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Old Series, No. 204.
New Series, No. 122.

TORONTO, CANADA, APRIL, 1908.

For Subscription Rates,
See page 267.

Entered as second-class matter, March 5, 1908, at the Post Office at Buffalo, N.Y., under the act of Congress of March 3, 1879.

RAILWAY ELECTRIFICATION.

By H. L. Kirker, Resident Engineer, W. E. & M. Co., St. Clair Tunnel.

This paper was written in the form of questions and answers. To save space we have omitted the questions, summarizing them where necessary to the context.

ELECTRIFICATION—WHY IT IS BEING DONE.

There are enthusiasts who maintain that an electric locomotive can do for a dollar what a steam locomotive does for two. There are moderates who believe that dollar for dollar is the ratio. There are pessimists who do not believe that the electric locomotive can do as much for a dollar as a steam locomotive can do for the same amount. However, as has frequently been pointed out, the primary object of electrification is not to reduce operating expenses, but to improve the service and increase the capacity. Vice-President McHenry, of the New York, New Haven & Hartford (formerly Chief Engineer of the C.P.R.), says that under general conditions it is altogether improbable that the saving resulting from the simple substitution of electric for steam power will be sufficient to justify the additional investment and financial risk.

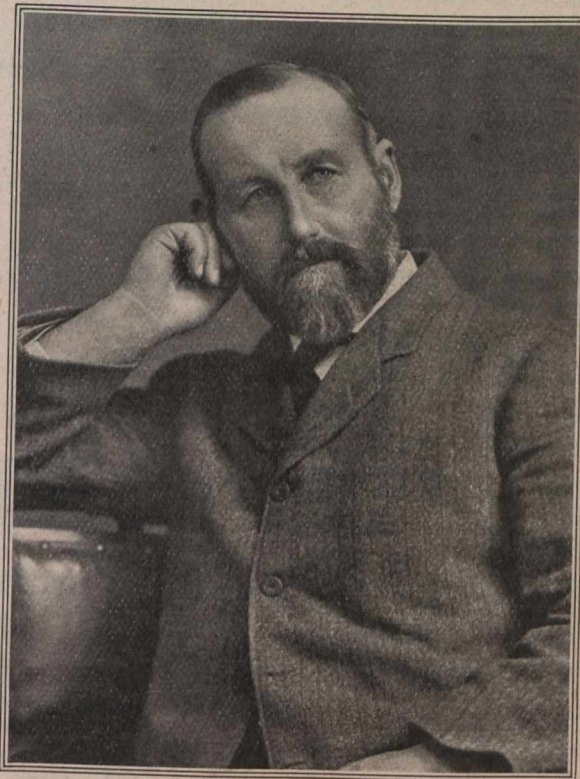
It is the opinion of railway men that steam roads are reaching the limits of their capacity. According to J. J. Hill's estimate of a year ago, 75,000 miles of new track were then needed to relieve the traffic congestion. E. H. Harriman has gone on record to the effect that an increase of capacity is a vital necessity, that electrification is the solution, and that the increase in capacity resulting from electrification will be accompanied by a great saving. Vice-President Brown, of the New York Central, believes that at the country's present rate of growth it will be necessary to spend as much towards increasing capacity of the present railways during the next ten years as has been spent in creating these railways. With reference to the present shrinkage of business, President Delano, of the Wabash, says he believes the low water mark has been reached, and that the business of the country will improve from now on.

The limits of the capacity of the steam service are first reached in terminals, on heavy grades and in tunnels.

Assuming that terminals, grades, and tunnels have in certain cases reached the limits of their capacity under existing steam conditions, there are those who believe that the steam locomotive has reached its limits as a commercial machine. It is doubtful whether the additional weight incident to increase in boiler capacity and the additional refinement incident to mechanical stoking, feed water heating, super-heating, and compound-

ing can justify themselves. This straining of steam locomotive design to get increased capacity merely produces a machine of half the maximum capacity, easily attained in electric locomotive design.

Assuming the steam locomotive to have reached its limits of draw bar pull and speed, and assuming a case where the terminals and tracks equipped with block signals have reached the limits of their capacity under steam conditions, the alternatives are to en-



EDWARD A. EVANS, C.E.,

General Manager Quebec Railway, Light and Power Co., and
President Canadian Street Railway Association.

large the terminals and lay down additional tracks or replace steam locomotives with electric locomotives that can handle heavier trains and at the same time increase the schedule speed. The cost of the new tracks and the cost of the terminal extensions, however, may easily exceed the cost of the electrification that will give an equal increase in capacity.

The electric locomotive can give a heavier pull at high speed than the steam locomotive can give. The electric locomotive is a more powerful high speed machine than the steam locomotive. It is essentially a driving mechanism, fed from a central station of many times the capacity required to handle the train. The elimination of the generating

plant from the locomotive makes room for a bigger prime mover and allows the weights to be so disposed as to increase the adhesion. The outside source of supply means that the motor can give a powerful pull through its entire range of speed. The steam locomotive is an isolated power station whose capacity is limited by the area of the heating surface of its boilers. It can exert a powerful pull at slow speed, but (to quote Mr. McHenry again) "there are few locomotives that can generate sufficient steam to use their full cylinder capacity at speeds in excess of 12 miles per hour." He adds that "an increase in speed beyond certain limits can only be attained by decrease in tonnage of train. The high cost of fast freight service is due to this."

The Mallet articulated compound built for the Baltimore and Ohio Rd. is one of the biggest steam locomotives ever built. It weighs 167 tons without tender. All the weight is on the drivers. It has a continuous capacity of 71,500 lbs. draw bar pull at 10 miles an hour (1,900 h.p.). A more recent Mallet, built for the Erie, for mountain service, weighs 205 tons, has 16 drivers, and can give a draw bar pull of 94,800 lbs., working simple. A maximum power Pacific type freight engine weighs 109 tons, exclusive of tender. Sixty-seven tons of this weight are on the drivers. The locomotive has a continuous capacity of 33,500 lbs. draw bar pull at 18 miles an hour (1,600 h.p.). A recent maximum type Pacific passenger engine has 86 tons on the drivers and can develop a draw bar pull of 32,000 lbs. A maximum power compound Atlantic type locomotive weighs 100 tons without tender. Fifty-five tons of this weight are on the drivers. The engine has a continuous capacity of 20,500 lbs. draw bar pull at 25 miles an hour (1,360 h.p.). A maximum power consolidation locomotive weighs 96.5 tons without tender. Eighty-five tons of this weight are on the drivers. The locomotive has a continuous capacity of 42,500 lbs. draw bar pull at 9 miles an hour (1,020 h.p.). The most powerful simple freight engine built in 1907 has a draw bar pull of 60,000 lbs.

The New York Central direct current third rail passenger locomotive weighs 95 tons. Of this weight 70 tons are on the drivers. It has a nominal capacity of 2,200 h.p. at 40 miles an hour. Its maximum capacity is 3,000 h.p. It can give a maximum draw bar pull of 34,000 lbs. before slipping its wheels.

The New York, New Haven & Hartford single phase passenger locomotive weighs 85 tons. All the weight is on the drivers. Its nominal capacity is 1,000 horse power. It can give a draw bar pull of 42,500 pounds.

The G.T.R. St. Clair Tunnel single phase freight locomotive (double header) weighs

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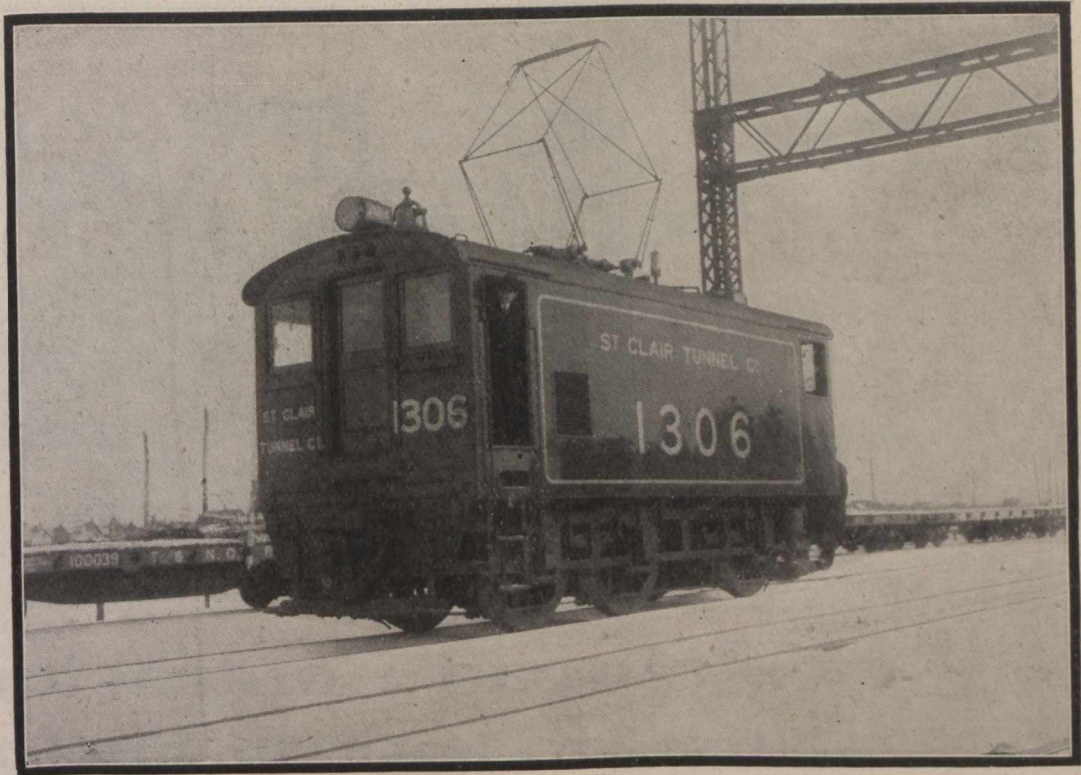
125 tons. All the weight is on the drivers. The locomotive has a nominal rating of 1,500 h.p. It can haul a 1,000 ton train up a 2% grade at 10 miles an hour. It can give a draw bar pull of 80,000 lbs. before slipping its wheels.

The 15 cycle experimental single phase locomotive (double header) made for the Pennsylvania Railway weighs 140 tons. One hundred tons of this weight are on the drivers. The locomotive has a continuous capacity of 9,200 lbs. draw bar pull at 61 miles an hour (1,500 h.p.), and one hour capacity 14,700 lbs. draw bar pull at 51 miles an hour (2,000 h.p.), a maximum draw bar pull of 48,000 lbs. and maximum capacity of 3,000 h.p. The three phase locomotive of the Italian State Railways weighs 95 tons. All of the weight is on the drivers. The nominal rating of the locomotive is 2,250 h.p. The maximum draw bar pull is 47,500 lbs. Mr. Armstrong says that the great claim for recognition of the electric locomotive lies in its great horse power output, its ability to carry full tractive effort, or slip its wheels at speeds two or three times greater than can be done with any steam locomotive yet built. Four motor equipments can be built to deliver a draw bar pull of 56,800 lbs. at 23 miles an hour (3,500 h.p.). Two of these trucks combined into one engine could give a draw bar pull of 113,600 lbs. at speed of 23 miles an hour (7,000 h.p.). The various independent locomotive units can be articulated to give practically unlimited power. The several articulated units can be handled by multiple control as a single unit.

The electric locomotive is a simpler machine than the steam locomotive. The motors are simpler than the steam engines they replace. The motor auxiliary apparatus consists of current collecting and current controlling devices. These accessories are insignificant in comparison with the generating plant of the steam locomotive. The manipulation of these electrical accessories is concentrated in a master controller.

The electric locomotive is more economical than the steam locomotive. Assuming that the steam locomotive consumes 4 lbs. of coal per h.p. hour, and that the modern central station can deliver a h.p. hour to the dynamo for 2 lbs. of coal, and assuming further that the addition of an electrical system to the central station only adds 5% to the total losses, it follows that the electric locomotive can deliver a h.p. hour to the draw bar with approximately half the coal consumption of the steam locomotive doing the same work. Moreover the electric locomotive consumes no power when idle, nor when coasting. Not only is the electric locomotive more economical of power than the steam locomotive but its maintenance is less. Taking the locomotive mileage for 1907 as 1,300,000,000 miles, and cost of repairs and renewals as \$104,000,000.00, the locomotive maintenance was 8c. per locomotive mile. The figure for 1904 was 8.1c. According to such authorities as Messrs. Stillwell and Armstrong, the maintenance of the electric locomotive need not exceed 5c. per locomotive mile. This is an instance of an important contract that contains the guarantee that the maintenance of the electric equipment of the locomotive shall not exceed 4c. per locomotive mile.

Admitting that the electric locomotive is more powerful, simpler, and more economical than the steam locomotive, it is true that it is helpless in case of failure of power supply. A complete failure of the power system could



ELECTRIC LOCOMOTIVE USED IN THE G.T.R. ST. CLAIR TUNNEL.

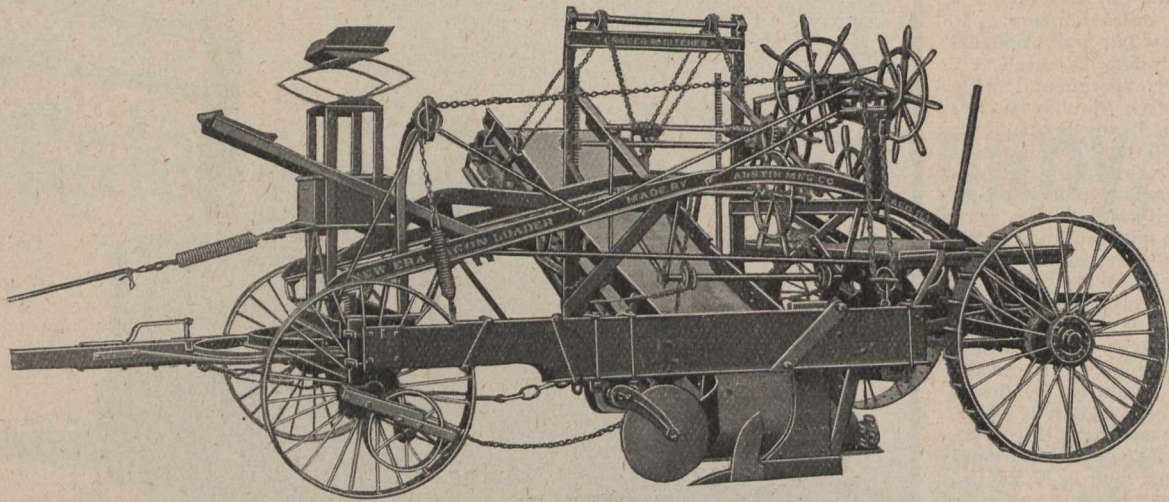
tie up the electric zone. However, the possibility of such a contingency is remote. The reliability of the power station and the reliability of the transmission system is based on 20 years' experience. Each power station has reserve units, and the various power stations are inter-connected. The transmission lines are in duplicate. Repairs can be rapidly effected. Traffic can be shunted around local trouble as in steam service. The reserve units in the power stations, the interconnection of stations, and the duplication of the transmission systems practically eliminate the hazard of a complete stoppage of traffic due to failure of power. A destruction of the track due to such causes as wrecks and floods would carry away the third rail, and the third rail would interfere with repairs. However, the overhead trolley would practically render the power supply system independent of the permanent way.

In the discussion of the subject of electrification it is frequently assumed that a steam locomotive costs \$10 per h.p., and the electrical equipment \$100 per h.p. (\$15 for the electric locomotive and \$85 for the power station and the transmission system.) But coal chutes, water tanks, cinder pits, boiler shops, and a part of the machine shops should be charged up to the steam locomotive. They are as much a part of the steam locomotive equipment as the power house and transmission system are a part of the electric locomotive equipment. These steam accessories would have to be scrapped in a completely electrified division. It is not any more necessary for the railway company to own the power plant than it is for it to own a coal mine. There will be power companies as there are coal companies. It will be possible to buy power delivered to the trolley just as it is possible to buy coal delivered to the sidings. As to the cost of a h.p. hour at the draw bar of an electric locomotive compared with the cost of a h.p. hour at the draw bar of a steam locomotive, for equal work done the cost of current is greater than the cost of locomotive coal. However, according to Mr. Armstrong, the operating expense for 1,000 ton miles up and down a 2% grade is \$1.39 for the steam locomotive and \$1.02

for the electric locomotive. The cost in the case of the steam locomotive is made up of coal, crew, maintenance. In the case of the electric locomotive it is made up of current, crew, maintenance.

Assuming the cost of operation of the electric locomotive to be less than the cost of operation of steam locomotive, a given h.p. of electric locomotive will do more work in a year than an equal h.p. of steam locomotive. The electric locomotive is in service more hours per day than the steam locomotive. It is in service more days per year than the steam locomotive. There is no turning, coaling, watering, cleaning of fires, boiler washing. In the aggregate the steam locomotive makes 80 miles a day. The freight locomotive will average 6 hours a day on the road. Selected figures show better results. According to the American Master Mechanics' Report, 1905, on 2,620 locomotives distributed among 22 roads, the engines averaged 20% of their time in the roundhouse, 33% of their time awaiting orders to go on the road and 47% of their time actually on the road. The more common assumption is that the time in the roundhouse exceeds 30%. This is instanced in the following quotation from the Railway Age: "If we consider the average run of a steam locomotive consumes 10 hours, and that a 5-hour lay over is customary at the roundhouse, we see that one-third of the time is not available for earning dividends, and the motive power of the railroad is practically reduced by 33%—exclusive of engines that are in the shop." The increased availability of the electric locomotive, coupled with its high speed and heavy tractive effort characteristics, mean that the electric locomotive can handle more ton miles per year than an equal horse power of steam locomotive can handle. Messrs. Stillwell and Putnam believe that the ratio of electric locomotives to steam locomotives for a given service will not exceed 2 to 3, and will probably approximate 1 to 2.

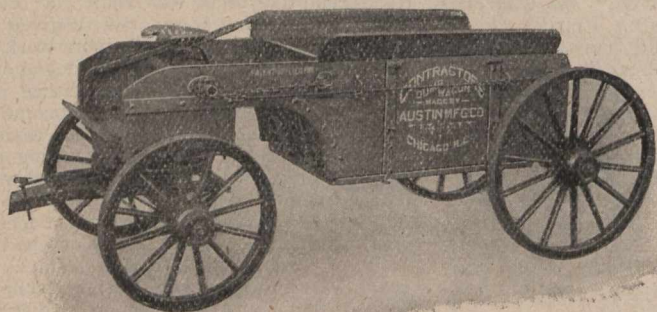
Taking the normal steam service on a 2% grade to be 500 ton trains at 10 miles an hour, it is a simple matter to replace the steam locomotives with electric locomotives that can haul a 1,000 ton train up a 2%



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grade at 20 miles an hour. This does not necessarily mean that the electric locomotive unit will be four times as powerful as the steam unit. It can be. It is more probable, however, that the electric unit will be a 1,500 h.p. or 2,000 h.p. engine, and that these units will be articulated to give the required power. The articulated units will be controlled as one unit from one master controller.

Speaking of London, Eng., terminal conditions, Mr. Dawson says: "The use of electricity, taking into consideration the small proportion of long distance trains to local ones, will practically result in doubling, not only the average speed of local trains, but also in doubling the carrying capacity of existing lines and terminals." Mr. Sprague, speaking of American city terminal conditions, says: "As a net result it may be safely stated that so far as the train movements are concerned, the capacity of the yards, over and above that required for the storage of cars alone, can be trebled as compared with steam locomotive-drawn trains. In addition (smoke being eliminated) the yards can be roofed over and the space (overhead) utilized for streets, parks, and buildings."

Admitting that electrification is a cheaper alternative than laying new tracks on grades, building new tunnels, and enlarging terminals, it is not the only alternative so far as main line work is concerned. The addition of a block signal system on the miles of line not yet so equipped will increase the capacity of the railway system, and will do it much cheaper of course than electrification can do it. W. N. Smith points out that while double tracking increases the capacity four-fold, there is plenty of room for increasing the capacity of existing roads by equipping single track roads with block signals, since but 17% of the single track roads in the U.S. are protected with block signals, and single track roads constitute 70% of the total mileage. He admits, of course, that electrification will increase the capacity of roads already equipped with block signals.

Notwithstanding the fact that electrification increases capacity, reduces operating expenses, and improves service, in general the existing electrifications have been forced on the railways. In some cases, tunnels for instance, it has been brought about by legislation. In other instances, such as subways and terminals, the smoke nuisance has forced the issue. So far as suburban lines are concerned, street car competition has been the agent. The West Jersey & Sea Shore Rd. is, perhaps, the most conspicuous instance of voluntary electrification.

Even granting that one electric locomotive can do the work of two steam locomotives, and that the maintenance of the electric locomotive is half that of the steam, it does not follow that a general electrification of the American railway system would result in an electric locomotive doing as much for a dollar as the steam locomotive does for two. The functions of a locomotive in an industrial community, like that of America, is to pay dividends, but it cannot pay dividends until it has paid the operating expenses and the fixed charges of the railway system. If there is anything left of the revenues after paying the operating expenses (maintenance of way and structures, maintenance of equipment, conducting transportations, and general expense), and paying the fixed charges (interest on funded debt, interest on floating debt, rentals, taxes, and sinking fund), why, the remainder (the net earnings) is applicable to dividends. Now, according to the estimate of Messrs. Stillwell and Putnam, if all the U.S. railways were operated by electric power instead of steam, the aggregate cost of operation which in 1905 was \$1,400,000,000.00, would have been \$1,150,000,000.00. That is to say, the cost of electric operation would have been 82% of the cost of steam operation. This

saving of \$250,000,000.00 (18% of cost of steam operation) would not only have paid the fixed charges on the electric investment, but would have increased the net earnings. The conclusion then is that the ratio of the operating expenses and fixed charges of an electric system to the operating expenses and fixed charges of an equivalent steam service is nearer 1 to 1 than 1 to 2. The discussion is academic. Such a thing as the possibility of a general electrification is not even intimated. The general conclusion, however, is irresistible—electrification is the means of increasing the capacity of a congested railroad division.

ELECTRIFICATION—WHERE IT IS BEING DONE.

Admitting for the sake of argument that electrification will increase capacity, improve service, and reduce operating expenses, concrete instances of electrification justify these conclusions. Take the case of the Mersey Ry., a short main line road connecting Liverpool with Birkenhead, Eng. It is a tunnel road. It was electrified to eliminate smoke and meet ferry competition. The traffic is almost exclusively passenger. The system is direct current third rail 650 volt with multiple unit trains. The electric service was substituted for the steam service May, 1903. Mr. Dawson points out that a comparison of the electric service with the steam shows that the train mileage in 1901 (steam) was 311,000 miles, while in 1906 (electric) the train mileage was 829,000 miles. The locomotive charges per train mile in 1901 (steam) were 13.65 pence (approximately 27.7c.), while in 1906 the locomotive charges per train mile were 5.95 pence (approximately 11.9c.). The locomotive charges include power, locomotive wages, locomotive maintenance and repairs, and office expense. This increase in train mileage was effected by the increased schedule speed and the increased train frequency. This livening of the service enabled the weight of the train to be cut down to about one-half that of the steam trains. As a net result, this augmentation in service has been effected with an increase of 10% in the total operating expense. The smoke, of course, has been eliminated and the traffic is increasing.

The Mersey is not the only instance in England of the application of direct current third rail system to a steam road. The Great Eastern Ry. has electrified the line between Newcastle and Tynemouth. The Lancashire and Yorkshire has electrified the line between Liverpool and Southport. The District Ry. in London has been completely electrified. The Metropolitan (underground) has electrified all of its London lines. The direct current third rail system is used in each instance. In the case of the Great Eastern the change was made to meet tramway competition. The cost per locomotive mile has fallen from 14.5 pence (steam) to 6.75 pence (electric). The L. & Y. electrification was necessitated by tramway competition. The accelerated service resulting from electrification has had the desired effect. The District and the Metropolitan were electrified to augment their revenues by increasing the capacity of the system and improving the service. The increase in capacity and the improvement in the service have been realized, but the physical conditions are so extraordinary that a marked increase in the net earnings is not as yet being realized. However, confidence in the ultimate result is manifested by the work of consolidation, and extensions of electrifications that these lines are carrying out.

The third rail direct current system is in use on the continent of Europe, but is mainly confined to subway lines such as the Metropolitan of Paris, and the elevated roads like the Berlin Overhead. The third rail line between Milan Galarate and Porto Ceresio, in

Italy, is the most important installation of this kind in Europe.

The third rail direct current system is extensively used in America. It is in use on the elevated roads such as those in Boston, New York, Philadelphia, and Chicago. It is in use on more than 40,000 miles of light railways (interurban service). It is doing heavy railway work on the Lackawanna & Wyoming Valley Rd., connecting Scranton and Wilkes Barre, Penn.; on 97½ miles of the Long Island Rd.; on the West Shore Rd. between Utica and Syracuse, N.Y.; on the West Jersey and Sea Shore Rd., connecting Camden and Atlantic City,—65 miles, double track; and on the New York Central (electric zone). There are other instances, but these are representative.

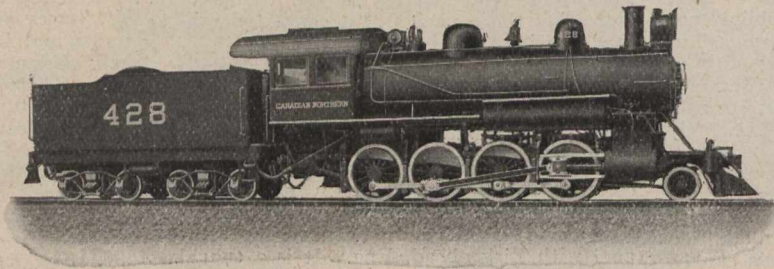
The most conspicuous example of the application of the third rail system to heavy railway work is the New York Central electrification. Its electrical equipment consists of 35 electric locomotives, 131 motor cars and 55 trailers. The service was inaugurated Dec., 1906. The locomotives are equipped with 600 volt motors. The nominal capacity of the locomotive is 2,200 h.p., the maximum capacity, 3,000 h.p. Vice-President Wilgus, who had charge of the electrification, said recently that the maintenance of the electric locomotives is so much less than that of the steam locomotives, and that the amount of the time spent in the shops by the electric locomotives is so much less than that spent in the shops by the steam locomotives, that the saving neutralizes the interest charge and the depreciation charge of the additional investment; and, moreover, shows a net saving in repairs and fixed charges over steam equipment of 19%. Mr. Wilgus stated further that a comparison of the light repairs and inspection of the electric locomotive with the coaling, watering, drawing fires, repairs, etc., of the steam locomotives shows a saving in time in favor of the electric locomotive of over four hours a day—a saving equal to 18%. He says the electric locomotive is a more nimble and a more efficient machine than the steam locomotive—that it has increased the daily ton mileage 25%. He added that the increased current consumption per ton mile for high speed service is 18%, while a corresponding increase in speed with steam service would run up the coal consumption 165% a ton mile.

The third rail direct current system is not as applicable to long distance heavy railway work as it is to the short haul. The low voltage of the direct current motor seriously handicaps the application of this system to heavy long haul work. The normal pressure of the direct current railway motor is 600 volts. This means heavy currents for heavy power. Heavy currents mean a third rail since the overhead trolley cannot handle heavy current. The third rail, of course, is not a desirable adjunct to the permanent way. Now heavy current cannot be transmitted economically more than a few thousand feet. This means that there must be substations at frequent intervals along the line. These substations draw high voltage alternating current from the transmission line and deliver low voltage direct current to the third rail. The change from alternating current to direct means moving machinery. Moving machinery requires attendants. Consequently the application of the low voltage direct current to long distance heavy railway work is handicapped by the physical objection to the third rail and the financial objection of the expense due to substation and feeder investment and the expense of substation crews. The advent of the 1,200 volt direct current railway motor will diminish the number of substations, but even with this voltage the current required for heavy freight service will be too heavy for the overhead trolley. The third rail cannot be insulated to stand this voltage. Conse-

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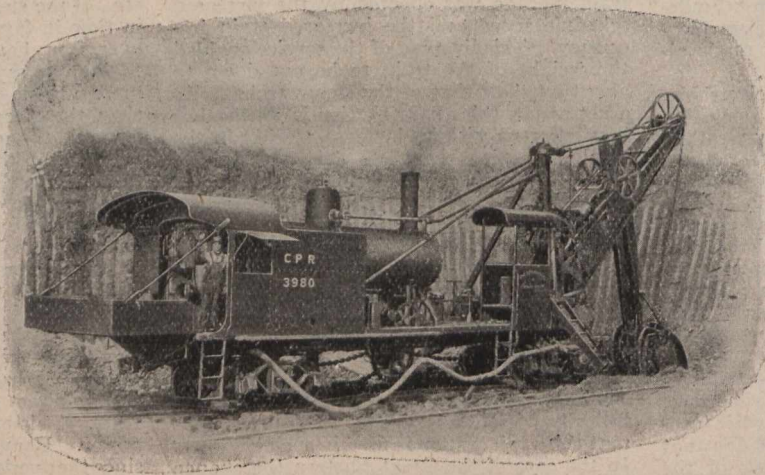
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quently the 1,200 volt direct current can hardly be applied to extremely heavy railway work.

Admitting the commercial success of the direct current motor in street railway work, light railway work, heavy terminal work and admitting its limitations in main line work, the direct current series motor can be modified so as to work on alternating current and thereby eliminate the rotary converter substations and at the same time substitute a high voltage trolley for a low voltage third rail. Improvement in design has brought out a series railway motor that will work on single phase current.

The single phase railway motor is being applied to heavy railway work. It is in use on the New York, New Haven and Hartford Rd. between the Grand Central Station, New York, and Stamford, Conn., a distance of 34 miles. Twelve miles of this distance lie in the New York Central third rail zone. The remaining 22 miles are equipped with single phase trolley. There are no substations in the single phase system. Alternating current is fed into the trolley at 11,000 volts from the Cos Cob power station. There are 35 locomotives. They operate on direct current in the New York Central zone (12 miles), and on single phase alternating current the rest of the distance (22 miles). The locomotive weighs 85 tons (all on the drivers), and has a nominal capacity of 1,000 h.p. The locomotive can handle a 200 ton train at a schedule speed of 26 miles an hour with stops every 2.2 miles. It can attain a speed of 65 miles an hour with the same train, and can maintain a speed of 60 miles an hour on long runs with a 250 ton train. Heavier trains can be handled by coupling two or more locomotives and operating them as single units. The service was inaugurated July 24, 1907. Notwithstanding the handicap of a double set of auxiliary apparatus on the locomotive incident to the use of direct current on one part of the line, and alternating current on the other, the single phase motor is demonstrating that it can handle long distance heavy railway work.

The single phase motor is also in use on the Rochester division of the Erie Rd. The electrified section is 34 miles long. Overhead trolley is used. The current comes from Niagara Falls (approximately 90 miles). There is a single transformer substation. This substation reduces the transmission line pressure from 60,000 volts to a trolley pressure of 11,000 volts. The auto transformer on the car takes current from the trolley at 11,000 volts, and delivers it to the motors at 220 volts. The service was inaugurated in June, 1907. The single phase motor is in use on the Spokane and Inland Ry. The system involves 106 miles of track. There are 15 transformer substations. They reduce the line voltage from 45,000 volts to a single phase trolley pressure of 6,600 volts. However, within the city limits of Spokane, the motors run on direct current. The equipment includes six freight locomotives, each equipped with four 150 h.p. motors, six freight cars, each equipped with four 100 h.p. motors, and 15 passenger cars, each of which is equipped with four 100 h.p. motors.

The G.T.R. St. Clair tunnel installation is a conspicuous example of the application of the electric locomotive to heavy freight service. The tunnel involves two grades, each of which is 2%, and approximately a mile long. The locomotive (double header) weighs 125 tons (all on drivers). It has a nominal capacity of 1,500 h.p. and can haul a 1,000 ton train up a 2% grade at 10 miles an hour. It can give a draw bar pull of 80,000 lbs. before slipping its drivers. Each half unit can be used as an independent locomotive. Current is supplied from an overhead trolley at 3,300 volts. The change over from steam service to electric is now being made.

The single phase motor is also used for light railway work. It is in use on the Indianapolis and Cincinnati Traction Co. lines. The initial service was inaugurated Dec., 1904. This was the beginning of single phase railway work in America. It is in use on the Warren and Jamestown (Pennsylvania) street railway lines. Also in the Napa Valley, California. It is in use on the Pittsburg and Butler Ry., a 39 mile line connecting Pittsburg and Butler, Penn. The equipment involves 18 passenger cars, each equipped with four 100 h.p. motors. A single generating station supplies the power. The transmission pressure is 22,000 volts. Two transformer substations reduce the 22,000 volt line pressure to 3,300 volt trolley pressure. Within the city limits of Pittsburg the motors operate on 600 volt direct current. There are other roads. The magnitude of the application of the single phase railway motors is instanced by the fact that one American company alone has built 60 single phase locomotives and 2,000 single phase railway motors—representing the electrification of 1,000 miles of track.

The single phase railway motor is also being applied to heavy railway work in England. The London, Brighton, and South Coast Ry. is making an initial installation of it on its London suburban lines. The Midland Railway is equipping an experimental line with it.

The single phase system is also being applied to heavy railway work on the continent. The action of the Swedish Government is significant. There are 375,000 h.p. available in waterfalls in Sweden. Fuel is dear. The Government consequently is anxious to apply this power to the railways. It equipped an experimental line with single phase locomotives. As a result of the tests the Government has decided to proceed with railway electrification. The initial equipment will involve 1,300 miles of track and 385 single phase locomotives. The Swiss Government has equipped an experimental single phase line near Zurich. As a result of the tests the single phase system will probably be applied to the St. Gothard Tunnel Line. In Germany the Prussian Government will use the single phase system on the Eifel Bahn, a double track line, connecting Cologne and Treves, a distance of 112 miles. The substitution of the single phase system is also contemplated on the Berlin Ring Railway. The Vienna-Baden interurban line in Austria is one of the largest single phase lines in Europe. It is 17.8 miles long. The equipment involves 14 motor cars, each of which is equipped with four single phase motors of 40 h.p. each. The Brembana Valley Ry. is the most important single phase line in Italy. It is 16 miles long and involves 5 locomotives of 300 h.p. each. The Roma-Civita-Costellena line (Roman suburban) is another single phase road. The use of the single phase motor is also contemplated for heavy railway work in Italy.

Admitting that the direct current railway motor is a commercial success for short hauls, and admitting that the single phase railway motor extends the range of electrification to main line work, it is also true that the three phase railway motor is adapted to long distance heavy railway work. The conspicuous example of the application of the three phase locomotive to railway work is the Valtellina line in Italy. The electrified portion is 66 miles long. The transmission pressure is 40,000 volts, the trolley pressure is 3,000 volts. Two overhead trolleys and the track constitute the three circuits. The two trolley wires, of course, are not only insulated from the rail, but from each other. The original equipment consisted of five 70 ton locomotives and 10 motor cars. Two of the locomotives have been transferred to the Simplon Tunnel, and replaced by locomotives of later design. The later locomotives are equipped with two motors, one of which is

1,200 h.p., and the other 1,500 h.p. The locomotive has three speeds of 40, 26, and 16 miles an hour. The system has been in operation five years. Its success has been pronounced. The Government is arranging to equip an additional 60 miles of the road with three phase locomotives.

The Simplon tunnel service is performed with three phase locomotives. The electrified section is 12.5 miles long. As is customary with the three phase systems, two trolley wires and the track constitute the three circuits. Fifteen cycle 3,300 volt current is used. The locomotives weigh 62 tons, 42 tons of which are on the drivers. Their rating is 780 h.p. They have two speeds, 42 and 21 miles an hour. The draw bar pull at the lower speed is 12,000 pounds, and at the higher speed 7,000 lbs. They handle 400 ton passenger trains and 500 ton freight trains. The service involves 1% grade. The electrification is to be extended 12 miles, and later will probably be carried to Milan.

Further extensions of the three phase systems are to be used in Italy. The Italian Government has entered on a programme that involves the electrification of 12 trunk line divisions, representing approximately 200 miles of line. More than half of this will be three phase. The most of the divisions in question are mountain passages that involve heavy grades and frequent tunnels. The three phase system is also to be applied to the Alberg Line in Switzerland—the connecting link in the trunk line between Paris and Vienna. The three phase system has not been tried on English railways.

In America three phase locomotives are to be used in the Great Northern Ry.'s Cascade tunnel in Washington. Here the object is to eliminate smoke. The energy will come from a water power plant 30 miles from the tunnel. The transmission pressure will be 33,000 volts. A transformer station at the tunnel portal will step this pressure down to 6,600 volt trolley pressure. The locomotives will weigh 100 tons—all on the drivers—and have a nominal capacity of 1,300 h.p.—will haul a 500 ton train up a 2% grade at 15 miles an hour. Electric braking will be used. This feature will be made recuperative—consequently there will be not only a saving of brake shoes on down grade, but a delivery of current from the locomotive to the line in such a way as to help out the power stations in hauling other trains up grade.

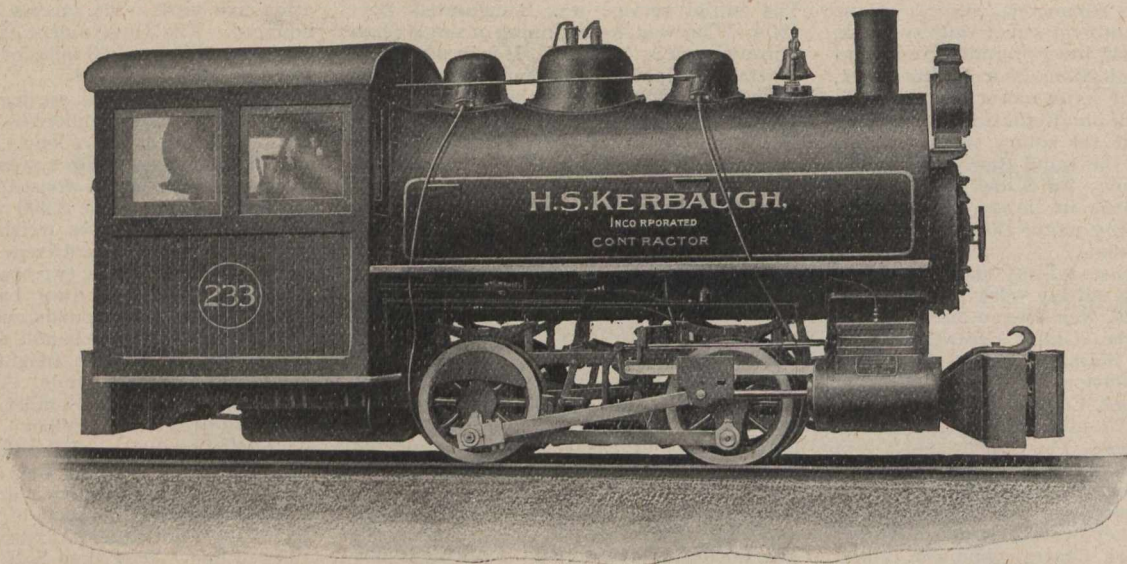
This paper, the balance of which will be given in our next issue, was read before the Canadian Railway Club recently.

Headlights on Locomotives.

The Secretary of the Board of Railway Commissioners has issued the following circular to railway companies: "Owing to the numerous reports the Board has received from its inspectors relating to the poor condition of the headlights on a large number of locomotive engines in use on the different railway systems in Canada, the Board has had under consideration the advisability of requiring the railway companies subject to its jurisdiction to use an electric system of headlights, or some other good system that will give satisfactory light for the protection of life and property.

"The Board directs me to say that it will be glad to have you file with it, in writing, at as early a date as possible, such observations as you may wish to make regarding the proposal of the Board to issue an order as suggested herein."

