classification of materials in excavation is one of the most difficult problems which the young, or indeed the old, engineer has to solve and it is also one of the most important, and no specification that has ever been written covers the whole matter. An engineer can define rock and earth in their strict geological sense without difficulty, but if he follows out such a classification strictly he will probably ruin most of the contractors who have the misfortune to work under him.

A specification can only be taken as a general outline on which to base the classification, and, while a court will no doubt take it in its literal sense, the engineer, if he is a fair-minded man, will vary its terms to suit particular conditions. The question is not to determine what is actually earth and what is actually rock, but what is the relative cost to the contractor of excavating the different kinds of material found in cuttings. I have seen soft clay and quick sand, which had to be loaded into carts with scoops, and would slop out like mortar, and which would cost as much or more than ordinary rock to handle, yet under the usual specifications this would be classed as earth. Hard pan



and cemented gravel are also sometimes as expensive to handle as rock, but very often must be taken out as earth, if the terms of the contract are literally interpreted.

The young and inexperienced resident engineer cannot, of course, be allowed much latitude in classification, but he should endeavor to form a fair idea as to what it should be in justice to the contractor, and then give his chief the benefit of his observations and let him decide the doubtful points.

A man who keeps his eyes open can soon see whether a cut is being properly handled and can form a good idea as to what the moving of the material is costing. If he finds that under the strict letter of the specification the material is earth, while, judging by the cost to the contractor, it is loose rock, he should report to the chief that, in his opinion, the contractor is not receiving fair treatment and give his reasons for thinking so.

I cannot agree with Professor Dalton

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that there should be no classification, as this would throw the whole burden on the contractor and would naturally force him to bid higher, in order to cover the risks taken. On the same principle the whole contract might be let for so much per mile, or even for a lump sum, to cover everything from right of way to ballast.

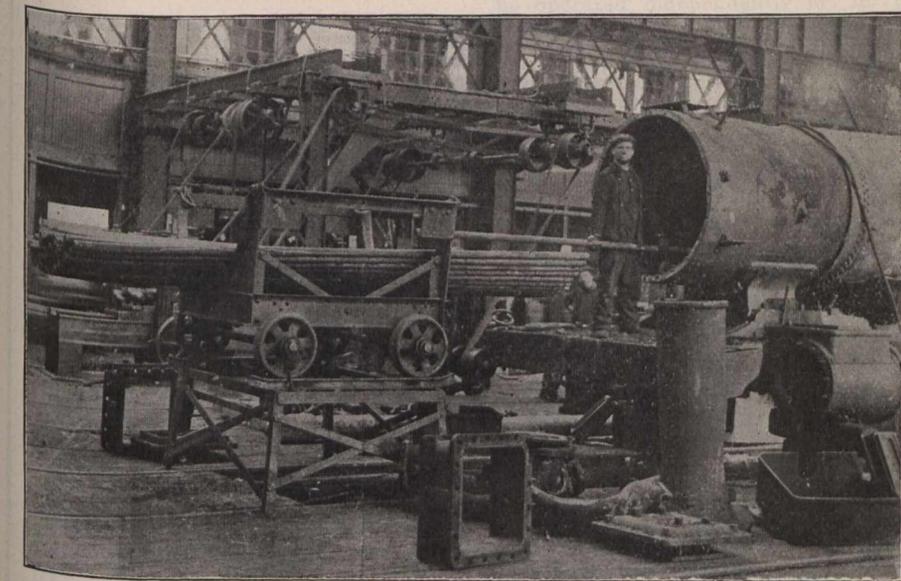


Fig. 1. Removing Tubes from Boiler for Putting on New Ends.

The contractor is as much entitled to his profits as the engineer is to his salary, and where there is a loss, unless, of course, it is due to bad management, he is simply furnishing so much capital to the company without any return, which is an injustice, even though it may be strictly legal under the terms of the specification.

Repairing Boiler Tubes at C.P.R. Angus Shops.

The C.P.R., in its Angus shops, Montreal, has developed ways and means for handling boiler tubes while in the shops for re-ending and cleaning, which is decidedly unique. At the same time they provide a means of expediting the work to a degree that would be impossible under old methods of handling and end-

ed truck, as indicated. This truck is in an elevated position to facilitate the

a special rail top of the truck gauge, the ends of the track being bent up to prevent the car running off. Hook bolts further hold the truck in position during the filling operation.

All the tubes from one boiler being removed, the holding truck is transferred to the storage space shown along the wall in fig. 2. This space is sufficient to accommodate 18 trucks, the practice being to pile them three high. To make this possible, examination of the truck in fig. 1 will show that the top has a track similar to that on the supporting truck, on which the upper trucks may be placed. The superiority of this method of storing is very apparent. The foreground of fig. 2 shows the end trimming and welding machines, which, however, are illustrated more advantageously in fig. 4, and in connection with the latter illustration they will be more fully described.

For cleaning the tubes, a machine made by J. T. Ryerson and Sons, Chicago, Ill., is used; this machine is shown in operation in fig. 3. The machine operates on the tumbler principle, the chains lifting the tubes up from the holding truck and when at a sufficient height, the chains pass over their sprockets, tumbling the tubes around, cleaning the tubes very effectually. The

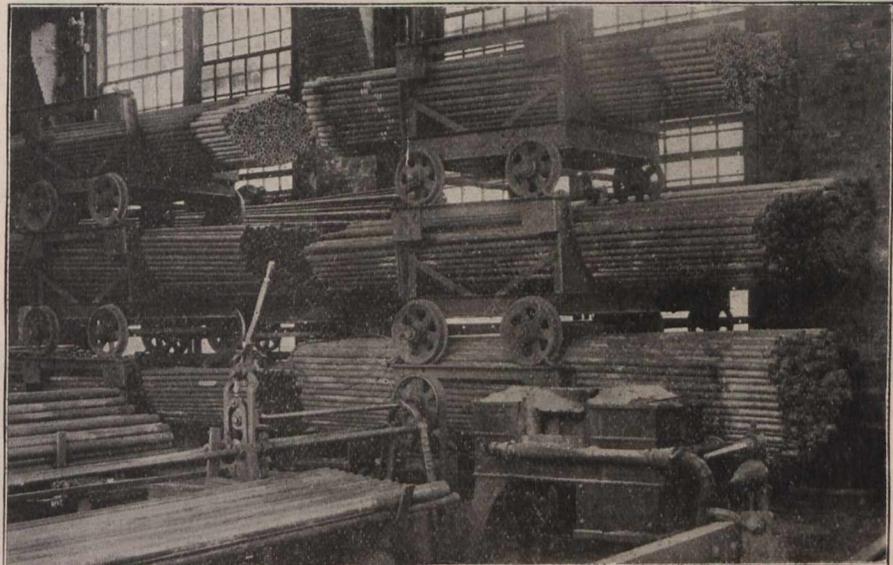


Fig. 2. Tube Storage in Rack Cars specially constructed for the Purpose.



Fig. 4. Department where the Tubes are trimmed, New Ends welded on, and finally cut to Length.

time required is materially less than by the old hand chipping process. The tubes throughout this process are handled entirely by mechanical means, being lifted up, cleaned and replaced without handling separately.

Fig. 4 is a view of the shop shown in fig. 2, taken from another position. Here the tubes are trimmed, new ends welded on, and finally cut to the requisite length in a manner similar to that described in the Nov., 1910, issue of the Railway and Marine World, which outlined the practice of the C.P.R. West Toronto shops. A neat weld is obtained by the method employed, the main feature in the process being the fact that two bevelled edges are brought overlapping to form the weld instead of merely flaring the end of the piece to be welded on, and slipping it over the tapered end of the main part of tube. The facilities provided for making the tubes easy to handle, are emphasized in this illustration, where the carrying truck is shown lowered into a cut-out in the ground, thereby keeping the tube clear for handling. Another view of the shop where the tubes are re-ended, is illustrated in fig. 5.

welding. As shown in fig. 1, the tubes on being removed, are placed in a specially form-

handling, making it unnecessary to have an extra helper to whom the tubes would be handed. The truck stand has

The information and illustrations in this article were obtained from Lacey R. Johnson, Assistant Superintendent of Motive Power, C.P.R., Eastern Lines.

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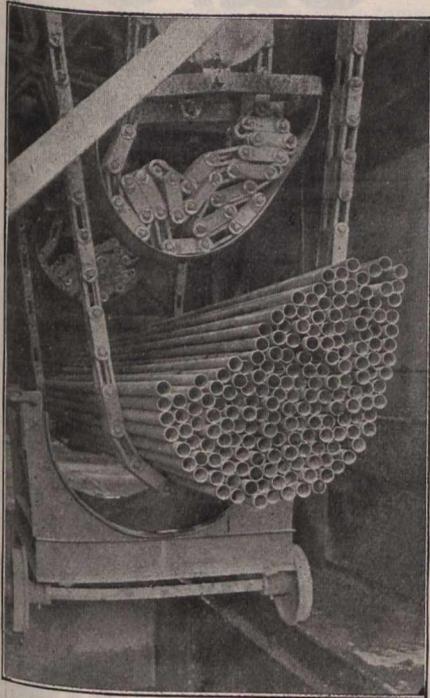
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Shop Car at C.P.R. Angus Shops.

Every plant of any pretensions has a small industrial railway with feeding lines running through the shops to carry material from point to point during the successive stages of manufacture.

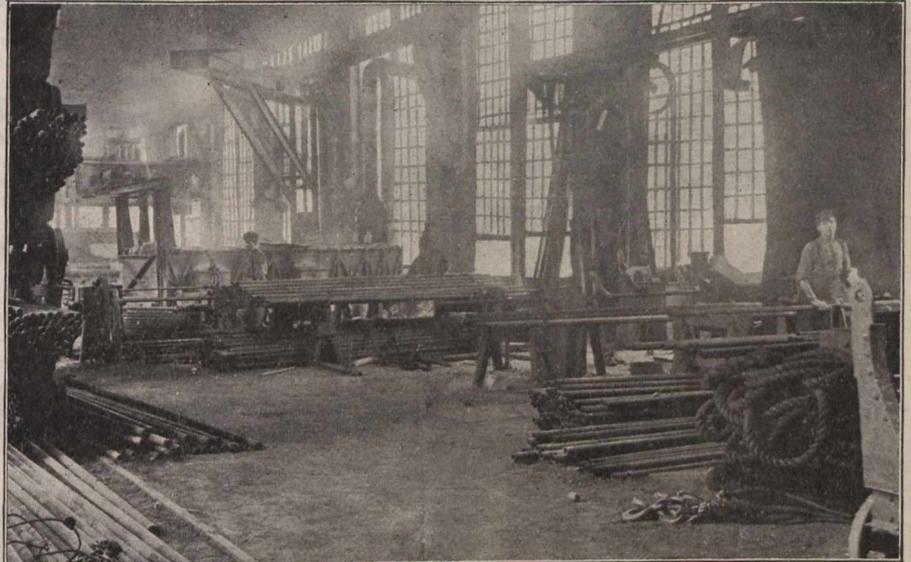


Ryerson Tube Cleaner in Operation. Fig. 3.

The system of shop tracks in the C.P.R. Angus shops at Montreal, information concerning which has been obtained from Lacey R. Johnson, Assistant Super-

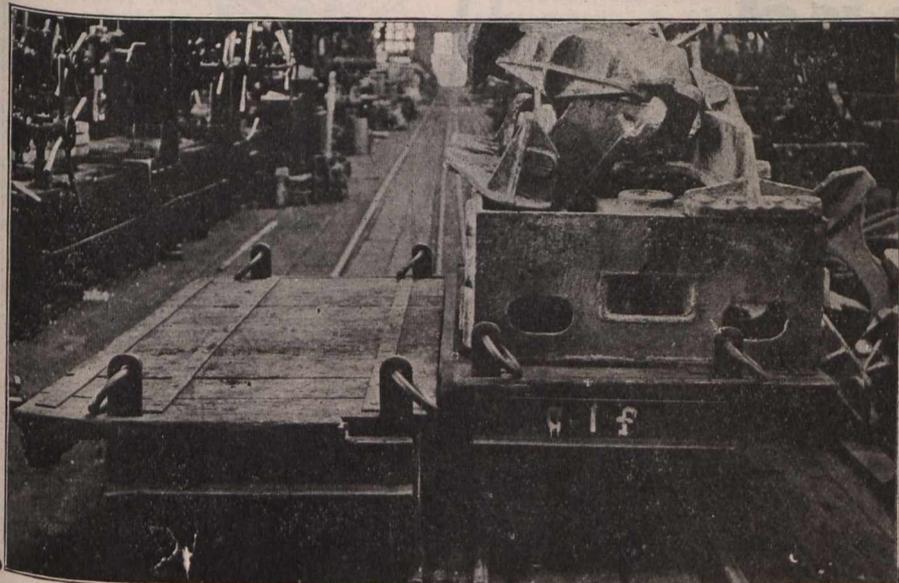
is flush with the axle. This provides two fairly wide, offset cars, which may be operated independently or in pairs when so desired, for heavy loads. Singly, they are capable of handling castings and forgings of large proportions. Instructions have been issued concerning the extent of the loading and the direction of traffic on the two tracks, resulting in smooth operation.

At intervals throughout the shops, turntables and cross-tracks are provided, and on these cross-tracks all the loading and unloading is done when-



Another View of Tube Repairing Department. Fig. 5.

ever possible. This arrangement of cars and trackage has been found to be excellent for the handling of material in the shop, especially when it is neces-



Shop Trucks used on the Industrial Railway in the C.P.R. Angus Shops.

intendent of Motive Power, Eastern Lines, is particularly good, the main feature being its flexibility, made possible by the kind of car and arrangement of trackage.

The accompanying illustration shows the type of car used and the arrangement of trackage. A double narrow gauge track has been laid of such proportions that the two outer rails form a standard 4 ft. 8 1/2 in. gauge. The inner rails are quite close together, just sufficient space being left to permit the journal boxes to clear. The outer edge of each truck is extended about a foot, giving an overhang, while the inner face

sary to transfer it from one department to another.

The Utica Mining Co., Kaslo, B.C., is arranging for the building of a tramway on its property, to connect with a concentration about to be built, and probably with the Kaslo and Slocan Ry. and the C.P.R.

Michigan courts have granted a temporary injunction against the enforcing of the two-cent-a-mile passenger fare law, on the application of the Duluth, South Shore and Atlantic Ry. The law was to have become effective in Michigan Aug. 2.

Railway and Allied Associations, Clubs, Etc.

The names of persons given below are those of the secretaries.

CANADIAN CAR SERVICE BUREAU, J. E. Duval, 401 St. Nicholas Building, Montreal.

CANADIAN FREIGHT ASSOCIATION, T. Marshall, Union Station, Toronto.

CANADIAN FREIGHT ASSOCIATION (Western Lines), W. E. Campbell, 101 Bon Accord Building, Winnipeg.

CANADIAN RAILWAY CLUB, J. Powell,

St. Lambert, Que. Meetings at Montreal 1st Tuesday each month, 8.30 p.m., except June, July and August.

CANADIAN SOCIETY OF CIVIL ENGINEERS, C. H. McLeod, 413 Dorchester St. west, Montreal.

CANADIAN STREET RAILWAY ASSOCIATION, Acton Burrows, 70 Bond Street, Toronto.

CANADIAN TICKET AGENTS ASSOCIATION, E. de la Hooke, London, Ont.

CENTRAL RAILWAY AND ENGINEERING Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto 3rd Tuesday each month, except June, July and August.

EASTERN CANADIAN PASSENGER ASSOCIATION, G. H. Webster, 54 Beaver Hall Hill, Montreal.

ENGINEERS CLUB OF MONTREAL, C. M. Strange, 9 Beaver Hall Square, Montreal.

ENGINEERS CLUB OF TORONTO, R. B. Wolsey, 94 King St. west, Toronto.

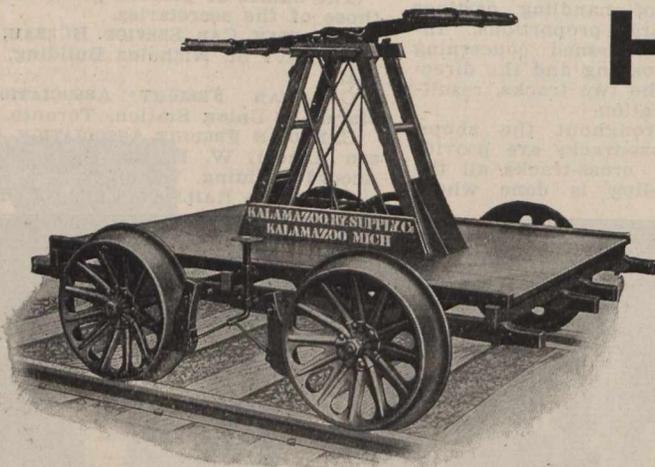
NOVA SCOTIA SOCIETY OF ENGINEERS, J. Lorn Allan, Halifax and Eastern Ry., Dartmouth, N.S.

QUEBEC TRANSPORTATION CLUB, J. S. Blanchet, Quebec.

WESTERN CANADA RAILWAY CLUB, W. H. Rosevear, 52 1/2 Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

White Pass and Yukon Ry. Rates.—

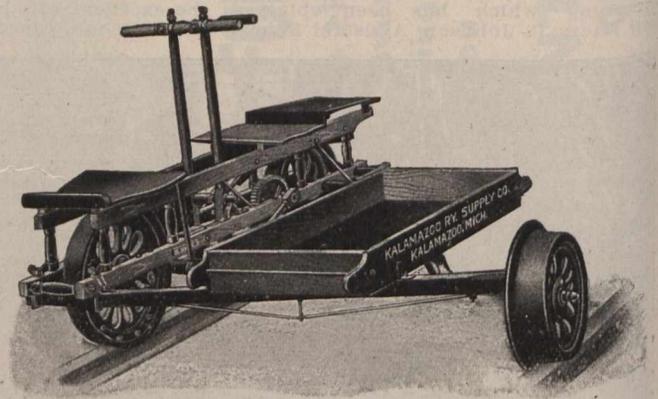
G. A. Mountain, Chief Engineer, Board of Railway Commissioners, sailed from Vancouver, Aug. 8, for Skagway, Alaska, for the purpose of making a physical valuation of the W.P. and Y. Ry. from that point to Dawson, Yukon. Mr. Mountain will report generally as to cost of construction, maintenance and operation, with a view of enabling the Commissioners to form a conclusion as to whether the proposed reductions in tariffs which shippers desire to have enforced are reasonable, or whether, under the exceptional conditions alleged to exist by the company, the existing tariffs are reasonable.



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The Proper Care of Track Material and Tools.

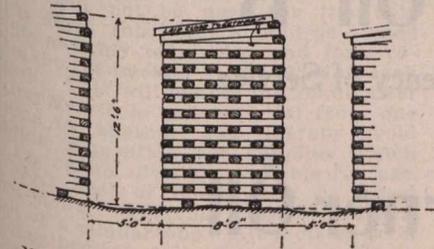
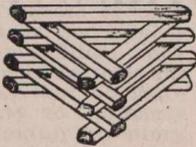
Following is the report of the special committee on this question appointed by the Roadmasters' and Maintenance of Way Association of America:

UNTREATED TRACK TIES.

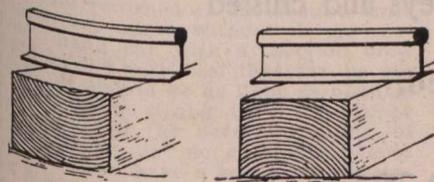
Cross ties, when received in rude form direct from the forest, are to be stored in material yards or distributed on roadmaster's subdivision. As soon as unloaded they should be piled—suitable high ground with good drainage having been selected for this purpose. Two old ties or timbers should be placed next the ground as a foundation for the pile, which should be composed of cross tiers with no more than six or seven ties in each tier—the size of the ties would govern—but plenty of space should be allowed between the tiers to permit them to dry out and thoroughly season before being placed in the roadbed. The ties in the last tier should be placed close together to act as a roof over the pile and should have a pitch of about six inches, which can be accomplished by placing two ties under one side of the top tier and one tie under the other side. The last tier should slant away from the track. Ties should be peeled before piling.

If the ties are unloaded along sections, the number of ties in each pile would depend upon the number of ties per mile required for renewals. If the ties required per mile should be from 200 to 300 we would pile from 25 to 40 ties in a pile; if the tie renewals should be light—say from 75 to 100 per mile—we would pile them in V shaped piles of about 15 ties each, so that the track men would not have to haul them too far on the dump car in distributing them.

The sod should be removed from around the piles for a space of at least six feet and the grass should be mowed from the grass line to the edge of the right of way at least 50 ft. on each side of the piles to prevent fire from getting into them. In piling untreated ties of all kinds they should be piled with the heart side down and in placing them in the track the heart side should always be placed next to the road bed. The accompanying sketches will show the



Note:—In piling ties for seasoning, they should be placed heart side down.



manner we would recommend for piling and placing in the track.

TREATED TRACK TIES.

Ties treated with solutions of zinc chloride should be piled in cross tiers

similar to untreated ties and as openly as possible in order to bring about rapid evaporation of moisture from the ties before they are placed in the track. We believe in the theory advanced that the zinc chloride used in treating the zinc ties is an antiseptic and being forced into the tie renders it impervious to all animal or vegetable life which is the cause of all wood decay. Consequently, the drier the wood becomes, after treating the more thoroughly the wood becomes impregnated with the zinc chloride.

Now the zinc chloride, when pure, is practically insoluble in water and if the chloride could be introduced into the tie in an absolutely pure state, the effect of the tie being wet by rains while in track would be practically nothing. It does not get into the tie in a pure state, however, and the result is that the continual soaking and drying of the tie in the track does eventually wash away the chemical and as it wastes away, the various small animals and fungi find feeding ground in the outer surface of the tie which we then say has begun to decay. This washing away of the chemical treatment, be it either zinc chloride or the other processes of a similar nature, can be very materially reduced by proper ballast and a well drained road bed.

Ties treated with creosote should be piled just the opposite from those treated with zinc chloride. They should be piled in cross tiers, but just as compactly as possible so as to leave no air space between them. The reason for this is that the creosote disappears with some rapidity from the creosoted ties and every precaution must be taken so as to reduce the rapidity of evaporation as far as possible.

On the other hand, the process of treating creosoted ties is done along another line, in that the pores of the wood are filled with creosote oil. In treating these ties, the oil is forced into the wood as thoroughly as possible, rendering the tie waterproof. So long as the creosote oil remains in the tie, it will also keep out any animal or vegetable growth and prevent decay. But all oils are to a certain extent volatile, creosote oil is not an exception to this, but evaporates rapidly for a heavy oil. This can be noticed when a pile of ties is examined at the time of unloading and at a later date, say thirty, sixty, or ninety days after. When first received, the tie is very wet with oil, but later it becomes dry enough to be handled without soiling the hands and the color will have changed from black to a dark brown. This is the case with ties when piled in an open pile or with the outside ties in a compact pile, while the inside ties will still be black and will be almost as oily as when unloaded. This outside oil has not been absorbed by the ties since the oil was on the tie when it left the treating plant, where the pressure is very great and the temperature is raised to a point where the pores of the wood will best admit the oil.

Since we know that the creosote oil does evaporate and that the principle involved in this method of treating is to effectually seal the pores of the tie against the admission of water and air with their load of wood-destroying germs, we easily arrive at the conclusion that the better method is to get the creosoted ties into the track as soon after treating as possible, but in the event that this is impossible, as it usually is in the majority of cases, we would then use the best method we could to stop evaporation by piling them close together. We would go a step farther in the method of piling these ties and would recommend that a layer of fresh earth be placed over the top of the piles which would serve not only as an additional protection against sparks from passing locomotives, but would also be an addi-

tional measure of precaution to retard the evaporation of the creosote oil.

SWITCH TIES AND HEAD BLOCKS.

When switch ties and head blocks are received, they should be distributed at once to the sections where needed and should receive the same good care in piling as track ties. Old ties or timbers should form the foundation and they should be piled in tiers with a two or three inch strip between each tier. Sufficient space should be left between the tiers or head blocks to permit them to dry out well and thoroughly season before being placed in the track and where a great quantity of this material is piled in supply yards, we would recommend that the different lengths be piled separately to avoid confusion in loading them up for distribution.

CROSSING PLANK AND FENCE LUMBER.

This material should be piled the same as switch ties, in tiers with at least a two-inch strip between each. Different lengths of planks should be piled separately to avoid confusion and unnecessary handling when taking them for use. This class of material we would recommend be ordered once a year and used as soon as possible, after it has been well seasoned, except a small surplus which may be kept at division headquarters for emergency use.

RAILS.

New and usable rails should receive great care in unloading to prevent them being bent or broken, and in piling great care should be taken in forming the foundation, which should be composed of old timbers. The foundation would depend upon the size of the pile, but in all cases it should be composed of old timbers strong enough to prevent the rails from becoming surface bent while in the pile. Rails should be piled in tiers and rails of equal lengths should be placed across each tier to form the sub-foundation of the next tier. The number of rails to be placed across the pile would depend upon the length of the rail in the pile and the number of tiers the pile contained, but not more than eight feet space should be left between rails placed across the pile.

SWITCH MATERIAL.

When switches or frogs or guard rails are kept in stock, they should be piled on skids or rail rests; but ordinarily, this kind of material should not be distributed along sections, but a sufficient amount of each kind, of the same pattern and weight as the rail in track, should be kept at division headquarters or in the larger yards, where it may be quickly secured when needed. Each kind and pattern should be separated to avoid confusion in loading it when called for. When railroad crossings, frogs or switches are kept in stock for any length of time, we would recommend they receive a coat of cheap dark paint and the bolts be well oiled to prevent rusting.

RAIL AND JOINT FASTENINGS.

A small supply of joint fastenings, spikes and bolts and nutlocks should be given each section, which should be kept under cover in the tool house or under the roof where it will not become rusty. At division headquarters or the larger yards where it is necessary to carry a large amount of this material in stock, if no permanent shed is provided, it should be neatly piled up and a temporary roof of old boards should be placed over same. Track bolts should be closely watched and if necessary a little cheap oil be applied to prevent rusting.

EMERGENCY RAILS.

Each section should have a sufficient amount of emergency rails on hand to insure it answering the purpose for which it was intended, which will be governed to a large extent by the condition of the rails in track. If the rails are in good, healthy condition, one em-

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S. A. MEGEATH,

PRESIDENT

emergency rail each two miles will be sufficient for single track. One pair of emergency angle bars should also be placed with each rail. These rails

with good results and saving some money. We recommend this feature of the car question be given consideration. Track tools of all kinds should never

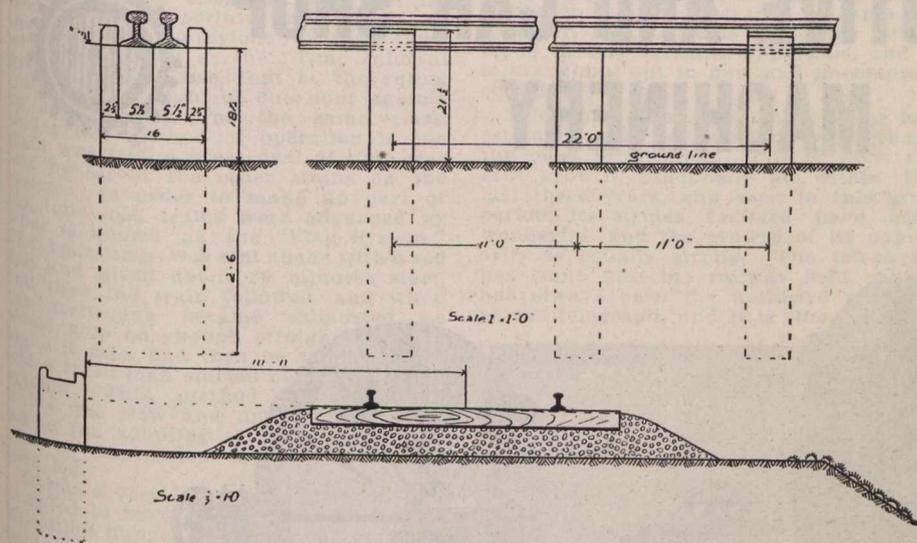
it can be secured by the scrap crew when required. We would recommend the scrap be picked up once a month. The scrap bin for small scrap should be provided at each section tool house with two compartments, each 4 ft. x 4 ft.; one compartment for small track scrap and the other for car scrap. We would recommend scrap bin as per sketch at every section tool house and all scrap should be picked up daily and placed in it at the close of the day's work. Whenever any old worn-out wooden cattle guards or other worn-out equipment of this kind is burned as rubbish, all the bolts, nuts, washers or other metal should be picked out and conveyed to the scrap bin. When old tie piles are burned, the ashes should be raked over and the old spike stubs, which in many cases are quite plentiful, should be picked up by the track men and saved as scrap. Its value will more than pay for gathering it up and it will educate the men on the matter of economy. Whenever any usable parts of cars or locomotives are picked up, such as draw bars, car doors, brake-shoes or any other usable material, they should be at once sent to the shops where they can again be made use of.

The results obtained in the care of track material and tools, depend in a larger measure than in any other part of their work, upon the interest taken in the matter by the foreman and his men and we believe the surest way to bring about the results desired is to create a sense of the value of property among the men by continually impressing upon them the fact that all tools and material should be cared for just as conscientiously as if they were their own personal property. This impression will go fully as far as the most careful instructions.

C.P.R. and G.T.R. Shareholders.

The Canadian Pacific Ry. has about 24,000 shareholders, the number of Canadian holders being 2,500. Nearly all the 4% preference stock is held in Great Britain. Of the common stock, holders in Great Britain have approximately 65%, 15% being held on the Continent, while the remaining 20% is divided evenly between Canada and the United States.

Grand Trunk Ry. shares are held by 54,200 persons, against 52,900 a year



Rail rests to be made of second hand trestle stringers.

should be placed on suitable rail rests at or near mile posts.

Rail rests as per sketch we would recommend for this purpose.

TOOLS.

Each section should be supplied with a sufficient number of first-class tools, the very best that money can buy, as there is no greater waste of money than for a section crew to work with inferior tools. The number of pieces of each kind would be governed by the number of men in each crew. In addition, each section should have a few extra tools for use in case of emergency, but no more than absolutely necessary to properly care for the work. A monthly inventory of all tools on a section should be rendered by the section foreman. In general, for ordinary repair work, the foreman should make his requisition on the roadmaster for tools and material once every thirty days and the foreman should be furnished with a small surplus of tools and material blank on which he should enter all tools on his section which will not be used for the next thirty days; this blank should be pinned to his monthly requisition and forwarded to the roadmaster at the close of each month. This will enable the roadmaster to transfer tools and material from one section to another and thereby avoid making requisition for supplies which he has on his division available for use. A great deal of money can be saved each month by having a system of this kind or a similar one. All tools as soon as they become dull or out of repair so they will not do first-class work, should immediately be sent to the shops for reshape and they should be put in good shape and returned to the section from whence they came without delay.

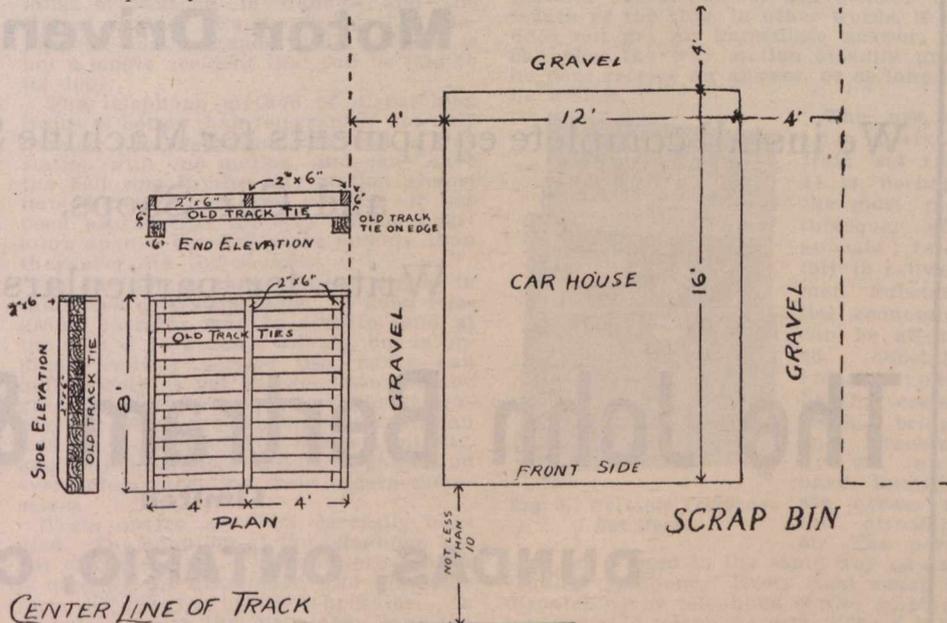
The hand car with a section crew should be the very best that can be obtained. It should be as light as possible but sufficiently strong to carry six or eight men and the necessary outfit of tools. There is no greater waste of money than to have a section crew running a poor hand car; thirty minutes in the morning and thirty minutes in the evening, day after day, on account of a poor hand car, runs into money very fast. The foreman should give his hand car very close attention; he should inspect it every morning before going to work and see that all bolts are securely fastened and that all bearings are clean and well oiled.

Motor cars have been in use on some entire divisions in the past year or so

be used for any other purpose than that for which they are made. Track shovels should never be permitted to be used in holding up the end of ties while tamping, in pulling ties out of track or putting in new ones; nor should they be used for spacing ties in the track. Claw bars should not be forced under the head of a spike by hammering the heel with a spike maul; sufficient wood from around the head of the spike should be cut with an adze or sharp pick to permit the claw bar to grasp the spike head. Nor should they be used between the tie and rail to lift the rail. This will break the claw in a great many cases, especially in cold weather.

Lanterns should always be kept in first-class condition, ready for an emergency call, except that they should not be left standing or hanging up in the tool house with the cup filled with oil, as this will spoil the oil and rot the wick.

When through with the day's work, all tools should be conveyed to the tool house and locked up for the night. Track gauges and track levels should be tested frequently to ascertain if they are



CENTER LINE OF TRACK

true and correct.

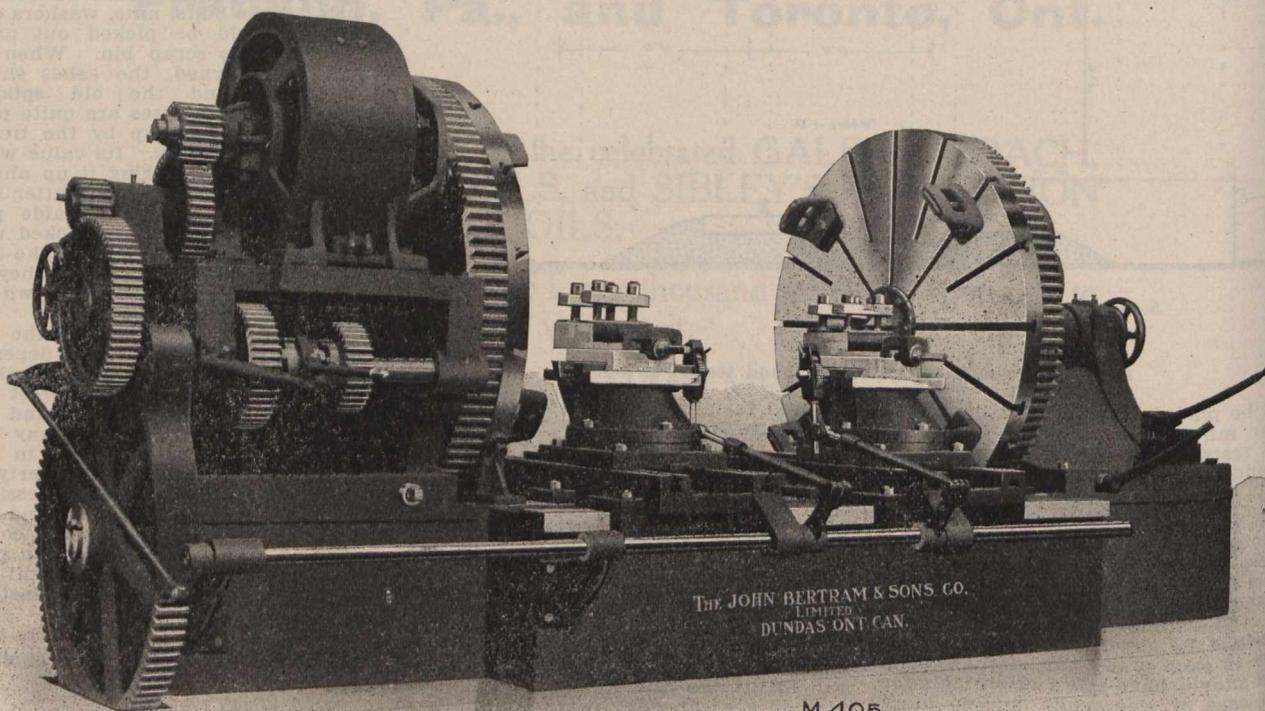
SCRAP.

All scrap should be picked up daily and placed with the other scrap where

ago. This puts the G.T.R. second only to the Pennsylvania Rd., which has 64,869 shareholders. The G.T.R. shares are almost exclusively held in England.



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Telephone Train Dispatching.

By A Dwight Smith,

Train dispatching dates as far back as 1850, when the telegraph was first introduced by Superintendent Minot of the Erie Rd. Previous to that time, what was known as the "Time Interval System" was in use, that is, the ruling train had the right of one hour against an opposing train of the same class. Under this method of operation if one train was late, a great deal of time was lost by all of the other trains on the system. In order to make up part of the time lost, trains were advanced by what is known as the "Flag System." The train-man was sent ahead with a red flag and given about 20 minutes start, and then the train followed, and when the train-man became exhausted he would stop on enough straight track to make it safe, and then be taken aboard and a fresh man started out in the same manner. This method of advancing trains was slow and unsatisfactory and led to the adopting of the telegraph in 1850 by Superintendent Minot of the Erie Rd.

It was a very interesting incident, and is stated to have happened as follows:— Mr. Minot happened to be going over the road on a westbound day express, and under the rules then existing the train was to wait for an eastbound express to pass it at Turners, 47 miles from New York. That train had not arrived, and the westbound train could not proceed until an hour had expired, unless the eastbound train arrived at Turners within a short time. There was a telegraph office at Turners, and Mr. Minot telegraphed to the operator at Goshen, 14 miles further on, and asked him whether the eastbound train had left the station. The reply was that it had not yet arrived at Goshen, showing that it was much behind time. Mr. Minot then telegraphed as follows:—

"To agent and operator Goshen:
"Hold the train for further orders.
"C. Minot, Supt."

He then wrote this order and handed it to the conductor:—
"To conductor and engineer, day express:
"Run to Goshen regardless of opposing train.

"C. Minot, Supt."

The engineer refused to run on the order, and after using his verbal authority without effect, Mr. Minot climbed on to the locomotive and took charge of the train himself. He ran it to Goshen and then from Goshen to Middleton, and from Middleton to Port Jarvis on a similar order, and entered the yard from the east as the other train came into

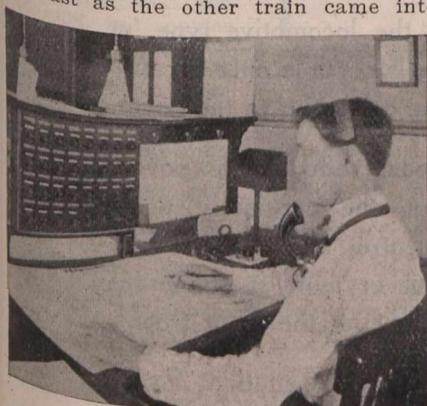


Fig. 1. Dispatcher's Office.

it from the west. An hour or more had been saved by the westbound train and the question of running trains on telegraphic orders was once and for all settled.

The telephone, being one of the older members of the electric family, the engineer, in his big, brotherly way, rather looks upon it as having settled down to

a respectable middle-aged life. He expects nothing startling in the way of a development in telephony (when he actually reaches the expectant stage) rather, a steady growth in its uses and minor improvements in apparatus. It appears, however, that there is still some young blood in this versatile apparatus, and it is branching out in new and unconquered fields.

Telephone train dispatching is the latest commercial development and perhaps the most interesting. It is of very recent growth, practically all within the last three years, and even in this brief period, its strides forward have been wonderful, and the growth of its popularity is equally strong. The telephone has come into the railway field, which has always been the exclusive province of the telegraph, and it is there to stay,



Fig. 2. Way Station Operator using Transmitter Arm.

because of the numerous advantages it possesses peculiar to itself.

There is no branch of railroading more carefully and conscientiously maintained at the uniform high level than the dispatcher's force (see fig. 1). On these men and their apparatus hang the lives of the many millions of travellers over the whole of this big country. They are men who must not make mistakes, because an error does not only mean financial loss, but is too frequently paid for by the loss of human lives. It is small wonder, then, that the railway's first requirement for anything connected with the dispatcher is safety—"absolute safety." The telephone has passed this requirement most satisfactorily, as is evidenced by its adoption on over 50,000 miles of railroad in Canada and the United States. Furthermore, the telephone's record stands clean. There is not a single accident that can be laid to its door.

The telephone method of dispatching trains is better than telegraphy, not only because the dispatcher can call a way station with one motion, and can "have the bell ring in the way station almost immediately," but also because it has been proved that the way station operators answer the bell more quickly than they ever did the sounder.

In addition to this, there is a gain in the speed of transmission. A good telegraph operator may be able to send at the rate of 50 words a minute, but in ordinary railway service this figure can quite safely be cut in two, owing to the grade of operators that have to be employed. With the telephone a man can talk at the rate of 100 words a minute, and this difference in time is gained on everything, excepting train orders themselves.

Train orders are very carefully handled. The adoption of the telephone has not changed them. The same order book is used by the dispatcher, and the same form by the way station operator. In giving an order the dispatcher calls the station required, the way station operator then comes in on the line, giving the name of his station. The dispatcher then says "31 order copy 1," or some-

thing of this nature, according to the type of order he is putting out. He then proceeds to write his orders in his order book, spelling all names and numbers, and repeating it to the way station operator as he writes. This regulates the speed to such an extent as to enable it to be readily copied by the operator. Now there is a double check on the correctness of this order. As soon as the operator has finished writing his order he repeats it back to the dispatcher as he has written and received it. The dispatcher underlines each word as it is repeated to him. When this is finished, the dispatcher gives the operator the sign, "complete 10.25," as the case may be.

It is very interesting to watch the change which comes in the personal feelings between the dispatcher and the way station operator. Because he can talk by word of mouth, the operator becomes more a part of the system. A cordial spirit of co-operation creeps in, discipline is improved, and so is the service. There is no more fighting for the use of the train wire. With the telephone the dispatcher has complete control of the wire, and yet more important, when the dispatcher is calling a way station he positively knows that he has rung the bell in that station. By means of an ingenious arrangement of the bell circuit, he can tell in every case whether or not the bell of the called station has actually rung. This is called the "answer back" and takes the form of a distinctive buzz in the dispatcher's head receiver. It can be produced only by the ringing of the bell. Now, the way station operator (fig. 2), knowing that the dispatcher has heard the bell ring in his station, is more liable to answer the call quickly than if he were listening to his call coming in over a Morse sounder.

Many way stations in this country have men who have to act in the case of Scotland, Sept. 15, 1843. The capacity of operators and agents. This means that they must necessarily leave their instruments to attend to the selling of tickets or handling of freight in a building which is very often some distance away. With a bell that can be heard several hundred feet, the station agent can be performing his duties out in the freight shed or away from the building and still be within sound of his selector bell. In order that the full advantage may be obtained from this feature, the dispatcher can control the length of the ring, in other words, if he does not get an immediate answer, he can ring the way station steadily until he does receive an answer, or as long as he wishes.

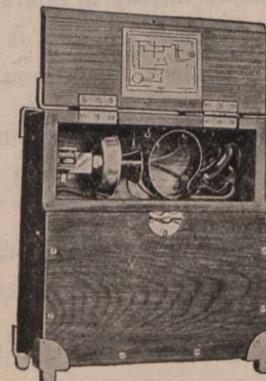
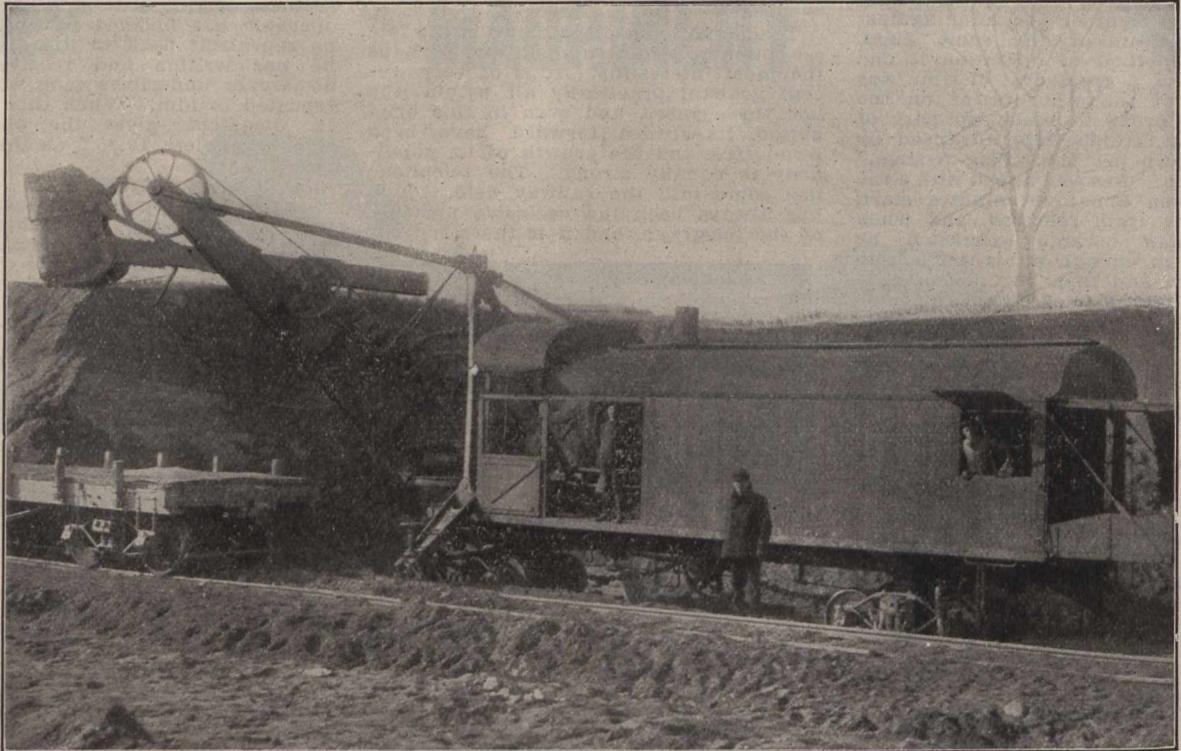


Fig. 3. Portable Telephone Set Open.

The use of the portable train set (fig. 3) is perhaps the most picturesque, and appeals forcibly to railway men. Substantial economies can be affected. Officials, inspectors, train crews, track, bridge and wrecking crews can have immediate access to the dispatcher. The portable set is used in the same way as any regular telephone. Every road which is dispatching by telephone is also employing portable telephone sets. The C.P.R. has adopted it to such an extent that all the vans and baggage cars now being built are wired and equipped with portable sets, regardless of what divi-

ATLANTIC STEAM SHOVELS



CLASSY 45-16-2½ ATLANTIC SHOVEL.

ECONOMY IN OPERATION

Reduction in friction and boiler losses, with corresponding increase in pull at dipper, is the reason why the Atlantic shovel digs more at less cost than shovels of the chain type.

Wire rope hoist, found only in the Atlantic, exerts a direct pull on the dipper and substitutes friction of a rope with but one large sheave for that of a chain with from four to six additional small sheaves. The less power lost in the machine itself, the more you have left for digging.

Further economy in operation is secured by using a large boiler of the locomotive type, in which more of the heat is utilized and less is lost up the stack. This is possible only because of the removal of the hoisting engines from their usual position on the car body, to the boom.

The placing of the main hoisting engines at the foot of the boom reduces the power necessary for swinging the boom and removes the twist upon the car body when working on one side. With this construction the turntable centre and boom foot constitute the engine frame. One casting takes the place of four or more in the usual construction, reducing the total weight of the shovel, and the weight on the front trucks.

Spare parts are kept on hand at our Works at Longue Pointe, Montreal, Canada. Every part is made to gauges, and sure to fit.

MONTREAL LOCOMOTIVE WORKS, LTD.

OTTAWA BANK BUILDING, MONTREAL, CANADA

sion they are destined for. The use of this apparatus is becoming more popular every day. It saves minutes and valuable time in case of emergency, and minutes on a railroad generally represent thousands of dollars. It has been found to be of estimable service in every day running of the road. If an engine blows out a stuffing-box, breaks an eccentric or valve gear, it is no longer necessary to keep a dispatcher fuming over what might have happened to that train and trying to patch up his schedules; now he can be told this on the spot by the conductor of the train (fig. 4). This

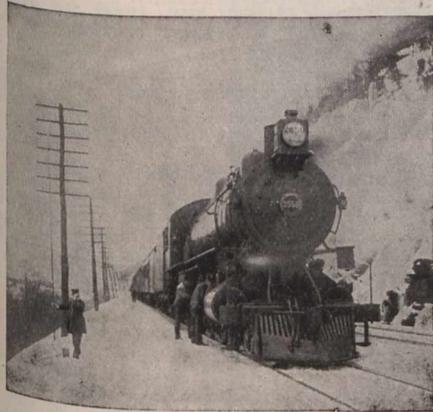


Fig. 4. Portable Train Set in Use by Conductor.

has been very beneficial in many instances; because of our rugged winter climate, trains stalled in snow drifts can advise the dispatcher of the fact. This saves many a long wait and many a long tramp for the brakeman to the nearest station.

Portable train sets are connected to the line by what is known as a line pole (fig. 5). This pole is not unlike a fishing pole, and is generally in two sections for compactness sake. The top section is equipped with two contact clips, which give a firm contact, and in conjunction it has a flexible line cord by which connection is made. This cord is generally about 100 ft. long, and enables the train crew in most cases, if pole line is not far distant from the track, to speak from the inside of the van.

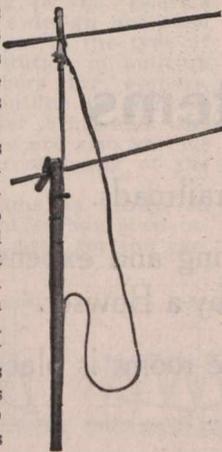


Fig. 5. Top Section Linepole Making Contact.

Another advantage peculiar to the telephone is the facility it gives for keeping trains on a division in close touch with the dispatcher by means of siding sets (fig. 6). The use of portable sets has already been mentioned. Siding sets perform the same function, only instead of being carried on trains they are permanently located at intervals along the railway. These sets can be placed in booths or pole shelters built on the line. In many cases a specially designed set is used and mounted direct on the poles. This latter set is an iron, weather-proof, rust-proof set (fig. 7), and is equipped with a standard switch lock, so that only train crews, or persons having authority, can get access to the train wire. Typical points where these sets show to advantage are tanks and draw bridges.

Thus, in many ways the telephone has improved train dispatching; in small ways, perhaps, considering each

phase by itself; in the aggregate, in a large, broad, modern way. It is introducing economies, simplifying the work and making for better service in every way.



Fig. 6. Trainman Using Siding Set.

[The writer of the foregoing article (the first of a series) is Railway Sales Engineer of the Northern Electric and Manufacturing Co., Ltd., Montreal.—Editor.]

Transportation Men's Birthdays in September.

- Many happy returns of the day to:—
- G. W. Alexander, Local Treasurer, G.T.R. Western Lines, Detroit, Mich., born at Lightcliff, Yorks, Eng., Sept. 10, 1859.
- H. Bailey, Bridge and Building Master, District 1, Lake Superior Division, C.P.R., Sudbury, Ont., born at Huntsville, Ont., Sept. 2, 1879.
- W. B. Bamford, Division Freight Agent, Atlantic Division, C.P.R., St. John, N.B., born at Belleville, Ont., Sept. 10, 1863.
- W. D. Barclay, General Manager, Canadian Northern Quebec Ry., Quebec and Lake St. John Ry., Halifax and Southwestern Ry., and Inverness Ry. and Coal Co., Quebec, Que., born at Campbellton, N.B., Sept. 23, 1852.
- G. T. Bell, Assistant Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal, born there, Sept. 7, 1861.
- W. H. Biggar, K.C., General Counsel, G.T.R. and G.T.P.R., Montreal, born at the Carrying Place, near Trenton, Ont., Sept. 19, 1852.
- E. R. Bremner, ex-Division Freight Agent, G.T.R., Ottawa Division, Ottawa, born at Toronto, Sept. 9, 1875.
- M. H. Brown, Division Freight Agent, Ontario Division, C.P.R., Toronto, born at Victoria Square, Ont., Sept. 2, 1866.
- W. G. Brownlee, General Transportation Manager, G.T.R., Montreal, born at Lawrenceville, Ill., Sept. 9, 1858.
- W. B. Bulling, Assistant Freight Traffic Manager, C.P.R. Eastern Lines, Montreal, born there, Sept. 16, 1858.
- C. F. Burns, Auditor of Disbursements, Intercolonial Ry., Moncton, N.B., born at Clements Port, N.S., Sept. 10, 1854.
- A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 20, 1864.
- A. W. Davis, Locomotive Foreman, G.T.R., Stratford, Ont., born at Sittingbourne, Kent, Eng., Sept. 5, 1864.
- A. S. Dawson, Chief Engineer, Irrigation Department, C.P.R., Calgary, Alta., born at Pictou, N.S., Sept. 6, 1871.
- W. H. Estano, Traffic Auditor, Intercolonial Ry., Moncton, N.B., born at Halifax, N.S., Sept. 29, 1874.
- C. B. Foster, General Passenger Agent, C.P.R. Western Lines, Revelstoke and

east, Winnipeg, born at Kingston, N.B., Sept. 30, 1871.

J. P. Ferguson, representing Galena Signal Oil Co., Ottawa, Ont., born at Drummondville, Que., Sept. 12, 1856.

D. W. Hatch, Travelling Agent, Atchison, Topeka and Santa Fe Ry., Montreal, born at Bedford, Que., Sept. 1, 1841.

Jules Hone, Jr., railway and steamship ticket agent, Quebec, Que., born at Montreal, Sept. 8, 1874.

J. E. Hutcheson, Superintendent and Purchasing Agent, Ottawa Electric Ry., Ottawa, Ont., born at Brockville, Ont., Sept. 15, 1858.

W. H. Kelson, ex-General Storekeeper, C.P.R., Montreal, born at Bath, Eng., Sept. 5, 1850.

C. B. King, Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.

V. Kistler, District Freight and Passenger Agent, Great Northern Ry., Grand Forks, B.C., born at Clyde, Ohio, Sept. 4, 1881.

R. E. Larmour, Division Freight Agent, British Columbia Division, C.P.R., Vancouver, born at Brantford, Ont., Sept. 26, 1868.

H. D. Lumsden, C.E., ex-Chief Engineer, National Transcontinental Ry., Ottawa, born at Belhaire, Scotland, Sept. 7, 1844.

J. Bruce Macdonald, Director, Niagara Navigation Co., Toronto, born at Glengarry, Ont., Sept. 19, 1850.

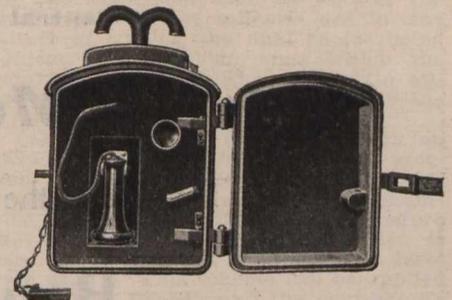


Fig. 7. Metal Siding Set Open.

F. J. Mahon, Superintendent Telegraphs, C.P.R. Atlantic Division, St. John, N.B., born at Montreal, Sept. 18, 1865.

J. F. Mundle, City Freight Agent, C.P.R., Montreal, born at Prescott, Ont., Sept. 20, 1857.

B. S. Murray, Route Agent, Canadian Express Co., London, Ont., born at Glenwood, N.Y., Sept. 17, 1856.

J. Osborne, General Superintendent, Ontario Division, C.P.R., Toronto, born at Montreal, Sept. 19, 1861.

S. S. Oliver, A.M. Can. Soc. C.E., formerly of the Engineering Dept., Canadian Northern Quebec Ry., and Quebec and Lake St. John Ry., now practising as a civil engineer, Quebec, Que., born there, Sept. 9, 1858.

J. Paul, General Freight Agent, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., born in Euphrasia tp., Grey Co., Ont., Sept. 13, 1858.

C. S. Richardson, District Freight Agent, C.P.R., Buffalo, N.Y., born at New York City, Sept. 26, 1870.

W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, born at Longueuil, Que., Sept. 21, 1857.