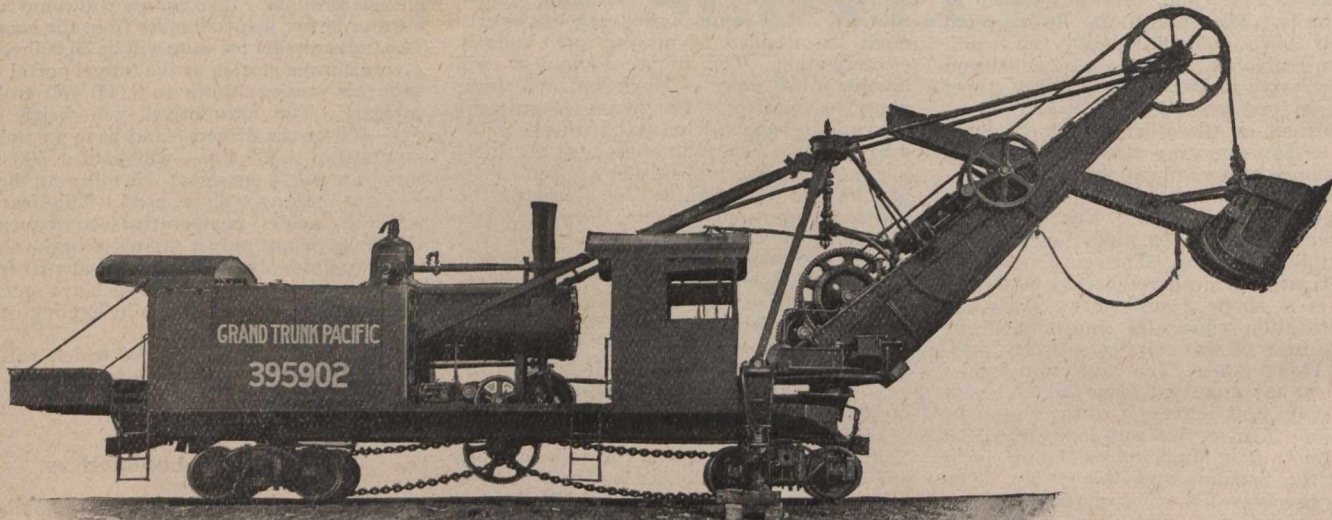
The C.P.R. has offered to make the Alberta Government a grant of 320 acres of land for the proposed establishment of an agricultural college, provided it be located in the vicinity of Gleichen



AMERICAN LOCOMOTIVE COMPANY

LIGHT LOCOMOTIVES

Suitable for Contractors, Mines, Lumber Companies, etc., and for a wide range of service where light rails, uneven roadbeds and sharp curves require a short, rigid wheel base and all weight to be carried on driving wheels.



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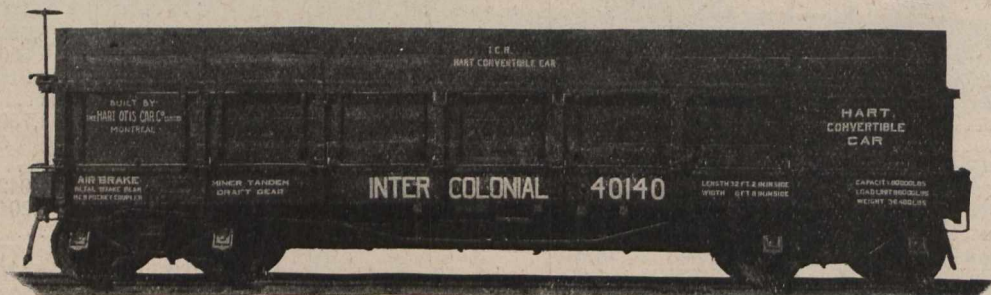
STEAM RAILWAY STATISTICS FOR YEAR ENDED JUNE 30, 1907.

The accompanying table gives some statistical information respecting the operation of the various railways in Canada, in addition to that given in the table published in our Feb. issue, pgs. 105 and 107. The two first columns of figures in the present table show the passenger and freight earnings, which form the principal sources of revenue. The total earnings from operation, which is the second column of figures in the table in our Feb. issue, includes also "other earnings," such as telegraph rents, and various other small receipts, together with balances of car mileage, switching charges, and hire of equipment, which amounted to \$5,146,945 and \$122,537, respectively. The next four columns show the distribution of the operating expenses. The gross of these four columns deducted from the total earnings from operation gives the net earnings, as given in the third column of the table in our Feb. issue. The other columns give some of the more important statistics.

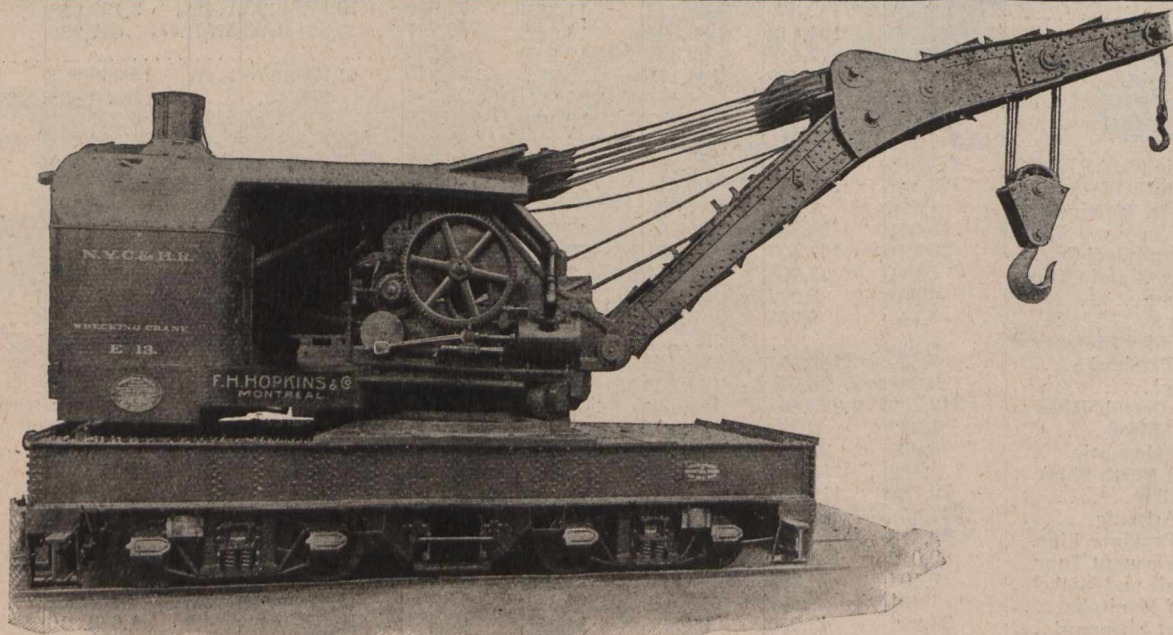
Name of Railway.	Passenger Earnings.	Freight Earnings.	Maintenance of Ways and Structures.	Maintenance of Equipment.	Conducting Transportation.	General Expenses.	Passenger Earnings		Passengers Carried One Mile.	Tons of Freight Carried One Mile.
							Per Train Mile.	Freight Earnings Per Train Mile.		
	\$	\$	\$	\$	\$	\$	\$	\$		
Alberta Ry. and Irrig. Co.	56,245	114,994	48,317	11,056	57,629	19,240	1.17	1.82	1,299,909	4,857,009
Algoma Cent. & Hudson Bay ..	17,348	243,323	36,170	34,987	131,121	14,688	0.57	6.67	560,082	5,879,786
Atlantic and Lake Superior...	25,280	43,605	20,519	13,936	29,186	6,478	0.39	0.59	918,525	2,325,707
Bessemer and Barry's Bay....		945	3,337		1,632	579				
Bay of Quinte.....	49,941	235,695	37,568	25,379	97,232	10,697	0.21	1.02	1,750,494	11,993,386
Bedlington and Nelson.....	332	1,658	6,675	657	6,680	290	0.14	0.71	5,779	55,405
Beersville Coal and Ry Co....	147	2,269	7	225	4,085	77				
British Yukon.....	81,948	235,609	58,858	17,840	59,224	11,642	1.51	4.09	1,042,832	2,838,431
Brockville, Westport & N.W....	34,868	27,154	3,087	1,646	17,318	5,014	1.15	0.95	2,204,040	655,950
Buctouche and Moncton.....	8,592	16,067	7,937	1,531	7,140	3,211	0.40	0.79		
Brandon, Sask. & Hudson Bay	2,037	3,996	14,035	2,542	9,769	709	1.55	0.80	77,297	463,851
Canada Coals and Ry. Co.....	4,685	33,735	5,096	3,650	11,244	2,282	0.33	1.60	110,891	932,809
Canada Southern.....	2,141,260	6,111,298	1,736,949	1,751,149	4,954,969	213,827			82,338,033	
Canadian Government Rys.—										
Intercolonial.....	2,934,231	5,685,268	1,500,399	1,671,435	4,677,534	352,693	0.92	1.34	148,412,096	966,919,251
Prince Edward Island.....	149,603	138,733	106,837	62,912	198,921	8,305	0.44	0.41	7,033,260	3,336,959
Canadian Northern.....	1,720,424	5,741,729	1,228,957	852,799	3,097,495	196,449	1.18	2.51	60,683,505	657,437,305
Canadian Northern Ontario...	59,854	66,544	33,805	14,886	81,091	12,052	0.56	2.13	2,403,339	4,009,207
Canadian Northern Quebec....	178,067	470,138	106,982	67,728	384,549	26,007	0.84	2.16	8,128,920	32,611,672
Canadian Pacific.....	22,688,334	45,477,512	9,885,597	8,930,329	25,064,822	1,430,169	1.67	2.39	1,044,888,381	5,812,386,819
Cape Breton.....	5,409	2,696	3,769	1,075	7,674	3,380	0.27	0.13	177,604	72,871
Caracquet.....	13,647	36,667	15,146	9,560	20,962	5,523	0.25	0.82	498,330	1,129,455
Carillon and Grenville.....	1,778	155	1,978	1,104	2,124	40	0.62	0.54		
Central Ontario.....	66,957	182,369	45,728	11,385	77,098	10,172	1.25	1.49	3,139,088	6,940,520
Crow's Nest Southern.....	29,360	104,118	39,864	18,627	50,727	3,821	0.90	3.57	697,236	8,905,176
Cumberland Ry. and Coal Co..	18,157	77,810	22,321	12,927	8,794					
Dominion Atlantic.....	380,157	398,413	104,175	55,530	296,345	41,933	0.78	1.46	15,066,225	15,587,371
Elgin and Havelock.....	3,767	8,863	4,181	895	5,384	252			109,035	
Esquimalt and Nanaimo.....	205,403	244,391	68,287	30,100	205,977	876	2.25	5.04	4,231,558	5,781,477
Grand Trunk.....	10,596,343	20,220,610	3,407,146	6,233,872	11,258,239	865,856	1.28	2.11	490,124,675	3,008,720,055
Canada Atlantic (G.T.R.)....	471,685	1,440,822	447,858	384,865	989,799	52,240	0.63	1.50	21,857,332	209,010,079
Halifax and South-Western...	162,357	156,711	90,515	32,876	140,658	26,979	1.37	1.25	6,628,081	7,863,317
Hampton and St. Martins....	4,178	7,921	1,500	103	3,705	448	0.31	0.60	110,302	282,247
Hereford.....	18,071	54,391	28,988	13,215	52,564	2,559	0.32	1.17	697,612	4,203,002
Inverness Ry. and Coal Co....	20,131	164,437	32,451	20,848	50,262	6,487	0.50	1.80	816,374	15,318,966
Irondale, Bancroft and Ottawa	7,781	23,903	11,314	2,683	12,808	4,382	0.25	0.78	221,280	1,151,586
Kaslo and Slocan.....	6,301	8,942	20,541	3,067	12,578	1,210	0.29	0.42	81,626	124,355
Kent Northern.....	7,741	9,753	3,416	950	4,935	1,530				
Kettle River Valley (not reptd)	56,659	167,501	52,430	21,116	90,109	7,759	0.35	1.67	1,262,553	6,344,805
Kingston and Pembroke.....	9,268	26,771	34,392	9,401	41,655	11,514	0.68	1.96	59,369	70,452
Klondike Mines.....	242,769	1,275,861	142,828	201,136	694,127	35,329	0.67	2.57	11,295,308	211,157,627
Lake Erie and Detroit River..	1,212	6,293	1,283	855	3,074	523			24,200	
Liverpool and Milton.....	4,035	29,227	6,292	3,261	10,924	5,704	0.21	1.59	159,974	66,150
Lotbiniere and Megantic.....	1,482	58,068	8,611	4,999	18,524	6,017	0.17	3.90	35,646	803,445
Manitoulin and North Shore..	72,783	118,501	43,755	13,765	108,621	2,650	0.75	0.98	2,998,271	3,195,291
Massawippi Valley.....	214,355	553,271	169,529	81,678	371,187	21,828	0.72	1.41	7,679,029	13,803,631
Montreal and Atlantic.....	49,448	42,986	23,244	3,806	45,480	2,009	0.70	0.80	47,771,985	47,771,985
Montreal and Province Line..	69,012	136,131	17,895	1,929	76,032	3,436	1.02	2.42	2,041,858	1,942,841
Montreal and Vermont Junc..	7,104	74,290	8,886	11,790	41,229	8,307	0.48	3.01	2,945,500	18,752,823
Morrisset, Fernie and Michel.	1,631	8,367	10,404	4,283	15,306	1,476	0.24	1.19	1,092,521	5,824,763
Midland Ry. of Manitoba.....	38,291	43,050	39,354	14,451	63,481	10,632	0.83	2.49	77,401	617,180
Nelson and Fort Sheppard....	19,172	22,634	12,436	4,022	17,686	6,514	0.17	0.44	1,033,810	1,001,922
New Brunswick Coal & Ry. Co.	10,566	20,193	8,343	3,902	10,055	1,444	0.41	0.43	300,606	2,018,656
New Brunswick and P.E.I....	15,920	24,824	12,945	5,757	23,099	6,138	0.26	0.41	372,012	438,885
New Brunswick Southern....	85,995	23,020	28,445	7,650	49,078	4,753	1.38	0.92	500,985	852,939
New Westminster Southern...		34,279	10,969	5,141	18,167			2.53	2,304,162	1,205,020
Nosbonsing and Nipissing....	2,047	3,576	5,333	2,742	1,669	4,138				148,478
Nova Scotia Steel and Coal Co.	6,580	18,512	11,993	1,544	13,890	2,641	0.15	1.42	205,472	438,720
Orford Mountain.....	69,152	55,348	38,345	13,845	64,821	6,120	0.88	1.44	2,846,678	3,762,260
Ottawa and New York.....		1,380	1,224		1,385	3,100				
Phillipsburg Ry. & Quarry Co.	9,387	11,165	2,445	810	1,964	275	0.94	1.74	459,673	442,354
Princeton Br. Wash. Co.....	301,976	611,438	154,298	97,625	310,471	56,487	0.73	1.60	12,572,334	42,176,068
Quebec Central.....	206,761	365,045	86,215	59,469	211,935	38,095	0.90	2.23	8,140,965	38,999,405
Quebec and Lake St. John....	145,908	39,585	20,687	14,005	68,487	27,117	0.55	1.58	6,482,389	1,331,680
Quebec Ry., L. and Power Co.										



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Prompt Shipments

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CANADIAN REPRESENTATIVES
 Successors late Jas. Cooper

Montreal

Steam Railway Statistics for Year Ended June 30, 1907.—(Continued from page 237)

Name of Railway.	Passenger Earnings.	Freight Earnings.	Maintenance of Ways and Structures.	Maintenance of Equipment.	Conducting Transportation.	General Expenses.	Passenger Earnings Per Train Mile.	Freight Earnings Per Train Mile.	Passengers Carried One Mile.	Tons of Freight Carried One Mile.
	\$	\$	\$	\$	\$	\$	\$	\$		
Quebec, Montreal and South'n.	103,824	144,506	54,310	34,096	140,249	23,481	0.55	0.67	3,951,123	10,147,807
Red Mountain.....	5,685	22,054	8,995	2,412	18,840	4,954	0.95	1.83	139,122	846,882
Rutland and Noyan.....	6,988	8,722	1,285	1,675	5,247	678	1.50	3.08	310,276	810,725
Salisbury and Harvey.....	10,976	25,492	18,110	4,016	13,821	1,806	.....	.....	.....	.....
Schomberg and Aurora.....	4,112	4,616	2,271	1,252	7,481	252	0.22	1.20	182,220	40,320
Stanstead, Shef'd & Chambly.	28,827	53,480	17,581	3,074	40,767	1,384	0.45	1.22	1,219,301	2,999,538
St. Clair Tunnel.....	59,784	252,003	12,414	99,581	32,177	2,194	.....	.....	.....	.....
St. Lawrence and Adirondack.	142,432	180,397	59,326	26,694	106,978	2,640	1.00	2.43	8,934,062	16,911,290
Sydney and Louisburg.....	20,262	382,413	67,115	128,465	157,905	45,812	0.61	4.36	734,647	57,105,680
Temiscouata.....	59,331	110,707	40,960	25,641	51,979	17,063	0.41	1.35	.....	.....
Temiskaming and N. Ontario..	349,886	297,857	93,092	63,881	315,533	30,654	2.19	1.78	12,643,073	19,619,604
Thousand Islands.....	12,267	26,104	4,212	2,360	15,822	2,675	0.34	0.73	219,366	231,978
Toronto, Hamilton & Buffalo..	247,404	566,544	103,531	70,421	327,411	36,841	1.02	3.65	11,094,865	41,677,780
Vancouver, Victoria & Eastern	36,292	227,934	48,661	20,018	101,046	9,155	1.29	5.44	907,792	14,017,098
Vancouver, West. and Yukon.	33,245	52,980	13,684	838	45,218	3,396	0.98	4.04	1,177,551	660,793
Victoria Ter. Ry. and Ferry Co.	3,330	6,898	4,248	1,076	5,722	1,757	0.42	0.99	800,400	109,338
Victoria and Sidney.....	16,977	13,772	6,032	2,054	11,786	3,274	0.68	1.16	113,630	261,711
Wabash Rd. in Canada.....	782,302	1,755,709	175,778	269,129	1,420,197	65,482	1.06	1.95	35,858,517	322,596,769
Wellington Colliery Co.....	2,381	2,778	8,441	15,085	10,873	.....	0.53	0.62	46,042	30,111
Wel. Col. Co. Ladysmith Ex..	494	36,839	3,037	7,115	27,181	.....	0.26	1.97	13,369	4,529,986
York and Carleton.....	876	1,707	1,080	125	2,542	33	.....	.....	.....	.....
Totals.....	45,730,652	95,738,079	20,887,091	21,666,373	57,325,543	3,869,669	.....	.....	2,049,549,813	11,687,711,830

The Railway Commissioners' Report.

The second report of the Board of Railway Commissioners for the year ended Mar. 31, 1907, has been laid before the Dominion Parliament and issued to the public. It gives details of changes in the law effected during the session of Parliament of 1906, lists of orders made, and judgments given, together with details of the work done by the different officers during the year. To the general public, however, the report has no interest, and to the transportation officials, whose interests are affected, its usefulness is limited by reason of the fact that the information is a year old. THE RAILWAY AND MARINE WORLD publishes every month a list of the orders issued up to as near the date of publication as possible, and from time to time gives in full the more important orders and judgments. The value of reports of all kinds is the promptness with which they are issued, and in the present case there can be no reason why a report should be a year late in being issued except to carry out to the letter the red tape idea that no report can become public property until it has been laid on the table of the House of Commons at the first session after the closing of the year.

On Mar. 31, 1907, the staff of the Board consisted of 32 persons, the salary list amounting to \$44,980, against 25 persons and a salary list of \$35,200, at Mar. 31, 1906. The names of the principal members of the staff with their office and salary are as follows:

ENGINEERING.	
G. A. Mountain.....	Chief Engineer..... \$4,800
T. L. Simmons.....	First Assistant Engineer..... 2,500
H. A. K. Drury.....	Second " "..... 2,500
J. A. Tessier.....	Third " "..... 2,000
J. Murphy.....	Electrical Expert..... 1,500
TRAFFIC.	
J. Hardwell.....	Traffic Expert..... \$3,600
G. A. Brown.....	Chief Clerk Traffic Dept. 2,000
LAW AND EXECUTIVE.	
A. G. Blair.....	Law Clerk..... \$2,500
E. C. Lalond.....	Inspector of Accidents..... 2,200
Jas. Ogilvie.....	Inspector of Ry. Equip-ments..... 2,200
E. A. Primeau.....	Registrar and Account't. 2,100

R. Richardson..... Priv. Sec. to Chief Comm. \$ 1,500
A. E. Ecclestone..... Priv. Sec. to Secretary... 1,000

RECORDS DEPARTMENT.

J. W. Thomson..... Chief Clerk..... \$1,100

April Birthdays.

Many happy returns of the day to—
J. A. Armstrong, Chief Train Dispatcher C.P.R., Ottawa, born at South Durham, Que., April 6, 1863.
F. J. Balch, Assistant General Freight Agent Ottawa and New York Ry., Ottawa, born at Massena, N.Y., April 15, 1870.
F. E. Barbour, General Passenger Agent Rutland Rd., Rutland, Vt., born at Bangor, Me., April 3, 1870.
Adam Brown, formerly President Wellington, Grey and Bruce Ry. (now G.T.R.), Vice-President G.N.W. Telegraph Co., and Postmaster of Hamilton, born at Edinburgh, Scotland, April 3, 1826.
A. H. Clark, Master Mechanic Irondale, Bancroft and Ottawa Ry., Irondale, Ont., born April 5, 1867.
A. E. Edmonds, District Passenger Agent C.P.R., Detroit, Mich., born at Woodstock, Ont., April 8, 1866.
J. H. Flock, K.C., Honorary Counsel Canadian Ticket Agents' Association, London, Ont., born at Toronto, April 6, 1834.
B. W. Folger, Manager Niagara Navigation Co., Toronto, born at Kingston, Ont., April 8, 1872.
W. E. Fowler, Master Car Builder C.P.R., born at Weymouth, Dorsetshire, Eng., April 27, 1856.
G. H. Garden, C.E., Chief Engineer Alberta Ry. and Irrigation Co., Lethbridge, Alta., born at Woodstock, N.B., April 5, 1849.
F. A. Gascoigne, Car Accountant C.P.R., Montreal, born at Gosport, Hants, England, April, 1866.
J. P. Gay, Manager G.T. Despatch Fast Freight Line, Detroit, Mich., born at Hamilton, Ont., April 26, 1857.
B. C. Gesner, formerly Air Brake Inspector I.C.R., now travelling representative Galena

Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.

J. M. Horn, city freight agent Canadian Northern Ry., Winnipeg, born at Schoots, Lanarkshire, Scotland, April 12, 1880.

E. A. James, ex-Manager Canadian Northern Ry., Winnipeg, born in London, Eng., April, 1865.

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

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

J. S. Lawrence, Superintendent C.P.R., Medicine Hat, Alta., born at Toronto, April 9, 1863.

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

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

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

E. V. Skinner, Assistant Traffic Manager C.P.R., New York, born in London, Eng., April 22, 1849.

J. R. VanCleve, Master Mechanic, Alaska Central Rd., Seward, Alaska, born at Little Falls, Minn., April 6, 1859.

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

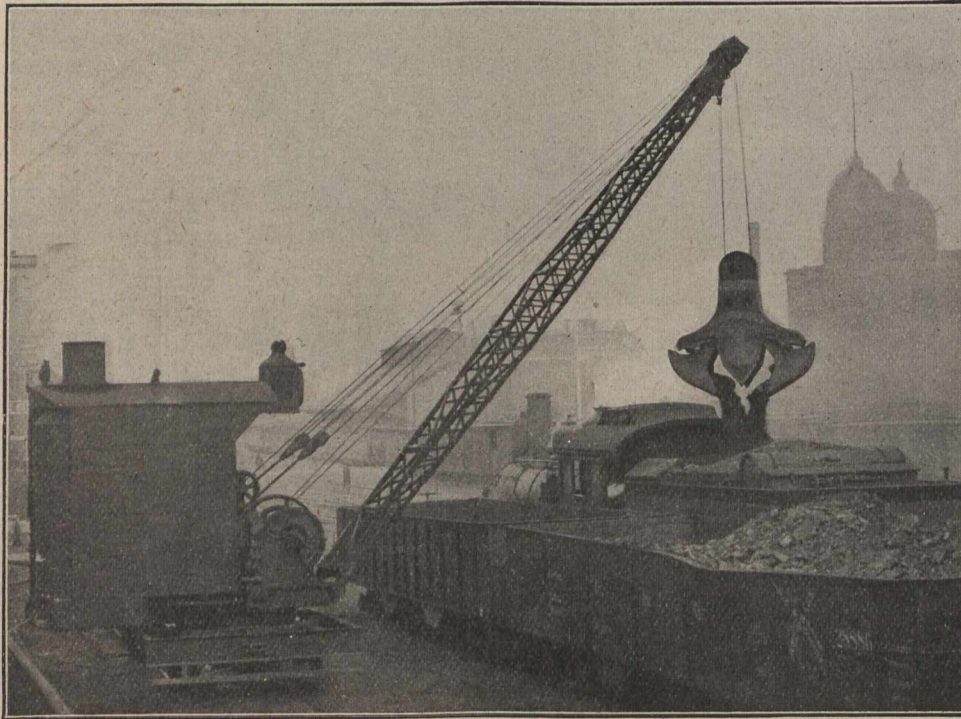
G. C. Wells, Assistant General Passenger Agent C.P.R. Eastern Lines, Montreal, born at Brockville, Ont., April 15, 1866.

Hon. J. Wood, President and General Manager New Brunswick and Prince Edward Island Ry., Sackville, N.B., born there April 18, 1843.

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

J. B. Lambkin, Assistant General Passenger Agent Intercolonial Ry., Halifax, N.S., born at Quebec city, April 5, 1858.

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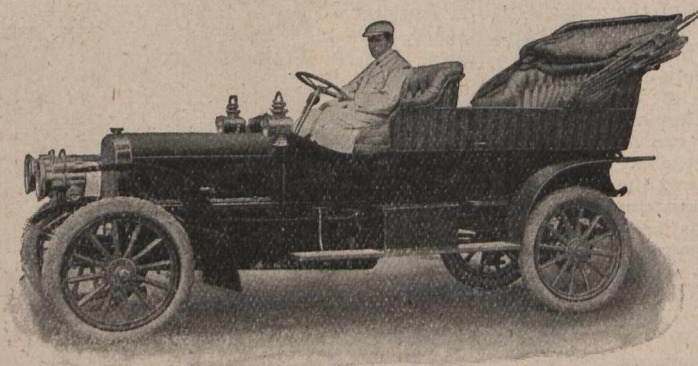
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Take a rigid training in Auld Licht faith and practise long-houred service on economical Scotch railways, comprehensive experience in Eastern Canada, New York, and the spacious plains of the Last West; broaden and deepen the result by a decade of management of a fast-growing, pioneer, cross-continental system of transportation, and you produce the Third Vice-President of the Canadian Northern Railway—D. Blythe Hanna, the extra successful man, who desires you acutely to feel the altitude he has reached is common enough. The nearest approach to vainglory of which Mr. Hanna is known to have been guilty is the admission that all the conceit was taken out of him long ago. But a man accustomed to handling enormous affairs, who has carried the main burden of the day-to-day management of a railway that has grown from nothing to 4,000 miles in 10 years, and who is never slow to acknowledge his debt to the little kirk where the fear of the Lord was rather grimly enjoined upon him, is too big to be anything but humble, unaffected; without worry about the impression he makes upon less prominent men.

The softer side of the Auld Licht theology is not sidetracked in the spacious room in Toronto, where Mr. Hanna keeps his hand on costly business that reaches down to the Atlantic, and is ready to overflow the Rocky Mountains into the Pacific. To the Presbyterian Church on Sunday mornings, and to the piano on Sunday afternoons, to sing old Scotch ballads to his daughter's accompaniments—these are habits that he will be surprised to see named in print. But they are of the essence of a character that is happily Scotch, and domestic and simple, in spite of a success that would have turned many other heads.

Mr. Hanna was born at Thornliebank, a few miles from Glasgow, five days before Christmas, 1858. He left the village as a boy; and when he returned 20 years afterwards, all the people he had known were dead. At 16 he became a junior clerk and ticket agent on the Glasgow, Barrhead and Kilmarnock Railway. After four years he changed to the Caledonian as goods clerk; and four years later, in 1882, went to Canada as a clerk in the audit office of the Grand Trunk Ry., at Montreal. In 1884 he transferred to the audit office of the New York, West Shore, and Buffalo System. He stayed two years in New York, and then accepted the post of chief accountant of the Manitoba and North-Western Ry., a small line branching from the Canadian Pacific at Portage la Prairie, 56 miles west of Winnipeg.

Six years of this post led to the Treasurer-ship of the Company in 1892, and in 1893 he became Land Commissioner as well. Then, in the last month of 1896, he found his real place, or rather the avenue to his proper vocation, the full extent of which is still only partially apparent. He became Superintendent of the Lake Manitoba Ry. and Canal Company, whose small, almost unnoticed line began in a village and ended nowhere. The Canadian Northern system, chartered to span the continent, is the present-day shape of the hundred-mile piece of track from Gladstone to Dauphin, of which Mr. Hanna took charge in Dec., 1896. The total operating force, including the Superintendent, was 13. To employ an extra man was not justifiable financially, so he compromised on a boy who is still on the pay-roll.

Ten thousand seven hundred men are employed on the system to-day. This is not a story of the expansion of the Lake Manitoba Ry. and Canal Company into a transcontinental railway, although Mr. Hanna has been associated with every move in the most rapid uprising of a system of intercommunication that has ever happened. Mr. Mackenzie,

the President of the Canadian Northern Ry., has a rare instinct for the right enterprise, and right men to conduct it. That Mr. Hanna became his right hand surprised nobody who knew Mr. Hanna. When various apparently disconnected undertakings were merged into the Canadian Northern Ry. Co. in 1902, with headquarters in Toronto, Mr. Hanna became Third Vice-President, and moved from Winnipeg to the charming metropolis on Lake Ontario. The Canadian Northern interests built a railway in Ontario that directly connects Toronto with the West, via Parry Sound. Mr. Hanna became Third Vice-President of the Canadian Northern Ontario Ry. Co. They acquired two separate lines in Quebec, which are now the Canadian Northern Quebec Ry. and Mr. Hanna is the President of the amalgamated undertaking.

When a man shows such capacity in one series of enterprises his advice is sought in the expansion of others. Four years ago Mr. Hanna became a director of several other financial institutions, and is known to have declined bank directorships. And he is just the same genial, consistent goer who started 30 years ago on the Glasgow, Barrhead and Kilmarnock Ry., at six shillings a week.

Fuel Consumption by Locomotives.

One of the new features of the information collected by the statistical branch of the Department of Railways, relates to the consumption of fuel, which is one of the chief items in the cost of operating a railway. The table prepared from the information gathered, gives the following results for the year ended June 30, 1907:

Class of Locomotive.	COAL.		WOOD.		Total tons of Fuel.	Miles run.	Fuel cons'm'd per 100 miles.
	Anthracite.	Bituminous.	Hard.	Soft.			
Freight.....	9,797	3,173,101	367	21,348	*3,194,510	43,824,909	7.29
Passenger.....		1,325,955	222	9,559	1,331,178	29,110,258	4.57
Mixed.....		301,041	690	1,398	303,549	7,492,278	4.05
Switching.....		555,438	68	3,929	557,576	14,816,272	3.76
Construct'n.	48	222,283	1	1,497	223,141	4,911,249	4.54
Total....	9,845	5,577,818	1,348	37,731	*5,608,954	100,154,966	

*Two cords of wood calculated as one ton of fuel.

The total amount of fuel consumed in all services was 5,608,954 tons. The average consumption of fuel per 100 locomotive miles was as follows: Freight, 7.29 tons; passenger, 4.57; mixed, 4.05; switching, 3.76; and construction, 4.54. Applying the average cost to the average consumption, it is found that \$20.48 would be expended on a freight train for the distance indicated, and \$12.94 on a passenger train. In the operating expenses for the year is a charge of \$29,511,063.67 for fuel for locomotives. Divided by the tons given in the above table, this would mean a cost of \$5.26 per ton. The actual cost of coal at points of distribution, as reported by the railways, was considerably below this figure, and there is a difference of over \$12,000,000 between the fuel bill thus made up and the total included with operating expenses. The sum indicated would probably be the cost of handling. The average cost of coal at the point of distribution was \$2.81. The total fuel bill of all the railways, apart from the cost of 223,141 tons used in connection with construction work, was \$15,137,504.48. This was equal to 14.59% of the operating expenses; but must be read in the light of the figures which place the final cost of fuel at \$29,511,063.67.

A branch of the Canadian Society of Civil Engineers has been established in Quebec with 45 members. E. A. Hoare, Chief Engineer of the Quebec Bridge and Ry. Co., is acting as Chairman, and P. E. Parent, District Engineer of the Department of Marine and Fisheries, as Secretary.

Rebating on U.S.-Canada Through Traffic.

The U.S. Federal Court of Appeals has set aside the recent conviction of the Camden Iron Works, Philadelphia, Pa., for accepting a rebate of \$1,230.57 from the Mutual Transit Co., of Buffalo, N.Y., on a shipment consigned to Winnipeg, Man. It is therefore decided that when a shipper in the U.S. makes a contract with a foreign carrier for continuous transportation over lines, on land or water, both within and without the United States, he can accept a rebate from the total amount of freight charges paid. The decision states: "The underlying problem presented, involves the ascertainment not merely of the meaning of the word 'arrangements,' but of the effect which in this particular case should be ascribed to the words 'common arrangement,' as used in the act of Feb. 4, 1887, and to the phrase 'tariffs published and filed by such carrier, in the act of Feb. 19, 1903. The court below held throughout and finally charged the jury 'that if these goods were shipped on a through bill of lading or any other through document or writing from any place in the U.S. to an adjacent country upon a contract of continuous shipment by a water company, partly over railways and partly over its own water route, and such goods were received in transit on this through writing under conventional division charges, such water company must be deemed to have subjected itself to an arrangement for a continuous carriage or shipment within the meaning of the act to regulate commerce.' This language is very clearly the same as was employed by the Supreme

Court in the case cited above; but the nature of the case with which the tribunal was dealing was so essentially different from that of the case now under consideration as to render the decision in the former wholly

inapplicable to the latter. In this instance the contract for continuous carriage or shipment was between the shippers themselves and a single carrier by water, and the question is not whether a carrier subject to the act had wilfully failed to file and publish the tariff or rates and charges, but whether the defendants, shippers had received from the rate that was named in the tariff or tariffs which such carrier had in fact published and filed. An offence which a carrier subject to the act may perpetrate by failing to file and publish tariffs and that which a shipper may commit by accepting a rebate from tariffs published and filed are distinctly denounced by the statute and should not be commingled or confused in its administration."

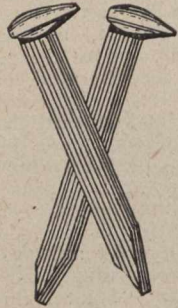
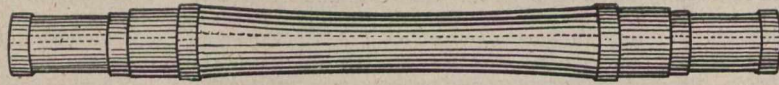
In giving its conclusion, the court states that as far as the water company is concerned, the element which materially influenced the result in the Supreme Court case mentioned is entirely lacking in this one, "unless, indeed, the transit company's necessary concession to the carriers by railroad of their own lawful rates constituted a conventional division of all charges; and to us it seems clear that it did not."

In the case of the Mutual Transit Co., convicted for granting the rebates dealt with in the foregoing, judgment was delivered at Buffalo, N.Y., Mar. 9, to the effect, that as this was a primary offence of the corporation, the motion for a new trial should be denied, and a fine of \$5,000 imposed, stay of execution for 60 days being granted.

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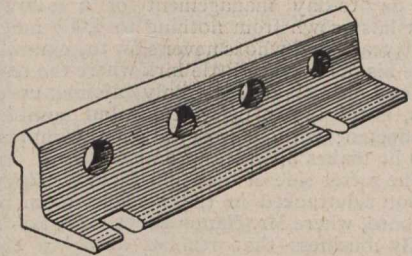
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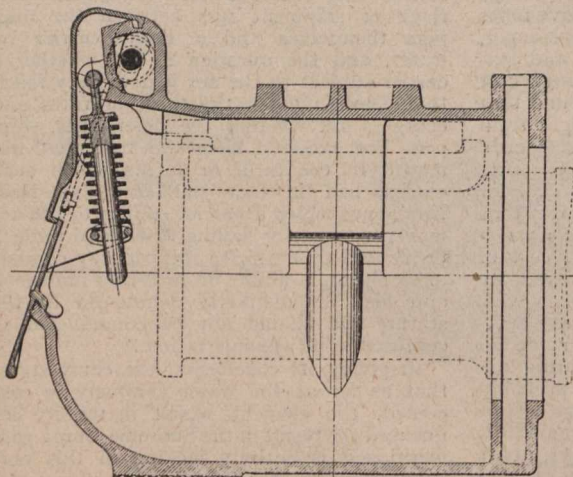


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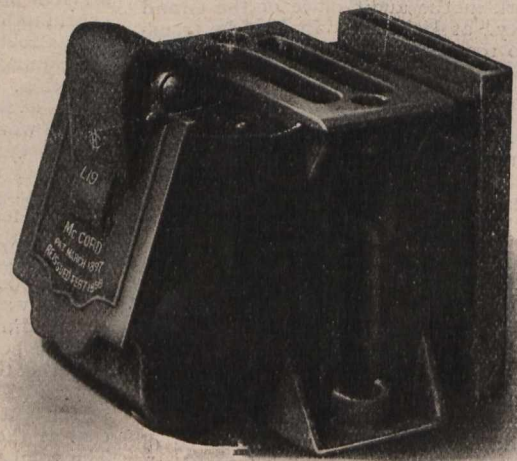
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Projected Lines, Surveys, Construction, Betterments, Etc.

Alaska Central Ry.—F. Stewart, General Manager, was in Montreal, Mar. 17, and in an interview stated that the company had constructed 19 miles of line from Seward, Alaska, and it was intended to complete the line for a distance of 35 miles. When this was done there was no doubt that a large amount of traffic would result. Mr. Stewart was on his way back to Seward, having been to London, Eng., making arrangements for the company's financial requirements. (Aug., 1907, pg. 663).

A press report, dated Mar. 23, states that Mr. Stewart has been superseded as General Manager of the A.C.R., the reason assigned relating to the financial arrangements with the Sovereign Bank of Canada, now in liquidation.

Algoma Central and Hudson's Bay Ry.—At a joint meeting of the Town Council and Board of Trade of Sault Ste. Marie, Ont., recently, it was arranged to send a joint deputation to the Ontario Government asking that steps be taken to provide additional railway accommodation for the district, particularly in the direction of the completion of the A.C. and H.B.R. to a junction with the G.T. Pacific Ry. It was decided to ask the Ontario Government to regrant 5,000 acres and \$20,000 a mile to construct the line from the projected junction with the C.P.R., to a junction with the G.T. Pacific. The deputation will also ask the Dominion Government to give a special cash subsidy to the A.C. and H.B.R., for the construction of the more northerly portion of the line.

A public meeting was held Mar. 16 at Sault Ste. Marie, at which a delegation was appointed to interview the Ontario Government with the object of obtaining a guarantee of the company's bonds upon the surrender of the land grant in order that the line might be completed to the National Transcontinental Ry., or for the Government to take over the railway and extend it as a colonization railway. After presenting their views Mar. 20, the Premier in reply said, while the Government believed that the time for stopping the general bonusing of railways had arrived, there were cases where exceptions might reasonably be made. In 1907, the Government renewed the money grant to the railway, and now it was asked to renew the land grant also. Good and strong reasons would have to be submitted before the Government could give a favorable consideration to the proposal. (Mar. pg. 179.)

Atlantic, Quebec and Western Ry.—An inspection of the work completed and in progress on this line has been made by Earl Ranfurly, Vice-President, who returned to London, Eng., Mar. 1. J. X. Lavoie, the Canadian Vice-President, stated, in an interview at Montreal, that the A., Q. and W. Ry. Co. had given Galindez Bros., the London bankers, \$2,000,000 for the old Baie des Chaleurs Ry., and expected to get a clear title to the line by May. It was, however, expected that it would cost about \$1,000,000 to put the line so bought into good shape. The company had already constructed 20 miles of an extension towards Gaspé, and had an additional 80 miles under contract. About 850 men have been employed, and this number is to be increased at once. One of the most important features of the work is the piercing of a tunnel at Cap l'Enfer, some 850 ft. through a limestone rock. About one-third of this rock work is already completed, and it is expected that the whole will be completed some time in June. The right-of-way is almost cut away right through to Gaspé, and the whole line is down for completion

some time during the fall of 1909. There are about 26 bridges on the lower section of the line, and all of these are to be built of concrete and steel. The terminal arrangements for Gaspé are of a very formidable nature, as the promoters are sanguine of being able to give to the Province of Quebec another winter port. The passenger station at Gaspé Basin will be located at the foot of Fort Ramsey, but the freight terminals are to be at Sandy Beach, about four miles from the town, where there are excellent facilities for a first-class port. Wharves can be built that will give 40 feet of water, with good shelter at all times. The company also proposes to erect a number of hotels on the route with the object of developing the tourist traffic. The question of a steamship line to Europe is also discussed, notwithstanding the non-success of previous attempts to establish one. (Feb., pg. 97.)

Canadian Minnesota Bridge Co.—It is reported that traffic will be operated over this bridge across the Rainy River, near Fort Frances, Ont., April 1. (Jan., pg. 19.)

Crow's Nest and Northern Ry.—The British Columbia Legislature, at its current session, passed an act incorporating a company with this title, for the purpose of constructing a railway from the C.P.R. at the Crow's Nest Pass, B.C., to or near the summit or divide between the waters of the north fork of Michel Creek, and the water of Grave Creek, via the west side of the north fork of Michel Creek, to the confluence of the two north branches of the creek, and thence by both branches to points near the divide. The capital is fixed at \$2,000,000, and it is authorized to issue bonds to the extent of \$50,000 a mile of railway constructed. Agreements may be made with other railway, steamship, transportation, telegraph or other companies, to lease or convey its undertaking either in whole or in part. The company is also authorized to carry on a general telegraph, telephone and express business. The provisional directors are: R. G. Belden, J. H. Hemphill, C. L. Butterfield, A. E. Wayland, Spokane, Wash. (Jan., pg. 19.)

Detroit River Tunnel.—Replying to a question in the House of Commons recently the Minister of Customs said the material used in the construction of the Canadian end of the international tunnel at Windsor, Ont., was being admitted free under item 596 of the Customs Tariff of 1907. This item was a new provision; remission of duty on materials used in Canada for international bridges and tunnels was formerly by Order-in-Council under the Audit Act. A protest on behalf of Canadian manufacturers has been made to the Government particularly in regard to the steel and cement to be used in the 0.75 of a mile of tunnel to be constructed inland from the submarine portion of the tunnel. (Mar., pg. 179.)

Eastern British Columbia Ry.—An act has been passed at the current session of the British Columbia Legislature incorporating a company with this title to construct a railway from the south fork of Michel Creek, at the loop on the C.P.R. Crow's Nest branch, southerly up the creek to the mouth of the east fork, thence along the same easterly and southerly to the southerly boundary of lot 6,999, group 1, Kootenay district, a distance of 14 miles. A clause is added to the section defining the route, setting forth that nothing in the act or in the Railway Act, "shall be deemed to authorize the company to build any branch line to any point nearer the International boundary than the southern boundary of lot 6,999." The capital stock is fixed at \$750,000; and bonds to the extent of \$30,000 a mile may be issued. The company is given power to enter into agreements with other companies. The provisional di-

rectors are: D. C. Corbin, J. K. O. Sherwood, A. T. Herrick and J. A. Harvey. (Jan., pg. 19.)

Fort William Terminal Ry. and Bridge Co.—The rules of the House of Commons with respect to private bills were suspended by resolution in order to allow of the introduction of the bill granting an extension of time for the construction of the line and bridges at the current session. The reason assigned for the application is that the question of street and railway crossings within the city of Fort William had still to be decided by the Board of Railway Commissioners, and that some delay may be experienced in getting these questions settled.

The local company is reported to have sold out its charter and franchises to one of the trunk lines, but the report has not been confirmed. (Mar., pg. 181.)

Great Northern Ry.—A Winnipeg despatch says the G.N.R. staff is moving from its Main St. offices to new premises on Portage Ave. Other despatches state that several parties of engineers have been placed in the field between Brandon, Man., and Calgary, Alta., with the object of locating a line about midway between the International boundary and the C.P.R.

A. Guthrie, the St. Paul, Minn., contractor, stated in Vancouver, B.C., recently, that the extension of the Vancouver, Victoria and Eastern Ry. from Michel through the Crow's Nest Pass would probably be completed by April 1. This is the first time that the V.V. and E. Ry. has been mentioned in connection with the line in the vicinity of Michel, all previous references to the latter having been that it was an extension of the Crow's Nest Southern Ry., which runs from Fernie, B.C., to a junction with the G.N.R. at Rexford, Mont. Another extension, said Mr. Guthrie, was being planned in that district, but he declined to discuss it. Tracklaying is reported to be in progress on the V.V. and E.R. between Keremeos and Headley City, B.C., about 20 miles. Slow progress is being made and it is not expected that the work will be completed before May. There are three crossings of the Similkameen River, and the bridge work is causing some delay. The company has given notice of its intention to construct spur lines to mills on the water front between New Westminster and Port Kells. (Feb., pg. 97.)

Halifax and Northeastern Ry.—Replying to a question in the Legislature, Mar. 4, the Minister of Public Works stated that the Government had not paid for any surveys made by the company, neither had the company paid for any of the surveys made by the Government. It was not the intention of the Government to compel the repayment, in whole or in part, of any of the money it had expended upon surveys. The surveys made by the Government since 1906 were location surveys. Owing to the fact that preliminary surveys had been made in 1906 jointly by persons proposing to undertake the enterprise and the Government, the Government were able in some cases to locate the line without preliminary surveys. The surveys were started about April, 1907, and were completed. The line had been located through the Musquodoboit Valley, down the West River, St. Mary's and Salmon River to Guysborough town, with a branch from Cross Roads, Country Harbor, to Country Harbor. Also a line from Sunny Brae down the East River St. Mary's, connected with the other line at or near Melrose. The total expenditure by the Government on this survey and for plans, profiles, etc., to Feb. 25, was \$29,326.34. The whole liability for this to Feb. 25 had been paid. The estimated expenditure to complete the surveys would be about \$1,000. The above report included all the expenditures asked for, said the Premier, but there had been \$34,478.65

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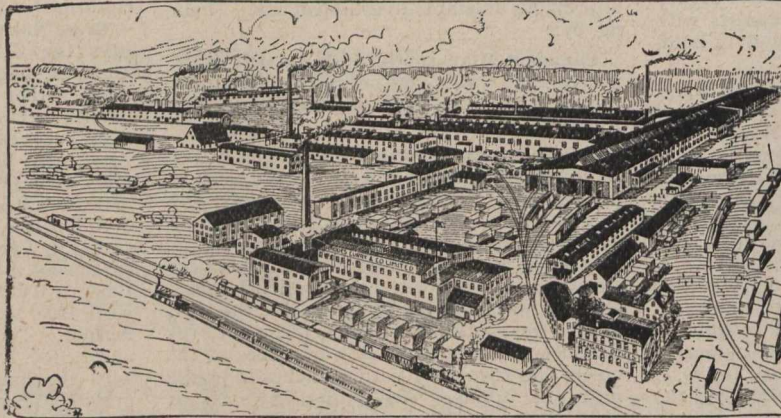
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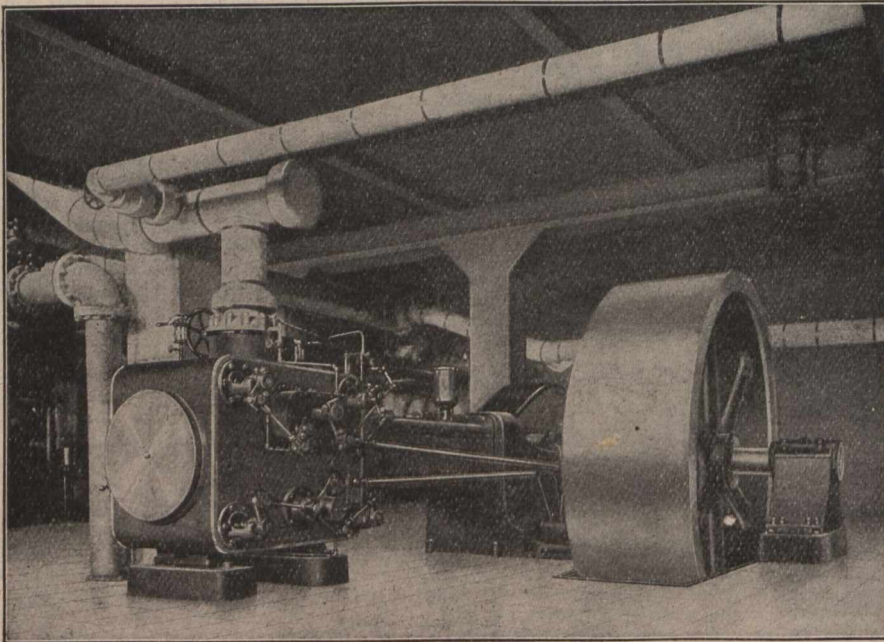
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paid by the Government for surveys, made in 1906 jointly by persons proposing to undertake the enterprise and the Government. These persons agreed to pay one-half the cost of the survey. They paid a portion of the expenses of the survey themselves. The Government expected to receive payment of the balance shortly. The plans and profiles of surveys had been completed. A full report would be laid before the House. The questions of proceeding with the work of construction this year was under the consideration of the Government. (Mar., pg. 181).

Hudson Bay Pacific Ry.—An act authorizing the incorporation of a company with this title has been passed at the current session of the British Columbia Legislature. The provisional directors are: D. B. May, Seattle, Wash.; L. E. Bensen, Goldfield, Nev.; J. McLachlan, Los Angeles, Cal.; W. H. Duval, W. H. Harding, Jr., New York City. The company is authorized to construct a railway from near Port Simpson or Work Channel, B.C., to the eastern boundary of the Province, via the south-western side of Work Channel to the Skeena River; along the north bank of that river to Hazelton; thence to the junction of the Buckley River; up the right bank of this river eight miles to the Suskewa River; along this river by a low divide to the head of Babine Lake; thence to the north end of Stuart Lake; thence north of McLeod Lake to the Misnichinca River, by Summit Lake to Pine River Pass, northwesterly to the head of Pine River, along the same to Moberly's Lake, and thence along the Peace River valley. Power is also given to construct branch lines not exceeding 20 miles in any one case. The capital is fixed at \$3,000,000, and bonds to the extent of \$25,000 a mile of line may be issued; it is also given power to promote the incorporation of any other company beneficial to its interests, and to enter into agreements with other companies. (Mar., pg. 186.)

Intercolonial Ry.—At a public meeting held at Parrsboro, N.S., Feb. 26, a resolution was passed asking the Dominion Government to construct a loop line from Amherst to Truro, via Parrsboro. The only opposition offered at the meeting was on behalf of the Standard Coal and Ry. Co., which was incorporated by the Nova Scotia Legislature in 1903. It has power to construct a railway from Athol to Parrsboro, and thence to Truro, with a branch to tap the coal mines at River Hebert, N.S.

The Minister of Railways replying to a question in the House of Commons recently said no surveys had been made by the Government for proposed railways between Truro and Parrsboro, via Five Islands; between Truro and Brule, or between Truro and Upper Stewiacke, N.S.

The work of rearranging the yard accommodation at Stellarton, N.S., will be started early in the spring. The work includes, among other things, the putting in of a concrete floor in the machine and blacksmith shop at the roundhouse, a complete sewerage system, a new sand drying house, and an electric lighting plant. This plant, it is intended, will be large enough to light the yards and buildings at New Glasgow and Westville as well as at Stellarton. It will necessitate the erection of about six miles of pole line. (Mar., pg. 181).

Ladysmith Lumber Co.—An act has been passed at the current session of the British Columbia Legislature authorizing the Ladysmith Lumber Co. to construct and operate for 12 years a line from 500 yards north of the Comox wagon road crossing in Newcastle townsite, following the old Eastern Wellington right-of-way, or nearly so, until it reaches the Government-gazetted wagon road in Mountain district, thence northwesterly for two miles, more or less; and branch lines

of not more than one mile. The railway is to be used as a private railway of the company in conjunction with its general logging, lumbering and manufacturing business and the transportation of such other freight as may offer along the line, and it is provided that the company shall have no power to carry on a general public telegraph, telephone, express or passenger business. The company may enter into agreements with any railway company for the construction and operation of the railway. (Feb., pg. 99.)

Little Nation Ry.—This railway as projected will have a length of about 70 miles, and will run from Papineauville on the C.P.R. Montreal-Ottawa line, along the valley of the Little Nation River to Nominique, on the C.P.R. Northern Colonization Ry., which is now being extended to Maniwaki, on the C.P.R. Gatineau Valley Ry. For the first 20 miles, as far as Cheneville and Preston, the line will run through a well-settled district, and beyond will open up a large area of unsettled territory. The company, we are advised, is prepared to proceed with the construction of the line as soon as Government subsidies have been secured. Following are the officers and directors for the current year: President, Rev. J. P. Belanger, St. Andre-Avelin, Que.; Vice-President, E. Rochon, Papineauville, Que.; Chief Engineer, H. Lefebvre, Cheneville, Que.; other directors: A. O. Belanger, Papineauville; N. Chene, St. Andre; A. C. Guillaume, H. Baulue, Cheneville; Secretary-Treasurer, J. A. Gadoury, Cheneville. (Dec., 1907, pg. 889).

Magdalen River Valley Ry.—Application will be made to the Quebec Legislature for an act authorizing a change in the point of location and route of this projected railway; and giving power to construct a line of less than standard gauge.

We were advised Mar. 12 that the amendment of the act for which the company is asking affects the location of about 0.25 mile of the line. A good deal of construction work is reported to have been done during 1907. M. Mullen, C.E., Bangor, Me., is President of the company.

A second notice respecting this company has been issued by Pentland, Stuart and Brodie, solicitors, Quebec, who are acting on behalf of Frank Ross of that city. It sets forth that application will be made at the current session of the Quebec Legislature for an act amending sections 4 and 16 of the act of 1907, to make the same conform to the bill as passed by both houses of the Legislature, and more particularly by limiting the right to construct branch lines. (Sept., 1907, pg. 663).

Manitoulin Island.—C. N. Smith, member of the Ontario Legislature for Sault Ste. Marie, is advocating the construction of a railway on Manitoulin Island by the Ontario Government. He suggests that a line be constructed from Little Current, the principal village on the island, to a junction with the Manitoulin and North Shore Ry. at Espanola, on the mainland, a distance of about 30 miles. The cost of such a line, it is estimated, would be about \$750,000. Manitoulin is an island 80 miles in length by 22 in width, and has a population of over 18,000. There is at present only communication with the mainland by boat in summer, and over the ice in winter. There is a large area of land on the island suitable for ranching and mixed farming.

The Manitoulin and North Shore Ry. Co. has a charter to construct such a line, and has made surveys to Little Current.

At a meeting of the associated municipalities of the island, Mar. 11, a resolution was passed asking the Ontario and Dominion Governments not to extend charter rights or subsidies beyond July of the present year; and expressing an opinion that the Ontario

Government should undertake the construction of a railway on the island, the Manitoulin and North Shore Ry. having failed to do anything under its charter. R. R. Gamey, M.P.P., stated to the meeting that the Minister of Public Works for the Province had informed him that if the company failed to construct the line within the time limit the Government would take the matter in hand and construct a line so as to give connection with the C.P.R.

Northern Empire Ry.—The Dominion Parliament is being asked at the current session for an act incorporating a company with this title to construct a railway from the International boundary east of Cardston, Alta., northerly through Lethbridge to Fort McMurray, thence generally northwesterly through or near Fort Vermillion to the boundary between British Columbia and Yukon at or near Lower Post, B.C.; thence via Dawson to the International boundary between Yukon and Alaska. Power is also being asked to construct a branch line from the main line, following generally the north bank of the North Saskatchewan River to Edmonton, Alta.; to issue securities to the extent of \$30,000 a mile, and to enter into agreements with the C.P.R., the Canadian Northern Ry., and the G.T. Pacific Ry. The persons named in the bill as provisional directors are H. Roy, R. Balfour, Ottawa; J. J. B. Gosselin, Notre Dame de Stanbridge, Que.; J. J. Flutot, Frank, Alta., and E. Hoffman, New York City. (Aug., 1907, pg. 563).

North Atlantic Mining Co.—Press reports state that this company is about to erect a number of cottages at Port Morien, N.S., and to start construction of a railway to the mine at Long Beach. The route for this was surveyed some time ago.

Nova Scotia Eastern Ry.—In the speech at the opening of the current session of the Nova Scotia Legislature recently, the Lieutenant-Governor said during the past year extensive surveys were made on the line of the proposed Halifax and Guysborough railway, under the supervision of the Government. These surveys are practically complete. The financial condition which developed during the past year made it difficult to successfully negotiate for the construction of this line of railway with any responsible company. It is hoped that during the present year the financial situation may be sufficiently improved to enable the Government to conclude a contract for the construction of this work upon reasonable terms. (July, 1907, pg. 479).

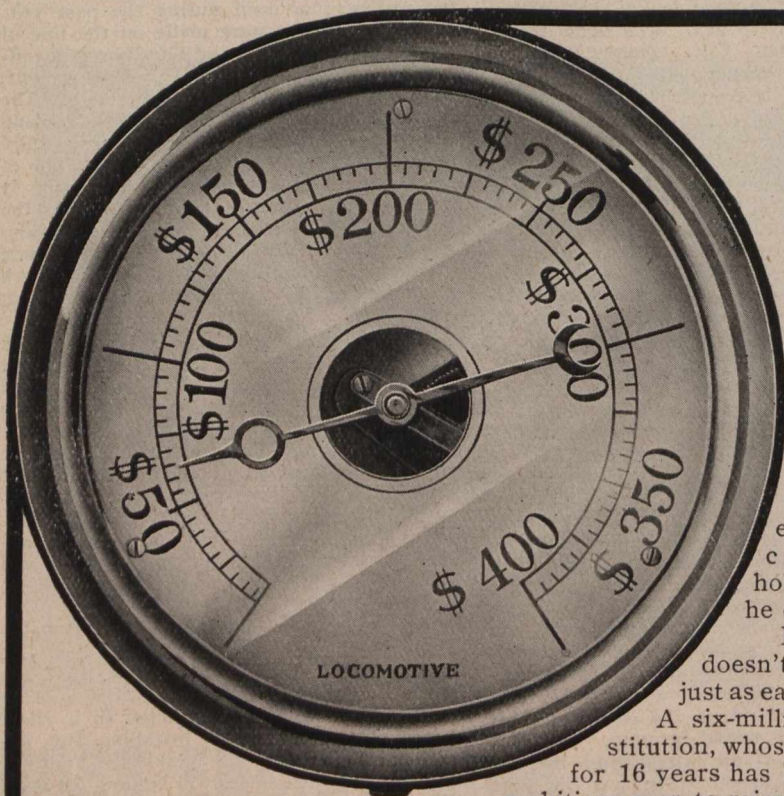
Pacific and Atlantic Ry.—Notice is given that application will be made at the current session of the Dominion Parliament for an act granting the provisional directors the powers given them by chap. 76 of the Statutes of Ontario, 1886, and chap. 120 of the Statutes of Ontario, 1900; authorizing the organization of the company, the first election of directors, and for more clearly defining the route of the railway, and for extending the time for the commencement and completion of the projected railway. (Feb., pg. 99.)

Port Hood-Richmond Ry. and Coal Co.—H. A. Morine, Manager Port Hood Coal Co., stated in Halifax, N.S., recently, that the work of double-tracking to the slope is being pushed and will be completed in a short time. The company is installing two additional boilers at the bankhead, and one at the pier. The latter will be used for operating the loading belts. (May, 1907, pg. 327).

Quebec Central Ry.—We are officially advised that there is nothing definitely settled as yet in regard to the further extension of the line beyond St. George, Beauce, Que. It is, however, expected that a decision will be reached shortly. (Feb., pg. 99).

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Quebec and Lake St. John Ry.—Application will be made this session of the Quebec Legislature for an act granting an extension of time within which the branch lines and extensions authorized may be constructed. (Mar., pg. 183.)

Temiskaming and Northern Ontario Ry.—A return was laid on the table of the Ontario Legislature, Mar. 3, showing the work done and payments made to McRae, Chandler and McNeil, on account of the construction of a 40 mile section of the line. The total value of work done to Jan. 1 was \$140,373.60, of which the Commission retained 10%, or \$14,037.36, leaving a balance of \$126,336.24. The amount paid to the firm was \$100,553.08, while the amount still due was \$2,768.25. The Commission is taking over the work, thus cancelling the contract. The Government have as security for the due performance of the contract \$10,000 in cash, together with the drawback of ten per cent., \$14,037.36. The estimated amount due for work done in Jan. is \$23,014.91. The reason for this action, it is understood, is that the contractors have failed to carry out the provisions of their contract with regard to the period within which the work was to have been completed. Ever since the contract was undertaken the prevailing climate conditions have been such as to seriously hamper the advancement of work. At Driftwood last summer the longest continuous spell of dry weather was two and a half days. The line over which the contractors are working is clay soil, and they claim that the wet weather has prevented them from working. They have also experienced difficulties with regard to obtaining a sufficient supply of labor. The point at which the contract began is about 100 miles north of New Liskeard, and extends to the junction point with the G.T. Pacific Ry.

The Kerr Lake branch was reported to be practically completed in March. (Mar., pg. 185.)

The Treasurer of Ontario, in his budget speech Mar. 20, said the railway was now operating over 130 miles, with steel laid for 70 more, and the grading for rails done in an additional ten. By Sept. 15 it was hoped to effect the junction with the G.T. Pacific Ry. Some delay had been occasioned in the bridges by a bridge company which had held the work back. Besides several branch lines were now operating

Toronto, Hamilton and Buffalo Ry.—It is proposed to construct a steel bridge with concrete abutments on the line at Cainsville, Ont. (Mar., pg. 185.)

Tusket Wedge Ry.—Replying to questions in the Nova Scotia Legislature Mar. 5, the Minister of Public Works said a survey had been made for a railway from the Halifax and Southwestern Ry., near Salmon River, in Yarmouth county, to near Tusket Wedge, about 7½ miles. The cost of the survey was \$714.15. The population to be served would be about 5,000. The Government gave no assurance that the proposed railway would be built, but informed the Halifax and Southwestern Ry. Co., that they would grant them a subsidy if they would undertake the work. There was no correspondence on the subject. There was no proposal at present to deal with the matter during the present session. (May, 1907, pg. 327.)

Vancouver Island and Eastern Ry.—Application is being made at the current session of the Dominion Parliament for an act incorporating a company with this title to construct a railway from Esquimalt Harbor, Vancouver Island, B.C., by the most practicable route northerly, to Seymour's Narrows, and from Bute Inlet or Frederick Inlet on the mainland of British Columbia easterly

through the Yellowhead Pass to Edmonton, Alta., with power to operate a ferry or ferries across the Narrows to connect the two sections of line. The capital of the company is placed at \$2,000,000; it may issue bonds to the extent of \$30,000 a mile of railway; develop and utilize electric power; carry on a general navigation business, and construct telegraph and telephone lines. Power is also being asked to enter into agreements with the C.P.R., the Canadian Northern Ry., and the G.T. Pacific Ry., or either of them. The provisional directors are: T. W. Paterson, R. C. Lowe, T. J. Jones, H. A. Munn, Victoria, B.C.; Jas. Smith, Edmonton, Alta., and M. J. Haney, Toronto. (Jan., pg. 23.)

Vancouver and Nicola Valley Ry.—The British Columbia Legislature has passed an act at its current session incorporating a company with this title, for the purpose of constructing a railway from near Nicola Lake along the valley of the Nicola River, by the most feasible and practicable route, to the junction of the Nicola and Coldwater rivers; thence along the valley of the latter river to the divide of the Coquihalla River; along that river to its junction with the Fraser River at or near Hope; thence along the south shore of the Fraser River to the railway bridge at New Westminster. Power is also given to construct branch lines and tramways, and to operate ferries, and steam and other vessels. The capital is fixed at \$5,000,000, and bonds to the extent of \$30,000 a mile may be issued. The company may enter into agreements of various kinds with other railway, navigation, or other companies. (Feb., pg. 99.)

Winnipeg City Power Plant.—The Winnipeg City Council has decided to push ahead as fast as possible during the current season with the construction of the tramway in connection with its projected power plant. W. M. Scott, field engineer on the work, reported to the council, Mar. 5, that the concrete piers of the bridge over the Winnipeg River were completed. Four spans of the superstructure were finished and four others were nearing completion. The bridge is expected to be ready for the resumption of tracklaying early in April. Tenders have been asked for the supply of 500 tons of 56-lb. rails with the necessary fastenings, to be delivered by April 30 at Lac du Bonnet. Tenders have also been asked for the supply of a second-hand bridge for the crossing of the Pinawa channel. The specifications provide for a single track, through truss, two-span steel bridge, one span 155 ft. to 165 ft., and one of 100 ft. to 115 ft., and sufficient strength to carry a 10-wheel locomotive with 34 tons on a rigid wheel base of 14 ft. 10 in., followed by a rolling load of 3,000 lbs. per lineal foot of track. The total expenditure on the power plant to Oct. 1, 1907, was reported to have been \$576,000. The council ordered a detailed statement of the cost of the works to be prepared. (Mar., pg. 185.)

The Winnipeg Board of Control has recommended the acceptance of the tender of J. J. Gartshore, Toronto, for the supply of 500 tons of rails with the necessary fastenings, delivered at Lac du Bonnet, for the construction of the tramway in connection with the city's power plant project. The price is \$39 per ton.

A proposition is under consideration by the merchants of London, Ont., to establish a cartage company to operate in the city, owing to the increase in cartage rates which went into effect Mar. 15.

The Department of the Interior has approved the engineering agreement for the sale and use of the largest irrigation by the C.P.R. in connection with its irrigation works in the Bow River, Rochester, Alberta.

Transportation Interests in Parliament.

Following are some of the principal laws affecting transportation interests under discussion in the Dominion Parliament and the Provincial Legislatures:

DOMINION PARLIAMENT.

With regard to the bill introduced by J. W. Barr, respecting the procedure to be adopted respecting the crossing of railway tracks by telegraph and other companies, the Minister of Railways stated that the total number of applications made to the Board of Railway Commissioners to carry water or gas mains under railway tracks from Feb. 4, 1907, to Dec. 1, 1907, was 215, all of which had been granted; and between the same dates there had been 65 applications to carry the lines of telegraph companies over railway tracks, all of which had been granted.

A bill to amend the Railway Act, introduced by J. A. C. Ethier, by rearranging the procedure respecting the fixing of the value of lands expropriated by railway companies.

Another bill under consideration directs the use of the French language by all railway telegraph and telephone companies or public utilities, as well as the English language, in all public announcements, and prescribes a penalty of \$5 on all companies and their employes for failing to comply with this provision.

In the Senate a bill was introduced repealing Sec. 414 of the Railway Act, and substituting a new section as follows: "Every person who sells, gives or barter any spirituous or intoxicating liquor to or with any servant or employe of any company while on duty, is liable on summary conviction to a penalty not exceeding \$500, or to imprisonment with or without hard labor for a period not exceeding one year, or both." The bill elicited considerable discussion in committee, and it is understood that it will be killed.

Another bill provides that railway companies be compelled to sell mileage tickets for 500 or 1,000 miles at two cents a mile; that where the buyer of such, by mistake, gets on a wrong train his ticket must be accepted, and the company must collect from the company issuing the ticket the amount due for the distance travelled by the holder, provided the two companies run trains between the points.

A bill has been given a first reading in the House of Commons providing for the repeal of sec. 270, chap. 37 of the Revised Statutes, and the substitution therefor of a section providing that all regular trains shall be started and run at regular hours fixed by public notice; fixing a penalty of \$5 for each minute's delay and making the defaulting company liable for damages, unless upon proof that the delay was unavoidable. The section at present enacts that all regular trains shall be started and run as nearly as practicable at regular hours fixed by public notice.

The Water-Carriage of Goods Act is the title of a bill under consideration by the Senate of Canada, which seeks to prohibit the inclusion of certain conditions in any bill of lading for the carriage of goods between Canadian ports, or from any port in Canada to any port outside Canada. It also defines the implied warranty in bills of lading, directs the issue of a bill of lading to the shipper, provides for notice of the arrival of the vessel to the consignee, and provides for the imposition of a penalty not exceeding \$2,000 and costs for each offence, the Admiralty Court to direct as to the division of the penalty between the person injured and the Crown.

A bill to amend the Irrigation Act has been under discussion in the House of Commons at the current session. Among the

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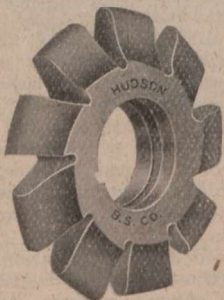
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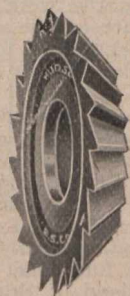
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amendments which will be made if the bill becomes law will be the following to sec. 2: The substitution of the words "agricultural machinery" for "railways or factories," in sub-sec. K., and the addition of two new sub-sections—(L) Industrial purposes means the working of railways or factories by steam, but shall not include the sale or barter of water for such purposes. (M) Board means Board of Railway Commissioners for Canada. The object of a number of the amendments is to provide a procedure under which provincial and municipal authorities may obtain orders to construct streets or roads across irrigation works, in cases where the consent of owners cannot be directly obtained.

PROVINCE OF ONTARIO.

The Ontario Legislature is being asked at its current session to amend the Provincial Railway Act of 1906, by amending sec. 2, sub-sec. 18, by adding in the eighth line thereof the words, "and shall include a mortgage of said lands"; by substituting the word "owner" in place of the words "opposite party" in the first line of sec. 68, sub-sec. 6; and by adding a new sub-section 4a to sec. 87, respecting fencing railway lines adjoining highways.

A bill is also under consideration to amend the Ontario Railway and Municipal Board Act of 1906. It gives the Board power to determine any dispute arising between a street railway company and a municipality as to the location of rails in any street or highway. It also empowers the Board to say what proportion of the cost of repairing streets consequent upon the laying of rails shall be borne by the respective parties. Provision is also made for enlarging the Board's powers in such a manner as to enable it to control the heating and lighting of cars, the use of open or closed cars, the height of steps, and the type of seat and brakes to be used. These are all matters in respect of which experience is claimed to have proved that the Board's powers are inadequate or not sufficiently clearly defined.

MANITOBA RAILWAY ACT.

An act was passed at the recent session of the Manitoba Legislature amending the Provincial Railway Act in several details. There were, said the Premier in moving its second reading, a number of charters subject solely to provincial jurisdiction, and yet in so far as tariffs were concerned the companies had to submit such matters to the Railway Commission of Canada. The new act provides for the naming of an officer of the several companies to file tariffs with the Province.

BRITISH COLUMBIA.

The Railway Assessment Act of 1907 has been amended by the addition of the words "the rate of taxation to be 1% of the assessed value" after the word property in sec. 6, and the addition of the words "except as varied by this Act" to sec. 8. It is specially provided that the two amendments made shall apply to the assessment and taxation of railways for 1907 and 1908, as well as to the assessment and taxation of railways for years subsequent to 1908.

The Telegraph Operators' Regulation Act is the title of a bill under discussion at the current session of the B.C. Legislature. It provides that no operator shall be employed for a longer period than eight hours in any 24 hours, except in cases of accident or for the purpose of saving human life. Twenty-four hours is interpreted to be from midnight to midnight, and a penalty of \$100 is prescribed for each offence. A bill providing for an eight-hour day for marine and shipbuilding workers, and prescribing for a penalty of like amount is also under consideration.

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

Blue Bonnets Switch.—A special spur has been completed at St. Laurent connecting with the Montreal Park and Island Ry., so that trains for the Blue Bonnets track can be brought in from the G.T.R.

Ottawa Terminals Ry.—A meeting of the shareholders was called to be held at Ottawa Mar. 26 for the purpose of organization and the election of officers.

The result of the discussion by the Ottawa City Council as to the amended plans for the projected terminal station and hotel, was the passing of a resolution Mar. 6, giving the G.T.R. until April 15 to revise the plans of the station in several details. E. H. Fitzhugh, Third Vice-President, in explanation of the plans and models, said on the basis of the present plan the hotel and equipment would cost \$1,525,441, and the station \$1,177,517. The latter includes the train sheds, baggage annex and concourse. The models showed the erections as originally proposed and the plans were the same, except that the office wing had been cut off the station building. To erect it would greatly exceed the appropriation, but the building would be so constructed as to permit the extra wings to be put on whenever required.

Toronto Union Station.—The arbitrators appointed in connection with the appropriation of the Eckardt Casket Co.'s premises in the burnt-out district of Toronto, has given that company \$16,000. The G.T.R. offered \$5,000, and the Eckardt Co. claimed approximately \$100,000. The arbitrators have not included any compensation for the value of the right of renewal of the lease. It is considered likely that there will be an appeal.

London, Ont., Improvements.—The new coal chutes have an elevation of 30 ft. from base to base of rail. The structure is comprised of pile foundation with framed timber bents. Between these bents are arranged pockets with hopper bottoms to throw coal to retaining doors. These hoppers are lined with sheet steel. The retaining doors are so arranged that they are made to slide up and down at will for the purpose of coaling engines, the operator simply pulling or slacking a chain attached to a lever, this in turn being attached to retaining door. Outside of the retaining door is an apron hinged on Z bars, which are attached to the building and form guides for retaining door. This apron is held in position by four weights, one large and one small on each side, so arranged that when the operator pulls down the apron he has only one weight on each side to pull until the apron reaches a certain position, when other weights take it up, and when putting the apron up, it works the opposite way, thereby making it easy to raise and lower aprons so that one man can operate them quite easily, they being practically on a balance. The chutes are 156 ft. long, containing 20 pockets and aprons, 10 on each side, and the track is so arranged that engines coal up on both sides of the chutes, and on the end are two large sand bins with capacity of 600 cubic yards. Between these bins is a sand room where the sand is dried, then forced by compressed air up into small bins, and from these bins by gravitation to locomotives on either track. Four 110,000 capacity cars can be handled in the chutes at one time. The storage capacity of the chutes is 800 tons. At the work end of the chutes is a pile trestle ramp, on which cars are pushed up into the chutes, one engine handling four cars at a time. The largest engines can now be coaled in two minutes.

Buffalo, Rochester and Eastern Rd.—Application is being made to the New York

State Public Service Commission for a certificate of necessity for the construction of a line which R. D. Gillett, President, said was to connect the Boston and Maine Rd., at Troy, with the G.T.R. at Buffalo, N.Y. Press despatches said the G.T.R. was behind the matter, and the line when constructed would form a G.T.R. loop. C. M. Hays, Second Vice-President, and General Manager, stated recently the G.T.R. had no interest in any one of these projects, and had plenty to do in Canada in pushing forward to completion the G.T. Pacific Ry. A subsequent announcement is to the effect that the company's plans have been amended so as to enter Niagara Falls by a new line from Tonawanda, and that the western business of the line will be handled by the G.T.R.

Grand Rapids and Northwestern Rd.—A company with this title has filed articles of incorporation at Lansing, Mich. The railway proposed to be constructed will shorten the haul between Grand Rapids and Ladington. Car ferries will be operated between Ladington and Milwaukee, Wis. At Grand Rapids connection will be made with the G.T.R., which company, it is stated, is behind the new project.

Grand Trunk-Milwaukee Car Ferry Co.—The first landing by the car ferry Grand Haven at the new slip and terminals of the G.T.R. at Milwaukee, Wis., was made Feb. 28. The new terminals cover 23½ acres, and have just been completed. They comprise an elaborate system of side tracks, switching tracks, a new slip and apron. (Mar., pg. 201.)

The Madeira-Mamore Rd. has been incorporated under the laws of the State of Maine for the purpose of constructing a metre gauge railway around the falls and the rapids extending about 250 miles from the headquarters of the Madeira River, which flows into the Amazon, about 3,000 miles from the north coast of Brazil. W. Mackenzie, President Canadian Northern Ry., Toronto, and associates are reported to be interested in the proposition. The new line when completed will result in the connection of the Republic of Bolivia with navigation on the Amazon River.

The Fuel Transportation Co. was the title of a company for the incorporation of which the Manitoba Legislature was asked at its recent session to pass an act. The proposal of the company was to construct and operate a line of sluice boxes, drains, tramways or mono-railway between Winnipeg and Lake Winnipeg, or any points on the Red or Assiniboine Rivers, and any other point in the Province. It was intended to carry freight of all kinds, and was primarily intended as a cheap method of bringing fuel from the northern part of the Province by pipes or sluice boxes to Winnipeg. A number of such concerns were reported to be in successful operation in the Western States. The Legislature committee asked for further details and plans, which the applicants were not able to supply, and it was decided not to report the bill.

The railway companies put in force in Toronto, Mar. 15, an advance in cartage charges on freight first to fifth class Canadian classification of from 1½ to 2% per 100 lbs., and smalls from 12 to 15c. each.

In an action brought by a Mrs. Brigamason against the Intercolonial Ry., in the State Court at Boston, Mass., to recover damages for injuries received through the sudden starting of a train at Moncton, N.B., it has been decided that the action was virtually against the King, and under the law of nations the Court had no jurisdiction. Funds of the Intercolonial Ry. in the hands of the railways at Boston were attached in order to secure the bringing of the action.

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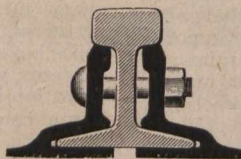
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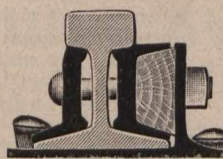
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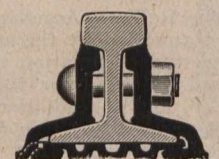
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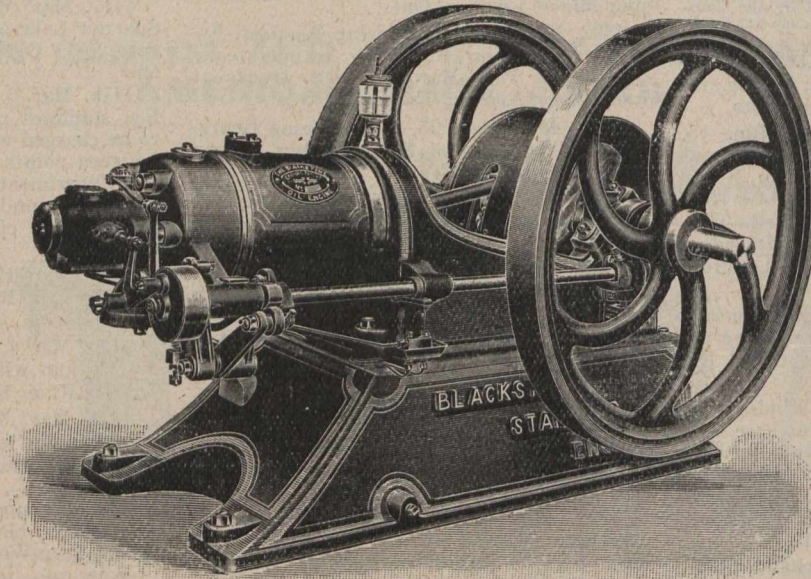
Orders by the Railway Commissioners.

- Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings.
- Complete copies of any of the orders summarized below, or of others previously passed by the Commission, will be furnished for 25 cents, cash to accompany requests for copies in all cases.
4371. Feb. 4.—Authorizing C.P.R. to construct a spur line to the Red Deer Milling and Elevator Co.'s premises, Red Deer, Alta.
4372. Feb. 18.—Extending until June 15, 1908, time within which G.T.R. shall construct crossing on S. B. Carew's farm, Emily tp., Ont.
4373. Feb. 22.—Authorizing Bell Telephone Co. to erect wires over G.T.R. siding to Standard Chemical Co., south of Longford station, Ont.
4374. Feb. 7.—Ordering Quebec, Montreal & Southern Ry. to change the existing details at and near junction of Rutland Rd. and G.T.R. at Noyan Jct., Que.
4375. Feb. 18.—Authorizing Windsor, Essex & Lake Shore Rapid Ry. and Pere Marquette Rd., to operate their trains over the crossing between their respective railways at Pelton, Ont.
4376. Feb. 21.—Authorizing Canadian Northern Ontario Ry. to erect telegraph wires across Canada Atlantic Ry. tracks at Boyne River, Ont.
4377. Feb. 19.—Authorizing C.P.R. to use 0.116 of an acre of Canadian Northern Ontario Ry. lands for the purpose of diverting existing highway from Parry Sound to Bala, in Medora tp., Ont.
4378. Feb. 20.—Authorizing C.P.R. to divert existing highway from Parry Sound to Bala, in Medora tp., Ont., where it crosses spur of C.P.R. Romford branch, from mileage 123.18 to Lake Joseph.
4379. Feb. 22.—Extending for three months from Feb. 22, 1908, time within which G.T.R. is authorized to take certain lands from the City of Toronto for the purpose of a passenger station and yards.
4380. Feb. 21.—Authorizing Windsor, Essex & Lake Shore Rapid Ry. to operate cars across Pere Marquette Rd. tracks, near Kingsville station, Ont.
4381. Feb. 17.—Authorizing G.T.R. to take certain lands belonging to G. Knill, in Blenheim tp., Ont.
4382. Feb. 25.—Authorizing Dominion Car & Foundry Co. to construct a sewer under tracks of G.T.R., Lachine canal bank branch.
4383. Feb. 4.—Authorizing Canadian Northern Ontario Ry. to divert Montreal and Ottawa Road, in Clarence tp., Ont., at mileage 37.13 from Hawkesbury, Ont.
4384. Feb. 25.—Approving revised location of G.T. Pacific Ry., from west line of section 30, tp. 53, range 9, west, to west line of sec. 7, tp. 54, range 13, west of 5th meridian, North Alberta, mileage 78.109 to 103.00.
4385. Feb. 25.—Authorizing C.P.R. to reconstruct bridge 18.2 on its Brockville, Ont., section.
4386. Feb. 25.—Approving Schomberg & Aurora Ry. Co.'s by-law authorizing W. H. Moore, General Manager, to prepare and issue tariffs of tolls to be charged for traffic carried upon the line.
4387. Feb. 26.—Authorizing North American Telegraph Co. to carry wires across G.T.R. track at Campbellford, Ont.
4388. Feb. 26.—Extending until June 1, 1908, time within which North American Telegraph Co. shall file and receive approval of its tariffs of tolls.
4389. Feb. 26.—Extending until June 1, 1908, time within which Bell Telephone Co. of Canada shall file and receive approval of its tariffs of tolls.
4390. Feb. 26.—Extending until June 1, 1908, time within which express companies in Canada shall file and receive approval of the Board of their tariffs of tolls.
4391. Feb. 25.—Authorizing Lindsay, Bobcaygeon & Pontypool Ry. to cross G.T.R. spur line at Lindsay, Ont.
4392. Feb. 21.—Authorizing Windsor, Essex & Lake Shore Rapid Ry. to operate its cars across Pere Marquette Rd. tracks at Lansdowne Avenue, Kingsville, Ont.
- 4393, 4394. Feb. 25.—Authorizing Georgian Bay & Seaboard Ry. to divert certain public highways in Tay tp., Ont.
4395. Feb. 27.—Extending until Mar. 15, 1908, the time within which order 3346, dated July 5, 1907, shall come into effect, with respect to application from the G.T.R. Co. for leave to prosecute before the Judicial Committee of the Privy Council an appeal from the judgment of the Supreme Court of Canada as regards the application of W. N. Robertson of Toronto, Ont., in what is known as "The Penny Fare Case."
4396. Feb. 28.—Approving revised location of G.T.R. from Richelieu River to near the public road crossing between Ranges 1 and 2, St. Hilaire parish, Que.
4397. Feb. 4.—Authorizing Canadian Northern Ontario Ry. to take part of east half of lot 33 in Clarence tp., Ont.
- 4398 to 4400. Feb. 28.—Authorizing various Bell Telephone Co. crossings over C.P.R.
4401. Feb. 28.—Authorizing G.T.R. to construct bridge over Otterburn park road, near St. Hilaire, Que.
4402. Feb. 28.—Approving revised location of G.T. Pacific Ry., Lake Superior branch, from mileage 0 to 50 in Ontario.
4403. Feb. 28.—Approving revised location of G.T. Pacific Ry. from mileage 50 to 100, near White Fish Lake, Ont.
4404. Feb. 28.—Approving revised location of Le Chemin de Fer de Colonization du Nord, between Nominieue and ten miles northwesterly therefrom, in Quebec Province.
4405. Feb. 28.—Authorizing G.T.R. to construct bridge over public road at milepost 21 1/4, Belœil, Que.
4406. Feb. 27.—Approving amended location of Hamilton, Waterloo & Guelph Ry. through City of Hamilton.
4407. Mar. 6.—Approving location of Montreal & Southern Counties Ry. from near Victoria St., St. Lambert, to east side of Common St., Montreal, 2.83 miles.
4408. Mar. 3.—Authorizing Clarenceville & St. Thomas Local Telephone Co. to carry its wires across Rutland & Noyan Ry., at Voxburgh crossing, St. Thomas parish, Que.
4409. Mar. 6.—Approving revised location of G.T. Pacific Ry., Lake Superior branch, mileage 134 to 150, English River to Surprise Lake, Ont.
4410. Mar. 6.—Approving revised location of G.T. Pacific Ry., Lake Superior branch, from White Fish Lake to English River, Ont., mileage 100 to 134.
4411. Mar. 6.—Authorizing C.P.R. to construct spur to city of Calgary's premises, Alberta.
4412. Mar. 6.—Authorizing C.P.R. to construct a spur line across Huron Street, Toronto, and thence to P. Burns & Co.'s premises.
4413. Mar. 6.—Authorizing C.P.R. to construct spur line across Huron St., Toronto, on southerly side of the three existing tracks across the street.
4414. Mar. 5.—Authorizing Bell Telephone Co. to erect its wires across tracks at Grass-hill station, Ont.
4415. Mar. 6.—Authorizing C.P.R. to construct spur lines in Vancouver, B.C., and to carry them across Victoria Drive and Cambridge St.
4416. Mar. 6.—Certifying to corrections made in location of Quebec, Montreal & Southern Ry., in Gentilly and St. Pierre les Becquets parishes, Que.
4417. Mar. 6.—Authorizing the Kosheesparrow Lake private telephone line to erect wires over G.T.R. tracks at Koshees siding, Ont.
4418. Mar. 6.—Approving Ottawa Electric Ry. standard passenger tariff showing tolls to be charged within the city of Ottawa and between points therein and the boundary of the Experimental Farm; between the limits of Ottawa and Britannia-on-the-Bay; and between the city limits and Rockcliffe rifle range.
4419. Mar. 12.—Bell Telephone Co. crossing over G.T. Ry. 1 1/8 miles east of St. Catharines station, Ont.
4420. Mar. 6.—Authorizing Essex Terminal Ry. to join with its track the Lake Erie & Detroit River Ry. track at Walkerville, Ont.
4421. Mar. 6.—Authorizing Esquimalt & Nanaimo Ry. to construct a branch line from its present terminus on south side of Store St., Victoria, B.C., to its proposed additional terminal grounds on the north side of that street, viz., block D, formerly occupied by Albion Iron Works.
4422. Mar. 10.—Authorizing the G.T. Pacific Ry. to construct its railway across 32 highways from mileage 0 to 42.029, Alberta.
- 4423, 4424. Mar. 10.—Authorizing the G.T. Pacific Ry. to construct its railway across 63 highways, from mileage 42.029 to 112.942, Alberta.
4425. Mar. 10.—Authorizing the G.T. Pacific Ry. to carry its track over the Canadian Northern Ry. by an overhead bridge, in sec. 14, tp. 53, range 24, west of 4th meridian, Edmonton district, Alta.
4426. Mar. 10.—Approving deviation in location of C.P.R. Temiskaming branch, in Mattawa, Ont.
4427. Mar. 10.—Authorizing G.T. Ry. to take certain property for the purpose of moving from its present site and placing thereon its passenger station at St. Hubert, Que.
4428. Feb. 17.—Authorizing Brantford & Hamilton Electric Ry. to erect its power transmission lines over the G.T.R. track at Cainsville, Ont.
4429. Mar. 10.—Authorizing G.T. Pacific Ry. to connect its track with the Canadian Northern Ry.'s main line track in lots 25, 26 and 27, St. Charles parish, Man.
4430. Mar. 12.—Bell Telephone crossing G.T.R. at Jarvis St., 1/2 mile north of Orillia station, Ont.
4431. Mar. 10.—Authorizing the C.P.R. to use bridge 96.2 on its Sherbrooke section.
4432. Mar. 11.—Authorizing C.P.R. to construct bridge over the Little Key River and James Bay Ry., on its Toronto-Sudbury branch.
4433. Mar. 11.—Authorizing Guelph & Goderich Ry. to operate its trains on its track where it crosses the G.T.R. track, by an overhead crossing at Goderich, Ont.
- 4434, 4435. Mar. 11.—Authorizing Guelph & Goderich Ry. to operate its trains on its track where it crosses the G.T.R. tracks at Blyth and Milverton, Ont., by means of overhead crossings.
4436. Mar. 10.—Approving location of Esquimalt & Nanaimo Ry. north of Wellington, B.C., from mileage 85.2 at Nanoose Bay, to mileage 87.5.
4437. Mar. 11.—Approving grade revision of C.P.R. main line between Hector and Field, B.C.
- 4438, 4439. Mar. 11.—Authorizing Bell Telephone Co. crossing over C.P.R. at Poplar

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4440. Mar. 11.—Authorizing C.P.R. to operate its trains on its track where it crosses the G.T.R. track, by an overhead bridge, at Tottenham, Ont.

4441. Mar. 12.—Approving Montreal Park & Island Ry. Co.'s by-law authorizing its Secretary to prepare and issue tariffs of tolls to be charged for all traffic carried.

4442. Mar. 12.—Approving location of G.T. Pacific Ry. stations in sec. 14, township 49, range 16, west of the 4th meridian, Alberta.

4443-4457. Mar. 12.—Approving location of G.T. Pacific Ry. station at 39 points in Manitoba, Saskatchewan and Alberta.

4458. Mar. 12.—Authorizing C.P.R. to construct spur line from its Snowshoe spur to the Granby Consolidated Mining & Smelting Co.'s premises, Yale district, B.C.

4459. Mar. 13.—Extending until the final disposition of the appeal of the G.T.R. to the Judicial Committee of the Privy Council from the Judgment of the Supreme Court of Canada, as regards the application of W. N. Robertson, of Toronto, Ont., in the penny fare case.

4460. Mar. 12.—Requiring that crossing of G.T.R. with Ottawa Electric Ry. Co. at Queen St., Ottawa, be protected by derails to be interlocked with gates. Trolley guard to be placed over the trolley wire.

4461. Mar. 11.—Approving Canadian Northern Ontario Ry. location through county of Hastings, from boundary line between counties of Hastings and Lennox, mileage 116 to 133, near Belleville, Ont., and from mileage 135, near Belleville, to the east boundary of Trenton, Ont., mileage 144.

4462. Mar. 13.—Authorizing municipality of Notre Dame de Quebec to lay water pipes under C.P.R. tracks at St. Malo, near Quebec city.

4463. Mar. 11.—Authorizing Quebec, Montreal and Southern Ry. to construct bridge over diverted highway west of Nicolet River, Que.

4464. Mar. 14.—Authorizing G.T. Pacific Ry. to construct its railway across 50 highways from mileage 0 to 49.197, Saskatchewan.

4465. Mar. 11.—Authorizing G.T. Pacific Ry. to cross C.N.R. track by an overhead bridge in sec. 14, tp. 53, range 24, west of 4th meridian, district of Edmonton, Alta.

4466. Mar. 16.—Authorizing Windsor and Tecumseh Electric Ry. to cross G.T.R. track on Sandwich St., Walkerville, Ont., by an overhead bridge, apportioning the cost of construction of such bridge, sidewalks, etc., between the railways and the town of Walkerville.

4467. Mar. 16.—Approving location of G.T. Pacific Ry. stations at six points.

4468. Mar. 13.—Authorizing C.P.R. to construct spur to the Western Cartage Co.'s premises, Calgary, Alta.

4469. Mar. 13.—Authorizing C.P.R. to construct its line along the line in block 70, between Tenth and Eleventh avenues, Calgary, Alta.

4470, 4471. Mar. 13.—Authorizing C.N. Quebec Ry. to construct bridges over the Jordan River near St. Sophie station, and over the River Rouge near Montcalm station, Que.

4472. Mar. 13.—Authorizing C.P.R. to construct its railway across Hall St., Renfrew, Ont.

4473. Mar. 13.—Authorizing C.P.R. to construct a spur to the Jamieson Meat Co.'s premises, Renfrew, Ont.

4474. Mar. 16.—Authorizing British Columbia Telephone Co. to erect its wires across

the Esquimalt and Nanaimo Ry. 755 ft. from the 7th mile post from Nanaimo, B.C.

4475. Mar. 16.—Authorizing C.P.R. to construct spur to the Onaping Lumber Co.'s premises, Moncrieff tp., Ont.

4476. Mar. 16.—Authorizing C.P.R. to construct a spur to the Algoma Custom Smelting Co.'s premises, Thessalon, Ont.

4477. Mar. 16.—Authorizing C.P.R. to construct its railway across road allowance between secs. 28 and 29, tp. 24, range 10, west of 5th meridian, Sask.

4478. Mar. 16.—Approving location of G.T. Pacific Ry. station on secs. 5 and 6, tp. 39, range 19, west 3rd meridian, Sask.

4479. Mar. 16.—Authorizing C.P.R. to construct a spur line to the H. W. McNeill Co.'s premises, sec. 32, tp. 24, range 10, west 5th meridian, Alta.

4480. Mar. 16.—Authorizing C.P.R. to carry its railway across 4th St. W., Calgary, Alta.

4481-4484. Mar. 16.—Approval of location of G.T. Pacific Ry. stations at five different points.

4485. Mar. 16.—Authorizing Windsor, Essex and Lake Shore Rapid Ry. to open for carriage of traffic the portion of its line from Windsor to Kingsville, Ont., 28 miles.

Canadian Northern Ry. Earnings, etc.

Gross earnings, working expenses, net profits, increases or decreases over 1906-07, from July 1, 1907:

	Earnings.	Expenses.	Net Earnings.	Increase or Decrease.
July..	\$1,024,300	\$662,300	\$362,000	\$420,500+
Aug..	835,600	619,200	216,400	240,700+
Sept..	738,300	549,200	209,100	133,900+
Oct..	931,200	621,300	309,900	116,100+
Nov..	957,400	689,100	268,300	215,700+
Dec..	801,100	558,400	242,700	264,900+
Jan..	578,200	462,500	115,700	226,800+
	\$5,886,100	\$4,162,000	\$1,724,100	\$1,618,600+

Approximate earnings for Feb., \$485,600, against \$333,200 for Feb., 1907.

C.P.R. Earnings, Expenses, etc.

Gross earnings, working expenses, net profits, increases or decreases over 1906-7, from July 1, 1907:—

	Earnings.	Expenses.	Net Profits.	Increase or Decrease.
J'ly	\$7,008,274.46	\$4,501,421.80	\$2,506,852.66	\$135,041.58+
Aug.	7,010,177.40	4,439,902.25	2,570,275.15	107,695.95+
Sept.	6,423,452.68	4,272,099.33	2,151,353.35	286,578.28-
Oct.	7,071,047.59	4,390,729.95	2,680,317.64	104,599.87-
Nov.	6,953,967.56	4,508,933.35	2,445,034.21	181,911.27+
Dec.	6,418,576.38	4,341,386.80	2,077,189.58	188,404.76-
Jan.	4,498,560.80	3,874,569.02	623,991.78	75,664.17+
	\$45,384,056.87	\$30,329,042.50	\$15,055,014.37	\$79,179.94-

Approximate earnings for Feb., \$4,016,000, against \$4,219,000 for Feb., 1907.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Operating revenue for Jan., \$199,206.89; expenses, \$158,019.25; net revenue, \$41,187.64; other income, \$11,690.59; interest on bonds, \$71,641.67; taxes, \$15,500.00; other expenses, \$6,365.15; against \$226,499.81, operating revenue; \$181,106.70, expenses; \$45,393.11, net revenue; \$5,050.21, other income; \$71,641.67, interest on bonds; \$15,000.00, taxes; \$2,607.36, other expenses for Jan., 1907. Total operating revenue for seven months ended Jan. 31, \$1,930,255.25; expenses, \$1,435,853.25; net revenue, \$494,402.00; other income \$56,378.67; interest on bonds, \$501,491.67; taxes, \$113,991.86; other expenses, \$72,545.20; against \$1,882,272.44, total operating revenue; \$1,260,377.41, expenses; \$621,895.03, net revenue; \$42,808.33, other income; \$501,491.67, interest on bonds; \$97,560.95, taxes; \$35,423.04, other expenses for same period 1906-07. Approximate earnings for Feb., \$187,927, against \$214,240 for Feb., 1907.

MINERAL RANGE RD.—Operating revenue for Jan., \$38,602.80; expenses, \$52,392.99; net revenue, \$6,209.81; other income, \$55.19; interest on bonds, \$6,946.67; taxes, \$3,000.00; other expenses, \$1,862.66; against \$55,541.97, operating revenue; \$54,062.25, expenses; \$1,479.72, net revenue; \$97.70, other income; \$6,946.67, interest on bonds; \$3,000.00, taxes; \$2,449.34, other expenses, for Jan., 1907. Total operating revenue for seven months ended Jan. 31, \$479,343.09; expenses, \$388,145.04; net revenue, \$91,198.05; other income, \$2,978.02; interest on bonds, \$48,626.67; taxes, \$23,101.08; other expenses, \$15,613.56; against \$448,109.62, total operating revenue; \$325,458.54, expenses; \$122,651.08, net revenue; \$2,191.21, other income; \$48,626.67, interest on bonds; \$21,049.97, taxes; \$15,741.24, other expenses, for same period 1906-07. Approximate earnings for Feb., \$55,776, against \$53,805 for Feb., 1907.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Operating revenue for Jan., \$761,539.89; expenses, \$515,980.76; net revenue, \$245,559.13; against \$706,290.06, operating revenue; \$368,114.88, expenses; \$138,175.18, net revenue, for Jan., 1907. Total operating revenue for seven months ended Jan. 31, \$7,535,418.54; expenses, \$4,461,603.65; net revenue, \$3,073,814.89; against \$7,506,826.71, total operating revenue; \$3,993,748.40, expenses; \$3,513,078.31, net revenue for same period, 1906-07. Approximate earnings for Feb., \$653,123, against \$627,554 for Feb., 1907.

Grand Trunk Ry. Earnings, Expenses, etc.

The following figures give the earnings of the G.T.R., the C. A. R., the G. T. Western Ry., and the D. G. H. & M. Ry., separately, for Jan., as compared with Jan., 1907:

GRAND TRUNK RAILWAY.		
	1908	1907
Earnings.....	\$2,128,200	\$2,517,000
Expenses.....	1,946,900	1,942,000
Net earnings.....	\$181,300	\$575,000
CANADA ATLANTIC RAILWAY.		
Earnings.....	\$123,100	\$125,300
Expenses.....	140,600	143,800
Deficit.....	\$17,500	\$18,500
GRAND TRUNK WESTERN RAILWAY.		
Earnings.....	\$417,800	\$450,200
Expenses.....	406,500	412,000
Net earnings.....	\$11,300	\$38,200
DETROIT, GRAND HAVEN & MILWAUKEE RY.		
Earnings.....	\$140,900	\$148,100
Expenses.....	118,100	126,700
Net earnings.....	\$22,800	\$21,400
Approximate earnings for Feb., \$2,399,435, against \$2,741,838 for Feb., 1907.		

Recent Dominion Legislation.

The following additional acts respecting transportation interests, passed at the current session of the Dominion Parliament, have received the royal assent:

Alberta and Brazeau River Ry.—Act of incorporation.

Ashcroft, Barkerville and Fort George Ry.—Extending the time for construction.

Boundary, Kamloops and Caribou Central Ry.—Extending the time for construction.

British Yukon Ry.—Authorizing the construction of a branch line

Calgary and Fernie Ry.—Extending the time for construction.

Canadian Pacific Ry.—Amending the acts respecting the company.

Edmonton, Dunvegan and British Columbia Ry.—Extending the time for construction.

Goodwin Car Co.—Act with respect to the company's patent rights.

Kamloops and Yellow Head Pass Ry.—Extending the time for construction.

Lindsay, Bobcaygeon and Pontypool Ry.—Extending time for construction of an extension.

Macleod, Cardston and Montana Ry.—Extending the time for construction.

Niagara, Grand Island Bridge Co.—Extending the time for construction.

St. Clair and Erie Ship Canal Co.—Extending the time for construction.

South Ontario Pacific Ry.—Extending the time for construction.

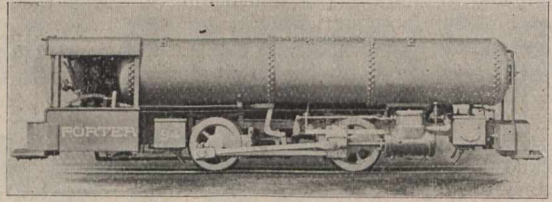
The Central Vermont Ry. was fined \$1,000 in the U.S. District Court at New York, Mar. 17, on admitting having granted a rebate of \$312 to the Woolson Spice Co., Toledo, Ohio, on a shipment of coffee.

The Canada Railway News Co. proposes to erect a tourist hotel in Rideout tp., Lake of Bays district, Ont., and to encourage this work the township council has passed a by-law fixing the assessment of the property at \$5,000. The Ontario Legislature is being asked to pass an act confirming the by-law at the current session.

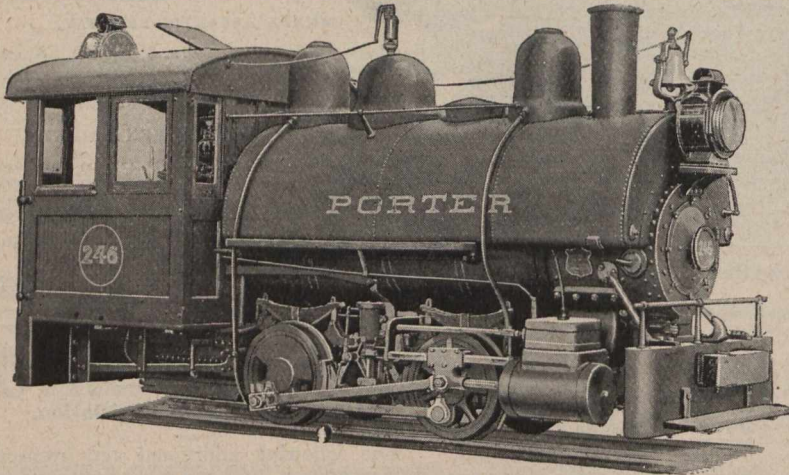
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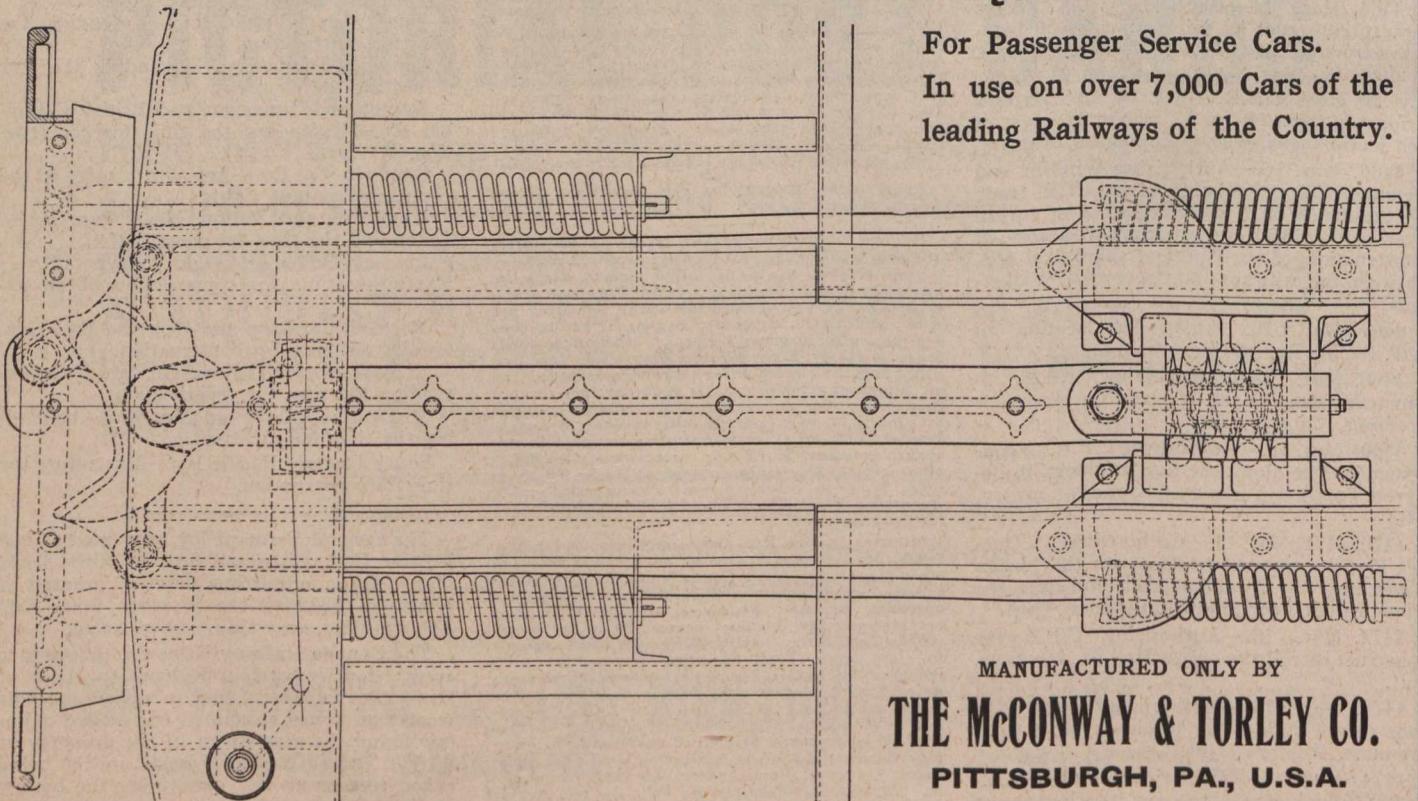
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The Quebec Bridge Disaster.

The report of the Commissioners—H. Holgate, C.E.; J. G. Kerry, C.E., and Professor J. Galbraith—appointed by the Dominion Government to investigate the collapse of the Quebec Bridge during construction on Aug. 29, 1907, was presented to Parliament Mar. 9. The report is an exhaustive one, with numerous appendices, but its conclusions are summed up in the following paragraphs:

The collapse of the bridge resulted from the failure of the lower chords in the anchor arm near the main pier. The failure of these chords was due to their defective design.

The stresses that caused the failure were not due to abnormal weather conditions nor accident, but were such as might be expected in the regular course of erection.

The design of the chords that failed was made by P. L. Szlapka, designing engineer of the Phoenix Bridge Co.

This design was examined and officially approved by Theodore Cooper, Consulting Engineer of the Quebec Bridge & Ry. Co.

The failure cannot be attributed directly to any cause other than errors in judgment on the part of these two engineers.

These errors of judgment cannot be attributed either to lack of common professional knowledge, to neglect of duty, or to a desire to economize. The ability of the two engineers was tried in one of the most difficult professional problems of the day, and proved to be insufficient for the task.

We do not consider that the specifications for the work were satisfactory or sufficient, the unit stresses in particular being higher than any established by past practice. The specifications were accepted without protest by all interested.

A grave error was made in assuming the dead load for the calculation at too low a value, and not afterwards revising this assumption. This error was of sufficient magnitude to have required the condemnation of the bridge even if the details of the lower chords had been of sufficient strength because, if the bridge had been completed as designed, the actual stresses would have been considerably greater than those permitted by the specifications. This erroneous assumption was made by Mr. Szlapka, and accepted by Mr. Cooper, and tended to hasten the disaster.

We do not believe that the fall of the bridge could have been prevented by any action that might have been taken after Aug. 27, 1907. Any effort to brace or take down the structure would have been impracticable, owing to the manifest risk of human life involved.

The loss of life on Aug. 29, 1907, might have been prevented by the exercise of better judgment on the part of those in responsible charge of the work for the Quebec Bridge & Ry. Co., and for the Phoenix Bridge Co.

The failure on the part of the Quebec Bridge & Ry. Co. to appoint an experienced bridge engineer to the position of Chief Engineer was a mistake. This resulted in a loose and inefficient supervision of all parts of the work on the part of the Quebec Bridge & Ry. Co.

The work done by the Phoenix Bridge Co. in making the detail drawings and in planning and carrying out the erection, and by the Phoenix Iron Co. in fabricating the material was good, and the steel used was of good quality. The serious defects were fundamental errors in design.

No one connected with the general designing fully appreciated the magnitude of the work, nor the insufficiency of the data upon which they were depending. The special experimental studies and investigations that were required to confirm the judgment of the designers were not made.

The professional knowledge of the present day concerning the action of steel columns under load is not sufficient to enable engineers to economically design such structures as the Quebec bridge. A bridge of the adopted span that will unquestionably be safe can be built, but in the present state of professional knowledge a considerably larger amount of metal would have to be used than might be required if our knowledge were more exact.

The professional record of Mr. Cooper was such that his selection for the authoritative position that he occupied was warranted, and the complete confidence that was placed in his judgment by the officials of the Dominion Government, the Quebec Bridge & Ry. Co., and the Phoenix Bridge Co. was deserved.

The instructions to the Commission were in general terms to investigate to the best of their ability the collapse of the bridge, and in carrying out these instructions they gave themselves very considerable latitude. They investigated everything to the most minute detail from the passing of the act of Parliament incorporating the Quebec Bridge Co. in 1887, and in doing so appear to have been given every facility and opportunity by the company, the Consulting Engineer, and the Phoenix Bridge Co. The report and its appendices bring out the facts that for the first 11 years of its existence the company practically accomplished nothing; that in 1900 the contract for the substructure was let, payment to be made partly by subsidies, and partly by the company's bonds, to be accepted at 60% of their face value, and that the contract for the superstructure was offered on similar terms. Tenders were asked for the superstructure in 1898, bridge building companies being asked to tender on their own designs to be drawn in accordance with certain specifications. These specifications had been prepared by E. A. Hoare, the company's Chief Engineer, of whom the Commissioners say that "from the standpoints of personal character and knowledge of Quebec and its people no better man could have been found, and the evidence throughout shows that to the best of his ability the company was faithfully served. There is, however, nothing in Mr. Hoare's record that would indicate that he had the technical knowledge to direct the work in all its branches." The tenders, the Commissioners point out, were "made from immature studies based upon insufficient data," and the report further states that "the procedure adopted in calling for tenders was not satisfactory in view of the magnitude of the work and was not calculated to produce the most efficient results." The bridge as originally designed, with its 1,600 ft. centre span, was certainly a work of great magnitude, but when it was decided in 1900 to increase the centre span to 1,800 ft.—or 100 ft. more than the two central spans of the Forth Bridge in Scotland—it was more than ever necessary that special care should have been exercised in the calculations and designs. The original specifications were the subject of consultation between Mr. Hoare, C. Schriber, the then Deputy Minister of Railways, and the Departmental Bridge Engineer, and in July, 1903, at the time when the final plans were being completed, Mr. Schriber suggested the appointment of an independent bridge engineer by the Department "to examine from time to time the detailed drawings of each part of the bridge as prepared and to approve or correct them as may seem necessary, submitting them for final acceptance to the Chief Engineer of the Department of Railways." This was objected to by the Consulting Engineer, as calculated to put him in the position of a subordinate, and an order-in-

council was passed Aug. 15, 1903, which the Commissioners say "left the matter of the specifications entirely in the hands" of Mr. Cooper, subject only to the approval of the Government authorities." The contract was let to the Phoenix Bridge Co., it being the lowest tenderer, and the Commissioners state that "there is no evidence whatever to indicate that economy at the expense of efficiency was ever considered by Mr. Cooper" in connection with the letting of the contract. Between 1900 and 1903 nothing apparently was done and the Commissioners add: "In the rush following the final financial arrangements of 1903 (i.e. the guaranteeing of the company's bonds by the Dominion Government), the necessity of revising the assumed weights was overlooked both by the engineers of the Phoenix Bridge Co. and by those of the Quebec Bridge Co., with the result that the bridge members would have been considerably overstressed after completion. This error was sufficient to have condemned the bridge, had it fallen from other causes."

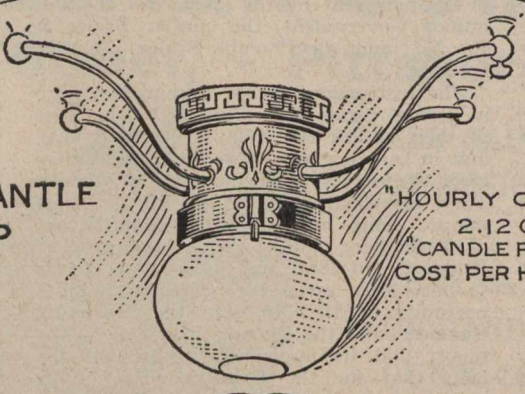
In regard to the assumed weight the Commissioners state in another part of the report: "We are satisfied from the knowledge gained during the designing of the 1,800 ft. span that the 1,600 ft. span could not have been built with the weight of metal stated on the tender of Mar. 1, 1899." The financial weakness of the Quebec Bridge Co. seriously interfered with the carrying out of the undertaking. The company was "inefficient and not well organized, . . . in the absence of a fully competent engineer of erection, and of a forceful chief of staff for the inspection of shop work," and while the Phoenix Bridge Co.'s staff in general "was highly efficient," it did not provide an engineer to take charge of the erection who "by virtue of technical training and long experience on large bridge work, was fitted to take complete local control of the erection." The Commissioners consider Mr. Cooper the only man in the employ of the Quebec Bridge Co. capable of assuming the duties of Chief Engineer, and he was not authorized to act in that capacity, nor was he able, owing to ill-health, to visit the bridge site during the construction work.

P. Szlapka, designing engineer of the Phoenix Bridge Co., in an interview respecting the finding of the Commission on Mar. 12, said he criticized the design of the chord section that failed, calling the attention of Mr. Cooper, the Consulting Engineer, to its weakness, but that gentleman overruled him. All the plans were sent to Mr. Cooper and accepted or discarded by him before any work was gone on with by the Bridge Co. Even after the plans for the defective chords had been passed, Mr. Szlapka states that he returned them to Mr. Cooper with a criticism, and that Mr. Cooper again sent them back with the statement not to alter them, as they were all right.

Montreal Warehousing Co.—Following are the officers and directors for the current year: President, C. M. Hays; Vice-President, W. M. Ramsay; other directors: E. H. Fitzhugh, J. W. Loud, W. Wainwright; Manager and Secretary, G. H. Hanna. The annual meeting was held in Montreal Mar. 17. The company is a subsidiary of the G.T.R., and does not issue a printed report.

The English courts have refused a stay of proceedings in the action where a London money changer sued the Dominion Express Co. on some orders changed. The facts show that W. Upton stole a number of the company's order forms at Yorkton, Sask., which were changed by the London broker. The company refused payment and the decision given Mar. 21 is that the case will be heard in London, unless there is an appeal.

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**HEAD OFFICE AND
WORKS:**

SYDNEY, CAPE BRETON, CANADA

MAINLY ABOUT PEOPLE.

E. Reino, Manager of the Finland Steamship Co., died at Montreal, Mar. 12.

F. S. Spence has been re-elected Chairman of the Toronto Harbor Commission.

H. R. Charlton, G.T.R. Advertising Agent, returned to Montreal from Great Britain Mar. 14.

A. MacKenzie has been appointed Dominion Coal Co.'s agent for the St. Lawrence district.

Mrs. Dickenson, wife of F. Dickenson, contractor, Hamilton, died there Mar. 14, after a short illness.

A. Kerr, formerly travelling passenger agent C.P.R., died at St. John, N.B., recently, aged 30.

F. Walton, for a number of years foreman carpenter G.T.R. shops, Point St. Charles, Montreal, died recently.

Sir Wm. Van Horne, Chairman of the Board, C.P.R., returned to Montreal early in March from a trip to Europe.

A. M. Nanton, Managing Director Alberta Railway and Irrigation Co., has returned to Winnipeg from Europe.

D. D. Mann, Vice-President Canadian Northern Ry., and party, returned to Toronto from Mexico, Mar. 9.

W. H. Stinson, G.T.R. station agent at Tillsonburg, Ont., has retired under the operation of the pension fund rules.

R. J. Mackenzie and the Misses Mackenzie left Toronto recently for California, where they purpose spending a short holiday.

M. H. McLeod, General Manager Canadian Northern Ry., returned to Winnipeg in the middle of March after a short trip to Cuba.

A. McDonald, who died at Detroit, Mich., Mar. 17, aged 89, was engaged in railway business at Hamilton, Ont., many years ago.

W. B. Howard, who died at St. John, N.B., recently, aged 65, was father of W. B. Howard, District Passenger Agent, C.P.R., at that port.

Hon. Jas. H. Howden, Minister of Railways in the Manitoba Government, was sworn in as Minister of Telephones also, Mar. 4.

H. C. Hammond, President Northern Navigation Co., returned to Toronto at the end of March, after spending several months in Europe.

Lady Shaughnessy returned from a visit to Great Britain, Mar. 1, Sir Thos. G. Shaughnessy going to St. John, N.B., to meet her.

H. D. Bayne, Montreal, Manager of the Canadian Westinghouse Co., sailed recently on a business trip to Great Britain, France and Egypt.

Lieut.-Col. the Hon. J. S. Hendrie, M.P.P. for Hamilton, has been re-elected chairman of the Railway Committee of the Ontario Legislature.

S. Harper, accountant at the Canadian Locomotive Works, Kingston, Ont., died suddenly at his boarding-house there, Mar. 21, aged 73.

K. W. Blackwell, President Montreal Steel Works, has been elected a director of the Intercolonial Coal Co., vice Lt.-Col. Henshaw, deceased.

Jno. Bonnick, who died in Winnipeg Mar. 15, was the driver of a stage on the Dawson trail, prior to the construction of the railway from Fort William to Winnipeg.

Col. F. Gourdeau, Deputy Minister of Marine, stated recently that he had requested to be relieved of his office. He has been in the public service over 40 years.

W. Cross, ex-Assistant to the Second Vice-President, C.P.R., returned to Winnipeg Mar. 21, after a three months' trip to Great Britain, including the Scilly Isles.

H. E. Kelly, formerly C.P.R. Chief Train Dispatcher at Toronto, who had been in ill-health for over a year, died in the general hospital at Chatham, Ont., Mar. 6.

Miss Crossen, daughter of W. J. Crossen, General Manager Crossen Car Mfg. Co., was one of the principal promoters of a charity ball held in Cobourg, Ont., Mar. 3.

Miss L. Peterson, daughter of P. A. Peterson, Chief Engineer Guelph and Goderich Ry., was married to Dr. D. Hingston, of Montreal, at Goderich, Ont., Mar. 3.

S. B. Morris, J.P., Canadian Pacific Ry. ticket agent at Rodney, Ont., has been elected Grand Master Workman of the Ancient Order of United Workmen of Ontario.

J. McCraw, formerly G.T.R. agent at Merriton, Ont., and latterly agent Central Vermont Ry. at St. Albans, Vt., is now General Agent of the C.V.R. at New London, Conn.

R. J. Mackenzie, Winnipeg, has decided to enter his horses at the various race meetings under his own name, and not as heretofore in the name of the Kirkfield stable.

Rev. A. H. Hoben, D.D., who has been appointed a professor in Chicago University, is a son of T. H. Hoben, Superintendent Canada Eastern Division, Intercolonial Ry., Gibson, N.B.

Allan Cameron, General Traffic Agent C.P.R., London, Eng., and Mrs. Cameron, spent some time in Montreal and Toronto recently, and sailed for home on the Empress of Ireland, Mar. 7.

T. Ahearn, city freight agent Intercolonial Ry., Montreal, was presented with a clock by the staff Feb. 25, on the occasion of his marriage, which took place on the following day.

John Moran, who died at Montreal, Mar. 3, was one of the oldest of the G.T.R. locomotive engineers. He was father of Mrs. Callaghan, wife of the Manager of the Hamilton rolling mills.