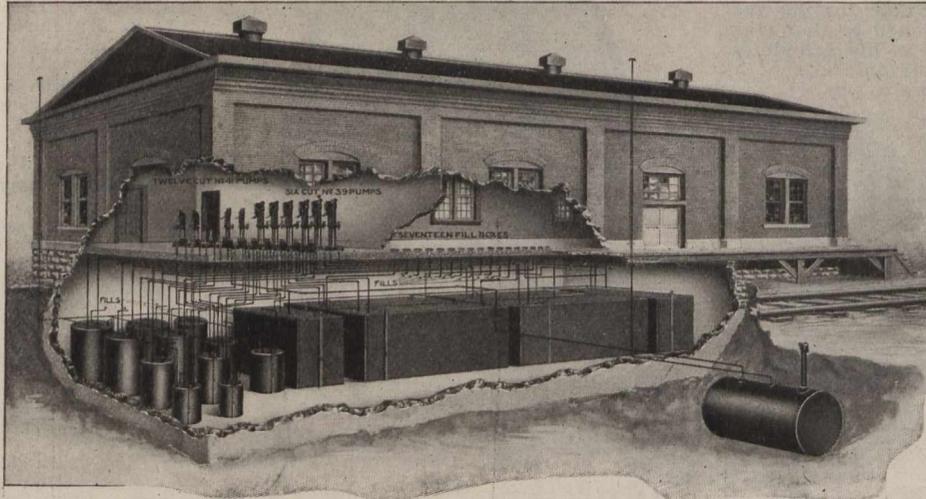
W. H. Rosevear, ex-General Car Accountant, G.T.R., Montreal, born at Wadebridge, Cornwall, Eng., Sept. 26, 1837.

F. W. Sterling, Travelling Freight Agent, C.P.R., Vancouver, B.C., born at Thornbury, Ont., Sept. 14, 1881.

E. W. Taylor, General Freight Agent, Reid Newfoundland Co., St. John's, Nfld., born at Carbonear, Nfld., Sept. 8, 1870.

Sir William Whyte, Vice President, C.P.R., Winnipeg, born at Charleston, \$397,130, against \$413,334 for same period 1910.

H. A. Young, Traffic Manager, Canadian Lake Line, Toronto, born at Brooklyn, N.Y., Sept. 1, 1864.



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Schemes of Erection Proposed for the Quebec Bridge.

The design of a structure of exceptional size is likely to depend more upon erection questions than on problems of proportioning the parts with regard to their functions in the completed structure. This is pre-eminently true for a bridge like that to be built over the St. Lawrence River at Quebec. Accordingly, the recent competition of designs and bids (of which the principal designs were illustrated in the Railway and Marine World for May), was in part a competition of erection methods. The outlines of the designs do not therefore suffice to state the essentials of the competing plans. We take pleasure in supplementing them now by a summary of the erection projects of the more important bids.

The plans prepared by the Board of Engineers allowed of six modifications of its general design, the differences being in the length of anchor arm, design of suspended span, and manner of erection. Alternative designs were also permitted. There were four bidders (see Railway and Marine World, May), and some of them submitting proposals for different schemes of erection, there were 35 distinct bids.

ST. LAWRENCE BRIDGE COMPANY.
The St. Lawrence Bridge Co., in addition to tendering on each of the Board's designs, submitted seven different alternate designs, as follows:—

Design A.—This corresponds to the Board's design with respect to panel lengths, height over main pier, profile of bottom chords, and floor system. It has an anchor arm of twelve panels and a suspended span designed for floating erection, corresponding to the Board's design V. The Board's design has been departed from in respect to the type of web system, the substitution of built-up tension riveted members for eyebars, and as regards the outline of the top chord of the cantilever arm and the suspended span. There are also various changes in the design of many of the members.

Design B is the same as design A, with the exception that carbon steel instead of nickel-steel is used for the ver-

of web system remain unchanged.

Design C is identical with design A, except that nickel-steel eyebars are used throughout, instead of built-up riv-

steel is also used for the centre posts of the suspended span.

Design Y corresponds to design X as design C compares with design A. Here

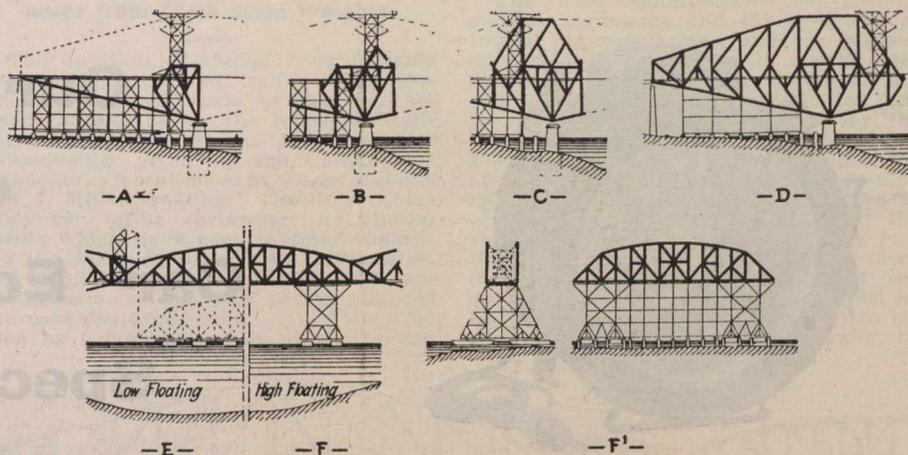


Fig. 2. Quebec Bridge. Scheme of erection, St. Lawrence Bridge Co., Board's Design.

eted tension members.

Design M retains the single intersection of the Board's design, and follows very closely the general features of the design submitted by Maschinenfabrik Augsburg-Nuernberg. The anchor and cantilever arms are each 522 ft. long with a suspended span of 714 ft. In this design nickel-steel is used throughout. The details of the main members have been somewhat changed from those prepared by the Board. Pin bearings are employed throughout for all abutting joints of compression members.

Design N is identical in outline with design M, the only difference being that carbon steel is substituted for nickel-steel in a number of the members. This change was made with the idea of effecting a slight economy in design.

Design X, which was accepted, is similar in outline and general details to design A, but is intended to accommodate railway traffic only, the tramway and highway roadways being omitted. A 4-ft. walk is allowed for on each side for the use of inspectors, etc. Carbon

railway traffic only is provided for and nickel-steel eyebars are used instead of riveted built-up tension members.

SCHEME OF ERECTION.—Several different schemes of erection are proposed, for the suspended span as well as the cantilevers. These schemes are in the nature of studies, the final choice being subject to the design upon which the contract might be awarded, and to approval by the Board. They include the following elements:—

(a) Erection of the anchor arm on steel falsework before starting the erection of the cantilever arm. In this scheme the anchor arm will be assembled and riveted up complete before moving ahead. An inside traveler is used and is operated from the floor level (see fig. 1). This scheme can be applied to both the Board's and the contractor's designs.

(b) Erection of the anchor arm and the cantilever arm concurrently. The first step in the erection is the construction of a high tower on piers between panel points AL12 and AL14. This tower has overhanging arms from which the trusses on either side can be reached. From this tower the anchor arm is erected up to AL10, under which point a temporary masonry pier is built, which acts both as a supporting pier and an anchorage (see fig. 2). After the floor has been put in place the tower is taken apart at the floor level, the upper part being used as an inside traveler, with which the remainder of the anchor arm is erected. The erection of the anchor arm is always sufficiently in advance of the cantilever arm to ensure that the centre of gravity is always between AL10 and the main pier. A falsework trestle for the handling of material connects the shore with the work under construction. This scheme of erection can apply either to the Board's design or the alternative designs.

(c) Erection of the cantilever arm by inside traveler, similar to that used for the erection of the anchor arm. In the case of erection scheme (a) the traveler used for the anchor arm is moved ahead on the cantilever arm and the erection proceeds, panel by panel, until this part of the bridge is entirely completed. In the case of erection scheme (b) the traveler for the cantilever arm is erected by the traveler used for the erection of the anchor arm when the erection of this arm has proceeded past panel point AL10, thus ensuring stability for the further progress of the work. From this point and to the end of the cantilever arm, the erection of schemes (b) and (c) are exactly similar.

(d) Erection of the cantilever arm with a top-chord traveler. This traveler is erected by the inside traveler of the

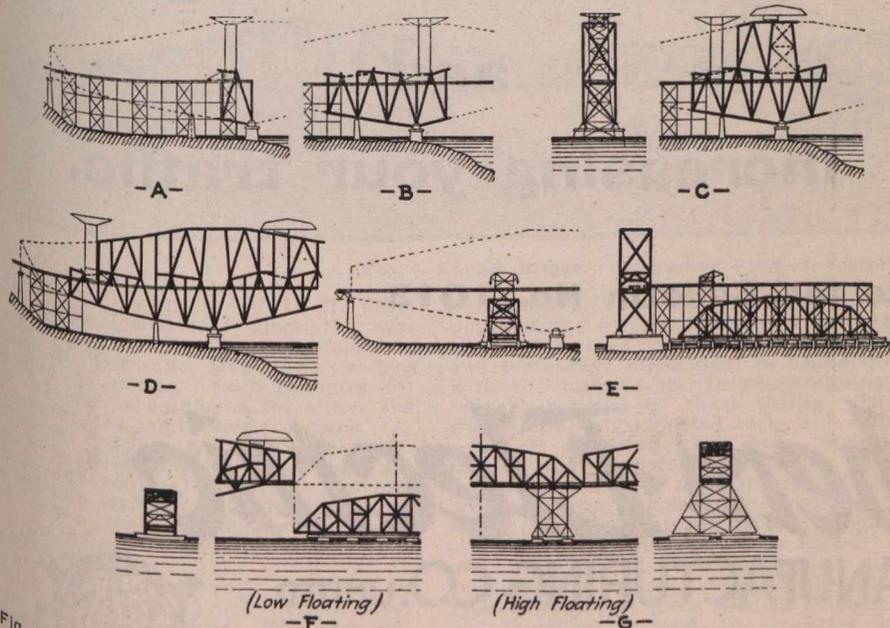
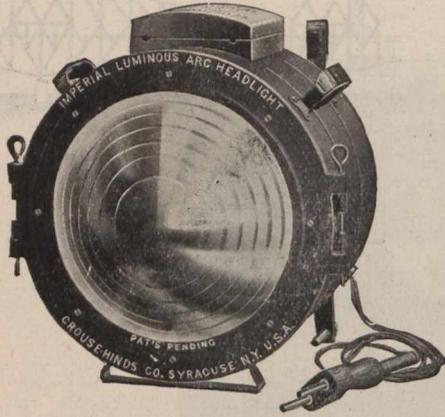


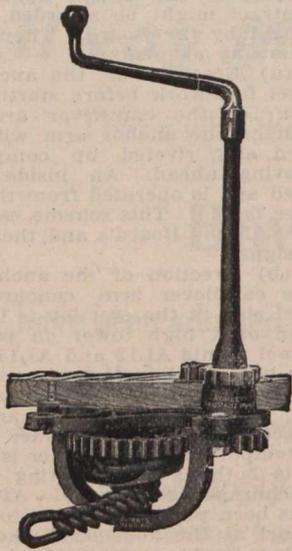
Fig. 1. Quebec Bridge. Scheme of erection, St. Lawrence Bridge Co.'s designs A, B and X. Project for erection of cantilever arm by top-chord traveller.

tical posts in the cantilever arm, three panels away from the centre pier, as well as for all members in the anchor arm. The details of members and type

steel is used for the anchor arm, members over the main piers, and for the vertical posts of the cantilever arm for three panels from the pier. Carbon



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anchor arm. This scheme of erection is intended to apply to the Board's design only (see fig. 2).

(e) Erection of the suspended span by cantilevering. This erection is done with a small top traveler in practically the same manner as is proposed by the other bidders. This scheme of erection applies only to the Board's designs I and IV.

(f) Suspended span floated in on high falsework. The falsework for this scheme of erection is constructed on concrete piers and is located on the shore directly at the bridge site. The suspended span is laid down at right angles to the bridge proper and one end is hard up against the anchor arm at almost a point corresponding to AL10. A traveling crane takes the mass in the preceding, except that the span is erected directly on the piers. For floating, six pontoons are required,

for towing the span into position.—Engineering News.

(To be continued.)

Weighing Carload Traffic and Allowances from Track Scale Weights.

The question of special freight tariffs for weighing carload traffic and allowances from track scale weights was argued recently before the Board of Railway Commissioners, and judgment was subsequently given by the Chief Commissioner, Commissioners S. J. McLean and J. Mills assenting. The Chief Commissioner, after reviewing the special tariffs which have been in force regarding the weighing of carload traffic, said: "The railway companies filed new tariffs of the same until a full presentation of the case could be made. . . . It will be seen by a comparison of the proposed

and whether the working thereof in the past has operated reasonably, or whether under existing conditions undue burdens are placed upon carriers by reason of these provisions."

The Chief Commissioner then reviewed the arguments and the evidence, as to the old regulations, and the proposed new ones, as well as the special conditions in force in British Columbia, notice of cancellation of which to date from Aug. 1 had been given by the C.P.R., and proceeded: "It seems to the Board that before it attempts, upon the material before it, to express an opinion as to what practice should be established and what allowance made, that the shippers and carriers should have a further conference in connection with these matters. . . . The Board is of the opinion that these matters should all be fully exhausted between the parties interested, when, if the matters cannot be

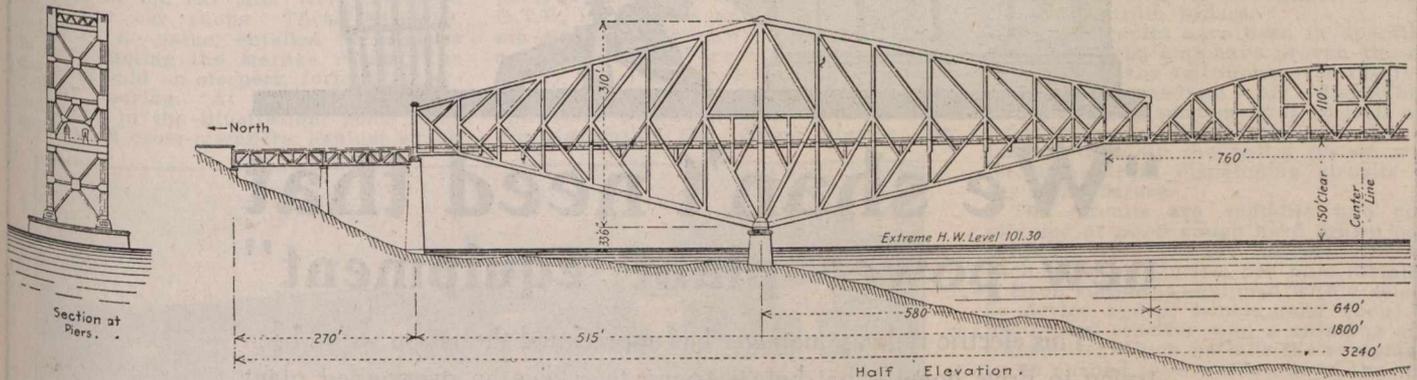


Fig. 3. Quebec Bridge. Accepted Design X, St. Lawrence Bridge Co.

material, both for the falsework and the suspended span, from the cars on the bridge and carries it to whatever point it is required. Eight pontoons 120 ft. by 36 ft. by 12 ft. deep are used. At high tide the falsework is lifted off the piers and towed into position.

(g) Suspended span floated in on low falsework. The erection of the suspended span in this case is carried out

The Board postponed the effective dates, made effective May 1, as to traffic moving between points in Canada, and May 15, as to traffic from or to points in Canada to or from points in the United States. Against these latter tariffs many complaints came to the Board from various parts of the country, and the shippers requested a hearing before they were permitted to go into effect.

adjusted, the Board will, either upon the material now before it, or upon further hearing and evidence, dispose of all matters that the parties are unable to adjust. In expressing this opinion the Board has no hesitation in saying that, in its opinion, the track scale allowances made by the railway companies in the past have, so far as the evidence discloses, been upon a liberal scale, and

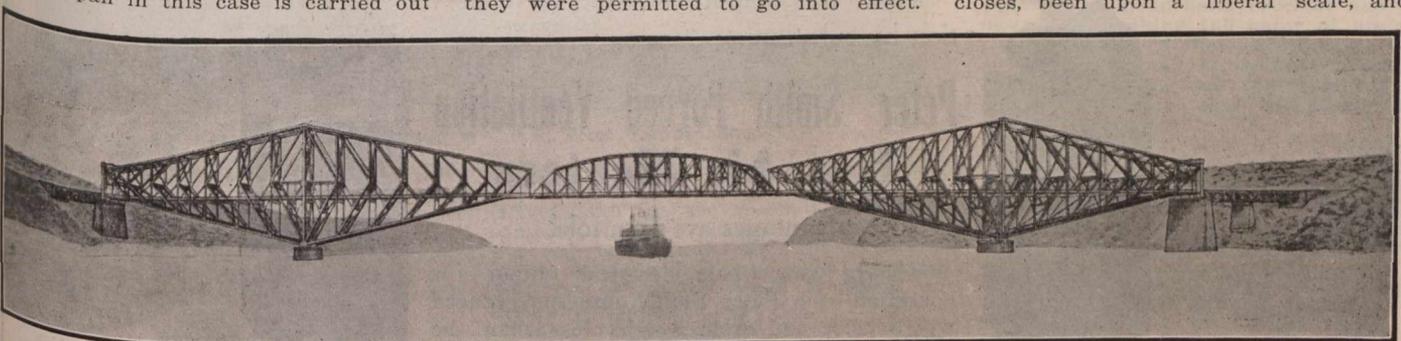


Fig. 4. Quebec Bridge. Perspective View of Accepted Design.

each 238 ft. by 38 ft. by 10 ft. deep. After being towed into place the suspended span is lifted into place by means of hydraulic jacks and wedges operated by power. Both schemes (f) and (g) can be employed for either the Board's or the contractor's designs.

ADOPTED PLAN.—As already stated, design X is the one which was finally approved and contracted for. It provides for railway traffic only. The top chord and other tension members will be built-up instead of eyebar members. The channel span is 1,800 ft.

The anchor arm will probably be erected on falsework, and the cantilever arms by inside traveler. The suspended span will probably be built on high falsework and floated into place.

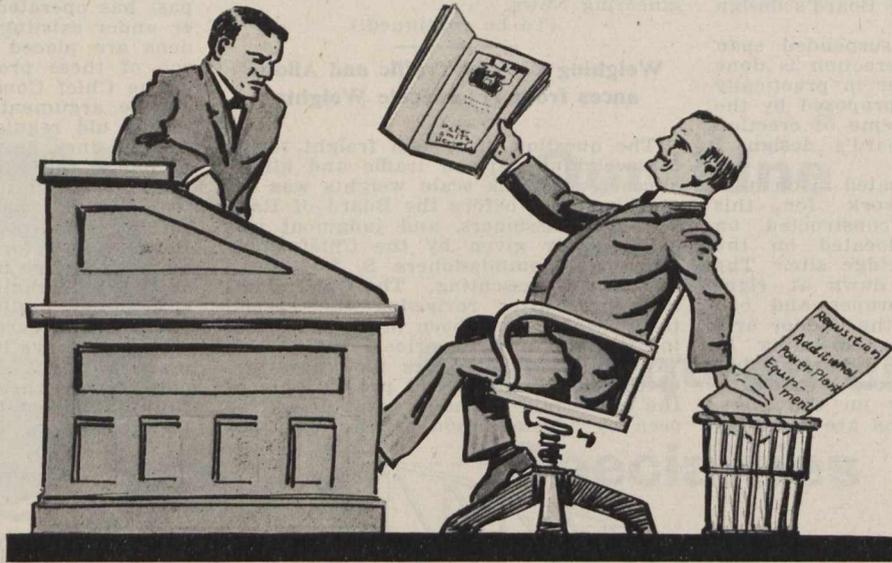
According to the specifications the government will stop navigation on the river during the progress of floating in the suspended span and will furnish free of charge the motive power required

new tariff with the old one that the proposal of the carriers now is to do away with allowances for blocking, dunnage and temporary racks used in connection with the bulk of the freight shipments in cars covered by these tariffs. This was strenuously objected to by the shippers. It seems to have been thought fair by the carriers in arranging their tariffs originally to make reasonable allowances from track scale weights to rectify any variation in the tare of cars, or increased weight thereof by reason of the absorption of moisture and the accumulation of snow, ice, and the like. These allowances have been in existence for many years, and the business of shippers has been adjusted in accordance therewith, and any change in these conditions naturally meets with objection. The point in the meantime, however, for consideration is whether it is fair that the carriers should modify these regulations in whole or in part,

without attempting to dispose finally of the matter, the Board will expect that the shippers will be prepared to deal liberally and fairly with the railway companies in any reasonable attempt made by the latter to put these track-scale allowances upon a fairer basis. Some arrangement must be made, however, with reference to allowances for snow and ice, other than suggested by the companies."

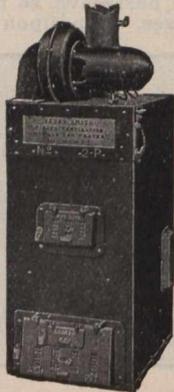
The same course is to be pursued in reference to the proposed change in the British Columbia tariffs, as radical changes of this sort should not be made, even if proper, without a longer notice to shippers. An order will be made postponing the going into operation of these proposed tariffs until after the conference between the companies and the shippers.

The International Railway Master Blacksmiths' Association held its annual meetings at Toledo, O., Aug. 15-17.



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This electric railway manager has appreciated the lesson we've been trying to drive home—that before trying to relieve an overloaded plant by adding to your equipment, it is well to consider the heater question. Conservative estimates show that practically half the total output used for car operation is required for operating electric heaters at such times as they are turned on at their maximum capacity. A fair average for the winter is 20 to 30 per cent.



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Estimates on equipment to fit your needs and catalog are yours for the asking.

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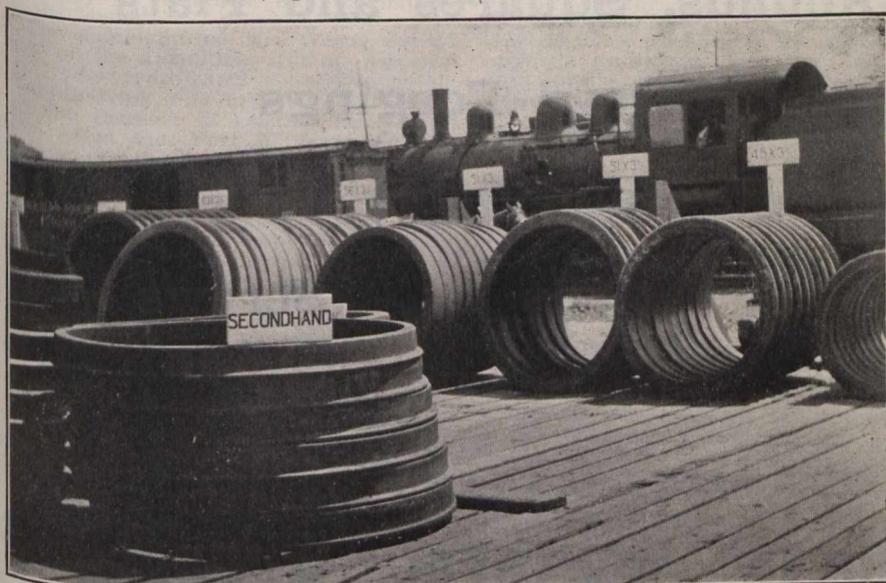
Detroit, Mich.

Locomotive Tire Storage at C.P.R. West Toronto Shops.

Particularly where ground space is at a premium, is it necessary to have a systematic yard arrangement. It occurred to A. Dixon, General Foreman of the C.P.R. West Toronto shops, that with but little labor, the yard arrangement might be considerably improved. A sample of what was accomplished in one line is shown in the accompanying illustration.

Previous to this yard systematizing, locomotive driving-wheel tires were lying around the yards in nondescript piles, just as left by the laborers, arranged in each case without any regard to future convenience. This careless arrangement, besides being inconvenient to the workmen looking for new tires, required about twice as much space as the method devised.

A lot of old car sills were obtained from the car shops. These car sills, being of no value, entailed no expense in constructing the storage racks. The car sills, laid on sleepers, formed an excellent flooring. At the other end, as indicated in the illustration, posts were sunk, with cross-members, against which



Locomotive Tire Storage at C.P.R. West Toronto Shops.

the tires were placed. Over each pile index boards were located, with tire sizes, making it convenient for the mechanic to select the required tire, and at the same time facilitating matters when taking inventory. The appearance of the yard is greatly enhanced by this arrangement.

Official Inspection of the G. T. R. and G.T.P.R.

A. W. Smithers, Chairman of the G.T.R. board of directors, London, Eng., accompanied by members of the staff of the English office, some shareholders, and a number of ladies, arrived in Portland, Me., via New York, Aug. 4, where they were met by C. M. Hays, President, and other members of the Montreal staff. After spending a couple of days at Mr. Hays' summer home at Cushing's Island, the party began an official inspection of the line, Aug. 7, reaching Montreal Aug. 8. In an interview Mr. Smithers said, in reference to the developments in the New England States, there was no thought of making Boston an ocean port for the system, and Providence was altogether out of the question as far as its ocean shipping facilities or possibilities were concerned. When the G.T. Pacific Ry. was finished

Canadian seaports would be built up in accordance with the company's agreement with the Government. Portland would not be affected by the development of Canadian ports by the company. So far as the G.T. Pacific Ry. was concerned, satisfactory progress had been made during the past year, and the end of the great work of construction was now in sight. Labor conditions were now more satisfactory than they had been in the past, and there was every prospect that the line would be completed and have become a great factor in the development of the Canadian West within two or three years.

The party started from Montreal on a special train of five private cars, Aug. 8, visiting Ottawa, and proceeding via North Bay, over the Temiskaming and Northern Ontario Ry. to Cochrane, where the National Transcontinental Ry. crosses. Returning from the north the party visited important points on the G.T.R. in Ontario, and sailed from Sarnia on the Northern Navigation Co.'s s.s. Hamonic to Port Arthur, accompanied by Jas. Playfair, President, Northern Navigation Co., and Inland Lines, Ltd., and H. H. Gildersleeve, Manager, Northern Navigation Co. From thence the

special train went on to Winnipeg, and the party set out on a trip over the G.T. Pacific Ry. as far as it has been completed west of Edmonton, Alta. The trip will be extended to Vancouver and Prince Rupert, B.C., and it is expected that the party will reach Montreal on the return journey Sept. 25.

The party comprises, in addition to A. W. Smithers, Chairman of the Board, and C. M. Hays, President, G.T.R. and G.T. Pacific Ry.: Mrs. Hays, F. and Mrs. Swanston, London, Eng.; Miss Gladys Jackson, London, Eng.; W. E. Davis, Passenger Traffic Manager; A. Butze, General Purchasing Agent; H. Deer, Assistant Secretary, London, Eng.; John Pullen, Assistant Freight Traffic Manager; D. E. Galloway, private secretary to the President; V. M. Payne, assistant secretary to the President.

Superheater Performance on Canadian Northern Railway.—An interesting superheater locomotive performance is reported by the C.N.R. locomotive 266, built by the Montreal Locomotive Works, and equipped with the Schmidt superheater, which ran 378 miles from Edmonton to North Battleford and back to Vermilion, with six or seven coaches on a total coal consumption of about eight tons, this efficiency being largely due to the superheater.

Telephone Train Dispatching on the Grand Trunk Railway.

By W. W. Ashald, Superintendent Telegraphs, Grand Trunk Railway.

The G.T.R. has the following sections of its line equipped with telephone train dispatching circuits:—One circuit between North Parkdale Jct. and Burlington Jct., via Allandale, a distance of 145 miles, the dispatchers located at Allandale, Ont. There are 22 stations on this line where regular operators are on duty. Another circuit between Allandale and Nipissing Jct., 165 miles, with 21 stations where regular operators are on duty. At sidings where there are no regular agents, emergency telephones are located in booths where trainmen can get in immediate communication with the train dispatcher and, if necessary, procure their own train orders.

These circuits have been in operation for 18 months and have proven the superiority of the telephone over the telegraph as a medium for dispatching trains. The management is so well satisfied with the results that it is the intention to equip the entire system with telephone train dispatching circuits in the near future.

The circuits are metallic and constructed of no. 9 gauge hard drawn copper wire weighing 210 lbs. per mile for each wire, or 420 lbs. per mile metallic.

Each station is equipped with a selector device and a 4-inch gong (bell), a head-band receiver, and a swinging arm transmitter which permits the equipment to be pushed to one side out of the way when not in use. The dispatchers' office equipment consists of a master selector, a separate calling key for each office, a head-band receiver and chest transmitter. The maximum time required to call any office is eight seconds. The system being selective, only the office desired is affected by the calling. The train dispatcher is constantly on the line and no other office can call except to speak direct to the dispatcher. When an office is called the operator immediately puts on his head-band receiver and answers by speaking the name of his station. The dispatcher receives an "answer back" signal the instant the station bell starts ringing and knows beyond the question of doubt that the station bell has responded to his call.

Through the medium of the telephone the train dispatcher is in direct communication with trainmen at all times and thus obtains information required by personal conversation, instead of through the medium of a third party, as is necessary by telegraph.

The telephone has come into general use on the larger railway systems, both in Canada and in the United States, for train dispatching purposes, within the past three years, and is being extended at the rate of about 1,500 miles each year.

The use of the telephone does not displace the telegraph operator, as the telegraph is still used for transmission of messages, reports, etc., as formerly, and the telegraph operator only uses the telephone for his train order work.

The cost of installing a telephone circuit exceeds the telegraph by about 8 per cent., but the saving in time, the improvement of traffic and the absolute safety of the system, appeals to railway managers, and they do not therefore stop to consider the cost of installation.

The Western Transfer Co., of which T. Long is President and General Manager, has acquired the Ripley Transfer, and the Gibbons Transfer Co., at Lethbridge, Alta., and has entered into a contract with the C.P.R. and wholesale business houses in the city to handle the cartage business.

THE STEEL COMPANY OF CANADA, LIMITED

Open Hearth Steel Products

R. R. Axles Splice Bars Tie Plates

Track Spikes Bolts and Nuts

BAR STEEL--Rounds, Squares and Flats

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Copper Wire and Cable

Wrought Pipe Nails Screws

DISTRICT SALES OFFICES :

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W. A. MacLennan, Vancouver, B.C.

H. G. Rogers, St. John, N.B.

J. B. H. Rickaby, Victoria, B.C.

Geo. D. Hatfield, Halifax, N.S.

Crossing
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Train Order
Signals,

Corning Lenses,

Bonding Drills,

etc., etc.

The Dominion Board of Railway Commissioners

have endorsed our illuminated highway signals
as good protection for level crossings.

Regarding Motor Cars—The best pays in the long RUN—and
that's the kind of a RUN a car is supposed to be built for—
and that's the kind you get in a BUDA car.

We carry Standard Signal and Railway Supplies.

THE WHYTE RAILWAY SIGNAL COMPANY

LIMITED

2 MANNING ARCADE ANNEX, TORONTO.

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Inspection
Hand Push Cars,

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Track Drills,

etc., etc.

Rates on Grain and Grain Products to Maritime Provinces.

The Board of Railway Commissioners recently dismissed the application of the Dominion Millers' Association for an order suspending the operation of the C.P.R. tariff, C.R.C. no. E 2040, and the G.T.R. tariff, C.R.C. no. E 2285, applying on grain and grain products from Ontario to Eastern Quebec and the Maritime Provinces, which were to have become effective May 1, until the companies had justified the advanced rates in the tariffs to the Board's satisfaction. Commissioner McLean gave the following judgment:—

The tariffs in question, which are the special and competitive joint freight tariffs on grain and grain products, in carloads, to points in the Maritime Provinces, were issued to be effective May 1, 1911. Before the effective date, and on complaint of the Dominion Millers' Association that these tariffs increased existing rates, the date for going into force was postponed, in order that after the hearing which took place in Toronto on April 25, the Board might have an opportunity of examining into the details of the tariffs.

The complaint of Mr. Watts, Secretary of the Dominion Millers' Association, who represented that Association at the hearing, was, in brief, one regarding the increase of existing rates. He also stated that Fort William, and not Chicago, should be the key to the situation in connection with these tariffs. The effect of the Chicago rate situation in this regard is considered later. As to this phase of the complaint, however, I think that the attention of the Board should be limited to the question of the increases in rates. If a different basing system for the tariffs in question is to be made use of, this must be developed as a separate matter.

At the hearing, the railways stated that in the tariffs in question were included three kinds of rates which might be denominated as: (a) special joint rates or "normal" rates; (b), competitive joint rates; (c), competitive joint "furtherance" rates.

By classification, grain and grain products in carloads have an 8th class rating. The C.P.R. has a class tariff to New Brunswick points on its system; the C.P.R. and G.T.R. have also joint class tariffs to points on the Intercolonial and its connections. The so-called "normal" rates are lower than these, and they cover the bulk of the rail points in the Maritime Provinces, either direct or by addition of arbitraries of connecting railways.

The present basis of the "normal" rates develops from the arrangement arrived at between the railways and the Dominion Millers' Association somewhere about the beginning of 1905, the exact date being uncertain. It had been alleged that no equitable relation existed between the rates of the millers in the Canadian Northwest and those of the millers in Ontario; and that both of these were in strong competition in grain products in the Maritime Provinces. It was, therefore, decided that in the shipments east of Montreal on grain products from Ontario points, the same arbitraries should be applied from Montreal as are applied by the C.P.R. in arriving at through rates from Fort William. Considering that Toronto was entitled to a differential of 5c. below Fort William, a basing rate of 10c. was established from Toronto to Montreal: certain other points were included in the Toronto group, and west of these, arbitraries were added. To points east of Montreal, arbitraries were also added. It will thus be seen that in effect the "normal" rates are based on Fort William.

From the consideration of the cir-

cumstances attaching to the development of this arrangement, as well as from the specific terms of the agreement which recites inter alia, "Whereas heretofore there has been no equitable relation between the rates, those from Ontario being based on one set of arbitraries over Montreal, while those of the Northwest have been on an entirely different basis," it appears that this matter was concerned entirely with the basis of the so-called "normal" rates. The basis of the competitive joint rates and of the "furtherance" rates are to be found in an entirely different set of facts and conditions.

The more important "normal" rates have been checked by the Board's Chief Traffic Officer, and he finds that these are in accordance with the agreement which has been set out. The increases which have taken place fall within the groups which have been spoken of as competitive joint rates and "furtherance" rates, and it was frankly stated by the railways in the course of the hearing that the increases were due to lessened competition. In the case of the competitive joint rates, the competitive situation on which these are based is mainly that through the port of Boston. It is a combination of the Boston route and the New York rate, the latter rate applying to Boston; that is to say, the New York rate plus the vessel rate port charges and marine insurance make up a rail and water rate by Boston to such places as St. John, Halifax, Moncton,

A TRIBUTE FROM ENGLAND.

Canadian Pacific Railway Co.
Office of the European Manager,
62, Charing Cross, London, S.W.,
England, July 10, 1911.

Dear Mr. Burrows.—For many years past I have been a subscriber to *The Railway and Marine World*, which in my opinion is the best paper in existence devoted to the many varied interests for which it stands.

Its great feature is the accuracy always maintained in its columns, and next to that I should place the personal element, which provides a source of interesting reading amongst the world's transportation fraternity.

May your well-deserved success long continue.

Yours faithfully,

GEO. McL. BROWN.

Amherst, Mulgrave and Sydney for local delivery. The all-rail Canadian route from Ontario can exceed this combination only in so far as it gives additional advantages, such as greater dispatch, etc. The rail haul from Windsor, Ontario, to Boston, is 731 miles, while to St. John it is 1,048 miles. To Halifax, the distance via Grand Trunk and Intercolonial is 1,306 miles, while via the C.P.R. and I.C.R. it is 1,324 miles.

The competitive factors above outlined have been decreasing in power. In the new tariff, the competitive situation affects the rate to the Sydneys. It is also effective so far as St. John is concerned, this being due to the short line mileage of the C.P.R. In general, it may be said that the decreased efficiency of the competitive factors has lessened the number of competitive joint rates. As to various points formerly covered by competitive joint rates, it is the "normal" basis which now applies. The "furtherance" rates apply to tide water ports on traffic going beyond to the out ports by vessel, or to Prince Edward Island points. These rates are really proportions. The "furtherance" rates, so far as the rail haul is concerned, are based on New York, or, more exactly, on the Chicago-New York rate. The Board, in order 586, July 25, 1905, dealing with the complaint of the Dominion Millers'

Association et al, re rates on flour and other grain products for export, recognized the Chicago-New York basis, and fixed certain groups in the territory west of Kingston and Sharbot Lake to Windsor on certain percentage relationships to the Chicago-New York rate, these maximum percentages varying from 70% to 90%. While this order was concerned with export rates, the traffic moving under "furtherance" rates presents an analogous condition. In so far as it has to be transhipped at St. John, Halifax, or other ports to ocean vessels, it is subjected to transportation conditions similar to the export traffic moving to European ports. Further it must be recognized that this "furtherance" traffic will move from Ontario points through Canadian channels only when the Chicago-New York rate is taken as a maximum. For example, under the grouping provided under the order, Chatham is a 78% point and will therefore take the Detroit rate as a maximum. Further consideration of this order shows the different proportionate percentages fixed in different parts of Ontario, and attracts attention to the controlling effect throughout western Ontario on the Chicago-New York rate. The Board's Chief Traffic Officer advises that these "furtherance" rates in the new tariffs are uniformly based.

At the close of the hearing in Toronto, Mr. Watts took the position that the rearrangement of rates which had been made in the tariffs in question was discriminatory and contrary to the agreement reached in 1905. As the situation presents itself to me, the agreement reached in 1905 has no necessary relation to the competitive joint and "furtherance" rates, except in so far as it fixes a maximum. The competitive joint rates have been controlled by rail and water competition, which is of decreasing importance. The "furtherance" rates are also controlled by competitive conditions. Both as to the competitive joint rates and as to the "furtherance" rates, the competitive conditions in so far as they are effective are effective over lines of rail and water communications which are not subject to the control of the Board. It has been so often recognized that rail carriers may meet the efficient competition of water carriers without at the same time necessitating a readjustment of rates at points where such competition is not in effect, and that it is unnecessary to quote decisions of various regulative tribunals dealing with this matter. It is sufficient to say that this has been recognized by the Board, as well as by the Interstate Commerce Commission, and other regulative tribunals. In Canada, the competition of a boat line which is now owned, chartered, used, maintained, or worked by a railway subject to the jurisdiction of the Board, is exempt from the Board's control. It is recognized that on such a state of facts it is in the discretion of the railway to what, if any, extent it shall recognize this competition; and if competition forces the rates of a railway below its normal basis, it follows that when the competition is less effective the railway may bring its rates up more closely to its normal basis. What applies to a hypothetical competition, such as has been outlined existing in Canada, applies with equal, if not greater, force to a competition effective through a foreign country and on the high seas.

I am, therefore, of opinion that it is within the discretion of the railways to vary their competitive joint rates or their competitive joint "furtherance" rates within the limits fixed by the "normal" rates, subject, of course, to their meeting any attack made on any of the rates so changed on the ground that they are discriminatory. It, therefore, follows that the application to have these tariffs disallowed must fail, and the application must be dismissed.

CROSSEN CAR MFG. COMPANY

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MODERN HIGH-CLASS

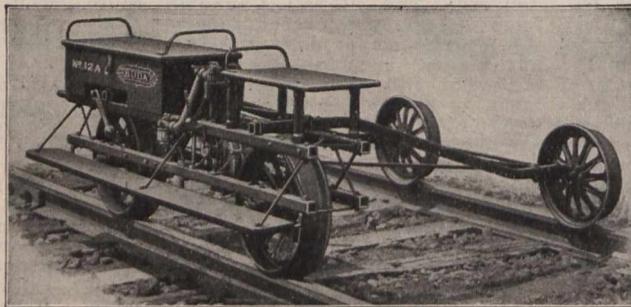
ROLLING STOCK

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SALES AGENTS :

DOMINION EQUIPMENT & SUPPLY CO.

354 Main St., WINNIPEG, MAN.

United States Railway Statistics for Year Ended June 30, 1910.

The statements in this preliminary abstract are based upon compilations for the annual statistical report of the Interstate Commerce Commission, covering the fiscal year ended June 30, 1910, and revised returns may slightly affect some of these advance figures before final publication. Except where specifically mentioned, the following statements do not include data from reports of companies classed as switching and terminal.

MILEAGE.

On June 30, 1910, there was a total single-track mileage of 240,438.84 miles in the U.S., indicating an increase of 3,604.77 miles over the corresponding mileage at the close of the previous year. An increase in mileage exceeding 100 miles appears for the states of California, Florida, Georgia, Minnesota, Mississippi, Nevada, Oklahoma, Oregon, Texas, Washington, and West Virginia, and the Territory of Arizona.

Substantially complete returns were rendered for 240,830.75 miles of line operated, including 10,357.19 miles used under trackage rights. The aggregate mileage of railway tracks of all kinds covered by operating returns was 351,766.59 miles. This mileage was thus classified: Single track, 240,830.75 miles; second track, 21,658.74; third track, 2,206.39; fourth track, 1,488.78; yard track and sidings, 85,581.93. These figures indicate an increase of 9,415.35 miles over corresponding returns for 1909 in the aggregate length of all tracks, of which increase 3,205.30 miles, or 34.04%, represent yard track and sidings.

The number of railways for which mileage will be included in the report is 2,196. In addition, 301 switching and terminal companies reporting show a total mileage owned of 3,884.62 miles, of which 1,614.21 miles were assigned as main track and 2,270.41 as yard track and sidings.

During the year railway companies owning 8,614 miles of line were reorganized, merged, or consolidated.

EQUIPMENT.

There were 58,947 locomotives in the service of the carriers on June 30, 1910, indicating an increase of 1,735 over corresponding returns for the previous year. Of the total number, 13,660 were classified as passenger, 34,992 as freight, and 9,115 as switching, and 1,180 were unclassified.

The total number of cars of all classes was 2,290,331, or 72,051 more than on June 30, 1909. This equipment was thus assigned: Passenger service, 47,095 cars; freight service, 2,135,121; and company's service, 108,115. The figures do not include so-called private cars of commercial firms or corporations.

The average number of locomotives per 1,000 miles of line was 245, and the average number of cars per 1,000 miles of line was 9,510. The number of passenger-miles per passenger locomotive was 2,367,386, and the number of ton-miles per freight locomotive was 7,287,863.

The number of locomotives and cars in the service of the carriers aggregated 2,349,278, of which 2,301,260 were fitted with train brakes, an increase of 86,353 over the previous year, and 2,332,837 were fitted with automatic couplers, an increase of 72,060. Nearly all of the locomotives and cars in passenger service were equipped with both train brakes and automatic couplers. Substantially all the freight locomotives had train brakes and automatic couplers. Of the 2,135,121 cars in freight service, the number fitted with train brakes was 2,107,312, and the number fitted with automatic couplers was 2,120,750.

EMPLOYEES.

The total number of persons reported as on the pay rolls of the steam roads was an average of 706 per 100 miles of line. As compared with returns for June 30, 1909, there was an increase of 196,597 in the total number of employees. There were 64,691 enginemen, 68,321 firemen, 48,682 conductors, 136,938 other trainmen, and 44,682 switch tenders, crossing tenders, and watchmen.

The total number of railway employees (omitting 95,328 not distributed) was apportioned among the six general divisions of employment as follows: To maintenance of way and structures, 504,979; to maintenance of equipment, 329,373; to traffic expenses, 21,652; to transportation expenses, 661,355; to general expenses, 53,385; and to outside operations, 33,348.

The total amount of wages and salaries reported as paid to employees during the year was \$1,143,725,306.

The total number of persons reported by switching and terminal companies as on their pay rolls was 33,015. The total amount of wages and salaries reported by this class of companies for 1910 was \$21,719,549.

CAPITALIZATION OF RAILWAY PROPERTY.

On June 30, 1910, the par value of the amount of railway capital outstanding was \$18,417,132,238. Of this, \$14,338,575,940 was outstanding in the hands of the public.

Of the total capital outstanding, there existed as stock \$8,113,657,380, of which \$6,710,168,538 was common and \$1,403,488,842 was preferred; the remaining part, \$10,303,474,858, represented funded debt, consisting of mortgage bonds, \$7,408,183,482; collateral trust bonds, \$1,153,499,846; plain bonds, debentures, and notes, \$933,966,704; income bonds, \$290,951,276; miscellaneous funded obligations, \$163,531,972; and equipment trust obligations, \$353,341,578.

Of the total capital stock outstanding, \$2,701,078,923, or 33.29%, paid no dividends. The amount of dividends declared during the year (by both operating and lessor companies) was \$405,771,416, being equivalent to 7.50% on dividend-paying stock. No interest was paid on \$790,499,252, or 7.94% of the total amount of funded debt (other than equipment trust obligations) outstanding.

PUBLIC SERVICE OF RAILWAYS.

The number of passengers carried during the year was 971,683,199. The corresponding number for the year ended June 30, 1909, was 891,472,425. The number of passengers carried 1 mile, or the passenger mileage, as compiled for 1910, was 32,338,496,329. The corresponding return for 1909 was 3,229,173,740 less. The number of passengers carried 1 mile per mile of road was 138,250.

The number of tons of freight carried (including freight received from connections), was 1,849,900,101, while the corresponding figure for the previous year was 1,556,559,741.

The ton mileage, or the number of tons carried 1 mile, was 255,016,910,451. The total ton mileage was 218,802,986,929; the increase in the ton mileage over the return for 1909 was 36,213,923,522. The increase in the number of tons carried 1 mile in 1909 over 1908 was 421,432,127; the number of tons carried 1 mile per mile of road for the year 1910 was 1,085,745.

The average receipts per passenger per mile were 1.938 cents; the average receipts per ton per mile, 0.753 cent. The passenger service train revenue per train mile was \$1.30.396; the freight revenue per train mile was \$2.86.218. The average operating revenues per train mile were \$2.24.628. The average operating expense per train mile were \$1.48.865. The ratio of operating expenses to operating revenues was 66.29%.

REVENUES AND EXPENSES.

The following figures under the heading of revenues and expenses exclude returns for a few small roads because of deficiencies in their reports. The operating revenues (average mileage operated, 236,986.51 miles) were \$2,750,667,435; the operating expenses were \$1,822,630,433. The corresponding returns for 1909 (average mileage operated, 232,981.11 miles) were: Operating revenues, \$2,418,677,538; operating expenses, \$1,599,443,410. The following figures show the operating revenues for 1910 in detail:

Freight revenue	\$1,925,553,036
Passenger revenue	628,992,473
Mail revenue	48,913,888
Express revenue	67,190,922
Excess baggage revenue and milk revenue (on passenger trains) ..	14,733,680
Parlor and chair car revenue and other passenger-train revenue ..	4,412,973
Switching revenue	26,367,214
Special service train revenue and miscellaneous transportation-revenue	8,858,215
Total revenue from operations other than transportation ..	23,778,637
Joint facilities revenue	Dr. 572,875
Joint facilities revenue	Cr. 2,439,272

Total operating revenues\$2,570,667,435
The operating revenues stated above averaged \$11,607 per mile of line.

Operating expenses, as assigned to the five general classes, were:
Maintenance of way and structures\$368,507,102
Maintenance of equipment 413,109,929
Traffic expenses 55,912,620
Transportation expenses 916,614,826
General expenses 68,485,956

Total operating expenses\$1,822,630,433
The foregoing operating expenses averaged \$7,691 per mile of line.

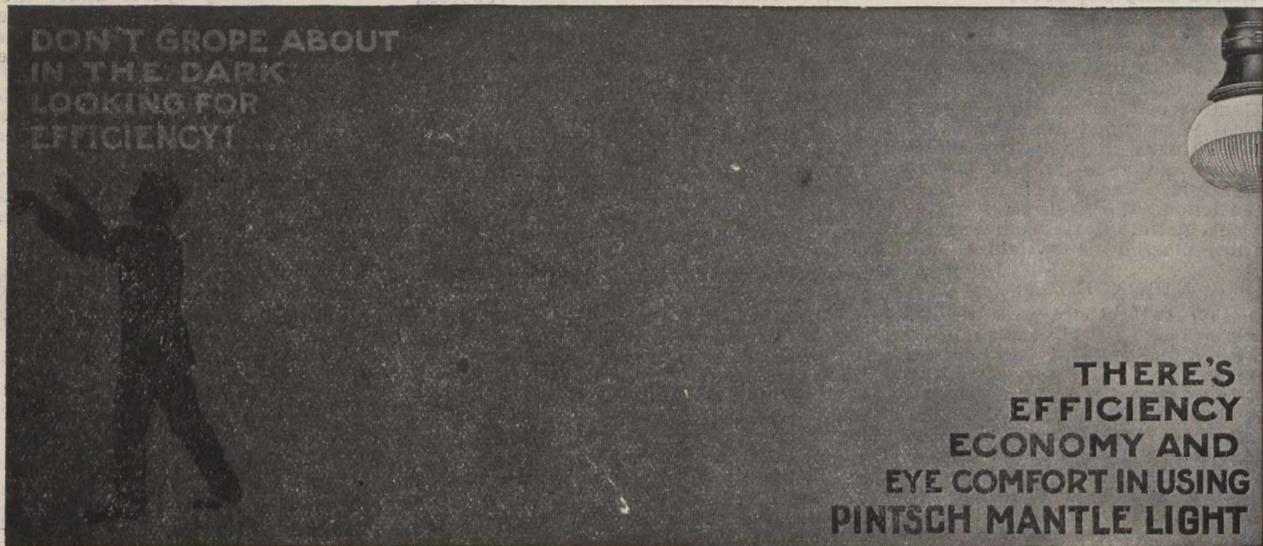
New Pere Marquette Railroad Locomotives.

The inability of the average newspaper reporter to correctly give technical railway matters was recently emphasized in a Detroit dispatch published in many Canadian papers. After proceeding to state that the Pere Marquette Rd., following the installation of a number of new compound locomotives, was conducting a series of tests with a new device which, it was believed, would effect a considerable saving in coal consumption, the report went on to claim that "by a new arrangement of engine valves, a steam pressure of 160 lbs. is expected to be sufficient to haul a full load, while an ordinary locomotive requires from 225 to 250 lbs. of steam."

This must indeed be a "fearfully and wonderfully made" arrangement of valves that would permit a much smaller steam pressure to perform an equal amount of work! In pursuance of the usual verification policy of The Railway and Marine World, W. Boughton, General Master Mechanic of the Pere Marquette Rd., was consulted. His reply in substance is as follows: "Evidently whoever wrote the article referred to, was very poorly informed. We have never used and are not buying any compound locomotives, and what is apparently referred to as a device which it is believed will effect a considerable saving in coal consumption by a new arrangement of valves, is a superheater." Mr. Boughton proceeds to state that the lower pressures usually carried on superheater locomotives probably occasioned the mistake in the press dispatch. It is wonderful what a mess a layman can make of a seemingly simple mechanical statement.

The Quebec Central Ry. entertained the members of the Railway Station Agents' Association of the New England States at luncheon, on the occasion of their visiting Sherbrooke, Que., during their recent convention.

DON'T GROPE ABOUT
IN THE DARK
LOOKING FOR
EFFICIENCY!



THERE'S
EFFICIENCY
ECONOMY AND
EYE COMFORT IN USING
PINTSCH MANTLE LIGHT

How can you plan for efficiency if the operating cost of your equipment is an unknown quantity?

PINTSCH MANTLE LIGHT

Costs one cent a burning hour for a 100 candle power lamp.

The Safety Car Heating & Lighting Co.

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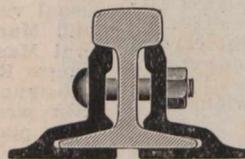
ADDITIONAL SAFETY AND ECONOMY IN

TRACK MAINTENANCE

has been proved by the use of Continuous, Weber and Wolhaupter base-supported rail joints—after fifteen (15) years' service, having a record of over **50,000 miles in use**—the extent of which is evidence of their excellence. Made in Canada.

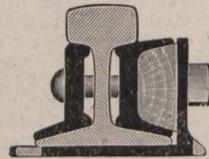
HIGHEST AWARDS.

Paris, 1900;
Buffalo, 1901; St. Louis, 1904.



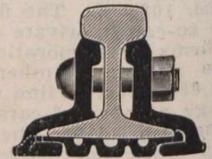
Continuous Joint.

Over
50,000
miles
in use.



Weber Joint.

Rolled
from Best
Quality
Steel.



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Baltimore, Md. Boston, Mass. Chicago, Ill. Denver, Colo. Pittsburg, Pa.
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London, E.C., Eng. New York City, N.Y.

THE RAIL JOINT COMPANY OF CANADA, LIMITED

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Makers of Base Supported Rail Joints for Standard and Special Rail Sections, also Girder, Step or Compromise, Frog and Switch, and Insulating Rail Joints, protected by Patents.

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.	1,279,000	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	894,200	359,200	24,800
Jan.	822,600	720,900	101,700	20,800
Feb.	903,100	667,300	135,800	4,300
Mar.	1,270,600	915,800	354,800	82,500
Apr.	1,345,400	984,300	361,100	29,900
May	1,445,600	1,042,400	403,200	34,600
June	1,465,600	1,147,400	318,200	25,400
Inc.	\$15,199,500	\$11,033,700	\$4,165,800	\$538,900
Dec.	\$2,378,200	\$1,839,300	\$538,900

Following is a comparison of the gross earnings, expenses and net earnings for the years ended June 30, 1908, 1909, 1910 and 1911. The figures for 1911 show approximate increases of 67½% in gross earnings, and 65% in net earnings over those of 1908.

	Gross earnings.	Expenses.	Net earnings.
1908	\$9,012,400	\$ 6,528,400	\$ 2,484,000
1909	9,668,900	6,873,500	2,795,400
1910	12,821,300	9,194,400	3,626,900
1911	15,199,500	11,033,700	4,165,800

Approximate gross earnings for July 1,475,950, and for two weeks ended August 14, \$652,250, against \$1,225,100, and \$481,800, for same periods 1910.

The average mileage operated during the year ended June 30, was 3,383, against 3,179 for the previous year.

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	\$3,484,619.59	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	118,863.39+
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	680,478.52-
Feb.	6,375,576.57	5,230,869.06	1,144,707.51	342,311.73-
Mar.	8,880,640.59	5,644,074.05	3,156,566.54	445,393.15+
Apr.	8,672,024.54	5,515,049.93	3,156,974.61	175,863.48+
May	9,312,057.17	6,367,972.41	2,944,084.76	387,820.61+
June	9,479,650.36	6,454,979.31	3,024,671.05	306,755.49+

Inc. \$104,167,808.21 \$67,467,977.64 \$36,699,830.57 \$2,859,874.70+

Following is a comparison of the gross earnings, expenses and net earnings for the years ended June 30, 1908, 1909, 1910 and 1911. The figures for 1911 show increases approximating 46% in gross earnings and 68% in net earnings, over those of 1908.

	Gross earnings.	Expenses.	Net earnings.
1908	\$71,384,173.72	\$49,951,807.70	\$21,792,366.02
1909	76,313,320.96	53,357,748.06	22,955,572.90
1910	94,989,490.33	61,149,534.46	33,339,955.87
1911	104,167,808.21	67,467,977.64	36,699,830.57

The net results of the company's operations for the year ended June 30, are as follows:—

Gross earnings	\$104,167,808
Working expenses	67,467,978
Net earnings	\$ 36,699,830
Net earnings of steamships in excess of amount included in monthly statements	1,118,350
Total net income	\$ 37,818,180
Deduct fixed charges	10,011,071
Surplus	\$ 27,807,109
Deduct amount transferred to steamship replacement account	\$1,000,000
Contribution to Pension Fund	80,000
	1,080,000
Net revenue available for dividends	\$ 26,727,109
Surplus for year carried forward after payments of all dividends	\$ 11,873,242
Special income from interest on land sales and from other extraneous assets, not included in the above	\$ 6,602,205
Approximate earnings for July \$2,921,000, and for two weeks ended August 14, \$4,477,000 against \$8,660,000 and \$4,064,000 for same periods 1910.	

DULLUTH, SOUTH SHORE AND ATLANTIC RY.—Operating revenue for 12 months ended June 30, \$3,148,818.16; operating expenses, \$2,269,

340.76; net revenue, \$879,477.40; other income, \$61,572.67; interest on bonds, taxes, etc., \$1,161,515.47; deficit, \$220,465.40, against \$3,302,147.03 operating revenue; \$2,269,247.84 operating expenses; \$1,032,899.19 net revenue; \$58,530.16 other income; \$1,173,253.29 interest on bonds, taxes, etc.; \$81,823.94 deficit for same period 1909-10.

MINERAL RANGE RD.—Operating revenue for 12 months ended June 30, \$746,425.14; operating expenses, \$707,587.49; net revenue, \$38,837.65; other income, \$17,529.27; interest on bonds, taxes, etc., \$151,684.11; deficit, \$95,317.19, against \$826,499.55 operating revenue; \$738,669.21 operating expenses; \$87,830.34 net revenue; \$9,916.48 other income; \$167,509.45 interest on bonds, taxes, etc.; \$69,762.63 deficit, for same period 1909-10.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Operating revenue for 12 months ended June 30, \$13,135,907.80; expenses and taxes, \$9,215,301.12; operating income, \$3,920,606.68, against \$15,407,179.40 operating revenue; \$9,026,601.21 expenses and taxes; \$6,380,578.19 operating income for same period 1909-10.