John Reynolds, who has been G.T.R. station agent at Brampton, Ont., since 1869, and has spent 54 years in the company's service, has been retired and placed on the pension list.

C. Shields, General Manager of the Consolidated Lake Superior Co., and previously of the Dominion Coal Co., who died at Sault Ste. Marie, Ont., Oct. 28, 1904, left an estate valued at \$115,000.

E. H. Allen, who resigned his position as Intercolonial Ry. Claims Agent recently, to become Provincial Secretary of New Brunswick, was defeated in the recent general elections there.

P. Kennedy, who died in Montreal recently, aged 90, was father of M. J. Kennedy, of the Montreal Street Ry., and of D. Kennedy, of the Donaldson Line of Steamships, Montreal.

Jas. White, of Lyons and White, who have a 61-mile contract on the Transcontinental Ry. between the New Brunswick boundary and the Quebec bridge, died at his residence Ottawa, Feb. 29, aged 56.

W. Wainwright, Second Vice-President G.T. Pacific Ry., returned to Montreal, Mar. 14, from Victoria, B.C., where he had been in consultation with the Provincial Government on G.T. Pacific Ry. matters.

W. J. Erwin, a construction engineer on the G.T. Pacific Ry., died in the hospital at Edmonton, Alta., Mar. 19, aged 27. He was a son of J. Erwin, Renfrew, Ont., roadmaster Kingston and Pembroke Ry.

W. H. Breithaupt, President Berlin and Bridgeport Electric Ry., addressed the Toronto Engineering Club Mar. 5, on river regulation with reference to the Ontario Peninsula and of the Grand River.

E. A. Evans, C.E., General Manager Quebec Railway, Light and Power Co., and President Canadian Street Railway Association, sailed from New York Mar. 3, intending to return to Canada in April.

G. H. Wilkinson, C.P.R. train dispatcher, Toronto, was acquitted by a jury at Whitby, Ont., Mar. 3, of criminal negligence in connection with the fatal wreck of two freight trains at Myrtle, Ont., Mar. 25, 1907.

J. W. Nairn, locomotive engineer, Truro, N.S., and W. M. Thompson, conductor, Moncton, N.B., have been elected members of the Board of the Intercolonial Ry. Provident Fund for the year ending Mar. 31, 1909.

E. R. Bremner, who recently resigned his position as Division Freight Agent, G.T.R., Ottawa, has been appointed Canadian Manager of Watson and Todd, lumber shippers, Liverpool, Eng. Office, Citizens Building, Ottawa.

H. J. Pettypiece, C.P.R. ticket agent, Forest, Ont., and formerly M.P.P. for East Lambton, Ont., who was again nominated to contest the riding in the Liberal interest for the Ontario Legislature, has retired from the contest.

Graham Fraser, formerly General Manager Dominion Iron and Steel Co., and for years General Manager of the Nova Scotia Steel and Coal Co., has been elected a director of the Dominion Coal Co., succeeding Hon. D. MacKeen.

Jesse Wallis, who died at St. Thomas, Ont., Mar. 14, was for some years general car foreman at the Michigan Central Rd. car shops and was latterly identified with the project for the establishment of a car construction company there.

A. Gobeil was presented with an address, a purse of \$1,000 and a silver service, by members of the Dominion Civil Service, at Ottawa, Mar. 12, upon his retirement from the Deputy Ministership of Public Works. Mr. Gobeil has been 36 years in the Government service.

T. Ahearn, C. J. Booth, E. J. Chamberlain, M. Davis, A. W. Fleck, S. N. Parent, W. Y. Soper, Ottawa, who are connected with transportation interests, are among the applicants at the current session of the Ontario Legislature for an act incorporating the Ottawa Hunt.

Capt. T. Taylor, formerly Commodore of the Hudson's Bay Co.'s fleet, died in the general hospital at Winnipeg, Mar. 15, aged 73. Prior to his retirement in 1903, he was in command of the schooner Otter, trading on Hudson and James Bays, and resided at Moose Factory, Ont.

The will of the late F. B. Polson, President of Polson Iron Works, Ltd., Toronto, disposes of an undivided half interest in Rose-dale lands valued at \$33,610; lands in Homer tp., Ont., furniture and effects, valued at \$10,750. The interest in the Polson Co. has not yet been valued.

D. M. Burchell, formerly stores manager of the Dominion Coal Co., has been found not guilty upon two charges of embezzlement from the company by a jury at Sydney, N.S. There were sixteen other charges of a similar nature alleged, against which a nulle prosequi was entered.

A. J. Gorrie, formerly General Superintendent Canadian Northern Quebec Ry., and Mrs. Gorrie, have returned to Montreal from their trip to Great Britain. Mr. Gorrie has assumed his duties as Managing Director of the Geo. Hall Coal Co. of Canada, Ltd., with headquarters at Montreal.

Walter Cassels, K.C., who has been appointed Judge of the Exchequer Court of Canada in succession to the late Justice Burbidge, was born in Quebec, and educated

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FOR LOGGING SERVICE:

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FOR SWITCHING SERVICE:

One four-coupled locomotive with cylinders 18" x 24", standard gauge.
One six-coupled locomotive with cylinders 18" x 24", standard gauge.
Two six-coupled locomotives with cylinders 21" x 26", standard gauge.

FOR FREIGHT SERVICE:

One ten-wheeled type with cylinders 18" x 26", standard gauge.
One ten-wheeled type with cylinders 18" x 24", standard gauge.
One consolidation type with cylinders 28" x 32", standard gauge.
Three consolidation type with cylinders 20" x 24", standard gauge.
One consolidation type with cylinders 19" x 24", standard gauge.

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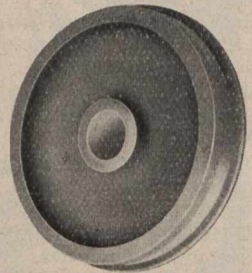
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at the Quebec High School and Toronto University, graduating B.A., 1865. He was called to the Ontario bar in 1869, and created a Q.C. in 1883.

W. Whyte, Second Vice-President C.P.R., accompanied by Mrs. Whyte; Sir Daniel McMillan, Lieutenant-Governor of Manitoba, and Lady McMillan, sailed from Boston, Mar. 14, on the S.S. Romanic for Naples, intending afterwards to visit France and Great Britain and to return to Winnipeg towards the end of May.

At the 24th annual gathering of the Royal Military College ex-Cadet Club, held at Ottawa, C. R. Coutlee, Halifax, N.S., the retiring president, occupied the chair. The officers for the current year include: Lieut. R. McColl, Halifax, Vice-President; and Capt. A. E. Doucet, Quebec, a member of the managing committee.

The Manitou Steamship Co., with headquarters at Chicago, Ill., having been taken over by the Northern Michigan Transportation Co., of which R. F. Church is General Freight and Passenger Agent, J. Berolzheimer, heretofore Secretary and General Passenger Agent of the Manitou S.S. Co., has associated himself with the Horseshoe Cigar Co., 745 East 47th St. Chicago.

J. B. Hunter, who has been appointed Deputy Minister of Public Works for the Dominion in succession to A. Gobeil, retired, was born at Waterdown, Ont., in 1876, and entered the civil service in 1900, serving in the Privy Council, Interior, Postmaster-General's and Marine Departments before entering the Public Works Department under the late Hon. J. Sutherland.

D. R. McBain, who was recently appointed Assistant Superintendent New York Central Lines between Buffalo and New York, at Syracuse, N.Y., was at one time connected with the Michigan Central Rd., having been for some seven years Master Mechanic at the company's shops at St. Thomas, Ont., and latterly, Assistant Superintendent of Motive Power at Detroit.

G. W. Stephens, chairman of the Montreal Harbor Commissioners, met with a peculiar accident while inspecting harbor works at Glasgow, Scotland, Mar. 12. In company with a party, he was on board a small steamboat, travelling at a good rate of speed, when an unnoticed hawser stretched across the basin was run into, which swept the deck of passengers and gearing. Though not seriously injured, the party had a marvellous escape.

W. K. Evans, who has been appointed Commercial Agent, G.T.R., Cincinnati, Ohio, was born at London, Ont., and entered the G.T.R. service there in the freight department, where he remained until Feb., 1893, since which his service has been as follows: Mar., 1893, to Mar., 1896, through freight agent's office, G.T.R., Detroit, Mich.; April, 1896, to Dec., 1897, in freight claims department, G.T.R.; Jan. to Mar., 1898, general freight department, G.T.R., Montreal; April, 1898, to Feb., 1908, accountant, Grand Trunk Despatch, and Milwaukee and Michigan Fast Freight Lines, Detroit, Mich.

A. D. Huff, who has been appointed division freight agent G.T.R., Ottawa, was born at Chatham, Ont., July 17, 1866, and entered railway service 1884, since which his record has been: 1884 to 1886, spare operator and clerk with G.N.W. Telegraph Co., and G.T.R.; 1886 to 1893, in various capacities G.T.R. freight department, London, Ont.; 1893 to 1897, contracting freight agent, G.T.R., London; 1897 to 1902, Travelling Freight Agent, Middle Division G.T.R., at Hamilton, Ont.; July, 1902, to Jan., 1903, chief clerk to Division Freight Agent G.T.R., at Detroit, Mich.; Jan., 1903, to Mar., 1908, commercial agent G.T.R., Pittsburg, Pa.

H. T. Wilgress, who was recently appointed agent C.P.R. Pacific Steamship service, Kobe, Japan, was born at Lachine, Que., July 29, 1857, and entered C.P.R. service in 1886, since when his record has been: Oct., 1886, to Feb., 1887, Cashier Local Treasurer's office, Port Moody, B.C.; Feb., 1887, to May, 1899, Paymaster Pacific Division; May, 1899, to July, 1900, townsite and right-of-way agent Columbia and Western Ry. (C.P.R.), Greenwood, B.C.; July, 1900, to Jan., 1901, Cashier Local Treasurer's office, Vancouver, B.C.; Jan., 1901, to Aug. 1905, Chief Clerk General Agent's office, Portland and Asiatic Steamship Co., Hong Kong, China; Aug. 23, 1905, returned to C.P.R. service as Chief Clerk General Traffic Agent's office, Yokohama, Japan, which position he held to Jan. 1, 1908.

R. S. Richardson, who was recently appointed Assistant Superintendent, Canadian Northern Quebec Ry., Montreal, was born at Napanee, Ont., April 9, 1865, and entered railway service with the G.T.R. March, 1876, as messenger, remaining with that company until 1885, during which period he was successively porter, switchman, baggage master, freight clerk and telegraph operator. Taking service on the Bay of Quinte Ry. in 1885, he was to 1886 conductor; 1886 to 1893, express messenger and station agent; 1893 to 1894, freight and passenger conductor; 1894 to 1895, soliciting freight and passenger agent, B. of Q. Ry.; 1895 to 1896, brakeman, Canada Atlantic Ry.; 1896 to 1897, conductor; 1897 to 1901, general yardmaster, C.A. Ry., Ottawa; 1901 to Feb., 1908, general yardmaster and trainmaster, C.P.R., Smith's Falls.

J. R. Cameron, who was recently appointed General Superintendent Canadian Northern Ry. at Winnipeg, was born at Truro, N.S., Nov. 5, 1865, and entered railway service in 1882, since when he has been consecutively: May, 1882, to April, 1883, brakeman and baggageman, C.P.R., Winnipeg; April, 1883, to Mar., 1886, conductor, C.P.R., Winnipeg; April, 1886, to April, 1887, conductor Manitoba and North-Western Ry., Winnipeg; April, 1887, to Oct., 1898, conductor Northern Pacific Ry., in Montana; Oct., 1898, to June, 1901, Trainmaster Northern Pacific Ry., Grand Forks, with jurisdiction over that company's lines in Manitoba; June, 1901, to Aug., 1904, conductor Canadian Northern Ry., Winnipeg; Aug., 1904, to Dec., 1905, Superintendent C.N.R., Kamsack, Sask.; Dec., 1905, to Jan., 1908, Superintendent district 1, C.N.R., Port Arthur, Ont.

Allan Purvis, who was recently appointed Superintendent district 4, Central Division, C.P.R., with office at Souris, Man., was born at Batavia, Java, June 29, 1878, and educated at the Merchant Taylor's school, Liverpool, Eng. He entered railway service at 12 years of age, being successively: Aug., 1890, to Feb., 1891, messenger Stores Department; Feb. to Nov., 1891, storeman; Nov., 1891, to Sept., 1892, junior clerk at Vancouver, B.C.; Sept., 1892, to Aug., 1893, timekeeper, Donald, B.C.; Aug., 1893, to Oct., 1894, clerk, Vancouver, B.C.; Oct., 1894, to Mar., 1895, assistant storekeeper, North Bend and Kamloops, B.C.; Mar., 1895, to Sept., 1896, clerk and operator, Car Service and Fuel Department, Vancouver, B.C.; Sept., 1896, to Jan., 1899, chief clerk, Fuel Department, Vancouver, B.C.; Jan., 1899, to Feb., 1908, chief clerk to General Superintendent, Vancouver, B.C., all service with the C.P.R.

P. G. Flaherty, who was recently appointed Chief Dispatcher G.T.R., Montreal, was born in Newberry Co., Va., 1866, and entered railway service in 1881, since which he has been consecutively, 1881 to Dec., 1883, operator Allegheny Valley Rd., New Bethlehem, Pa.; 1883 to 1886, dispatcher Buffalo, Rochester

and Pittsburg Ry., Buffalo, N.Y.; between 1886 and 1891 he was at different times dispatcher Union Pacific Ry., Evanston, Wyo.; and at different points in Mexico on the Mexican International and Mexican Central Rds.; 1891 to 1898, dispatcher Great Northern Rd., Kalispel, Mont., and West Superior, Wis.; 1898 to 1899, dispatcher G.T.R., Battle Creek, Mich.; 1899 to 1901, dispatcher Great Northern Rd., West Superior, Wis.; 1901 to Feb., 1903, dispatcher G.T.R., Island Pond, Vt.; Feb. to Sept., 1903, dispatcher Pere Marquette Rd., Grand Rapids, Mich.; Sept., 1903, to Oct., 1905, dispatcher Great Northern Rd., White Fish, Mont.; Oct. to Dec., 1905, night chief train dispatcher Oregon Rd. and Nav. Co., Tekoa, Wash.; Jan., 1906, to Feb., 1908, Chief Dispatcher Great Northern Rd., Spokane, Wash.

F. A. Howe, General Agent G.T.R., Chicago, Ill., whose retirement under the pension rules was announced in our March issue, although in his 78th year, is hale and hearty. It is not generally known that he is one of the oldest marine men connected with the great inland water ways, having worked up from man in the fore-castle to pilot, mate, captain and owner. As far back as 1849 he was sailing on the lakes between Chicago and Buffalo, and later on steamers owned by W. Read, of Erie, Pa., running between Chicago and Collingwood, Ont., in connection with the old Northern Ry. About 1854, in conjunction with A. T. Spencer, he purchased the steamer City of Superior, and in 1855 took her to Superior City, she being the second steamer on Lake Superior and the first to pass through the canal at Sault Ste. Marie. In the winter of 1859-60 the steamer Lady Elgin was purchased, and Mr. Howe and his partners started out from Chicago, Feb. 14, and tramped overland to Copper Harbor, where the steamer was laid up, in 24 days. At this time the Lady Elgin was the only steamer on the lake, owing to the canal being closed for the putting in of the upper lock gates. Mr. Howe retired from the marine service in July, 1860, and since then has been continuously engaged with the G.T.R. in connection with the lake and rail, and all rail traffic.

J. W. Leonard, whose appointment as General Manager C.P.R., Eastern Lines, in charge of matters relating to maintenance of way and operation, was announced in our Mar. issue, was born at Epsom, Ont., 1858. He entered railway service, 1872, since which his record has been: 1872 to Aug., 1877, telegraph operator and agent, Midland Ry. of Canada; Aug., 1877, to Dec., 1878, agent Victoria Ry.; Dec., 1878, to Mar., 1880, assistant manager, same road; Mar. to June, 1880, assistant to General Superintendent Credit Valley Ry.; June, 1880, to Nov., 1883, General Passenger Agent, same road; Nov., 1883, to May, 1884, Master of Transportation Ontario and Quebec Ry.; May, 1884, to Mar., 1887, Superintendent C.P.R. at Toronto; Mar., 1887, to Mar., 1890, Superintendent at Kamloops; Mar., 1890, to Mar., 1893, Superintendent lines east of Montreal, same road; Mar., 1893, to April, 1901, General Superintendent Ontario and Quebec division, same road, Toronto; April, 1901, to Mar., 1903, General Superintendent, Western Division, same road, Winnipeg; Mar. to April, 1903, General Superintendent, Central Division, same road, Winnipeg; April, 1903, to Jan., 1904, Assistant Manager, C.P.R. lines west of Lake Superior, Winnipeg. After some months spent in travelling, Mr. Leonard was elected President Guelph and Goderich Ry., and in Feb., 1905, was appointed Manager of Construction, C.P.R. lines in Ontario, and in Oct., 1905, Assistant General Manager, C.P.R. Eastern Lines, in charge of maintenance of way and operation, and also of the construction of new lines in Ontario,

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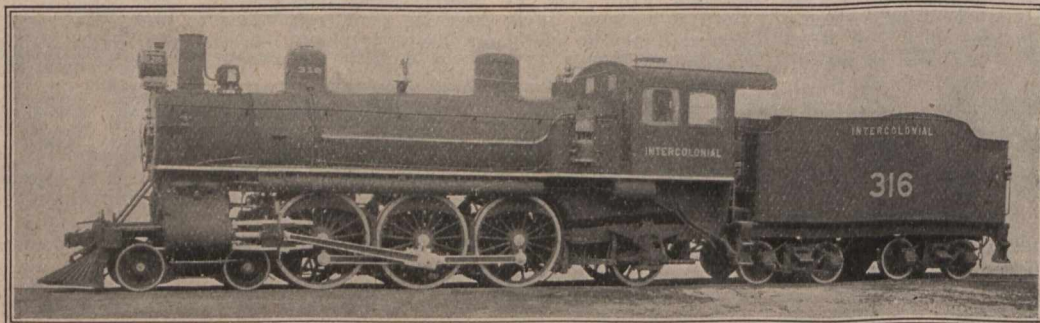
There will be a Canadian Northern exhibit from six Provinces at the Sportsmen's Shows at Toronto (March 21-28) and at Montreal (April 4-11).

Four hundred miles in Nova Scotia. Six hundred in Quebec. Two hundred in Eastern Ontario. Three hundred between Lake Superior and Lake of the Woods. All three Prairie Provinces.

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which combined positions he held until the appointment of J. G. Sullivan as Manager of Construction, C.P.R. Eastern Lines, Feb., 1907, leaving Mr. Leonard solely to the duties of Assistant General Manager Eastern Lines, in charge of maintenance of way and operation.

E. A. Evans, General Manager and Chief Engineer Quebec Ry., Light and Power Co., at Quebec, whose portrait appears on the first page of this issue, was born at Kensington, London, Eng., Feb. 26, 1855. Between 1875 and 1883 he was engaged as engineer on construction for the Cheshire Lines Committee (managing lines jointly owned by the Midland, Great Northern and Great Central Ry. companies), and the Lancashire and Yorkshire Ry. Co., and after a short stay in the U.S. came to Canada and was engaged in surveys on the projected Port Rowan and Lake Shore Ry., and the Pontiac, Pacific Jct. Ry., in 1884-5; served for nearly a year on the Geological Survey of Canada, since which his record has been: Mar., 1886, to Jan., 1889, engineer on Pontiac, Pacific Jct. Ry., Gatin-eau Valley Ry., and on surveys for St. Lawrence bridge at Quebec; June, 1889, engineer in charge of realignment and improvement of grades, ballasting and general completion of Quebec and Lake St. John Ry., from Whitehorse trestle to Roberval, 178 miles, and in charge of construction of branch line from Chambord Jct. to Chicoutimi; on the completion of this he was appointed engineer in charge of construction of Quebec city electric railway and General Manager on the opening of the line. This company has since developed into the Quebec Railway, Light and Power Co., which has built a suburban line along the north shore of the St. Lawrence River to Ste. Anne de Beaupre and Cap Tourment, and which also carries on a lighting and power business and has developed a magnificent water power at Montmorency Falls. Mr. Evans is a member of the Canadian Society of Civil Engineers; he was one of the founders of the Engineers' Club, Montreal, and took an active part in establishing the Canadian Street Railway Association, in which he has served successively as a member of the executive committee, as Vice-President, and this year as President.

The funeral of A. C. Killam, K.C., chairman of the Board of Railway Commissioners, who died at Ottawa somewhat suddenly, Mar. 1, from pneumonia, took place at Winnipeg Mar. 5. The late Chief Commissioner was born at Yarmouth, N.S., Sept. 18, 1849; graduated from Toronto University, and was called to the Ontario bar in 1877. He moved from Windsor, Ont., to Winnipeg in 1879, being called to the Manitoba bar the same year, and was made a Queen's Counsel in 1884. He represented South Winnipeg in the Manitoba Legislature until 1885, and is remembered there chiefly on account of his speech on the right of the province to grant railway charters without the Dominion having the power of disallowance. He was sworn in a Judge of the Court of Queen's Bench Feb. 19, 1885, and in April, 1899, became Chief Justice for the province on the retirement of Sir Thomas Taylor. In Aug., 1903, he was appointed a Justice of the Supreme Court of Canada, to fill the vacancy caused by the death of Justice Armour, being the first Western judge to be given a seat in that court. On the resignation of the late Hon. A. G. Blair, he was asked to become Chief Railway Commissioner, and took over the duties Feb. 6, 1905. The death of Mr. Killam will seriously cripple the work of the Commission, as there were a number of important cases awaiting judgment, notably the Bell Telephone's matter. He was also chairman of the arbitration committee, having in charge the adjustment of the dis-

putes between the Intercolonial Ry. and the G.T.R. His premature death came as a shock to those with whom he has worked all over the country, as he was apparently a man of great physical strength, and was noted for the constant alertness he displayed in the work of the Commission. Railway men from one end of the country to the other feel a profound regret at his death, as they recognized in him a man who would not only give due attention to all that came before him, but who was eminently fair in his decisions.

Victoria Rolling Stock Co. of Ontario.

Following are extracts from the annual report for the year ended Feb. 15, 1908:

"During the year the company did not issue any new debentures, and outstanding debentures against leases were reduced by \$379,000. The final payments under the following leases have matured and were duly met by the respective railway companies, and conveyances of the rolling stock included in the leases duly executed by this company: Leases April 1, July 15, and Sept. 15, 1897, to C.P.R. Co.; lease Aug. 2, 1897, to Minneapolis, St. Paul and Sault Ste. Marie Ry. Co. and C.P.R. Co.; lease Sept. 15, to International Ry. Co. of Maine and C.P.R. Co. All other payments maturing during the year have been promptly met. The directors wrote off discount and commission account \$20,000, leaving \$16,000 still to be dealt with. The profit on the year's business, after charging up directors' fees, expense account and the above amount (\$20,000) for discount and commission on debentures sold, is \$17,736.35, out of which a dividend of 12% per annum on the paid-up capital stock, amounting to \$14,400, has been paid, leaving \$3,336.35 carried forward to profit and loss account, which now stands at \$117,718.59."

ASSETS.	
Obligations on leases.....	\$2,013,313.55
Debentures held by company and accrued interest.....	171,888.06
Discount and commission on series S. debentures.....	16,000.00
Cash in Bank.....	110,510.31
	<u>\$2,311,711.92</u>
LIABILITIES.	
Capital stock, subscribed.....	\$ 600,000.00
" paid up.....	120,000.00
Debentures outstanding.....	2,054,000.00
Interest accrued on same.....	19,993.33
Balance at credit of profit and loss acct.....	117,718.59
	<u>\$2,311,711.92</u>
PROFIT AND LOSS ACCOUNT.	
Interest paid and accrued on debentures and advances.....	\$ 93,023.99
Discount and commission on debentures sold, series S.....	20,000.00
Expense account.....	1,094.88
Directors' fees last year.....	1,400.00
Dividend account.....	14,400.00
Balance carried forward.....	117,718.59
	<u>\$ 247,637.46</u>
Balance at credit profit and loss account Feb. 15, 1907.....	\$ 114,382.24
Rents received and accrued on leases and interest on debentures held by company.....	133,255.22
	<u>\$247,637.46</u>
MEMORANDUM RE ROLLING STOCK.	
Original cost of rolling stock held under existing leases.....	\$4,439,802.53
Amount paid in on account by railway companies in addition to interest.....	2,385,515.37
	<u>\$2,054,287.16</u>
Total amount of company's debentures outstanding.....	<u>\$2,054,000.00</u>

The officers and directors for the current year, who were re-elected, are: President, E. B. Osler; Vice-President, W. D. Matthews; Managing Director, H. C. Hammond; other directors, D. Coulson, Hon. J. S. Hendrie, H. Pellatt, D. R. Wilkie.

National Transcontinental Railway.

The total estimated length of the main line from Moncton, N.B., to Winnipeg, is 1,804 miles, and we are officially advised that the surveyed mileage is the same, and that with the exception of some revision at a few points the whole of the line has been located. Contracts for construction have been let covering in all about 859 miles exclusive of the mileage for which tenders are now under consideration as referred to below. The mileage under contract is distributed as follows: New Brunswick, 119 miles; Quebec, 150 miles east and 195 miles west of the St. Lawrence River, and 78 miles easterly from the Ontario boundary; Ontario, 72 miles from the Quebec boundary westerly, and 158 miles from the Manitoba boundary easterly; Manitoba, 87 miles from Winnipeg easterly. The mileage of grading done on the various contracts let in the several provinces was, at the latest reports, approximately: New Brunswick, 16 miles; Quebec, east of the St. Lawrence River, 41 miles; Quebec, west of the St. Lawrence River, 101 miles; Western Ontario and Manitoba, 171 miles. Track has been laid in Quebec west of the St. Lawrence River on 34 miles, and in Manitoba easterly from Winnipeg, on 49 miles. The maximum gradients are 0.4% eastbound, and 0.6 westbound, except at two points; and the sharpest curvature is 6°. The bridges and trestle are being constructed to stand the test of two 180-ton consolidation locomotives followed by a load of 4,750 lbs. per lineal foot. The tunnels are being constructed 16 ft. wide and 23 ft. 9 in. high on tangents. The steel being laid is 80 lbs. to the yard.

Tenders are under consideration by the Commissioners of the Transcontinental Ry. for the construction of several sections of the Eastern Division as follows:

District A.—From about 58 miles west of Moncton, N.B., to the crossing of the Intercolonial Ry. at mileage 97.7, a distance of 39.7 miles. Only one tender has been received, namely, that of the G.T. Pacific Ry. Co.

From mileage 97.7 to the Tobique River, at about mileage 165.7, less one mile, about 67 miles. The tenders received were from the G.T. Pacific Ry. Co., and Macdonald & O'Brien.

From the Tobique River to about 3.5 miles west of Grand Falls, N.B., about 31.5 miles. Tenders have been received from the G.T. Pacific Ry. Co., Craig & Thompson, Macdonald & O'Brien, M. P. & J. T. Davis, Kennedy & McDonald, the Willard Kitchen Co.; Trites, McPhail, Mavor & Miller.

District B.—From the Quebec-New Brunswick boundary westerly for about 52.4 miles. Tenders have been received from the G.T. Pacific Ry., O'Brien & Fowler, M. P. & J. T. Davis.

District D.—From about eight miles west of the crossing of the Abitibi River, Ont., westerly for 100 miles. The tenders under consideration are from the G. T. Pacific Ry. Co., and E. F. & G. E. Fauquier.

District E.—From about 19.5 miles west of the crossing of Mud River, near Lake Nepigon, Ont., easterly for 75 miles. Tenders have been received from the G.T. Pacific Ry. Co., J. D. McArthur, E. F. & G. E. Fauquier, Chambers Bros., McQuigge & McCaffrey.

J. D. McArthur, contractor for the section of the line from Winnipeg easterly to Lake Superior Junction, Ont., 250 miles, was in Montreal Mar. 11. He said the firm had about 7,000 men at work all winter on the contract, and the weather had been such that not a single day had been lost. About 60% of the entire work had been done. While the first estimate of the cost of the 250 miles had been \$13,000,000, so many changes had been made that the actual outlay would be well

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on to \$16,000,000. The changes made had all been for the improvement of the line.

GRAND TRUNK PACIFIC RY.

Soundings have been taken in the Red River at Winnipeg with a view of deciding on the foundation for the bridge to connect with St. Boniface. Tracklaying on the line between Portage la Prairie and Saskatoon has been resumed, and will be pushed until the gap of 65 miles left, when work had to be suspended Feb. 10, has been closed. Ballasting was expected to commence by the end of March, and the surfacing gang was announced to have been engaged to start work April 1. West of Saskatoon the grading has been completed to the Battle River, and two of Foley Bros. & Larson's camps have been at work all winter on the grading. One camp is located just across Battle River and the other just east of Clover Bar, where the line crosses the North Saskatchewan River. Under favorable conditions it is expected to have the grading from the Battle River to Edmonton completed early in the spring. At the Battle River the work of building the bridge is going on satisfactorily. However, it is not thought that Gunn & Sons, who have the contract for the cement work, will have it done till May, and that by the time the steel is on it will be late in the fall. The bridge is quite a bit larger than the one across the South Saskatchewan at Saskatoon. On the line west of Edmonton, Alta., sub-contracts of 30 miles each are reported to have been let by Foley, Welsh & Stewart to J. McAllister, M. McKenzie, and B. Baker. The remaining section of 30 miles of the contract, it is said, will be let in one or two mile sections.

The British Columbia Legislature, Mar. 7, passed the act ratifying the agreement between the company and the Provincial Government with respect to the Prince Rupert townsite. Under the agreement the Province disposes of its reversionary rights to the 14,118 acres bought from the Indians of Metlakatla by the railway company at the rate of \$2.50 an acre. One-quarter of the lots and blocks into which this land may be subdivided by the company is to be reconveyed to the Province, the chief commissioner to select one lot first, and the railway company three until the entire one-quarter is reconveyed. The Province pays one-quarter of the cost of the survey and subdivision. A free grant of a right-of-way not exceeding 100 ft. in width through from the coast to the eastern boundary of the Province is made to the company. Through the lands on Kaien Island and the Tsimpsean Reserve the right-of-way is to be but 60 ft. in width, and the plans must be approved by the Lieutenant-Governor-in-Council. The Province grants lands necessary for sidings, stations, etc., to the railway company, the area of such grants to be subject to the approval of the Lieutenant-Governor-in-Council. The railway company agrees to begin actual construction work by June 1, to purchase all material and supplies required, if the terms are similar to those upon which the said supplies may be obtained elsewhere within the Province. A fair wage clause is included in the Act. The railway is granted exemption from taxation until Dec. 31, 1921, according to the terms of the railway assessment act.

W. Wainwright, Second Vice-President G.T. Pacific Ry., stated Mar. 17, that tenders would shortly be asked for a further 200 miles of the mountain section of the line. A contract has been let to Foley, Welsh & Stewart, for the first 100 miles of the line from Prince Rupert easterly. (Mar., pg. 197).

Traffic on the Middleton and Victoria Beach line of the Halifax and Southwestern Ry. was reopened Mar. 9, after having been suspended for several weeks.

Railway Finance, Meetings, etc.

Buffalo and Lake Huron Ry.—The report of the directors for the half-year ended Dec. 31, 1907, sets forth that after providing for the interest on the first and second mortgage bonds the available balance will be £14,598 1s. 9d., which will enable the directors to pay the usual dividend of 5s. 3d. per share, and leave a balance of £813 8s. 6d. to be carried forward to the next account. Dividend warrants were posted Mar. 4. The company's line is leased to the G.T.R. for £70,000 a year, and the company also owns stock and bonds of the face value of £13,524 9s. 4d., which cost £8,122 7s. 2d. The stocks and bonds outstanding are: 52,513 ordinary shares of £10 each, £525,130; first mortgage 5½% bonds, £297,600; and second mortgage 5½% bonds, £466,158. The expenses, including rent of offices and directors' remuneration, amount to £544 17s. 3d. for the half-year.

Canadian Pacific Ry.—The directors recently sold on the London, Eng., market £2,000,000 of 4% debenture stock at over par, the price realized being very slightly lower than that realized by the Dominion Government for its recently floated loan.

Canadian Railways Finance Co.—The public inquiry into the formation and failure of this company, which was formed in London, Eng., for the purpose of financing the construction of the Hudson's Bay and Pacific Ry., has been closed. (June, 1907, pg. 407).

Consolidated Lake Superior Co.—Judgment has been handed out in the Chancery Court of New Jersey, to the effect that the right to vote upon \$5,000,000 of shares hypothecated with Philadelphia bankers, rests with the bankers and not with the Canadian Improvement Co. The bankers desired to vote on the stock at the annual meeting called for Nov., 1907, but were restrained by an injunction and the meeting was adjourned until the question was settled.

The annual meeting has been adjourned from time to time, the last adjournment fixing Mar. 18 as the day.

Press reports state that the earnings of the company for the half-year ended Dec. 31, 1907, show \$741,066 net, and that the interest and charges for the same period were \$214,000, leaving a surplus of \$526,000.

The annual meeting of the stockholders, which had been adjourned to Mar. 18, was further adjourned to April 6.

Crow's Nest Coal Co.—The report of the directors for 1907 shows net profits of \$382,986.28, an increase of \$31,195 over 1906. Adding to this the \$353,592.42 at credit of profit and loss; and \$324,420 premiums on new stock, made a total of \$1,060,998.70, from which there had been paid four quarterly dividends of 2½%, \$355,178.98; there had been transferred to reserve \$324,420, leaving \$381,399.72 at the credit of profit and loss. During the year the company spent on improvements \$414,501 on the coal interests; \$21,735.56 on the electric light company, and \$57,581.82 on the Morrissey, Fernie and Michel Ry. Following are the officers and directors for the current year: President, G. G. S. Lindsey, Toronto; First-Vice-President, Hon. R. Jaffray, Toronto; Second Vice-President, Sir H. M. Pellatt, Toronto; Treasurer, E. R. Wood, Toronto; other directors, E. C. Whitney, H. B. McGiverin, Ottawa; Col. W. P. Clough, New York; J. P. Graves, Spokane, Wash.; E. Rogers, Toronto.

Delaware and Hudson Co.—An injunction has been obtained in the New York Courts restraining the company from paying the quarterly dividend of 2¼% due Mar. 16. It is contended by the interests obtaining the injunction that the dividend has not been earned.

Dominion Atlantic Ry.—The annual meeting for the election of directors and the

transaction of other business was announced to be held in London, Eng., Mar. 27.

Duluth, Rainy Lake and Winnipeg Ry.—Gross earnings for 1907, \$403,229; operating expenses, \$255,232; net earnings, \$147,997; against \$336,878 gross; \$200,616 operating expenses, and \$136,262 net earnings for 1906. Under the interstate commerce commission accounting system, adopted by this company on August 1, 1907, \$11,398 was charged in operating expenses to cover depreciation of equipment during the last five months of the year. The average main line mileage in operation during both 1906 and 1907 was 48 miles.

Grand Trunk Pacific Ry.—The subscription list for an issue of £2,000,000 of 4% mortgage bonds, at 94½, closed in London, Mar. 18. Press reports state that the public only took about £200,000 of the issue, leaving the underwriters to take up the remaining £1,800,000.

Grand Trunk Ry.—The issue of £1,000,000 4% guaranteed stock on the London, Eng., market has been over subscribed, at 92½.

Halifax and Southwestern Ry.—Questions in the Nova Scotia Legislature resulted in the following statement being made by the Government recently: The amounts advanced to the company on account of railway construction were as follows: Halifax to Barrington Passage, \$2,795,376.23. Barrington Passage to Yarmouth, \$675,000; Victoria Beach Ry., \$400,000. Central Ry., \$425,000. In respect to the Liverpool and Milton Ry. it was proposed to treat that road as a part of the main line from Halifax to Yarmouth. Caledonia branch, \$299,700. The mileage of each of said railways was as follows: Halifax to Barrington Passage, 196.5 miles. Barrington Passage to Yarmouth, 502 miles. Victoria Beach Ry., 40 miles. Central Railway, 61.8 miles, Liverpool and Milton, 5.3 miles, Caledonia branch, 22.2 miles. The following were the liabilities of the Province on account of said undertakings still unpaid: Halifax to Barrington Passage, \$71,652.02, Liverpool and Milton Ry., \$71,550.00. The amount of interest to be added to the principal of mortgage under chap. 11, acts of 1907, was \$214,258.27. An agreement was made under the said act Dec. 27, 1906. The total amount of principal of said mortgage was \$4,738,258.27. The amount of interest accrued to Sept. 30, 1907, which had been paid by the company, was \$111,847.73. No interest paid by the company had been refunded.

Klondike Mines Ry.—Under the terms of a deed of mortgage dated July 29, 1905, the company has appointed Sir W. L. Young, Bart., London, Eng., as a trustee in room of J. Carlise, who has resigned. The other trustee under the deed is R. A. Lawther, of Lawther, Lutta & Co., shipowners, London.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—The directors announced Mar. 16, a dividend at the rate of 6% on the common stock. Heretofore the company has been paying a 4% dividend on its common stock.

Morrissey, Fernie and Michel Ry.—The annual meeting has been called to be held in Toronto April 6. See also Crow's Nest Coal Co.

Nova Scotia Southern Ry.—Replying to questions in the Nova Scotia Legislature recently, the Premier said there were a number of unpaid claims due by this company for labor and materials for the construction of the line between Shelburne and New Germany—a large portion being for the construction of that portion now in operation as the Caledonia branch of the Halifax and Southwestern Ry. The Province was not under legal obligation to pay the claims, but he considered it equitable to protect the creditors against loss, and it was arranged that if the Halifax and Southwestern Ry. should buy out the rights of the N.S.S. Ry.,

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it could utilize whatever portion of the line found advisable, provided it paid all liabilities of the old company for work and material in connection with the actual construction of the railway. These claims were made a charge against the advances to the H. and S.W.R., and were deducted from such advances. As a portion of the line of the H. and S.W.R. covered a portion of the same ground as that of the N.S.S. Ry. the Government informed the H. and S.W.R. Co. that if a reasonable agreement was made it would be approved, but that all claims in connection with the road for labor and material over the whole line would have to be paid for whether the new line followed the exact location of the old one or not.

Quebec Central Ry.—Gross earnings for Jan., \$68,782.16; expenditure, \$56,653.06; net earnings, \$12,129.10; against \$54,784.16 gross earnings; \$44,358.10 expenditure, and \$10,426.06 net earnings for Jan., 1907.

Temiscouata Ry.—Payment of interest at the rate of 1½% has been made on the consolidated mortgage income bonds.

At a shareholders' meeting in London, Eng., Mar. 11, the proposal to transfer the head office to that city was criticized. During the course of his remarks, the Chairman said that the railway was now in a fair way to do better financially than formerly, as it was a means of approach to a valuable pulp area.

Traffic receipts for Jan., \$3,922.23 from passengers, \$11,894.02 from freight and stock, \$827.66 from mails and sundries, \$16,643.91 total, against \$12,374.60 total for Jan., 1907.

Temiskaming and Northern Ontario Ry.—The annual statement for 1907 shows receipts as follows: Cash on hand Dec. 31, 1906, \$152.81; Ontario treasurer, \$2,429,329.15; accounts collectible, \$5,660.02; ditto, operation, \$134,863.37; townsite sales and mining bonuses, \$25,000.00; deposits on contracts, \$15,500.00; interest, \$225.07; unclaimed wages, \$442.60; miscellaneous, \$6,767.19; total, \$2,617,940.21; disbursements, total, \$2,617,484.70; and cash on hand Dec. 31, 1907, \$455.51.

Montreal press reports to the effect that F. W. Morse, Vice-President and General Manager G.T. Pacific Ry., and the Chairman of the T. and N. O. Ry. Commission, had arranged the terms for a lease of the Ontario Government railway to the G.T.P. Ry., is denied by Mr. Englehart, and by the Treasurer of Ontario. The Premier of Ontario subsequently stated that it was not the intention of the Government to give up control of the railway.

The Treasurer of Ontario, in his budget speech Mar. 20, stated that in all \$2,837,000 had been advanced by the Treasury to the Commission towards the construction of this railway. The net earnings for the year had been more than sufficient to pay the interest on the sinking fund on the portion of the line in operation, as well as to pay interest on the Canadian loan of \$3,000,000. During 1907, over 518,000 passengers had been carried, the number carried one mile being 16,333,000, not one of whom had been maimed or injured.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—See Victoria Terminal Ry. and Ferry Co.

Victoria Terminal Ry. and Ferry Co.—The Board of Railway Commissioners, it was announced, would be asked Mar. 30 to sanction an agreement selling the line of the V.T. Ry. and Ferry Co. to the Vancouver, Victoria and Eastern Ry. and Navigation Co. The line to be transferred consists of what is described as the third section of the undertaking, viz., the railway from the ferry landing at Port Guichon to Cloverdale, B.C., 18.38 miles, and a branch from near Mud Bay, now under construction, in a generally south-

easterly direction to the International boundary line near Blaine, Wash. The transfer of this line, together with the previous transfer of the line of the Vancouver, Westminster and Yukon Ry. between New Westminster and Vancouver, consolidates the several Great Northern Ry. lines in the vicinity of Vancouver under the title of the Vancouver, Victoria and Eastern Ry. and Navigation Co. The G.N.R. Co.'s other line, the New Westminster Southern Ry., it is understood, is to be practically abandoned on the completion of the new line referred to as under construction to Blaine.

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

Atlantic Division Shops.—Press reports state that the company has secured an option on an area of land at Aroostook Jct., on which it is proposed to erect machine shops. It is also reported that the shops now being operated at Woodstock, N.B., will be closed.

Guelph and Goderich Ry.—The work on the branch from Linwood to Listowel, Ont., is being proceeded with, and it is expected that the 3½ miles of track remaining to be laid will be completed at an early date.

St. Mary's and Western Ontario Ry.—A deputation from Arkona waited on the directors and engineers at St. Mary's, Feb. 25, with a view of securing the location of the line through that place. On Mar. 3, one of the company's engineering staff visited the Parkhill and Arkona district with a view of seeing if a practicable route could be obtained, and what advantages it would offer over that already surveyed. The surveys at present in progress between Exeter and Sarnia follow a route from Exeter to the Ausable River, about a mile north of the G.T.R. crossing of the river. From that point the line runs directly into Thedford and thence to Forest, along the north side of the G.T.R., the fence only separating the two lines. Reaching Forest the line leaves the G.T.R., and goes along the northern outskirts of the town near the flax mill, and thence to Blackwell. It is proposed to locate the station in Forest near the carpet factory.

Walkerton and Lucknow Ry.—The trestle bridge across the river at Walkerton, Ont., has been completed, but it is alleged that its construction is not in accordance with the plans agreed upon between the company and the town council. The latter body brought the matter before the Board of Railway Commissioners, and one of the Commissioners' engineers inspected the bridge Mar. 4, with the object of ascertaining if the bridge as erected was likely to cause an obstruction in the river. The grading of the entire line has been completed, with the exception of some small fills near the station. It is expected that the steel will be laid and the ballasting completed during April.

Manitoba and Northwestern Ry.—Preparations are being made for an early start at the work of completing the construction of the extension from Sheho to Lanigan, Sask. Ballasting of the recently completed line between Lanigan and Saskatoon will be started April 15. Lanigan is the point of junction with the Pheasant Hills branch from Kirkella, Man., and a train service is being operated between Winnipeg and Saskatoon by this route. Grading will be started at an early date on the projected line from Sheho to Prince Albert, Sask., but it is not expected that it will be finished this season. West of Saskatoon it is intended to push grading during the year as far as Battle river, at which point a bridge will have to be constructed to enable the line to effect a junction with the Wetaskiwin

branch of the Calgary and Edmonton Ry., already in operation from Wetaskiwin to Hardisty, Alta.

The Alberta Irrigation Works.—J. S. Dennis, Superintendent of Irrigation, and B.C. Land Commissioner, Calgary, Alta., in an interview at Montreal recently, said the area of land within the irrigation belt was about 3,000,000 acres, of which about 450,000 acres had been sold for settlement purposes. The price of irrigated lands ran up to \$25 an acre, and of non-irrigated lands from \$8 to \$15 an acre. There were at present east of Calgary 350 miles of irrigation canals, and it is expected that an additional 200 or 300 miles of canals will be cut this year. When the whole work is completed there will be about 3,000 miles of these irrigation canals.

Greenwood, B.C.—Trestle filling has been going on for some time on the line between Greenwood and Castlegar, B.C. There are seven trestles in all between these points to be filled in. At the cascade trestle about 400,000 cubic yards of material has already been put in, and it is expected that the work will be completed early in May. Some improvement is to be made in the gradients and curvature, and in connection with this the Mother Lode branch at Greenwood is to be partially reconstructed. C. S. Moss, Resident Engineer, was in Greenwood Mar. 3, and stated that the object of the revision was to cut out a couple of trestles and to reduce the gradient. Work would start early in April, and the new piece of line would be completed in a couple of months.

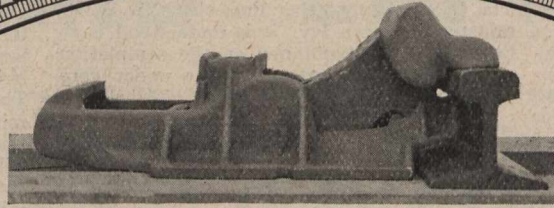
Minneapolis, St. Paul and Sault Ste. Marie Ry.—T. Greene, Chief Engineer, is quoted as having stated that grading on the line from Brooten to Duluth, Minn., 187 miles, has been suspended indefinitely. Track was laid in 1907 from Brooten to the Mississippi River, 50 miles, and grading has been completed to Onamia, 89 miles from Brooten, thus leaving 137 miles of track to be laid and 98 miles of grading to be completed. Foley Brothers, Larson & Co., of St. Paul, are contractors for the grading and Roberts Brothers of Chicago are contractors for the tracklaying. He also stated that there was no foundation for the recent press reports that the company intended to extend its lines to Spokane, Wash.

Lines in Washington Territory.—A press report from Seattle, Wash., says: "Definite announcement of the purpose of the C.P.R. to construct a railroad from Vancouver to Seattle is expected to be issued from the headquarters of the company at Montreal in a few days," and press reports from Spokane, state that it is reported there that "the right-of-way of the North Coast Ry. has been acquired by the C.P.R., and that the formal transfer will be made in a few days, when the plans will be disclosed. The purpose is to operate it in connection with the Spokane International Rd., which is used by the C.P.R. from the International boundary to Spokane." D. C. Corbin, President of the Spokane International Rd., is quoted as having stated that he had not heard anything official of the proposed acquisition, and we are advised by C.P.R. officers that there is no truth in the reports that the C.P.R. had secured the right-of-way of the North Coast Ry., and that it was intended to construct a line from the company's Crow's Nest Pass line to Eastport, Idaho, in connection with the project. (Mar., pg. 197.)

During Jan., 29 railway employes were killed and 26 injured in Canada. Of the fatalities, 9 were due to explosions, 5 to being run over, 4 to collisions, 3 to being struck by cars, 2 each to derailments, caught between cars, fires, and 1 each to falls, and falling materials



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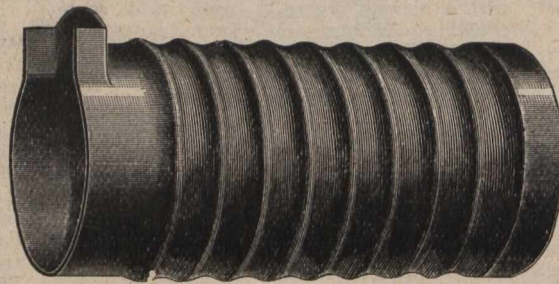
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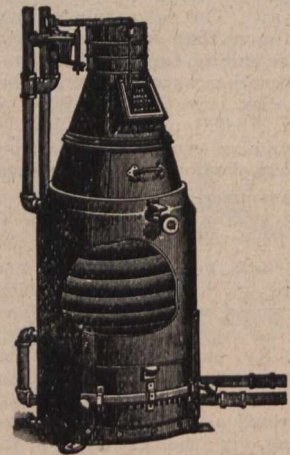
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TORONTO, CANADA, APRIL, 1908

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Alphabetical List of Advertisers.

	PAGE
Abbott, W., Montreal.....	302
Alexander Car Replacer Mfg. Co., Scranton, Pa. 292	
Am. Brake Shoe & Foundry Co., Mahwah, N.J. 268	
Babcock & Wilcox (Ltd.), Montreal.....	304
Baker, Wm. C., Heating & Supply Co., New York 266	
Baldwin Steel Co., New York City.....	248
Banwell-Hoxie Wire Fence Co., Ltd., Hamilton. 282	
Beatty, M., & Sons, Ltd., Welland, Ont.....	302
Bechtels Limited, Waterloo, Ont.....	302
Belle City Malleable Iron Co., Racine, Wis.....	302
Bliss Electric Car Lighting Co., Milwaukee, Wis. Cover 1	
Bowser, S. F., & Co., Limited, Toronto.....	272
Bradstreet Company.....	286
Brown Hoisting Machinery Co., Cleveland, O. 240	
Burnham, Williams & Co., Philadelphia, Pa. 258	
Burrows,—Acton Burrows, Limited.....	Cover 1
Butterfield & Co., Rock Island, Que.....	292
Canada Car Co., Ltd., Montreal.....	Cover 2
Canada Foundry Co., Ltd., Toronto.....	252
Canadian Bridge Co., Ltd., Walkerville, Ont. 290	
Canadian Bronze Co., Ltd., Montreal.....	298
Canadian Fairbanks Co., Ltd., Montreal.....	236
Canadian Gold Car Heating & Lighting Co., Ltd., Montreal.....	262
Canadian Iron & Foundry Co., Ltd., Montreal 262	
Canadian Locomotive Co., Ltd., Kingston... 260	
Canadian Northern Railway.....	260
Canadian Office & School Furniture Co., Ltd. Preston.....	296
Canadian Oil Co., Ltd., Toronto.....	262
Canadian Pacific Railway Land Department... 282	
Canadian Railway Accident Insurance Co. Cover 1	
Canadian Westinghouse Co., Ltd., Hamilton. Cover 2	
Central Rd. of New Jersey.....	300
Chicago Ry. Equipment Co., Chicago, Ill. 300	
Clark Automatic Nut Lock Co., Montreal... 284	
Coghlin, B. J., & Co., Montreal.....	302
Consolidated Ry. Elec. Ltg. & Equip. Co., N.Y. Cov. 1	
Confidential Iron Works, New York.....	266
Crossen Car Mfg. Co., of Cobourg, Ltd., Cobourg 264	
Date, John, Montreal.....	290
Delaware and Hudson Co.....	298
Dominion Bridge Co., Ltd., Montreal.....	290
Dominion Car & Foundry Co., Ltd., Montreal. Cover 4	
Dominion Iron & Steel Co., Ltd., Sydney, N.S. 256	
Dominion Wire Rope Co., Ltd., Montreal.....	248
Drewry, E. L., Winnipeg, Man.....	292
Drummond, McCall & Co., Montreal.....	270
Duner Co., Chicago, Ill.....	302
Edwards, O. M., Co., Syracuse, N.Y.....	284
Falls Hollow Staybolt Co., Cuyahoga Falls, O. 290	
Farlow Draft Gear Co. Baltimore Md.....	278
Firth, Thos., & Sons, Sheffield, Eng.....	298
Flannery Bolt Co., Pittsburg, Pa.....	268
Foster, James, Toronto.....	294
Fullerton Lumber & Shingle Co., Vancouver, B.C. 300	
Galena Signal Oil Co., Franklin, Pa.....	PAGE 230
Gardner, J. T., Chicago.....	292
Gartshore, J. J., Toronto.....	290
Gartshore-Thomson Pipe & Foundry Co., Ltd. 290	
Goold, Shapley & Muir Co., Ltd., Brantford, Ont 278	
Grand Trunk Railway.....	264
Greening, The B., Wire Co., Ltd., Hamilton, Ont. 298	
Hamilton Steel & Iron Co., Hamilton, Ont.....	242
Hart-Otis Car Co., Ltd., Montreal.....	238
Hayes Track Appliance Co., Geneva, N.Y.....	266
Holden, N. J. Co., Montreal.....	274
Hopkins, F. H., & Co., Montreal.....	238
Hotel Cadillac, Detroit, Mich.....	Cover 1
Hudson's Bay Company.....	260
Hunt, Robert W., & Co., Montreal.....	296
Hunter-Rose Co., Ltd., Toronto.....	296
Hutton, James, & Co., Montreal.....	302
Illinois Central Railroad.....	298
Imperial Bank of Canada.....	296
Intercolonial Railway.....	272
International Correspondence Schools.....	246
International Marine Signal Co., Ottawa.....	288
International Mercantile Marine Co.....	286
Jessop, Wm., & Sons Ltd., Sheffield, Eng.....	292
Kelson, The W. H., Co., Montreal.....	302
Kerr Engine Co. Ltd., Walkerville, Ont.....	284
Kilgore-Peteler Co., Minneapolis, Minn.....	294
Knowlton, W. H., Toronto.....	302
Latrobe Steel & Coupler Co., Philadelphia, Pa. 294	
Lewis, Rice, & Sons, Toronto.....	270
Lima Locomotive & Machine Co., Lima, Ohio 284	
Mail Job Printing Co., Ltd., Toronto.....	292
McCaskill, Dougall & Co., Montreal.....	254
McConway & Torley Co., Pittsburgh, Pa.....	Cover 1
McCord & Co., Chicago, Ill.....	242
McDougal John, Caledonian Iron Wks Co., Ltd. 296	
McGregor-Banwell Fence Co., Ltd., Walkerville. 280	
Metcalfe, John S., Co., Chicago, Ill.....	282
Midland Tow'g & Wreck'g Co., Ltd., Midland, Ont. 300	
Modoc Soap Co., Philadelphia, Pa.....	302
Montreal Locomotive Works, Ltd., Montreal... 234	
Montreal Steel Works, Ltd., Montreal.....	274
Mussens Limited, Montreal.....	Cover 1 and 232
National Malleable Castings Co., Cleveland, O. Cover 1	
Norton, A. O., Coaticook, Que.....	250
O'Connor, J. J., Port Arthur, Ont.....	294
Ontario Wind Engine and Pump Co., Toronto. 288	
Orford Copper Co., New York.....	270
Owen Sound Wire Fence Co., Ltd., Owen Sound. 294	
Page Wire Fence Co., Ltd., Walkerville, Ont.....	258
Phillips, Eugene F., Electrical Works, Ltd. 288	
Piper, The Hiram L., Co., Ltd., Montreal.....	302
Piper, N. L., Railway Supply Co., Ltd., Toronto. 276	
Polson Iron Works, Ltd., Toronto.....	240
Porter, H. K., Co., Pittsburg, Pa.....	254
Positive Lock Washer Co., Ltd., Newark, N.J. 302	
Preston Car & Coach Co., Ltd., Preston, Ont. 298	
Prowse, G. R., Montreal.....	258
Pyke, J. W., & Co., Montreal.....	258
Pyle National Electric Headlight Co., Chicago. 246	
Rail Joint Co., of Canada, Ltd. Cover 1 and 250	
Railway Materials Co., New York.....	Cover 1
Rhodes, Curry & Co., Ltd., Amherst, N.S.....	244
Robb Engineering Co., Ltd., Amherst, N.S.....	244
St. Thomas Brass Co., Ltd., St. Thomas, Ont... 268	
Safety Car Heating & Lighting Co., New York. 256	
Simplex Railway Appliance Co., Ltd.....	Cover 4
Smart, James, Mfg. Co., Ltd., Brockville, Ont.....	Cover 1
Standard Coupler Co., New York City.....	Cover 1
Standard Explosives, Limited, Montreal.....	264
Standard Steel Works, Philadelphia, Pa.....	258
Steel Concrete Co., Ltd., Montreal.....	272
Submarine Signal Co., Boston, Mass.....	286
Taylor & Arnold, Montreal.....	292
Toronto Bolt and Forging Co., Ltd., Toronto. 280	
Toronto Pressed Steel Co., Ltd., Toronto.....	276
Valentine & Sons Publishing Co., Montreal... 252	
Vulcan Iron Works, Wilkes-Barre, Pa.....	300
Washburn Steel Castings & Coupler Co., The. 274	
Wire & Cable Co., Montreal.....	Cover 1
Wolfe Brush Co., Pittsburg, Pa.....	296
Woodman, R. Mfg. and Supply Co., Boston, Mass. 298	

Wages on Public Works and Railway Construction.—Two bills are under consideration at the current session of the Dominion Parliament affecting the payment of wages. The first proposes to establish an eight-hour day on all classes of public works, and for the voiding of all contracts in which the provisions of the act are not complied with. The second provides for an amendment of the Railway Act, chap. 37, Revised Statutes, sec. 259, by the addition of words bringing "all workmen, day laborers or other persons employed by the said company in the operation of the railway," within its operation, and providing further that no part of the wages earned shall be retained by the company for any reason, and that wages shall be paid at intervals of not more than two weeks.

The Imperial Privy Council has granted special leave for an appeal to be taken by the G.T.R. Co. in what is known as the penny fares case.

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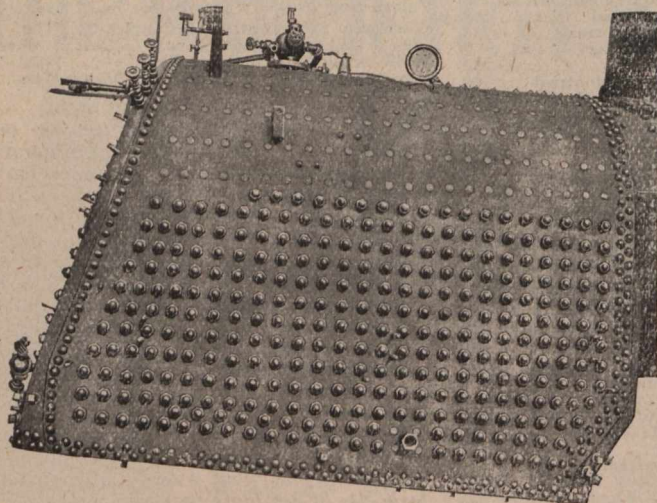
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Railway Rolling Stock Notes.

The Reid Newfoundland Co. is reported to have ordered two locomotives for its railway.

The Canada Car Co., Montreal, has received an order from the Hart-Otis Car Co., Montreal, for 20 ballast cars and one spreader car.

The Intercolonial Ry. between Feb. 14 and Mar. 14 ordered fifty 30-ton box cars from the Crossen Car Mfg. Co., Ltd., Cobourg, Ont.

The Canada Foundry Co., Toronto, between Feb. 14 and Mar. 14, delivered 9 consolidation locomotives to the Canadian Northern Ry.

The Canadian Locomotive Co., Kingston, Ont., between Feb. 15 and Mar. 14, delivered seven consolidation locomotives to the Intercolonial Ry.

The G.T.R. between Jan. 11 and Mar. 7 received the following additions to rolling stock: 8 caboose cars, 3 first-class coaches, 4 steel tank cars.

The Crossen Car Mfg. Co, Cobourg, Ont., during March, shipped a number of box cars to the Intercolonial Ry., on the order for 400 recently placed.

The Montreal Locomotive Works has ready for delivery fourteen 97½ ton Canadian Northern Ry. locomotives, and has delivered two 114-ton locomotives to the Intercolonial Ry.

The Dominion Coal Co. has added to its equipment one locomotive for the Sydney and Louisburg Ry., and one switching locomotive and a steam shovel for the banking station.

The C.P.R. between Feb. 17 and Mar. 19 placed the following orders for rolling stock: 1 colonist car, 1 baggage and express car, 1 baggage and mail car, and 3 ballast trimmers, at its Angus, Montreal, shops.

The Dominion Car and Foundry Co., Montreal, during Jan. and Feb., delivered 7 freight car underframes to the Montreal St. Ry.; 196 30-ton box car underframes to the Quebec, Montreal and Southern Ry.; 184 50-ton Otis type dump cars, and 54 steel ore cars to the C.P.R.

A press report states that the first of the G.T. Pacific Ry.'s private cars was out for a trial run recently. It has been built at the G.T.R. Point St. Charles shops, Montreal, for F. W. Morse, Vice-President and General Manager G.T. Pacific Ry., and has been named "Transcontinental."

The C.P.R. between Feb. 17 and Mar. 19 received the following additions to rolling stock: 11 first-class cars, 104 stock cars, 55 box cars, 95 flat cars, 5 colonist cars, 3 locomotives, Pacific type, from its Angus, Montreal, shops; and 79 steel coal cars and 54 steel ore cars from the Dominion Car and Foundry Co., Montreal.

A daily press report refers to the C.P.R. Angus shops at Montreal as having been partially shut down for some time past. We are officially advised that this is incorrect. The passenger car construction and repair shops have been working throughout the winter at their full capacity, and while there has been a slight decrease in the rate of locomotive building the locomotive repair shop has been exceedingly busy. There has been

a slight reduction in the number of freight cars turned out, but there has been no shut down in this department.

The Inverness Ry. and Coal Co. has ordered from Rhodes, Curry & Co., Amherst, N.S., 50 twin hopper cars, 30 tons capacity. Following are chief dimensions, etc.:

Length over end sill.....	30 ft. 6 ins.
Width over side sill.....	7 ft. 9 ins.
Height from rail to top of body.....	9 ft. 11 ins.
Trucks.....	swing beam.
Brake beams.....	wood.
Air brakes.....	Westinghouse.

The Montreal Locomotive Works is building for the M.P. & J. T. Davis Co. two locomotives. Following are the chief details:

Cylinders.....	15 by 24
Driving wheels.....	44 ins.
Boiler.....	49 ins. diam.
Boiler pressure.....	160 lbs.
Firebox.....	72 ins. long by 33½ ins. wide.
Weight, in working order.....	76,000 lbs.
Maximum tractive power.....	16,700 lbs.
Capacity—water.....	1,125 gals.
coal.....	1 ton.

The Intercolonial Ry., between Feb. 20 and Mar. 21, received the following additions to rolling stock: 219 box cars, 80,000 lbs. capacity; 93 platform cars, 80,000 lbs. capacity, and 17 refrigerator cars, 60,000 lbs. capacity, from Rhodes, Curry & Co., Amherst, N.S.; 109 box cars, 60,000 lbs. capacity, from the Crossen Car Mfg. Co., Cobourg, Ont.; 25 stock cars, 60,000 lbs. capacity, from the Canada Car Co., Montreal; and a further 30 platform cars, 80,000 lbs. capacity; and nine consolidation locomotives, from the Canadian Locomotive Co., Kingston, Ont.

Following are details of the C.P.R. pile driver noted in our March issue:

Wheel base of car.....	36 ft. 4 ins.
truck.....	5 ft. 3 ins.
Distance at either side from centre at which a pile can be driven.....	17 ft. 2 ins.
Distance in front of leading wheels, etc., 16 ft. 7 ins.	
Trucks.....	steel.
Body.....	wood.
Journal bearings.....	4¼ x 8 ins.
Height of leaders, rail to cross-piece on top, 42 ft.	
Hoisting engine.....	double cylinder.
No. of rope drums.....	2
Width of car over sills.....	9 ft. 10 ins.
Length.....	45 ft.
Wheels.....	six 33 ins. diam., cast iron, and two 34 ins. diam., steel tyred.
Height from rail to top of car body.....	4 ft. 0½ ins.

Following are general dimensions and particulars of the two switching engines, which the C.P.R. is building at its Angus, Montreal, shops for delivery in June, and which have already been noted in our columns. A diagram of these locomotives is given on this page.

Weight on drivers.....	126,000 lbs.
Total weight.....	126,000 lbs.
Diam. of cylinders.....	18 ins.
Stroke of pistons.....	26 ins.
Diam. of drivers.....	52 ins.
Type of boiler.....	radial stayed, wagon top.
Working pressure.....	200 lbs.
Heating surface, flues.....	1,406 sq ft.
" firebox.....	138 sq ft.
Tubes, number.....	234.
" outside diam.....	2 ins.

Tubes, length.....	11 ft. 6 ins.
Firebox, length.....	8 ft. 0½ ins.
width.....	3 ft. 7 ins.
Grate area.....	29 sq. ft.
Tank capacity.....	3,50 imp. gals.
Coal capacity.....	6 tons.
Air brakes.....	Westinghouse.
Brake beams.....	Simplex.
Couplers.....	Tower.

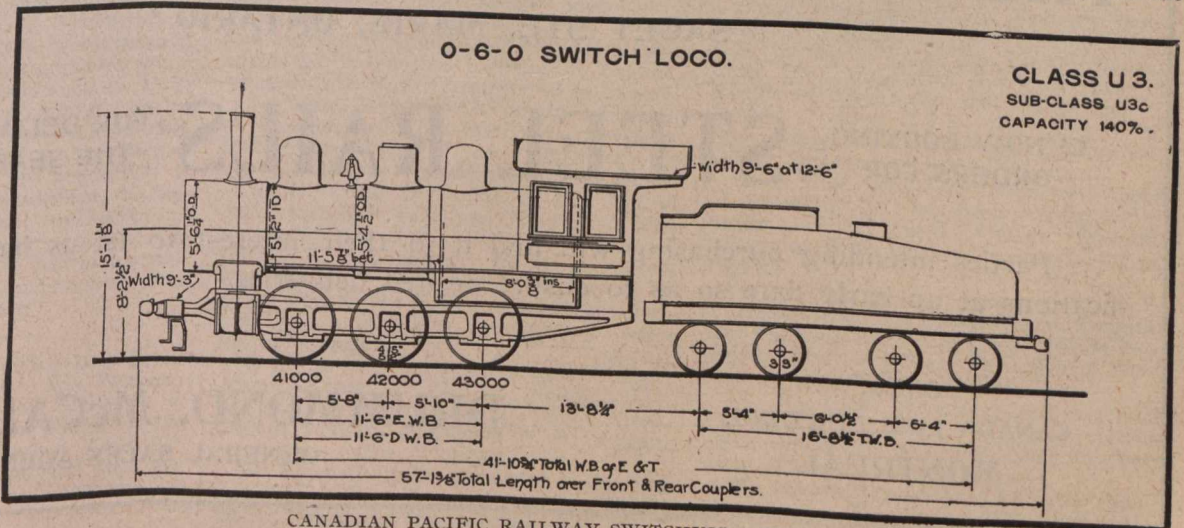
Following are the chief dimensions and special equipment of various rolling stock ordered by the C.P.R., and already noted in our Feb. and Mar. issues:

1 sleeping car.....	72 ft. 2 ins. by 9 ft. 10½ ins.
2 tourist cars.....	72 ft. by 9 ft. 10½ ins.
2 first-class cars, with smoking room.....	72 ft. by 9 ft. 10½ ins.
1 colonist car.....	67 ft. by 9 ft. 10½ ins.
1 baggage car.....	60 ft. by 9 ft. 10½ ins.
2 mail and express cars.....	60 ft. by 9 ft. 10½ ins.
6 mail cars.....	60 ft. by 9 ft. 10½ ins.
3 baggage and smoking cars.....	65 ft. by 9 ft. 10½ ins.
Special Equipment:	
Axles.....	5 x 9 ins., M.C.B.
Bolsters.....	double.
Brake beams.....	Simplex.
Air brakes.....	Westinghouse.
Couplers.....	Tower, passenger.
Heating.....	Gold system.
Journal boxes.....	McCord.
Lighting.....	Pintsch gas.
Platforms.....	Standard Coupler Co.
Wheels.....	36¼ ins., steel tyred.

84 box cars.....	36 ft. 8 ins. by 9 ft. 0½ ins.
4 freight refrigerators.....	41 ft. by 9 ft. 1½ ins.
22 30-ton stock cars.....	36 ft. 8 ins. by 9 ft. 5 ins.
162 30-ton flat cars.....	3 ft. 8 ins. by 8 ft. 10 ins.
2 Hart convertible cars.....	36 ft. 8 ins. by 8 ft. 10 ins.
12 vans.....	29 ft. by 9 ft.
Special Equipment:	
Axles.....	4¼ x 8 ins., M.C.B.
" for refrig. cars and Hart cars, 5 x 9 ins. M.C.B.	
Bolsters and brake beams.....	Simplex.
Sidebearings.....	Susemihl.
Brakes.....	Westinghouse.
Couplers.....	Tower.
Journal boxes.....	McCord.
Wheels.....	33 ins. cast iron.

Dominion Railways and Canals.

The Minister of Railways and Canals in speaking in the House of Commons Mar. 3, detailing the work of his Department for the year, said the canal systems of Canada had cost the country about \$120,000,000. The traffic on the St. Lawrence canals was not so large as had been hoped, while that on the Sault Ste. Marie canal had reached 12,000,000 tons, or two-thirds of the capacity of the canal. Of the total cost of the canals there had been expended upon the Welland canal about \$31,000,000, including the cost of the 800,000 bush. elevator at Port Colborne, which would be ready for use this season. He was not yet decided as to whether it would be better for the Government to control the elevator absolutely or to lease it to private parties. Up to the present it had to be admitted that Government management of elevators had not been successful. The enlargement of the Welland canal had been proposed, and one



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authority had figured it out that grain could be carried, if the canal were deepened to 21 ft., from Fort William to Montreal, with only one transhipment at Kingston or Brockville, at 3 2-8 cents a bush., or an advantage of 1/8 cent below the cost on the deepened Erie canal route. If that advantage could be gained the proposal to deepen the canal would be worth talking about. After pointing out that in connection with the construction of the Trent Valley canal the Government was endeavoring as far as possible to develop the water powers as the work progressed; touching on the progress of work on the new transcontinental railway, and declaring that the Government policy with regard to the rebuilding of the Quebec Bridge would be declared at a later date, the Minister proceeded to deal with the Intercolonial Ry. For the financial year ended Mar. 31, 1907, a period of nine months, the receipts were: Passenger earnings, \$1,952,438; freight earnings, \$4,032,745; mail and express, \$235,039; miscellaneous, \$28,087; total, \$6,248,311; and the expenditures were: Maintenance of way and structures, \$1,111,888; maintenance of equipment, \$1,180,521; conducting transportation, \$3,485,224; general expenses, \$147,537; rental of leased lines, \$105,000; total, \$6,030,171; leaving net earnings of \$218,139. For the 12 months ended June 30, 1907, the receipts were \$8,599,119, and the expenses \$8,202,064, leaving net earnings of \$397,054; while for the nine months ended Dec. 31, 1907, the receipts were \$7,169,469, and the expenditures \$6,790,444, leaving net earnings of \$379,024. It was not expected that when the accounts of the last quarter were made up to Mar. 31, that the net earnings would be so large as at the end of Dec. With regard to betterments it was the policy of the Department to take from revenue \$25,000 a month and credit it to what might be called the betterment fund, and it was hoped shortly to have transferred an amount sufficient to pay all that was required in that regard. The Intercolonial Ry. had 8,291 employes, of whom 63% were members of unions.

Referring to the future the Minister said the question of the management of the line by a Commission had been suggested. The question was open to discussion, but he was personally of opinion that the commission to manage the Intercolonial should be limited to one. The eastern terminus of the new transcontinental railway would be at Moncton, and the traffic it brought must be got to the seaboard. It might, therefore, be necessary, if the Intercolonial was to take charge of the transcontinental business, to construct a second track from Moncton to Halifax, and to make arrangements for a better service from Moncton to Western points. At present, he believed, they had fulfilled all the conditions of Confederation, and if a second track had to be constructed he would endeavor to get a straighter route, around the Cobequid mountains, to Halifax, and to have a lower gradient. As to the acquisition of local railways for branches of the Intercolonial Ry., if he came across a branch line anywhere, the acquisition of which would tend to contribute to the I.C.R. traffic, he would not hesitate to acquire it upon the favorable report of the Departmental officials. He had in his possession a report which would indicate that there were such branch lines.

A recent press report stated that F. H. McGuigan, formerly Fourth Vice-President G.T.R., had been appointed arbitrator in some proceedings in which the C.P.R. and the New York Central and Hudson River Rd. were interested. We are advised that the C.P.R. management has no knowledge of any such arbitration.

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. Any of our readers who may notice any error in our announcements will confer a favor by advising us.

Canadian Northern Express and Telegraph Companies.—Scott Griffin, heretofore Superintendent of territory west of Port Arthur, with headquarters at Winnipeg, has been appointed Manager of these companies. Office, Toronto.

W. C. Muir, heretofore Superintendent territory east of Port Arthur, Ont., with headquarters at Toronto, has been appointed Superintendent of territory west of Port Arthur, Ont., vice Scott Griffin, promoted. We are advised that the auditing of express and telegraph accounts for the territory west of Port Arthur, which has been performed by the Canadian Northern Ry. Auditor at Winnipeg since Mr. Muir, who was formerly Auditor of the Express Co. at Winnipeg, was transferred to Toronto, will be again placed under his charge.

Canadian Northern Ry.—A. E. Warren, heretofore chief clerk to General Manager, has been appointed Superintendent District 2. Office, Winnipeg.

Canadian Northern Quebec Ry.—Consequent on the Quebec and Lake St. John Ry. having passed under Mackenzie, Mann & Co.'s control, the operating and accounting departments of the Canadian Northern Quebec Ry. and the Quebec and Lake St. John Ry. are being amalgamated by D. B. Hanna, who is President of both companies.

F. M. Spaidal, General Superintendent C.N.Q.R., with headquarters at Montreal, is to be transferred to Quebec and will also be General Superintendent of the Q. & L. St. J. G. Tombs, General Freight and Passenger Agent C.N.Q.R., with headquarters at Montreal, will also be G.F. & P.A. of the Q. & L. St. J. R., his office remaining at Montreal.

W. A. Kingsland, Auditor C.N.Q.R., with headquarters at Quebec, has also been appointed Auditor Q. & L. St. J.R., his office remaining at Quebec.

A. E. Doucet, Chief Engineer Q. & L. St. J.R., has resigned.

S. S. Oliver, heretofore Auditor Q. & L. St. J. R., has been appointed Engineer of Maintenance C.N.Q.R. and Q. & L. St. J.R. Office, Quebec.

T. J. Sunderland, Acting Superintendent Q. & L. St. J.R., with headquarters at Quebec, will be Superintendent of that line.

The Treasury Department of the Q. & L. St. J.R. is being removed from Quebec to the C.N.R. offices, Toronto.

I. J. Derouin, Car Service Agent Q. & L. St. J.R., has also been appointed Car Service Agent C.N.Q.R. Office, Quebec, Que.

Canadian Pacific Ry.—A. Fortin, heretofore locomotive foreman at Ottawa, has been appointed locomotive foreman at Quebec, succeeding F. Nowell, transferred to Ottawa.

T. Milne, heretofore locomotive foreman at London, Ont., has been appointed locomotive foreman at Windsor, Ont., succeeding W. H. Kirkby, transferred to London, Ont.

W. H. Curle, heretofore of the firm of Scott and Curle, solicitors, Ottawa, has been appointed one of the assistant solicitors of the C.P.R. at Winnipeg. He has withdrawn from private practice and will devote his entire time to the C.P.R. interests, as assistant to J. A. M. Aikins, the company's solicitor at Winnipeg.

W. C. Bowles, heretofore General Freight Agent, Kootenay District, Nelson, B.C., has been appointed General Freight Agent, Central Division, succeeding W. B. Lanigan, promoted. Office, Winnipeg.

W. Bryce has been appointed locomotive foreman at Minnedosa, Man., vice W. T. Mains, transferred to Cranbrook, B.C.

P. S. Lindsay, whose appointment as road foreman of locomotives district 3, Central Division, succeeding J. Stuart, was announced in our last issue, will have his headquarters at Brandon, Man.

J. Scott, heretofore general foreman locomotive shops, Vancouver, B.C., has been appointed road foreman of locomotives. Headquarters, Souris, Man.

G. Glasford, heretofore District Master Mechanic, Cranbrook, B.C., has been appointed road foreman district 3, Western Division. Headquarters, Calgary, Alta.

J. A. Kennedy has been appointed acting Trainmaster district 2, Western Division, succeeding A. Hobkirk, transferred. Office, Lethbridge, Alta.

R. W. Drew, heretofore chief clerk General Freight Agent's office, Nelson, B.C., has been appointed Acting General Freight Agent Kootenay and Boundary districts. Office, Nelson, B.C.

A. Hobkirk, heretofore Trainmaster district 2, Western Division, Lethbridge, Alta., has been appointed District Master Mechanic at Cranbrook, B.C., succeeding G. Glasford, transferred.

D. T. Mains has been appointed locomotive foreman at Cranbrook, B.C., vice J. C. Reed, promoted.

J. R. McNabb, who was succeeded as Trainmaster at Cranbrook, B.C., by E. L. Chudleigh, as announced in our last issue, is now running as a conductor in that district.

A. W. Clark, heretofore locomotive foreman at Field, B.C., has been appointed locomotive foreman at Eholt, B.C.

J. C. Reed, heretofore locomotive foreman at Cranbrook, B.C., has been appointed general foreman locomotive shops, Vancouver, B.C., vice J. Scott, transferred to Souris, Man.

J. A. Fullerton, formerly ships husband at Vancouver, B.C., is reported to have been appointed to take charge of the company's trans-Pacific steamship business there.

Stewart Gordon, Manager of the Empress Hotel, Victoria, B.C., has resigned, and it is reported that he will return to England. B. M. Humble, Secretary of the Vancouver Club, and formerly Secretary of the St. James Club, Montreal, is reported to have been appointed to succeed him.

C. H. Reade has been appointed C.P.R. city passenger agent at Tacoma, Wash., vice J. O'Grady, resigned.

W. T. Payne, who was recently appointed General Superintendent of the company's Trans-Pacific Steamship service at Vancouver, B.C., has been appointed Manager of that line and in charge of all the company's interests in China, Japan and Hong Kong. Office, Yokohama, Japan.

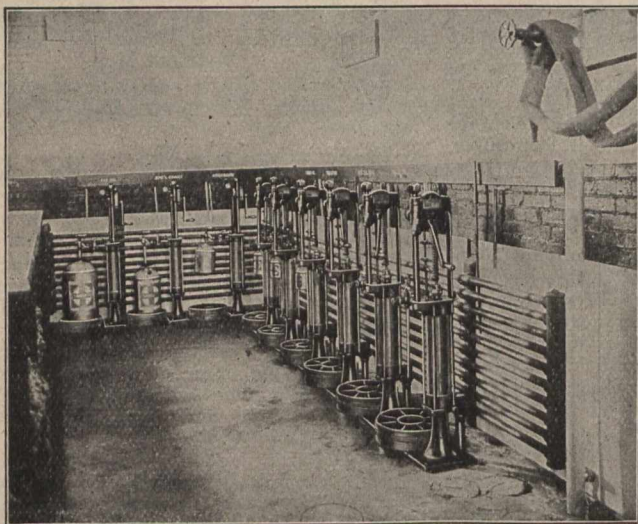
Grand Trunk Ry.—P. G. Flaherty, heretofore Chief Dispatcher Great Northern Ry., U.S., Spokane, Wash., has been appointed Chief Train Dispatcher district 2, west of Richmond, Que., and districts 4 and 5, Eastern Division, G.T.R., succeeding G. M. Stone, assigned to other duties at Montreal. Office, Bonaventure station, Montreal.

A. D. Huff, heretofore Commercial Agent at Pittsburg, Pa., has been appointed Division Freight Agent, Ottawa Division, succeeding E. R. Bremner, resigned. Office, Ottawa.

In our Mar. issue we announced that F. P. Nelson, Soliciting Freight Agent, Toronto, had been appointed chief clerk Division Passenger Agent's office. This should have read Division Freight Agent's office.

W. R. Tiffin, Superintendent Northern Division, at Allandale, Ont., press reports state, will shortly be retired under the operation of the new pension rules.

The following agents have been appointed: Doucets Landing, Que., J. A. Falardeau; Massena Springs, N.Y., D. J. Gates; Wales,



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When inward mail steamers at Halifax do not connect with the regular train, the Maritime Express, west-bound, special train, with through sleeping and dining cars attached, for passengers, baggage and mail, will leave Halifax for Quebec and Montreal, connecting with trains for Ottawa, Toronto and all points west.