CHICAGO DIVISION.—Operating revenue for 12 months ended June 30, \$8,836,669.98; expenses and taxes, \$7,029,111.75; operating income, \$1,807,558.23, against \$8,928,224.58 operating revenue; \$6,262,495.86 expenses and taxes; \$2,665,728.72 operating income for same period 1909-10.

Grand Trunk Ry. Earnings, Expenses, Etc.

Subject to audit, the accounts for the half year ended June 30, show the following results:—

Gross receipts	\$3,561,200
Working expenses	2,628,200
Net receipts	£ 933,000
Income from rentals, outside operations and car mileage balance	22,400
Total net revenue	£ 955,400
Net revenue charges, less credits	\$511,000
Balance	£ 444,400
Deduct, Canada Atlantic Ry. deficiency for the half year	\$41,700
Detroit, Grand Haven and Milwaukee deficiency for the half year	39,700
Surplus	£ 363,000

This surplus added to the balance of \$9,100 from Dec. 1910 makes a total of \$372,100 available for dividend, which will admit of payment of the full dividend for the half year on the 4% guaranteed stock, and first and second preference stocks, leaving a balance of about \$11,700 to be carried forward.

The accounts of the G. T. Western Ry. for the year ended June 30, after providing for all fixed charges, including the balance brought forward from the previous year, show a deficit of \$31,462. As this result has arisen owing to the unusual circumstances of the strike which occurred during the third and fourth weeks of July and the first week of August, 1910, it has been decided to carry the balance forward to the next year.

Following is a comparison of gross earnings, expenses and net earnings for the years ended June 30, 1908, 1909, 1910 and 1911. The figures for 1911 show approximate increases of 9½% in gross earnings and ½% in net earnings, over those of 1908.

	Gross earnings	Expenses	Net earnings.
1908	\$32,543,288	\$23,610,734	\$8,932,554
1909	30,433,604	21,922,792	8,510,812
1910	33,868,415	25,368,317	8,500,098
1911	35,361,557	26,390,043	8,971,514

Approximate earnings for July \$4,237,383, and for two weeks ended Aug. 14, \$2,066,044 against \$3,179,896 and \$1,603,660 for same periods 1910.

TRAFFIC RECEIPTS OF THE SYSTEM.

	1911	1910
Aggregate from July 1 to July 31:—		
Grand Trunk Ry.	£685,677	£521,589
Canada Atlantic Ry.	36,513	25,887
G. T. Western Ry.	113,327	81,032
D.G.H. & M. Ry.	35,179	24,895
Totals	£870,696	£653,403

Orders placed for Steel Rails,

As stated in our June issue, the Canadian Pacific Ry. had then ordered 107,200 tons of steel rails, by far the larger portion from the Algoma Steel Co. and nearly all the balance from the Dominion Iron & Steel Co. We are now officially advised that the company has ordered 30,000 tons of 65 lbs. steel rails in the United States for branch lines in the west.

The Government Railways Managing Board has ordered 7,000 tons of 80 lbs. steel rails from the Dominion Iron & Steel Co. for the Intercolonial Ry.

The Algoma Eastern Railway Co's Bond Issue.

An issue of £513,600 of 5% first mortgage bonds, due 1961, has been placed on the London, Eng., market through the Bank of Montreal, at 93%. The principal and interest of these bonds is guaranteed unconditionally by the Lake Superior Corporation.

The A.E. Ry. Co. was incorporated by the Dominion Parliament, with an authorized capital of \$2,000,000 of common stock, \$1,000,000 of 5% non-cumulative preferred stock, and \$3,000,000 of 5% first mortgage 50-year gold bonds. All the common stock and \$800,000 of the preferred stock, and the present is the first issue of bonds. With the disposal of these there will remain \$500,000 of bonds unissued.

Under the old title of the Manitoulin and North Shore Ry., the company built and has in operation 22 miles of railway, between Sudbury and Crean Hill, serving the nickel mines of the Canadian Copper Co. and the Mond Nickel Co., and a short piece of line at Spanish River, operated by the C.P.R. The extension of the line from Crean Hill, via Spanish River to the shore of Lake Huron, at Whitefish Bay, is under construction, as is the section from Whitefish Bay to Little Current, on Manitoulin Island. The cost of these extensions, about 64 miles, including stations, terminal facilities and docks, and making provision for rolling stock, is estimated at £538,378. These extensions are expected to be completed by July, 1912.

The total length of the line from Sudbury to Little Current is 86 miles, and subsidies in aid of construction have been granted as follows:—Dominion Parliament, a minimum of \$3,200, rising to a maximum of \$6,400 a mile for the whole distance; Ontario Government, a cash payment of \$5,000 a mile for 53 miles north from Little Current; a land grant of 7,400 acres a mile for 66 miles between Whitefish River and Sudbury, and 10,000 acres a mile from Little Current to Whitefish River.

The net earnings from the existing 22 miles of line for the year ended Dec. 31, 1910, were £7,083, during which period the extension from the Gertrude Mine to Crean Hill had been in operation only five months; the net earnings for 1910 from this section are estimated at \$12,000. With the line in full operation, and the completion of docks at Little Current for shipping, the output of the mines, it is estimated that the net earnings of the railway should amount to \$29,000.

Part of the proceeds of the bond issue will be used to pay for \$250,000 bonds of the Lake Superior Corporation, which have been cancelled in order to absolutely free the railway from all encumbrance, other than the first mortgage bonds now issued.

The directors are: T. J. Drummond, D. C. Newton, Montreal; J. F. Taylor, Toronto; H. M. Price, Quebec; W. C. Franz, Sault Ste. Marie, Ont.; W. K. Whigham, London, Eng.; R. L. Austin, Philadelphia, Pa.

Minneapolis and St. Louis Rd., Iowa Central Ry.—

New York press dispatches Aug. 15, state that the directors of these companies have elected N. Erb as President of both companies, and that the first named company will be extended to the Canadian border with a view of connecting with the Canadian Northern Ry. and the G.T. Pacific. A Winnipeg dispatch of the following day says, "The Canadian Northern Ry. has either acquired control of the Minneapolis and St. Louis Ry., or will work in connection with that company to secure terminals in Minneapolis and Chicago. Confirmation of the report cannot be secured."

Why the G. P. R. North Toronto Route to Ottawa and Montreal is the Logical One

The train leaves as follows:

Leave North Parkdale	- - -	9.15 p.m.	Arrive Ottawa, 6.50 a.m.
Leave West Toronto	- - -	9.30 p.m.	Arrive Montreal 7.00 a.m.
Arrive North Toronto	- - -	9.40 p.m.	Daily except Sunday.
Leave North Toronto	- - -	10.00 p.m.	Will Stop at Westmount.

- ¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.
- ¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.
- ¶ The roadbed has been improved till it is unexcelled in Canada.
- ¶ The equipment is "Canadian Pacific Standard," a synonym for the "best" and attentive porters, non-obsequious, ensure efficient service.

SLEEPING CAR SPACE HELD

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North Toronto Station

King Edward Hotel

West Toronto Station

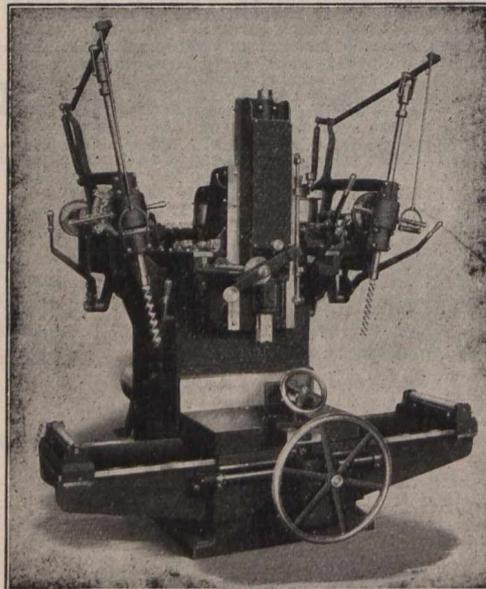
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NO. 238 MORTISER

MODERN DESIGNS FOR MOTOR CONNECTION

Grand Trunk Railway Betterments, Construction, Etc.

New England Lines Proposals.—The injunction restraining the New York, New Haven and Hartford Rd. from building on the right of way in Woonsocket, R.I., for which plans have been filed by the New England Southern Rd., is effective until Sept. 16, when the question whether the land is necessary to the N.E.S.R. or to the N.Y., N.H. and H. Rd., will be argued. One of the conditions upon which the injunction was granted was that the N.E.S.R. should put up a bond to indemnify the N.Y., N.Y. and H.R. from any loss should a final decision be given in its favor. A bond of \$50,000 was put up Aug. 5.

A somewhat similar situation has arisen in Burlington, Vt., where the Rutland Rd. has filed track allowances on Lake St., which the Central Vermont Rd., the controlling company of the N.E.S.R. claims to own. E. H. Fitzhugh, President, and G. C. Jones, General Manager, C.V.R., are negotiating for a settlement.

The organization of the New England Southern Rd. in Massachusetts was completed in Boston, Aug. 17. The certificate states that \$1,000,000 of capital has been subscribed, and \$100,000 paid in. The company proposes to build a railway from Palmer, Mass., to Providence, Rhode Island. The entire capital is in the hands of officials of the Central Vermont Ry., which is controlled by the G.T.R.

Bonaventure Station, Montreal.—A. W. Smithers, Chairman of the Board, in an interview at Montreal, Aug. 8, said the company was busy working out its plans for the modernization of Bonaventure station, and that it would not be long before active work was begun upon its erection.

Ottawa Improvements.—A. W. Smithers, Chairman, and the directors' party visited Ottawa Aug. 11, and inspected the work in progress at the hotel and station building. He expressed himself satisfied with the progress made, but declined to say anything in regard to the plans for rearranging the entrance of railways into the city, as he had not given them serious consideration. The new station, President Hays stated, would be completed about Oct. 1.

A contract has been let to John S. Metcalf Co., Ltd., Montreal, for the concrete foundations for the train shed of the new passenger station at Ottawa, and for the erection of the concrete platforms for the same. The approximate expenditure under the contract is \$50,000.

M. Donaldson, Superintendent, Ottawa Division, in a recent interview said the western end of Ottawa was the most advantageously placed industrial centre, and that the G.T.R. would do all that was possible to develop it.

Toronto Asylum and Central Prison.—Official announcement was made, Aug. 11, that the site of the Toronto Asylum, Queen St., and the Central Prison, King St., had been sold to the G.T.R. and the Massey-Harris Co. for \$1,025,000. The G.T.R. assumes the whole parcel, but has entered into an arrangement by which the Massey-Harris Co. secures a portion of the Asylum grounds for an extension of the plant. Possession is to be given of such portions of the properties as the Government may from time to time be able to vacate. About eight acres of the Asylum site have already been handed over to the purchasers.

The plans for the laying out of the Asylum site have been submitted to the city council. The area acquired by the G.T.R. is to be laid out for yard accommodation, a new freight shed, and for factory sites. The northwest portion of

the site is reserved for sites, while the freight sheds will be along the southern boundary of the property. There will be two freight sheds, with a 50 ft. wagon road between them, and a capacity of 108 cars. The yard area will be bordered by Queen St. on the north and Shaw St. on the east, and runs down to Armour St. at the southwest corner. At this point tracks will be run into the property, branching out into sidings, which will occupy all but the northwest portion. Altogether there will be 12 uncovered tracks, with accommodation for 496 cars. The company intends to give the public adequate protection on the streets, which border on the tracks. A space of 100 ft. will be left from the eastern side of Shaw St., while the sidings will end 90 ft. south of the south side of Queen St.

Mimico-Toronto Grade Revision.—H. G. Kelley, Chief Engineer, completed an inspection of the grade revision work on Lake Shore road, Toronto, Aug. 3. It is about half completed, and this rate of progress is considered to be satisfactory. The first section of the new track to be completed was put in operation July 25, when the eastbound traffic was switched over from the temporary tracks to the new ones.

Toronto Belt Line Spur.—Application is being made to the Board of Railway Commissioners for approval of plans of a spur track from the Toronto Belt Line Ry. at Windermere Ave. to the Steel Co. of Canada's premises, lot 28, first concession from the bay, York tp.

Guelph Improvements.—In connection with the laying out of the grounds and the other improvements at Guelph, consequent upon the erection of the new station, which was opened for traffic at the end of June, the track is being raised from the bridge over the Speed River westward. Subways carrying four tracks are being built on Huskisson St. and an adjoining street.

Stratford Freight Sheds, etc.—A new freight shed 100 by 46 ft. is to be built, and next year it is expected that a start will be made in carrying out the reconstruction of the yards. (Aug., pg. 737.)

Wyevale-Tiffin Branch.—The piece of line which has been under construction from near Wyevale, on the Penetang branch, to Tiffin, on the Midland branch, 8.90 miles, is practically completed. The only piece remaining to be finished is a fill of 2,000 ft. at McDonalds.

Railway Ties Bought in 1910.

The Forestry Branch of the Department of the Interior has issued the following statistics with regard to cross-tie consumption: In 1910 there were 9,213,962 cross ties purchased by steam and electric railways at a cost of \$3,535,228, a decrease of 35% from the number purchased in 1909. The average cost at the point of purchase was 38 cents a tie. Cedar, jack pine and hemlock furnished 77% of all the ties purchased. Cedar alone supplied 40% of the total consumption and its use is increasing yearly in proportion to other species. Oak, which makes an expensive tie, costing 74 cents each, was used principally by a United States company having mileage in Canada. Of the total number of ties purchased, 70% were hewn. The only important species which had a majority of sawn ties, was oak. Sawn ties cost on the average 36 cents each, and hewn ties 3 cents more. The steam railways used 95% of all the ties and they cost on the average 38 cents. The electric railways used 302,540 ties—an increase of 183% over 1909. They cost 41 cents each. Although on the average the electric railways use smaller ties, this excess of 3 cents in the cost is due not only to the disadvantages inci-

dent to contracts for smaller quantities of materials, but also the fact that the electric roads are more likely to purchase ties at points where the price includes transportation charges.

The Quebec Bridge for the N.T.R.

Questions relative to the plans prepared by the Quebec Bridge Commission, and the plan submitted by the St. Lawrence Bridge Co., which has been accepted by the Government, were raised in the House of Commons shortly before its recent prorogation, and the Minister of Railways, in reply, stated that the official design provided for a railway, street railway, and roadways on the bridge, but tenderers were asked in addition to submit designs of their own, and alternative designs were submitted in addition to tenders on the official design by three companies, the British Empire Co. being the only company which did not submit an alternative design. A report, dated Oct. 26, 1910, was made by the three Commissioners, stating that a satisfactory bridge could be built on the official design or on either of the designs submitted by the St. Lawrence Bridge Co. The Commissioners were asked to supplement that statement by a more positive one, as to which of the designs they named was the best. A report was then made by R. Mojeski and C. Macdonald, recommending the adoption of one design submitted by the St. Lawrence Bridge Co., the Chairman, H. E. Vautelet, dissenting. Under the order-in-council appointing the board, H. W. Hodge and M. J. Butler were called in, and as a result a final report was made Feb. 11, recommending the acceptance of one of the designs submitted by the St. Lawrence Bridge Co. This design included all the accommodations for traffic provided in the official design. In this report attention was also called to the fact that the St. Lawrence Bridge Co. had among its tenders, submitted a design omitting the roadways, and stated that, if the Government desired it, the highways could be omitted without changing the above recommendation, or delaying the progress of the work. After a full consideration, the Government decided to build a railway bridge with footwalks, and on March 14, a report was signed by Messrs. Macdonald, Mojeski and Hodge, recommended that a contract with the St. Lawrence Bridge Co. for the superstructure of a bridge of this character, by which a saving of \$2,600,000 could be made. This design is, in every way, similar to the design which was recommended by the Board, except that it provides only for the railway and footwalks.

The contract for the bridge was signed April 4. The total amount paid up to July 24 for salaries and expenses of the Board was \$256,808.23.

Tenders are under consideration by the Department of Railways for the removal of the unused material delivered on the ground and intended for use in connection with the bridge which collapsed. (Aug., pg. 741.)

Don Bridge, Toronto.—The new high level bridge across the Don River, at Queen St., Toronto, is expected to be completed Nov. 1. The cost will be about \$200,000, of which 85% is being paid by the G.T.R., C.P.R., Canadian Northern Ry. and the Toronto Ry. The contract was let by the city council to the McGuigan Construction Co.

The Minister of Trade and Commerce has, pursuant to the authority of the act respecting the grain trade in the inspection district of Manitoba, declared that all elevators at Fort William and Port Arthur, Ont., are public terminal elevators, from Aug. 20 until further declaration.

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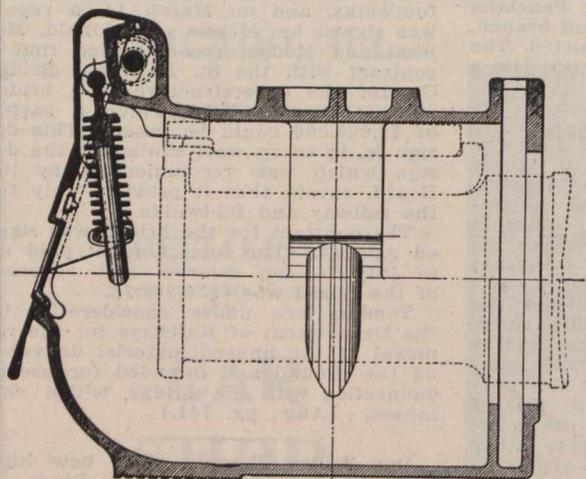
W. E. DAVIS, Passenger Traffic Manager, Montreal.

G. T. BELL, Asst. Pass. Traffic Manager, MONTREAL.

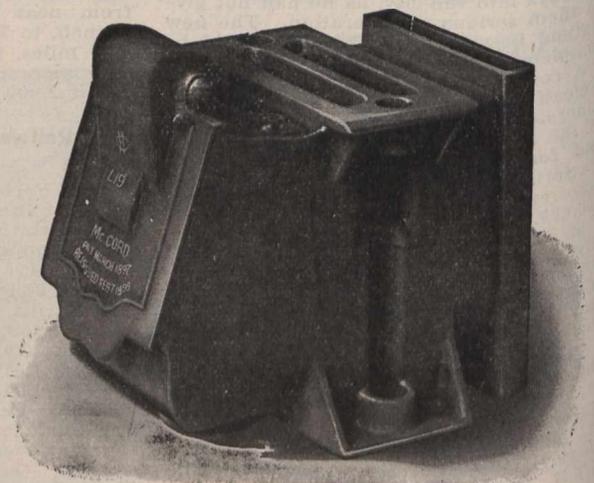
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**National Transcontinental Railway
Station at Quebec.**

Tenders were received to Aug. 31 by the N.T.R. Commissioners for the erection complete of a terminal station in Quebec, in accordance with plans and specifications prepared under the direction of the Commission, and approved of by G.T. Pacific Ry. officers.

The plans and specifications, which were prepared by Marchand and Haskell, architects, provide for a building on the site of the old Champlain Market, to be used as a passenger station for the N.T.R., which is to be operated by the G.T. Pacific Ry. The plans show a building facing on the square, the terrace side being 257 ft. wide, with a depth of 124 ft. for the main building.

The main front shows a handsome elevation, the central portion being carried considerably above the rest of the building. The feature of this part is a well designed arch, flanked by pillars, and finished with capstone and pediment. Passing through the main entrance doors, a large vestibule is reached, off which are the elevators, stairway, and booths, which will be devoted to purposes not yet defined. From the vestibule entrance is obtained the rotunda, which is surrounded by a dome 41½ ft. in diameter. Off the rotunda are arranged ticket offices, parcel office, Canadian Express bondroom, Canadian and U.S. customs officers, a large baggage room, with public area; telegraph office, etc. Another vestibule leads from the rotunda to the concourse, which extends the whole length of the building. Off the rotunda is the general waiting room in the centre of the building, and in the main front is the lunch counter and restaurant, while on the concourse side are the waiting rooms for men and women respectively, to each of which is attached ample toil-

et and lavatory accommodation. A vestibule leads to a platform 53 ft. wide between the station building and the train shed. Upstairs there will be two floors over the main building, which will be used by the G.T. Pacific Ry. as offices. The baggage room, extending the full width of the building, is on the harbor side. The plans contemplate 11 tracks, of which six are to be laid at once, alongside which will be platforms 650 ft. in length. We are advised that a train shed is not contemplated at present.

The main building is to be of Deschambault white stone. The building is estimated to cost about \$750,000, and it is expected to have it completed by the end of 1912.

**National Transcontinental Railway
Construction, Etc.**

At a meeting of the Moncton, N.B., city council, Aug. 8, the Mayor said the N.T.R. Commissioners had decided that freight yards and machine shops were necessary, and that work was to be started in providing them. The immediate expenditure would be about \$500,000. A committee was appointed to meet the engineers and arrange as to the concessions asked for.

Press reports, Aug. 11, state that J. H. Corbett, of Corbett and Floesch, has arrived in Moncton for the purpose of starting work on the yards, etc., and that the necessary construction plant is on the way to Moncton. The plans are said to include the laying of ten miles of track in the yards.

Tenders are under consideration for the building of trainmen's houses at the following points:—Nepadogan and Edmundston, N.B.; Laurier, St. Foye and Fitzpatrick, Que.; Cochrane, Graham and Redditt, Ont., and Transcona, Man. A Moncton, N.B., press report, Aug.

14, states that a contract has been let to Dr. Murray and John Leah for the erection of station and other buildings on the line between Moncton and Beaver Brook, N.B., at an estimated cost of \$150,000.

A contract is reported to have been let to J. H. Gignon, Quebec, for the erection of station buildings at 35 points on the Quebec section.

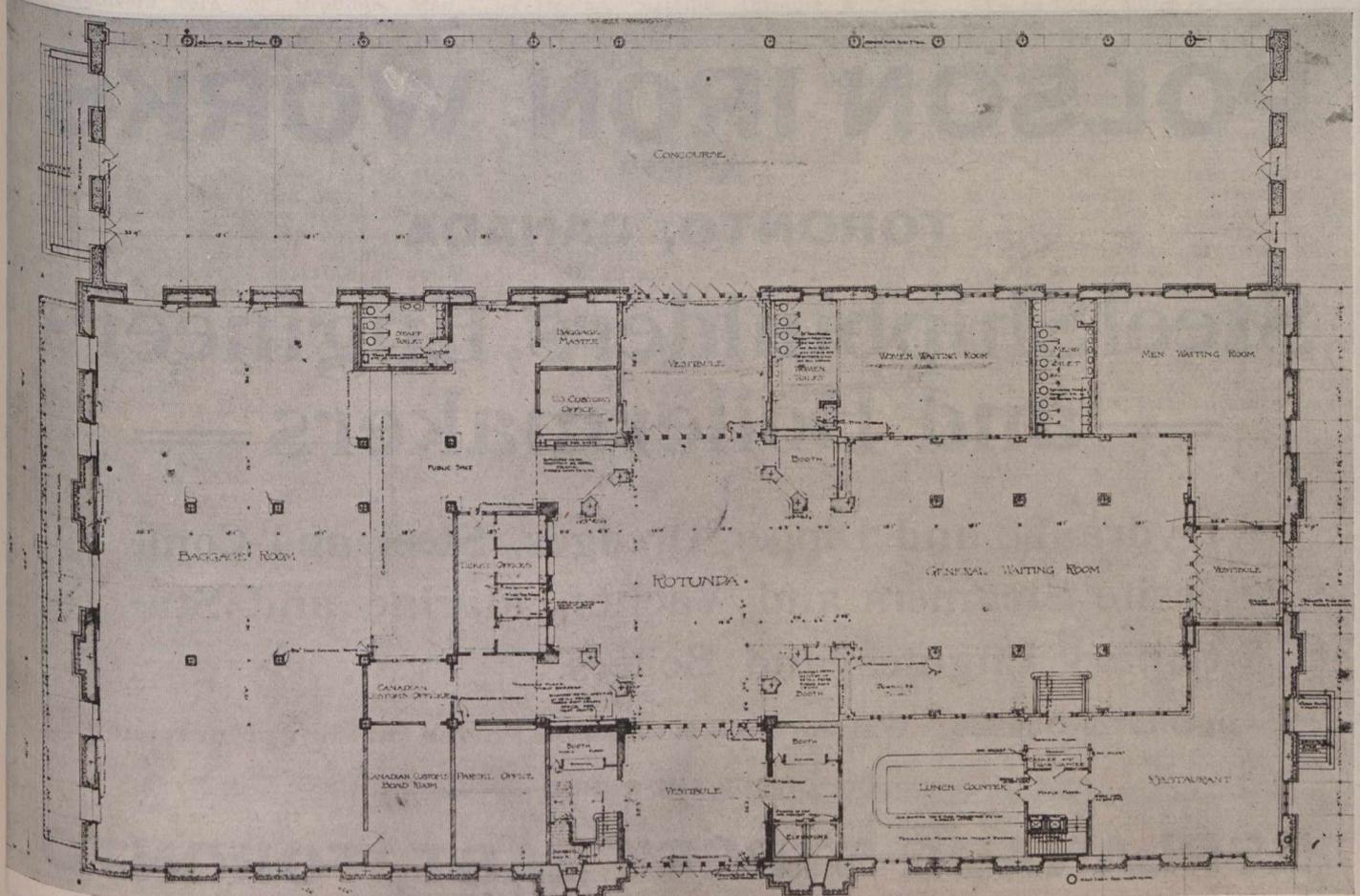
Steel is reported to have been laid 150 miles easterly from Cochrane, Ont., of which 50 miles have been laid this season. The contractors, Foley, Welch and Stewart, are ballasting and finishing up their contract.

It is said that as a result of a conference held at Ottawa, July 31, the G.T. Pacific Ry. will take over the section of the line from Winnipeg to the junction with its branch to Fort William, Ont., at an early date. This section of the line has been operated by the contractors for some months. It is said that the question of taking over the section of the line from the south bank of the St. Lawrence River to Moncton, which is now nearly completed, was also discussed, but that no decision was reached.

The Commissioners will receive to Sept. 4, tenders for the supply of 2,000 gross tons of 80 lb. steel rails, to be delivered at Moncton, N.B.

The yards at Transcona, Man., are being surfaced and lined up by the contractors, the J. D. McArthur Co. The storage capacity at present completed is for about 1,000 cars, and this will be considerably increased when the work is completed.

We are officially advised that a contract has been let to Haney, Quinlan and Robertson for the erection of the car shops at Transcona, Man., described on pg. 741 of our Aug. issue. This firm is completing the erection of the locomotive shops at the same place. (Aug., pg. 747.)



National Transcontinental Railway Station, Quebec. Ground Floor Plan.

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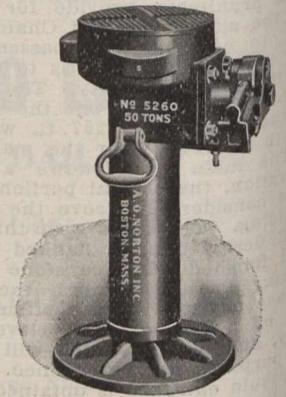


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— OFFICE AND WORK —

ESPLANADE STREET EAST, TORONTO

**Grand Trunk Pacific Railway
Construction, Etc.**

The G.T. Pacific Ry. began operating its trains in and out of the new Union Station at Fort Garry, Winnipeg, Aug. 10.

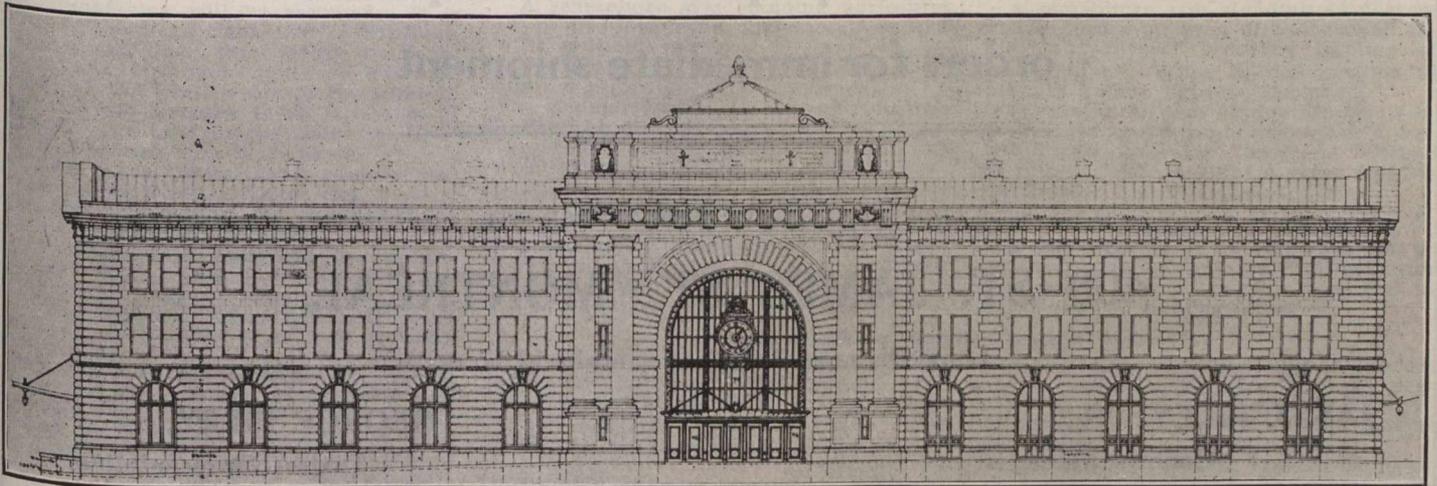
Tenders were received to Aug. 15 for the erection of the Selkirk Hotel in Winnipeg. Some delay has been experienced in getting titles to all the property required for the hotel, but E. J. Chamberlin, Vice President and General Manager, states that the clearing of the property will be started at once, and that it is hoped to get the foundations in before winter. The excavation for the foundations will necessitate the removal of about 50,000 cubic yards of material.

Regina fair. A regular train service is in operation from Melville to Edgeley, and it will be extended to Regina as soon as the ballasting of the line has been completed. Grading has been completed for about 20 miles out of Regina in the direction of Moose Jaw. In connection with this branch there has been deposited with the land titles office at Moose Jaw a plan, profile and book of reference showing the location from the east line of sec. 25, tp. 17, range 24, west of the second meridian, to the west line of sec. 3, tp. 17, range 26, west of the second meridian, mileage 23.32 to 40.01.

In connection with the line under construction southerly from Regina to the International boundary, press reports state that it is proposed to build a branch line, starting 13 miles south

Grading is reported to have been commenced on a branch from Moose Jaw northwesterly. This projected branch will be 81 miles long and will in time be extended to connect with the main line at Young. From this point a branch is under construction to Prince Albert. Authority has been given by the Board of Railway Commissioners to operate traffic on the branch from Young to mileage 45.5. Track has been laid to Wakaw, near the proposed crossing of the river, and grading has been completed from Prince Albert to the north bank. With the completion of the bridge and the laying of about 25 miles of track the branch will be completed. A start was made Aug. 8 building a roundhouse in Prince Albert, and in laying out a yard.

On the branch to Battleford about



National Transcontinental Railway Station, Quebec. Front Elevation.

Engineers were in Brandon, Man., Aug. 12, looking over the routes suggested for the entrance of the company's line into the city. A route map for the line in the city submitted to the Minister of Railways July 24 showed that connection would be made with the Great Northern Ry., and that its station would be used, but from what is being done by the survey party above referred to it would look as if the company proposed to lay out its own terminals near First and Richmond streets.

The Board of Railway Commissioners has authorized the carrying of traffic over the line from Melville, via Yorkton to Canora, 29.5 miles, at 16 miles an hour.

On the lines southerly from Melville, trains have been run into Regina, the first one being Aug. 9. This train service was only a temporary one for the

of Regina, passing through Weyburn, and on to the Montana border, connecting there with a branch of the Great Northern Ry.

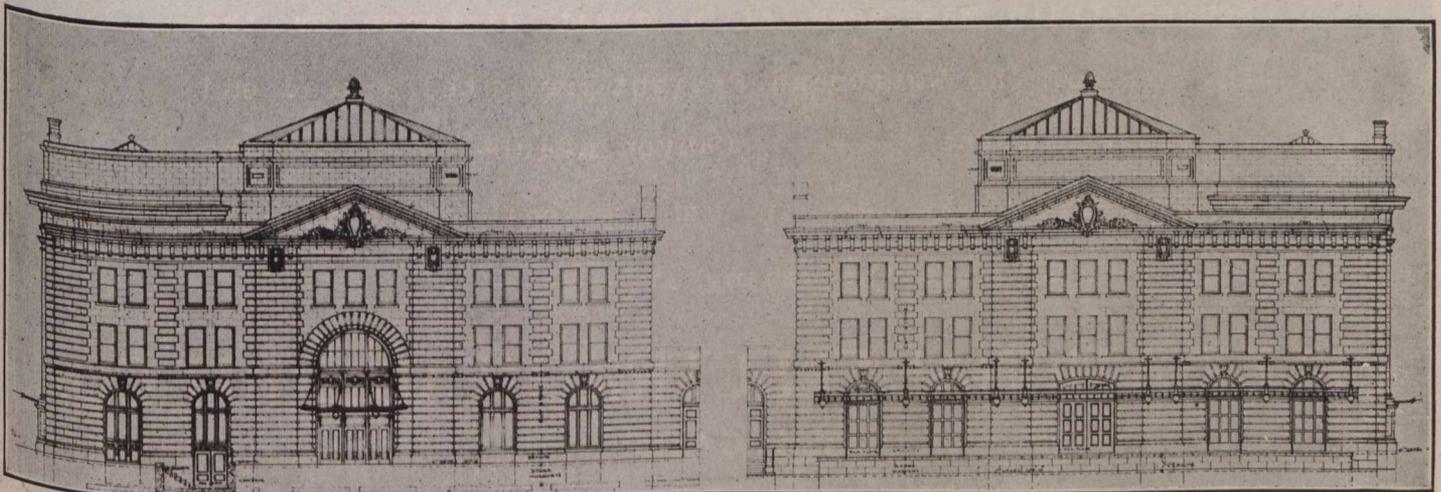
Plans have been sent to the Saskatoon, Sask., city council for a line leaving the main line west of the city, and coming in alongside the Goose Lake Canadian Northern Ry. line and crossing both that line and the C.P.R. about Ave. P and running north to the proposed G.T.P.R. station on 22nd street near the site of A. L. Brown's house Ave. P and 22nd street. From that point the line will strike off northwest to Battleford.

The Board of Railway Commissioners has approved of the location plans of the Cutknife branch from Battleford to the west line of sec. 29, tp. 43, range 18, west of the third meridian, mileage 0 to mileage 14.66.

62% of the grading is reported completed, and 11 miles are ready for track laying. The branch starts at Biggar, Sask., and will be about 45 miles long.

On the line being built from Biggar towards Calgary, about 55% of the grading has been done on the 50 miles under contract, and 10 miles are ready for track laying.

On the line from near Tofield, which is also heading for Calgary, track has been laid to the crossing of the Red Deer River, and the Board of Railway Commissioners has authorized the opening of this section for traffic. Five of the seven spans of the bridge have been completed, and it is expected that the other two spans will be finished by Sept. 1. Tracklaying will then be resumed towards Calgary. Some difficulties have been met with in building the line through the C.P.R. irrigated lands, but



National Transcontinental Railway Station, Quebec. End Elevations.

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(From Daily Papers)

"Wednesday night B_____ forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the _____ Canyon near _____. The warning light was seen in time to enable the freight to get back on to the siding at _____."

PYLE-NATIONAL ELECTRIC HEADLIGHT CO.

CHICAGO

a settlement has been arrived at and construction was resumed Aug. 7.

Press reports state that a start will be made at an early date near Edson for a branch line to the Peace River district. The surveys for such a line are reported to have been completed during the summer.

On the line under construction to the Pacific Pass and Brazeau coal fields, tracklaying has been started from the junction point just west of Edson. The branch will have a length of 56 miles and eight miles of track were reported to have been laid Aug. 10.

On the main transcontinental line a train service has been put in operation from Edson to Hinton, Alta., 55.6 miles. Track has been laid as far as the Athabasca River, where a bridge is being built. As soon as this bridge is completed, tracklaying will be resumed. It is expected to have track laid to Fitzhugh this season. At this point divisional yards and terminals will be laid out. Fitzhugh is 17 miles east of the summit, and in this distance there is a rise of 238 ft. The total height above sea level at Yellowhead Pass is 3,704 ft.

Press reports state that a contract has been let to Foley, Welch and Stewart for the construction of the line from Tete Jaune Cache, 50 miles west of Yellowhead Pass, to Aldermere in Bulkley Valley, B.C., a distance of 415 miles. This report was in circulation Aug. 2, but the date for closing the tenders was Aug. 15, so that the story was probably premature. It is not, however, unlikely that this firm will secure the contract, as it has the contracts westerly and easterly terminating at Tete Jaune Cache, and Aldermere respectively, both of which contracts are well advanced towards completion. An official confirmation of the letting of the contract is expected daily.

Working easterly from Prince Rupert, a train service is being operated to Vanarsdol, 100.9 miles, while track has been laid as far east as Hazleton.

The contractors are busy at work on the three tunnels in the canyon on the Skeena River, which is about 106 miles east of Prince Rupert. The length of the three tunnels are said to be 1,300 ft., 1,100 ft. and 800 ft. Work on these have been in progress for quite a long time now, with the result that all of them are nearly completed. (Aug. PS. 747).

Railway Finance, Meetings, Etc.

Algoma Central and Hudson Bay Ry.—A meeting of shareholders has been called for Sept. 20 at Sault Ste. Marie, Ont., to receive the report of the directors for the year ended June 30, and to consider and ratify "all the acts and proceedings of the Board since the last meeting of shareholders." Notices for the holding of meetings of shareholders of the Ontario, Hudson Bay and Western Ry., and the Algoma Eastern Ry., on the same day, and for similar purposes, have been given. All three railways are owned by the Lake Superior Corporation.

Buffalo and Lake Huron Ry.—The report for the six months ended June 30 shows that after providing for interest on first and second mortgage bonds, the balance, including the amount brought forward from the previous half year, was £14,913 11s. 1d., which, after payment of the usual dividend of 5s. 3d. a share, leaves £1,128 17s. 10d. to be carried forward to the next half year's accounts. The railway is operated under lease by the G.T.R. The directors for the current year are, Chairman, M. H. Maxwell, Liverpool, Eng.; J. M. Syngé, Westerham, and E. Ashton, Liverpool, Eng.

Canadian Northern Ry.—A duplicate of a confirmatory trust deed dated Jan.

Amendments to General Train and Interlocking Rules.

The Board of Railway Commissioners passed the following order 14271, dated July 20:—Re joint application of the Grand Trunk and Canadian Pacific Ry. Companies, under sections 29, 30, 26³ and 269 and such other sections of the Railway Act as may be applicable, for an amendment to the General Train and Interlocking Rules approved by the Board, Order 7563, July 12, 1909: It is ordered that the said rules be amended by cancelling the rules following, marked "Rules to be Cancelled," and substituting therefor the following provisions, marked "New Rules to be Substituted":—

Rules to be Cancelled.

Home Block Signal and Station Protection Signal, and Train Order Signal.

A semaphore arm 60 degrees from the horizontal or a disc withdrawn indicates "proceed." When this position at night a green light is displayed.

Distant Block Signal.

A semaphore arm standing horizontal or a disc displayed indicates "proceed with caution, prepared to stop at the home signal." When this position at night a yellow light is displayed.

A semaphore arm 60 degrees from the horizontal or a disc withdrawn indicates "proceed." When in this position at night a green light is displayed.

Interlocking Signals—Home Signal.

A semaphore arm 60 degrees from the horizontal indicates "Proceed." When in this position at night a green light is displayed.

Interlocking Signals—Distant Signal.

A semaphore arm standing horizontal indicates "proceed with caution, prepared to stop at the home signal." When in this position at night a yellow light is displayed.

A semaphore arm 60 degrees from the horizontal indicates "proceed." When in this position at night a green light is displayed.

New Rules to be Substituted.

Home Block Signal, and Train Order Signal.

A semaphore arm 60 degrees below or 90 degrees above the horizontal or a disc withdrawn indicates "proceed." When this position at night a green light is displayed.

A semaphore arm standing 45 degrees above horizontal or a disc displayed indicates "proceed, prepared to stop at next signal." When in this position at night a yellow light is displayed.

A semaphore arm 60 degrees below or 90 degrees above the horizontal or a disc withdrawn indicates "proceed." When in this position at night a green light is displayed.

A semaphore arm 60 degrees below or 90 degrees above the horizontal indicates "proceed." When in this position at night a green light is displayed.

A semaphore arm standing 45 degrees above horizontal indicates "proceed, prepared to stop at next signal." When in this position at night a yellow light is displayed.

A semaphore arm 60 degrees below or 90 degrees above the horizontal indicates "Proceed." When in this position at night a green light is displayed.

20, 1910, made between the company, the National Trust Co., the British Empire Trust Co., and the province of Alberta, supplemented to the deed of June 10, 1909, made to secure certain 4% guaranteed debenture stock or bonds issued or to be issued, was filed with the Secretary of State, Ottawa, Aug. 3.

Canadian Pacific Ry.—The directors have declared a 2% dividend on the preferred stock, and a 2½% on the common stock for the quarter ended June 30, payable Sept. 30, to shareholders of record Sept. 1. The common stock dividend is at the rate of 7% per annum from revenue, and 3% per annum from land sales, etc.

Dominion Atlantic Ry.—Gross earnings for 12 months ended June 30, \$1,256,400, against \$1,331,726 for same period 1909-10.

Grand Trunk Pacific Ry.—London, England, cables, Aug. 22, state that there has been listed on the Stock Exchange there £696,000 of a recent issue of 4% debenture stock.

Guelph Jct. Ry.—The revenue received by the city of Guelph, Ont., from the C.P.R. for the operation of this railway for the quarter ended June 30, was \$8,897.37, against \$8,066.09 for the same period 1910.

The directors on July 27 declared a dividend of 9% for nine months, the cheque amounting to \$15,000, being made payable to the city of Guelph, which holds the entire issue of common stock.

Kingston and Pembroke Ry.—The annual meeting was held at Kingston, Ont., Aug. 9, when it was reported that the past year was the best in the company's history. Following are the officers and directors for the current year:—President, W. D. Matthews, Toronto; Vice President and General Manager, W. R. Baker, C.V.O., Secretary, C.P.R.,

Montreal; other directors, A. R. Creelman, K.C., H. P. Timmerman, Montreal; J. Osborne, Toronto; Hon. W. Hart, J. B. Walkem, R. Crawford and W. F. Nickle, Kingston, Ont.

New Brunswick and Prince Edward Island Ry.—The annual meeting was held at Sackville, N.B., Aug. 1. Following are the officers and directors for the current year:—President, C. W. Fawcett; Secretary, C. Pickard; other directors, M. G. Siddall, F. B. Black, H. E. Fawcett, H. M. Wood and F. C. Harris.

New Brunswick Ry.—At the recent annual meeting of shareholders, a dividend of 4% was declared for the year ended June 30. Following are the officers and directors for the current year:—President, F. S. Meighen; Vice President, W. T. Whitehead; other directors, Lord Strathcona and Mount Royal, Sir Thos. G. Shaughnessy, John Turnbull, Robt. W. Reford, Col. H. H. McLean, K.C., G. Ferrer and G. S. Cantlie.

Quebec and Lake St. John Ry.—Total earnings for July, \$66,095.28, against \$56,689.43 for July, 1910. Aggregate total earnings for seven months ended July 31, \$337,611.60, against \$324,060.10 for same period 1909-10. The average earnings per mile for July were \$231.60, against \$198.63 for July, 1910, and for the seven months ended July 31, they were \$1,182.71, against \$1,146.94 for the same period 1909-10.

Temiskaming and Northern Ontario Ry.—Gross earnings for June, \$123,857.79; expenditure, \$111,847.56; net operating earnings, \$12,010.23; other income, hire of equipment, \$3,132.93; less for outside operations, \$310; net income, \$14,833.16.

White Pass and Yukon Ry.—Gross earnings for six months ended June 30, \$397,130, against \$413,334 for same period 1910.

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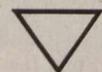
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The Canadian Northern Railway's Montreal-Port Arthur Line.

The line which is to be built by the Canadian Northern Ontario Ry. under the special act passed last session of the Dominion Parliament will complete the main transcontinental line from Montreal to Port Arthur. The first section of the line is described in the act granting aid to the railway as the mileage already in part built by the C.N. Quebec Ry. and the C.N. Ontario Ry. from a point in Quebec province opposite Hawkesbury, to Rideau Jct., west of Ottawa. The second section extends from Rideau Jct. to a junction with the existing Toronto, Sudbury-Gowganda Jct. line, in Capreol tp.; the third section carries the existing line from the junction in Capreol tp., to near Sellwood Jct., 10.6 miles, and the fourth section covers the remainder of the distance into Port Arthur.

The Ottawa-Sudbury or Ottawa-French River section, as it is often called, is in many ways one of the most interesting sections of the C.N.R. system. The Toronto and Sudbury lines come out of Ottawa together for some 5.5 miles to Rideau Junction, where they bend in opposite directions, the Sudbury line heading northwest for over 30 miles to the Ottawa River. The work is light, and the alignment very good indeed, the only interesting features being the two overhead crossings of the C.P.R. at Bells Corners, and of the G.T.R. at South March. At mileage 38 from Ottawa the line crosses the Ottawa River into Quebec province, at the outlet of the Chats Lake. The crossing is about 2,500 ft. long, with one span of 250 ft. and a number of shorter ones. All foundations are on rock, and never submerged more than a few inches below low water. Through the county of Pontiac the work is again light to Portage du Fort, where the Ottawa is again crossed. The river is narrower at this point, but the grade much higher (about 50 ft. above low water). There are three spans of 200 ft. each and a number of shorter ones, the deepest foundations being in 18 ft. depth at low water. The location as outlined above was the subject of considerable study and discussion, as it seemed quite unnecessary to cross the Ottawa twice and leave the towns of Arnprior and Renfrew to one side. It was found, however, that the location of the Canada Atlantic and the C.P.R. on the south side of the Ottawa, through both these towns, and of the latter along the immediate bank of the river, made it impracticable to secure a reasonable share of the traffic, and at the same time to get good alignment and grades, and two crossings of the C.P.R. would have been necessary, and there would also have been heavy crossings of the Mississippi, the Madawaska and the Bonnechere. As a government-aided road also it seemed in better taste to strike out into new territory and avoid direct competition with the older lines.

Crossing back into Ontario at Portage du Fort, the line passes through a very rich country centred in Forresters Falls, Beachburg and Westmeath, and, crossing the C.P.R. again overhead about three miles east of Pembroke, runs into the latter town at the 86th mile, where the Muskrat River is crossed, in the valley of which is a G.T.R. branch, necessitating a high bridge to clear it overhead. A mile further on the line crosses the Indian River, a comparatively small stream. The natural route from this west is, of course, the Ottawa River, but not only are the shores very bold and precipitous, but the C.P.R. fully covers the territory and the C.N.R. would again have laid itself open to the charge of unnecessarily paralleling the older road. The valley of the Indian

River was therefore taken to its source, near Grand Lake, and then the Petawawa River valley. This occupies a great depression running parallel to the Ottawa, and generally about 25 miles distant. An enormous quantity of pine timber has come down this river in the last 40 years, and it is still coming. The route follows the river closely from Lac a Travers to the head of Cedar Lake, which is a great sheet of water 10 miles long and two miles wide, forming a collecting basin for the several branches. The northern one is followed past Cauchon Lake, the line going over a low divide to the Amable du Fond. Crossing Kioskoqui Lake, the line ascends to another low divide and reaches waters flowing into Lake Nipissing. Here is the greatest individual drop in the whole line, a descent of 300 ft. in less than 15 miles, which necessitates a grade of 26 ft. per mile, compensated for curvature. At the foot of this grade is Chisholm Jct., where the Georgian Bay branch leads off, while the main line goes on past Callendar to North Bay, 230 miles from Ottawa. The C.P.R. is crossed for the third time at Nipissing Junction, again over head, and the Temiskaming and Northern Ontario Ry., about one mile from North Bay on the level. The line now skirts Lake Nipissing for some 10 miles close alongside the C.P.R., and then takes the valley of the Sturgeon River, which it crosses near Sandy Falls. It then follows the Kapikotitwia branch, and over a very low summit to Timmins Brook, draining into the Wahnapitei River, crossing the latter below Island Portage. The river is ascended for nearly two miles, and the line goes through a narrow pass to the south bay of Wahnapitei Lake and thence by Massy Creek to a junction with the line from Toronto at a point in Capreol township, near Hammer station.

The heaviest grade on this long stretch of 300 miles is that mentioned above. In the opposite direction the standard is the same, but occurs only in short pieces. There are some few 6° curves and one or two 8°, but the standard is 4°, and is seldom exceeded. In the canyon of the Petawawa River below Cedar Lake and at one or two other points there is some heavy side hill work in rock. The most interesting features are the two bridges over the Ottawa, and the almost complete avoidance of grade crossings of other roads. There are seven crossings of other railways between Rideau Jct. and North Bay, and in all but one (the T. and N.O.R.) grade separation is effected.

The Sudbury-Port Arthur line is sometimes referred to as the "missing link." The first title is somewhat of an error, as Sudbury will not be on the main line at all. The contract which has been let for the building of the line from Port Arthur to the existing line will terminate easterly at Gowganda Jct., 53 miles north of Sudbury Jct., and includes some grading and clearing done by Angus Sinclair. There are about 15 miles beyond Gowganda Jct. ready for tracklaying, and Gowganda Jct. is 30 miles north of Sellwood Jct.

The greater part of the work to be done is very ordinary construction. The most interesting section is the last 120 miles into Port Arthur, which includes some heavy side hill work in rock and a tunnel of 1,100 ft. along the shore of Lake Nipigon, and an expensive bridge over the Nipigon River, a diversion of the same and a viaduct 2,200 by 130 ft. across the Blende River Valley. The other more important river crossings are, from east to west, the Ground Hog, the Trout, the Kapuskasing, Missinable, Kabinakagami, Morrison, Kenogami, Sturgeon, and Black Sturgeon.

The ruling gradients are against westbound trains 6-10 of 1%, and against eastbound 5-10 of 1% compensated,

which have nowhere been exceeded between Montreal and Port Arthur, and in a very few instances lived up to. The ordinary standard is 1-10 less than this in either direction. The standard of curvature is 6°, which has been exceeded at only half a dozen places, and for some hundreds of miles on the interior plateau 4° is the rule.

We are indebted to H. K. Wicksteed, B.A. Sc., M. Can. Soc. C.E., Chief Engineer of Surveys, Mackenzie, Mann and Co., Ltd., for the details of the routes, etc., of the two sections of the line described.

The contract for the building of the line from Gowganda Jct. to Port Arthur has been let to Foley Bros. and the Northern Construction Co. The mileage covered by the contract is approximately 540 miles.

A sub-contract has been let to P. T. Walsh for the first 59 miles out of Port Arthur, and another to the Nipigon Construction Co. for the next 91 miles easterly, thus putting 150 miles under subcontract. Some smaller contracts have been let on the eastern end of the work. Foley Bros. and the Northern Construction Co. will do some of the work direct with their own forces.

The construction will be under the charge of E. T. Agate, Sudbury, and H. T. Hazen, Port Arthur, as District Engineers, for the company, while O. W. Swensen will represent Foley Bros. and Northern Construction Co.

The Nipigon Construction Co., which has its headquarters at Nipigon, Ont., has the following officers and directors: President, W. G. Chambers; Vice President, W. B. Russel; Managing Director, C. McQuigger; Superintendent, R. K. Russel; director, W. A. McCaffery. All of them have been engaged in railway construction work for some years, and have just completed some contracts on the National Transcontinental Ry.

Tenders for the building of this section of the line are under consideration, and contracts will probably be let early in Sept.

C. P. L. Fowler, who has been Manager for the Nelson-Jenks Coal Co. at Great Falls, Montana, is reported to have been appointed Purchasing Agent for Foley Bros. & Northern Construction Co. in connection with their Gowganda Jct.-Port Arthur contract on the Canadian Northern Ry. It is said his headquarters will be at Nipigon.

The following Division Engineers have been appointed on the western end of the work:—Division A, A. P. Wenzell, Port Arthur; Division B, E. L. Dorsett, Nipigon; Division C, R. H. McCoy, Nipigon; Division D, A. J. Isbester, Nipigon.

Canadian Northern Railway Construction, Betterments, Etc.

James Bay and Eastern Ry.—We are advised that a contract has been let for the line from Roberval westerly for 30 miles, to J. P. Mullarkey, Montreal. A sub-contract is reported to have been let to Peron and Co., Metabetchouan, Que., for the building of this 30 miles westerly from Roberval, Que., which is the terminus on Lake St. John of the Quebec and Lake St. John Ry. The new line will, it is said, proceed westerly through the parishes of St. Prime, St. Felicien and La Dore. The company is authorized to build a line from near Lake Abitibi, Ont., on the Canadian Northern Ontario Ry., easterly and southeasterly, passing south of Lake St. John to the mouth of the Saguenay River, Que. The interests formerly associated with the Q. and L. St. J. Ry. had a Quebec charter for the building of a line from Roberval to James Bay, and also a charter for the Trans-Canada Ry., under which charters surveys were made covering these 30 miles. Provincial and Domin-

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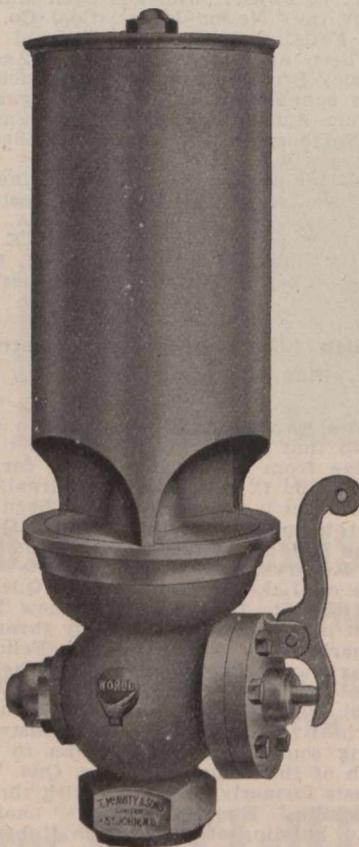
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Standard on Canadian Railways.

ion subsidies have been voted for this mileage out of Roberval.

The Canadian Northern Montreal Tunnel and Terminal Co. has been incorporated under the Dominion Companies Act, with a capital of \$50,000, and office at Toronto, for the purpose of laying out and operating railway, tramway and steamship terminals, transportation warehousing and storage facilities, tunnels and approaches, yards, stock yards, grain elevators, steamships, piers, docks, drydocks, ship basins, etc., in connection therewith to carry on a number of other businesses, and to do whatever may be incidental or necessary to the carrying out of the company's main objects. The operations of the company to be carried on throughout Canada. The provisional directors are:—G. G. Ruel, S. P. Biggs, A. J. Mitchell, J. B. Robertson, F. J. Buller, all of whom are connected with the Toronto offices of Mackenzie, Mann and Co., Ltd.

Canadian Northern Quebec Ry.—Quebec press reports, Aug. 14, state that the company has purchased a considerable area of land at Limoilou, Que., for the purpose of extending its yards and terminals at Quebec. The land is situated behind the Q. and L. St. J.R. station in Limoilou, just across the St. Charles River from Quebec.

The Board of Railway Commissioners has extended until Sept. 15 the time for the completion of the C.N.Q.R. across Notre Dame St., Montreal, and the joining of the Montreal St. Ry. and the Montreal Harbor Commissioners' tracks.

With respect to the projected terminals in Montreal, press reports state that electricity will be used as a motive power for the traffic on account of the tunnel under Mount Royal. A. W. Smithers, Chairman of the Board, G.T.R., stated in Montreal, Aug. 8, that he had not heard anything of a proposal that the G.T.R. and the C.N.R. should join in the building of a big terminal station there.

The new short line between Montreal and Hawkesbury, Ont., will be finished this fall. The substructure for the bridge over the Back River at Montreal will be started at an early date. The contract for this work had not been let up to Aug. 20.

The Canadian Northern Montreal Land Co. has been incorporated under the Dominion Companies Act, with a capital of \$2,500,000, and offices in Toronto, for the purpose of acquiring lands, wharves, docks, warehouses, etc.; to acquire land for townsites, and to develop the same; and to carry on in connection various businesses, including those of shipowners, wharfingers, forwarders, and agents. The provisional directors are: G. G. Ruel, R. H. M. Temple, A. J. Reid, S. P. Biggs, and R. P. Ormsby, all of Mackenzie, Mann and Co.'s offices, Toronto.

It is said that a purchase of 402 acres of lands made for \$846,000 by J. Barbour, Toronto, Aug. 11, is in the C.N.R. interests. The total amount invested in land recently in the Cote des Neiges and St. Laurent districts recently is said to aggregate \$5,000,000.

Canadian Northern Ontario Ry.—The erection of the steel superstructure of the bridge across the Trent River at Trenton has been practically completed, and the steel has been delivered for some small bridges between Cobourg and Trenton, Ont. An announcement of the date of opening this section of the line is expected daily.

The grading on the extension to Belleville has been completed to the city boundary, and is being progressed with through the city. The substructure for the bridge across the Moira River is well advanced, and a contract has been let to T. Manley for the building of a station on Church St., south of Dundas St., at a cost of about \$22,000. A five-stall

roundhouse is being built at Napanee, which, it is expected, will be completed in Nov. In connection with the building of the line on to Ottawa, a sub-contract has been let to R. A. Girouard for a section of about nine miles from Jones' Locks, Smiths Falls to Otter Lake.

A spur has been completed at Ottawa, connecting the line from Montreal and Quebec, with the Ottawa and New York Ry.

The company is reported to have purchased 110 acres of land at Bowesville, near the concrete bridge being built over the Rideau River, at the point where it is expected the Toronto-Ottawa line will join the company's transcontinental line. This area will be used for shops, etc., according to the reports. Other reports state that options have been obtained on something like 2,000 acres of land on the Merivale road for the company's purposes.

Extended reference to the Montreal, Ottawa, and Port Arthur line will be found on another page.

Duluth, Winnipeg and Pacific Ry.—Press reports say that J. A. Johnson and H. Fawcett, Duluth, Minn., have been awarded a contract for building a 10-stall roundhouse and the shop buildings in that city, which previous reports stated had been let to Bailey and Marsh, Minneapolis, Minn.

Plans are being prepared for the building of a station at Virginia, Minn., the point where the D.W. and P.R. connects with the Duluth, Rainy River and Winnipeg Ry., thus making a through line from Duluth to Winnipeg, and Port Arthur.

Canadian Northern Ry.—Tenders are under consideration for the erection of a brick station at Fort Frances, Ont. The plans show a 2½ story building, 116 by 24 ft. The platform will be 500 ft. long.

The Winnipeg and Northern Ry. has deposited in several registry offices of the area covered, plans, profiles and books of reference of its projected line through river lots in the parishes of St. Paul, St. Andrews, St. Clements, and St. Peter, and through townships 14-17, and ranges five to seven east of the principal meridian. This is the line which is being built as an extension of the Birds Hill branch to the beaches on the east side of Lake Winnipeg. About four miles of grading has been completed in the vicinity of St. Paul, and several miles of clearing and brushing have been done beyond. A second construction camp has been started near East Selkirk.

A contract has been let for the first section of the line to T. R. Edwards, Winnipeg.

The Fort Garry union station, Winnipeg, was opened for traffic Aug. 8. The first train to leave was a G.T. Pacific Ry. one, while the C.N.R. ran the first inward bound train.

Considerable betterments are being carried out on the lines west of Winnipeg. The new station at Brandon is practically completed, and such progress has been made with the hotel at the same place that it is now expected to have it opened for business Jan. 1, 1912. New roundhouses are being erected at Neepawa, Regina, Humboldt, Saskatchewan and Edmonton. At many points on the line additional ballast is being put in, and a good deal of ditching is being done.

The Board of Railway Commissioners has authorized the opening of the following lines for traffic:—From Shellbrook to Big River, 57 miles; from Shellbrook to Blaine Lake, 35 miles; from North Battleford to Edam, 38 miles; from Kindersley to Alsask, 44 miles.

Grading has been completed as far as the city boundary of Moose Jaw, Sask., on the branch from the Maryfield-Lethbridge line. The plans for the entrance

into the city, with the exception of a short distance, in respect of which the city desires to have the G.T. Pacific Ry. plans before it, have been approved. The station will be built at the corner of Thirteenth and Stadacona streets, and the freight sheds will be located behind Athabasca St. It is expected to have the steel laid on the branch this season.

The Russell branch is reported completed as far as Canora; the grading of the Melfort branch is completed to Humbolt, and the grading is completed to the Saskatchewan River of a branch southerly from Dellsle, Sask. Dellsle is a station on the Goose Lake branch, which is now open for traffic to Alsask, 44 miles beyond Kindersley. This line will affect a junction near the Red Deer River, with the branch from Vegreville, and will then be continued to Calgary. Surveys are being made for a route for a line from Calgary to Lethbridge to connect up with the line from Maryfield. The Cowan Construction Co., having completed the grading to Moose Jaw, has removed its plant to New Warren, about 30 miles southeast, and has started grading westerly on the extension of the branch from Maryfield to Lethbridge.

Construction trains are being run on the extension from North Battleford to Meota, and it is expected to have a further distance of about 75 miles completed this year.

Starting from Camrose, on the Vegreville-Calgary branch, a line is being built to Strathcona, upon which considerable grading has been done. It is expected to have everything ready for tracklaying this year. From Stettler, a branch has been completed to Red Deer, where a station is being built. The Northern Construction Co. has a large outfit at work, grading westerly from Red Deer towards Rocky Mountain House, and the Brazeau River coal-fields.

The grading gangs on the line from Edmonton to Athabasca Landing have reached the Tawattinawa River, and track has been laid to mileage 60. D. Campbell, of the company's construction staff, says it is expected to have track laid to the Landing by the end of the year.

Owing to the wet weather in the early part of the season grading on the line from Onoway has not progressed as rapidly as was expected, but the work is now going on much faster. The substructure for a 3,000 ft. bridge, 70 ft. above highwater level, is being put in at the crossing of the Pembina River, to which point it is expected to have track laid this year. Grading is being gone on with north of the Pembina to the Athabasca River, the crossing of which is 140 miles from Edmonton. Engineers are in the field beyond this point locating the line to the Peace River.

A. Laidlaw, Spokane, Wash., who is interested in mining properties in Jasper Park, in a recent interview said, the C.N.R. has been graded and track laid to 40 miles west of Edson, and only 85 miles east of the Yellowhead Pass, to which point it is expected to have track laid this fall. The C.N.R. parallels the G.T. Pacific Ry. for many miles to the summit of the Rockies. The company is reported to have acquired about 1,500 acres of land on the McLeod River, just south of Edson, for divisional yards and terminals.

Canadian Northern Pacific Ry.—F. G. Holt, Executive Agent, C.N.R., returned to Vancouver, B.C., Aug. 6, after a trip of inspection over the line to Kamloops, to which point the work is in the hands of the contractors. Tracklaying was started at Port Kells, July 31, and was reported to have been completed to the Salmon River. A ballast pit has been opened near Port Kells, and the ballasting gang is working close behind the



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tracklayers. Grading has been completed to the Popkum Indian reserve, nine miles east of Chilliwack. The substructure for a swing span bridge is being built at Chilliwack. Grading gangs are at work as far as Hope, and a number of the other plants have been removed east of Hope and on nearly as far as Kamloops. The work between Hope and Kamloops is being gone on with as fast as possible, but owing to the fact that the B.C. Government insists that "only white men" can be employed on the work, the number of men is not so large as would have been the case if the contractors had been able to engage Asiatics.

The company has withdrawn its application to the Board of Railway Commissioners for permission to parallel the C.P.R. tracks on C.P.R. right-of-way along the Fraser river from Lytton to Cisco bridge, where the C.P.R. crosses the river to the west bank. At the hearing last year the application was opposed by the C.P.R. on the ground that the applicant had no status, as it was a provincial corporation, the C.N. Pacific Ry., and therefore had no authority to expropriate C.P.R. right-of-way. It was also urged that the building of a line lower down the canyon would be a menace, owing to the danger of the C.P.R. embankment becoming undermined. A special report on the routes was prepared by C. E. Cartwright, and an amended plan providing for two additional bridges across the Fraser River, proposed.

Winnipeg papers of Aug. 15 stated that a contract had been let to the Northern Construction Co. and the Cowan Construction Co., jointly, for the building of the section of the C.N.P.R. from Kamloops to the Yellowhead Pass, about 250 miles. The estimated cost of the work is placed at \$10,000,000, and the contract is to be completed within two years. The dispatch added that A. R. Mann, President of the Northern Construction Co., had gone to Vancouver to arrange for the immediate starting of work from the Kamloops end.

The wharf at Port Mann was reported completed Aug. 14, and machinery is being installed in order to facilitate the handling of the construction material which is being delivered in large quantities. The tracks at present laid in the yard have been connected up with the Great Northern Ry. line, which facilitates work considerably. Considerable progress has been made with the clearing of the townsite.

Canadian North Eastern Ry.—Track was expected to be laid to the Red Cliff mine, 13.5 miles from Stewart, B.C., Aug. 31. (Aug., pg. 743.)

Duluth, Winnipeg and Pacific Railway Construction.

This line was projected from Duluth to Virginia, Minn., connecting there with the Duluth, Rainy Lake and Winnipeg Ry., which extends from Virginia to Rainy River, and is connected by a bridge over the river with the Canadian Northern Ry. at Fort Frances, Ont. The two railways in Minnesota, together with the International bridge, are controlled by the Canadian Northern Ry. interests, and the completed line will form, with the Canadian Northern Ry., the shortest route between Duluth and Winnipeg, and will also give a short and direct railway connection between Duluth and Port Arthur, Ont.

The terminal points are the same as those of the Duluth, Missabe and Northern Ry., the route unavoidably lying through pretty much the same country, but there is absolutely no paralleling. The Duluth, Missabe and Northern is an iron ore road with an enormous busi-

ness, which it carries on over grades of 6-10 of 1% against the ore traffic and 2% in the opposite direction. It was felt that the last was too low a standard to be accepted on the new line, and after an exhaustive examination a route was adopted giving a grade of 1.15% out of Duluth for some 10 miles, and then flattening off to a standard of 3-10 against southbound and 6-10 against northbound traffic, for the remaining 65 miles. This portion is all on the elevated table land north of Lake Superior, and there is nothing in the construction out of the ordinary, the grading alternates between clay and gravel, cuttings and muskegs and two or three moderately bad sink holes are the only interesting features.

The 500 ft. lift out of Lake Superior to the plateau is nearly all on a steep and very broken rock side hill. It includes a 500 ft. tunnel and some very heavy rock work, aggregating 150,000 cubic yards in a distance of about eight miles, also two or three bits of permanent trestle. The entry to Duluth is all elevated and grade crossing of streets has been practically eliminated. The Canadian Northern Ry. owns its own yard and water terminals in West Duluth, but it is proposed to run over the Northern Pacific Ry. tracks into Duluth proper, and also via the Grassy Point bridge into Superior.

We are indebted to H. K. Wicksteed, B.A.Sc., M. Can. Soc. C.E., Chief Engineer of Surveys for Mackenzie, Mann and Co., Ltd., for the foregoing information.

We were advised by H. T. Hazen, Chief Engineer in charge of construction, Aug. 19, that the grading on the line between Duluth and Virginia had been completed, with the exception of the 500 ft. tunnel at Short Line Park, which was expected to be finished in a week thereafter. Track has been laid from Virginia to the tunnel, 67 miles, and about 20 miles of this has been ballasted. This work is being done by Foley, Welch and Stewart. The bridge work is progressing very favorably, the bridges over the St. Louis and Cloquet Rivers and the Duluth, Missabe and Northern Ry. having been completed and the bridge at the crossing of the Spirit Lake Transfer Ry. being under way. Contracts have been let and work started on the 10 stall engine houses and machine shops at Duluth and Virginia. The station buildings, section dwellings, etc., have been completed at Harney, Simar, Twig, Bartlett, Peary and Eveleth. The whole work should be finished by Nov. 1.

A Railway to Hudson Bay.

A contract is reported to have been let to J. D. McArthur, Winnipeg, for the building of the first section of the Dominion Government railway to Hudson Bay. This extends from the northern bank of the Saskatchewan River at Pas Mission, Sask., to Thicket Portage, about 185 miles. The construction of a bridge across the river at this point, the contract for which was let over a year ago to Mackenzie, Mann and Co., Ltd., is already well advanced. This bridge will enable the contractors to get in their supplies, etc., over the Canadian Northern Ry. branch here, now terminating at Pas Mission. Construction is to be started Sept. 12, and the contract calls for the completion of the work in two years.

The route of the line, for the whole distance, whether Port Nelson or Fort Churchill is selected as the Bay terminus, was described on pg. 97 of our issue of Feb., 1910. The estimated cost of the two routes, as made by J. M. Armstrong, Chief Engineer, were appended to the description of the routes. (Aug., pg. 747.)

Dominion Atlantic Railway Bridge Construction.

The first work of importance to be started on the Dominion Atlantic Ry. since it has passed under the control of C.P.R. interests, is the reconstruction of the bridges. We are officially advised that the present structures are to be replaced by steel superstructures on concrete or cribwork substructures. It is contemplated at present to undertake the reconstruction of the bridges at Bear River, Little Joggins, Big Joggins, Moose River, Allen's Creek, and Shubenacadie River. The plans for these bridges have been approved by the Board of Railway Commissioners. Following are details as to the various structures:—

BEAR RIVER BRIDGE.—Existing bridge 1,660 ft. long, maximum height 82 ft., made up of four Howe truss deck spans of 150 ft. each, one similar span with concrete swing pier (all spans on concrete piers), balance of wooden trestle. Existing wooden spans to be replaced with steel spans, the trestle with three deck plate girders of 103 ft. each and one deck plate girder span of 85 ft., balance to be filled in with earthwork protected with rock filled crib work against the tidal waters. The new work includes the putting in of two new concrete piers and two concrete abutments.

LITTLE JOGGINS.—Length 690 ft., maximum height 43 ft., a trestle bridge with an 80 ft. deck Howe truss swing span on concrete pier at centre. To be filled in to an opening spanned by a 40 ft. plate girder span. Filling to be protected against tidal waters by rock filled crib work.

BIG JOGGINS.—Length, 970 ft., maximum height 45 ft., a trestle bridge with an 80 ft. deck Howe truss swing span at the centre. This span is to be replaced by a 120 ft. deck plate girder swing span, balance to be filled in with earth work protected with rock filled crib work.

ALLEN'S CREEK.—Existing structure 710 ft. long, maximum height 65 ft., made up of one through Howe truss span of 100 ft., balance wooden trestle. To be replaced with one 150 ft. through truss span of steel, and two 85 ft. through plate girder spans, the balance to be filled in with earth work protected from tidal waters by rock filled crib work. The new work includes the putting in of two abutments and two concrete piers.

MOOSE RIVER.—Existing bridge 935 ft. long, maximum height 66 ft., made up of four Howe truss deck spans of 150 ft. each, one swing span of similar construction 150 ft. long, balance timber trestle. To be replaced with three steel deck lattice spans of 150 ft. each, one deck lattice swing span of 160 ft., three deck plate girder spans of 75 ft. each, and one deck plate girder span of 65 ft. The new work includes the building of two new abutments of concrete, one concrete pier, and the raising to an additional height of 20 ft. six of the existing concrete piers. A small amount of earth work will go in to complete the length of the bridge.

SHUBENACADIE RIVER BRIDGE.—A short lift span is to be replaced, making a wider channel for boats. A 130 ft. swing span will be put in, necessitating the building of a pivot pier, one new abutment, and concrete extensions to an existing pier. It will be necessary also to remove one of the existing piers.

The Alberta Government has been granted permission to appeal to the Imperial Privy Council against the decision of the Supreme Court of Canada in the case of the Crown against the Alberta Ry. and Irrigation Co., concerning the maintenance of bridges over irrigation ditches.

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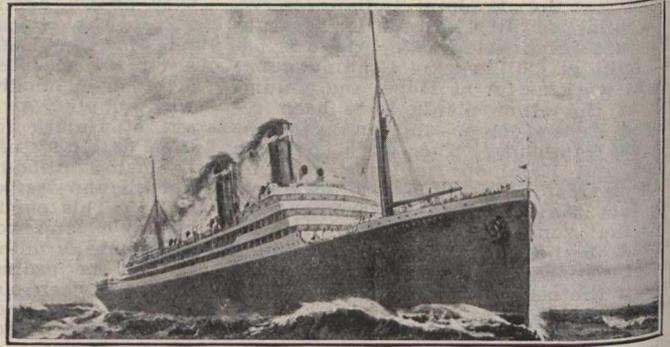
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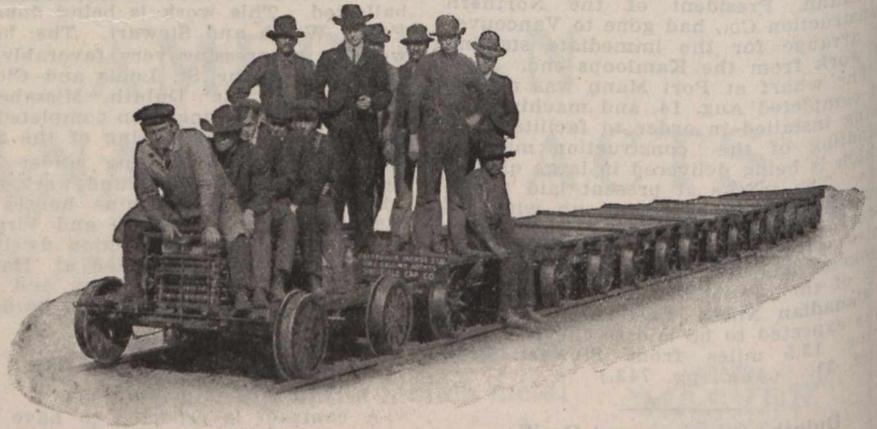
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Canadian Pacific Railway Construction Betterments, Etc.

Tobique Valley Ry.—The laying of the line from Perth to Plaster Rock, N.B., with heavier rails has been practically completed, and reballasting is in progress.

Orford Mountain Ry.—The operation of trains has been extended from Mansonville, Que., to North Troy, Vt., five miles, an extension which has lately been completed.

Windsor St. Station.—The stone facing of the additions to the Windsor St. Station is well on towards completion, and the concrete floors are being laid. Work in other departments is also being pushed forward. Adjoining the new boiler-house will be a big chimney, 230 ft. high, of which the lower 90 ft. will be of concrete, and the top 140 ft. of brick.

Place Viger Improvements.—The wing of the Place Viger Hotel, extending over the new station annex, and reached by a bridge from the main building was opened Aug. 18. The wing contains 30 suites of apartments on either side of a balcony 225 ft. long.

Montreal-Quebec Jct. Second Track.—The Board of Railway Commissioners has authorized the operation of traffic over the second track of the gauntlet track across Bordeaux bridge, between Montreal and Quebec Jct.

Angus Shops Industrial Lines.—We are advised that plans have been filed for the building of an industrial spur at the east end of Montreal, extending from the crossing of the present main line near the crossing of the same with Forsyth St., through the town of Maisonneuve and as far as lot 394 in Longue Pointe parish, a distance of 4.85 miles. This line is referred to in press reports as being run from the Angus shops via Bout de l'Isle to the present Quebec line near L'Epiphanie, and having for its object the shortening of the line to Quebec.

Westmount.—The company has been ordered by the Board of Railway Commissioners to build a subway at Bethune Ave., Westmount, Que., within six months. The Dominion Railway Grade Crossing Fund will pay \$5,000 towards the cost, the company and the city each providing one-half of the balance.

Western Junction near Montreal.—A Montreal dispatch of Aug. 22 says that the company is building near Western Jct, 10 miles out of Montreal, a new terminal headquarters, which consists of a 24-stall engine house, a machine shop, a turn-table, a coaling plant, a stores building, a rooming and lodging house, capable of accommodating 100 men, and a car-shunting and storage yard of 2,000 cars capacity. Eventually the new terminal will have a capacity of 4,000 cars. At the point chosen for the terminal the main line to Ottawa is joined by the tracks from the south across the Lachine bridge, which the company is at present double-tracking.

Sidings at Lachine, Que.—Application is being made to the Board of Railway Commissioners for authority to build a spur line from the Lachine Canal south along the branch to serve a number of industries.

Toronto Office Building.—The Toronto city council has at last authorized the issue of a permit for the erection of the office building at the corner of Yonge and King streets, Toronto. The building will be 15 stories high, and will be built as rapidly as possible. The site has been cleared for some months.

West Toronto Station.—The new passenger station is practically completed, and rapid progress is being made with the laying of the concrete platforms.

West Toronto Yard Extension.—Great

changes are beginning to be apparent at the western end of the yards. A large area of land on either side of the track right on to Lambton is being levelled and laid with sidings. At Jane and Elizabeth streets subways are being put in. The contract for the concrete abutments for these subways has been let to Wells and Gray, Ltd., Toronto.

South Ontario Pacific Ry.—The Board of Railway Commissioners has approved of a revised location on this line from Guelph Jct. to Hamilton, so as to permit it to connect with the Toronto, Hamilton and Buffalo Ry. at Hamilton.

London Improvements.—Work was started, Aug. 10, by the Canadian Bridge Co., of Walkerville, Ont., on the erection of a new bridge across the Thames, west of London. It will consist of three spans of 150 ft. each. Work at the new round-house is being proceeded with, and work on the new coal shed is expected to be completed early in Sept. Grading for the additions to the yard is completed and track laying is in progress.

Port Arthur and the Company.—A vote was taken at Port Arthur, Ont., Aug. 17, for the purpose of confirming an agreement made May 29, between the company and the city council, settling various matters in dispute. Under the terms of the agreement the city grants exemption from taxation on all C.P.R. property in Port Arthur, except for school and local improvement purposes, no such exemption being recognized in the case of property leased by the railway to others; acceptance and execution of a lease of the water frontage from the C.P.R., for the use of the municipal docks; exemption from taxation of any property which the C.P.R. may convert into a park, land within three years, when required by the C.P.R. for the erection of a union passenger station for the C.P.R., C.N.R., and G.T.P.R., and the company agrees to withdraw all claims for damages arising out of the Current river washout in May, 1908; to build a passenger dock and freight shed at a cost of about \$200,000; to grant an entry to the Grand Trunk Pacific Ry.; to provide a union passenger station for the three transcontinental railways, and to provide a park, on certain land provided. We were officially advised, Aug. 20, that the plan for these several works had not been definitely prepared.

Yard at Mission Island, Fort William.—Engineers have been engaged since Aug. 14 marking out the boundaries, etc., of the proposed new yards on Mission Island no. 1, Fort William. Connection will be made with the new yards by means of the bridge now about completed over the Kaministikwia River. It is stated that work will be started almost immediately with the grading for the tracks on the new yards.

Boissevain to Lauder.—Plans have been prepared for a 40 mile branch from Boissevain, northerly and westerly to Lauder, Man., and connecting there with the lines running from Souris through Nepinka, and with the branch line running westerly to Alida. While the plans have been prepared the route may be slightly changed before it is built.

Viriden to Macauley, Man.—The branch line from Viriden, now terminating at Three Creeks, is being extended to Macauley, Man., about 30 miles, where it will join the Pheasant Hills Branch from Kirkella. The contractor is P. Lamb, Winnipeg.

Winnipeg Hotel and Station.—Plans are under consideration for the enlargement of the hotel and station building. These include the addition of two stories to a wing of the station; a subway beneath the tracks to connect with a four-story building, north of the tracks; a subway beneath Main St. subway, to connect with a new building

on the west side of Main St.; a new first-class waiting-room for travellers, on the ground floor of the Royal Alexandra annex. The plans for these works are not yet definitely settled.

Winnipeg Subways.—The contract for building a subway under the C.P.R. tracks at Broad St. has been let to the Parsons Construction Co. The city is contributing \$120,000 towards the cost.

A bylaw is to be voted on in Dec. to provide \$200,000 for the building of a subway under the C.P.R. tracks at Princess St.

Station Buildings, Manitoba Division.—The Brandon Construction Co. has made considerable progress with the demolishing of the station at Brandon. The company will also build the new station. The contract price is about \$60,000, and the work is to be finished in Feb., 1912. In connection with this work the company is laying out a new freight delivery yard.

Tenders are under consideration for the building of new stations at Broadview and Souris, Man.

Weyburn-Forward Branch.—An extension of this line from Forward to Ogema, Sask., was opened for traffic Aug. 15. The branch is being further extended and it is intended that it will ultimately connect up with the company's lines at Lethbridge, Alta.

Lanigan-Humbolt Line.—Press reports state that engineers are locating a line from Lanigan, via Humbolt, to near Rosstern, where a junction will be made with the line projected from near Sutherland to Prince Albert, Sask.

Regina, Sask.—In connection with the erection of the union station in Regina, it is said that the track in the yards will be rearranged, and that the yard itself will be largely added to. Plans for the new trackage system are said to have been prepared.

North Portal, Sask.—The Board of Railway Commissioners has authorized the building of an additional track northeast of the present main line along the International boundary at North Portal, Sask.

Branches from Wilkie.—Considerable progress has been made on the three branch lines under construction from Wilkie, Sask. Grading has been completed southerly to Anglia on one branch and tracklaying was started Aug. 1. Fourteen miles of grading has been completed in the direction of Kerrobert on the second branch, and the work on the branch northerly into the Cutknife district is being rushed. Survey parties are in the field beyond the end of the location on the Cutknife branch, and are reported to have got beyond Vermillion, Alta., working in the direction of Peace River.

Moose Jaw-Lacombe Line.—Two of the piers for the big bridge across the Saskatchewan River at Outlook, Sask., on this line have been completed, and work was started, Aug. 8, in filling up the foundations for two other piers.

Medicine Hat to Calgary.—The Southern Alberta Land Co. states that it has been informed by Sir William Whyte that it is the C.P.R.'s intention to start work this year on a new line from Medicine Hat to Calgary, Alta. It is said that the line will follow the river for about 50 miles, and then proceed across country through the irrigation belt, and joining up with the main line near Shepherd.

Irricana to Standard, Alta.—The new line extending from Irricana to Standard, Alta., 36.7 miles, in the company's irrigated lands, was opened for traffic Aug. 1. It runs easterly from the Langdon-Acme branch.

Calgary Station.—Tenders are under consideration for the building of a west

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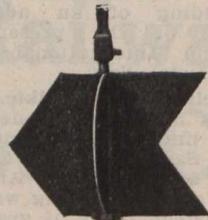
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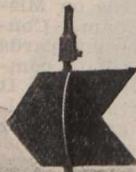
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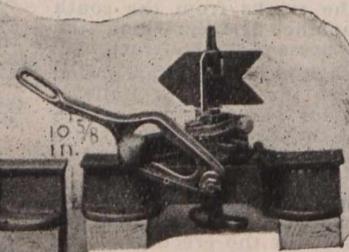
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wing and an addition to the present east wing of the station at Calgary, Alta.

Western Shops.—F. W. Peters, Assistant to the Vice President, in an interview at Calgary, Alta., Aug. 17, said nothing had been settled at that date about the proposed new shops in Alberta, which Calgary and several other places are anxious to have located within their boundaries.

Western Hotels.—The excavation for the foundation for the C.P.R. hotel at Calgary, Alta., was started Aug. 10. The Ross Cartage Co. was given the contract for the work, which also includes the excavation for the foundation of the west wing of the station. The contract for the foundations and superstructure is expected to be let at an early date.

F. S. Swales, London, Eng., in company with W. S. Painter, Chief Architect, C.P.R., is visiting Canada in connection with the company's plans to increase the accommodation at its hotels in the Rocky Mountains, and to build additions to the hotels at Vancouver and Victoria. It is proposed to start construction of the main section of the Hotel Vancouver, at an early date, and to begin work for the addition of a wing to the hotel at Victoria, within a few weeks. Messrs. Swales and Painter were in Vancouver Aug. 5, and in Victoria Aug. 8, looking over the present buildings and the sites for the extensions.

Edmonton to International Boundary.

—Press reports state that surveys are being made for the building of a line from near Edmonton, Alta., southerly and easterly, via Swift Current to the International boundary, about 100 miles west of North Portal, where it will meet a line to be built from the Minneapolis, St. Paul and Sault Ste. Marie Ry., northerly from the big bend in the Missouri River.

While this is a press report, the C.P.R. has under construction branches running northeast and southwest from Swift Current.

Strathcona-Edmonton Bridge.—It is expected that the concrete work for the high level bridge across the Saskatchewan River between Strathcona and Edmonton, Alta., will be completed in Sept. A spur track has been laid to the bridge site, for bringing in the steel for the superstructure. It will take about a year to erect the steel and complete the connecting lines.

Three Forks to Lucky Jim Mine.—A contract has been let to W. P. Tierney, Nelson, B.C., for building a spur line from Three Forks to the Lucky Jim Mine, at Bear Lake, B.C., about five miles. Work was reported to have been started Aug. 12, and it is expected to have it completed Dec. 31.

Bridges, Mission to Vancouver.—A contract is reported to have been let to Mueller and Taylor, Vancouver, for the building of 13 small concrete bridges and bridge abutments on the line between Mission Jct. and New Westminster, B.C. The bridges are to be built of sufficient width to carry a double track line.

Vancouver Improvements.—An agreement has been reached between the Coquitlam council and the C.P.R. in regard to the establishment of railway yards in the neighborhood of Pitt River. The agreement will be submitted to the Coquitlam voters for their approval as soon as the necessary bylaw can be prepared. The agreement is that the C.P.R. must expend \$250,000 within the next two years on the construction of yards, roundhouses, machine shops and all other equipment that goes with them, and that the work must be started within 30 days after the ratification of the agreement by the Coquitlam electorate. In return for this the

company is granted a flat tax rate of \$1,500 on their land for a period of 10 years, exclusive of school taxes, which they must pay.

Esquimalt and Nanaimo Ry.—Tenders are under consideration for the erection of a roundhouse and station building at Alberni, the terminus of the branch line now being completed. A station and chalet are being built at Cameron Lake, and it is expected they will be completed by Nov. 1. The ballasting gang are working a few miles beyond Cameron Lake, towards Alberni, and it is expected that the ballasting will be completed by Oct. 1.

Work was started Aug. 1 on the Duncan-Cowichan Lake branch line, over 300 men being employed. (Aug., pg. 739.)

Great Northern Ry. Lines in Canada.

Midland Great Northern Ry.—The Winnipeg city council has approved of a temporary alteration of the route of the line in the city in the vicinity of the crossing of the Assiniboine River and the erection of a timber bridge. The application was made on account of difficulty in procuring material for a steel bridge. The route as originally proposed is to be followed when the time arrives for the grade separation provided for in the agreement.

A permit was issued Aug. 3, for the building of freight sheds and an office building on Ross Ave., between Isabel and Sherbrooke streets. The building will be 400 by 50 ft., and the estimated cost is \$45,000. The contract has been let to the J. McDiarmid Co., Winnipeg, the work to be completed by the end of the year.

Satisfactory progress is reported to have been made with the grading of the line into the station, and the building of the subways.

L. C. Gillman was in Winnipeg, Aug. 17, inspecting the work in progress on this line. About 60% of the grading is completed, and considerable progress has been made with the erection of the freight shed. It is expected that the line will be opened for traffic Dec. 31.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Tracklaying and bridge building have been started on the section of this line from Princeton northwesterly to Tulameen, B.C. The grading was completed in 1910 by A. Guthrie and Co., which firm, it is reported, has been given a contract for the grading of the line from Tulameen to the Hope Mountains. The distance on which track is to be laid is about 14 miles. There are six bridges on this mileage, and the work of erecting these has been given to A. Guthrie and Co.

West of the Hope Mountains the line is being built from Abbotsford to Chilliwack, and the grading to this latter point is expected to be completed by Sept. 30. Near Chilliwack the line will connect with the Canadian Northern Pacific Ry., and this company's line will be run over to near Hope Summit, from which point a separate route will be followed to a junction with the line being built westerly, which has now reached Tulameen.

Two survey parties were reported to be in the field Aug. 10, working between Hope and the Summit, in an endeavor to find an easier route between these two points than any hitherto surveyed. W. H. Burns and — Butler are in charge of the parties, and — Amburn is superintending the work. The best gradient hitherto secured between Hope and the Summit is 2 1/2%, while between the Summit and Tulameen, the gradient is just slightly over 1%.

Vancouver Terminals.—The Vancouver terminals of the G.N.R. lines are under construction at False Creek. The area

acquired for the construction of these terminals includes 160 acres on False Creek, and 100 acres abutting on the creek. A union station, for the use of the G.N.R., the Canadian Northern, and the G.T. Pacific Ry. is to be erected on Park Lane, about 100 ft. from Westminster Ave. In close proximity will be built freight houses, roundhouse, freight yards and car yards. These buildings will be erected on the north side of False Creek, adjoining the area reserved for the city. Across this reservation will be located the storage tracks. Entrance will be obtained to the station building over the land which is to be reclaimed. It will take about 3,500,000 cubic yards of material to fill in the flats, and of this about 1,500,000 cubic yards has already been dumped in from the cut on Fifth Ave. The old cut nearby is to be widened and deepened, and Park Lane will be increased from 40 ft. to 100 ft. in width. The dock, which is under construction, will be 800 by 148 ft., and on this will be built a warehouse 100 ft. wide and the full length of the dock. Tracks have been laid connecting this dock with the terminal site on False Creek.

M. J. Costello, General Traffic Manager, G.N.R., was in Vancouver, Aug. 10, and in an interview stated that the final plans for the terminals were being passed upon, and the work now being done was in preparation for the carrying out of the whole scheme. Three docks are to be built between the present city wharf and the B.C. Sugar Refinery, of which one will be built at once, and the others when required. The total expenditure to be made for terminal purposes in Vancouver is estimated at nearly \$10,000,000. (Aug., pg. 729.)

Carillon and Grenville Railway acquired by Mackenzie Mann & Co.

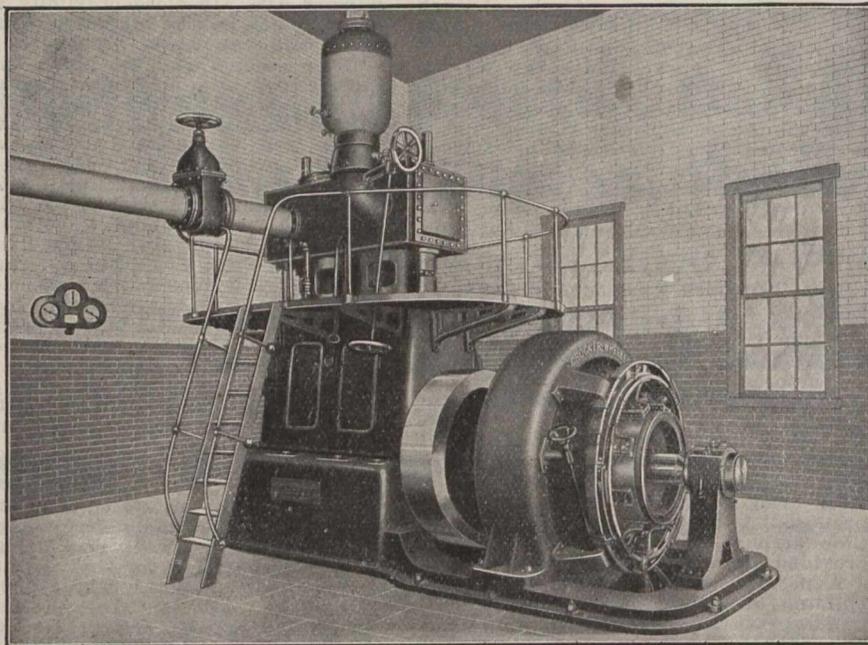
Reference was made in our June issue, pg. 501, to press reports which stated that interests connected with Mackenzie, Mann and Co. had acquired the Carillon and Grenville Ry. We are now officially advised that these interests have purchased the railway, and are now in possession of the property. The line extends from Carillon to Grenville, Que., 13 miles, connecting at either end with the Ottawa River Navigation Company's steamers. It has a gauge of 5 1/2 ft. and is the only broad gauge line remaining in Canada. It was built in the Ottawa River Navigation Co.'s interests, and was operated by that company during the season of navigation only. The gauge of the line will probably be changed to standard, and a portion of it used as a part of the main line of the Canadian Northern Ry. between Montreal and Hawkesbury, and consequently as a part of the company's main transcontinental line. It may, however, be found necessary to build a new line, in which event a portion of the present right of way may be used.

The new owners of the C. and G.R. have not acquired the charter rights of the Carillon and Grenville Ry. Co., but only the physical property of the railway between Carillon and Grenville, nor have they bought the Ottawa River Navigation Co.

According to the prospectus of the Central Ry. Co. of Canada, referred to on another page of this issue, the C. and G. Ry. is one of the properties said to have been acquired by that company. This is a matter respecting which an explanation will be awaited with interest.

That the C.P.R. was preparing to ship coal in large quantities from the B.C. coal fields to the U.S. is a newspaper report, which we are officially advised is without foundation.

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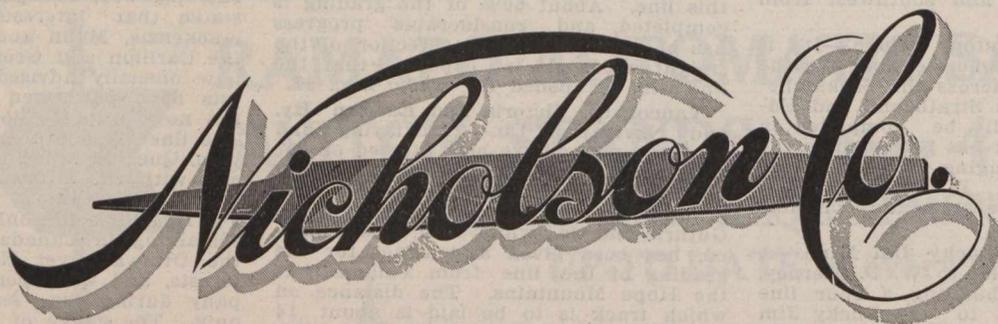
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The Central Railway Co. of Canada's Prospectus.

There has been placed on the London, Eng., market, through Parr's Bank, Ltd., an issue of £1,000,000 of first mortgage 5% bonds of the Central Ry. Co. of Canada. Of this issue £400,000 was stated to have been taken up in Canada and in Paris, France, the remaining £600,000 being offered at 95%. The issue is to be secured by a first mortgage on about 164 miles of railway, comprising a line of 110 miles from Montreal to Ottawa, and 54 miles of branch lines, which are at present partly built, together with the equipment, and a land grant of about 1,300,000 acres of land in the valley of the Ottawa River, to which the company will be entitled "under 19 and 20 Vict., chap. 112, and 24 Vict., chap. 80. The proceeds of the bond issue will be utilized for the purpose of paying the balance of about £40,000 due on the purchase of the Ottawa River Navigation Co. and the Carillon and Grenville Ry., owned by it; the payments to C. J. Willis and Son, under their contract for building the line from Montreal to Ottawa, the provision of rolling stock, the defraying of legal and other expenses, and the balance to making surveys, etc., for extensions. The officers and directors are: President, Hon. A. Campbell, Toronto; Vice President, Hon. W. Owens, Montreal; other directors, Hon. A. Desjardine, E. G. Penny, H. W. Raphael, F. S. McLennan, Montreal; W. F. Tye, Toronto; J. A. C. Ethier, K.C., St. Scholastique, Que.; Sir R. Gresley, Burton-on-Trent, Staffordshire, Eng.

Accompanying the prospectus is a lengthy statement dated May 3, over the signature of Hon. W. Owens, the Vice President, and a map showing the district which will be served by the projected railway. This statement sets out that the main line will extend from Montreal to Midland, on Georgian Bay, 344 miles, and that legislative authority has been obtained to extend the line from Midland to St. Thomas, Ont., and other points, and to make connections, not only with Canadian railways, but with U.S. railways at the International boundary. The total length of main line and branches is stated as 660 miles. The present issue will provide for the completion of 164 miles of line, viz., the main line from Montreal to Ottawa, and two branches. The main line, Senator Owens says, "includes the Carillon and Grenville Ry., 13 miles, constructed and in operation," and the main line of the Central Counties Ry. from Hawkesbury to Ottawa; while the branch lines include the St. Agathe branch, 47 miles, "of which the seven miles already constructed are to be brought to standard, and 13 miles are partly constructed." The second branch to be built will be one of seven miles, to Ste. Rose. Out of the proceeds of the bond issue the company proposes to acquire the Carillon and Grenville Ry., the Central Counties Ry., the Ottawa Valley Ry. and the Ste. Agathe branch, as well as the Ottawa River Navigation Co.

The plans for the railway have been reported upon by J. M. Shanly, C.E., Montreal, and an agreement has been made for connection with the projected terminals in Montreal of the Montreal Central Terminal Co.

A contract has been entered into with C. J. Willis and Sons, 28 Victoria St., Westminster, London, Eng., for the construction of the line from Montreal to Midland, and 37 miles of branch lines, by Dec. 31, 1913, the section from Montreal to Ottawa to be completed Nov. 1, 1912. The contract provides for a high standard of construction, with low gradients, light curvature, bridges and culverts of stone, concrete and steel, and 80 lb. rails. We are advised by the

representative of the contractors in Canada that it is more than likely that a portion of the work will be sublet, but that no instructions have been received to go ahead with the work. A contract, states the prospectus, has been entered into for the construction of the branch from St. Andrews to Ste. Agathe, the contract price being \$21,400 a mile.

The Ottawa River Ry. was originally incorporated by the Dominion Parliament in 1903, to build a railway from near Grenville to Montreal, with branches from St. Andrews to St. Come, up the River Rouge to Lake Rouge, and to connect with the Canada Atlantic Ry. near Hawkesbury, Ont. H. W. Rapheal and J. A. C. Ethier are the only two of the original directors who are now associated with the company. It obtained power to build additional lines in succeeding years, and in 1905 was authorized to change its name to the Central Ry. Co. of Canada, and was given power to amalgamate with various other railways. In 1904, the company obtained an act of incorporation from the Ontario Legislature as the Ottawa River Ry., and extensions of time have been granted by both the Dominion Parliament and the Ontario Legislature to both companies.

The Ottawa Valley Ry. was incorporated by the Dominion Parliament in 1892, to build a railway from St. Andrews to Carillon, and from Grenville to near Calumet, on the C.P.R., and in 1894 all the rights of this company were authorized to be transferred under an agreement to the Atlantic and Lake Superior Ry.

The Prescott County Ry. was incorporated by the Dominion Parliament in 1897. A further act was passed in 1889 changing its name to the Central Counties Ry., and amending acts were passed from time to time with respect to extensions of time for construction, arrangement of bond issue, etc. The company built a line from Glen Robertson to Hawkesbury, and from South Indian to Rockland, Ont., together 38.49 miles, which lines are leased to the Canada Atlantic Ry., the company maintaining a separate existence, and having power to build certain other lines.

The Carillon and Grenville Ry., to which the prospectus says the 1,300,000 acre land grant attaches, was incorporated by the pre-Confederation Parliament in 1840-41, and the acts quoted as covering the land grant were passed in 1857 and 1861 respectively. The railway was built under a subsidy granted by the Dominion Parliament in 1894.

In connection with the statement in the prospectus and in the letter of Senator Owens, Vice President, that among other properties acquired is that of the Carillon and Grenville, 13 miles constructed and in operation, and that this line is to form part of the company's main line from Montreal to Ottawa, it should be noted that the physical property of the C. and G. Ry. has been sold by the Ottawa River Navigation to interests associated with Mackenzie, Mann and Co., but we are advised that this sale will be contested. With respect to the land grant of 1,300,000 acres, which is mentioned as an asset, Sir Richard W. Scott, ex-Secretary of State, who was one of the directors of the original company, is quoted as saying that the grant was made in 1854 for the building of a railway between Quebec and Lake Huron. In 1861 the Canada Central Ry. was formed to build a line between Ottawa and Carleton Place as a part of the project, but it was found impossible to float the bonds for construction. The 1854 charter was allowed to lapse, but the Canada Central Ry. charter was kept alive and the line was built in the seventies, and is now part of the C.P.R. The Ontario Government maintained that the land grant had lapsed at

Confederation, and after an action in the courts a settlement was effected, and an act was passed by the Dominion Parliament in 1874, confirming the settlement. Sir Richard adds:—"The prospectus, said to have been issued in England, claiming an asset of 1,300,000 acres of Ontario land, is not based in legal substance."

The Dominion Government started the policy of voting cash subsidies in aid of the building of railways in the session of 1882, the first payments being made in the financial year 1883-84. In J. E. H. Currier's Index to Railway Legislation, 1867 to 1905, is the following statement: "There have to be added the following exceptional subsidies," and then appears: "The Canada Central Ry. paid between 1878-83, \$1,525,250." As the company built 120 miles of line, which now forms part of the C.P.R. system, the subsidies received amounted to \$12,700 a mile.

The solicitor of the Central Ry. Co. of Canada advises us that the land grant referred to in the prospectus is intact, and that the company is acting upon the advice of eminent counsel in Canada and England.

Railway Entrance to Ottawa

The question of a general entrance into Ottawa for all railways was dealt with Aug. 18, at a conference between a special committee of the city council, N. Cauchon representing D. McNicoll, Vice President C.P.R., who was unable to attend owing to indisposition; and Sir Donald Mann, Vice President, and W. H. Moore, Secretary, Canadian Northern Ry. The plan proposed over a year ago for bringing in the railways by a tunnel along a portion of the Rideau Canal, the closing of which would be necessary, was discussed at length, and it is said that while the city approved of the proposed tunnel approach, the abandonment of a portion of the Rideau Canal is not looked upon with any degree of favor. The canal might be narrowed, and a portion of the driveway reserve might be utilized for the tunnel, giving room for six tracks. The tunnel would extend from opposite the Central Station across the city to the Union Station.

The G.T.R. is not favorable to the proposition, and will probably oppose it when application is made to the Dominion Government for the approval of the plans.

Transportation Conventions in 1911.

Sept. 12-14.—Society of Railway Financial Officers, St. Paul, Minn.

Sept. 12-15.—Master Car and Locomotive Painters' Association of United States and Canada, Atlantic City, N.J.

Sept. 12-15.—Roadmasters' and Maintenance of Way Association of America, St. Louis, Mo.

Sept. 19.—American Association of General Passenger and Ticket Agents, St. Paul, Minn.

Oct. 9-13.—American Electric Railway Association, Atlantic City, N.J.

Oct. 10.—Railway Signal Association, Colorado Spring, Col.

Oct. 17-19.—American Railway Bridge and Building Association, St. Louis, Mo.

Oct. 19-21.—American Association of Dining Car Superintendents, Cincinnati, O.

Nov. 6-10.—Association of Railway Electrical Engineers, Chicago, Ill.

Nov. 15.—American Railway Association, Chicago, Ill.

Nov. 17-18.—American Association of Freight Traffic Officers, Cincinnati, O.

Dec. 12-13.—Association of Transportation and Car Accounting Officers, Louisville, Ky.

Dec. 29-30.—American Association of Passenger Agents, Jacksonville, Fla.

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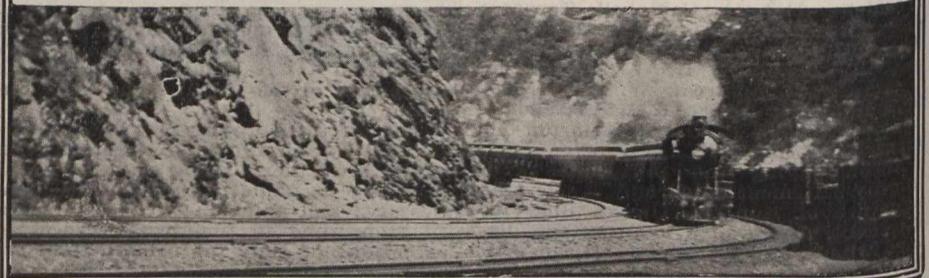
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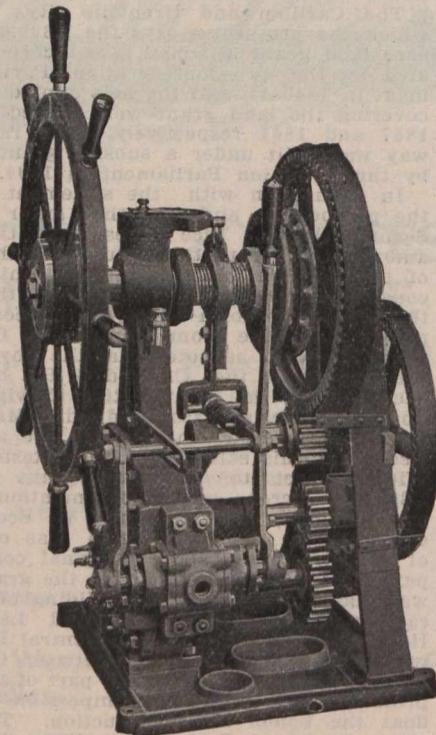
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TORONTO, CANADA, SEPTEMBER, 1911.

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Kennedy, Wm., & Sons, Ltd.	880
Kingsmill, Saunders, Torrance & Kingsmill.	851
L	
Legg Bros	868
Lewis, Rice, & Son, Ltd.	868
London Guarantee & Accident Co., Ltd.	892
London Machine Tool Co., Ltd.	854
Long & Allstatter Co.	872
Lovell, Alfred	Cover 1
Lumen Bearing Co.	888
M	
McAvity, T., & Sons, Ltd.	840
McConway & Torley Co.	884
McCord & Co.	832
MacLeod, Walter, & Co.	856
*Meaford Wheelbarrow Co., Ltd.	852
Metcalf, John S., Co., Ltd.	894
Midland Towing & Wrecking Co., Ltd.	896
Miller Chemical Engine Co.	878
Montreal Locomotive Works, Ltd.	816
Mudge, Burton W., & Co.	884
Mussens Limited	Cover 1 and 810
N	
Nathan Manufacturing Co.	880
Nicholson File Co.	848
*Northern Electric & Mfg. Co., Ltd.	820
Northern Engineering Works	892
Norton, A. O., Inc.	834
Nova Scotia Steel & Coal Co., Ltd.	846
O	
Ohio Brass Co.	882
Ontario Wind Engine & Pump Co., Ltd.	890
Orford Copper Co.	898
Ottawa Car Co., Ltd.	Cover 1
P	
Parry Sound Lumber Co., Ltd.	892
Pay-As-You-Enter Car Corporation	872
Phillips, Eugene F., Electrical Works, Ltd.	890
Piper, The Hiram L., Co., Ltd.	898
Piper, N. L., Railway Supply Co., Ltd.	884
Polson Iron Works, Ltd.	834
Positive Lock Washer Co.	898
Pratt & Letchworth Co., Ltd.	896
Pratt & Whitney Co. of Canada, Ltd., Cover 1	
Preston Car and Coach Co., Ltd., Cover 1	
Provincial Steel Co., Ltd.	886
Provincial Steel Co., Ltd.	856
Pyke, J. W., & Co., Ltd.	836
Pyle National Electric Headlight Co.	836
R	
Rail Joint Co. of Canada, Ltd., Cover 1 and 828	
Railway Materials Co.	898
Reid, John, & Co.	851
Robb Engineering Co., Ltd.	848

Royal Typewriter Co.	868
Royce, Geo. C.	850 and 858
Russel Wheel and Foundry Co.	802
S	
Safety Car Heating and Lighting Co.	828
Saxby & Farmer, Ltd.	Cover 1
Seeger Refrigerator Co.	882
Shanly, J. M.	851
*Smart, James, Manufacturing Co., Ltd.	874
Smith, Peter, Heater Co.	822
Southern Press	898
Standard Coupler Co.	894
Steel Co. of Canada, Ltd.	824
Symington, T. H., & Co.	870
T	
Tallman Brass and Metal Co., Ltd.	Cover 1
Tate Accumulator Co. of Canada, Ltd.	866
Tate, Jones & Co., Inc.	898
Taylor & Arnold, Ltd.	884
Taylor, J. & J.	862
Titanium Alloy Manufacturing Co.	850
U	
Union Switch and Signal Co.	Cover 1
United States Light and Heating Co.	866
V	
Vulcan Iron Works	882
W	
Western Wheeled Scraper Co.	Cover 1
White Star-Dominion Line	884
Whyte Railway Signal Co., Ltd.	824
Williams & Wilson, Ltd.	838
Wire and Cable Co.	Cover 1
Wood, R. D., & Co.	890
Wood, Guilford S.	854

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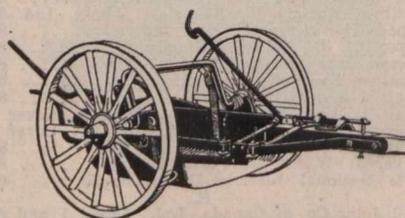
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Alberta Central Ry.—The Board of Railway Commissioners has extended the time for the completion of the line to Rocky Mountain House, Alta.

Grading outfits began reaching Red Deer, July 25, and were rushed out along the route, all available men being sent out. The contractors, D. F. McCArthur and Co., have orders to push work as fast as possible, and it is hoped that the first 100 miles of the line will be completed this year. The company's forces had practically completed the grading on the first 40 miles out of Red Deer before this contract was let. Perhaps the most difficult piece of work on the contract is the draining of Burnt Lake, a shallow lake on the right of way. (Aug., pg. 757.)

Alberta Pacific Ry.—A local correspondent, referring to the projected railway building in the vicinity of Pincher Creek, Alta., by this company (formerly the Pincher Creek, Cardston and Montana Ry.), says:—"The time has gone past when the Alberta Pacific people could have demonstrated to the neighborhoods through which its proposed route would run that their intentions were genuine from the go-in. They have had about a two years' innings at the job, and are not much further ahead than when they started. Upwards of \$15,000 has been expended by them on preliminary work."

Lethbridge papers, Aug. 16, state that W. Skouson, a Montana contractor, has brought in a large grading outfit and is preparing to start work at once at Pincher Creek, grading towards the International boundary. Additional men are being hired locally to reinforce the gang which brought in the plant.

Algoma Central and Hudson Bay Ry.—A contract has been let to the Superior Construction Co., of which T. J. Kennedy is President, to build an extension of the line from Hobon, on the C.P.R. transcontinental line, to a junction with the National Transcontinental Ry., 142 miles west of Cochrane, Ont., a distance of about 101 miles. The estimated cost of the work is placed at between \$3,000,000 and \$4,000,000. This extension will run well into the clay belt of Northern Ontario, and will carry the company's line to within about 150 miles from Hudson Bay. The Superior Construction Co., which is at present building the Crean Hill-Whitefish Bay extension of the Algoma Eastern Ry., proposes to sublet the contract in sections. Its headquarters are at Espanola, Ont.

Tenders are being asked for the building of a new station at Sault Ste. Marie, Ont., estimated to cost \$65,000.

We are advised that the estimated cost of the grading, tracklaying and ballasting on the line from Hobon to the National Transcontinental Ry., for which the Superior Construction Co., Sault Ste. Marie, Ont., has the contract, is \$1,670,000, and that the cost of the extension complete for operation will approximate \$3,000,000.

The Board of Railway Commissioners has approved of location plans of the Josephine branch at mileage 17.08 from Michipicoten, to the Magpie mine, 9.16 miles. This branch has already been built. (Aug., pg. 733.)

Atlantic and Lake Superior Ry.—Some confusion has arisen in regard to the name of this and allied companies. The old Atlantic and Lake Superior Railway from Matapedia to New Carlisle, 98 miles, is now known as the Quebec Oriental Railway. It connects at the latter point with the Atlantic, Quebec and Western Railway, which is already open to Grand River, 54

miles and is also under construction beyond that point to Gaspé. C. R. Scoles is General Manager of both lines, but they are entirely separate in their organization though a joint through train service is run between Matapedia and Grand River.

Mr. Scoles is also contractor for the completion of the Atlantic, Quebec and Western Railway to Gaspé, which we are officially advised will be an accomplished fact by the end of this year. (See Atlantic, Quebec and Western Ry., Aug., pg. 733.)

Brandon Transfer Ry.—Track has been laid on the line connecting the C.P.R., the C.N.R. tracks and those of the Brandon, Saskatchewan and Hudson Bay Ry. in Brandon, Man., and ballasting is being done. The earthwork is fairly heavy, there being a number of cuts and fills along the route. Victoria Ave. and Princess Ave. are crossed on the level. It was expected to have the line in operation by Aug. 20. (Aug., pg. 733.)

British Columbia Ry. and Development Co.—An action has been entered in New York by the assignee of M. Van Gender to recover \$80,000 from the British Columbia Ry. and Development Co., and the promoters of the company, Jean Wolkenstein and R. Conklin, the writ alleging a conspiracy to defraud.

The B.C.R. and D. Co., in its advertising literature stated that it had acquired the British Columbia and Alaska Ry. Co.'s charter. A number of the directors of the B.C.R. and D. Co. are also provisional directors of the B.C. and Dawson Ry. (See B.C. and Dawson Ry., July, pg. 645, and B.C. and Alaska Ry., April, pg. 319.)

Burrard Inlet-Tunnel and Bridge Co.—See Vancouver, Westminster and Yukon Ry.

Caribou, Barkerville and Willow River Ry.—A survey party is reported to be running preliminary lines for this projected railway. The route as laid down is from Barkerville, almost directly north to the mouth of the Willow river, about 35 miles east of Fort George, where it connects with the main line of the G.T.P.R. It taps the Hepburn coal properties on Bear River, besides giving access to the rich placer fields north of Barkerville. W. H. Dunphy, one of the provisional directors, is quoted as having stated that construction will be started next spring. (Aug., pg. 733.)