For further particulars apply to **TORONTO OFFICE, 51 KING STREET EAST**

Ont., J. S. Snyder; Phelps, Ont., E. A. Farrow (Acting); Brampton, Ont., H. McDougall; St. Mary's, Ont., T. J. Oakley; Burlington Jct., Ont., C. R. Anderson; St. George, Ont., C. M. Wells; Paris Jct. (Frt.), Ont., N. J. Dore; Paris (Pass.), Ont., W. F. Mylne; Black Rock, N.Y., T. W. Saunders; Bridgeburg, Ont., T. W. Saunders; Fort Erie, Ont., T. W. Saunders; Sebringville, Ont., W. R. McGar; Tillsonburg, Ont., W. A. McMonagle; Elora, Ont., W. Godfrey; Moorefield, Ont., S. D. Croft; Whitechurch, Ont., G. Lamont; Clandeboye, Ont., N. G. Case; Londesboro, Ont., W. H. Lyon; Belgrave, Ont., C. P. Carlisle. Outside Ticket Agent, Tweed, Ont., C. W. Huyck.

E. F. Flinn, heretofore Commercial Agent at Cincinnati, Ohio, has been appointed Commercial Agent at Pittsburg, Pa., succeeding A. D. Huff, promoted.

W. K. Evans, heretofore accountant G. T. Despatch Line, Detroit, Mich., has been appointed Commercial Agent Cincinnati, Ohio, succeeding E. F. Flinn, transferred to Pittsburg, Pa.

Intercolonial Ry.—G. Ackman is acting as Claims Agent of the above in succession to E. H. Allen, who resigned Jan. 28, to become Provincial Secretary of New Brunswick, and who was defeated in the recent elections. This information was given by the Minister of Railways in answer to a question in the House of Commons recently.

Quebec and Lake St. John Ry.—See Canadian Northern Quebec Ry.

Toronto Union Station.—C. Farrow, heretofore ticket agent and operator G.T.R., Guelph, Ont., has been appointed to take charge of the ticket exchange office, Toronto Union Station.

Steam Railway Track Laid in 1907.

Additions and corrections received since the figures published in our last issue were put in type, show that the total mileage of single track laid on Canadian railways during 1907 was 1,469.65 miles, distributed as follows:

	Miles.	Miles.
ALGOMA CENTRAL AND HUDSON BAY RY.		
From mileage 69 to Chippewa River Bridge.....		0.17
CANADIAN NORTHERN ONTARIO RY.		
Between Parly Sound and French River, Ont.....	45.3	
Between French River and Sudbury	45.2	
Key Harbor branch.....	6.0	
Hutton Mines branch.....	20.6	
Garson Mines branch.....	3.6	
		120.70
CANADIAN NORTHERN QUEBEC RY.		
St. Jerome to Montford.....	15.60	
Garneau Jct. easterly.....	12.40	
St. Anne's River to Belle Isle River	7.50	
		35.50
CANADIAN NORTHERN RY.		
From Brandon to Regina, Sask.....	219.90	
From Rossburn towards Russell, Man.....	13.64	
From Cardinal to De Lourdes, Man.	1.24	
From Virten main line to Station, Man.....	0.63	
Oakland extension, Man.....	17.14	
Towards Pas Mission, Sask.....	11.48	
Atikokan spur, Ont.....	3.31	
		267.34
CANADIAN PACIFIC RY.		
From Nominique westerly.....	2.00	
South Bank branch extension, Montreal.....	0.75	
Toronto-Sudbury Line — Mileage 92.20 to 160.20.....	68.00	
From mileage 185.70 to 202.50.....	16.80	
Guelph and Goderich Ry. — From mileage 63.60 to 80.00.....	16.40	
Listowel branch.—From Linwood towards Listowel.....	13.00	
Walkerton and Lucknow Ry. — Mileage 0 to 24.....	24.00	
St. Mary's and Western Ontario Ry. — From mileage 0 to 3.....	3.00	
Pheasant Hills branch.—Newdorf to Lanigan, Sask.....	148.70	
Pheasant Hills branch.—Lanigan to Saskatoon, Sask.....	76.10	
Moose Jaw to Tuxford, Sask.....	15.30	
Wolsley-Reston branch.—Reston, Man., to Kaiser, Sask.....	98.20	
		482.25

	Miles.	Miles.
CROW'S NEST SOUTHERN RY.		
From Fernie to Hosmer, B.C.....		7.35
CENTRAL ONTARIO RY.		
Bird's Creek to Maynooth, Ont.....		10.00
INTERNATIONAL TIMBER CO.		
From mouth of Campbell River inland, Vancouver Island, B.C.....		4.00
MARITIME COAL AND RY. CO.		
From Joggins old mine to new mine		1.00
MIDLAND RY. OF MANITOBA.		
International boundary north of Walhalla, N.D., to Morden, Man.		15.34
NAPIERVILLE JUNCTION RY.		
Loop connecting the line with the C.P.R. and G.T.R. at St. Constant, Que.....	1.40	
Transfer connection with G.T.R. at Lacolle, Que.....	0.35	
NATIONAL TRANSCONTINENTAL RY.		
Between Quebec Bridge and La Tuque, Que.....	34.00	
From St. Boniface, Man., easterly.....	49.00	
		83.00
GRAND TRUNK PACIFIC RY.		
From track end 35 miles westerly from Portage la Prairie to Ituma, Sask.....	239.00	
From milepost 416.5 west of Winnipeg, to crossing of the South Saskatchewan River.....	51.00	
Lake Superior branch.—From Fort William to Knowlton, Ont.....	100.00	
		390.00
ORFORD MOUNTAIN RY.		
From Mansorville, Que., southwards toward North Troy, Vt.....		2.50
QUEBEC AND LAKE ST. JOHN RY.		
From mileage 28 to La Tuque, mileage 40.....	12.00	
From mileage 4 to Clark's, Gosford branch.....	1.50	
		13.50
QUEBEC, MONTREAL AND SOUTHERN RY.		
From Pierreville to station 1220, Que.....		4.00
TEMISKAMING AND NORTHERN ONTARIO RY. —From McDougall's Chute to milepost 208.....		5.00
VANCOUVER, VICTORIA AND EASTERN RY. —Chopaka to Kerichoos.....		18.20
VICTORIA TERMINAL RY. AND FERRY CO. —From International boundary to Olivers, B.C.....		0.80
WINNIPEG CITY POWER PLANT RY. —From Lac du Bonnet, Man., to Winnipeg River Crossing.....		2.50
YORK AND CARLETON RY. —Stanley to Ryan Brook, N.B.....		4.55
Arranged by provinces the mileage is as follows:		
Saskatchewan.....	1907 609.68	1906 171.76
Ontario.....	380.38	336.06
Manitoba.....	349.69	272.69
Quebec.....	94.00	113.10
British Columbia.....	30.35	76.09
New Brunswick.....	4.55	14.85
Nova Scotia.....	1.00	89.88
Alberta.....		97.63
Yukon.....		32.00
	1,469.65	1,204.06

Canadian Northern Ry. Construction.

Canadian Northern Quebec Ry.—It is stated that the Garneau-Quebec cut-off will be completed by the end of July.

Canadian Northern Ontario Ry.—A deputation from Orillia waited on the Ontario Government Mar. 4, to urge the guarantee of the company's bonds for the construction of a line from Udney, mileage 77.5 from Toronto, to a point on the Georgian Bay between Coldwater and Midland, a distance of about 35 miles. W. Mackenzie, President C.N.R., had an interview with the Premier of Ontario Mar. 10, at which the construction of this branch and of other extensions of the old James Bay Ry. are said to have been discussed. In an interview Mar. 14, D. D. Mann, Vice-President C.N.R., stated that it had not yet been settled what construction would be gone on with during the current year. The branch railway and the ore docks at Key Harbor, however, would be completed. It was expected to commence shipping ore from the Moose Mountain iron mines over the branch to Key Harbor at the opening of navigation, and to increase the output of the mines in two or three years to 500,000 tons a year.

Canadian Northern Ry.—It is said that the work of relaying the line between Port

Arthur, Ont., and Portage la Prairie, Man., with 80-lb. rails will be started early in the spring.—The line will also be ballasted and put in shape for the heavier traffic expected as a result of the opening of the Duluth, Rainy Lake and Winnipeg Ry., in connection with which line through trains are to be operated from Winnipeg and Port Arthur to Duluth, Minn. It is also intended to make a number of improvements at Fort Frances, Ont., which is near the point of junction with the D., R.L. and W. Ry. It was announced, Mar. 5, that the spur connecting the C.N.R. line with the Ontario end of the bridge over the Rainy River, constructed by the Canadian-Minnesota Bridge Co., was expected to be completed by April 1.

A force of men has been engaged all winter on the construction of the line from Etiomami, Sask., towards Hudson Bay, and recent reports state that the grading has been completed to Pas Mission, at the junction of the Saskatchewan and Carrot rivers, a distance of about 100 miles. The surveys to Fort Churchill, a further distance of 325 miles, are in a more or less complete stage. A return presented to the House of Commons, Mar. 2, gives correspondence relating to land subsidies earned in connection with the construction of the projected line to Fort Churchill. In Jan., 1906, the company applied for approval of a route map showing the unconstructed remainder of the company's authorized line between Winnipeg and Hudson's Bay. A year later W. M. McCarthy reported that he had inspected 70½ miles, built from Erwood to the end of the track. It is laid with 60-lb. rails, and was in good condition. In Feb., 1907, the Saskatchewan grain growers met at Regina and passed a resolution urging the more rapid completion of the railway to Hudson Bay. An order-in-council of May 8, 1907, makes it appear that the total number of acres earned and patented by the railway in the west was 1,864,279, and there were 2,788,608 acres still to be earned. On that date, under existing acts, 2,256,341 were to be earned on account of the railway running to Fort Churchill. Correspondence between the departments of the Interior and Railways would seem to indicate that no extension of time for the construction of the railway and the earning of the subsidy has been provided for, and the Railway Department's contracts with the company with respect to land subsidies on this line expired on July 10, 1906. The company in reply to this maintained that the order-in-council of May 8, 1907, gave them the necessary extension.

Recent British Columbia Legislation.

The following acts affecting transportation interests were passed at the recent session of the B.C. Legislature:

Crow's Nest and Northern Ry.—Act of incorporation.

Eastern British Columbia Ry.—Act of incorporation.

Grand Trunk Pacific Ry.—Act respecting the company's lands at Prince Rupert.

Hudson Bay Pacific Ry.—Act of incorporation.

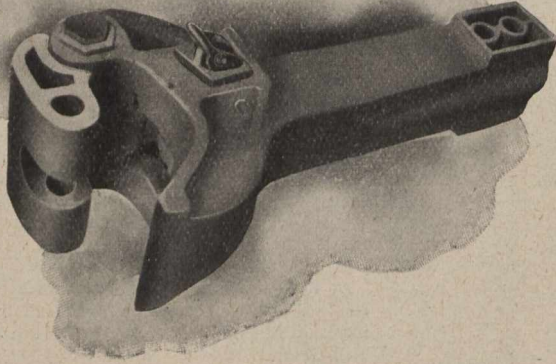
Labor Regulation Act.—Amending the Act of 1907.

Ladysmith Lumber Co.—To enable the company to construct and operate a logging railway on Vancouver Island.

Nelson.—Enabling the city of Nelson to borrow \$85,000 for electric light and power purposes.

Railway Assessment Act.—Two acts amending the Act of 1907.

Vancouver and Nicola Valley Ry.—Act of incorporation.



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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 Falls Hollow Staybolt Co., Cuyahoga Falls, Ohio, has received an order for a large tonnage of staybolt iron to be used in 30 locomotives which the American Locomotive Co. is building for the Paris and Orleans Ry., of France.

The Canadian Westinghouse Co. have issued the following publications: Magnetic Brakes, a paper read by A. L. C. Fell before the Tramway and Light Railway Association, London, Eng.; The Effect of Brake Beam Hanging upon Brake Efficiency, a paper read by R. A. Parke before the New York Railroad Club, and two instruction pamphlets, the Type L Triple Valve and the Type M Triple Valve.

Coal and Iron Mining Railways.

In addition to the various steam railways doing a general freight and passenger business in various sections of the Dominion, the annual statistics of which were published as usual in our April issue, there are several lines owned by coal and iron mining companies and operated for their private purposes. Of seven of these companies five are located in Nova Scotia and two in British Columbia. The total length of line operated is 144.49 miles, all of which except one mile is laid with steel rails, and the companies own 50 locomotives and 2,625 cars. During the year ended June 30, 1906, they carried 5,198,375 tons of coal, 219,050 tons of iron ore, 100,996 tons of iron, and 497,009 tons of other freight, a grand total of 6,015,430 tons. With the exception of the Dominion Coal Co.'s line, the Sydney and Louisburg Ry., none of these lines are included in the general railway statistics of the Dominion. In these the Nova Scotia Steel and Coal Co. is mentioned as operating the line of the old New Glasgow Iron, Coal and Ry. Co., 72.50 miles, from New Glasgow to Sunny Brae, N.S., and the Wellington Colliery Co. is referred to as operating a line of 10.75 miles from Union Bay to Cumberland, B.C. The freight statistics given in the general report vary from those given in the report as to coal lines, while those given in connection with the Dominion Coal Co.'s line agree with those given under the Sydney and Louisburg Ry. in the general report. Following are the principal particulars with respect to the different lines:

ACADIA COAL CO., LTD.—Intercolonial Ry. to Slopes Colliery, 2.50 miles; Allan Shaft colliery to New Glasgow, N.S., 1.00 mile; sidings, 2.50 miles; New Glasgow to Thorburn, 6.00 miles; sidings at Thorburn, 1.00 mile; sidings along route, 1.00 mile; total mileage operated, 14.00 miles; standard gauge; 13 miles of track laid with 56 lb. steel rails, and one mile laid with 50 lb. iron rails; two junctions with other railways. The company owns three locomotives, and during the year ended June 30, 1906, carried 124,000 tons of coal, and 10,000 tons of other freight.

INTERCOLONIAL COAL MINING CO.—Drummond colliery to Abercrombie pier, Pictou Harbor, N.S., 10.00 miles; Drummond colliery to Drummond siding, connecting the colliery with the Intercolonial Ry., 0.50 mile; total mileage operated, 10.50 miles; standard gauge, laid with 56-lb. steel; one junction

with, and one crossing of another railway. The company owns two locomotives and 170 cars; and during the year ended June 30, 1906, carried 255,377 tons of coal, and 10,960 tons of other freight, mostly wood for timbering mines.

LONDONDERRY IRON CO.—Londonderry, N.S., to Londonderry station on the Intercolonial Ry., 2.50 miles; East Mines to East Mines station, 4.00 miles; Londonderry to West Mines ore workings, 5.00 miles; siding round works at Londonderry, N.S., 3.50 miles; total mileage operated, 15; of which 5 is 3 ft. gauge, the remainder being standard gauge. It has two junctions with other railways. The company owns four locomotives and 66 cars, and carried during the year ended June 30, 1906, 114,325 tons of coal, 87,540 tons of iron ore, 41,498 tons of iron, and 43,000 tons of other freight.

NOVA SCOTIA STEEL AND COAL CO.—Sydney Mines to North Sydney, N.S., 5 miles; branch, Sydney No. 1 to Sydney No. 3, 3 miles; sidings at Sydney, 23 miles; total mileage operated, 31 miles; standard gauge, laid with 56 and 80-lb. steel rails; one junction with other railway. The company owns nine locomotives and 340 cars, and carried during the year ended June 30, 1906, 639,077 tons of coal; 131,510 tons of iron ore, 59,498 tons iron, and 229,550 tons of other freight.

DOMINION COAL CO.—Sydney to Louisburg, N.S., 39.30 miles; main line to Bore Hole, 0.04 mile; main line to International mine, 0.25 mile; main line to Reserve mine, 2.30 miles; main line to Caledonia mine, 1.20 miles; main line to Hub mine, 0.93 mile; main line to point in direction of Point Morien, 0.38 mile; main line to Glace Bay wharf, 1 mile; main line to Wash plant, 0.54 mile; main line to Dominion No. 6 colliery, 5.32 miles; main line to Mira quarry, 0.25 mile; main line to Sydney coal yard, 1.23 miles; leased main line to I.C.R. at Sydney, 1.25 miles; total mileage operated, 53.99 miles, all laid with 80-lb. steel; standard gauge. The company owns 23 locomotives and 1,527 cars, and during the year ended June 30, 1906, carried 3,570,115 tons of coal, and 200,846 tons of other freight.

WELLINGTON COLLIERY CO.—Ladysmith to Wellington, B.C., extension, 11 miles; Esquimalt and Nanaimo Ry., Ladysmith to wharves at Ladysmith, B.C., 1 mile; siding, 1 mile; total mileage operated, 13 miles; standard gauge, laid with 50 and 60-lb. rails. The company owns six locomotives and 250 cars, and during the year ended June 30, 1906, carried 335,149 tons of coal and 1,563 tons of other freight.

WESTERN FUEL CO.—Wharves to Harewood mine, B.C., 7 miles of standard gauge, laid with 56-lb. steel rails. The company owns three locomotives and 272 cars, and during the year ended June 30, 1906, carried 160,332 tons of coal and 1,000 tons of other freight, consisting almost entirely of mine stores and timber.

National Transcontinental Ry.

Contracts were awarded, Mar. 28, for six sections of the railway, aggregating 366 miles, as follows:

To the G.T. Pacific Ry. Co.—From a point 58 miles west of Moncton, N.B., westward for 39.7 miles; and from the latter point westward to the Tobique river, N.B., 67 miles.

To the Willard-Kitchen Co.—From the Tobique river to Grand Falls, N.B., 31.5 miles.

To M. P. & J. T. Davis—From the Quebec-New Brunswick boundary westward 52.4 miles.

To E. F. & G. E. Fouquier—From a point 8 miles west of the Abitibi river, Ont., westward 100 miles; and from Lake Nepigon westward 75 miles.

Board of Railway Commissioners.

A sitting was held at Toronto, Mar. 11, to take up such cases from the city and vicinity as the Deputy Commissioner and Commissioner Mills could dispose of. A sitting was held at Ottawa, Mar. 12, when decisions were given in a number of cases, and consideration was given as to the position in which others were in consequence of the death of the Chief Commissioner. Sittings of the Commission to dispose of local cases were held at Peterborough, Mar. 17; Toronto, Mar. 18; Ingersoll, Mar. 19, and Chatham Mar. 20.

A bill having for its object the reorganization of the Board has been given considerable consideration at the current session in the House of Commons. The bill provides for a commission of six members, the Chief Commissioner and the Assistant Chief Commissioner can be selected from the ranks of the judges or barristers of ten years' standing; making the Assistant Chief Commissioner eligible for the position of Chief Commissioner, giving the Assistant Chief Commissioner all the powers of Chief Commissioner. In the case of the absence of both the Chief and the Assistant Chief Commissioner the Deputy Chief Commissioner shall exercise the powers of Chief Commissioner. The Chief Commissioner is to preside at all meetings, and in his absence the Assistant Chief Commissioner will preside, and the opinion of either of them upon any question arising when he is presiding, which in the opinion of the Commissioner is a question of law, shall prevail. The Chief Commissioner's salary is fixed at \$10,000 a year; the Assistant Chief Commissioner's salary at \$9,000, and the Commissioners at \$8,000 a year each. These provisions are in substitution of sections in the act now standing on the Revised Statutes. New sections provide for the holding of more than one sitting at the same time; authorizing the Minister of Railways to establish such offices anywhere in Canada as may be required; and also making some amendments in connection with the procedure before the Board.

An order-in-council was passed Mar. 21, appointing James Pitt Mabee, one of the Justices of the High Court of Ontario, to be Chairman of the Board of Railway Commissioners of Canada. Mr. Mabee was born at Port Rowan, Ont., Nov. 5, 1859; was educated at the Port Rowan High School, and matriculated Nov., 1877. He was called to the Ontario Bar Nov., 1882, and practised from 1882 to 1887 at Listowel, Ont., and from 1887 to Jan. 1, 1905, at Stratford, Ont. He was appointed a King's Counsel in 1901, and from Jan. to Nov., 1905, practised at Toronto, as a member of the firm of Beatty, Blackstock & Co., retiring therefrom on his appointment to the High Court of Justice of Ontario. From Jan. to Nov., 1905, Mr. Mabee was also Chairman of the Canadian section of the International Waterways Commission, and from Mar., 1906, to Mar., 1908, a member of the Statute Revision Commission, on the appointment of the Ontario Government.

W. A. Hunt, formerly chief clerk in the C.N.R. Accountant's Dept., Winnipeg, has been sentenced to two years' imprisonment for defrauding the company by means of forged pay checks.

R. Robertson & Sons, Ltd., has been incorporated under the Ontario Companies Act, with a capital of \$30,000 and offices at Toronto, to establish a general contracting business for the construction of railways, bridges, subways, etc. R. J., W. E., Jas., and C. S. Robertson, Toronto, are the provisional directors.

Maintenance of Freight Car Air Brakes.

By W. C. Hunter, Manager New Brunswick Coal and Ry. Co.

When we stop to consider that there are in round numbers 2,000,000 freight car air brakes in operation at present in the United States and Canada, representing an aggregate investment of approximately \$60,000,000, it would seem that the maintenance of the same in efficient condition is an important subject, not only because inefficient air brakes fail to earn a fair return on their cost as a train stopping mechanism, but from the fact that air brakes in bad order are capable of, and do cause loss and damage to lading and rolling stock, the aggregate cost of which is practically an incalculably large sum. It follows, however, that a very necessary feature of the work of such maintenance is a well-defined system of keeping check of all air brake repairs, and also of the general condition of the brakes in service.

Every freight car air brake should get a general overhauling at least once a year. It is evident, however, to get this result that these operations cannot be confined to repair tracks, but the work can be done on the loading and unloading tracks of freight depots at larger terminals where cars stand for hours and sometimes days. Some railways are doing this, and have installed air plants at such points, so that brakes on cars at these points can be tested to find defects, and also to thoroughly test as the work is done, and therefore when the cars are put into trains there remains nothing to do but make the terminal test from the locomotive. This avoids much delay to freight en route by holding cars for air brake repairs.

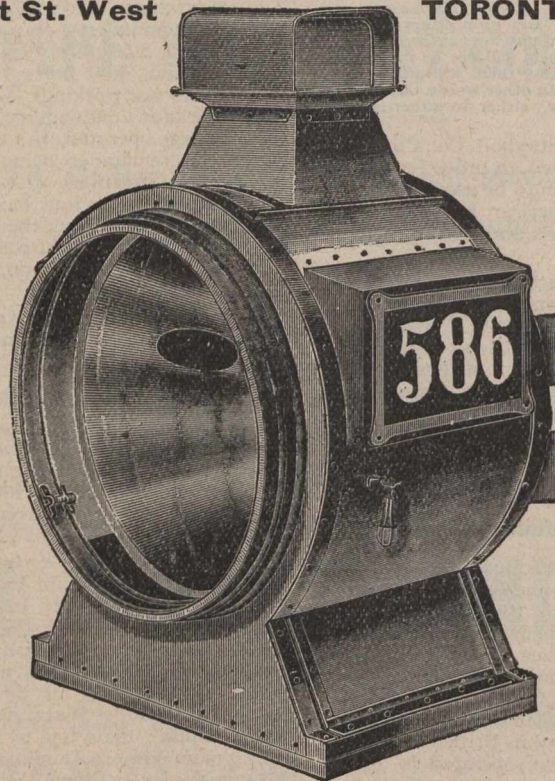
Following is a description of how one important Canadian railway is doing this work, keeping record of the work done, and the general condition of its freight car air brakes. As an example, I will take one of its large terminal points. It extended the yard air plant to reach the freight depot tracks, and located the piping to reach tracks holding about 300 cars, so there are always plenty of cars to work on. It uses 1 1/4 inch pipe, locating the hose boxes about 100 ft. apart and carrying 90 lbs. air pressure. Two men are employed there who do nothing else whatever during the season but test and overhaul air brakes on these tracks. The men are supplied with all necessary tools, including a piece of hose 50 ft. long fitted with air hose couplings at each end, several pieces of pipe from 4 to 10 ft. long with air hose at each end, and a portable brake valve. With these, couplings can be made around a "non-air" car, or from one track to another. This point is equipped with the Westinghouse triple valve testing devices, and triple valves are cleaned and tested in a room fitted up for the purpose. The men work under a terminal car foreman and are kept supplied with all repair parts required. They are especially instructed for this work and become very proficient. The work is stenciled on the side of the auxiliary reservoir, giving letter designating place, and the date—for instance, J., 20-8-03. This stencil covers the following work done: Triple valve cleaned and oiled, or changed. Brake cylinder cleaned and oiled. Pipe clamps and cylinder blocks tightened. Piston travel adjusted. Hose tested with soap suds, and couplings and gaskets tested and renewed if required. Angle cocks, cut-out cocks, release valves and retaining valves are tested and required repairs made. Pipe work is tested and repaired if required, and brake shoes applied if needed. In fact, every brake gets a general overhauling if in service one year since the last stencil

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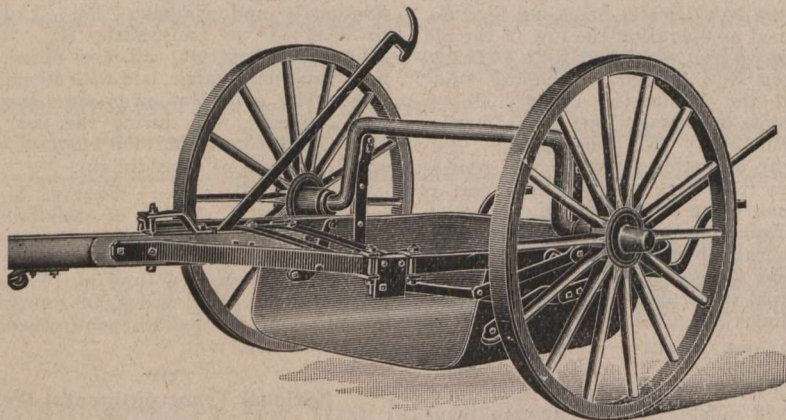
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mark, or in any case if a test shows that it requires it. The result of one season's work at that point, which is fairly indicative of the work done at all such points, showed an average cost of 73.8c. per car, not including brake shoes. Beside the work done at freight depot points, the usual air brake running repairs are carried on at the repair shops and tracks.

Referring now to the system of keeping record of these general repairs to air brakes. The form shown here, no. 597, and designated as report 4, is sent to the General Air Brake Inspector by the terminal car foreman at the end of each month. The

4,000 car numbers, and for this system of air brake records, will last 10 years. The books are arranged to furnish an index for each car number. Opposite each number on its own line is copied from the form the date and place letter where the air brake last received a general overhauling, and they file the forms for reference each month separately. The officials are thus able in a moment to tell just when and where any car on the railway had its air brake overhauled, what was done to it, and when it is due to be again overhauled, which last mentioned feature you can easily recognize the value of. They are also able to keep a record of air brake work done on freight cars. The record thus serves as a check on bills for such repairs. They are also able to detect mistakes or carelessness in reporting air brake repairs, which, without such a record, would pass unnoticed, and any attempt to do the work with the stencil alone is sure to be detected. Another large railway using a similar recording system, prefers a card index instead of the books, and I believe it is found very satisfactory. In tracing up responsibility for slid flat wheels and damage to lading or draft-gear, the record is also very valuable and is a time-saver.

Referring now to the system of keeping daily check of the condition of freight car air brakes running on the whole railway, and the reporting of defects by the use of the air brake defect card, and following up the repairs of the said reported defects, they are able to show results which are particularly gratifying. They use for this three printed forms; first, the air brake defect card; next, the conductor's report of condition of air brakes, form 641 and form 643. The last is simply a printed letter with a few blank spaces to fill in. The last two mentioned forms are shown and are designated as reports 5 and 6 respectively.

The air brake defect card is used by the train conductors according to the instructions printed on the card itself. These cards in some form are doubtless familiar to most of us and there is considerable variation in their style, but a uniform style of air brake defect card is a subject now up, and it is needless therefore to go into a description of the card used here. The air brake defect card is of course only to be used to indicate defects in the air brake when found, but the second mentioned form, called the conductor's report of condition of air brake, is sent to the General Air Brake Inspector for every freight train run, no matter what the conditions of the brakes are. The use of this form has more than met expectations. It will be seen that, while this form is very simple and condensed, it at the same time covers a great deal of information. By its use one is able to tell just how many freight car air brakes are in operation on the railway each day, just how many were in good order, just how many were bad and cut out, on what part of the railway the most trouble occurs with the brakes, and what it consists of. The freight train conductor is enabled by this form to make a correct report of any trouble which may have occurred with the air brakes on the trip, and it is found that a considerable number of men value this feature very much. It also encourages them to report anything, however small, that may come to their notice. The use of the form by the conductors necessarily requires inspection of the train en route, and it follows that defects are discovered where they exist, and are carded with a defect card, so that the use of this form compels the use of the air brake defect card. Thus one very beneficial result is gained, Conductors are required to know of and report slid flat wheels on

Form 597

A. B. C. RAILWAY.
REPORT OF AIR BRAKE REPAIRS.

(REPORT NO. 4.)

On.....	Cars at.....	during Month of.....	190.....
DATE	Car Initials	Car Number	Triple Valve Cleaned and Oiled or Changed
			Cylinder Cleaned and Oiled
			Pipe Clamps and Cylinder Blocks Tightened
			Piston Travel Adjusted
			Air Brake or Signal Hose Renewed
			Angle Cock or Cutout Repaired
			Release Valve Repaired
			Retaining Valve Repaired
			Pipe Work Done
			Date and Place of Former Cleaning
			Place or Letter Last Stencil'd
			Other Repairs to Brake
			Is Brake now in Good Condition

NOTE.—Shop Foremen and Car Inspectors must fill out this Form and read it to the General Air Brake Inspector on the first of each month. Care must be taken to make a full report of all Air Brake repairs.

No.....

A. B. C. RAILWAY

DEFECTIVE AIR BRAKE

Card applied to Car No..... Initials.....

By Conductor..... Train.....

Or by Inspector..... at.....

For Defect No.....

Destination of Car..... Date..... 190.....

INSTRUCTIONS.—Use figures to indicate defects. Send this Stub to the..... by first train mail.

(REVERSE OF CARD NO. 1.)

A. B. C. RAILWAY

DEFECTIVE AIR BRAKE

This CAR CAN NOT be placed between Air Brake Cars

Form No.

Car No..... Initials..... Train No..... Date..... 190.....

17. Train Pipe (A End) DEFECTS

18. Cross-over Pipe

19. Angle Cock (A End)

Car applied at..... by Conductor.....

Or by Inspector.....

Repairs made at..... by Inspector.....

Date..... 190.....

INSTRUCTIONS.—To indicate the defect draw a line through the description, detach the Stub and send it to the.....

Tack the Card to the B end of Car just over the buffer block.

When repairs are completed send this Card to the.....

this form, which in itself acts as a preventive of such occurring while in their charge, and is also of great value in correctly locating the responsibility when it does occur. Conductors are required to make out this form in duplicate. One copy goes to the car inspector at the terminal on arrival, and he is thus notified of the condition of the air brakes on the train. Therefore, he has no excuse for failure to see any defect cards which may be on the cars. An accurate check is kept on the conductors to prevent failure to send in this report and strict observance of the use of the air brake defect card is enforced. The most valuable feature of the use of this conductor's report is that it keeps the General Air Brake Inspector in close touch with the air brake situation all over the railway, and this increases his usefulness to a very considerable degree. Take any other official in the mechanical or operating departments, and they almost always have a system of obtaining prompt information of the condition of, and failures occurring to the parts of the equipment under their charge, and are thus able to deal promptly with irregularities and the causes thereof. The air brake is in itself a special equipment, and on most railways is, to a more or less extent, under the direct charge of a general air brake inspector, who is expected to render good service by keeping it in efficient condition, with a minimum of failures, and

to be able to render prompt and accurate reports of such to his superior officer. To do this, he should be in constant and prompt receipt of the necessary information. It is sometimes the case on railways that while they have a general air brake inspector, he is only informed of how the air brake equipment is working day by day in a hearsay way, and, if irregularities occur, he is often only informed of such when a batch of correspondence reaches him for "his opinion and recommendation," or "to take up and prevent a recurrence of," perhaps a month or more after the trouble occurred. To overcome this difficulty, and to keep him in close touch with the air brake situation on all parts of the railway, this form is admirably adapted, and as a result, he is able to promptly take up all the irregularities and investigate them himself when the matter is fresh, and thus can take measures to prevent as much as possible a recurrence. As example of the use of this form, one is received by the General Air Brake Inspector with the statement thereon that there were 20 good air brakes on the train, but were not in use because the pump on the locomotive was disabled. Prompt investigation disclosed the fact that a certain engineer needed instruction as how to handle a refractory pump, and also the fact that a certain pump was in bad order, and that a repair man was responsible for not putting it in good order when entrusted with

FORM NO. 641

A. B. C. RAILWAY.

CONDUCTOR'S REPORT OF CONDITION OF AIR BRAKE.

Train.....Arriving at.....Date.....190.....

Engine No.....Engineman.....

Number of Air Brakes cut in and operating.....

Number of Air Brakes not operating and with Air Brake Defect Card applied.....

Did any trouble occur with Air Brakes on trips.....

Cause.....

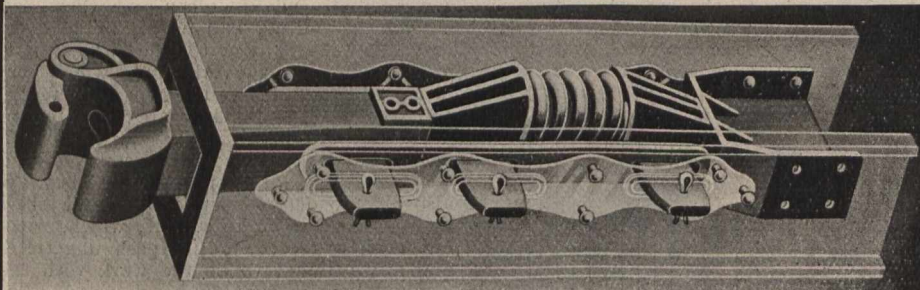
Are there any Slid Flat Wheels on Train?.....

If so, give Numbers of Cars.....

Conductor.....

the job. It follows that steps were taken to prevent such occurring again. Following is another case: A conductor reports an angle cock closing itself, caused by loose train pipe clamps permitting the angle cock plug to strike the buffer block when the car was running. This indicated careless car inspection at a certain point, or points. Still another case follows: A conductor reports a train with so many brakes cut out that it indicated failure to make repairs

THE FARLOW TWIN SPRING DRAFT GEAR



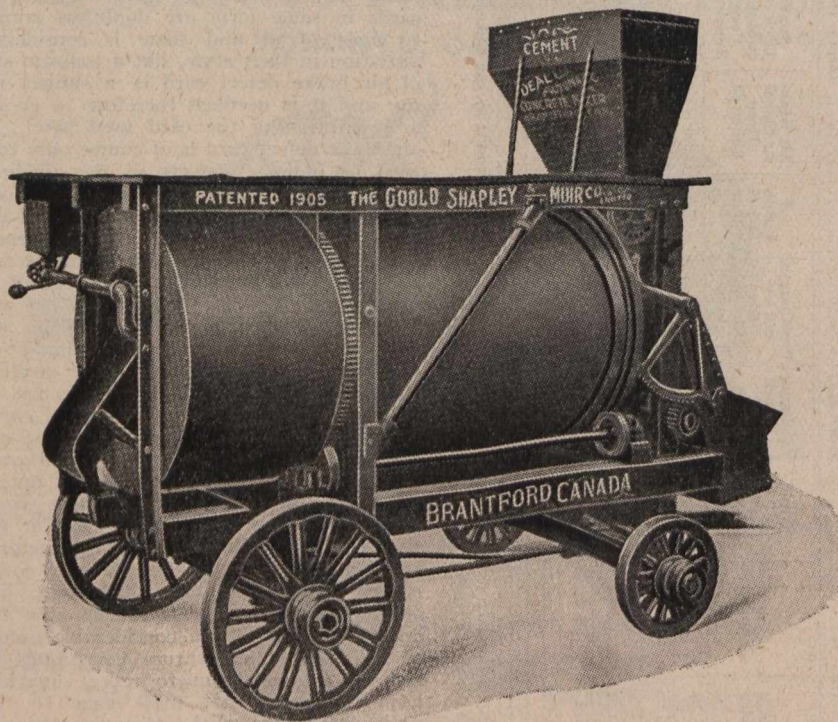
Designed for Wooden or Steel Cars and Engines.
 Pulling Strains Distributed Equally on the Three Cross Keys.
 Buffing Shocks Distributed on End Sill, Three Cross Keys, Filler Block and Body Bolster. Cannot be Pulled Out or Driven Back and Will Not Spread Sills.

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 BRANTFORD, CANADA

by certain repair men, and the investigation also disclosed a failure to make a terminal test by the crew. All of such irregularities

(REVERSE SIDE OF REPORT NO. 5)

INSTRUCTIONS.

Conductors of Freight Trains will fill out this form in duplicate, and send one copy to the General Air Brake Inspector, and deliver the other, along with his way bills, at the end of each trip. The Car Inspector to ask for and get them as soon as possible after arrival of the train.

If the Car Inspectors at terminals do not receive this Form for each Freight Train arriving at their station, they will write across the face of one of these Forms the words "No report," and enter the Train No., Date, and Conductor's name. Sign it and send it to the General Air Brake Inspector.

are immediately investigated and taken up with the responsible parties, and such instruction and encouragement given; or, if necessary, such discipline administered as to prevent a recurrence.

The third form shown here, 643, explains itself as referred to in speaking of the defect card stub, the destination of the car to which its card is applied is shown. These stubs are kept in the General Air Brake Inspector's office and at the end of each month, the cards which had been received from the repair men all over the railway are matched with the stubs, and if any stubs are left over without cards having arrived to match them, this form is filled out from these stubs and sent to the Master Car Builder, who signs it, and sends it to the terminal car foreman who received the

men now find that the General Air Brake Inspector is watching every defect, that every conductor is helping him by discovering and reporting the same, that these reported defects must be repaired, and that failure to repair them will be noticed and an explanation will certainly be called for as per this form.

The new result of this system is very gratifying and is more apparent as the time goes on. This system is capable of expansion to meet the requirements of any railway, no matter how large. Of course, on large railway systems, it will require clerical help, but one clerk should be able to handle it in almost any case. The cost of stationery used is also an item of expense, but that this system pays there is not the slightest doubt. In fact the railway referred to found for one thing that this system reduced the average number of slid flat wheels 60% in six months. When we consider that it necessarily begets the co-operation of all concerned in the train service, from superintendents to the youngest brakeman, in getting successful operation of the air brakes, it seems to me that much has been gained. The fact that the General Air Brake Inspector is able at any time to furnish his superior officer with exact data as to the condition of the air brakes on the whole railway is in itself worth all the trouble and expense, and is particularly useful when it is desired to point out the necessity of some requirement for improvement of the service. The system of recording takes in the passenger car brakes, and is easily applicable to locomotive brakes with modifications to meet locomotive conditions.

The British Columbia General Contract Co. is being wound up under Chap. 144, Revised Statutes of Canada, F. C. Sewell and J. Kendall having been appointed provisional liquidators. The order was made on the petition of W. H. Malkin & Co. (Ltd.) and others.

ELECTRIC RAILWAYS.

London Street Railway Company.

Following are extracts from the report for the year 1907:

EARNINGS.			
	1906	1907	
Passengers.....	\$199,528.61	\$226,509.77	
Miscellaneous.....	3,383.07	5,866.82	
Gross earnings.....	\$202,911.68	\$232,376.59	
EXPENSES.			
MAINTENANCE:			
Way and structures....	\$ 17,542.95	\$ 17,294.91	
Equipment.....	28,433.26	24,279.36	
TRANSPORTATION:			
Power plant.....	28,656.00	32,882.44	
Car service.....	60,712.87	65,864.88	
GENERAL.....	24,033.31	27,703.29	
Total operating expenses.....	\$159,428.39	\$168,024.88	
Net earnings.....	\$43,483.29	\$64,351.71	
DEDUCTIONS.			
Interest on bonds.....	\$25,000.00	\$25,000.00	
Interest on overdraft.....	923.94	2,228.64	
Total deductions.....	\$25,923.94	\$27,228.64	
NET INCOME.....	\$17,559.35	\$37,123.07	

The policy of the directors to keep the properties in the very best condition has been followed during the year, and in addition the following improvements have been made: Track and roadway, guard rail, Springbank line and Pottersburg loop, new track in car house and yard, purchase of sewer beneath Dundas street tracks, railroad crossing derail and signal system, ordered by Railway Commission, \$4,508.97. Electric line, trolley wire on account of new car house

and terminal, lightning arresters and negative feeder, \$433.00. Battery building and new car house, \$6,900.01. Power plant equipment, part payment on 320 amp. storage battery, additional circuit breakers, \$14,346.44. One new 24-in. drill and motor, \$237.38. 5 new cars, 39 fenders and new trucks, \$10,564.57. Electrical equipment of cars, \$12,063.43. Paving, \$3,273.70. Ten fire extinguishers, \$124.15. Total, \$52,451.65.