Chicago, Milwaukee and St. Paul Ry. Chicago, Milwaukee and Puget Sound Ry.—Press reports state that plans are under construction for the building of a line from Fargo, N.D., to Winnipeg, Man., and that A. J. Earling, the President of the C.M. and St. P. Ry., on his recent visit to Canada, was looking into the matter. The C.M. and St. P. Ry. is associated with certain charters for railway construction in Alberta and British Columbia, and is said to have secured options on considerable property in the vicinity of Lipton St., just south of Portage Ave., Winnipeg, for terminal purposes. The Lipton St. property will, it is said, be utilized for freight terminals and running rights will be sought into the Fort Garry union station for passenger traffic.

The C.M. and P.S. Ry., the company building the extension of the C.M. and St. P. Ry., to the Pacific coast, is reported to have completed preliminary surveys for a line from Moncton, Wash., to Vancouver, B.C. A. W. Nase, the company's commercial agent in British Columbia, is quoted as having stated that when the main line is completed into Everett, Wash., a branch will be built from Seattle into Vancouver as quickly as possible. (July, pg. 645.)

The Crow's Nest and Northern Ry. Co. was incorporated by the British Columbia Legislature in 1908 to build a rail-

way from the C.P.R. Crowsnest Pass branch to the summit near Michie Creek, and at the last session of the Legislature the company was granted an extension of time for construction. A meeting of shareholders was held at Crowsnest, B.C., August 8, to elect directors, and also, press reports state, to make arrangements for building the line. (April, pg. 319.)

Dominion Atlantic Ry.—The Board of Railway Commissioners has authorized the rebuilding of the bridges at Big Joggins, and Allans Creek, and those over the Shubenacadie and Bear rivers, N.S.

P. Giffkins, General Manager, in an interview at St. John, N.B., Aug. 15, is reported as saying that heavier rails are being laid on the line, that the rolling stock is being increased, and that the possibility of a big car ferry across the bay to handle freight traffic is being seriously considered. The great difference between high and low water is one of the difficulties in the way of establishing such a service, but it is quite probable some plan for overcoming it will be evolved. (May, pg. 409.)

Essex Terminal Ry.—The Board of Railway Commissioners has authorized a deviation of the line in Windsor, Ont., crossing Tecumseh road, Peltier St., Crawford and Wellington avenues. (July, pg. 645.)

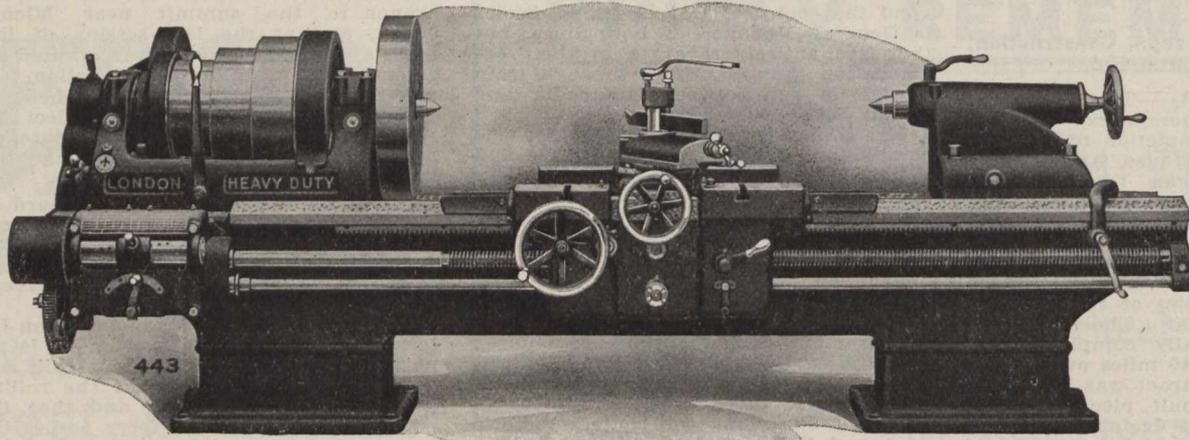
Grouse Mountain Scenic Incline Ry.—The preliminary work on the first section of this projected railway at Vancouver, B.C., was reported to have been completed Aug. 11. Engineers are now laying out the second section of the work, which includes the precipitous portion of the ascent of the mountain, and is said to embrace a number of interesting engineering features. (July, pg. 645.)

High River and Hudson Bay Ry.—High River, Saskatchewan and Hudson Bay Ry.—The first title is that given by the Alberta Legislature, and the second is that given by the Dominion Parliament to the same interests for building a railway from the International boundary in Alberta to Hudson Bay, the provincial charter covering only the Alberta section of the line. The estimated length of this section is 250 miles, while the extension through Saskatchewan covered by the Dominion charter is estimated at 425 miles, making 675 miles of main line. It is estimated that there will also be about 200 miles of branches. The main line, it is proposed, will start at the western boundary of Alberta, connecting there with United States lines, and will run as straight as possible to Pas Mission, Sask., where connection will be made with the projected Dominion Government line to Hudson Bay. We are advised that a consulting engineer has been appointed, and that it is proposed to have location surveys completed within as short a time as possible. The surveys will probably not be started until the fall. If the company's plans are realized it is hoped to begin construction within a couple of years and to have the line completed by the time the Government line is completed. By this projected route Portland, Ore., and Tacoma, Wash., would be brought within 1,750 miles of Port Nelson, on Hudson Bay.

Following is the executive of the company: Chairman, C. C. Short; Treasurer, H. N. Sheppard; Secretary, F. Crandell; other members, Dr. T. E. Le Claire and W. P. Walker. With the exception of Messrs. Crandell and Walker, who live at Calgary, the members are at High River, Alta. (June, pg. 505.)

Intercolonial Ry.—Tenders are under consideration for the supply of ties and switch ties.

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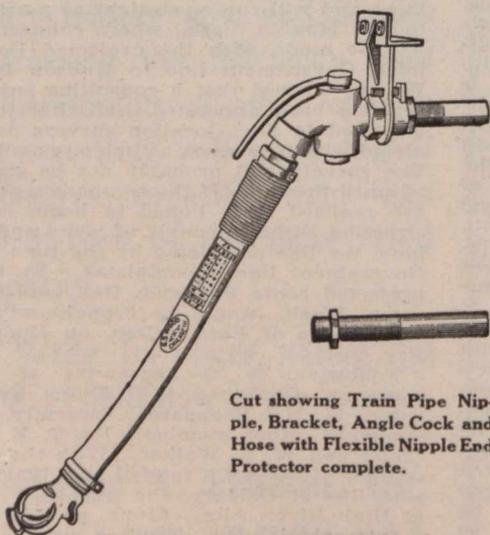
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the Managing Board, it was announced that it had been decided to recommend the carrying out of considerable improvements. These will include the building of a second track at leading points, and particularly the stretch between Chaudiere Jct. and Levis, Que., and the building of subways at various points, particularly in St. Flavie, Que., and in Moncton, N.B. The details of the recommendations will probably be announced in the near future.

The new wing which is being built to the general offices at Moncton, N.B., will be three stories high, with a basement, its outside dimensions being 139 by 57 ft. The building will conform in style to the main block, and is to be of concrete to grade; rockfaced ashlar masonry to the first floor, and the remainder of pressed brick with cut stone sills, lintels, etc. In the basement there will be fire-proof rooms for storing documents, plans, etc. The ground floor will be given over to the car mileage department, the second is the engineering department, and the accounting and auditing department, which now occupies the third floor of the present building, will be given the third floor in the new one. The rooms to be vacated on the first and second floors of the present building will be given to the management and to the traffic department, respectively. The addition is expected to be completed by Mar. 31, 1912.

A contract is reported to have been given to H. Ryan and Son for the erection of a new station at Fredericton, N.B., to cost about \$20,000. Tenders are under consideration for the building of a stone passenger station at Truro, N.S. Tenders will be received by the Department of Railways for the building of the following lines of railway:—From Guysboro to Country Harbor Crossroads, and from the latter point to Deepwater, Country Harbor, and from Dartmouth to Deans, all in Nova Scotia. (Aug., pg. 733.)

Michigan Central Rd.—It is expected that a contract will be let early in Nov. for the erection of the proposed new station in Detroit, Mich. The building, which will be 14 stories high, will have its main entrance at the northeast corner of the intersection of Dalzell and Sixteenth streets, and will be laid out on the lines of the New York Central and Hudson River Rd. station in New York city. The details of the plans have not been fully worked out. The building will cost about \$3,000,000, and will be completed in about three years. (Aug., pg. 753.)

Midland Continental Ry.—The company behind this ambitious proposal for the building of a railway from Winnipeg to the Gulf of Mexico, as one section of a great north and south railway, is reported to have organized the Midland Construction Co. The officers of this latter organization include F. K. Bull, Racine, Wis., as President, with C. V. Weston, President of the South Side Elevated Rd., Chicago, and H. S. Duncombe, Vice President, Colorado Midland Ry., as engineers. Reports further state that the company has secured control of the route of an old line extending from Norfolk, Neb., northward to the Missouri River, and on to Yankton, S.D., about 100 miles. The grading for the line between Edgemont and Jamestown, N.D. These are the main features of recent reports, and are given as such, merely because of the proposal to connect up with Winnipeg, Man. (Dec., 1910, pg. 1015.)

New Brunswick Coal and Ry. Co.—After having been closed for some time pending the erection of a concrete bridge at Washademoak, N.B., the old Central Ry. of N.B. section of this line was reopened for traffic, August 1. The new bridge was built under the superin-

tendence of T. Sefton, formerly bridge inspector, Intercolonial Ry. (Aug., pg. 733.)

Prince Edward Island Ry.—Good progress is reported on the Elmira branch, and it is expected to have it completed by Sept. 30.

Press reports state that construction will be started on what is known as the New London and North Shore line as soon as the engineers can prepare the specifications. (June, pg. 507.)

Quebec and Saguenay Ry.—Plans and profiles showing the line to be built from mileage 78.5 to 85, have been deposited in the Registry Office of the Saguenay District of Charlevoix County, and with the Department of Public Works at Quebec.

H. Doheny, one of the contractors, in a recent interview, stated that the entire line under contract, from St. Joachim to Murray Bay, was well covered with men, over 2,000 being at work. There were about 15 sub-contractors on the line and all of them were getting well ahead with their work. (Aug., pg. 733.)

Quebec Central Ry.—The Quebec Public Utilities Commission recently approved plans for an under-crossing at Theford Mines, to enable the Bennett & Martin Mining Co. to work its mining property. (Feb., pg. 113.)

Reid Newfoundland Ry.—The completing of the ballasting, lifting, ditching, building stations, wire and snow fences, cattle guards, etc., on the Bonavista branch is now in progress, the work being in charge of H. Burton.

Track has been laid on the Trepassey branch for 16 miles, and the work is still going on, A. Graham being in charge of construction, with headquarters at Cape Broyle, 40 miles from St. John's. (Aug., pg. 733.)

St. John Valley Ry.—The Provincial Secretary for New Brunswick recently stated that an agreement had been reached between the Provincial and Dominion Governments as to the building of this line along the St. John River valley, and that it was hoped to have the preliminary work of construction in hand by the end of the current season. In connection with this line, Hon. J. K. Fleming, added, it is planned to build a line from Quebec across the State of Maine, which would connect with the St. J.V.R. near Centreville, N.B. A charter for the building of this line as the Aroostook Valley Ry. is held by A. R. Gould. This company, however, proposes to operate its line by electricity. (See St. John and Quebec Ry., July, pg. 649.)

Salisbury and Albert Ry.—Press reports state that the Dominion Government has notified the company that legislative authority will be sought as soon as the new parliament meets with a view of taking over the line on the payment of \$120,000, or of leasing it on a basis proposed by officers of the company at a recent conference with the Minister of Railways. The offer of the Government is conditional upon the company agreeing at once to make sufficient repairs to enable the line to be operated for its entire length.

Sydney and Louisburg Ry.—The branch now under construction to the new Birch Grove Colliery will be 2.5 miles long. It leaves the main line at Morien Jct., about midway between Sydney and Louisburg, N.S. There are no bridges and nothing in the way of important engineering features. The curvature is light and the gradient against the loaded traffic in no case exceeds 25 ft. per mile. The line is intended purely for coal traffic, and is being built by day labor under the charge of the company's own officers. C. M. Odell is Resident Engineer. (Aug., pg. 733.)

Temiskaming and Northern Ontario Ry.—J. L. Englehart, Chairman of the

T. and N.O.R. Commission, stated in an interview Aug. 16, that it was very likely an early arrangement would be made by which the G.T.R. or G.T.P.R. will secure running rights over the T. and N.O.R. from Cochrane to North Bay on a wheelage basis. While negotiations were in progress, no definite conclusions had been reached on any point.

A number of sidings to mining properties have been completed in the Porcupine district, and the freight congestion as a result of the recent fire has been relieved. Several surveys have been made with a view of building a line of about 50 miles into the Gowganda district. (Aug., pg. 735.)

Toronto, Hamilton and Buffalo Ry.—Application is being made to the Brantford city council for the right to lay eight tracks on Newport St., and to make some extensions to the freight shed. (July, pg. 649.)

Vancouver to Peace River.—An organization known as the Peace River Pacific League has been started in Vancouver and district to promote the building of a railway from that city to the Peace River district. At a meeting at New Westminster it was pointed out that the Grand Trunk Pacific Ry., the Vancouver, Westminster and Yukon Ry., and the Howe Sound and Northern Ry. at present hold charters for the building of such a line as is proposed, and that provincial aid could be given only to one company. The League is holding meetings at different points to stimulate public interest prior to making application for aid to the Provincial Government. (Aug., pg. 735.)

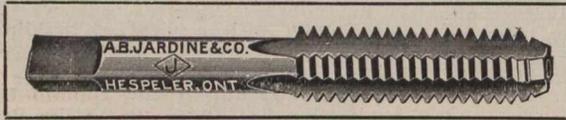
Vancouver, Westminster and Yukon Ry.—The agreement between the several municipalities interested, the Burrard Inlet, Tunnel and Bridge Co., and the V. W. and Y. Ry., with respect to the building of a bridge across the second narrows of Burrard Inlet, Vancouver, B.C., has been signed. The municipalities are providing a large proportion of the funds necessary for the building of the bridge, and are represented on the directorate of the B.I.T. and B. Co., while the V.W. and Y. Ry. has been voted a subsidy for the building of a bridge at this point. Under the agreement all these interests are joined, and while the bridge will be built by the B.I.T. and B. Co., the approaches and connecting railways will be built by the V.W. and Y. Ry.

We are advised by the B.I.T. and B. Co. management that the preliminary work of location has been done, and that test holes are being sunk for foundations. It is expected to have the work of putting in the substructure under way this year. D. Cameron is Chief Engineer. At a recent meeting of the municipal delegates with the B.I.T. and B. Co. J. A. L. Waddell, Consulting Engineer, produced estimates as to the cost of the proposed bridge. The cost of a lift span bridge about 1,800 ft. in length, not including wooden approaches and fill, with a lift clearance of 150 ft. and a horizontal clearance of 220 ft., would be in the neighborhood of \$1,341,000. He placed the additional cost of having a lift clearance of 190 ft. at about \$16,000, and for making provision to carry water pipe across \$50,000. He thought this structure could be finished in about two years.

J. Hendry, Vancouver, is President, and W. McNeill, a director of the V.W. and Y. Ry., the latter representing the company in the negotiations. (Aug., pg. 735.)

Victoria Harbor Ry.—Notice is given under the provisions of the British Columbia Ry. Act, 1911, that the V.H.R., having submitted a map showing the general location of a proposed line of railway at Victoria Harbor, and having made application for approval of the same, the Minister of Railways for the

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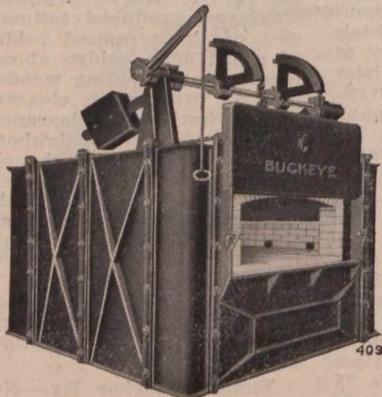
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province has issued a certificate of approval of the general route, with the exceptions noted on the map submitted with the application.

The Victoria city council has given a first reading to a bylaw granting the company a franchise for a railway around the harbor, with branches to connect with the various railways and industrial spurs. Among those interested in the company are: A. H. Mitchell, H. A. Ross, J. O. Cameron, A. E. Todd, R. Hall. The bylaw will again come up for discussion before the council as soon as detail plans are submitted to the council. (Aug., pg. 735.)

Wolfe, Megantic and Lotbiniere Ry.—Representatives of Paris, France, financial houses made a trip of inspection over the route of this projected railway, recently, and looked into the mineral resources of the tributary territory. They were accompanied by Messrs. Tobin, McCrae and Begin, who hold the charter for the building of the line. The same interests are also associated with the Lotbiniere and Megantic Ry., and also in a charter under which these two lines may be amalgamated as the Quebec Eastern Ry., and extended. (See Quebec Eastern Ry., Oct., 1909, pg. 745.)

Large Additional Railway Construction Contracts Awarded.

The current year will long be remembered in railway construction circles as having witnessed the letting of some of the largest single contracts and the largest total mileage of railways put under contract in any one year in Canadian history. In our July issue we gave particulars of contracts for new lines given out this season, showing that upwards of 1,400 miles had then been put under contract. Since that time the following important contracts have been let:—

ALBERTA CENTRAL RY.—Between Red Deer and mileage 100, west (about 40 miles grading partially completed), 100 miles, D. F. Macarthur, Winnipeg.

ALGOMA CENTRAL AND HUDSON BAY RY.—From Hobon, Ont., to junction with the National Transcontinental Ry., about 115 miles, Superior Construction Co., Sault Ste. Marie, Ont.

CANADIAN NORTHERN ONTARIO RY.—From near Sellwood Jct. to Port Arthur, 550 miles, Foley Bros. and Northern Construction Co., Nipigon, Ont.

CANADIAN NORTHERN PACIFIC RY.—Hope to Kamloops, B.C., 163 miles, Northern Construction Co. and Foley, Welch and Stewart.

Kamloops to Yellowhead Pass, about 270 miles, reported to be let to Northern Construction Co.

GRAND TRUNK PACIFIC RY.—From Tete Jaune Cache to Aldermere, B.C., 410 mile, reported let to Foley, Welch and Stewart.

HUDSON BAY (DOMINION GOVERNMENT) RY.—From Pas Mission to Thicket Portage, about 185 miles, the J. D. McArthur Co., Winnipeg.

JAMES BAY AND EASTERN RY.—Roberval, Que., westerly for 30 miles, J. P. Mullarkey, Montreal.

The contracts above enumerated cover over 1,518 miles of railway, thus making altogether about 3,000 miles of line put under contract this year. At the present time there are under consideration tenders for the Ottawa-Sudbury section of the Canadian Northern Ry., and for two lines of considerable length in Nova Scotia for the Dominion Government.

The Victoria and Sidney Ry. and the Victoria Terminal Ry. and Ferry Co. have appointed H. A. Jackson, St. Paul, Minn., Assistant Traffic Manager, Great Northern Ry., to prepare and issue tariffs of tolls under the British Columbia Railway Act, 1911. The bylaws making the appointment have been approved by Provincial Minister of Railways.

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.

The Intercolonial Railway has received an American railway ditcher from the American Hoist and Derrick Co., St. Paul, Minn.

The Tallman Brass and Metal Co., Hamilton, Ont., announce that owing to the increase in business it is erecting an addition to its foundry, and also building a large addition to its finishing department.

The Ohio Brass Co., Mansfield, Ohio, has issued catalogue supplement no. 2, containing important additions and improvements to the various materials listed in its railway, mine, catenary and high tension insulator catalogues.

The Robb Engineering Co., Amherst, N.S., has received an order from the Sturgeon Lake Development Co., Toronto, for two Robb-Mumford boilers 54 in. by 18 ft., and one stack 48 ins. in diameter and 80 ft. high, with smoke connection.

The Canadian Locomotive Co. has been granted a license to do business in Ontario under the Act respecting extra-provincial companies. The capital to be employed is not to exceed \$3,500,000 and J. S. Lovell, Toronto, is appointed attorney.

The Titanium Alloy Manufacturing Co., Pittsburgh, Pa., has issued "Titanium, the best rail ever rolled," a handsomely illustrated booklet containing facts, figures and illustrations, to show that titanium has solved the rail problem. It states that three years ago the Titanium rail was merely being tried on two or three roads, while now it is in service on more than 50 steam railways and on many important electric lines.

The Vulcan Iron Works, Wilkes-Barre, Pa., has published a new catalogue of locomotives which is ready for distribution. It is rarely that one comes across such a well arranged catalogue, for, not only does it advertise the company's product, but it also contains about 40 pages of valuable railway data that should prove useful to all connected with the motive power department. A large variety of locomotives are illustrated and described, those shown being principally contractors' and industrial types.

Jas. J. Riley, Jr., has been appointed Second Vice President and General Manager of Curtis's & Harvey (Canada) Limited, manufacturers of explosives, with office at Montreal, and as the explosive business now takes up so much of his time he has resigned the Vice Presidency of the Canadian Railway and Contractors Supply Co. His brother, Geo. C. Riley, has also resigned as Secretary of the Supply Company to devote his entire time to the sales department of the explosive business. Robert Wall, who has taken over the Messrs. Riley's interests will continue the business of the Canadian Railway and Contractors Supply Co.

The Canadian Fairbanks-Morse Co., Ltd., which has been incorporated with a capital stock of \$2,600,000, and head office at Montreal, has acquired the businesses of the Canadian Fairbanks Co., Ltd., Montreal, the Fairbanks-Morse Canadian Manufacturing Co., Ltd., Toronto, and the subsidiary companies,

the Dominion Safe and Vault Co., Ltd., of Farnham, Que., and the E. and T. Fairbanks Co., Ltd., of Sherbrooke, Que. The officers are, President, H. J. Fuller, heretofore President of the Canadian Fairbanks Co.; Vice President, F. C. Brooks, heretofore President of the Fairbanks-Morse Canadian Manufacturing Co.; Vice President and Secretary, T. McMillan; Treasurer, E. R. Whitehead.

Canadian Ticket Agents' Association.

The 25th annual meeting will be held at Sault Ste. Marie, Ont., on October 4, 5, and 6, on the invitation of the Town Corporation and the Board of Trade. Features of the business meeting will be addresses from representatives of the American Association of General Passenger and Ticket Agents and of the American Association of Passenger Agents. The entertainment features will comprise a visit to the Lake Superior Corporation's steel plant and other works, a trip on the St. Marys River and a trip on the Algoma Central and Hudson Bay Ry. to the end of the track, where there will be a camp or bush dinner, the Association being the guests of the railway company. There will also be an evening reception at the boat club, a theatre party, a smoker, etc.

Railway Lands Patented.—The following railway lands, situated in Manitoba, Saskatchewan, Alberta and British Columbia, were patented during June:—

	Acres.
Calgary and Edmonton Ry.	2,723.00
Canadian Northern Ry.	320.00
Canadian Pacific Ry. grants	189.34
Canadian Pacific Ry., Souris branch..	42.00
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	3,262.23
Total	6,586.57



DEPARTMENT OF RAILWAYS AND CANALS.

BRANCH LINE OF RAILWAY FROM DARTMOUTH TO DEANS.

SEALED TENDERS addressed to the undersigned and endorsed "Tenders for Branch Line, Dartmouth to Deans," will be received at this office until sixteen o'clock on Friday, September 15th, 1911.

Plans, profiles, specification and form of contract to be entered into can be seen on and after the 15th instant at the office of the Engineer of the Department of Railways and Canals, Ottawa; at the office of the Chief Engineer of the Intercolonial Railway, Montreal; and at the office of the Board of Trade, Halifax. Forms of tender may be procured from the Chief Engineer of the Department of Railways and Canals or from the Chief Engineer of the Intercolonial Railway.

Parties tendering will be required to accept the fair wages schedule prepared or to be prepared by the Department of Labor, which schedule will form part of the contract.

Contractors are requested to bear in mind that tenders will not be considered unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque for the sum of \$150,000.00 made payable to the order of the Minister of Railways and Canals must accompany each tender, which sum will be forfeited if the party tendering declines entering into contract for the work, at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,

L. K. JONES, Secretary.

Department of Railways and Canals, Ottawa, August 12th 1911.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.



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Orders by the Board of 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.

14214. July 15.—Authorizing G.T.R. to rebuild the lost channel bridge at mileage 49.20, Ottawa Division.
 14215. June 29.—Ordering C.P.R. to build station at Cap St. Martin, Que., and stop one passenger train in each direction daily, except Sunday, on flag.
 14216. July 17.—Authorizing W. M. Sedgwick, Nova Scotia Steel and Coal Co., to prepare and issue tariffs of tolls.
 14217. July 13.—Authorizing Dominion Atlantic Ry. to rebuild its Big Joggins bridge, Digby county, N.S.
 14218. July 17.—Authorizing Essex Terminal Ry. to cross Tecumseh Road, Peltier St., and Crawford and Wellington Aves., Windsor, Ont., for deviation of its line.
 14219. July 18.—Authorizing C.N.R. to open for traffic its line from Shellbrook to Big River, Sask., 57 miles; speed limited to 18 miles an hour.
 14220. July 17.—Authorizing C.N.R. to build across public road between secs. 29 and 20, tp. 8, r. 1, w. 2 m., Sask.
 14221. July 15.—Authorizing C.N.R. to open for freight traffic its Goose Lake line from Kindersley to Alsask, Sask., 44 miles; fencing and crossing signs to be completed within 60 days under penalty of \$25 a day.
 14222. July 17.—Authorizing C.N.R. to cross with its Hallboro branch public road between secs. 31 and 32, tp. 13, r. 18, w.p.m., Man.
 14223. July 17.—Amending order 14091, June 26, re crossings on C.N.R. Hallboro branch, Man.
 14224. July 17.—Extending to Sept. 15, time for completion of C.N.R. across Notre Dame St., Montreal, and joining of Montreal St. Ry. and Montreal Harbor Commissioners' tracks.
 14225. July 17.—Authorizing C.P.R. to slightly change its line at bridge 39.49, North Bay subdivision.
 14226. July 15.—Authorizing C.P.R. to open for traffic that portion of its Montreal-Quebec Jct. second track of the gauntlet track across Bordeaux bridge.
 14227. July 15.—Authorizing C.P.R. to cross with its Waldo branch six highways in Kootenay district, B.C.
 14228, 14229, July 12, 13.—Approving location of eight G.T.P.R. stations in western provinces, and six on Lake Superior branch, Rainy River district, Ont.
 14230. July 15.—Authorizing G.T.P. Branch Lines Co. to open for traffic its Prince Albert branch from Young to mileage 45.5; speed not to exceed 15 miles an hour, cattle guards and crossing signs to be placed within 30 days under penalty of \$25 a day.
 14231. July 13.—Authorizing G.T.P. Branch Lines Co. to cross 27 highways on its Regina-Boundary branch, Sask.
 14232. July 11.—Dismissing C.N.Q.R. application to take lands of B. J. Coghlin in Montreal.
 14233. July 17.—Authorizing C.N.R. to cross public road between secs. 33 and 32, tp. 13, r. 18, w.p.m., Man.
 14234. July 12.—Authorizing C.N.O.R. to cross public road between Loughborough and Portland tps.
 14235. July 17.—Authorizing C.P.R. to build spur for R. J. Lough on Quebec sub-division, at mileage 15.15 easterly from Quebec Jct.
 14236. July 17.—Authorizing C.P.R. to build an additional track northeast of main line along International boundary, North Portal, Sask.
 14237. July 11.—Ordering that C.P.R. Park Ave. crossing, Montreal, be protected by day and night watchmen until completion of subway, city to pay wages of watchmen, who will be appointed by C.P.R.
 14238. July 11.—Ordering C.P.R. to build subway at Bethune Ave., Westmount, Que. \$5,000 to be paid from railway grade crossing fund and remainder by C.P.R. and city equally; work to be completed in six months.
 14239. July 17.—Authorizing G.T.R. to build siding into Canadian Quarries and Construction Co.'s premises, con. 1, Nepean tp., Ont.
 14240. July 17.—Authorizing G.T.P. Branch Lines Co. to open for traffic its Tofield-Calgary branch from Tofield to Red Deer River crossing, Alta., and rescinding order 14068, June 28.

14241. July 17.—Authorizing G.T.P. Branch Lines Co. to carry traffic on its Yorkton branch from Melville, to Canora, Sask., 29.5 miles; speed limited to 16 miles an hour, and rescinding order 14053, June 21.
 14242. July 17.—Authorizing G.T.P.R. to divert road in s.w. ¼ sec. 16, tp. 22, r. 5, w. 2 m., mileage 68.2, Sask.
 14243. July 17.—Authorizing G.T.P. Branch Lines Co. to cross and divert four highways on its Biggar-Calgary branch.
 14244. July 18.—Approving Boston and Maine Ry. bylaw authorizing F. S. Davis, Chief of Tariff Bureau, to prepare and issue tariffs of tolls.
 14245. July 18.—Approving Kettle Valley Ry. Standard Passenger Tariff C.R.C. 2, to apply in British Columbia.
 14246. July 18.—Extending to Oct. 1, time for completion of Alberta Central Ry. branch line at Rocky Mountain House, B.C.
 14247. July 20.—Authorizing C.P.R. to open for traffic its Irricana East branch, from mileage 0 to 36.7, between Irricana and Standard, Alta.
 14248. July 20.—Approving location of G.T.P. Branch Lines Co. Cutknife branch from Battleford to west line of sec. 29, tp. 43, r. 18, w. 3 m., mileage 0 to 14.66, Sask.
 14249. July 4.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to build its main line across John St., Bethany, Ont.
 14250. July 18.—Dismissing application of Dominion Millers Association for order suspending C.P.R. tariff, C.R.C. E. 2040, and G.T.R. tariff E. 2285, on grain, etc.
 14251. July 17.—Approving revised location of Algoma Eastern Ry., through lots 6, 7 and 8, con. 6, Merrit tp., Sudbury District, Ont., and authorizing diversion of trunk road.
 14252. July 18.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to build bridge 79.31 over Pigeon Creek, Ont.
 14253. July 18.—Authorizing C.P.R. to rebuild bridge at mileage 67.3, Cascade subdivision.
 14254. July 15.—Approving location of C.P.R. station at Bittern Lake, Alta.
 14255, 14256. July 18.—Authorizing G.T.R. to rebuild bridges 186 on Becanoeur River, mileage 135.73, District 3, near Lyster, Que., and 48 at milepost 82.78, District 19.
 14257. July 18.—Authorizing G.T.P. Branch Lines Co. to cross with its Prince Albert branch, 23 highways in Saskatchewan.
 14258. July 17.—Authorizing G.T.P. Branch Lines Co. to cross with its Calgary branch, highway in s.e. ¼ sec. 4, tp. 30, r. 20, w. 4 m., mileage 145.7, Alta.
 14259. July 15.—Approving location of nine G.T.P.R. standard no. 1 stations on Lake Superior branch, Thunder Bay District, Ont.
 14260. July 18.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch 20 highways in Saskatchewan.
 14261. July 15.—Approving location of G.T.P.R. station at Cabot, St. Francois Xavier parish, Man.
 14262, 14263. July 18.—Authorizing C.N.R. to cross public roads between secs. 23 and 22, tp. 7, r. 3, w. 2 m., and between sec. 31, tp. 13, r. 18, and sec. 36, tp. 13, r. 19, w.p.m., Hallboro branch, Man.
 14264. July 18.—Authorizing C.N.O.R. to cross Van Luven St., Yarker, by overhead structure.
 14265, 14266. July 18, 15.—Authorizing C. N. Alberta Ry. to cross north and south road allowances between secs. 26 and 27, tp. 53, r. 9, w. 5 m., also 10 highways.
 14267. July 21.—Authorizing Vancouver, Fraser Valley & Southern Ry. to open for traffic its line from Park Drive, Vancouver, to Eighth Ave., New Westminster, B.C.
 14268, 14269. July 21, 20.—Authorizing C.N.R. to open for traffic its line from Shellbrook to Blaine Lake, 35 miles, and from North Battleford to Edam, Sask., 38 miles.
 14270. July 19.—Authorizing South Ontario Pacific Ry. to make revision in its Guelph Jct. to Hamilton line to connect with T. H. & B.R.
 14271. July 20.—General order re General Train Rules. This order is given in full on another page.
 14272, 14273. July 18.—Authorizing Dominion Atlantic Ry. to rebuild its Bear River and Allen's Creek bridges in Digby and Annapolis Counties, N.S.
 14274. July 20.—Ordering G.T.R. to make ditches for Begnoche, St. Blaise, Que., by Aug. 15.
 14275. July 18.—Authorizing Toronto Eastern Ry. to cross public roads on lots 26 and 27, mileage 19.8, Darlington tp., Ont.
 14276. July 22.—Approving Algoma Central & Hudson Bay Ry. Josephine Branch at mileage 17.8, from Michipicoten to Magpie Mine, 9.16 miles, Algoma District, Ont.
 14277. July 22.—Authorizing C.N.R. to cross public road between secs. 7 and 12, tp. 5, r. 6 and 7, w. 2 m., Sask.
 14278. July 19.—Approving Montreal & Southern Counties Ry. location between Front St., St. Lambert, and eastern bound-

ary of Country Club, lot 295, St. Antoine de Longueuil parish, Que.
 14279. July 20.—Authorizing Saskatchewan Government to cross C.P.R. with road in n.e. ¼ sec. 20, tp. 29, r. 8, w. 2 m.
 14280. July 20.—Authorizing Alberta Government to cross C.P.R. on south side of sec. 19, tp. 29, r. 25, w. 4 m.
 14281. July 20.—Approving plans and specification for Carp drain under G.T.R. in Huntley tp., Ont.
 14282. July 21.—Authorizing city of Regina, Sask., to carry its street railway across C.N.R. at Dewdney St., half-interlocking plant to be installed.
 14283. July 20.—Extending to July 31, time for removal by C.P.R. of small hill at mileage 62.5, Morris tp., Ont.
 14284. July 20.—Authorizing C.P.R. to close crossing at station and divert highway along Munquart River near Bath.
 14285. July 18.—Authorizing C.P.R. to cross with its Smiths Falls to Bathurst double track, four highways in Lanark County, Ont.
 14286. July 18.—Authorizing C.P.R. to close portion of road allowance between secs. 32-33 tp. 18, r. 14, w. 4 m., Alta.
 14287. July 22.—Authorizing C.P.R. to build additional 300 ft. to spur into Victoria Park, Calgary, Alta.
 14288. July 22.—Authorizing C.P.R. to build two spurs to A. G. Peuchan's premises one-half sec. 3, tp. 8, r. 4, w. 5 m.
 14289 to 14298.—July 21-20.—Authorizing C. N. Alberta Ry. to cross public road between secs. 29 and 30, tp. 54, r. 2, w. 5 m. and to cross nine road allowances.
 14299. July 21.—Authorizing C.N.R. to cross with its Hallboro branch, 10 roads, in Manitoba.
 14300. July 21.—Approving C.N.Q.R. plans of gates to be installed at Ontario St., and Valois Ave., Montreal.
 14301. July 18.—Authorizing C.N.O.R. to cross seven highways in Marlborough and Goshorn tps.
 14302. July 19.—Authorizing Niagara, St. Catharines and Toronto Ry. to operate siding from Elm St. to connect with Canada Cement Co.'s siding, Port Colborne, Ont.
 14303. July 21.—Authorizing G.T.P.R. to cross temporarily with its Melville-Regina branch, C.N.R. Prince Albert Branch in s.e. ¼ sec. 36, tp. 17, r. 20, w. 2 m. Regina, Sask. Diamond to be installed and watchman and semaphore used.
 14304. July 20.—Authorizing G.T.P.R. to cross with its Prince Albert branch the the C.N.R. Prince Albert branch in n.w. ¼ sec. 13, tp. 48, r. 25, w. 2 m., interlocking plant to be installed.
 14305. July 20.—Authorizing G.T.P. Branch Lines Co. to cross with its Calgary branch, highway in s.w. ¼ sec. 14, tp. 24, r. 29, w. 4 m., Alta.
 14306, 14307. July 20-18.—Authorizing G.T.P. Branch Lines Co. to divert road and to cross and divert road on its Prince Albert branch between mileage 49.5 and 49.8 and at mileage 101.1, Sask.
 14308. July 18.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch, 18 highways in Saskatchewan.
 14309. July 20.—Authorizing G.T.P. Branch Lines Co. to build standard no. 1 station at Mehan, on its Yorkton extension, Sask.
 14310. July 18.—Authorizing G.T.P. Branch lines Co. to cross with its Regina-Boundary branch the C.P.R. Estevan branch at Frober, Sask., interlocking plant to be installed.
 14311. July 22.—Authorizing G.T.P.R. to cross highway between s.w. and n.w. ¼ sec. 16, and n.w. ¼ sec. 9, tp. 53, r. 25, w. 4 m., mileage 4.1, North Alberta District.
 14312. July 20.—Authorizing C. N. Alberta Ry. to build across north and south road allowance between secs. 27 and 28, tp. 53, r. 8, w. 5 m., Alberta.
 14313. July 20.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch, 22 highways in Saskatchewan.
 14314. July 15.—Authorizing G.T.R. to build new station and dwelling at Manilla Jct., Ont.
 14315. July 21.—Authorizing G.T.R. to build three spurs near International Marine Signal Co.'s premises, Ottawa, Ont.
 14316. July 20.—Extending to Nov. 1, time for Hull Electric Co. to equip electric cars with power brakes in accordance with provisions of genera order 10462.
 14317. July 20.—Authorizing G.T.R. to build passing track at Theford station, Ont.
 14317 to 14320. July 19-20-18.—Authorizing G.T.R. to build spurs to premises of Vine-land Canning Co., Lincoln county, Robinson Bros., Cork Co., Killyall St., Port Colborne, and Knechtel Furniture Co., Victoria St., Hanover, Ont.
 14321. July 21.—Authorizing G.T.P. Branch Lines Co. to cross with its Tofield-Calgary branch, the C.P.R. Calgary and Edmonton branch in Calgary, Alta., interlocking plant to be installed.
 14322. July 20.—Authorizing G.T.P.P. divert road in n.w. ¼ of sec. 21, tp. 36

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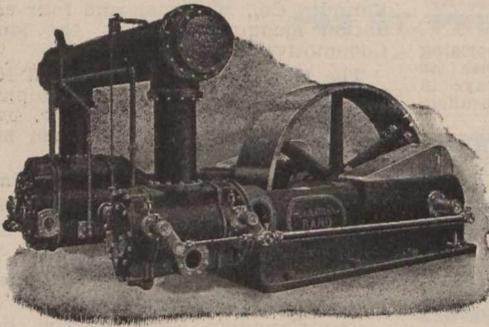
w. 3 m., at mileage 25.6, Sask.
 14323 to 14326. July 20-21-18.—Authorizing G.T.P. Branch Lines Co. to build over highway on its Moose Jaw northwest branch at mileage 47.4, to divert three highways on its Prince Albert branch at mileage 41.7, 44.9 and 43.6, divert one road in s.w. ¼ sec. 25, tp. 36, r. 9, w. 3 m., mileage 22.1, Sask., and to cross eight highways on its Calgary branch.
 14327. July 21.—Authorizing town of Blind River, Ont., to extend Frances St. across C.P.R.
 14328. July 18.—Authorizing town of Steelton, Ont., to build highway across Algoma Central and Hudson Bay Ry. at Conmee Ave.
 14329. July 18.—Authorizing C.N.O.R. to cross public road between cons. 2 and 3, Nepean tp.
 14330, 14331. July 20-19.—Authorizing C.N.R. to divert highway between secs. 35, tp. 23, r. 1, and sec. 2, tp. 24, r. 1, w. 5 m., to divert trail to road now travelled, and to build spur line to Edmonton Lumber Co.'s yards, Strathcona, Alta.
 14332. July 21.—Authorizing C.N.O.R. to cross public road in Montague tp.
 14333, 14334. July 21-20.—Authorizing C.N. Alberta Ry. to cross north and south road allowances between secs. 26 and 27, tp. 53, r. 8, and between s.w. ¼ sec. 10 and s.e. ¼ sec. 9, tp. 53, r. 22, w. 5 m., Alberta.
 14335, 14336. July 18.—Authorizing Algoma Eastern Ry. to build bridges over Whitefish and Spanish Rivers at mileage 66.23 and 42.80 Ont.
 14337. July 20.—Authorizing Esquimalt and Nanaimo Ry. to build spur to McKinnon Farm gravel pit, north Cowichan District, Vancouver Island, B.C.
 14338. July 18.—Authorizing C.P.R. to build seven bridges on its Edmonton, Sherbrooke, Calgary, Cascade, Kipawa, St. Lin subdivisions.
 14339. July 20.—Authorizing C.P.R. to build spur to A. McBride & Co.'s premises, Calgary, Alta.
 14340. July 20.—Authorizing Georgian Bay and Seaboard Ry., (C.P.R.) to close original road allowance between cons. 6 and 7, Ops. tp. Ont.
 14341. July 20.—Ordering C.P.R. to build farm crossing for G Sabourin, lot 2, con. 2, Caldwell tp. Ont.
 14342. July 19.—Authorizing C.P.R. to cross with its Moose Jaw Northwesterly branch, 48 highways between mileage 135.687 and 219.46.
 14343. July 20.—Approving revised location of G.T.P. Branch Lines Co., Prince Albert branch, mileage 105.04 to 109.01, Sask.
 14344. July 18.—Authorizing Algoma Eastern Ry. to build bridge over trunk road, Merriville tp. mileage 47.38, Ont.
 14345. July 20.—Authorizing G.T.P. Branch Lines Co. to build across and divert highway at mileage 24, Yorkton Branch, Alta.
 14346. July 18.—Extending to Aug. 15, time for installation of gates by C.N.Q.R. at Moreau St., Montreal.
 14347. June 15.—Authorizing G.T.P. Branch Lines Co. to carry traffic over its Melville-Regina branch from Melville to Balarces, Sask., and rescinding order 14116, June 15.
 14348. July 21.—Authorizing C.N.R. to build spurs across Fleet, Mulvey and Jessie Aves., and across property of Blackwoods, Ltd., Winnipeg, Man.
 14349. July 4.—Ordering C.P.R. to install within 90 days improved type of electric bell at crossing ¼ mile west of Piles Jct., Que., 20 per cent. to be paid from railway grade crossing fund.
 14350. June 15.—Ordering that G.T.P.R. and C.N.R. shall each pay one half cost of maintaining interlocking plant at Oak Point Jct. Man.
 14351. July 25.—Ordering that C.N.R. take certain precautions for protection at crossing of Red River bridge between Emerson and Emerson Jct., Man.
 14352. May 16.—Dismissing application of Canadian Oil Companies Ltd., for order directing G.T.R., C.P.R. and C.N.R. to establish carload rate of 56c. per 100 lbs. carload on petroleum and its products.
 14353. July 24.—Relieving C.N.R. from keeping a watchman and stopping its trains at Pembina St. crossing, Winnipeg.
 14354. July 24.—Authorizing C.N.R. to open for freight traffic its line from Oak Point to Gypsumville, Man., 97 miles.
 14355. July 26.—Authorizing C.N.O.R. to cross public road in lot 44, con 1, Camden tp.
 14356. July 22.—Authorizing C.N.O.R. to build bridge over Rouge River, St. Andrew parish.
 14357. July 15.—Approving C.N.O.R. plans for station building at Belleville.
 14358. July 21.—Authorizing C.N. Alberta Ry. to cross public road between secs. 25, tp. 54, r. 3, and sec. 30, tp. 54, r. 2, w. 5 m., Alta.
 14359. July 21.—Extending to Dec. 23, time for completion of spur by C.P.R., New Westminster District, B.C.
 14360, 14361. July 25-24.—Approving Nelson and Fort Sheppard Ry. and Red Moun-

tain Ry. bylaws authorizing H. A. Jackson to prepare and issue tariffs of freight tolls.
 14362. July 21.—Ordering Napierville Jct. Ry. to file plans within 30 days for station building at Deison Jct., station to be built within 90 days from date of approval.
 14363. July 21.—Ordering C.P.R. to build crossing in s. w. ¼ sec. 12, tp. 21, r. 1, w. 5 m., Alta.
 14364. July 20.—Approving V.V. & E. Ry. bylaw authorizing H. A. Jackson to prepare and issue tariffs of freight tolls.
 14365, 14366. July 22-18.—Authorizing G.T.P. Branch Lines Co. to cross with its Prince Albert branch, three highways in Saskatchewan, and with its Calgary branch, two highways in Alberta.
 14367. July 20.—Approving location and plans of G.T.P.R. station at Zenata, Sask.
 14368, July 24.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch, six highways in Saskatchewan.
 14369. July 22.—Authorizing G.T.R. to rebuild bridge carrying Patton St. over its tracks at Grimsby, Ont.
 14370. July 24.—Authorizing G.T.R. to use four bridges on its Eastern Division.
 14371. July 22.—Authorizing C.P.R. to build three bridges on its Northwest branch and Kingston and Pembroke Ry.
 14372. July 22.—Authorizing C.P.R. to build spur in lot 26, block B, for G. H. Archibald & Co., Calgary, Alta.
 14373. July 22.—Authorizing C.P.R. to build its Moosejaw Northwesterly branch across 25 highways from mileage 243.00 to 266.37, Saskatchewan and Alberta.
 14374. July 25.—Authorizing C.P.R. to rebuild bridge at mileage 20.0 on its Eastern Division, Brockville subdivision.
 14375. July 24.—Amending order 14088, June 26, re crossing of highways by C.P.R., Kinivie branch in Alberta.
 14376, 14377. July 24-20.—Approving location of C.P.R. stations at Moore Park on McGregor-Varcoe branch, Man., and at Abbotsford, B.C.
 14378. July 21.—Relieving C.P.R. from further protection of crossing between cons. 2 and 3, Lobo tp., Ont.
 14379. July 22.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to divert public road allowance between cons 7 and 8, Elden tp., Ont.
 14380. July 24.—Authorizing South Ontario Pacific Ry. (C.P.R.) to build its Guelph Jct. to Hamilton branch across seven highways from mileage 3.98 to 9.75, Ont.
 14381. July 25.—Authorizing C.P.R. to build spur for W. Hunt, at mileage 83.54, Portal Subdivision, near Weyburn, Sask.
 14382. July 24.—Approving Bedlington and Nelson Ry. bylaw authorizing H. A. Jackson to prepare and issue tariffs of freight tolls.
 14383. July 27.—Removing speed limitations of 10 miles an hour on C.P.R. trains St. Antoine municipality, Riviere du Loup, Que.
Quebec Central Ry.—In the article on the change of control of this line, in our August issue, page 731, it was stated that it was to be leased for 22 years to the C.P.R. Co., acting for itself and the Ry. The proposed lease is for 99 New York, New Haven and Hartford years. A Montreal press report of Aug. 24 states that the agreement has been executed. It is subject to the ratification of the holders of Q.C.R. securities and to legislative approval. It is said that the English directors will be replaced by a Canadian board.
 During June, 10 employees were killed and 11 injured in the course of their work in connection with the construction and operation of Canadian railways. Of the fatalities, four were due to collisions, three to being struck by locomotives, two to being run over, and one to a derailment.
 Lewis Gleason, travelling expert for the Galena Signal Oil Co., with headquarters at Chicago, who is well known in railway circles throughout Canada, wrote recently: "I must compliment you on your excellent publication. The Railway and Marine World grows better as it gets older, a good indication that it is prospering, as it undoubtedly deserves."
 Reports as to the use of cars show that for the 11 months ended July 31, nearly 100,000 cars were used to haul grain from the Canadian Northwest to lake ports. These cars were handled as follows:—C.P.R., 59.6%; Canadian Northern Ry., 31.8%; Grand Trunk Pacific Ry., 7.3%; Great Northern Ry., U.S. Lines, 1.3%.

Railway Rolling Stock Notes.

The Intercolonial Ry. has received 15 tank cars, from the Canadian Car and Foundry Co., Montreal.
 The G.T. Pacific Ry. has received two colonist cars from the Canadian Car and Foundry Co., Montreal, and four consolidation locomotives from the Montreal Locomotive Works.
 The New Brunswick Coal and Ry. Co. has recently added to its equipment a combination first class smoker, baggage and postal car, which has been built at Moncton. It is 55 ft. long.
 The locomotive which the International Ry. of New Brunswick recently purchased from the Intercolonial Ry., as mentioned in our last issue, is, we are advised, a freight one with a boiler pressure of 140 lbs., and cylinders 17 ins. diam. by 24 ins. stroke.
 The Canadian Northern Ry., between July 15 and Aug. 15, ordered 25 first-class cars, 57 box cars, 10 second class cars and three dining cars from the Canadian Car and Foundry Co., Montreal; and 250 box cars from the Crossen Car Manufacturing Co., Cobourg, Ont.
 The city of Toronto, in connection with the construction of its proposed street car lines, has purchased one Marion shovel and 40 four yard dump cars from F. H. Hopkins and Co., Montreal; and another steam shovel, some cars and six saddle tank locomotives in the United States.
 The C.P.R., between July 25 and Aug. 17, ordered the following rolling stock: 83 box cars, nine stock cars, three refrigerator cars (freight), four first class cars, two second class cars, two mail and express cars, one baggage and express car, 10 D.10 locomotives, 10 D.4 locomotives, one T.2 locomotive and one tank switcher locomotive, from its Angus shops, Montreal; 14 D.4 locomotives from the Montreal Locomotive Works, and one coal car in the U.S.
 The Canadian Northern Ry., between July 15 and Aug. 15, received the following additions to rolling stock:—30 flat cars, 110 box cars, five second class cars and two first class cars from the Canadian Car and Foundry Co., Montreal; seven refrigerator cars from the Crossen Car Manufacturing Co., Cobourg, Ont.; 105 box cars from the Nova Scotia Car Works, Halifax, N.S., and 10 switching locomotives from the Montreal Locomotive Works.
 The C.P.R., between July 25 and Aug. 17, received the following additions to rolling stock: 372 box cars, 20 stock cars, 13 vans, 16 freight refrigerator cars, one suburban car, two tourist cars, three second class cars, 10 baggage and smoking cars, one dining car, two buffet-parlor cars and six D.10 locomotives from its Angus shops, Montreal; 352 steel frame box cars, 27 steel flat cars, from the Canadian Car and Foundry Co., Montreal, and two N.3 locomotives from the Canadian Locomotive Co., Kingston, Ont.
 The G.T.R. has ordered 10 Richmond compound consolidation locomotives from the American Locomotive Co. for use on its U.S. lines. They will be built at Shenectady, N.Y. Following are the chief details:—
 Cylinders 22½ and 35 by 32 ins.
 Driving wheels, diam. 63 ins.
 Boiler type.... Extended wagon top, wide firebox
 Boiler pressure 210 lbs.
 Tubes, no. and diam. 353 2 ins.
 Tubes, length 15 ft.
 Heating surface, firebox 168.2 sq. ft.
 Heating surface, tubes 2,757.1 sq. ft.
 Grate area 50.62 sq. ft.
 Tender, type Water bottom
 Capacity, water 7,000 U.S. gals.
 Capacity, coal 14 tons
 Tractive power 36,000 lbs.
 Two of the new parlor-buffet cars, which the C.P.R. recently built at its

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CANADA.

Angus shops, and of which a floor plan was given in our last issue, have been placed in service between Montreal and Ottawa. The car is divided into two main compartments, the observation end being for smokers, the other end, which is the larger, being the general room. The buffet and toilet accommodation is located between. The interior is finished in mahogany, with arched ceiling in dull gold; the chairs are upholstered in green velvet plush, and in black leather in the smoking compartment. Lighting is by electricity from large dome lights along the centre, and individual reading lamps affixed to the walls.

Following are the chief details of the 25 Otis dump cars, which the Intercolonial Ry. has ordered from the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue, and which will be built under license from the Hart-Otis Car Co., Montreal:—

Length over end sills	38 ft. 9 ins.
Length inside	36 ft. 9½ ins.
Width over all	9 ft. 11¼ ins.
Width inside	9 ft. 6 ins.
Height inside	5 ft.
Height from rail to top	9 ft. 4 13-16 ins.
Height from rail to floor	4 ft. 4 13-16 ins.
Truck centres	26 ft.
Wheel base of truck	5 ft. 6 ins.
Wheel base of car	31 ft. 6 ins.
Number of doors on each side	Six
Width of door opening	2 ft. 2 ins.
Bolsters and brake beams	Simplex
Side bearings	Susemihl
Couplers	R. E. Janney
Air brakes	Westinghouse K.C. 1012

Following are the chief details of the 25 first class cars which the Canadian Northern Ry. is having built by the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue:

Length over end sills	72 ft. 6 ins.
Length inside	69 ft. 10½ ins.
Width over all at eaves	10 ft. 2¾ ins.
Width between deck sills	5 ft. 6 ins.
Height top of sill to bottom plate	6 ft. 8½ ins.
Platform	Standard Coupler Co.
Body bolsters	Double cast steel
Inside finish	Mahogany
Vestibule finish	Birch
Seats	Walkover type corrugated backs.
Lighting	Commercial Acetylene Co.
Heating	Gold Duplex, Frumveler heater
Hoppers	Duner Co.
Water system	C.N.R. standard, air pressure.
Air brakes	Westinghouse P.M. 1612
Truck wheels	36 ins. steel tired, cast steel centres.
Axles	M.C.B. standard 4¼ by 8 ins.
Bolster springs	36 ins. double elliptic.
Equalizer springs	8¾ by 10 ins.
Brakebeams	Simplex high speed
Journal boxes	McCord Malleable
Journal bearings	M.C.B. bronze
Wedges	M.C.B. Malleable
Pedestals	M.C.B. cast iron
Side bearings	Roller

The G.T.R. is building, at its Montreal shops, 20 baggage cars and 15 coaches. Of the baggage cars, five are fitted with end doors in one end only, each door divided in the middle, and made to fold again, thus making a four section door. The end door opening of these cars is 7 ft. 6 ins. wide by 6 ft. 11¼ ins. high. They are also fitted with four side doors, two of which will be 8 ft. by 6 ft. 2 ins. and two 5 ft. by 6 ft. 2 ins., one small and one large door on each side of the car. They are to be used for automobile traffic. Following are the chief dimensions:—

Baggage Cars.	
Length over end sills	60 ft. 10 ins.
Length inside	60 ft.
Length over buffers	63 ft. 2½ ins.
Width over side sills	9 ft. 8 ins.
Inside width in clear	8 ft. 10½ ins.
Height over all	14 ft. 4½ ins.
Side doors	Four, 5 ft. wide
End doors	Two, 2 ft. 3 ins. wide
Coaches.	
Length over end sills	67 ft. 6 ins.
Length inside	66 ft. 7 ins.
Length over buffers	75 ft. 6¼ ins.
Width over side sheathing	9 ft. 9½ ins.
Inside width in clear	8 ft. 9 ins.
Height over all	14 ft. 4½ ins.
Seating capacity, car body	60
Seating capacity, smoke room	9
Bolsters	Double cast steel

R. K. Scarlett, C.P.R. passenger agent, Nelson, B.C., was married there, July 25, to Miss C. B. Barnes, of Vancouver.

Traffic Orders by the Board of Railway Commissioners.

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

RATES FROM QUEBEC PROVINCE TO NEW ENGLAND STATES.

14209. July 14. The application of Lefebvre & Mahon, of Howick Station, Que., exporters of lumber, hay, and grain, complaining of the rate of 27c. per 100 lbs. charged on a carload of hay from St. Edouard, Que., on the Napierville Junction Ry., to Pawtucket, Rhode Island, it is hereby declared that the rate which should have been charged on the said shipment from St. Edouard to Worcester, Massachusetts, was 18c. per 100 lbs., in accordance with the tariff of the Napierville Junction Ry. C.R.C. 4 and 5, lawfully published and filed, plus the arbitrary or proportional rate of the New York, New Haven and Hartford R.R. from Worcester, Mass., to Pawtucket, R.I., stated to be 4c. per 100 lbs., making in all, a joint through rate of 22c. per 100 lbs., and that the Napierville Junction Ry. is hereby authorized to refund to the applicants the amount charged in excess of the lawful rate; and it is ordered that the Napierville Junction Ry. publish and file not later than September 1, joint through freight tariffs to points on the New York, New Haven and Hartford R.R., by such reasonable and practicable and cheapest routes as may be available, as has been done by the Quebec, Montreal and Southern Ry.

LUMBER RATES FROM B.C. TO G.T.P.R. POINTS.

14213. July 18. Re complaint of Mountain Lumber Manufacturers' Association of Calgary, Alta., that they are unable to obtain joint through rates on lumber, shingles, and other forest products in carloads, from the shipping points in the interior of British Columbia, on the C.P.R., to points on the G.T.P.R., it appearing from letters from counsel for the C.P.R. and G.T.P.R. on file with the Board that the G.T.P.R. has refused to concur in joint through rates on lumber, etc., from the points of shipment in British Columbia to points on its lines until it is able to receive the traffic from the C.P.R. at or near Calgary, Alta., it is ordered that the C.P.R. and G.T.P.R. do agree upon and publish and file a joint tariff, or joint tariffs, of tolls to all points on the G.T.P.R., by the shortest joint mileages via Camrose, Alta., Saskatoon, Sask., and Portage la Prairie, Man.; the said joint tariff, or tariffs, to apply from all the shipping points from which the tariffs on lumber, etc., apply to points east of the Rocky Mountains on the C.P.R. and Canadian Northern Ry., and to include all the articles enumerated therein. And it is also ordered that in compiling the said joint tariff, or tariffs, should any disagreement arise between the companies which the companies are unable to settle themselves, full particulars of the points in dispute shall be reported to the Board not later than Sept. 1, 1911.

WHITE PASS AND YUKON RAILWAY RATES.

14385. July 18. Re application of British Yukon Ry. Co., British Columbia Yukon Ry. Co., and the Pacific and Arctic Ry. and Navigation Co., for a rehearing, pursuant to the Order of the Governor-in-Council, dated June 16, of the Board's order dated January 18, it is ordered that the applicant companies, and the Dawson Board of Trade or other shippers affected, if they so desire, be afforded an opportunity of supplementing their case by such evidence, facts or figures as they deem proper; and that the applicant companies be relieved from filing the joint tariffs prescribed under said order, and are permitted to restore the joint tariffs disallowed by the said order, until such case can be disposed of.

ALLOWANCES FROM TRACK SCALE WEIGHTS, CARLOAD TRAFFIC.

14389. July 25. Re special freight tariffs governing the weighing of carload traffic and allowances from track-scale weights; and re application of the Canadian Manufacturers' Association, and the Mountain Lumber Manufacturers' Association of Calgary, Alta., for an order directing that the operation of the said tariffs put in force by the railway companies in Western Canada in the beginning of May, 1911, be delayed until after the applicants shall have had an opportunity of being heard, it is ordered that the special tariffs of the railway companies operating west of and including Port Arthur, Ont., showing the allowances from track-scale weights of carload traffic, as in effect immediately prior to May 1, be restored until the applicants and shippers shall have an opportunity of presenting their views to the Board, or until the matters in dispute shall have been adjusted between the parties at a conference which shall be had between the railway companies and shippers, or their representatives.

The Retirement of Sir William Whyte.

A Winnipeg press despatch of Aug. 28, says: The retirement of Sir Wm. Whyte, Vice President of the C.P.R. in control of Western lines was officially announced here to-night by Sir Thos. Shaughnessy at a dinner at the Manitoba Club, given in honor of Sir William by the President, at which about 125 of the leading citizens of Winnipeg were present.

In expressing regret at the severance of Sir William's active connection as an official of the company, Sir Thomas said that three years Sir William reached the age, when under the regulations of the company, he should have retired, and that it was only at his (the President's) personal solicitation that he consented to remain in office for a few years longer. A short time ago Sir William had notified him that the time had arrived when he must insist on being relieved of his duties. Sir Thomas rejoiced to be able to announce that the company was not altogether losing the benefit of his experience, as he would continue his connection with the company as a director, having been elected to the board at its last meeting.

Sir William's retirement takes effect on Sept. 30. It is said that his future plans are indefinite, but that he will continue to live in Winnipeg.

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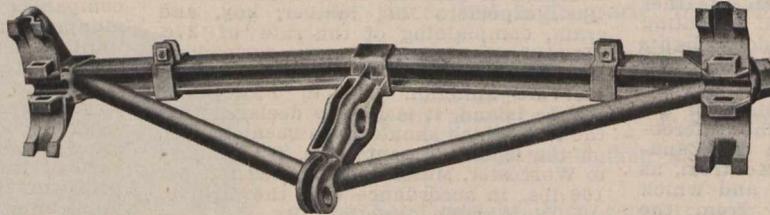
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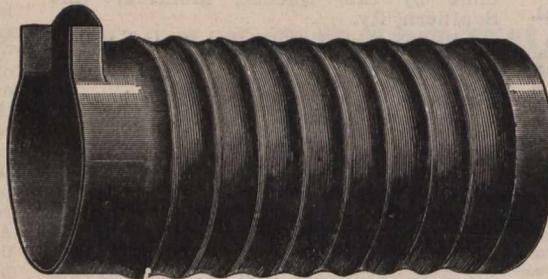
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Mainly About Transportation People.

Lord Strathcona has sent \$10,000 to the Y.M.C.A. building fund at Brantford, Ont.

D. McNicoll, Vice President, C.P.R., returned to Canada, August 4, from Great Britain.

Sir Thos. G. Shaughnessy returned to Montreal, August 2, from a vacation at St. Andrews, N.B.

Jos. T. Tucker, Chairman of the Central Freight Association, died at Chicago recently, aged 76.

W. Wainwright, Second Vice President, G.T.R., returned to Canada, August, from Great Britain.

T. J. Drummond, President, Lake Superior Corporation, returned to Montreal, from England, July 31.

Sir Thos. G. Shaughnessy left Montreal, Aug. 23, on his annual trip of inspection over the C.P.R. system.

G. T. Bell, Assistant Passenger Traffic Manager, G.T.R., returned to Montreal, recently, from a European trip.

H. H. Vaughan, Assistant to the Vice President, C.P.R., has been elected President, Engineers' Club, Montreal.

J. M. Gibbon, European Advertising Representative of the C.P.R., arrived in Montreal from London, Eng., Aug. 7.

E. E. Horsey, Manager, Lake Ontario and Bay of Quinte Navigation Co., rescued a lad from drowning at Kingston, Ont., recently.

Sir Donald D. Mann, Vice President, Canadian Northern Ry., left Toronto, Aug. 22, on an inspection trip over the lines in the west.

F. J. Phelan, eldest son of T. P. Phelan, President, Canada Railway News Co., died at Toronto, Aug. 20, of typhoid fever, aged 30.

M. J. Haney, contractor, Toronto, has given a second \$1,000 to the Holy Family Church, Montreal, which he attended in his youth, for a new organ.

J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke, sailed from Quebec, at the end of July, for England, to spend a short holiday, and returned towards the end of August.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, with his wife and son, spent part of the summer in Prince Edward Island.

The body of John Stuart, formerly train dispatcher, Michigan Central Rd., St. Thomas, Ont., was found in a pond at Tillsonburg, Ont., Aug. 11.

N. Rankin, heretofore in the C.P.R. publicity department, Calgary, Alta., has been appointed Secretary of the Western Canada Irrigation Association.

Mrs. P. S. Ross, of Montreal, mother of W. G. Ross, ex-Managing Director, Montreal Street Ry., died at Caledonia Springs, Ont., Aug. 18, aged 83.

A. B. Murdoch, Canadian Northern Ry. agent at Oak Point, Man., and previously of the C.P.R. audit staff, died at St. Boniface Hospital, Aug. 7.

F. Scott, Treasurer, G.T.R., and Mrs. Scott returned to Montreal, July 28, from a holiday trip to Vancouver and other points on the Pacific coast.

W. G. Ross, ex-Managing Director, Montreal St. Ry., Mrs. and the Misses Ross returned to Montreal, recently, from an extended European trip.

The engagement is announced of Miss A. F. Paul, daughter of John Paul, Niagara, St. Catharines and Toronto Ry., to C. J. Sullivan.

E. J. Haughton, District Superintendent, Dominion Government Radio-telegraph service, Vancouver, B.C., was married to Miss M. E. Shotbolt, of Victoria, B.C., Aug. 3.

H. H. Horsey, architect, who died in Ottawa, Aug. 14, aged 83, was formerly a civil engineer, and in that capacity was engaged upon construction work on the G.T.R.

Miss H. Cantley, daughter of T. Cantley, General Manager, Nova Scotia Steel and Coal Co., died in New Glasgow, N.S., July 31, following an operation for appendicitis.

Arthur M. Grantham, formerly Purchasing Agent and Superintendent of Construction, Toronto Ry., was married, August 29, to Miss Margaret F. Wedd, of Toronto.

M. L. Hersey, Consulting Chemist, C.P.R., Montreal, is the Liberal candidate for the representation of the St. Antoine division of Montreal in the House of Commons.

Michael Connolly and W. J. Poupore, contractors, have been elected directors of the National Real Estate and Investment Co. of Canada, Ltd., which has its headquarters in Montreal.

D. B. Hanna, Third Vice President, Canadian Northern Ry., spent a short time in Winnipeg, early in August, with Sir William Mackenzie, President, whom he accompanied from Toronto.

J. Turnbull, Chief Superintendent, London and North Western Ry., of England, who is visiting Canada, is going over the C.P.R. in Vice President McNicoll's private car Metaped'a.

A. J. Earling, President, Chicago, Milwaukee and St. Paul Ry., accompanied by a number of directors, spent some time early in Aug. visiting Banff and other points on the C.P.R.

B. R. Hepburn, General Manager, Ontario & Quebec Navigation Co., is the Conservative candidate for the representation of Prince Edward County, Ont., in the House of Commons.

H. J. Fuller, President, Canadian Fairbanks Morse Co., Ltd., has been elected a director of the Eastern Townships Bank, Sherbrooke, Que., in succession to the late S. H. C. Miner.

J. H. Black, formerly Superintendent, Temiskaming and Northern Ontario Ry., took over the duties of his new position as Manager, Northern Ontario Light and Power Co., Haileybury, Ont., August 1.

U. E. Gillen, Superintendent Middle Division, G.T.R., Toronto, stated Aug. 3 that there was no truth in the report that he was about to leave the G.T.R. service to enter that of the G.T. Pacific Ry.

W. S. Laverty was presented by his colleagues in the Canadian Northern Ry. stores department, Winnipeg, with a purse of money recently, on his marriage to Miss J. Orr, of Londonderry, Ireland.

S. F. McKinnon, of Toronto, who died in London, Eng., Aug. 4, was actively engaged some years ago in the Canada National Ry. and Transport Co. project for a route from Collingwood to Toronto.

A. W. Smithers, Chairman of the Board, G.T.R., accompanied by H. Deer, Assistant Secretary of the company, arrived in Canada, Aug. 5, for the annual trip of inspection over the G.T.R. and G.T.P.R.

J. Hendry, President, Vancouver, Westminster and Yukon Ry., returned to Vancouver, recently, from a six months' tour of Europe, in which he was accompanied by Mrs. and Miss Hendry.

M. Brown was presented with a cabinet of silver by the head office staff of the British Columbia Electric Ry. recently, on the occasion of his marriage to Miss E. Wooteen, of Vancouver.

Mrs. Quick, wife of J. E. Quick, Gen-

eral Baggage Agent, G.T.R., submitted the designs which have been adopted by the manufacturers in Limoges, France, for the china for the new G.T.R. hotel at Ottawa.

D. Murphy, one of the Commissioners of the Temiskaming and Northern Ontario Ry., and President, Ottawa Transportation Co., has been elected a director of the Prudential Investment Co., Vancouver, B.C.

Mrs. David McNab, who died in Lethbridge, Alta., Aug. 5, aged 82, and whose funeral took place at Kingston, Ont., Aug. 10, was mother of T. McNab, Master Mechanic, Alberta Ry. and Irrigation Co., Lethbridge.

E. A. Dornan, who died at Gananoque, Ont., Aug. 12, had been station agent at Thousand Islands Jct., G.T.R., for over 30 years, and during the summers acted as District Passenger Agent, with office at Alexandria Bay, N.Y.

A. Lagault, son of a C.P.R. lineman at Smiths Falls, Ont., and D. S. Cole, Ottawa, were awarded C.P.R. scholarships in the Faculty of Applied Science at McGill University, Montreal, at the recent matriculation examination.

J. F. Stevens, formerly General Manager, Great Northern Ry., U.S., will, it is said, represent the syndicate which is said to have taken over the National Railways of Mexico, and will probably assume the management of the lines.

The formal announcement of the conferring of the dignity of knighthood of the United Kingdom upon Wm. Whyte, Vice President C.P.R., was made in the London, Eng., Gazette, July 25, and is repeated in the Canada Gazette, of Aug. 12.

S. Fowler, a newspaper man, who died in Kingston, Ont., Aug. 20, was a son of the late John Fowler, of Cobourg, Ont., an old railway contractor, and was himself associated with the building of Brockville, Westport and Sault Ste. Marie Ry.

J. L. Doupe, Assistant Land Commissioner, C.P.R., Winnipeg, Man., read a paper on "The Development Work of a Great Railway," at the recent gathering of the National Convention of Real Estate Exchanges, at Denver, Col.

A. D. Tees, Yardmaster at the C.P.R. Angus shops, Montreal, was presented with a gold watch chain, Aug. 19, by the staff, on the occasion of his marriage to Miss Boyer. Accompanying the watch chain was a chatelaine bag for the bride.

Sir Thomas Tait, who, after his return to Canada in July, spent some time at St. Andrews, N.B., visited various parts of the province, including the Grand Lake coal area, in company with H. P. Timmerman, Industrial Commissioner, C.P.R.

J. H. Corcoran was the recipient of a presentation from the Intercolonial Ry. passenger staff at Moncton, N.B., recently, on becoming Travelling Passenger Agent for the G.T.R. in the Maritime Provinces with headquarters at Moncton, N.B.

E. M. Herr, Assoc. Am. Inst. E. E., formerly First Vice President in charge of operation of the Westinghouse Electric & Manufacturing Co., has been elected President of the same, succeeding E. F. Atkins, who declined reelection.

G. W. Vanderslice, at one time Superintendent, Manitoba Division, Northern Pacific Ry., with office at Winnipeg, and latterly Superintendent, Northern Division, Chicago Great Western Railroad, with office at St. Paul, Minn., has resigned the latter position.

C. E. A. Carr, General Manager, Quebec Ry., Light and Power Co., was recently under medical treatment at the Jeffrey Hale Hospital, Quebec. He re-

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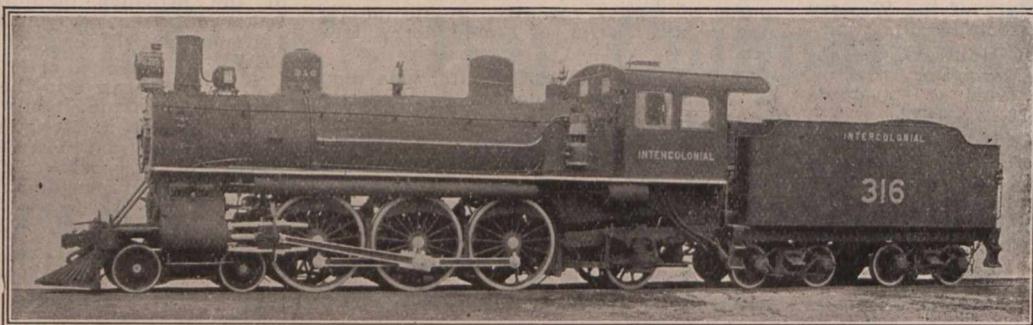
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turned to Quebec from Ste. Agathe, where he went to recuperate, towards the end of August.

The following ticket agents have joined the Canadian Ticket Agents' Association recently:—W. S. Davis, C.P.R., Oakville, Ont.; A. P. Potter, C.P.R., Tottenham, Ont.; W. J. Leonard, C.P.R., Plattsville, Ont.; G. E. Walker, G.T.R., Guelph, Ont.

Sir William Mackenzie left Toronto early in August for a trip through the west, remaining some time in Winnipeg both on the outward and homeward trips, in connection with the city's proposal to purchase the Winnipeg Electric Ry.'s properties.

Hon. R. Lemieux, heretofore Postmaster-General, has been appointed Minister of Marine and Fisheries in succession to Hon. L. P. Brodeur, appointed to succeed the late Hon. D. Girouard as a Puisne Judge of the Supreme Court of Canada.

Lieut.-Col. H. H. McLean, of the 28th New Brunswick Dragoons, and Vice President of the St. John Railway, has been granted the rank of Colonel in the Canadian Militia, in special recognition of his services in commanding the Canadian contingent at the coronation.

L. O. Armstrong, Colonization and Industrial Agent, C.P.R., started from Montreal, Aug. 3, on a lengthy trip to investigate the possibilities of developing tourist and fishing resorts in territory tributary to the C.P.R., on the north shore of Lake Superior.

John Callaghan, who has been appointed Division Engineer, G.T.P.R., at Fitzhugh, Alta., was, up to the time of his appointment, with Foley, Welch and Stewart, contractors, as Superintendent and Engineer. Prior to that he was a Division Engineer of Construction on the C.P.R.

P. H. Walsh, Superintendent, Kootenay Ry. and Navigation Co., and of the Kaslo and Slocan Ry. for the Great Northern Ry., U.S.A., and Mrs. Walsh, were the principal guests at a dinner and dance given at Kaslo, B.C., Aug. 3, in connection with their approaching removal from the town.

D. B. Hanna, Third Vice President, Canadian Northern Ry., appealed recently to the Toronto Court of Revision against the assessment of his house, Thornliebank, Castle Frank Avenue, at \$55,000. The evidence showed the total cost to be \$45,000 and the assessment was reduced to \$42,000.

D. B. Lindsay, Secretary, Temiscouata Ry., Riviere du Loup, Que., died suddenly at Moncton, N.B., Aug. 7, aged 75. He had been connected with the railway for 22 years, and since Jan., 1901, as Secretary and General Manager, resigning the latter position, Oct., 1909, on account of ill health and advancing years.

N. S. Reeder, M. Am. Soc. M.E., Vice President of the Western Steel Car & Foundry Co., of Chicago, Ill., and formerly General Manager of the Canada Car Co., Montreal, has been elected Second Vice President of the Pressed Steel Car Co., of Pittsburgh, Pa. He will continue to make his headquarters in Chicago.

Lord Strathcona celebrated his 91st birthday in London, Eng., Aug. 6, and received numerous congratulations from various parts of the world. He subsequently joined his yacht and, with Lady Strathcona and Dr. and the Hon. Mrs. Howard, spent some time at Colonsay, his island home in the Western Hebrides.

J. C. Sheppard, who has recently been in charge of construction work on the G.T. Pacific Ry., on the Alberta-British Columbia boundary, for the contractors, has been transferred to a similar position on the Copper River-Aldermere

contract. The contracts on both divisions are being carried out by Foley, Welch and Stewart.

B. B. Kelliher, Chief Engineer, G.T. Pacific Ry., was thrown out of a vehicle in which he was driving, on the route of the railway on the British Columbia-Alberta boundary, July 27, owing to the horse bolting. Mr. Kelliher escaped serious injury, but was compelled to abandon his inspection trip and to return to Winnipeg for rest and treatment.

R. G. Cromar, who has been appointed Assistant Superintendent, District 2, Lake Superior Division, C.P.R., North Bay, Ont., was born near Owen Sound, Ont., Nov. 4, 1873, and entered C.P.R. service Nov. 5, 1889, since when he has been consecutively, once boy, operator, terminal agent and general yardmaster at various points east of Fort William, latterly at North Bay, Ont.

George Eade, American Manager for Thos. Cook & Son, tourist agents, died recently in New York City after an illness of several months. He was born in London, Eng., in 1851, and was for some time in the service of the White Star Line at Liverpool. He came to America in 1886, as Manager of Thos. Cook & Son's business in the United States and Canada.

A. MacNamara, whose appointment as Assistant to Master Mechanic, G.T.P.R., Rivers, Man., was announced in our last issue, was born at Toronto, Mar. 4, 1884, and entered railway service in 1901, since when he has been in various capacities in the Master Mechanics' offices, G.T.R., Toronto and Montreal; June, 1908, to July 1, 1911, chief clerk to master mechanic, G.T.P.R., Rivers, Man.

E. T. Agate, C.E., M. Can. Soc. C.E., who has been appointed District Engineer for the construction of the Canadian Northern Ontario Ry., between Gowganda Jct. and Nipigon, is a graduate of Cornell University, and was connected with the C.P.R. engineering department for nine years. During the past two years has been Canadian Manager at Vancouver, B.C., for L. M. Rice & Co., railway contractors, Seattle, Wash.

M. B. Carlin, ex-General Manager of the Columbia River Lumber Co., Ltd., and now a member of the firm of Grant Smith & Co., which has a contract for building a portion of the Canadian Northern Pacific Railway on Vancouver Island, is President, and J. D. McArthur, railway contractor, Winnipeg, is a director of the Canadian Pacific Lumber Co., Ltd., which recently made an issue of £350,000 six per cent. 1st mortgage bonds in England. Accompanying the prospectus was a report on the Columbia River Lumber Co.'s property by F. W. Jones, ex-director of that company and formerly assistant to the Manager, C.P.R. Western lines.

W. B. Bulling, Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, who has been obliged to retire temporarily from active service owing to ill health, was born at Montreal, Sept. 16, 1858, and entered G.T.R. service there in 1872. He resigned in 1880 to enter the Chicago and North Western Ry. service in Chicago, where he only remained a short time, returning to the G.T.R. He was appointed chief clerk, General Freight Department, C.P.R., Montreal, in 1883; District Freight Agent in 1889; General Freight Agent, Eastern Division, in 1892, and Assistant Freight Traffic Manager, Eastern Lines, in July, 1901.

E. N. Todd, who has been appointed Division Freight Agent, Eastern Division, C.P.R., Montreal, was born at Huntington, Que., Oct. 17, 1879, and entered C.P.R. service May, 1896, as junior clerk, Foreign Freight Department, since when he has been, from

June, 1899, to May, 1900, chief import clerk, same department; May, 1900, to Aug., 1901, in service with the Franco-Canadian Steamship Line; Aug., 1901, to 1904, chief correspondence clerk, Foreign Freight Department, C.P.R.; 1904 to Jan., 1909, Export and Import Freight Agent, C.P.R., Toronto; Jan., 1909, to Sept. 1, 1911, Export Freight Agent, C.P.R., Montreal.

J. A. Carroll, who has been appointed Road Foreman of Locomotives, District 1, Canadian Northern Ry., was born at Chilton, Wisc., Dec. 14, 1865, and entered railway service in 1885, since when he has been, to 1887, fireman, Wisconsin Central Ry.; 1887 to 1888, fireman, Atlantic and Pacific Ry., now part of the Sante Fe System; 1888 to 1900, locomotive engineer, same road; 1900 to 1907, Traveling Engineer, Albuquerque Division, same road; 1907 to Aug., 1908, Locomotive Foreman, C.P.R., Outremont, Que.; Aug. 1908, to Aug., 1911, District Master Mechanic, District 2, Lake Superior Division, C.P.R., White River, Ont.

J. H. Hughes, who was recently appointed Superintendent, District 2, Lake Superior Division, C.P.R., White River, Ont., was born at Georgetown, P.E.I., October 7, 1865, and entered railway service, October 1885, since when he has been, to August 7, 1886, brakeman, Intercolonial Ry.; August 7, 1886, to January, 1888, freight brakeman, C.P.R., North Bay, Ont.; January, 1888, to October 1, 1902, conductor and Rule Instructor, C.P.R.; October 1, 1902, to March, 1907, Trainmaster, District 1, Lake Superior Division, C.P.R.; March 1, 1902, to May 6, 1911, Assistant Superintendent, and latterly Acting Superintendent, same district.

W. H. Allison, who was recently appointed District Freight Agent, C.P.R., Saskatoon, Sask., was born at London, Ont., July 22, 1885, and entered C.P.R. service, August 1, 1901, since when he has been, to November, 1901, shed boy; November 1, 1901, to May 7, 1906, messenger, billing clerk, abstract clerk, rate clerk and chief clerk, successively, London, Ont.; May 7, 1906, to March 15, 1907, correspondence clerk, Freight Department, Regina, Sask.; March 15, to May 1, 1907, export clerk, General Freight Office, Winnipeg; May 1 to June 1, 1907, claims clerk, same office; June 1, 1907, to January 1, 1909, chief clerk to General Freight Agent, Winnipeg; January 1, 1909, to June 15, 1911, City and Travelling Freight Agent, Regina, Sask.

J. H. Black, whose portrait appears on the first page of this issue, was born near Smiths Falls, Ont., July 8, 1874, and entered railway service, Feb. 16, 1896, since when he has been, to Sept., 1896, freight checker, C.P.R.; Sept., 1896, to July, 1898, telegraph operator, C.P.R.; July, 1898, to Jan., 1902, agent, C.P.R. Sharbot Lake; Jan., 1902, to Nov., 1904, Auditor, Kingston and Pembroke Ry., Kingston, Ont.; Nov., 1904, to Aug. 1, 1911, General Freight and Passenger Agent, Superintendent and Traffic Manager, and Superintendent, successively, Temiskaming and Northern Ontario Ry., North Bay, Ont. He resigned the last named position, Aug. 1, to become General Manager, Northern Ontario Light and Power Co., Haileybury, Ont.

Hon. E. B. Garneau, who died in Quebec, Aug. 18, after a short illness from typhoid fever, was a director of the Richelieu and Ontario Navigation Co., and of the Quebec Ry., Light, Heat and Power Co., and was associated with other transportation interests having Quebec as the centre of their operations.

Press dispatches from Kansas City, Mo., Aug. 31, stated that A. F. Dillinger, formerly assistant chief operating officer of the Board of Railway Commis-

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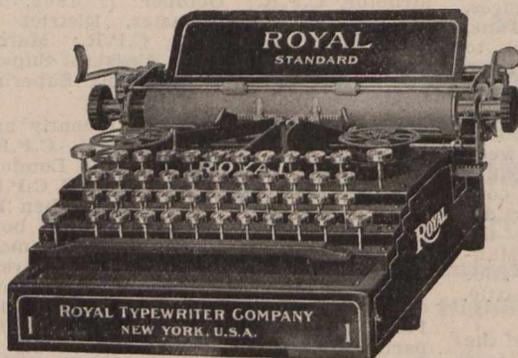
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sioners. Ottawa, had been placed under arrest there, under a warrant issued at Des Moines, Iowa. A Mrs. Rose Morgan, in whose company he was, was arrested under a similar warrant at the same time. Mrs. Dillinger, who had travelled from Ottawa, was present at the arrest. Nothing further has transpired, and Ottawa papers state "the inference is that Mr. and Mrs. Dillinger have effected a reconciliation."

W. M. Kirkpatrick, who has been appointed Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, is a son of the late Sir Geo. Kirkpatrick, at one time a director of the C.P.R. He was born at Kingston, Ont., Oct. 8, 1874, and entered C.P.R. service, Mar. 7, 1892, in the Vice-President's office, and up to July, 1899, he filled various positions in the Chief Engineer's office, Foreign Freight Department, Montreal, and General Freight Agent's office, Toronto; July, 1899, to Dec., 1902, clerk in Fourth Vice President's office, Montreal; Dec., 1902, to Apr., 1905, Assistant General Freight Agent, Pacific Division, Vancouver, B.C.; Apr., 1905, to Feb., 1907, Export Freight Agent, Montreal; Feb. to Dec., 1907, General Freight Agent, Atlantic Division, St. John, N.B.; Dec., 1907, to Apr., 1911, General Freight Agent, Through Traffic, Ontario Division, Toronto; Apr. to Aug. 21, 1911, General Freight Agent, Eastern Lines, Montreal.

A. W. Wheatley, who has been appointed General Manager, Canadian Locomotive Co., Kingston, Ont., was born at Ashford, Kent, Eng., and served an apprenticeship as machinist in the South Eastern Ry. shops there. In 1892 he went to the U.S., since when he has been, to 1894 in Northern Pacific Ry. service at St. Paul, Minn.; 1894, same service at Staples, Minn.; 1895 to 1900, Roundhouse Foreman, same place; 1900 to 1902, General Foreman, same road, Livingstone, Mont.; Dec., 1902, to June, 1903, Master Mechanic, same road, Yellowstone Division, Glendive, Mont.; June, 1903, to Mar., 1904, General Master Mechanic, same road, St. Paul, Minn.; Feb., 1905, to Mar., 1906, Shop Superintendent, Chicago, Rock Island and Pacific Ry., Moline, Ill.; Mar., 1906, to June 1, 1907, Assistant Superintendent of Motive Power, Union Pacific Rd., Omaha, Neb.; June 1 to Oct., 1907, General Inspector, American Locomotive Co., Schenectady, N.Y.; Oct., 1907, to Nov., 1910, Manager, Montreal Locomotive Works, Ltd., Montreal; Nov., 1910, to Aug., 1911, Manager, American Locomotive Co., Dunkirk, N.Y.

Charles E. Morgan, City Passenger & Ticket Agent, G.T.R., Hamilton, Ont., died there, August 20, aged 69, after having been in failing health for some time. He was born in Hamilton and lived there all his life, with the exception of a few years spent in Guelph, Ont. After leaving school he went into the banking service and then became offices in Hamilton and Toronto. On the Great Western Ry. ticket agent, with absorption in the G.W.R. by the G.T.R. he gave up his Toronto office and confined himself to the Hamilton business. He also had a number of steamship and other ticket agencies and did a large and successful business. He is survived by one son, Charles R., and two daughters, Mrs. W. F. Robinson and Mrs. W. E. Daniel. The funeral at Hamilton was largely attended by railway and steamship officials, E. de la Hooke, Secretary, Association, of which Mr Morgan was a member for many years and in which he served as a member of the executive committee as Vice President and as president. C. R. Morgan will continue his father's business and has already been appointed ticket agent of many of the most important steamship lines.

A. R. Macdonell, whose death in England on July 15 was mentioned in our last issue, was born at Williamstown, Glengarry county, Ont., Dec. 20, 1855. He commenced his railway career on the Intercolonial Ry. in the seventies, and then, in partnership with his father in 1879, took a contract on section B of the Canadian Pacific Ry. east of Winnipeg. After finishing that work, he went east to Port Arthur and took some heavy contracts on the C.P.R. Following that, in partnership with M. J. Hogan, of Montreal, he constructed the Baie des Chaleurs Ry. The next contrast he was connected with was in partnership with his father-in-law, J. Ryan, on the Soulanges canal. Following this, he took the contract for the construction of the Temiskaming and Northern Ontario Ry. from North Bay practically to Cochrane. This contract, with the exception of the National Transcontinental Ry. contracts, was the heaviest work he undertook. In 1907, in partnership with M. J. O'Brien, he took a number of contracts on the National Transcontinental Ry., amounting in all to some 400 miles, of which something over 300 had been completed at the time of his death. He went to England on the advice of his physician, who thought the change would be beneficial to his health, and he had expected to return to Canada next autumn.

H. T. Hazen, Chief Engineer, Duluth, Winnipeg and Pacific Ry., Duluth, Minn., who has also been appointed District Engineer, Canadian Northern Ontario Ry., Port Arthur easterly, was born at Truro, N.S., Mar. 14, 1870, and commenced his railway career on survey work on the Hants Central Ry., Truro, N.S., since when he has been, to 1893, roadman and Resident Engineer on location and construction, Ottawa and Gatineau Ry.; 1893 to 1894, Locating Engineer, Restigouche and Victoria Colonization Ry.; 1894, Locating Engineer, New Brunswick Trunk Line Ry.; 1894 to 1895, on topographical survey of Riviere du Lievre; 1895 to 1896, Resident Engineer, St. Lawrence and Adirondack Ry.; 1896 to 1897, Resident Engineer, Cobourg, Northumberland and Pacific Ry.; 1897 to 1898, Resident Engineer, Montreal and Ottawa short line, C.P.R.; 1898 to 1899, Resident Engineer, C.P.R. double-tracking; 1899, Assistant Engineer, Great Northern Ry. of Canada; 1899 to 1900, Assistant Engineer, Ottawa and Gatineau Ry.; 1900 to 1904, Assistant Engineer, Grand Trunk Ry.; 1904, in charge of Exploration surveys, Midway and Vernon Ry.; 1904, Superintendent and Engineer for contractor, Ragged Rapids dam on Severn River; Jan. 1, 1905, to Oct., 1909, with Canadian Northern Ry. as Division Engineer, location Parry Sound to Sudbury. Division Engineer of construction, Parry Sound to French River and Key Branch, and Engineer in charge Garneau to Quebec, St. Jerome-Montfort Branch and St. Jacques Branch; Oct., 1909, he was appointed Chief Engineer, Duluth, Winnipeg and Pacific Ry., and since July, 1911, has also been District Engineer, Canadian Northern Ontario Ry., Port Arthur easterly for about 275 miles.

F. S. Darling, M. Can. Soc. C.E., formerly of the C.P.R. Engineering Department, is now Assistant of the Chief Engineer, Boston & Maine Rd., at Boston, Mass.

The Government Railways Managing Board announced at Moncton, N.B., Aug. 21, that increases of wages aggregating nearly \$40,000 a year would be granted to the clerks in its employ.

Robert Gardiner, Locomotive Foreman, Grand Trunk Pacific Ry., Melville, Sask., writes:—"I have read the Railway and Marine World for the past four years and would not like to be without it."

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.

Canadian Northern Ry.—J. A. Carroll, heretofore District Master Mechanic, C.P.R., White River, Ont., has been appointed Road Foreman of Locomotives, District 1, C.N.R. Headquarters, Rainy River, Ont.

H. J. Cowie, heretofore European Traffic Manager, has been appointed European Freight Agent, C.N.R., and General Freight Agent, C.N. Steamships, Offices, London, Liverpool and Bristol.

P. A. VanEss and Co., Rotterdam, Holland, have been appointed General Agents for the Continent of Europe.

Canadian Pacific Railway.—W. M. Kirkpatrick, heretofore General Freight Agent, has been appointed Assistant Freight Traffic Manager, with general supervision over all matters pertaining to rates and divisions, and all matters under the jurisdiction of the Board of Railway Commissioners, Trans-Continental Freight Bureau, etc., vice W. B. Bulling, who has been obliged to retire from active service temporarily owing to ill health. Office, Montreal.

H. E. Macdonell, heretofore Division Freight Agent, Eastern Division, Montreal, has been appointed General Freight Agent, Eastern Lines, in charge of the solicitation of freight traffic and of interchange with connecting lines, vice W. M. Kirkpatrick, promoted. Office, Montreal.

E. N. Todd, heretofore Export Freight Agent, has been appointed Division Freight Agent, Eastern Division, with territory, Chalk River and east; also Smiths Falls to Newport, Vt., Megantic and Quebec, Que., including branch lines, vice H. E. Macdonell, promoted. Office, Montreal.

F. G. Friesser, heretofore Assistant Foreign Freight Agent, New York City, has been appointed Export Freight Agent, vice E. N. Todd, promoted. Office, Montreal.

G. T. Rooke has been appointed Inspector of Transportation, Eastern Lines. Office, Montreal.

J. B. Smith has been appointed Assistant Inspector of Transportation, Eastern Lines. Office, Montreal.

H. A. Plow, heretofore chief clerk, Assistant Freight Traffic Manager's Office, Montreal, has been appointed District Freight Agent, with jurisdiction over territory, Chalk River, and Smiths Falls east to Buckingham, Caledonia Springs and Kempton, including the Eganville, Waltham, Maniwaki, Brockville and Prescott subdivisions, reporting to the Division Freight Agent, Montreal. Office, Ottawa, Ont.

W. H. Ivory has been appointed acting Chief Dispatcher at Havelock, Ont.

P. G. Cromar, heretofore Agent and General Yardmaster, North Bay, Ont., has been appointed Assistant Superintendent, District 1, Lake Superior Division, vice J. H. Hughes, promoted. Office, North Bay, Ont.

J. V. McNab, heretofore Resident Engineer at Moose Jaw, Sask., is reported to have been transferred to Saskatoon, Sask., vice R. C. Smith, transferred to Moose Jaw.

A. P. Stretton has been appointed Local Right of Way and Lease Agent, with jurisdiction in all local right of way and lease matters affecting the operating department in the Alberta Division. Office, Calgary.

G. Moth, heretofore in the locomotive department, Lethbridge Alta, has been appointed acting District Master Mechanic, District 1, Alberta Division, vice R. D. Smith, on leave of absence. Office, Medicine Hat, Alta.

J. W. Chesterman has been appointed Assistant Car Foreman, Revelstoke, B.C. This is a new position.

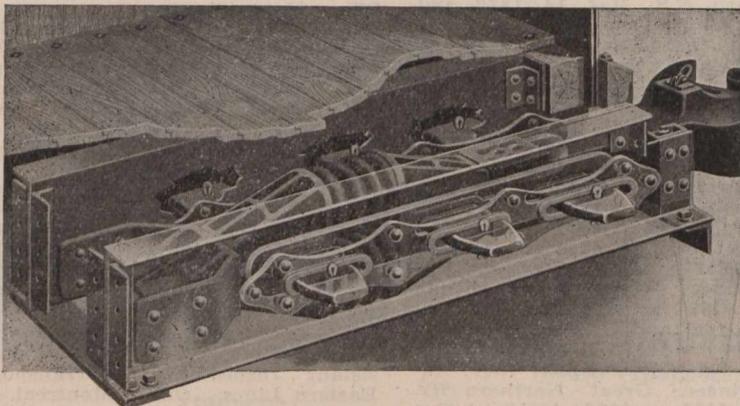
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Levis,	24.10						

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L. D. Cole has been appointed Assistant Foreign Freight Agent at New York City, vice F. G. Frieser, transferred to Montreal. Office, 1 Broadway.

G. A. Walton, heretofore General Agent, Passenger Department, Spokane, Wash., has been appointed General Agent, Passenger Department, Chicago, Ill., vice A. B. Calder, resigned to enter private business in Winnipeg, Man.

Central Vermont Ry.—C. M. Hays, President, G.T.R. and G.T.P.R., who resigned the Presidency of the C.V.R. recently, as announced in our last issue, has been elected Chairman of the Board.

Fort Garry Union Station, Winnipeg.—J. Bannerman, heretofore in charge of Canadian Northern transfer service at Winnipeg, is reported to have been appointed station master, Fort Garry Union Station, Winnipeg.

Grand Trunk Pacific Ry.—J. Birse has been appointed Road Foreman, with territory from Westfort, Ont., to Transcona, Man., vice D. Miller, acting Road Foreman, assigned to other duties. Office, Westfort, Ont.

I. A. Macpherson has been appointed Assistant to the General Superintendent, vice R. D. Thomas. Office, Winnipeg.

F. G. Adams, heretofore Travelling Freight Agent, G.T.R., Winnipeg, Man., has been appointed Commercial Agent, G.T.P.R., Regina, Sask., vice W. E. Mann, resigned.

W. B. Cronk, formerly Superintendent, District 2, Lake Superior Division, C.P.R., White River, Ont., has been appointed Superintendent, G.T.P.R., with jurisdiction over the Melville-Regina, Regina-Boundary and Regina-Moose Lines. Office, Regina, Sask.

John Callaghan, heretofore Superintendent and Engineer for Foley, Welch and Stewart, G.T.P.R. contractors, has been appointed Division Engineer, G.T.P.R., at Fitzhugh, Alta.

The following agents have been appointed:—Redditt, Ont., L. W. Graham; Hinton, Alta., H. J. Toby.

In announcing the appointment of outside agents at Fort William, Ont., in our last issue, the name was given as R. Street Co., instead of the Ray Street Co.

Grand Trunk Ry.—J. H. Corcoran, heretofore in Intercolonial Ry. Passenger Department, has been appointed Travelling Passenger Agent. Office, Moncton, N.B.

W. Mewing, heretofore in General Freight Department, G.T.P.R., Winnipeg, has been appointed Travelling Freight Agent, G.T.R., vice F. G. Adams, appointed Commercial Agent, G.T.P.R., Regina, Sask. Office, Winnipeg.

The following agents have been appointed:—Compton, Que., R. F. Findlay; Doon, Ont., W. D. Harris; Pottersburg, Ont., T. H. Lashbrook; Copetown, Ont., R. H. Vrooman; Thorold, Ont., W. J. Meredith (acting); Seaforth, Ont., W. R. Plant. Outside agencies—Holland Land- ing, Ont., J. L. O'Brien; St. Marys, Ont., A. Willard; New York City, International Sleeping Car Co.

Great Northern Ry.—H. A. Noble has been appointed General Passenger Agent, vice S. J. Ellison, resigned to engage in other business. Office, St. Paul, Minn.

Intercolonial Ry.—W. P. Mills, heretofore acting Roadmaster, has been appointed Roadmaster, Cape Breton Division, vice S. Fraser, deceased. Office, Sydney, N.S.

John Savage has been appointed acting Roadmaster, Windsor and Dartmouth Branches, vice John McLellan, superannuated. Office, Windsor, N.S.

A. Astle, heretofore acting Roadmaster, has been appointed Roadmaster, Canada Eastern Division, vice A. W. Grass, resigned. Office, Fredericton, N.B.

New York Central Fast Freight Lines, Merchants' Despatch.—Carl Howe, Man-

ager, has removed his office from Buffalo, N.Y., to 632 La Salle Street Station, Chicago, Ill., to which address all correspondence is to be sent, except that in connection with the tracing of cars. The Car Department, handling tracing of all cars, will continue at 708 Brisbane Building, Buffalo, under the supervision of F. B. Hannis, Car Accountant, to whom such communications should be addressed. The following lines are under Mr. Howe's jurisdiction:—Red Line, White Line, Blue Line, Canada Southern Line, West Shore Line, Nickel Plate Line, North Shore Despatch, Merchants Despatch-Dairy Line, Rutland-Michigan Central Line, Jersey Central-Lake Shore Despatch, Jersey Central-Michigan Central Despatch, Merchants Despatch-Pere Marquette Line.

Northern Navigation Co.—W. R. Buring has been appointed Travelling Freight and Passenger Agent, to cover the territory west of Toronto, including the G.T.R. Northern Division. Office, Sarnia, Ont.

S. Hewitt has been appointed Travelling Freight and Passenger Agent for the city of Toronto, and other special work. Office, Union Station, Toronto.

Quebec Railway, Light, Heat & Power Co.—H. G. Matthews, heretofore Secretary-Treasurer of the Marconi Wireless Telegraph Co. of Canada, has been appointed Assistant to the President of the Quebec Railway, Light, Heat & Power Co., with office at Quebec. We are advised that this appointment was made owing to the President, Rodolphe Forget, being unable to spend any time in Quebec, in consequence of his diversified interests.

Quebec, Montreal and Southern Ry.—G. F. Lavesque has been appointed Master Mechanic, vice A. C. West, resigned. Office, Sorel, Que.

Union Pacific Rd., Southern Pacific Co., Oregon Short Line Ry., Oregon-Washington Rd. and Navigation Co. G. W. Vaux, heretofore Travelling Passenger Agent, Toronto, has been appointed Canadian Passenger Agent. Office, Toronto.

White Pass and Yukon Route.—F. B. Wurzbacher has been appointed General Agent at Seattle, Wash., with jurisdiction over traffic matters in the Vancouver office, vice I. W. Dudley, resigned.

White Star-Dominion Line.—M. A. Overend, heretofore Travelling Freight Agent, Toronto, has been appointed Freight Agent for Ontario, vice G. W. Torrance, deceased. Office, Toronto.

Telegraph and Cable Matters.

Alex. E. Reoch has been appointed Secretary-Treasurer, Marconi Wireless Telegraph Co. of Canada, at Montreal, vice H. G. Matthews, resigned to enter Quebec Ry, Light, Heat and Power Co.'s service.

W. Marconi, of the Marconi Wireless Telegraph Co., arrived in Montreal, Aug. 14, by the White Star-Dominion Line s.s. Laurentic. It was reported that during the trip he carried out a number of experiments with wireless telegraph apparatus, which enabled him to keep in communication with the wireless telegraph station at Poldhu, Cornwall, throughout the entire voyage.

The Ottawa city council is planning the construction of conduits for the carrying of underground wires. Estimates recently considered cover the building of conduits for the high and low tension wires on a number of streets, for \$45,000. It is stated that the work will not be undertaken until the spring, and in the meantime the objections of the C.P.R. Telegraphs and will form the subject of a conference.

The C.P.R. has opened telegraph offices at Chelsea, Hebert, Ivry and Timiskaming, Que.; Bobs, Dorion, Espanola, French, Moffat and Point au Baril, Ont.; Bredenburg, Candahar, Hume, Luseland, Salvador, Secretan and Trossachs, Sask.; and has closed its offices at Clarenceville, Eastman, Henryville, L'Ange Gardien East, Mount Johnson, Noyan Jct., Rougemont, St. Aime, Ste. Angele, St. Barnabe, St. Damase, St. Judes, St. Louis, St. Robert and Sabrevois, Que.; Hurkett and Rutter, Ont.

The bill which has been introduced into the British House of Commons to extend the Pacific Cable Act, 1901, also authorizes a submarine cable to be laid between Australia and New Zealand, as already sanctioned by the contributing Governments, and any other extensions, connections or rearrangements in, or near the Pacific Ocean, which, in the opinion of all the contributing Governments, are necessary or expedient for the improvement of the Pacific Cable Board's undertaking. The contributing Governments are those of Great Britain, Canada, Australia and New Zealand.

Among the Express Companies.

The Canadian Northern Ex. Co., which was recently fined \$1,000 for contempt of court in connection with the delivery of certain papers referring to the last Manitoba elections, has withdrawn its appeal against the judgment, and has paid the fine.

E. A. Wellwood, route agent, Canadian Ex. Co., between Port Huron and Detroit, Mich., and Toronto, pleaded guilty to a series of thefts at Port Huron, Aug. 16, and was later sentenced for an indeterminate period from two to five years in Iona prison.

The Dominion Ex. Co. is objecting to the extension of the limits for delivery in Calgary, Alta., on the ground that if compelled to make free deliveries to isolated portions within the city limits, a greater expense would be involved than would be covered by the amount received for carriage of the goods.

The Canadian Ex. Co.'s return to the U.S. Interstate Commerce Commission for May 31st shows total receipts from operation, \$236,710; net operating revenue, \$26,487, against \$184,476 total receipts from operation and \$8,847 net operating revenue for May, 1910. The aggregate total receipts from operation for 11 months ended May 31 were \$2,414,761; net operating revenue, \$235,137, against \$2,235,086 total receipts from operation and \$224,652 net operating revenue for same period 1909-10. The mileage operated over for the 1910-11 period was 7,362 on steam railways, and 162 other lines, against 6,520 steam and 2,792 other lines, for the 1909-10 period.

The Wells, Fargo and Co. express service was put into operation over an additional 16,000 miles of territory, Aug. 1. Included in the lines now operated over is the Wabash Ry., divided as follows:—from Detroit, Mich., to Buffalo, N.Y., not including Buffalo, nor Niagara Falls, and Milan to Detroit, Mich., is included in District 2, E. B. Thomas, Route Agent, with headquarters at Detroit, Mich.; from State Line to Roanoke, and Attica to Covington, Ind., included in District 3, G. E. Mikesell, Route Agent, with headquarters at Huntington, Ind.; from Hammond, Ind., to Monclova, on Fort Wayne, Ind., to Monclova, and Fort Wayne, Ind., to Whitehouse, O., included in District 4, F. E. Brownell, Route Agent, with headquarters at Hammond, Ind. The report that the Pacific Ex. Co. had been taken over is incorrect. This report is accounted for by the fact that Wells, Fargo and Co. had purchased some of the Pacific Ex. Co.'s material and property at certain points.

A HISTORY OF THE PAY-AS-YOU-ENTER CAR AND ITS LESSON

The following cities are using Pay-As-You-Enter Cars: Chicago City Railway, 839 cars; Chicago Railways, 1,328; Public Service Corporation of New Jersey, 466; New York City Railway, 555; Third Avenue Railroad, New York, 550; International Railway, Buffalo, 200; Buffalo & Lake Erie Traction Co., 10; Washington Ry. & Elec. Co., Washington, D.C., 100; Capital Traction Co., Washington, D.C., 51; Municipal Traction Co., Cleveland, Ohio, 180; United Rys. Co. of St. Louis, Missouri, 310; Portland Ry., Lt. & Pwr. Co., Portland, Ore., 25; Columbus Ry. & Lt. Co., Columbus, Ohio, 10; Wichita R.R. & Lt. Co., Wichita, Kan., 14; Jacksonville Elec. Co., Jacksonville, Fla., 5; Dallas Elec. Co., Dallas, Texas, 20; Houston Elec. Co., Houston, Tex., 41; Northern Texas Trac. Co., Ft. Worth, Texas, 25; Ithaca Street Ry., Ithaca, N.Y., 2; Peoria Street Ry., Peoria, Ill., 13; Urbana & Champaign Ry., Champaign, Ill., 3; Mutual Lt. & Water Co., Brunswick, Ga., 4; Rochester Ry. Co., Rochester, N.Y., 25; Ft. Dodge, Des Moines & So. R.R. Co., 2; Muskogee Elec. Trac., Muskogee, Okla., 6; Union Traction Co., Dubuque, Ia., 4; Topeka Ry. Co., Topeka, Kas., 12; United Rys. & Elec. Co., Baltimore, Md., 32; Detroit United Ry., Detroit, Mich., 225; Cincinnati Traction Co., Ohio, 50; Montreal Street Railway, 400; British Columbia Elec. Ry., 30; Calgary Street Railway, 18; Metropolitan Street Ry., Kansas City, Mo., 50; Edmonton Radial Ry., 4; San Antonio Traction Co., San Antonio, Tex., 6; Rockford & Int. Ry., Rockford, Ill.; Cairo Street Ry. & Lt. System, 6; Des Moines City Railway, Iowa, 12; Macon Ry. & Lt. Co., Macon, Ga.; Virginia Ry. & Power Co.; Columbia Elec. St. Ry. & Lt. & Power Co., Columbia, S.C.; Aurora, Elgin & Chicago Ry., Chicago, Ill.; Wichita Falls Traction Co., Wichita Falls, Tex.; Ottawa Electric Ry. Co., Ottawa; Bloomington & Normal Ry. & Lt. Co., Bloomington, Ill.; Corsicana Transit Co., Corsicana, Tex.; Compania Electrica y de Ferrocarriles, Mexico; The Milwaukee Elec. Ry. & Lt. Co., Milwaukee, Wis.; Springfield Street Ry. Co., Springfield, Mass.; Lynchburg Traction Co., Lynchburg, Va.; Chicago & Southern Traction Co., Chicago, Ill.; Calumet & South Chicago Ry. Co., Chicago, Ill.

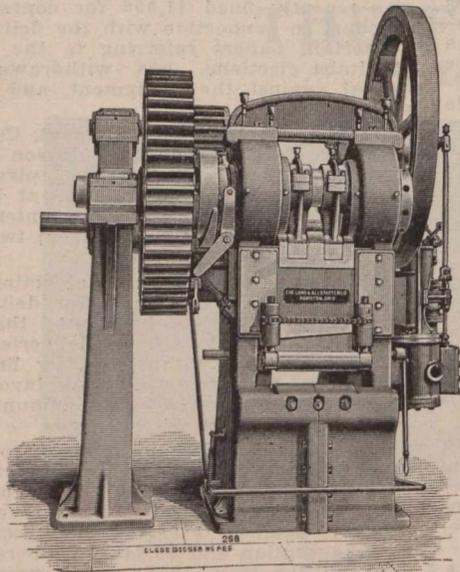
THE LESSON

taught by this widespread use of Pay-As-You-Enter Cars is obvious. Increased Revenue, Accident Elimination and Schedule Improvement have been demonstrated in every case. Isn't all this sufficient to show that it always pays to operate the Pay-As-You-Enter Car? Why not remodel some of your present cars?

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The Use of Tee Rails in Street Railway Construction.

By F. G. Simmons.

(CONTINUED FROM AUGUST ISSUE.)

The author wishes to call particular attention to this New York engineer's words when he says, "There is no difficulty in laying a smooth top paving of a type suited for any vehicular traffic in connection with the use of a standard section of tee rail, and if properly designed and constructed the pavement should not wear in ruts." This is the meat in the nutshell. It can be done and that without difficulty, but it does call for co-operation between the railway and the municipal engineers.

L. W. Rundlett, Commissioner of Public Works of St. Paul, Minn., wrote the committee as follows: "Instead of answering the questions exactly as given, I would say in relation to the rail section to be used for street car traffic that, in my opinion, the tee rail best suits all conditions. In the first place, I think it is the best rail that can be put down, looking at it from the street car standpoint, and I am of the opinion that in paved streets the pavement can be so laid that it gives equally satisfactory results, as far as the city is concerned, as the grooved rails, and on unpaved streets it causes no more obstruction than the grooved rail, although it is evident that teams can be driven along the line of the grooved rail better than on the tee rail; but that is not the result desired by a city, as, at present, what we expect of the street car companies is rapid transit, and we do not wish to invite any team traffic along the tracks to obstruct them. As the tracks are laid in this city on the paved streets, I will say that we have never experienced any trouble and I have never received any complaints either from teamsters or from the public in general, and I do not think there is any particular difference whether the traffic is light or heavy. The construction of the pavement between the tracks and on the outside of same must be first class when the tee rail is used, and the same thing might be said of any rail. In regard to the height of the rail, it must be sufficient to give ample room to put in the pavement on paved streets, and the 7-in. 91-lb. standard rail which is used by the street car company at the present time is perfectly satisfactory. On streets where there is no pavement, a 4-in. rail has been found sufficient."

City Engineer Andrew Rinker, of Minneapolis, Minn., also wrote the committee to the effect that Minneapolis considered the tee rail the best for use in city streets. Here are the responsible city engineers of two of our most prominent cities placing themselves on record as un-

qualifiedly in favor of tee rail, and as these cities have had many years experience with it, their opinions may be considered incontrovertible. Minneapolis in particular is today, in the opinion of the author, nearly, if not quite, the best paved city of any considerable size in the United States.

At a meeting of the Southwestern Electrical and Gas Association at El Paso, Texas, on May 7, 1908, Mark Lowd, of the Stone & Webster Engineering Corporation, in a paper on track construction, had the following to say: "It is the intention of this article to deal briefly with tee rail construction in paved streets, this being the type of construction which the writer believes to be the best for the operating companies from the standpoint of first cost and economy of operation. In many cities the type of rail is designated by ordinance, which unfortunately in most cases specifies grooved rail. These ordinances were largely the result of a lack of attention and inexperience on the part of the railway companies in the early days of electrical traction. Emerging from the days of the horse car to the heavier electric car, the railways were confronted with the problem of securing a rail suitable for the new conditions confronting them. The old strap rail, the light tee rail, and the light girder rail were

"The flangeway is always ready for an increase in size of wheel flanges of the local cars, or for the interurban car with the large flanges necessary for high-speed work.

"The tee rail is not as noisy.

"Car wheel maintenance is less.

"The tee rail has a longer life, particularly at the joint, which is the vital point of any rail.

"It is more easily handled, and high-priced shop curves are unnecessary.

"A good vitrified brick or paving block makes a most satisfactory form of pavement, especially in the south and southwestern country. If asphalt or bitulithic pavement is used, do not under any circumstances permit the asphalt or bitulithic to be laid against the rail. Use a brick or stone liner against the rail. This will not only permit the tightening of a joint-bolt or the renewal of a bond without disturbing the adjoining pavement, but will also make a more durable job. The use of the special or nosed brick is unnecessary and rather unsatisfactory. The regular brick laid as shown in the accompanying cross-section of tee rail construction will give far better results. This construction has been used with great success in Milwaukee and other cities. A rich cement grout makes the most satisfactory filler for brick or stone pavement."

W. A. Heindle, Superintendent of Construction for the Tri-City Ry. Co., in the cities of Davenport, Rock Island and Moline, Ill., says: "We are limited in our Davenport work to a 7-in. tee rail, while we are compelled to use a 7-in. girder rail on the Illinois side of the river. All things considered the high tee rail will be found most suitable and serviceable provided a satisfactory form of pavement be installed. The selection of paving materials rests principally with the city authorities. While asphalt presents the neatest appearance, it is hardly suitable for track work, as it disintegrates under vibration and water. Where asphalt must be laid, however, it is advisable to lay longitudinally, three or four courses, or a toothing course of brick, adjoining the rail. Creosoted wood block is coming into extensive use, and is very satisfactory paving material, but somewhat expensive. With care the wooden block can be laid so that any swelling due to moisture will not affect the track gauge. All things considered, vitrified paving brick seems to afford the best material for the purpose. The use of tee rail may require special brick for forming the flangeway. Where vehicles use the railway right-of-way, these special bricks will cut out in the course of two or three years and the pavement will become unsightly. Better workmanship can be secured by using beveled stone blocks for forming the flangeway or by using standard brick, starting the first course entirely beneath the rail head and giving the pavement the proper crown. This is satisfactory, provided the depth of wheel flange is not greater than the depth of rail head."

The city of Detroit, which was formerly a firm advocate of the girder type of rail, sent out a committee two years ago to investigate the merits of tee rail construction. This committee consisted of members of the city council and the Assistant City Engineer. They visited Grand Rapids, Milwaukee, St. Paul and Minneapolis. Upon their return they reported the result of their investigations to the city council and after reciting the subject matter obtained while on the trip, they said: "We therefore recommend that the Commissioner of Public Works grant the company permission to

FROM THE PRESIDENT OF THE CANADIAN STREET RAILWAY ASSOCIATION.

James Anderson, General Manager, Sandwich, Windsor and Amherstburg Railway, writes from Windsor, Ont., as follows:

"I take pleasure in saying that your paper gives more reliable and up-to-date news of the railways and railway men than any other publication of its kind. What is true of the railway side, must also be true of the marine interests, and you are deserving of the patronage of both classes."

all found inadequate, it being impossible to maintain either a satisfactory rail or a well kept pavement. The manufacturers gave us the girder rail of greater height and weight, in various forms, and the grooved rail, also of greater weight. It is probable that the first good results in paved streets were obtained by the use of the girder and grooved rails, and this is the principal reason that so many cities demand the use of such rails. With the increase in weight and height of the tee rail occasioned by the needs of the steam railways for heavier rail to meet the requirements of high speed and greater weights, there came an opportunity to demonstrate that the tee rail could be used in any kind of paved street with excellent results, both in regard to car operation and maintenance of roadway. The tee rail has many advantages over either the girder or grooved types, and no disadvantages that are known to the writer. It is preferred for the following reasons:

"It is designed on better mechanical lines; there is no eccentric loading as in the case of the grooved rail.

"There is no excessive waste of metal when heavy traffic and large wheel flanges are to be considered. In many cities grooved rails weighing from 125 lb. to 150 lb. per yard have been used, where an 80 lb. or 90 lb. tee rail would have been sufficient.

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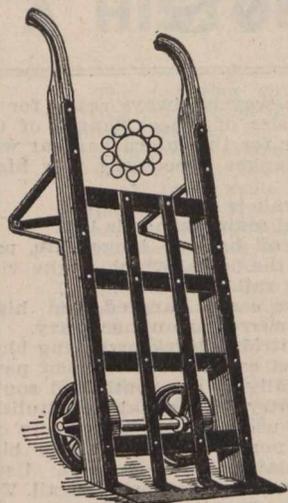
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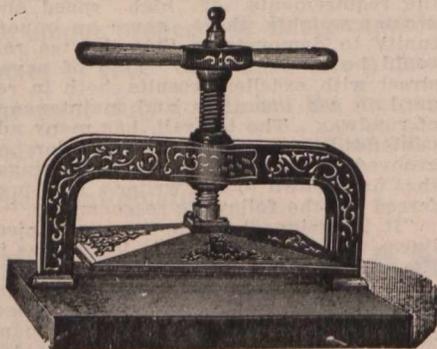
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reconstruct the tracks on Jefferson Ave. from Woodward to Beaufort Aves. on the express condition that the company use a 60-ft. 7-in. tee rail weighing from 91 to 97 lbs., using granite blocks between tracks and 18 inches outside." This commendation was confirmed, the tee rail was laid and Detroit is now enthusiastically in the tee rail column.

In summing up the consensus of opinion over the country it seems that the chief opponents of the use of tee rail in city streets are the municipal officers and other engineers in the cities where practically no experience has been had and that practically all those officers and engineers who have had anything like a comprehensive experience with this type of construction are strongly in favor of it. Proper results are often prevented through the methods employed by the municipalities in laying the paving. I can illustrate this to you more clearly by telling you how this work has been done in Milwaukee. Under the laws now in force there the kind of paving to be used is finally determined through petition of the property holders, and it is a sad fact that they rarely select the type of pavement best suited to the conditions. The arguments of paving contractors, material supply men and others are brought to bear and the result usually obtained is political and not mechanical.

(Continued in October issue.)

Electric Railway Notes.

The British Columbia Electric Ry. is converting all its old cars into the multiple unit system, and is building 25 steel frame single end cars.

The Calgary Municipal St. Ry. has received two single truck pay-as-you-enter cars from the Preston Car and Coach Co., Preston, Ont.

The Port Arthur and Fort William Electric Ry. has received two double truck pay-as-you-enter cars from the Preston Car and Coach Co., Preston, Ont.

The Ottawa Electric Ry. has received four 33½ ft. electric pay-as-you-enter cars. 45 ft. long over all, mounted on 27-FE-1 trucks, from the Ottawa Car Co., Ottawa.

The Edmonton Radial Ry. has received two 30½ ft. long overall, mounted on 27-G-1 trucks, from the Ottawa Car Co., Ottawa, Ont., and two single ended cars from the Preston Car and Coach Co., Preston, Ont.

The population of London, Ont., which it was anticipated would reach the 50,000 necessary before a vote on the question of the operation of street cars on Sundays can be taken, has been announced as only 47,968.

Press reports recently stated that D. A. Gordon had been elected President, Chatham, Wallaceburg and Lake Erie Ry., succeeding the late G. W. Kipp, but we have been officially advised that no appointment has been made, nor will it be taken up until the annual meeting in September.

J. A. Marsh, who was recently appointed Trainmaster, British Columbia Electric Ry., New Westminster, was born at Dresden, Ont., Aug. 16, 1876, and entered B.C. Electric Ry. service in 1903, since when he has been to May 1, 1911, three years as conductor on the Interurban lines and five years as agent at Vancouver.

The Montreal Street Ry. applied for a writ of prohibition, Aug. 16, to prevent the board of arbitration, recently appointed under the provisions of the Lemieux Act, to investigate some differences between the employes and the company from acting. The application alleges that the Industrial Disputes Investigation Act of 1907 is unconstitutional.

H. G. Matthews, heretofore Secre-

tary-Treasurer of the Marconi Wireless Telegraph Co. of Canada, has been appointed Assistant to the President of the Quebec Railway, Light, Heat and Power Co., with office at Quebec. We are advised that this appointment was made owing to the President, Rodolphe Forget, being unable to spend any time in Quebec in consequence of his diversified interests. Mr. Matthews, who is 33 years of age, is a native of Montreal.

E. Sterling, who was recently appointed Division Trainmaster, B.C. Electric Ry., New Westminster, was born at Thornbury, Ont., Oct. 3, 1875, and entered railway service, May, 1891, since when he has been, to Oct., 1896, operator and agent, C.P.R.; Oct., 1896, to Mar., 1897, train dispatcher, C.P.R., Smelter Jct., B.C.; Mar., 1897, to July, 1909, conductor, C.P.R.; July to Oct., 1909, acting Trainmaster, C.P.R., Nelson, B.C.; Oct., 1909, to May 1, 1911, Chief Dispatcher, B.C. Electric Ry.

Following are the chief details of the two combination passenger and baggage cars which the G.T.R. is building at its



Patrick Dubee, Secretary, Montreal Street Railway, and Vice President, Canadian Street Railway Association.

Montreal shops, for the Montreal and Southern Counties Ry.:—
 Length over buffers 49 ft. 4 ins.
 Outside width over sheathing 8 ft. 1½ ins.
 Height outside over all 12 ft. 6½ ins.
 Length inside passenger compartment, 18 ft. 6 ins.
 Length inside, smoking compartment, 10 ft. 6½ ins.
 Width inside in clear 7 ft. 4 ins.
 Seating capacity, passenger compartment 28
 Seating capacity, smoking compartment 16
 Baggage door, one each side, width 3 ft. 6 ins.
 Motorman's door, width 2 ft.
 Motors, each car Four 40 h.p.

F. R. Glover, heretofore Assistant Manager, British Columbia Electric Ry., has been appointed General Executive Assistant. The circular announcing this appointment states: "While the directors regret that this appointment will sever Mr. Glover from active participation in the operating end of the company's business, they are glad to think that he will now have more time to devote to giving them the benefit of his experience and advice on those questions of policy which are constantly arising. They also take this opportunity of publicly acknowledging the valuable services which he has rendered to the company for so many years."

Patrick Dubee, whose portrait appears

on this page, was born in Montreal, March 4, 1876, and was educated at the Christian Brothers School and at St. Patrick's Academy. He started as office boy with the Montreal St. Ry. Co., July 9, 1890, two years before the electrification of the road, and has remained in its employ ever since, occupying various positions in the Secretary, Comptroller, and Manager's office until May, 1901, when he was appointed Assistant Secretary at the time that W. G. Ross was appointed Secretary-Treasurer. In Dec., 1903, Mr. Ross having been elected Managing Director, Mr. Dubee was appointed Secretary. In 1903, when the Montreal St. Ry. Mutual Benefit Association was organized, the details in connection with the organization were left in his hands. He was subsequently elected a Director and Secretary-Treasurer of the Association and has occupied those positions continually since. This Association is recognized as the most successful of its kind in America. In 1901, when the Montreal St. Ry. Co. acquired control of the Montreal Park & Island Ry. Co., he was appointed Secretary of the latter company. In 1904, on the organization of the Suburban Tramway & Power Co., he was appointed Secretary-Treasurer, and in 1909 he was appointed Secretary-Treasurer of the Longueuil Tramways Co., all of which positions he still holds. He has taken a very active part in the Canadian Street Railway Association's proceedings since its inception in 1904, having been a member of the executive committee for several years, and this year being Vice President.

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for June, \$387,664; working expenses, \$252,819; net operating earnings, \$134,845; renewal funds, \$29,770; net earnings, \$105,075; approximate income from investments, \$20,000; net income, \$125,075, against \$253,180 gross earnings; \$159,095 working expenses; \$94,085 net operating earnings; \$17,852 renewal funds; \$76,233 net earnings; \$16,500 approximate income from investments; \$92,733 net income for June, 1910. Aggregate gross earnings for 12 months ended June 30, \$4,226,834; net earnings, \$1,589,784, against \$2,981,617 gross and \$1,239,839 net for the same period 1909-10.

Dividend at the rate of 5% per annum has been paid on the 5% non-cumulative preferred ordinary stock, for the half year ended June 30, together with an additional dividend at the rate of 1% per annum for the same period.

Calgary Municipal St. Ry.—The official figures for the operation of the electric railway for the six months ended June 30 show:—Receipts, \$153,446; working expenses, \$103,275; net earnings, \$50,171. Expenditure during the six months on extensions, etc., \$324,693; amount authorized by bylaw for extensions, \$486,604.

Earnings for July, \$39,147; operating expenses, \$15,187; net earnings, \$23,960. After making provision for fixed charges, there remains a surplus for the month of \$16,000.

Edmonton Radial Ry.—The revenue for the first six months of the year was \$106,655, against \$67,906 and \$35,297 for the same periods of 1910 and 1909, respectively. The number of passengers carried during the first six months of this year was 2,534,358, against 1,566,816 during the same period in 1910, and 806,988 in 1909.

Halifax Electric Tramway.—Receipts for July, \$23,821.28, and for week ended Aug. 7, \$5,641.11, against \$22,176.80 and \$5,071 for same periods 1910.

London St. Ry.—Gross earnings for July, \$24,066.19; expenses, \$16,384.32; net earnings, \$7,681.87; deductions, \$2,-

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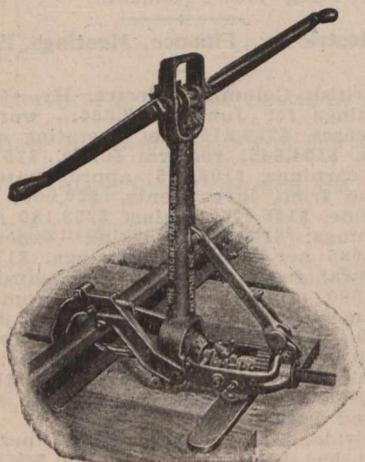
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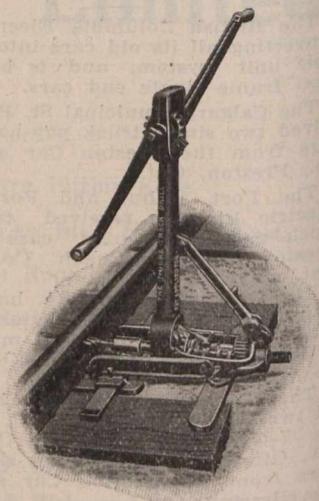
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450.65; net income, \$5,231.22, against \$24,248.90 gross earnings; \$16,556.08 expenses; \$7,692.82 net earnings; \$2,441.75 deductions; \$5,251.07 net income for July, 1910. Aggregate gross earnings for seven months ended July 31, \$151,568.02; expenses, \$110,577.33; net earnings, \$41,290.69; deductions, \$16,719.99; net income, \$24,570.70, against \$141,513.59 aggregate gross earnings; \$103,154.76 expenses; \$38,358.83 net earnings; \$16,698.65 deductions; \$21,660.18 net income for same period 1910.

Montreal St. Ry.—Passenger earnings for July, \$421,666.94; miscellaneous earnings, \$16,104.20; total earnings, \$437,771.14; operating expenses, \$231,068.77; net earnings, \$206,702.37; city percentage on earnings, \$51,436.56; interest on bonds and loans, \$15,043.91; rental leased lines, \$607.10; taxes, \$5,000; total charges, \$72,087.57; surplus, \$134,615.30; expenses per cent. of earnings 52.78, against \$383,371.70 passenger earnings; \$15,475.22 miscellaneous earnings; \$398,846.92 total earnings; \$215,224.22 operating expenses; \$183,622.70 net earnings; \$39,200.82 city percentage on earnings; \$14,705.50 interest on bonds and loans; \$552.90 rental leased lines; \$4,000 taxes; \$58,459.22 total charges; \$125,163.48 surplus; 53.96 expenses per cent. of earnings, for July, 1910. Aggregate total earnings for 10 months ended July 31, \$3,876,711.22; operating expenses, \$2,246,207.60; net earnings, \$1,630,503.62; total charges, \$475,972.99; surplus, \$1,154,530.63; expenses per cent. of earnings, 57.94, against \$3,490,646.48 aggregate total earnings; \$2,021,516.05 operating expenses; \$1,469,130.43 net earnings; \$419,546.49 total charges; \$1,049,583.94 surplus; 57.91 expenses per cent. of earnings for same period 1909-10.

Sherbrooke Ry. and Power Co.—Gross earnings for three months ended July 31, \$12,711.97, against \$9,579.05 for the corresponding three months of 1910. Passengers carried in July 119,449, against 85,470 in July, 1910.

Toronto Ry.—Gross earnings for June, \$398,685; working expenses, maintenance, etc., \$191,973; net earnings, \$206,712, against \$362,371 gross earnings; \$180,089 working expenses, maintenance, etc.; \$182,282 net earnings, for June, 1910. Aggregate gross earnings for six months ended June 30, \$2,232,005; net earnings, \$1,085,741, against \$2,192,213 gross, and \$968,742 net for same period 1910.

At a special general meeting of shareholders in Toronto, Aug. 14, the capital was increased by \$4,000,000, to be disposed of as follows:—\$2,000,000 to be issued to shareholders of record, Aug. 25; \$1,000,000 to be divided among the shareholders as a stock dividend, and \$1,000,000 to be retained in the treasury. The capital is now \$12,000,000.

Toronto Suburban Ry.—A mortgage trust deed in favor of the British Empire Trust Co., securing an issue of \$540,000 of 4½% first mortgage debentures, has been deposited with the Ontario Railway and Municipal Board, Toronto.

Winnipeg Electric Ry.—Gross earnings for June, \$305,353; working expenses, \$141,251; net earnings, \$164,102, against \$242,420 gross earnings; \$117,128 working expenses; \$125,292 net earnings for June, 1910. Aggregate gross earnings for six months ended June 30, \$1,881,605; net earnings, \$925,550, against \$1,532,195 gross and \$754,880 net for same period 1910.

The matter of the purchase of the Winnipeg Electric Ry. on the basis of \$250 a share by the city of Winnipeg has been under consideration by the city council for some time. A committee was appointed, July 31, to negotiate an agreement for the transfer of the property, and to arrange for the sub-

mission of a bylaw to the taxpayers sanctioning the purchase. Sir Wm. MacKenzie, President of the company, personally attended several meetings of the committee to discuss the matter, and it was reported, Aug. 14, that the negotiations had fallen through. This, however, was denied Aug. 22.

Guelph Radial Railway Electric Locomotive.

The Guelph Radial Ry. has recently received an electric locomotive which is illustrated on this page. It is of the double truck industrial type, and is built for standard gauge track. The trucks are of the equalized pedestal type, with cast steel rigid bolsters and inside hung motors. The wheels are steel tired, with cast iron centres. The frame is built of 10-in. steel channels with cast iron bumpers. The longitudinal sills are four in number, and they are strongly braced transversely. A radial draw-bar is used at each end, and the couplers are of the M.C.B. automatic type.

The cab is centrally located, and has large side and end windows. An efficient hand brake is fitted, as well as the Westinghouse automatic air brake. The equipment throughout is most complete for a locomotive of this type. It was built by the Baldwin Locomotive Works. Following are the general dimensions:—
Motors, four, No. 101-B-2 500 volts.
Wheel base, rigid 6 ft. 0 ins. 18 ft. 0 in.
Diameter of Drivers 33 in.
Journals, 3½ in. x 7 in.
Width, 8 ft. 0 in.
Height, 12 ft. 6 in.
Length 23 ft. 0 in.
Weight 54,000 lbs.

Electric Railway Projects, Contructions, Betterments Etc.

Alberta Electric Ry.—Press reports state that surveys are being made for the building of an electric railway from Banff to Calgary and other points in Alberta. (June, pg. 555.)

Birds Hill and Springfield Ry.—The Springfield, Man., municipal council has ratified the bylaw granting franchise for the building of an electric railway by this company. (Aug., pg. 783.)

British Columbia Electric Ry.—The question of the unification of the various franchises held by the company for lines in Vancouver and vicinity, in conjunction with the plans for the enlargement of the city boundaries is still under discussion. If the idea is carried through, the company will surrender its existing franchises, which have varying terms of years to run, and will be given a new franchise with conditions covering greater Vancouver, and provided

with arbitration clauses, covering terms.

A contract has been let to D. Matheson for the erection of a new freight shed, 167 by 38 ft., at the foot of Carroll St., Vancouver.

The Board of Railway Commissioners has authorized the Vancouver, Fraser River and Southern Ry. to open for traffic its line from Park Drive, Vancouver, to Eight Ave., New Westminster.

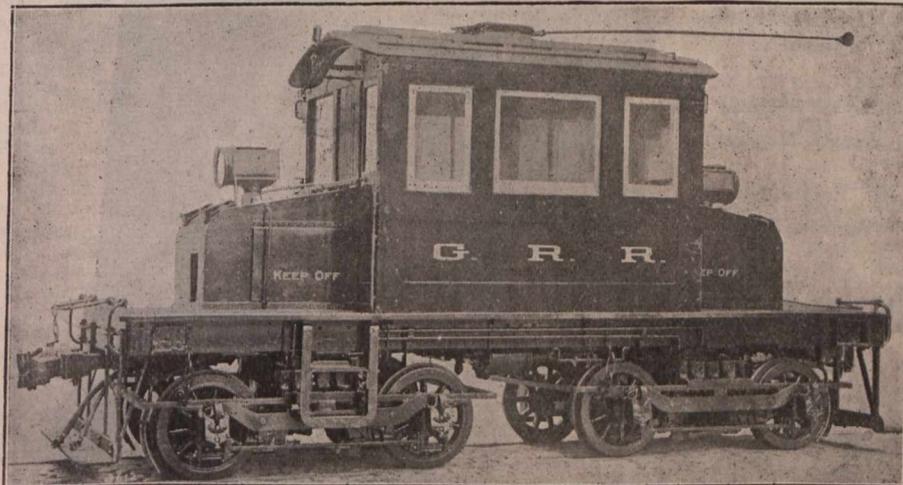
The question of the construction of lines to Blaine, at the International boundary, the Delta district, to Columbia, and to Sunnyside, are under consideration. It is stated that a decision has been reached that the New Westminster-Millside line and the Point Grey lines are to be built at once. (Aug., pg. 783.)

Calgary Municipal St. Ry.—The Shoreline Park extension is expected to be ready for operation by Aug. 27. Good progress is being made with other extensions. Propositions are under consideration for the building of extensions to South Calgary and to Manchester subdivisions; a line on Eighth Ave. will not be built at present, and a proposal to build a private line, 11 miles in length, has been withdrawn.

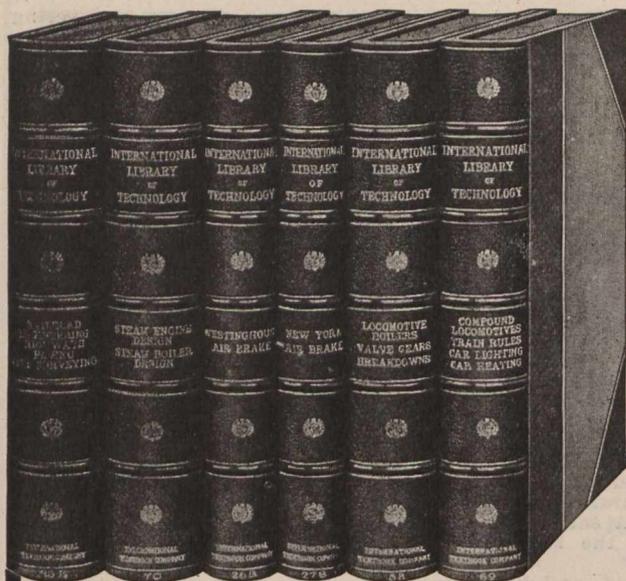
The City Commissioners had under consideration, Aug. 15, the recommendations of T. McCauley, Superintendent of the railway, recommending the building of a second track on certain streets, the extension of other lines, and the purchase of additional equipment and rolling stock. The estimates show \$114,140 for work inside the city, \$49,980 for extensions outside the city, and \$156,000 for additional equipment and rolling stock.

Edmonton Radial Ry.—Strathcona Radial Ry.—An agreement has been reached between the municipal councils of Edmonton and Strathcona, Alta., by which the city of Strathcona will be absorbed into the city of Edmonton. One of the conditions of the amalgamation is that a low level traffic and railway bridge be built across the Saskatchewan River at the foot of Fourth st. by the city of Edmonton. The city of Edmonton owns the electric railway system in that city and controls that in Strathcona. The agreement, which now awaits final sanction of the citizens, lays down a basis for the operation of the existing lines in both places, and for the building of extensions. (May, pg. 453.)

Gatineau River Valley.—Press reports state that a company is being organized in Ottawa to build an electric railway from that city along the valley of the Gatineau River. The idea is to make the line serve all the summer resorts between Ottawa and Farm Point, Que.



Electric Locomotive, Guelph Radial Railway.



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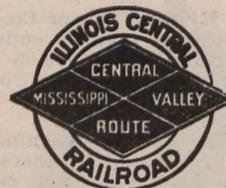
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Halifax Electric Tramway.—The Point Pleasant Park extension was opened for traffic Aug. 10. (Aug., pg. 783.)

Lake Erie and Northern Ry.—Plans and estimates for the first section of this projected railway are reported to have been completed by W. P. Kellett, Chief Engineer. This section extends from Port Dover, on Lake Erie, via Simcoe, and Waterford to Brantford, Ont. (July, pg. 683.)

Lethbridge, Alta.—In connection with the plans for paving the streets, the Lethbridge, Alta., City Council has directed its engineer to investigate the street railway systems at Calgary and Edmonton, with a view of preparing the streets for tracklaying. (Mar., pg. 257.)

London and Lake Erie Ry. and Transportation Co.—It is proposed to erect a new passenger station and an addition to the freight shed in London, and a new transformer station and freight shed in St. Thomas, Ont. An extension of the line from Port Stanley to Erie Rest, at the western extremity of the municipality, is under consideration. (June, pg. 555.)

Lunenburg Electric Ry.—The Nova Scotia Legislature has incorporated a company with this title to build an electric railway within the municipalities of Lunenburg and Chester, the provisional directors being:—F. G. Nichol, Mahone Bay, N.S.; W. Duff, F. Powers, H. H. McIntosh, F. Matheson, Lunenburg, N.S.; W. H. McDonald, J. D. Lohnes, Riverport, N.S.

Press reports stated that surveys are being made under the direction of F. G. Nichol, for an electric railway 12 miles long from Lunenburg to Riverport. (June, pg. 555.)

Moncton Tramways, Electricity and Gas Co.—We are advised that during the past few months the company has been directing its work chiefly towards the completion of the natural gas installation in Moncton, N.B., and that it is expected to have the gas in use in a month or so. Progress in connection with the building of the proposed electric railway has, therefore, been slow. As a fact, however, the company has erected poles for stringing the overhead wires over the entire route, and it is intended making a start with the track work in the course of a few weeks. Orders have been placed in the United States for the rails and it was expected that delivery of the same would be begun by Aug. 30. The company issued advertisements for men and teams for grading Aug. 15. W. G. Ritchie is resident engineer. (June, pg. 557.)

Montreal and Southern Counties Ry.—We are advised that work was started Aug. 1 on an extension of the line in St.

Lambert, Que., on a private right of way, from Front St. to the Country Club, 1.25 miles. As this will be the first section of the main line through raprairie, Huntington and Chateauguay counties, the line will be of heavy construction and laid with 80 lb. steel. It was expected to have this extension completed Aug. 30.

Application was made, Aug. 15, for an injunction to restrain the company from continuing to have its tracks on certain streets in St. Lambert. Judgment was delivered, Aug. 18, dismissing the action on the ground that the matter under litigation had already come up before the Board of Railway Commissioners, and that the decisions of the latter body, on questions of fact, were final. As to the competency of the commission in regard to questions of law, the matter is now pending an appeal taken before the Supreme Court.

The Montreal board of Control is considering an application from the company to extend its lines on the following streets:—McGill, St. Paul, Lagachetiere, Cathedral, Metcalfe, Burnside, Stanley, Osborne, Mountain, Albert, Inspector and Chaboillez Square. (April, pg. 365.)

Montreal Street Ry.—The company notified the city council, Aug. 4, that it was intended to start construction of car lines on the following streets:—Plateau, St. Elizabeth, and Portugal, in Notre Dame du Grace Ward. A conference is being arranged with a view of deciding on other extensions as to which there is some difference of opinion between the council and the company. The final settlement of the differences as to the track space on Commissioner St., between the company and the Harbor Commissioners is likely to be made by the city providing space for the street railway tracks, which are now partly on the Harbor Commissioners' property. (Aug., pg. 783.)

Moose Jaw Electric Ry.—The meeting held at Moose Jaw, Sask., July 31, was a formal gathering for the purpose of closing out the affairs of the Moose Jaw Electric Ry. Co., Ltd., and transferring the assets and liabilities to a new company, with a similar title, incorporated by the Saskatchewan Legislature. The meeting of shareholders to ratify the transfer was held in Victoria, B.C., in which province the original company was incorporated.

About six miles of track has been laid, the overhead work is completed, and everything is about ready for operation. The power house is practically completed. The first section of the line was placed in operation Aug. 17. It is intended to complete seven miles of track this year. No plans, we are advised, have been arranged as to future extensions. (Aug., pg. 783.)

Morrisburg and Ottawa Electric Ry.—Following are the officers elected at the organization meeting held Aug. 3:—President, Jas. Oliver; Vice President, Alderman W. J. Campbell; Secretary-Treasurer, R. A. Bishop.

Press reports state that arrangements are being made to have surveys made at once so that some construction may be done this fall. (Aug., pg. 783.)

Nanaimo, B.C.—A letter was read from Stewart and Rogers, at the meeting of the city council, Aug. 3, refusing to agree to the amendments made by the council to the proposition for the building of an electric railway in the city. The council passed a resolution informing Stewart and Rogers that unless the amendments were agreed to the negotiations would be called off. (July, pg. 683.)

Nipissing Central Ry.—The question of the route for the extension from Cobalt to Liskeard, Ont., is said to be practically agreed upon, and a start is ex-

pected to be made with construction at an early date. (Aug., pg. 783.)

North Midland Ry.—A. E. Welch told the St. Marys, Ont., town council, Aug. 10, that arrangements had been made to build an extension of the projected line into St. Marys and Stratford, and that provided all conditions were satisfactory, construction would be started this fall. (Feb., pg. 169.)

Ottawa Electric Ry.—The company, it is said, has refused to consider the building of the proposed cemetery extension through Beechwood Ave. The route favored by the company is that via Cumming's bridge. (July, pg. 683.)

Ottawa, Smith's Falls and Kingston Ry.—At a recent meeting of directors in Ottawa arrangements are said to have been completed for the commencement of field work, and for an early start at construction. It was expected to have location work started by Aug. 30. Capital stock is being subscribed locally, and arrangements are being made for the financing of the construction in England. The survey work is in charge of—Upson, C.E., and R. W. and S. E. Farley, were reported Aug. 11, to be in charge of parties at work in the field. The centre of the survey work is at Manotic, one party working towards Ottawa and the other towards Smiths Falls. (Aug., pg. 783.)

Ontario West Shore Ry.—A correspondent of the Goderich Star says he recently went over the route for this railway and that from appearances the work is anything but progressive or promising for early completion. (June, pg. 557.)

Quebec Ry., Light and Power Co.—The President and other directors recently inspected the country in the direction of Lorette, Que., and it is stated that arrangements are being made with a view of extending the line in that direction. (Aug., pg. 783.)

Regina Municipal Ry.—A car service was started on two routes Aug. 14, and others will be started as soon as other lines are completed. Cars were started running over the lines July 25, and the formal opening of the line for traffic took place July 27, but it was not until Aug. 14 that a regular schedule was put in operation.

Construction on other lines is being pushed as fast as possible, and the city council has propositions under consideration for the extension of the lines to other parts of the city. (Aug., pg. 783.)

Toronto Civic Lines.—Assistant City Engineer Powell stated, Aug. 17, that about 10 miles of the civic street railway had been completed out of the 15 miles proposed to be laid. The question of the operation of these lines by the Toronto Ry. is under consideration.

Work was started, Aug. 10, on the line on Gerrard St. east, under the charge of E. L. Cousins, the city's railway engineer. (July, pg. 685.)

Winnipeg Electric Ry.—Extensions of lines are being built on Sargent and Ethel Avenues, and on Donald and Garry Streets, and other extensions which it is expected will be built this year are:—Selkirk and McPhillips Street joining with Logan Ave., and lines via Brant St. bridge and Notre Dame Ave. West. The question of extensions in other parts of the city was under discussion by the city council Aug. 9, and was held over for further reports by the City Engineer. (July, pg. 685.)

Under the heading "Railway and Allied Associations, Clubs, etc.," on page 809, C. M. Strange is given as Secretary of the Engineers' Club of Montreal. He resigned recently and R. W. H. Smith, the former secretary, has been re-appointed.



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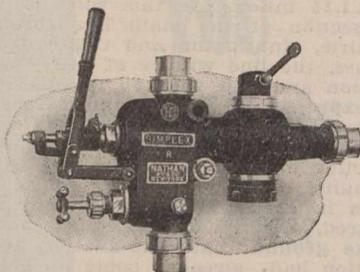
It is the intention of the City of Toronto to call for tenders for construction of double track underground subways, approximately three miles in length, on or about September 15th.

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G. R. GEARY, Mayor.

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Quebec Railway Light, Heat and Power Company's Organization.

The chart on this page shows the old organizations of the five companies which have been merged into the Quebec Railway, Light, Heat and Power Co., namely, the Canadian Electric Light Co., the Jacques Cartier Electric Co., the Quebec Railway Light and Power Co., the Quebec Gas Co., and the Frontenac Gas Co., and also the organization of the new or consolidated company. Under the re-organization there is one general manager instead of five as before, and the heads of departments have been reduced from 25 to 10. The salaries for management and superintendents formerly amounted to over \$73,000 a year. At half the cost under the consolidation better salaries are paid and it is claimed that better men are obtained. There is also, of course, a large saving in directors' fees, auditing, solicitors, medical advisers, etc. This is merely one phase of the advantages of consolidation, which, sooner or later, means better service to the public and reduction in rates they have to pay.

Before the consolidation it was not unusual for the consumer to have three meters, one for electric power supplied by the Quebec Railway Light and Power Co., one for electric light supplied by the Jacques Cartier Electric Co., and one for gas supplied by either the Quebec Gas Co. or the Frontenac Gas Co. Where formerly this consumer was troubled three times a month by three different meter readers, representing three different companies, and had to keep track of three different accounts payable at three different dates, since consolidation this consumer is only visited by one meter reader, who reads all three accounts on the same date, and all three accounts are rendered on the one bill, which simplifies the matter very ma-

terially. Where formerly it was not uncommon to have an accident on a transmission line, necessitating the shutting down of the individual plant until repairs could be made, thus leaving the consumer of the company in darkness, since consolidation, with these three electric light plants tied together, such a thing as a shut down and leaving any portion of the city in darkness would be almost impossible.

The Quebec Public Utilities Commission and Electric Railways.

In November, 1910, the Commission ordered the Montreal Street Railway to remove the fenders and to equip all cars with automatic drop wheel guards, also to equip all cars over 30 ft. long, and weighing 25,000 lbs. and over, with air brakes, in addition to hand brakes and sanding apparatus. The order was also made applicable to all other electric railways subject to the Commission's jurisdiction, unless cause to the contrary is shown. The Quebec Railway, Light, Heat & Power Co., which was served with the order, objected on the ground that it was not a public utility, but was in control of the Quebec Railway, Light & Power Co., which had been declared subject to Dominion authority. The Commission recently decided in favor of the company's contention.

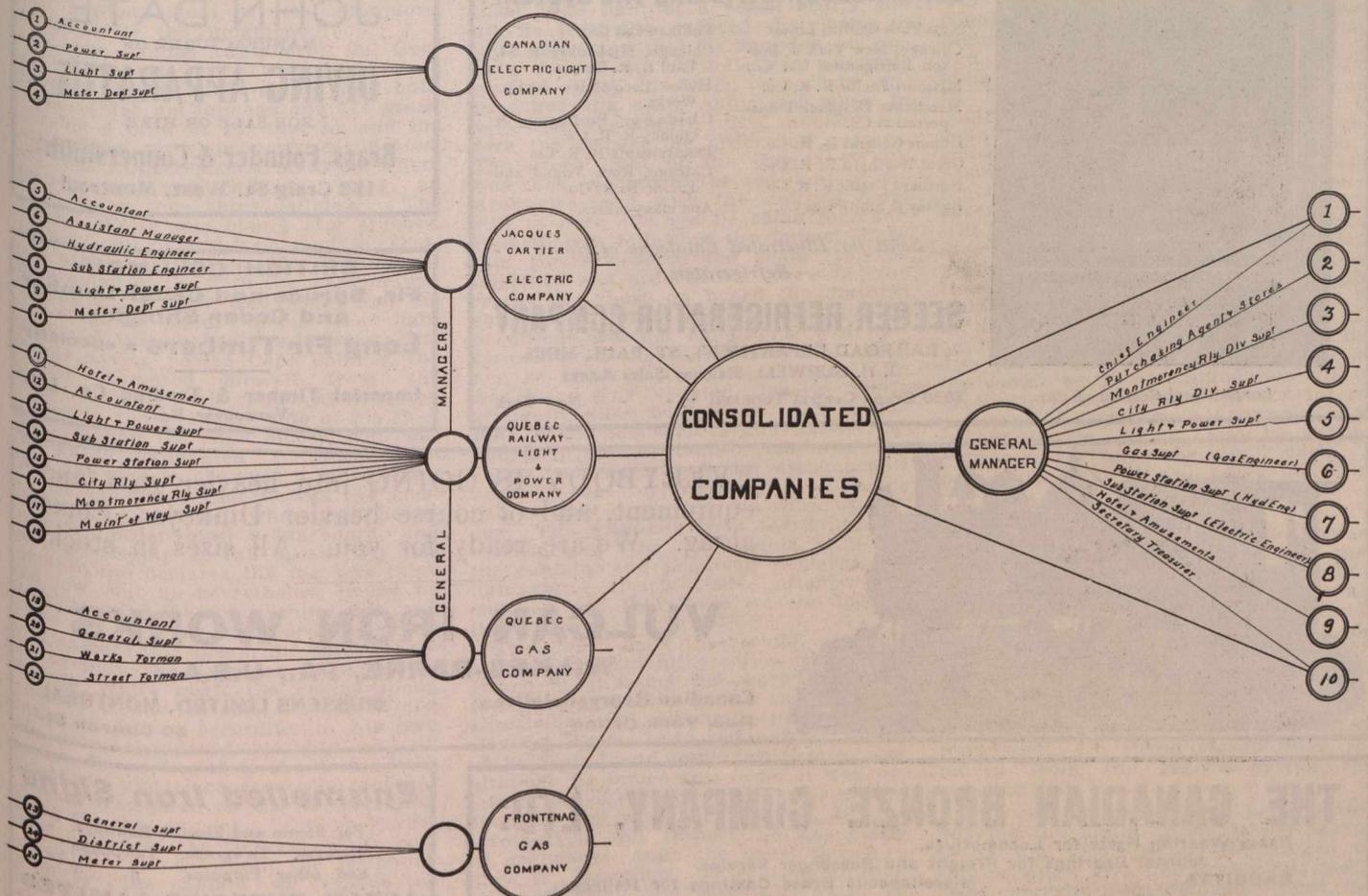
A. K. S. Hemming complained recently to the Commission that the Montreal St. Ry.'s crossing of the G.T.R.'s four tracks at Guy St., Montreal, was dangerous and that it should be removed further west, where the G.T.R. has only two tracks. He also asked that the M.S.R. service between Centre St. and Notre Dame St., along Seigneurs St., be changed, and complained that a corner of Seigneurs St. near the Montreal Woolen Mills, was dangerous, owing to the narrowness of the street, and asked that

the city be ordered to widen the street. The M.S.R. Co. questioned the Commission's jurisdiction, and the Commission decided recently that as the change of crossing suggested would involve the M.S.R. crossing the G.T.R. at another point, and as the G.T.R. is subject to Dominion jurisdiction, the Commission had no authority to make such an order, and that it has no jurisdiction to order the city to widen a street.

The Winnipeg Electric Ry. has added 30 new cars to its rolling stock during the present year, and a number of additional cars are being built at the company's shops, Fort Rouge, Winnipeg.

J. J. Hackney, who recently resigned the position of Manager, Guelph Radial Ry., on his appointment as Manager of Public Utilities at Port Arthur, Ont., as announced in our last issue, was, prior to leaving Guelph, presented with a gold fob and an address by the railway employees.

The Toronto Railway Co. recently transferred its found articles department from the head office building, corner of King and Church Streets, to the new Lansdowne Avenue car barn in the west part of the city. The matter was taken up by the city council, on the ground of inconvenience to the public, an alderman suggesting that legislation be obtained entrusting all found articles to the city. The Company's General Manager, R. J. Fleming, at once wrote the Mayor that it would be a pleasure to hand over to the city daily all articles found by the conductors, and suggested that the council appoint an officer to make arrangements to carry out the proposition. No doubt other managers would like to make similar arrangements with municipal authorities, as such a plan would save the companies considerable trouble and expense.



Quebec Railway, Light, Heat and Power Company's Organization Chart.

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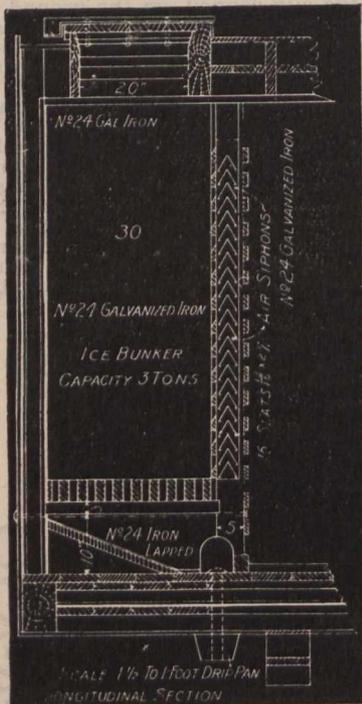
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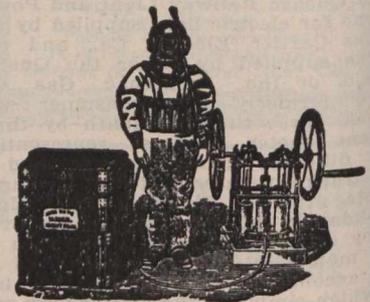
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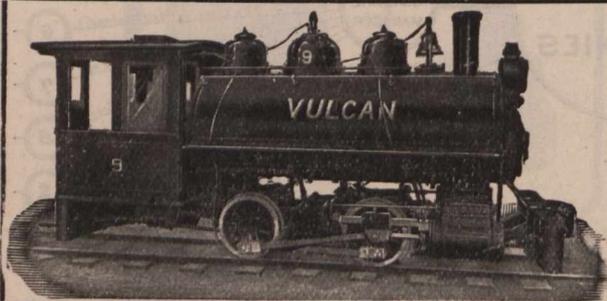
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The Collision Between the s.s. General Wolfe and the s.s. Aranmore.

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. McGough, Deputy Harbor Master, and Capt. F. X. Pouliot, of the C.G.S. Montmagny, held an investigation at Quebec, Aug. 8, into the collision which occurred off Murray Bay in the river St. Lawrence early on June 28, between the s.s. General Wolfe and the s.s. Aranmore, which resulted in the foundering of the General Wolfe and the damaging to a limited extent of the Aranmore. Following is the judgment:

Thomas Young, captain of the General Wolfe, set forth that she was a schooner rigged, single screw, steel built vessel, of 385 net tonnage and 774 gross, carrying a crew of 23, that he and the first officer were properly certificated, and that 31 passengers, many of whom were women and children, were on board when the ships collided. The General Wolfe was bound for Quebec, the final call having been made at Godbout at 8 a.m. on June 27. Throughout the evening of the 27th the weather was intermittently clear and foggy and the sea remained calm under the light southwest breeze that was blowing. The vessels having passed Cape Salmon, the captain absented himself from the bridge, and upon his return he observed a light on the starboard side of his ship, and although the chief officer, who was on watch, designated it Goose Cape light, the captain observed it more closely and concluded that it was the mast head light of a ship, whereupon he issued the order hard a starboard, and kept proceeding at full speed. At this juncture, he declares the fog was thick and low, but he nevertheless issued no signal to warn the approaching ship, and while still on his starboard helm and with engines full ahead, the ships crashed together, the Aranmore striking the General Wolfe abaft the engine room, whereupon the master of the Wolfe, seized by fright, according to his own admission, abandoned his ship, and all on board, and leaped to the deck of the Aranmore, and is consequently ignorant of what transpired on the Wolfe subsequent to the impact. Odilon Fortin, chief officer of the General Wolfe corroborated in the main the testimony given by the captain as regards the weather conditions, adhering rigidly to the statement that the fog was thick prior to and at the moment of the im-

pact. The light, which in reality was the mast head light of the Aranmore, was construed by him to be the Goose Cape light, and when the ships struck he also ignored the first duty of an officer, and sought refuge on the Aranmore. Although unseen at the moment by him, he learned subsequently that the wheelsman had also abandoned his post, following which the General Wolfe, with a deserted bridge, still under her starboard helm and her engines going full ahead, described a complete circle and plunged into the port bow of the then receding Aranmore, fortunately inflicting but slight injury. The second officer of the General Wolfe, Fournier, was awakened by the shock, and hastening to the deck ordered the boats to be launched, and participated in the work of rescue, assisting the crew who put out from the Aranmore.

The master, John Hearn, declared that the Aranmore is an iron built vessel, registered number 499, gross tonnage 1,169, and that her crew numbered 27. She is properly equipped with navigating instruments and lifeboats, and carries passengers and freight, as well as being a subsidized mail carrier between Quebec and North Shore points. Subsequent to her departure from Quebec, being outward bound, the Aranmore encountered varying weather conditions, and although he was compelled to anchor, owing to fog on the evening of June 27, he proceeded as soon as it lifted, and for some time prior to the collision the atmosphere was perfectly clear, the various lights being discernible at a considerable distance. He was on the bridge and distinguishing the mast head light of a vessel nearly end on, he forthwith ordered the helm to port, declaring that he sounded no signals, there being no indication whatever of fog. With his helm to port he approached the other ship, and when in very close proximity, or a moment before the impact, he order full astern. The green light of the General Wolfe was then exposed to the red light of the Aranmore, and with the latter's helm still to port, the vessels came together. Immediately following the impact, Captain Hearn ordered the boats to be launched and ordered his crew to the rescue of those on board the disabled ship, which work, fortunately aided by propitious weather conditions, was performed in a thoroughly practical manner, so much so that not a single life was lost. The ill-fated General Wolfe gradually filled with water, and as she sank below the surface and finally disappeared, the Aranmore rode over the vortex prepared to render assistance if need be, but fortunately the lifeboats had already completed the work of rescue. The witnesses from the Aranmore corroborated the statements made by the captain, and positively declared the lights were clearly visible prior to the collision and that there was no indication of fog.

The Court finds that while it commends the seamanlike action of Captain Hearn in directing the work of rescue following the collision, he should, upon perceiving the erratic course of the General Wolfe, have reduced the speed of his vessel and gone full astern, and although he issued this order it was too late to prove effective, for it was almost simultaneous with the impact. In his tardiness in this respect, he was guilty of negligence, and the court therefore finds it incumbent to reprimand him, and to remind him that it is owing to his previous unblemished record and commendable action following the col-

lision that he is not more severely dealt with. Capt. Young and First Officer Fortin, who threw to the winds what has been the proverbial duty of sea-faring men from time immemorial, to stand by their ship, are guilty of base cowardice, and their action in leaping to safety and leaving to perish if needs be those entrusted to their care, cannot be denounced too strongly. Young and Odilon Fortin are in the court's opinion unworthy to be numbered among mariners, whose bravery has ever been proverbial, and therefore they shall be struck from the list, their certificates being cancelled forever.

Floating Dry Dock for Toronto.

The Dominion Government has passed the plans for the floating dry dock to be built at Toronto by the Polson Iron Works, Ltd., and has granted aid in its construction, consisting of 3% per annum on a capital expenditure of \$900,000 for 20 years. The dock when complete will be of sufficient capacity to handle the largest vessels at present operating on Lake Ontario, and will be built in three sections, which when coupled together will be 600 ft. long and 100 ft. wide. It is anticipated that two of these sections will be completed early in 1912, so that vessels can be docked there in the spring. The lifting capacity of these two sections will be 4,500 tons in all. When the third section is completed, the lifting capacity will be increased to 9,000 tons.

The dock will be equipped with the most modern machinery and the pumps will be operated by electricity. On account of being built in sections each section can be used as a separate dock and the first two sections will each be able to accommodate vessels up to 175 ft. Where larger vessels are to be accommodated the two sections will be coupled together. Dredging, piling and concreting will be done to furnish a basin with sufficient draught of water for operating the docks, and new steel sheer legs of 100 tons lifting capacity will be installed. The dock will be situated just west of the company's present property, sufficient land having been leased from the city for the purpose. This will be blasted to a depth of 28 ft. to accommodate the floating dock. In addition to the foregoing works, land has also been acquired on the east side of the works, where accommodation will be made for vessels coming to dock for repairs, providing ample accommodation for all vessels which may be waiting their turn for using the repair dock. A new boiler shop is also being added to the plant.

Vessels Removed from the Register.—

During June, the following sailing vessels were removed from the Canadian register for the reasons assigned:—Alkaline, Parrsboro, N.S., 626 tons, stranded; Evelyn, Charlottetown, P.E.I., 167 tons, transferred to Barbados; J. W. Mills, Lunenburg, N.S., 76 tons, sunk in collision; Jennie May, Lunenburg, N.S., 88 tons, stranded; Maple Leaf, Lunenburg, N.S., 26 tons, transferred to Newfoundland. No steam vessels were removed from the register during the same period.

An order in council has been passed defining the limits of the public harbor of Shediac, N.B. as, all the waters inside or south of a line drawn due north astronomically from Bouleaux Point, the latter limit coinciding with the west limit of Cape Bald harbor.

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CANADA	Oct.	7
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MEGANTIC	"	28
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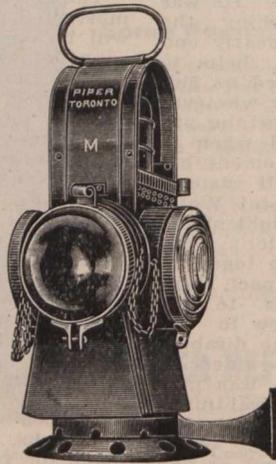
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The Stranding of the s. s. Morien.

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by N. Hall, Port Warden of Halifax, and J. W. Harrison, Marine Superintendent of the Furness Withy Line, held an investigation into this matter at Halifax, N.S., July 25, the following being the judgment:

The Morien is a steamer of 490 tons register, 834 gross, steel built, employed in carrying coal from Parrsboro, N.S., to Portland, Me., carrying a crew of 19 men; mate holding certificate, second mate no certificate, engineer holding appropriate certificate. This steamer is owned by the Home Steamship Co., Capt. Burchell registered owner.

The evidence goes to show that on July 4, at about 8 p.m. the light at Digby Cut was seen and a bearing taken and another bearing taken from another point of land which was not exactly defined by the evidence of the master. The ship was then bound for Parrsboro. The weather was very thick and the ship going at full speed. At midnight, a sounding was taken and 37 fathoms obtained. This sounding was obtained by a deep sea lead, which was used at subsequent times when the soundings were taken, although there is on board a

sounding machine of a make not mentioned, but by which Lord Kelvin's tubes are used. At 12.30 another sounding was taken, giving 32 fathoms. From that on till the stranding, he took no further soundings. The ship was then put at half speed and kept at half speed up to the time of the casualty. Cape d'Or and Cape Spencer were seen when the fog cleared up for about a quarter of an hour. Presumably a bearing from the sound of the foghorn at Cape d'Or was taken, but the evidence as to whether this was done or not, was not very clear. The course was changed when Cape Spencer was abeam, in such a way as to bring her to pass midway between Cape Split and the mainland. Relying on the casual observation of Cape Spencer to establish his position from the land, the master kept on navigating his vessel without taking any further precaution to ascertain whether this casual observation would be verified.

The ship stranded about 3.55, when the engines were put full speed astern and kept full speed astern for 20 minutes when the ship floated off, not with the engines, but with the flood tide. It was then found that the vessel was making water in several compartments. The course was shaped for Parrsboro, where she entered and anchored.

chored.

The evidence of the other witnesses corroborated, in part, that of the master.

The court finds that the master certainly neglected to take ordinary precautions which a careful navigator applies in the navigation of his vessel, and that he relied upon approximate observations and two soundings in the course of eight hours, and in view of the fact that the ground he was navigating was fraught with certain danger, owing to the changes of currents, and as it has been given out that eddies exist in the proximity of the Coves, the court is of the opinion that the master is in default for not taking ordinary precautions by using the lead, especially as he had on board a sounding machine whereby positive accuracy could be ascertained without stopping his vessel or losing any time.

Again, looking at it from a different point of view, the court is of opinion that owing to the thick weather experienced during the last eight hours, that it would have been preferable for the master to anchor his vessel and lose a tide rather than risk the property in his care.

In view of these conclusions the court cannot but severely censure the master

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING JUNE, 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Bertha D.	126,958	Namu, B.C., 1910	Screw 6 n. h. p.	51.0	10.2	3.9	19	13	Victoria, B.C.	R. Draney, Namu Harbor, B.C.
Bonnington	130,555	Nakusp, B.C., 1911	Pa. 202.5 39.1	7.5	17.0	1700	955	4	Vancouver, B.C.	C. P.R. Co., Montreal.
Bow Echo	130,375	Peterboro, Ont., 1911	Screw	33.8	7.0	3.4	4	4	Peterboro, Ont.	Peterboro Canoe Co., Peterboro, Ont.
Brenda C.	130,571	Tancook, N.S., 1910	"	41.4	10.3	5.3	11	11	Lunenburg, N.S.	E. Covey, M.O., Tancook, N.S.
C. L. Miller	130,574	Little Tancook, N.S., 1909	"	36.6	10.2	5.4	11	10	"	L. Miller, Northwest Cove, N.S.
Castlegar	130,556	Okanagan Landing, B.C., '11	" 27	94.4	19.4	8.2	104	71	Vancouver, B.C.	C. P.R. Co., Montreal.
Chatson	130,282	Port Robinson, Ont., 1911	" 12	61.0	17.6	8.8	55	34	St. Catharines, Ont.	R. Ross, Port Robinson, Ont.
Cora Bertie	126,878	Deer Island, N.B., 1911	"	64.0	16.3	7.0	31	31	Digby, N.S.	W. G. Crocker, Freeport, N.S.
Crombie	130,557	Chase, B.C., 1911	" 6	89.4	18.1	7.2	162	102	Vancouver, B.C.	Adams River Lumber Co., Chase, B.C.
Emperor	126,654	Collingwood, Ont., 1910	" 199	525.0	56.1	27.0	7031	4641	Midland, Ont.	Inland Lines, Ltd., Midland, Ont.
Forman F.	130,575	Little Tancook, N.S., 1910	"	42.4	10.9	6.2	15	"	Lunenburg, N.S.	O. Fleet, Blandford, N.S.
Glen Isle (1)	107,789	Ottawa, Ont., 1900	" 4	108.0	23.6	6.6	156	95	Ottawa, Ont.	Rideau Canal Supply Co., Ottawa.
G. Whiz	126,839	Hamlet, Ont., 1911	" 12	73.0	16.0	3.0	55	39	Toronto	N. E. Bennett, Hamlet, Ont.
Gordon - Kelly	130,269	Simcoe, Ont., 1904	Pa. 2	37.0	10.6	3.0	16	10	Ottawa	G. Gordon & Co., Cache Bay, Ont.
I'llaway	130,553	Vancouver, B.C., 1911	Screw 2	37.0	9.3	4.5	14	9	Vancouver, B.C.	W. A. Akhurst, Vancouver, B.C.
John Milton (2)	75,583	Deseronto, Ont., 1876	" 2	48.0	10.0	3.9	14	10	Brockville, Ont.	J. H. Simpson, Brockville, Ont.
Kitkatka	126,617	Hartley Bay, B.C., 1911	"	30.5	9.0	3.1	7	5	Prince Rupert, B.C.	P. Bates, et al., Hartley Bay, B.C.
Laurentian (3)	113,641	Beverly, Eng., 1902	" 84	149.0	24.0	11.1	355	155	Quebec, Que.	A. C. and G. D. Davie, Levis, Que.
Lavita	130,549	Seattle, Wash., 1908	" 1	37.0	11.7	7.2	11	8	Vancouver, B.C.	E. W. MacLean, Vancouver, B.C.
Lottie B. L.	130,570	Tancook, N.S., 1910	" 3	42.0	10.4	5.3	12	11	Lunenburg, N.S.	A. Levy, Little Tancook, N.S.
Maggie Main	126,840	Gravenhurst, Ont., 1909	" 1	40.0	8.5	4.5	19	16	Toronto	D. Schell, Gravenhurst, Ont.
Mary Winnie	130,550	Vancouver, B.C., 1911	" 1	34.8	9.5	4.0	10	7	Vancouver, B.C.	H. M. Wood, North Arm, Burrard Inlet, B.C.
Oceastig	126,959	Muskegon, Mich., 1910	" 1	25.0	7.2	3.3	5	3	Victoria, B.C.	A. Blackburn, Ganges Harbor, B.C.
Phana (4)	98,845	Dumbarton, Scotland, 1891	" 1254	531.0	54.8	17.9	7815	4278	Toronto	Bermuda Atlantic Steamship Co., Toronto.
Phantom	126,669	Shelburne, N.S., 1911	"	35.0	6.9	4.1	8	6	Shelburne, N.S.	F. D. Parker, Wolfville, N.S.
Polana	126,980	Kingston, Ont., 1911	" 54	107.3	23.0	12.6	296	86	Quebec, Que.	Minister of Agriculture, Ottawa.
Prince Albert	99,584	Hull, Eng., 1892	" 170	232.0	30.0	14.1	1015	587	Prince Rupert, B.C.	Grand Trunk Pacific Development Co., Montreal
Puddle Duck	130,554	Vancouver, B.C., 1910	" 1	42.5	9.4	4.4	15	10	Vancouver, B.C.	H. de Wolfe King, Vancouver, B.C.
Reverie	130,552	Coupeville, Wash., 1909	"	35.5	14.2	4.8	18	15	"	E. McMillan, North Vancouver, B.C.
Sadie Evelyn	130,580	Tancook, N.S., 1911	" 3	42.0	10.3	5.6	12	"	Lunenburg, N.S.	H. Publicover, Blandford, N.S.
Senawa Nabee	126,720	St. John, N.B., 1911	" 3	38.9	9.3	5.0	17	12	St. John, N.B.	Minister of Public Works, Ottawa.
Tramontana	130,449	U.S.	" 1	60.0	16.0	6.0	23	19	Vancouver, B.C.	Kingcome Navigation Co., Vancouver, B.C.
Veve	130,270	Sturgeon Falls, Ont., 1908	" 1	38.0	12.0	3.3	22	14	Ottawa	G. Gordon & Co., Cache Bay, Ont.
Victor S.	130,579	Tancook, N.S., 1908	" 1	40.2	10.3	5.8	12	11	Lunenburg, N.S.	A. Stephens, M.O., Mill Cove, N.S.
Zora (5)	13,551	U.S.	" 2	39.9	10.8	3.5	15	10	Vancouver, B.C.	J. M. Smith, Vancouver, B.C.

(1) Formerly, Welshman. (2) Formerly, Florence. (3) Formerly, King Edward. (4) Formerly, Scott. (5) Formerly, Taku.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING JUNE, 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Agnes Pauline	126,808	Shelburne, N.S., 1911	Schr.	74.0	22.0	9.0	71	Yarmouth, N.S.	N. D'Entremont, M.O., Pubnico, N.S.
Alice M.C.	130,678	Indian Harbor, N.S., 1907	"	38.0	10.6	5.4	12	Lunenburg, N.S.	H. Covey, M.O., Indian Harbor, N.S.
Caracuet	130,339	Caracuet, N.B., 1911	"	34.0	13.5	5.6	15	Chatham, N.B.	P. Doiron, Caracuet, N.B.
Denton S.	130,567	Tancook, N.S., 1908	"	36.0	10.8	5.2	11	Lunenburg, N.S.	C. Scott, Indian Harbor, N.S.
Ella M. Young	130,568	" 1910	"	42.4	10.8	5.4	12	"	M. Young, Dover, N.S.
Filmore H.	130,576	Lunenburg, N.S., 1907	"	40.2	10.6	5.6	11	"	A. Hubley, Pleasantville, N.S.
Financier	130,338	Bay du Vin, N.B., 1911	"	34.0	9.7	5.0	10	Chatham, N.B.	J. R. McMaster, Harkwicke, N.B.
Fred	126,776	Richibucto, N.B., 1911	"	41.0	12.3	5.2	14	Richibucto, N.B.	W. E. Forbes, Richibucto, N.B.
Ginger	130,386	Caracuet, N.B., 1911	"	38.2	14.6	6.0	19	Chatham, N.B.	L. L. Friolet, Caracuet, N.B.
Hattie L. B.	126,579	Little River, N.S., 1911	"	43.4	6.6	6.5	12	Pt. Hawkesbury, N.S.	M. LeBlanc, Little River, N.S.
Hennepin	126,578	Grand Etang, N.S., 1911	"	42.0	11.6	6.7	12	"	J. M. Cormier, Grand Etang, N.S.
Irene L.	130,577	Little Tancook, N.S., 1910	"	39.6	10.2	5.4	11	Lunenburg, N.S.	C. Levy, Little Tancook, N.S.
L'Acadienne	130,337	Lameque, N.B., 1911	"	37.0	13.3	5.8	18	Chatham, N.B.	J. S. Noel, Shippigan Island, N.B.
Lola B.	126,915	Spry Bay, N.S., 1910	"	32.3	11.4	5.4	10	Halifax, N.S.	C. W. Boutiller, Spry Bay, N.S.
Marguerite H.	130,672	Mahone Bay, N.S., 1911	"	74.6	23.0	9.2	75	Lunenburg, N.S.	D. Heisler, M.O., Lunenburg, N.S.
Marion R.	126,916	Popes Harbor, N.S., 1910	"	51.5	13.6	6.2	22	Halifax, N.S.	D. Richardson, De Bay Cove, N.S.
Muriel L.	130,573	Little Tancook, N.S., 1910	"	44.6	11.2	7.0	15	Lunenburg, N.S.	P. Lowe, Blandford, N.S.
Otokia	130,572	Mahone Bay, N.S., 1911	"	96.6	25.0	9.8	89	"	A. Ernst, M.O., Mahone Bay, N.S.
Pauline L.	130,671	Little Tancook, N.S., 1906	"	43.6	10.8	6.6	15	"	F. Levy, Little Tancook, N.S.
R. J. W.	130,335	Caracuet, N.B., 1911	"	47.0	14.6	6.6	26	Chatham, N.B.	P. J. Fiott, Caracuet, N.B.
309 Violet C.	126,778	Richibucto, N.B., 1911	"	30.0	11.9	5.0	10	Richibucto, N.B.	W. E. Forbes, Richibucto, N.B.
310 Violet C.	126,917	Sambro, N.S., 1911	"	37.9	11.4	5.0	14	Halifax, N.S.	J. H. Smith, Sambro, N.S.
Westholme No. 2	126,957	Chemainus, B.C., 1900	Barge	80.3	36.5	8.4	218	Victoria, B.C.	Westholme Lumber Co., Victoria, B.C.

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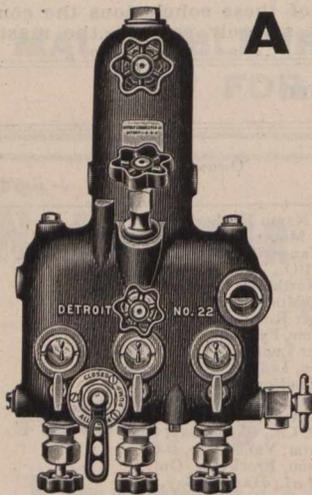
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Montreal Harbor Elevator Facilities

It was stated in Montreal, Aug. 3, that as a result of the congested condition existing at the port, the Harbor Commissioners would shortly announce that in future no grain would be received at their elevators which was not destined for immediate shipment to trans-Atlantic ports. It was also stated that the 20 days free storage would be discontinued. D. Seath, Secretary to the Harbor Commission, is reported to have stated that Montreal was not intended to be a storage port, but was only suited as a quick transit centre.

In response to a request from Detroit for information on the point as to whether Montreal was unable to accommodate more grain, it was reported, Aug. 9, that the Commission had replied that the statement as circulated at certain lake ports to that effect was untrue, as no grain was allowed to remain unloaded longer than was necessary. On Aug. 9, it was stated that 15 vessels were waiting to discharge grain into elevators, but that there was no accommodation, the Commissioners' elevator and the G.T.R. elevator both being filled to capacity.

The Commissioners state that the fault does not lie so much with the port as with the grain dealers, who, in spite of the fact that they are well aware that every available foot of space in the elevators is occupied, continue to ship grain by thousands of bushels, without troubling about the fact that there are no storage facilities for it.

The Commissioners' new elevator will not be completed until the spring, but they have decided to enlarge it by providing for a further 850,000 bush., making the total capacity 2,600,000 bush. John S. Metcalf Co., Ltd., Montreal, are the designing and constructing engineers.

Notices to Canadian Mariners.

The Department of Marine has issued the following:—

75. July 13, 191. Ontario, Detroit River, Limekiln Crossing channel, light vessels again in position. 192. Ontario, Georgian bay, Midland bay, Tiffin, range lights established. 193. Ontario, Georgian bay, Victoria harbor, Port McNicoll, lighted beacon, buoys, sailing directions. 76. July 13, 194. Lists of Government stations for communication with shipping on the eastern coasts of Canada.

77. July 18, 195. New Brunswick, south coast, Bay of Fundy, St. John harbor, Partridge Island, lighthouse tower increased in height. 196. New Brunswick, Chaleur bay, Petit Rocher, buoy established. 197. Nova Scotia, Bay of Fundy, Hall harbor, lighthouse established. 198. Nova Scotia, Bay of Fundy, Hampton, lighthouse established.

78. July 19.—199. New Brunswick, south coast, Bay of Fundy, Musquash, intended change in character of light. 200. Nova Scotia, Bay of Fundy, Minas basin, Cobequid bay, Highland village, description of light. 201. Prince Edward Island, south coast, Northumberland strait, Egmont bay, entrance to Percival river, buoy established.

79. July 21.—202. New Brunswick, east coast, Northumberland strait, Richibucto harbor entrance, change in position of lights on south beach and north beach.

80. July 25. 203. Nova Scotia, Bay of Fundy, Lurcher shoal, lightship to be

removed from her station temporarily for repairs.

81. July 26. 204. British Columbia, Vancouver island, Victoria harbor, Selkirk water, rocks off Halkett island, buoy. 205. British Columbia, Queen Charlotte islands, Graham island, Hecate strait, Skidegate inlet, Deadtree point, wireless telegraph station established.

82. July 27. 206. Quebec, Ottawa river mouth, Lake St. Louis, shoal in Dowker channel, temporary buoy. 207. Ontario, Detroit river, Ballard reef channel, bulletin board established. 208. Ontario, Lake Superior, east end, Batchawana bay, Corbeil point, name. 209. Ontario, Lake Superior, Thunder bay, Port Arthur, wireless telegraph station established.

83. July 27. 210. Quebec, Gulf of St. Lawrence, Gaspé coast, L'Anse a Beaufils, light established. 211. Quebec, Gulf of St. Lawrence, Magdalen islands, Grindstone island, wireless telegraph station established. 212. Quebec, River St. Lawrence, Portneuf-en-bas, new lighthouse. 213. Quebec, Saguenay river, Riviere du Moulin, change in front range light. 214. Quebec, River St. Lawrence, Barrett ledges, west buoy changed in position.

84. July 28. 215. Nova Scotia, Atlantic coast, Petpeswick inlet, positions of spar buoys. 216. Nova Scotia, Northumberland strait, Caribou channel, beacons.

85. July 31. 217. British Columbia, Strait of Georgia, Malaspina strait, Powell river, hydrographic notes, buoys established. 218. British Columbia, Nepean sound, Otter channel, reported rock northward of Campania island not found.

86. Aug. 1. 219. Nova Scotia, south coast, submarine bell buoy moored near Egg island gas and whistling buoy for experimental purposes. 220. Nova Scotia, Cape Breton island, south coast, L'Ardoise, storm signal station established. 221. Nova Scotia, Cape Breton island, east coast, storm signal stations established. 222. Nova Scotia, Cape Breton island, north coast, Bay St. Lawrence, storm signal station established. 223. Quebec, Gulf of St. Lawrence, off Fame Point, submarine bell buoy moored for experimental purposes.

87. Aug. 2. 224. Quebec, Gulf of St. Lawrence, Gaspé basin, paddy shoal lighthouse, color of pier, light to be changed. 225. Quebec, Gulf of St. Lawrence, Gaspé Basin, Jauvum shoal, lighthouse, color of pier, light to be changed.

88. Aug. 3. 226. Nova Scotia, Bay of Fundy, Brier island lightstation, intended change in characteristic of fog alarm. 227. Nova Scotia, west coast, Cape Fourchu lightstation, intended change in characteristic of fog alarm. 228. Nova Scotia, south coast, Halifax approach, Chebucto head, intended change in characteristic of fog alarm. 229. Nova Scotia, south coast, Halifax harbor, Mauger beach, intended change in characteristic of fog alarm. 230. Nova Scotia, south-east coast, Cranberry island, intended change in characteristic of fog alarm.

231. Nova Scotia, Cape Breton island, south coast, Louisburg harbor, intended change in characteristic of fog alarm. 232. Nova Scotia, Cape Breton island, east coast, Scataris island, northeast point, intended change in characteristic of fog alarm. 233. Nova Scotia, Cape Breton island, east coast, Flat point lightstation, intended change in characteristic of fog alarm. 234. Newfoundland, south coast, Cape Freels, intended change in characteristic of fog alarm.

235. Newfoundland, southeast coast, Cape Race, intended change in characteristic of fog alarm. 89. Aug. 8.—236. Ontario, Georgian bay, Byng inlet, additional buoys.

90. Aug. 10.—237. Nova Scotia, south coast, telephone cable laid from Chebucto head to Sambro island. 238. Prince Edward Island, north coast, Tracadie,

change in position of range lighthouses. 239. Quebec, river St. Lawrence below Quebec, north of Patience island, gas buoy removed. 240. Quebec, River St. Lawrence below Quebec, West narrows, West Sand spit, can buoy replaced temporarily by gas buoy.

91. Aug. 11.—241. British Columbia, Vancouver island, west coast, Clayoquot sound, Fortune channel, Mosquito harbor, Plover point, light discontinued. 242. British Columbia, Vancouver island, west coast, Clayoquot sound, Village channel, lighted buoys. 243. British Columbia, Vancouver island, southeast coast, Esquimalt harbor, Constance cove, position of mooring buoy. 244. British Columbia, Strait of Georgia, Discovery passage, Cape Mudge, buoy established. 245. British Columbia, Seymour inlet, Wawatie bay, uncharted rock.

92. Aug. 12.—246. Ontario, Great Lakes and River St. Lawrence, dates to which lights will be kept in operation.

93. Aug. 14. 247. Quebec, Gulf of St. Lawrence, Cape Rosier, intended change in characteristic of fog alarm.

248. Quebec, Gulf of St. Lawrence, Cape Magdalen, intended change in characteristic of fog alarm. 249. Quebec, Lake St. John, mouth of Repinoka river, range lights established. 250. Quebec, Lake St. John, back range light on Riviere a la Pipe wharf. 251. Quebec, River St. Lawrence below Quebec, eastward of Orleans Island, gas buoys placed temporarily for dredging purposes.

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Maritime Provinces and Newfoundland.

The town of Campbellton, N.B., has deposited plans and description of a wharf to be built on the Resugouche river there.

An order in council has been passed, making compulsory, the payment of pilotage dues, within the pilotage district of Shepody Basin, N.B.

The Department of Marine is receiving tenders, to Sept. 5, for four third order 10 ft. iron lanterns for lighthouses situated in the Maritime Provinces.

W. N. Reinhardt, owner of the schooner Guide, is suing the Steamship Cape Breton Co., owner of the s.s. Cape Breton, for damages due to the collision between the two vessels.

The Dominion Government s.s. Montmagny left Quebec, Aug. 15, for the Lower St. Lawrence, the Straits of Belle Isle and Labrador, with provisions and construction materials for various stations there.

Hon. E. Bowring, announced at St. John's, Nfld., at the recent celebration of the centenary of the firm of Bowring and Co., that the directors had decided to give as a centenary memorial, \$10,000 a year for five years, and in addition, the regular employees were each to receive one month's wages.

The Halifax Trading and Sealing Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$85,000, and office at Halifax, N.S., with powers, among other things, to carry on a general shipping business, and to build, purchase, or otherwise acquire, and operate vessels of all kinds.

The Dominion Coal Co. has entered into a contract with Furness Withy and Co. for the carrying of coal from Sydney, N.S., for seven years. In order to carry out this agreement, Furness Withy and Co. have ordered in Middlesbrough, Eng., two specially designed vessels, with a carrying capacity of 7,600 tons each.

Tenders were received by the Public Works Department, Aug. 10, for the construction of a dry dock at St. John, N.B., and for dredging and other harbor works there, which it is proposed to

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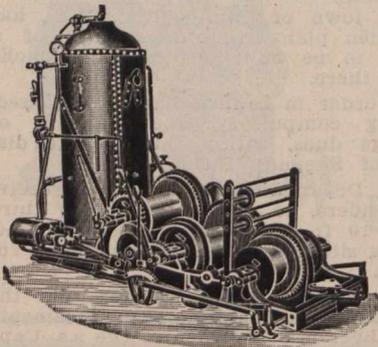
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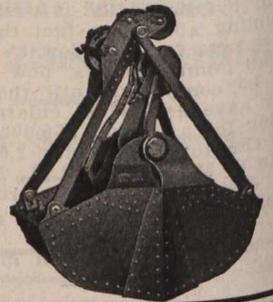
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carry out at Courtenay Bay. It is said that tenders have been received from some of the well known British firms specializing in this class of work.

The s.s. Amethyst, which was recently wrecked at Mutton Head, near Trepassy, on the southeast coast of Newfoundland, was built at Stockton-on-Tees, Eng., in 1878, and was formerly named Santiago de Cuba. She was screw driven, with engine of 120 n.h.p. Her dimensions were: length, 240.5 ft.; breadth, 32.2 ft.; depth, 16.6 ft.; tonnage, 1,495 gross, 894 register.

The Port Hood Richmond Railway Coal Co.'s s.s. John Irwin, which recently foundered at sea, under unknown circumstances, during a heavy storm, was built at Paisley, Scotland, in 1897. She was screw driven, with engine of 68 n.h.p. Her dimensions were: length, 140 ft.; breadth, 23.1 ft.; depth, 9.7 ft.; tonnage, 303 gross, 80 register. Of the crew of 11, one only was saved.

The Minister of Public Works, while in St. John, N.B., Aug. 9, is reported to have said that as soon as the transfer of the lots on the west side of the harbor from the city to the C.P.R. is completed, tenders will be called for the construction of an extensive wharf and sea wall, and possibly for the extension of the present breakwater to Partridge Island, for the protection of the harbor.

A steamboat, named Robert G. Cann, was launched at Shelburne, N.S., recently, for Hugh Cann and Son, for operation on the Canso and Mulgrave route, replacing the steamboat John L. Cann. She was subsequently towed to Yarmouth, where her machinery will be installed. Her dimensions are: length, 124 ft.; breadth, 25 ft.; depth, 9 ft. The hull has been built exceptionally strong and sheathed with galvanized iron about the water line, as she will be in operation during the winter.

The Government has received eight tenders for the building of vessels for the Canadian navy. Of the chief firms tendering, it is reported that Cammel, Laird and Co. were the lowest, and stated that its plant would be located at St. John, N.B. Swan, Hunter and Wigham Richardson, the second lowest tenderer, named Halifax, N.S., as their proposed location; the British Canadian Shipbuilding Co., of which Sir Henry M. Pellatt is the head, named Sydney, and Vickers, Limited, named Montreal.

The joint commission appointed by Canada and the U.S. recently to enquire into the feasibility and desirability of further improving the navigation of the St. John River, by the construction of storage dams and other works, has sent in an interim report, describing the work done up to the present, and stating that enough data has been secured to justify them in carrying out the study of the problems which will form the basis of their final report, which, it is expected, will be submitted in the fall.

Province of Quebec Marine.

The Montreal Harbor Commission's steam tug Sir Hugh Allan, arrived at Montreal, from Barrow-in-Furness, Eng., at the end of July, having taken 15 days on the voyage.

The Montreal Harbor Commissioners have awarded contracts for the construction of two concrete sheds, each 400 ft. long, on the Tarte pier. At first the sheds will be built one story, but provision will be made for the addition of another at any time.

A notice has been issued to all vessels to reduce their speed to a minimum when passing a point in the St. Lawrence River, at Quebec, between the Allan Line wharf and the market dock, where the National Transcontinental Ry. Commissioners have a scow at work with deep water boring apparatus.

The C.P.R. has installed a fire pump on its Atlantic service tug Cruiser. It was made in London, Eng., is operated in conjunction with the tug's boilers, and is capable of sustaining a pressure of 160 lbs. A recent test proved the capabilities of the apparatus and its usefulness in case of fire.

The Dominion Government has entered into a contract with Canadian Vickers, Limited, Montreal, for the construction of a dry dock at Montreal, to be of the floating type, and of the first class, for which a subsidy will be paid of 3 1/2% per annum for 35 years, on an investment up to \$3,000,000. The dock will be built in England and towed to Montreal.

The Montreal harbor revenue for July was \$57,381.71, against \$56,456.68 for July, 1910. From the commencement of navigation to July 31, the revenue was \$176,380.73, against \$169,296.73 for the same period 1910. There was a slight decrease in receipts from imports. Since the commencement of navigation, 372 ocean-going vessels, with a tonnage of 1,112,609, entered the harbor, against 351 vessels, with a tonnage of 1,041,721 for the same period 1910.

Ontario and the Great Lakes.

During July, there were 1,249,935 bush. of grain received at Kingston, and transhipped to Montreal by river barges.

The Northern Navigation Co.'s s.s. Hamonic was recently docked at Port Arthur, to have a propeller blade replaced.

The Department of Public Works will receive tenders to Sept. 11 for the construction of a breakwater at Thessalon, in the Algoma district.

The Department of Railways and Canals received tenders, Aug. 21, for the construction of a turning basin at Thorold, on the Welland canal.

The Department of Marine Steamboat Lambton, grounded on Pancake shoal, near Whitefish Point, Aug. 6, and was subsequently released with minor damages.

The Niagara Navigation Co.'s steamboat, Chicora, was towed to Toronto by the same company's steamboat, Cayuga, Aug. 21, having broken her intermediate shaft.

The Department of Public Works has awarded contracts for dredging at Big Island to R. Weddell and Co., Trenton,

and at Kingsville, to the Windsor Dredging Co., Windsor, Ont.

The Niagara, St. Catharines and Toronto Navigation Co.'s steamboat Dalhousie City, has been placed in service between Toronto and Port Dalhousie, making two trips daily.

The Ontario and Quebec Navigation Co.'s s.s. Geronia, while entering the C.P.R. wharf at Brockville, Aug. 22, collided with the ferry steamboat Bigelow, considerably damaging her upper works.

The Canadian Storage Corporation, Ltd., proposes to build storage warehouse docks at Port Arthur, each 800 ft. long, with concrete buildings, seven stories high, each costing about \$400,000.

The Marine Department is placing a buoy on the Minnie Blakley shoal at Point Anne, near Belleville, where the Lake Ontario and Bay of Quinte Steamboat Co.'s steamboat Caspian recently grounded.

The ferry steamboat Sirius, operating between Cornwall, Ont., and Massena, N.Y., and owned in the latter place, capsized, Aug. 1, shortly after leaving the New York shore, seven of the passengers being drowned.

A steam tug, named John R. Stover, built for Eddy Bros., Bay City, Mich., was launched at Collingwood recently. She is built of steel throughout, her dimensions being: length, 75 ft.; breadth, 18 ft.; depth, 9 ft.

Capt. Williams, commodore of the Toronto Ferry Co.'s fleet, was removed from the steamboat Trillium, Aug. 13, on account of sudden illness. His place was taken by Capt. Jennings of the steamboat Primrose.

The Niagara, St. Catharines and Toronto Navigation Co.'s steamboat, Dalhousie City, left Collingwood, Aug. 14, for Toronto, where she arrived, Aug. 21, when she was placed on her route between Toronto and Port Dalhousie.

The General Realty Corporation, Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$500,000 and office at Port Arthur, with power among other things to build, own, deal in and operate steam and other vessels.

The Niagara Navigation Co.'s s.s. Cayuga, which lost a blade from one of her propellers, Aug. 7, had the damage repaired at Toronto by the use of the specially designed cofferdam, which was fully described and illustrated in our June and July, 1908, issues.

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the Sault Ste. Marie Canals in July:

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Copper	Eastbound	Short tons	1,300	16,379	17,679
Grain	"	Bushels	2,907,776	645,976	3,553,752
Building stone	"	Short tons	1,760	30	1,790
Flour	"	Barrels	311,501	456,360	767,861
Iron ore	"	Short tons	3,698,654	1,463,169	5,161,823
Pig iron	"	"	"	5,081	5,081
Lumber	"	M. ft. B.M.	5,835	82,214	88,049
Silver ore	"	Short tons	"	"	"
Wheat	"	Bushels	4,707,365	1,475,232	6,182,597
General merchandise	"	Short tons	6,152	16,060	22,212
Passengers	"	Number	4,626	7,017	11,643
Coal, hard	Westbound	Short tons	56,021	362,411	418,432
Coal, soft	"	"	596,693	1,613,611	2,210,309
Flour	"	Barrels	"	"	"
Grain	"	Bushels	"	1,100	1,100
Manufactured iron	"	Short tons	39,258	24,128	63,386
Iron ore	"	"	"	"	"
Salt	"	Barrels	8,397	753,169	66,566
General merchandise	"	Short tons	82,480	185,649	168,129
Passengers	"	Number	6,577	6,708	13,285
Vessel passages	"	Number	1,029	1,845	2,874
Registered tonnage	"	Net	2,928,324	3,611,996	6,540,320
Freight—Eastbound	"	Short tons	3,940,525	1,735,094	5,675,619
"—Westbound	"	"	775,667	2,094,543	2,870,200
Total freight	"	"	4,716,182	3,829,637	8,545,819

Short tons are tons of 2,000 pounds



DEPARTMENT OF RAILWAYS AND CANALS.

Branch Line of Railway From Guysborough to Sunny Brae Through Country Harbor Crossroads with an Extension from Country Harbor Crossroads to Deep Water of Country Harbor.

SEALED TENDERS addressed to the undersigned and endorsed "Tender for Guysborough County Harbor Line," will be received at this office until 16 o'clock, on Friday, September 15th, 1911, for section No. 1, of the above line of railway, comprising that portion extending from Guysborough to Country Harbor Crossroads and from the latter point to Deep Water Country Harbor.

Plans profiles specifications and forms of contract to be entered into can be seen on and after the 15th instant at the office of the Chief Engineer of the Department of Railways and Canals, Ottawa, at the office of the Chief Engineer, of the Intercolonial Railway, Moncton; and at the office of the Board of Trade of Halifax. Forms of tender may be procured from the Chief Engineer of the Department of Railways and Canals or from the Chief Engineer of the Intercolonial Railway.

Parties tendering will be required to accept the fair wages schedule prepared or to be prepared by the Department of Labor, which schedule will form part of the contract.

Contractors are requested to bear in mind that tenders will not be considered unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature, the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque for the sum of \$100,000 made payable to the order of the Minister of Railways and Canals must accompany each tender, which sum will be forfeited if the party tendering declines entering into contract for the work at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,
L. K. JONES.

Secretary.

Department of Railways and Canals,
Ottawa, August 12th 1911.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

**The Canadian Pacific Railway Co.
DIVIDEND NOTICE.**

At a meeting of the Board of Directors, held this day, the following dividends were declared:—

On the Preference Stock two per cent. for the half year ended 30th June last.

On the Common Stock two and one-half per cent. for the quarter ended 30th June last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from interest on the proceeds of land sales and from other extraneous assets.

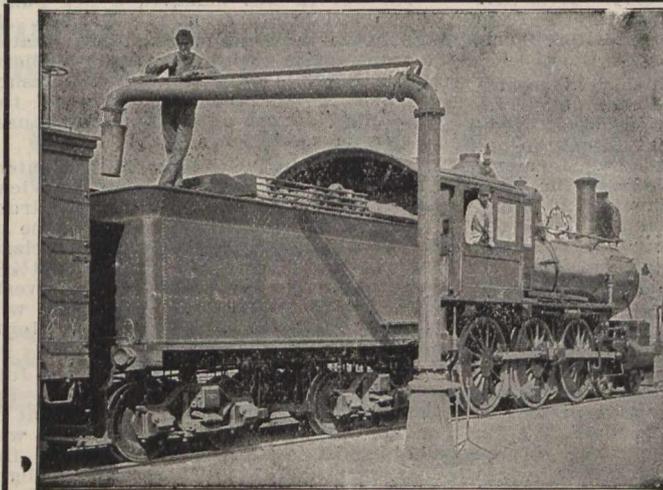
Both dividends will be paid on September 30th to shareholders of record at the closing of the books in Montreal, New York, and London, at 3 p.m. on Friday, 1st September next.

All books will be re-opened on Thursday, October 5th.

By order of the Board,
W. R. BAKER,
Secretary.

Montreal, 14th August, 1911.

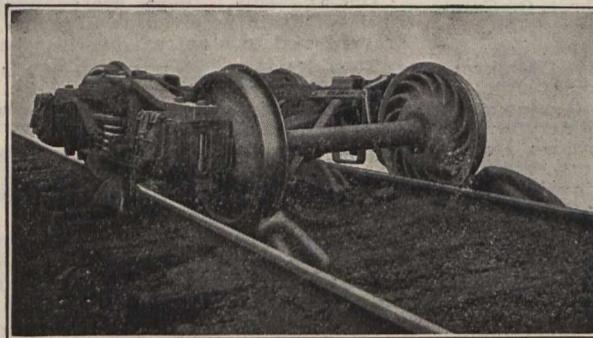
During June, four employes were killed, and one injured, in the course of their work in connection with the navigation of Canadian vessels. Of the fatalities, two were due to falls from vessels and drowning, and one each to being crushed between lock gates and vessel and to a fall overboard and striking a log.



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Centrifugal Pumps, Pumping Engines, Gas Plants, Gas Power
Plants, Cast Iron Pipe, Hydrants, Valves & Fittings, etc., etc.

**R. D. WOOD & CO.
PHILADELPHIA, Pa.**

The Cornwall and Montreal Navigation Co.'s steamboat Filgate, which was burnt recently at Valleyfield, Que., has been raised and the hull taken to Cornwall, where it has been docked. It is stated that the vessel will, in all probability, be rebuilt, and be ready for further service next season.

Press reports from Windsor, state that the residents of Pelee Island have subscribed the necessary funds for the building of a steamboat to ply between the island and the main land. The proposed vessel, it is said, will be larger than any of those now on this service, which are considered too small for rough weather.

Traffic on the Canadian canals for July shows considerable falling off in the tonnage passing through. The total is 17,143,060, against 21,457,752, a decrease of 4,314,692 tons. The decrease is chiefly due to the Sault canals, where about 4,500,000 tons less of ore was handled this year than in the same month of 1910.

The Merchants Mutual Line steamboat, H. M. Pellatt, was seized, Aug. 14, at Montreal, on a claim for \$10,000 for damages sustained by the U.S. yacht Cignet, in a collision in the canal, Aug. 12, for which it is alleged the H. M. Pellatt is responsible. The vessel was released on bonds furnished by G. E. Jaques and Co., agents.

The Keystone Transportation Co.'s steamboat Key West ran into the head gates of lock 21 on the Welland canal, Aug. 20, opening them and thus causing the carrying away of the gates and some damage to the vessel itself. The replacing of the gates was accomplished in very short time, and locking was resumed the following day.

The Midland Towing and Wrecking Co.'s barge Albatross foundered in Georgian Bay, near French River, Aug. 21, those on board being saved after spending the night and day drifting in small boats. The barge was in tow of the Midland tug C. C. Martin, which was also lost, together with her entire crew.

W. R. Burgin has been appointed Travelling Freight and Passenger Agent, Northern Navigation Co., to cover the territory west of Toronto, including the Northern Division of the G.T.R., with office at Sarnia, Ont. S. Hewitt has been appointed Travelling Freight and Passenger Agent for the city of Toronto, and other special work, with office at the Union Station, Toronto.

The steamboat Mary Louise, owned in Kingston, was reported to have sunk in the Rideau River, near Dog Lake, Aug. 12. She was built at Portland, Ont., in 1902, as a sailing vessel, her dimensions being: length 77.2 ft., breadth 18.6 ft., depth 4.2 ft., tonnage, 60 gross, 30 register, and she was equipped with engine of 3 n.h.p. driving a screw.

The Ontario and Quebec Navigation Co.'s s.s. Geronia, while en route from Quebec to Toronto, Aug. 9, lost one of her propellers, and had to be docked at Kingston to have it replaced. It was estimated that the company would lose about \$10,000 on account of the mishap, as the vessel was booked to capacity, the route having proved exceedingly popular.

The following is a list of members of the Toronto Harbor Commission, created by the recent legislation, re-modeling the previous commission, and extending its powers. Appointed by the Dominion Government, F. S. Spence; appointed by the city, T. L. Church, R. H. Smith and L. V. Clarke; appointed by the Toronto Board of Trade, R. S. Gourlay.

Press reports recently stated that the new lake freighter Toiler, which is equipped with internal combustion en-

gines, and of which we have given full description, was on her way across the Atlantic to take up her service on the Great Lakes. We are officially advised that she is not on her way to Canada, and it is not likely that she will come out this season.

The Reid Wrecking Co.'s steam tug Winslow was burnt at Meldrum Bay, while on its way to Georgian Bay, Aug. 21. She was built at Cleveland, O., in 1865. Her dimensions were: length 120 ft., breadth 19 ft., depth 10 ft.; tonnage 353 gross, 193 register. She was equipped with engine of 150 n.h.p. driving a screw. The loss is put at \$25,000 with insurance of \$20,000.

Press reports state that the Buffalo, Lockport and Rochester Transit Co.'s steamboat Olcott, operating between Toronto and Olcott Beach, N.Y., will be lengthened, during the winter, by 30 ft., making her 204 ft. over all. The increase in size will enable her to accommodate about 1,400 passengers. It is also stated that a new boiler will be installed in place of the present two small boilers.

The Ontario and Quebec Navigation Co.'s steamboat Geronia left Toronto, on her maiden trip to Quebec, Aug. 3. This route will be continued for the remainder of the season, the following ports being called at each way: Charlotte, N.Y., Brighton, Trenton, Belleville, Deseronto, Picton, Kingston, Gananoque, Prescott, Brockville, Iroquois, Morrisburg, Cornwall, Montreal and Quebec.

The Calvin Co.'s s.s. Chieftain III, which was sunk in collision with the s.s. Hero, Aug. 20, in the St. Lawrence River, near St. Antoine, was built at Garden Island, Ont., in 1906. Her dimensions were: length 142.4 ft., breadth 39.4 ft., depth 9.3 ft., tonnage, 355 gross, 147 register, and she was equipped with engine of 48 n.h.p. driving a paddle wheel. Four of the Chieftain's crew were lost.

The U.S. Lake Survey reports the levels of the Great Lakes, in feet above tidewater, for July, as follows:—Superior, 601.64; Michigan and Huron, 579.88; Erie, 571.75; Ontario, 245.54. Compared with the average July levels for the past 10 years, Superior was 1.10 ft. below; Michigan and Huron, 1.33 ft. below; Erie, 1.13 ft. below, and Ontario 1.33 ft. below. It was anticipated that during August Superior, Michigan and Huron would rise 0.1 ft., and Erie and Ontario 0.2 ft.

The Lake Shippers' Clearance Association held its annual meeting in Winnipeg, Aug. 22, when the report for the past year showed that 82,065,629 bush of grain were loaded, against 74,440,421 for the previous year. The association was organized two years ago to facilitate the handling and shipping of grain from the head of the lakes, and has headquarters at Winnipeg, with a branch at Fort William, Ont. There was an excess of revenue over expenditure of \$11,731.38. The officers for the current year are:—President, J. Fleming; Secretary, A. C. Ruttan; Treasurer, A. K. Godfrey; Directors, G. Tilt, P. N. Baird and F. W. Young.

Following a tour of inspection of the works in progress in Toronto harbor by the newly appointed Harbor Commission and others, J. G. Sing, Government Engineer said, Aug. 15, there is no reason why vessels up to 600 ft. long should not come into the harbor, but in order to make it safe for them to do so there should be a depth of water of 28 ft. The chief work inspected was the new western channel, which has been made 400 ft. wide, with two piers of stone and re-inforced concrete, about 30 ft. wide, the longer pier being 2,500 ft. long. The work on the city dock at Ashbridge's bay has been commenced, a considerable amount of piling having been done.

The U.S. Department of Labor and Commerce issued a circular, Aug. 17, calling attention to the law forbidding Canadian vessels from carrying excursion passengers from U.S. ports to Canadian ports and back. This law provides a penalty of \$200 for each passenger so carried. On Aug. 21 the Assistant Secretary of the department stated in a letter that the situation had been brought to the Department's attention through the case of the Turbinia Steamship Co.'s s.s. Turbinia, which left Charlotte, N.Y., July 9, with a party of excursionists for Presqu'Île Bay, on the Canadian side, and return. When the vessel arrived at Presqu'Île, the channel was blocked and she returned to Charlotte. A fine of \$183,000 was imposed, which was reduced to \$500, and later, after the explanation of the owners of the Turbinia, to \$50. He also is reported to have stated that Canadian vessels for some years had taken large excursion parties from Charlotte to Cobourg, Ont., and other Canadian ports, and in many instances the tickets provided specifically that passengers should not go ashore at any place until the vessel returned to Charlotte. This, he said, is a distinct violation of the law.

The Department of Marine has issued a notice that all Canadian lights and fog alarms in Lake Superior will be kept in operation until Dec. 15, or later if the season of navigation will permit, with the exception of the lights at Caribou Island, Otter Island, Michipicoten Island, Gargantua, Michipicoten harbor and Corbeil point, from which stations and keepers may be removed at any time after Dec. 1. The lights and fog alarms in Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie and Lake Ontario and connecting waters will also be kept in operation to Dec. 15, except southeast shoal lightship, Lake Erie, which may be moved from her station not earlier than Dec. 5, and Lonely Island light, Georgian Bay, which may be closed Dec. 5. All lights in the River St. Lawrence will be kept in operation as long as navigation is open, and all gas buoys, both on the river and the Great Lakes, will be kept at their stations as long as ice conditions will permit, and where it is necessary to remove the buoys before the close of navigation, spar markers will be laid down if possible. Light keepers are cautioned to maintain their lights until the dates specified for their respective districts and later, if navigation remains open.

Hon. Rodolphe Lemieux, heretofore Postmaster General, has been appointed Minister of Marine and Fisheries, in place of Hon. L. P. Brodeur, who has been appointed a judge of the Supreme Court.

The Canadian section of the International Waterways Commission, recently created under the new treaty between Canada and the U.S., consists of Sir George Gibbons, London, Ont., Chairman; A. Geoffrion, K.C., Montreal, and A. P. Barnhill, St. John, N.B.

In referring to the proposal of Cammell, Laird and Co., naval contractors, of England, to establish dock and ship-building works in Canada, the Canadian Gazette of London, Eng., stated, Aug. 10:—"To this firm has fallen the high distinction of receiving from the Canadian Government the contract to build the fleet of war vessels which the Canadian authorities have decided to construct." Among the tenders recently sent in for the construction of the proposed vessels, it has been stated that Cammell, Laird and Co.'s was the lowest, but on Aug. 28 we were officially advised that the contract had not been awarded.

London Guarantee and Accident Company, Limited

Head Office for Canada - Toronto
D. W. ALEXANDER, Manager.

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By the Twin and Triple-Screw Royal Mail Steamers	LAURENTIC, MEGANTIC	(Sept. 16, Sept. 30)
	TEUTONIC, CANADA	(Oct. 14 Oct. 28)
		(Sept. 9, Sept. 23)
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New York, Plymouth, Cherbourg, Southampton

St. Louis ..Sept. 9	New York ..Sept. 16
St. Paul ..Sept. 23	Philadelphia Sept. 30

Atlantic Transport

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Minnetonka Sept. 9	Minnehaha ..Sept. 16
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CedricSept. 14	CelticSept. 28
BalticSept. 21	AdriaticOct. 5

New York, Plymouth, Cherbourg, Southampton

OlympicSept. 9	MajesticSept. 16
OceanicSept. 23	OlympicSept. 30

To the MEDITERRANEAN

REGULAR SAILINGS FROM
NEW YORK AND BOSTON

THE CANADIAN PACIFIC RAILWAY COMPANY.

Notice to Shareholders.

The Thirteenth Annual General Meeting of the Shareholders of this Company for the election of Directors to take the places of the retiring Directors, and for the transaction of business generally, will be held on Wednesday, the 4th day of October next, at the principal office of the Company at Montreal, at Twelve o'clock noon.

The Common Stock transfer books will be closed in Montreal, New York and London at 3 p.m. on Friday, the first day of September; the Preference Stock books will be closed in London at the same time.

All books will be reopened on Thursday, the fifth day of October.

By order of the Board.

W. R. BAKER,
Secretary.

Montreal, August 14th, 1911.

The Niagara Navigation Co.'s steamboat Chicora was taken out of service, Aug. 19, for the remainder of the season, on account of damage to her machinery. She was berthed for the winter at Toronto and an examination made, when it was found that her main shaft crank was broken and that the engine bed plates had given way. It is reported that the vessel will probably be sold, and that a new vessel will be purchased for next season's traffic.

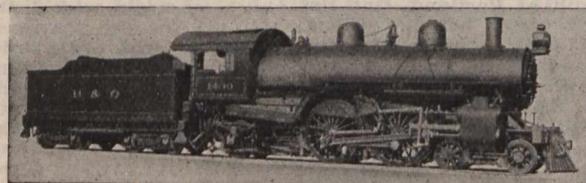
THE BALDWIN LOCOMOTIVE WORKS

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Manufacturers of

Broad and Narrow Gauge Single Expansion and Compound



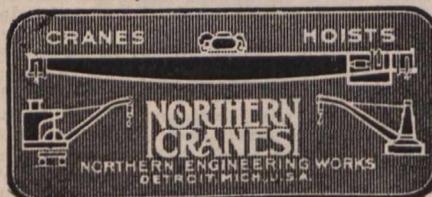
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TIMBER, RAILWAY TIES, TELE-
GRAPH POLES, LATH, SHINGLES,
BOX SHOOKS.

Manitoba, Saskatchewan and Alberta.

The Red River Navigation Co., Ltd., recently incorporated at Winnipeg, with a capital of \$1,000,000, will, it is reported, commence operating on the Red River, on a large scale, in the spring of 1912.

The Hudson's Bay Co.'s Edmonton manager, on his return there recently from a trip to the Peace River and Athabasca districts, is reported to have stated that next year a full schedule would be put in force for all boats on the northern rivers and lakes, and proper connections established. It was anticipated that a trip could be arranged from Athabasca Landing to Grand Rapids, thence to Fort McMurray and continued by Lake Athabasca, and tributary streams to the Mackenzie River, and thence to the Arctic circle, about 3,600 miles.

Meetings are being arranged in Grand Forks, N.D., with a view to seeing what steps can be taken to improve the conditions on the Red River, so that navigation may be undertaken with safety, to Winnipeg. Suggestions will be made that the channel be deepened, and that, among other things, lock dams be constructed at various points. In 1884 the steamboat Grand Forks navigated the river from Grand Forks to Winnipeg, and in 1909 the same vessel repeated the trip, but the conditions were found to be unfavorable, on account of low water at various points.

At a recent meeting of the joint committee on wharfrage and dockage of the Winnipeg and St. Boniface councils, Col. Ruttan, City Engineer of Winnipeg, was instructed to go to Ottawa to secure the information necessary to establish a harbor commission, and to submit plans for proposed temporary docks, etc. A bylaw is being prepared for submission to the ratepayers at an early date, for the purpose of supplying the necessary funds for the erection of temporary docks and shipping facilities.

B.C. and Pacific Coast Marine.

The Progressive Towing Co., Vancouver, is applying for authority to change its name to the Progressive Steamboat Co.

During July, vessels with a registered tonnage of 153,914 entered Vancouver harbor from foreign ports, against a tonnage of 116,965 for July, 1910.

Greer, Coyle and Co.'s steamboat Aluvia, recently built at Lulu Island, has been taken over by the owners for operation on the Upper Fraser River, in the freight trade. She is 100 ft. long, by 25 ft. beam.

The C.P.R. Arrow Lake steamboat Bonington, which was launched at Nakusp, in May, has been completed and placed on her route. She is a four-decker with accommodation for about 600 passengers.

The North Arm Steamship Co. has leased additional property on the waterfront to the west of the ferry wharf at Vancouver, for one year, and will erect passenger offices and a warehouse there, on account of increased business.

The Queen Charlotte Fishing Co., Ltd., has been incorporated under the British Columbia Companies Act, with a capital of \$100,000, and office at Vancouver, to carry on a general fishing business, and with power to own and operate steam and other vessels.

The All Red Steamship Co., which operates the s.s. Selma to ports on the Powell River, is reported to be negotiating, in England, for the purchase of another vessel, to enable a daily service between Vancouver and the Powell River, instead of a tri-weekly one, as at present.

H. H. H. Lonsdale and J. P. Fell, of Vancouver, have applied to the Governor in Council for approval of construction of certain works, consisting of dredging, filling in and making of wharves on the foreshore in front of district lot 265, group 1, New Westminster District.

The steamboat Skeena, recently purchased by the North Arm Steamship Co. from Foley, Welch and Stewart, as mentioned in our last issue, is being placed in service to North Arm ports. She has passenger accommodation for about 400, and was formerly used in the passenger and freight service on the Skeena River.

A number of Puget Sound steamship companies are reported to have amalgamated under the name of the Sound Packet Lines, with the intention of operating between all Sound ports of importance, including Victoria and Vancouver. The vessels affected are given as Edith, Transport, Fidelago, Neptune and Dredger no. 2.

The G.T.P. Coast Steamship Co.'s s.s. Prince John, arrived at Victoria at the end of July, from Glasgow, Scotland, having taken 71 days on the voyage round the Horn. After a cleaning and overhauling, she will be placed on the Islands run, relieving the s.s. Prince Albert, which will take the place of the s.s. Henriette.

Judge Grant, at Vancouver, recently decided a case where an employe sued the C.P.R. for wrongful dismissal, for refusing to handle cargo from a vessel on a Sunday, by dismissing the claim, holding that the company was within its contract rights, but ordered that the employe be paid an amount deducted from his pay wrongfully.

Investigations into the causes of the wrecks of the steamships Princess May, owned by the C.P.R., and Belcarra, owned by the Sechelt Steamship Co., were opened at Vancouver, Aug. 18. The former vessel struck on the north reef of Sentinel Island, near Juneau, Alaska, Aug. 5, 1910, and the latter sank in the Agamemnon Channel, Jervis Inlet, Sept. 17, 1910.

Work is progressing on the G.T.P. Coast Steamship Co.'s wharf at Victoria. The site is at the foot of Main St., and the old Albion Ironworks and other buildings there have been removed. About 160 piles have been placed, and a considerable portion of the wharf has been built. The plans for the erection of a warehouse, had not, at the time of writing, been passed.

The auxiliary schooner Tuladi, after having been thoroughly overhauled and repaired, has been licensed to carry passengers, and has been placed on the route between Victoria and Sidney and the islands. She was built at Vancouver in 1908, and is equipped with a gasoline engine of 4 n.h.p., driving a screw. Her dimensions are: length, 49.3 ft.; breadth, 14.3 ft.; depth, 6 ft.; tonnage, 32 gross, 21 register.

The Nelson board of trade is preparing statistics of the cost of making the Columbia River navigable, on the Canadian side of the International boundary. A commission has been appointed in the State of Washington, to deal with the river on the U.S. side, and arrangements are being made with a view to joint action being taken to lay the matter before both the Dominion and Federal authorities, and to obtain funds for the carrying out of complete surveys.

Balfour, Guthrie and Co. are reported to have stated that work will be commenced shortly on the construction of their new dock at Vancouver, which will be built in connection with the C.N.R. and the Great Northern Ry. The plans, which have been deposited with the Public Works Department at Ottawa, show a dock about 750 by 100 ft., situated between the sugar refinery and Heat-

ley Ave. Large sheds will be erected, which will be without pillars or other obstructions, and it is hoped to have the work completed by November.

The directors of the North Vancouver Ferry Co., at a recent meeting, ordered the issue of 80,000 fully paid up, non-assessable shares to the city of North Vancouver, under agreement of purchase, made in March. A discussion also took place regarding the equipment of the ferry no. 1, with a new boiler, preferably one with a pumping attachment, so that the vessel might be used as an auxiliary in case of fire. A contract for the installation of a new boiler in ferry no. 2, has been awarded to McDougal and Jenkins, North Vancouver, for \$1,700.

The Union Steamship Co.'s s.s. Chelohsin, which was recently launched at Dublin, Ireland, is of the following dimensions: length between perpendiculars, 175 ft.; breadth molded, 35 ft.; depth to awning deck, 22½ ft. She has three complete decks, with shade deck running almost from end to end, above which are located a number of state rooms, smoke room, pilot house and officers' quarters. She is fully equipped with electric light, steam heating, electric fans, and all modern appliances for the comfort and convenience of passengers. The machinery consists of triple expansion engines of about 1,500 h.p., capable of a speed of 14 knots an hour when loaded to capacity.

The C.P.R. is reported to have purchased the steam tug Colima, which has been utilized in connection with harbor works at Manzanillo, and it is stated that she will be used in connection with the steam tugs Nanoose and Czar, in the car ferry service. She was built at Philadelphia, Pa., in 1904. The hull is of steel, and she is of the following dimensions: length, 95¼ ft.; beam, molded, 22½ ft.; draught, 11¼ ft. She is equipped with fore and aft compound engines, with cylinders 16 and 32 ins. dia. by 24 ins. stroke, supplied with steam at a working pressure of 150 lbs. by boiler 12½ ft. dia. by 10¾ ft. long. The auxiliary machinery includes wrecking pumps, steam capstans, steam steering gear, electric light equipment, etc.

Atlantic and Pacific Ocean Marine.

M. A. Overend, heretofore Travelling Freight Agent, has been appointed Freight Agent for Ontario for the White Star-Dominion Line, with offices at Toronto, in place of the late G. W. Torrance.

Elder Dempster Co.'s s.s. Sobo, which has been under charter to Pickford and Black, for the past three years in the West Indies service, having completed her charter, sailed for England, Aug. 5, returning to her owners' service.

On the arrival of the Allan Line s.s. Victorian at Montreal, Aug. 11, 57 stewards were arrested for refusal to obey orders. The charges were all subsequently dismissed, it being held that the arrests had been illegal. The men all returned to their work.

The Dominion Government has presented a binocular glass to Capt. J. G. Croach of the British steamship Bardistan, in recognition of services rendered to the crew of the schooner H. J. Logan, of Parrsboro, N.S., which was abandoned at sea in Dec. 1910.

R. Jones, shore captain, White Star-Dominion Line, Montreal, for the past 10 years, died there, Aug. 4, aged 65. He had been connected with trans-Atlantic shipping for several years, having commanded vessels of the Dominion Line and Elder Dempster Co.

Referring to recent press reports that the G.T.R. was about to acquire steamships for the establishment of a trans-

Atlantic service, we are officially advised that while such a policy is likely to be decided on in the future, there is no immediate probability of an Atlantic service being acquired, nor until the completion of the G.T. Pacific Ry.

The Cunard Line s.s. Laconia, which was launched at Wallsend-on-Tyne, Eng., Aug. 3, is the first vessel to be operated on the North Atlantic service

with a series of anti-rolling tanks, designed to keep vessels on an even keel during varying conditions of weather. The company also has under construction, the s.s. Aquitania, which, it is stated, will be the largest vessel in the world when completed.

The C.P.R. s.s. Empress of China struck on a sunken rock off the Japanese coast, at the end of July, and reports

stated that she was in such an exposed position, and the damage so extensive that it was impossible to save her. The passengers and mails were landed safely. She was built at Barrow, Eng., in 1891, her dimensions being: Length, 455.6 ft.; breadth, 51.2 ft.; depth, molded, 33.1 ft. Salvage operations are said to be in progress, but no information is available at the time of writing.

NOTICE TO SUB-CONTRACTORS.

Contract has been awarded for the construction of the Algoma Central & Hudson Bay Railway, from Hobon, on the Canadian Pacific Railway, to a point on the National Transcontinental Railway, a distance of approximately 101 miles, to Superior Construction Co., Limited. Sub-contractors desiring to secure sections of this work should communicate with the above contractors at Espanola, Ont.

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The Deputy Minister of Trade and Commerce, while in St. John, N.B., in connection with the proposed service between St. John, Halifax and the West Indies, is reported to have stated that he was simply investigating the local conditions and receiving recommendations, and that he did not think any change would be made in the subsidy arrangements. The previous subsidy paid was \$135,000, of which Great Britain paid one half, and as Great Britain has withdrawn from the arrangement, the Canadian Government, not feeling justified in making up the difference,

would arrange the best possible service for half of the, previous subsidy.

The two steamships which the C.P.R. has ordered at Glasgow, Scotland, for its trans-Pacific service, as mentioned in our last issue, will be about 15,000 tons register, 570 ft. long, and have a speed of 18 knots an hour. They will be a little larger than the Atlantic Empresses, and will have accommodation for 200 first class passengers and 6,000 tons of freight. The engines will be of about 16,000 h.p., and it is stated that oil will be used as fuel, but that coal burning equipment will be installed for emer-

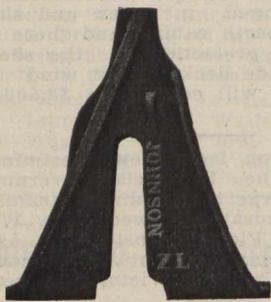
gency use. The saloon accommodation will be arranged in suites, and single and double berth cabins, and there will be increased protection of the shelter and promenade decks from wind and spray. They will cost about \$2,500,000 each.

A deputation from New Westminster waited on the Provincial Government recently to urge that a direct steamship line be inaugurated between New Westminster and Victoria, instead of, as at present, shipping freight to Vancouver by rail and thence to Victoria by vessel.

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.

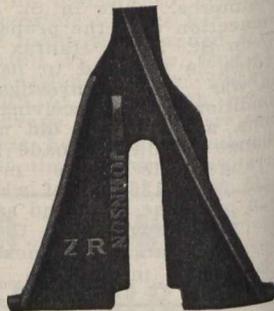
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W. M. Dunlop & Co. Ottawa.
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Robb Engineering Co., Ltd. Amherst, N.S.
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Polson Iron Works, Ltd. Toronto.
Robb Engineering Co., Ltd. Amherst, N.S.
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Polson Iron Works, Ltd. Toronto.
Robb Engineering Co., Ltd. Amherst, N.S.
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Polson Iron Works, Ltd. Toronto.
Robb Engineering Co., Ltd. Amherst, N.S.
- Boilers, Water Tube**
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John Bertram & Sons Co., Dundas, Ont.
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Canadian Car & Foundry Co., Montreal.
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Canada Iron Corporation, Ltd. Montreal.
The Holden Co., Ltd. Montreal.
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Canada Iron Corporation, Ltd. Montreal.
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Railway Materials Co. New York.
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Corbet Foundry Co. Ltd. Owen Sound, Ont.
Dominion Bridge Co. Montreal.
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Williams & Wilson, Ltd. Montreal.
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Cleveland Bridge & E. Co. Darlington, Eng.
Dominion Bridge Co. Montreal.
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International Marine Signal Co., Ottawa.
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Chapman & Walker, Ltd. Toronto.
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The Wire & Cable Co., Montreal.
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- Car Movers**
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Mussens, Ltd. Montreal.
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Dorner Railway Equip. Co., Chicago, Ill.
J. T. Gardner Chicago, Ill.
Hart-Otis Car Co., Ltd. Montreal.
Ottawa Car Co., Ltd. Ottawa.
Pay-As-You-Enter Car Co., Montreal.
Preston Car & Coach Co., Ltd. Preston.
Russel Wheel & Fdry Co., Detroit, Mich.
Western Wheeled Scraper Co. Aurora, Ill.
- Car Signal Systems**
Ohio Brass Co., Mansfield, Ohio.
- Cars, Logging**
Russel Wheel & Fdry Co., Detroit, Mich.
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American Vanadium Co., Pittsburgh, Pa.
Canadian Car & Foundry Co., Montreal.
Crossen Car Mfg. Co., Cobourg, Ont.
Lumen Bearing Co., West Toronto, Ont.
Russel Wheel & Fdry Co., Detroit, Mich.
Titanium Alloy Mfg. Co., Pittsburgh, Pa.
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Canadian Bronze Co., Montreal.
Corbet Fdry Co., Ltd. Owen Sound, Ont.
Kerr Engine Co., Walkerville, Ont.
Lumen Bearing Co., West Toronto, Ont.
Tallman Brass & Metal Co. Hamilton, Ont.
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Russel Wheel & Fdry Co., Detroit, Mich.
- Castings, Iron**
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Canada Iron Corporation, Ltd. Montreal.
Corbet Fdry Co., Ltd. Owen Sound, Ont.
Kerr Engine Co., Walkerville, Ont.
Russel Wheel & Fdry Co., Detroit, Mich.
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- Castings, Malleable**
Galt Malleable Iron Co., Galt, Ont.
Pratt & Letchworth Co., Brantford, Ont.
Taylor & Arnold, Montreal.
- Castings, Manganese Steel**
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Lumen Bearing Co., West Toronto, Ont.
- Castings, Steel**
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Canada Iron Corporation, Ltd. Montreal.
Canadian Steel Foundries, Ltd. Montreal.
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Pratt & Letchworth Co., Brantford, Ont.
Titanium Alloy Mfg. Co., Pittsburgh, Pa.
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Mussens, Ltd., Montreal.
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Williams & Wilson, Ltd., Montreal.
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Ohio Brass Co., Mansfield, Ohio.
Taylor & Arnold Montreal.
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- Cranes**
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Northern Engineering Wks., Detroit, Mich.
Williams & Wilson, Ltd., Montreal.
- Cranes, Electric**
Babcock & Wilcox Montreal.
Dominion Bridge Co., Montreal.
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Imp. Guarantee & Acc. Ins. Co.Toronto.
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Can. Casualty & Boiler Ins. Co.Toronto.
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Acton Burrows, LimitedToronto.
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Canadian Steel Foundries, Ltd.Montreal.
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H. & E. Lifting Jack Co.Walkerville, Ont.
F. H. Hopkins & Co.Montreal.
Mussens, Ltd.Montreal.
A. O. NortonCoaticook, Que.
James Smart Mfg. Co.Brockville, Ont.
Williams & Wilson, Ltd.Montreal.
- Japans**
The Dougall Varnish Co., Ltd.Montreal.
- Journal Bearings**
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Kerr Engine Co.Walkerville, Ont.
Jas. W. Pyke & Co.Montreal.
- Journal Boxes**
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The Hiram L. Piper Co.Montreal.
The N. L. Piper Ry Supply Co.Toronto.
- Lamps, Switch**
The N. L. Piper Ry Supply Co.Toronto.
- Lathes**
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International Marine Signal Co.Ottawa.
Walter MacLeod & Co.Cincinnati, O.
Safety Car Htg. & Ltg. Co.New York.
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Blau-Gas Co. of Canada, Ltd.Montreal.
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co.Toronto.
Safety Car Heating & Ltg. Co.New York.
United States Light & Heat Co.New York.
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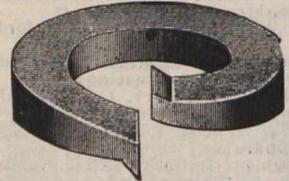
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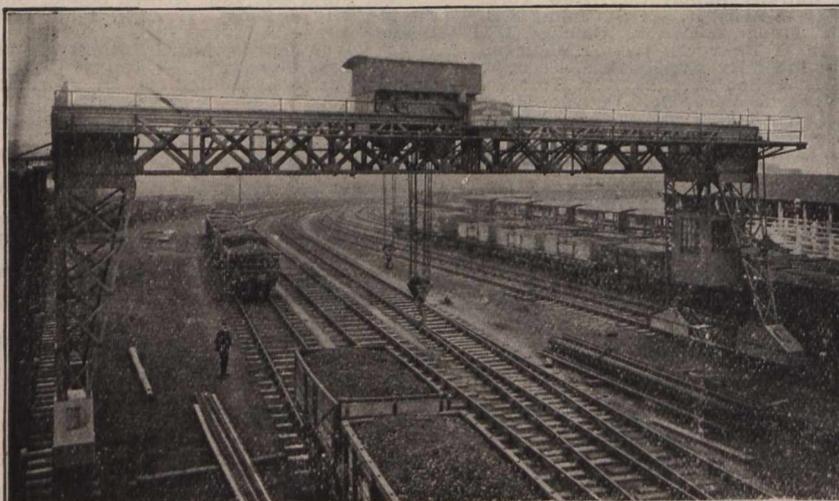
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