By the additional cars purchased and put on the service during the year, the equipment is quite adequate for ordinary demands. With the installation of a 320 ampere storage battery plant, the power facilities are now sufficient to meet the heavy requirements for summer traffic. To provide storage for the additional cars purchased during the past two years, a car house and terminal was built on the property adjacent to the power house, which is very convenient for their successful operation. Pending a legal census a request was made by the city to consider an extension to the company's lines in the north-easterly part of the city. The matter is under consideration. During the first part of the year a committee from the city council approached the directors upon the subject of purchasing the company's properties by the municipality. It was agreed to enter into negotiations, subject to the approval of the shareholders, when the city had the necessary legislation to purchase. All agreements with the city have been fulfilled and the service greatly improved. The directors intend to dispose of an additional issue of \$50,000.00 5% bonds to offset the present bank overdraft occasioned by additions to the properties. It is with pleasure the directors draw attention to the remarkable increase in gross earnings and surplus for the past year and confidently expect that the coming year will prove also satisfactory. No suits are pending from last year's business. There were 52 shareholders of record Dec. 31, 1907.

ASSETS. 1907.

Road and equipment, real estate, buildings and plant.....	\$1,053,023.33	
Improvements, additions, etc.....	52 451.65	
Cash on hand.....	\$ 1,697.81	
Accounts receivable....	2,092.03	
Stores.....	22,108.48	
Coal stock.....	1,248.06	
Suspense.....	8,198.62	
Uniforms.....	161.42	
Sundries (prepaid accts.)	72.72	
Injuries and damages.....		35,579.14
Grand total.....	\$1,141,054.12	
LIABILITIES.		
1907.		
Capital stock.....	\$ 540,024.00	
Bonds—5%.....	500,000.00	
Mortgage (Bathurst St. lots).....	750.00	
Bond interest.....	\$ 7,808.00	\$1,040,774.00
Molsons Bank (overdfnt.)	30,003.24	7,808.00
Accounts and wages payable.....	21,248.54	
Dividend payable Jan. 2, 1908.....	16,200.72	
Ticket float (unredeemed tickets).....	\$ 3,461.73	67,452.50
Injuries and damages fund.....	419.12	
Profit and loss (surplus).....	21,138.77	
Grand total.....	\$1,141,054.12	
PROFIT AND LOSS ACCOUNT.		
Surplus, Jan. 1, 1907.....	\$ 591.09	
Net income for 1907.....	37,123.07	
Unclaimed wages.....	85.33	
Grand total.....	\$37,799.49	
Dividend 3% payable Jan. 2, 1908....	\$ 16,200.72	
Directors' tickets and auditors' fees....	460.00	
Surplus.....	21,138.77	
Grand total.....	\$37 799.49	

A. B. C. RAILWAY.		FORM NO. 190.	
CAR NUMBER	INITIALS	CAR NUMBER	INITIALS

DEAR SIR: Stubs from the Air Brake Defect Card, Form..... have been received at this office, showing that during the month of..... the following cars were forwarded to your Station, with the Air Brake Defect Card attached.

MR.....

As these Cards have not been returned by you to this office, it is presumed you did not make the necessary repairs. Please let me have your explanation. Yours truly,

General Air Brake Inspector.

cars, according to destination written on the stubs, and who should have made the repairs and sent in the defect card. The result is that all car inspectors and car fore-

Statistical information: Gross earnings, \$232,376.59; operating expenses, \$168,024.88; expenses per cent. of earnings, 72.3; net earnings, \$64,351.71; net income per cent. of capital, 6.88; passengers carried, 6,321,994; car earnings per revenue passenger, 3.63c; transfers, 1,039,362; total passengers, 7,361,356; car earnings per passenger, 3.07c.; car mileage, 1,435,993; gross earnings per car mile, 16.18c.; operating expenses per car mile, 11.70c.; net earnings per car mile, 4.48c.; number of miles of track, 33.25; gross earnings per mile of track, \$6,988.77; population, city estimates, 47,769.

The directors and officers are as follows: President, H. A. Everett, Cleveland, Ohio; Vice-President, T. H. Smallman, London, Ont.; other directors, P. W. D. Broderick, W. M. Spencer, London; H. S. Holt, Montreal; E. W. Moore, C. W. Wason, Cleveland; Sec.-Treas., G. H. Bentson; Manager, C. B. King.

Halifax Electric Tramway Company.

Following are extracts from the report for the year 1907: The net earnings show an increase of \$4,599.71 over 1906. The usual quarterly dividends at the rate of 6% per annum have been paid, leaving a surplus of \$65,508.23, from which have been deducted interest on loan, and for renewals of track and other necessary improvements, \$10,643.22. Additions to plant and rolling stock, including street paving and double track to the value of \$78,603.49, have been made during the year, which amount has been transferred to permanent investment account. The interruption to traffic in consequence of street paving operations and renewing of water pipes by the city, was the cause of serious loss in revenue, and, as there is yet several weeks' work to be done during the coming summer, it is not to be expected that the full benefit of regular and uninterrupted car service can be enjoyed until this work is completed; nevertheless, the percentage of expenses to income bears a very satisfactory comparison with any previous year.

ASSETS.

Property.....	\$2,353,522.07
Accounts receivable.....	44,534.44
Supplies.....	18,434.36
Suspense account.....	12.2 2.67
Cash on hand.....	29,729.78
	<u>\$2,458,483.32</u>

LIABILITIES.

Capital stock.....	\$1,350,000.00
5% bonds.....	600,000.00
Accounts payable.....	51,618.48
Notes payable.....	120,000.00
Bond interest.....	15,000.00
Dividend due Jan. 1, 1908.....	20,250.00
Tickets outstanding.....	1,288.54
Surplus account.....	300,326.30
	<u>\$2,458,483.32</u>

INCOME ACCOUNT.

Passenger receipts.....	\$ 173,870.64
Light and power earnings.....	173,943.31
Gas earnings.....	56,798.98
Sundry earnings.....	839.47
	<u>\$ 405,452.40</u>

Operating expenses.....	\$ 228,944.17
Coupons.....	30,000.00
Net earnings.....	146,508.23
	<u>\$ 405,452.40</u>

SURPLUS ACCOUNT.

Balance, 1906.....	\$ 252,053.33
Net earnings, 1907.....	146,508.23
	<u>\$ 398,561.56</u>

Three dividends paid.....	\$ 60,750.00
Dividend due Jan. 1, 1908.....	20,250.00
Interest.....	6,592.04
Renewals.....	10,643.22
Balance.....	300,326.30
	<u>\$ 398,561.56</u>

Statistical information: Railway earnings,

TORONTO BOLT AND FORGING CO.

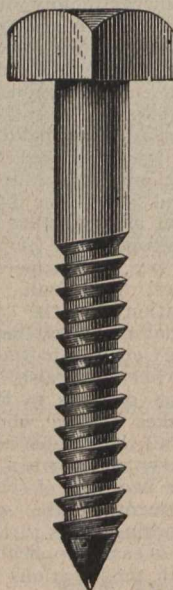
Manufacturers of

LIMITED

BOLTS AND NUTS

OF ALL KINDS, INCLUDING

**Track Bolts
Track Spikes
Lag Screws
Boiler and
Bridge Rivets**



TORONTO

CANADA

IDEAL RAILWAY FENCING

MADE TO LAST

Large gauge (No. 9) hard steel wire is used throughout, decreasing cost of maintenance, insuring durability and serviceability.

IDEAL FENCE has been adopted as a standard by all the leading Railways in Canada. More IDEAL is used by Railways this year than all other makes combined.

Write for Prices and Catalogue

The McGregor Banwell Fence Co.

WALKERVILLE, ONTARIO

LIMITED

\$120,568.17; electric light and power, \$77,262.29; total earnings, \$197,830.46; operating expenses, \$113,081.92; bond interest, \$30,000; net earnings, \$57,748.54; dividends paid and interest, \$48,000; surplus, \$6,748.54; per cent. operating expenses to income, 59.06; passengers carried, 2,419,268; car mileage, 593,608; incandescent lamps, 14,225; arc lamps, 309; stationary motors, h.p. 216.

The officers and directors are: President, Hon. D. MacKeen; Vice President, J. Y. Payzant, W. B. Ross; other directors, A. Kingman, J. Hutchison, J. C. Mackintosh, H. S. Poole, W. M. Doull, C. C. Blackadar; Manager, J. W. Crosby; Secretary, W. J. DeBlois.

Winnipeg Electric Railway Company.

Following are extracts from the report for the year 1907:

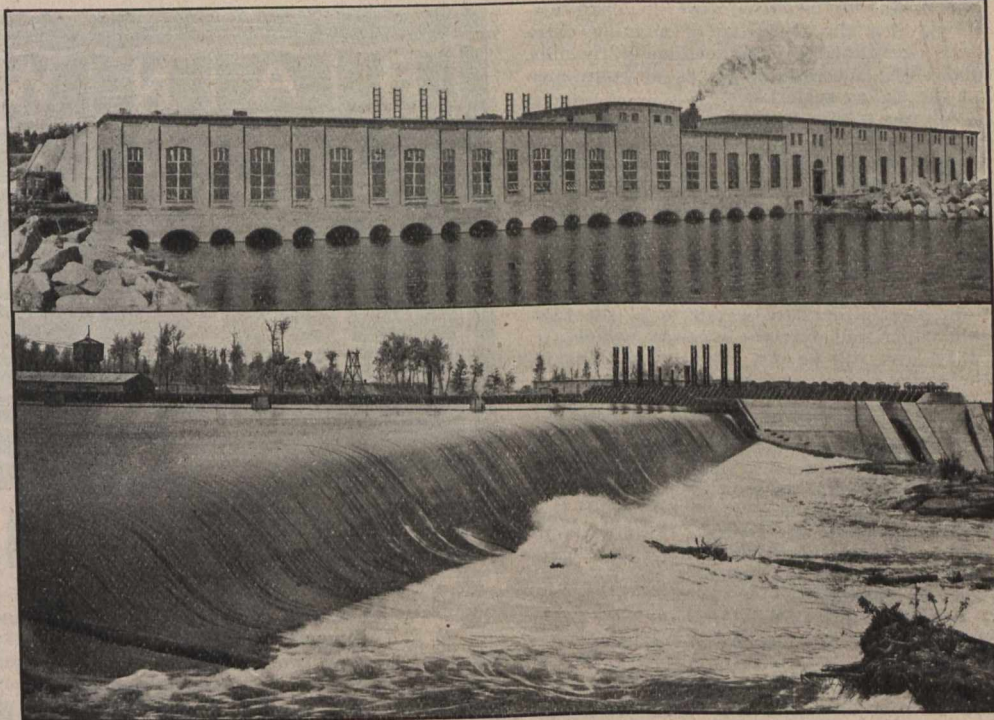
The gross profits are \$946,675.67, compared with \$714,341.32 in 1906. After providing for percentages on earnings accrued to the city and interest on bonds, the directors declared four quarterly dividends, amounting to \$373,136.67, leaving a surplus of \$186,871.90, which has been transferred to credit of profit and loss, making a total credit to this account to Dec. 31, 1907, of \$806,310.63. The percentages of earnings show an increase of 21.62% compared with 1906, while the operating expenses show an increase of 10.53% as compared for the same period. The net earnings show an increase of 30.75% over those of 1906. The roadbed, rolling stock, buildings and other properties have been efficiently maintained. The company's hydraulic works at Pinawa channel of the Winnipeg River have given great satisfaction. The car service, both as to efficiency of operation and equipment, compares favorably with the service or equipment of any street arc company in America. During the year the following improvements and additions were made, forty additional large, double-truck, closed cars added to the system; 20 having been constructed at the company's own shops in Winnipeg, and 20 in Ontario. All cars have been equipped with air brakes and heaters provided for the motorman's vestibule in all cars. Nineteen and a half miles of track were constructed; 6½ miles of this being surface track with ballast, and 13 miles being track with concrete foundation. 1,588 new poles were put up in the extension of electric lighting and power lines, with 340,088 lbs. of wire. 48,007 ft. of new gas mains were put down in the extension of gas mains. 838 new gas services were put in. Addition to Fort Rouge storage barn, with capacity for 50 cars.

ASSETS.

Cost of property: Street railway, buildings, plant and equipment; electric lighting, plant and equipment; electric power, plant and equipment; gas, buildings, plant and equipment; water power, plant and equipment	\$12,001,911.26
Stores	159,084.46
Accounts receivable	277,135.75
Cash on hand	5,426.67
Conductors' working fund	5,355.00
Winnipeg, Selkirk and Lake Winnipeg Ry. Co.	623,649.69
	<u>\$13,072,562.83</u>

LIABILITIES.

Capital stock	\$ 5,320,950.00
Bonds, 5%, payable Jan. 1, 1927	\$1,000,000.00
Bonds 5%, payable Jan. 2, 1935	4,000,000.00
W. S. & L. W. Ry. bond interest and payment guaranteed	400,000.00
	<u>5,400,000.00</u>
Accounts payable	\$ 415,705.65
Wages for Dec.	48,561.55
Interest on bonds paid Jan. 2, 1908	125,000.00
	<u>589,267.20</u>



THE WINNIPEG ELECTRIC RAILWAY CO.'S WATER PLANT, PINAWA CHANNEL, WINNIPEG RIVER, 30,000 h.p.

Car license, due Feb. 1, 1908	\$ 3,160.00
City percentage, due Feb. 1, 1908	43,092.87
	<u>46,252.87</u>
Unredeemed tickets	3,152.69
Bank of Montreal	701,328.70
Suspense	205,300.74
	<u>\$12,266,252.20</u>
Surplus	806,310.63
	<u>\$13,072,562.83</u>

PROFIT AND LOSS ACCOUNT.

Balance at credit, Dec. 31, 1906	\$ 761,538.73
Less paid on acct. stock dividend	142,100.00
	<u>\$ 619,438.73</u>
Net earning	186,871.90
Balance at credit, Dec. 31, 1907	<u>\$ 806,310.63</u>

Statistical information: Capital stock, authorized, \$6,000,000; subscribed, and paid in, \$5,320,950; subscribed and in course of payment, \$679,050; gross receipts, \$1,722,406.69, increase 1907 over 1906, 21.62%; operating expenses, \$775,731.02; increase 1907 over 1906, 10.53%; operating expenses per cent. of earnings, 45.05; net earnings, \$946,675.67; increase 1907 over 1906, 30.75%, \$232,334.35; fixed charges, \$386,667.10; dividends, \$373,136.67; surplus for year, \$186,871.90; net income per cent. of capital, 12.01; passengers carried, 20,846,317, increase 1907 over 1906, 3,616,763; transfers, 5,954,067; railway earnings per capita, 9.84.

The directors and officers are: President, W. Mackenzie; Vice-President, W. Whyte; Secretary-Treasurer, F. Morton Morse; other directors, Sir Wm. C. Van Horne; D. D. Mann; D. B. Hanna, A. M. Nanton, H. Sutherland, R. J. Mackenzie; Manager, W. Phillips.

Niagara, St. Catharines and Toronto Ry.

The annual report for the year 1907, presented at the meeting of shareholders Mar. 16, showed liabilities of \$2,600,933.50, made up of capital stock, \$925,000; first mortgage bonds, railway, \$819,000; first mortgage bonds, navigation company, \$200,000; current liabilities, \$352,224.42; profit and loss, \$204,709.08. The assets showed investment account, \$2,458,822.50; navigation stock in treasury, \$100,000; current assets, \$42,111.00.

RECEIPTS.

MAIN LINE—	1907.
Passenger earnings	\$ 95,517.81
Freight earnings	56,492.51
Express earnings	1,116.91
Sundry earnings	3,687.97
WESLEY PARK—	
Earnings	34,099.03
LOCAL LINE—	
Earnings	21,750.31
NAVIGATION CO.—	
Passenger earnings	28,360.29
Freight earnings	25,157.16
Sundry earnings	1,122.62
Welland division	3,158.64
	<u>\$270,463.25</u>

EXPENSES.

1907.	
Maintenance of bridges and buildings	\$ 16,885.71
Maintenance of locomotive and car department	35,427.92
Maintenance of passenger department	32,004.91
Maintenance of freight department	19,686.78
Maintenance of boat department	35,656.27
Maintenance of power house	12,491.69
General expense	30,949.92
Total operating	<u>\$183,103.20</u>
Net earnings from operations	\$ 87,360.05
Interest and discount	47,304.00
Surplus for year applicable for dividends	<u>\$ 40,056.05</u>

STATISTICS.—Percentage of operating to total earnings, 67%; passengers carried, 2,267,206; divided as follows: main line, 948,035; local line, 441,004; Wesley Park line, 762,442; Welland line, 31,420; Navigation Co., 84,305.

The freight traffic showed a slight increase notwithstanding the fact that toward the end of the year the financial stringency affected materially some of the heaviest shippers. Freight operation was increased, as at times it was necessary to cut off freight service for two or three days at a time owing to the condition of fills, due to settling. This had the effect of increasing car service cost, also the labor of operation, as to relieve the congestion of cars extra trains had to be run. The passenger business, with the exception of navigation, showed the regular increase. The navigation business fell off owing to the extremely cold and late spring and the general condition of business at the end of the season due to financial reasons. The local line at Niagara Falls shows a falling off in gross earnings, due to the completion of the large works at that point, and the consequent dismissal of hundreds of men engaged on this work who were regular patrons of the line. The slight increase in operating on the main

line is due to increased cost of repair material, also the necessity of running extra trips occasioned by the settling of the fills, and slight increase in wages of train men on the sliding scale basis.

All the trestle work has been eliminated between Thorold and Merritton, all wooden bridges replaced with steel, and between Merritton and St. Catharines, with the exception of that section between the Lybster cotton mills and the G.T.R. main line crossing, which is subject to Government permission, which permission is now under Government consideration. There are also some steel girders to be put in at the Lincoln paper mill over the raceway, which are ready, and will be put in the first thing in the spring.

The line from Fonthill to the Welland River is complete with the exception of ballasting and overhead wire. The wire has been ordered, also the ballast. This work will be completed as soon as the snow disappears. Options are in hand from the Welland River to the Toronto, Hamilton and Buffalo Ry. crossing, some of which have been closed, and the engineer has an estimate for the crossing of the Welland River. Options are also in hand for the line from St. Catharines to Niagara-on-the-Lake.

The 1,000 h.p. rotary sub-station at Thorold has been built, completely equipped, and is now in operation. The Merritton plant is being turned over to the Willson Carbide Co. as per terms of agreement. With the present arrangement the power is very much increased, and very much better both in quality and distribution.

The steamers Lakeside and Garden City will only need the usual spring repairs to put them in first-class condition for the season's use.

Following are the officers and directors for the current year: President, F. Nicholls; Vice-President, E. R. Wood; Directors, D. D. Mann, Z. A. Lash, H. G. Nicholls, Emilius Jarvis and C. E. A. Goldman.

Projects, Construction and Betterments.

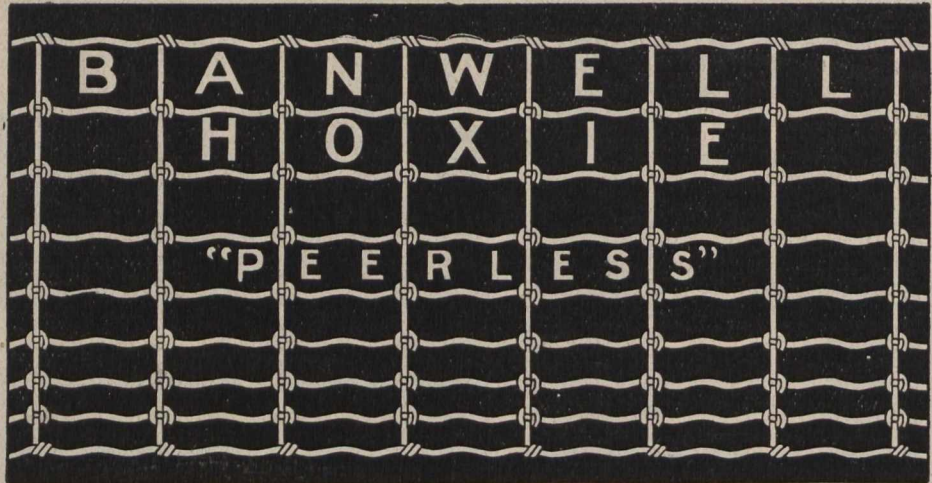
Berlin and Bridgeport Electric St. Ry.—Extensions are under consideration by which the line will run through Bloomingdale, New Germany, Conestoga, Winterbourne and West Montrose, to connect with the C.P.R. Guelph and Goderich line.

Brantford and Hamilton Ry.—It is not expected that the electric railway connecting these cities will be opened for traffic until May 24. The line is reported to be practically completed, and the ballasting, etc., will be completed at once. The terminus in Brantford will be at Cockshutt bridge. (Feb., pg. 121.)

British Columbia Electric Ry.—During 1907, in addition to extensions to track amounting to 9.8 miles, several miles of track in Vancouver have had the old 40-lb. rails replaced by 60-lb. rails, and on the Victoria branch lines, with 56-lb. rails. It is proposed to undertake, during the current year, extensions totalling 80 miles, including the Westminster-Chilliwack line of 56 miles.

Brockville, Ont.—A proposal is being considered to construct an electric railway between Brockville and Prescott, 16 miles, together with a street railway through Brockville. Included in the scheme is a summer park, which it is proposed to construct halfway between Brockville and Prescott. J. B. Gaughn, Brockville, is the prime mover in the proposal.

Calgary St. Ry.—The special committee of the city council appointed to consider the question of a street railway recently reported that, in the committee's opinion,



PEERLESS WOVEN WIRE FENCING

Made from uniformly heavy hard steel wire, well galvanized.
 Made in large rolls ready to stretch up.
 Requires but few posts; costs very little to erect.
 Conforms perfectly to any surface, no matter how rough
 Reduces the cost of fence maintenance to a minimum.

BANWELL HOXIE WIRE FENCE COMPANY LIMITED
 HAMILTON, ONTARIO

C.P.R. LANDS

THE CANADIAN PACIFIC RAILWAY COMPANY have 9,000,000 acres of selected lands for sale in Manitoba, Saskatchewan and Alberta.

Maps, as enumerated below, showing these lands in detail, will be sent free on application.

- Map No. 1—Winnipeg to Second Meridian.....\$ 8.00 to \$15.00 per acre.
- Map No. 2—South-Eastern Saskatchewan, 2nd to 3rd Meridians..... 10.00 to 25.00 per acre.
- Map No. 3—Main Line, 3rd Meridian to Range 10 W., 4th Meridian(generally) 8.00 " "
- Map No. 5—South-Western Alberta..... 8.00 to 15.00 per acre.
- Map No. 6—Part of Alberta—Edmonton, Battle and Saskatchewan Rivers Districts—4th Meridian to Range 7, West 5th Meridian..... 10.00 to 25.00 per acre.
- Map No. 7—Part of Western Saskatchewan, 3rd to 4th Meridians..... 10.00 to 25.00 per acre.

All prices are subject to change without notice.

TERMS OF PAYMENT

An actual settler may purchase not more than 640 acres on the ten instalment plan by paying a cash instalment at time of purchase, interest at six per cent. on the unpaid purchase money at the end of the first year, and the balance of the principal, with interest, in nine equal instalments annually thereafter, as shown in the following table:

160 Acres at \$ 8.00 per acre, cash payment	\$191.70	first year's interest	\$65.28	and nine instalments of \$160.00
" " 9.00 " " "	215.70	" " "	73.46	" " 180.00
" " 10.00 " " "	239.70	" " "	81.62	" " 200.00
" " 11.00 " " "	263.60	" " "	89.78	" " 220.00
" " 12.00 " " "	287.60	" " "	97.96	" " 240.00
" " 13.00 " " "	311.55	" " "	106.10	" " 260.00
" " 14.00 " " "	335.60	" " "	114.32	" " 280.00
" " 15.00 " " "	359.50	" " "	122.44	" " 300.00

Purchasers who do not undertake to go into residence on the land are required to pay one-sixth of the purchase money down, balance in five equal annual instalments with interest at the rate of six per cent. per annum.

Interest at six per cent. will be charged on overdue instalments.

F. T. GRIFFIN, Land Commissioner, Winnipeg.

CANADA NORTH-WEST LAND CO.

This Company has 525,000 acres of selected lands in Manitoba and Saskatchewan which offer excellent opportunities to settlers and investors who desire to secure good lands in well-settled districts. These lands are on sale at the Company's Office at Winnipeg, and at the various land agencies of the Canadian Pacific Railway Company.

F. T. GRIFFIN, Land Commissioner, Winnipeg.

JOHN S. METCALF CO.

ENGINEERS AND CONTRACTORS FOR

GRAIN ELEVATORS ONLY

CONCRETE—STEEL—WOOD

Plans and Specifications our Specialty

619-623 THE TEMPLE - - CHICAGO

the city was not prepared, at present, to undertake such construction, and requested authority to invite proposals to April 15 from private companies. (Feb., pg. 121.)

Dunnville, Wellandport and Beamsville Ry.—Arrangements are said to have been made for the financing of this projected line by a firm of bankers in Philadelphia, Pa. The provisional directors of the company are: President, J. A. Ross, Vice-President, F. R. Lalor, M.P.; G. R. Smith, T. Marshall, P. I. Edgcombe, M. P. Parry, F. J. Ramsay, E. E. Anderson; Secretary, W. J. Aikins.

The company is said to be prepared to submit proposals to the municipalities through which its projected line will run, and it is stated that construction will be commenced from Dunnville to St. Ann, 16 miles, this year.

An extension of two years within which to undertake the construction of this line was granted, Mar. 26, by the Ontario Legislature. (Jan., pg. 47.)

Guelph Radial Ry.—Application has been made to the Ontario Legislature for an extension of the time in which to complete construction of several authorized branch lines. The application was, later recast to provide that the work must be completed within five years instead of seven years as in the original bill. This means that construction must be completed by 1913. Amendments were also added to the bill, to provide that the company must obtain the consent of any municipality before constructing and operating any lines within its boundaries. (Feb., pg. 121, and Jan., 1907, pg. 45.)

London Street Ry.—A by-law has been prepared to carry out an agreement arrived at between the company and the city council by which the company will be permitted to use T rails in relaying part of its tracks on Dundas st., London, Ont. (Feb., pg. 121.)

Longueuil Tramway Co.—Application is being made at the current session of the Quebec Legislature for an act extending the time within which the projected lines may be constructed. H. St. Mars is Secretary of the company.

Montreal Park and Island Ry.—It has been decided to construct an extension of about a mile along the Upper Lachine Road, so as to give the residents of the Westmount plateau better connection with the city. (Mar., pg. 203.)

Montreal St. Ry.—We are advised that the company has completed the purchase of the right-of-way from the present terminus of the Back River Line, to a point opposite St. Vincent de Paul, about 2.55 miles, but it is not likely that construction of this line will be undertaken this year.

Morrisburg Electric Ry.—Application is being made at the current session of the Ontario Legislature for an act to incorporate a company to construct and operate a system of electric railways from Morrisburg, through Williamsburgh, Winchester, Chesterville, Morewood to Russell, and a branch line to Winchester village. Power is also sought to construct and operate telegraph and telephone, power and lighting lines in connection with the railway, and to own and operate hotels, sanitariums, and vessels to run in connection with the railway. I. Hilliard, Morrisburg, Ont., is solicitor for the company.

The Mount McKay and Kakabeka Falls Ry. Co.'s bill in respect to its powers, was before the Ontario Legislature Mar. 19, when the clause relating to the exemption of taxation for 21 years by Neebing township was struck out and the bill reported.

It is stated, however, that the township council has power to re-enact this clause without appeal to the Legislature. (Feb., pg. 121.)

Niagara, St. Catharines and Toronto Ry.—The bill before the House of Commons, providing for the extension of this railway company's lines to Hamilton and Toronto, was passed Mar. 16, with the addition of two restrictive clauses, prohibiting the company from doing a street railway business, and from running on any highway or public place within any municipality, without the consent of such municipality expressed by by-law. The N., St. C. and T. Ry. is operated under a Dominion charter, and is empowered to use steam and electricity as a motive power.

Nipissing Central Electric Ry.—Representatives of the various municipalities which have been asked to grant franchises for the proposed electric railway in the Cobalt district, met at Haileybury, Ont., recently to consider the form the franchise should take. The company will not pay for a right-of-way except in places where private property is crossed, but has waived the claim of exemption from taxation. The agreement provides that work shall be commenced by July 1, and that the first five miles must be completed within one year. The first section to be undertaken is between Cobalt and Haileybury. The company gives a bond of \$1,000 to each municipality, which will be forfeited if work to that amount is not completed within a year from the date of commencement. The meeting was generally in favor of giving the company every assistance.

North Midland Ry.—A. E. Welch appeared before the St. Mary's, Ont., Town Council recently in connection with the passing of a by-law granting a franchise in that town. The company wanted a franchise of 25 years, with an automatic extension for a further period, as they could not go to Great Britain and sell bonds to run for a less period than 40 years. Power was desired to operate lines on Water St., Queen St. west, and Wellington St., and the company was willing to consider the question of the rebuilding jointly of the Wellington St. bridge. The question was fully considered by the council at a special meeting held Mar. 2, when the by-law was passed. The Ontario Legislature has passed through committee a bill granting the company an extension of time for the construction of its projected line, with the proviso that at least 15% of its \$1,000,000 capital must be expended within a specified period. (Mar., pg. 203.)

Ontario West Shore Electric Railway.—The application for an extension of the time in which to undertake construction of the proposed lines, and for confirmation of the bonus by-laws passed by various municipalities through which the line is to run, was before the Ontario Legislature, Mar. 26 and ordered to stand over, to permit of the bill being put in legal form. (Mar. pg., 203.)

Quebec and Saguenay Ry.—A press report states that a syndicate has been formed, with a capital of \$5,000,000, to construct an electric railway from Ste. Anne de Beaupre to Tadoussac, Que., a distance of 120 miles. R. Forget, M.P., is interested in the scheme, and we are advised that there is a probability of the matter being taken in hand in the near future. (Mar., pg. 203.)

Southwestern Traction Co.—An extension of two years, within which the company is to commence construction of its extensions of track, was granted by the Ontario Legislature, Mar. 10. It is understood that construction on the lines to Delaware and In-

gersoll will be commenced during the year, and that the extension to Aylmer will be considered later. (Mar., pg. 203.)

Toronto Ry.—Application is being made at the current session of the Ontario Legislature by the Toronto City Council for an act providing among other things for an amendment of the act relating to the Toronto Ry., so that in case "of the company refusing to lay down and operate new lines, as provided in the conditions attached to the agreement between the company and the city, the city may lay down and operate such new lines; and also to provide that the city may construct and operate lines of street railway in the territory added to the city since the date of the agreement with the company." (Jan., pg. 47.)

Upper Columbia Tramway Co.—It is proposed to make application under the British Columbia Tramway Company Incorporation Act and the acts amending the same, for the incorporation of a company with this title to construct a single or double-track railway or tramway with the necessary branch lines, side tracks, etc., throughout the district of East Kootenay, the general route to be as follows: Commencing at or about the south-east corner of lot 21, group 1, Kootenay district, on the west shore of Windermere Lake; thence along the course of Johnson Creek to Brady Creek, and thence along the course of Brady Creek through the north end of block C, in lot 4,596, and lot 27, and from the junction of Johnson Creek with Brady Creek south-easterly to the south end of block D, lot 4,596. The applicants are Jas. McCormack, C. E. Ways, and A. C. Underhill.

Western Central Ry.—An extension of two years within which to commence construction of the proposed line between London and Toronto, via Guelph, was granted by the Ontario Legislature Mar. 19. It is provided that \$250,000 must be expended on construction work within that period. The clause in the bill to empower the company to engage in the businesses of navigation, park, hotel, elevator, warehouse, and express companies was struck out. Five years are now allowed for the completion of the road. C. B. Smith, Toronto, is the company's engineer. (Feb., pg. 121.)

Windsor, Chatham and London Ry.—An application for an extension of time within which the railway is to be constructed and completed was granted by the House of Commons Mar. 17. A Dominion charter was granted the company in 1906, empowering it to construct a railway from Windsor to Chatham, and thence to London, Ont., with power to operate telegraph and telephone lines, and to make agreements for the operation of the line and for other purposes with the G.T.R., the C.P.R., the Lake Erie and Detroit River Ry., the Canada Southern Ry., and the Windsor, Essex and Lake Shore Rapid Ry. The provisional directors named in the bill are: I. and W. T. Piggott, W. F. McKeough, Chatham, Ont.; I. Brien, Essex, Ont.; W. C. Crawford, W. I. Moffatt, Tilbury, Ont.; T. F. Robinson, Detroit, Mich., and F. A. Tennis, Philadelphia, Pa. (Apr., 1906, pg. 457.)

Windsor, Essex and Lake Shore Rapid Ry.—The line between Windsor and Kingsville is complete and in operation, and it is expected that the extension to Leamington will be in operation by May 1.

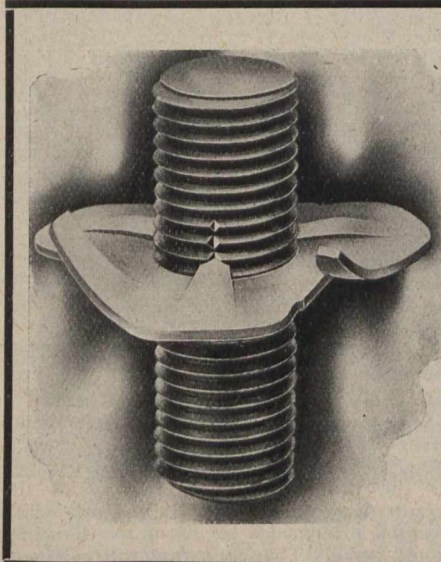
Winnipeg Electric St. Ry.—The Winnipeg City Council has laid over for further consideration a proposal to strengthen the buttresses and place a new superstructure on the Main St. bridge so as to permit the laying of a double track for the street railway. (Jan., pg. 47.)

Electric Ry. Finance, Meetings, Etc.

Fort William, Ont.—The city councils of Fort William and Port Arthur have arrived at an agreement by which the tracks of the Port Arthur St. Ry. within the Fort William boundaries shall be purchased by Fort William, together with half of the rolling stock. The amount to be paid for the track is based on the estimated profits for five years of that portion of the road. Operation of the system will be controlled by a joint commission consisting of two members from each city, a fifth member being the mayor of each city acting in alternate years. It is understood that the line will be double-tracked throughout; and power furnished by Port Arthur. (Feb., pg. 121.)

Halifax Electric Tramway Co.—Traffic receipts for Feb., \$12,272.37, against \$10,912.08 for Feb., 1907. Receipts for 2 months ended Feb. 29, \$25,192.46, against \$23,299.84 for same period, 1907.

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of 6% per annum, payable April 1, has been declared.

Hamilton, Grimsby and Beamsville Electric Ry.—It is reported that the Dominion Power and Transmission Co. has purchased the stock of the minority shareholders in the H.G. and B.E.R. Co., exchanging therefor D.P. and T. Co.'s stock. The control of the railway is thus secured by the Power Co.

Hamilton Radial Ry.—The bill granting a Dominion charter to the H.R. Ry. has been passed by the House of Commons. Several amendments which were proposed with a view of protecting the rights of municipalities and the Provincial Governments were defeated. The Minister of Railways stated that in the Government bill respecting the Railway Commission a section would be inserted providing for the specific performance of contracts. (Jan., pg. 47).

Hamilton Street Ry.—Negotiations have been proceeding for some time between the company and a committee of the Hamilton City Council, and it was reported Mar. 8, that it was probable a new agreement will be made with the company. The committee offered to give the company a reduction of from 8 to 5% on all receipts over \$316,000, and some other concessions, in return for which the company would reconstruct the line. It was stated March 20, that the negotiations were likely to fall through. The city offers to reduce the amount of its percentage from 8 to 5% on all earnings over \$316,000, the amount earned last year. Col. Gibson proposes that the city take 8% on \$316,000 for the next three years as its share, and 4% on earnings over that amount after three years, till the end of the contract term.

Montreal St. Ry.—Passenger earnings for Feb., \$265,179.10; miscellaneous earnings, \$5,045.53; total, \$270,224.43; operating expenses, \$201,449.05; net earnings, \$68,773.38; city percentage on earnings, \$14,567.24; interest on bonds and loans, \$17,935.96; contingent for renewals, \$13,258.95; rent leased lines, \$444.43; surplus, \$22,568.80; against, \$238,250.89 passenger earnings; \$5,217.03 miscellaneous earnings; \$243,467.94 total; \$182,273.08 operating expenses; \$61,192.86 net earnings; \$12,600.14 city percentage on earnings; \$11,379.92 interest on bonds and loans; \$12,173.40 contingent for renewals; \$339.96 rent leased lines; \$24,699.44 surplus for Feb., 1907. Total earnings for 5 months ended Feb. 29, \$1,458,462.81; operating expenses, \$943,475.93; net earnings, \$514,986.88; city percentage on earnings, \$61,661.35; fixed charges, \$158,363.20; surplus, \$294,962.33; against \$1,327,460.38 total earnings; \$888,195.68 operating expenses; \$439,264.70 net earnings; \$53,311.64 city percentage on earnings; \$142,355.14 fixed charges; and \$243,597.92 surplus for same period 1906-07.

Mount McKay and Kakabeka Falls Electric Ry.—The bill recently passed by the Ontario Legislature confirms the Neebing tp. by-law, to guarantee the company's bonds to the extent of \$10,000 a mile for the 4 miles of the route through the township.

Nelson City, B.C.—An act has been passed at the current session of the British Columbia Legislature to enable the corporation of the city to borrow \$85,000 for electric light and power purposes.

New Westminster-Vancouver Tramway Co.—Judgment has been given in the British Columbia Courts in the action of Jenns against the executors of David Oppenheimer. The defendants obtained a verdict of \$50,000 from H. R. Sperling, R. M. Horn-Payne and R. W. Garbutt, in connection with the sale of the New Westminster-Vancouver Tramway Co., and Jenns, a shareholder, sued on

his own account and on behalf of other shareholders for an accounting. The court finds that the plaintiff is entitled to a declaration that the money received was on account of the N.W.-V.T. Co., and to an order that it be paid into court to abide the result of the reference.

The Suburban Tramway and Power Co. is applying at the current session of the Quebec Legislature for an act authorizing an increase of the capital stock of the company.

Toronto Ry.—Car earnings for Feb., \$260,834.50, against \$233,860.52 for Feb., 1907. Earnings for 2 months ended Feb. 29, \$530,159.79, against \$488,673.04 for same period 1907.

Windsor, Essex and Lake Shore Rapid Ry.—At a special meeting of shareholders, Mar. 4, the following officers and directors were elected for the current year: President, J. Piggott, Chatham, Ont.; Vice-President, W. C. Crawford, Tilbury, Ont.; Second Vice-President, C. Magee, Ottawa; other directors, J. W. McColl, Hon. E. G. Stevenson, Toronto; Secretary, W. T. Piggott; Treasurer, W. R. Phillimore, Chatham, Ont.

Electric Railway Notes.

We are advised that the Ottawa Electric Ry. has not yet decided to operate pay-as-you-enter cars.

A. J. Ferguson, Montreal, was elected a director of the Detroit United Railways, at the adjourned meeting held Mar. 18.

D. A. Gordon has been appointed general manager of the Chatham, Wallaceburg and Lake Erie Ry., vice G. Fielder, resigned.

The Southwestern Traction Co., London, Ont., has ordered six interurban cars from the Preston Car and Coach Co., to be delivered May 15.

The Ontario Railway and Municipal Board will sit in Port Arthur, Ont., June 3, to hold an enquiry relative to the application for permission to run cars on Sundays.

The Ontario Legislature has approved of a bill of the town of Niagara Falls, by which the assessment of the Suspension Bridge Company is fixed at \$150,000 for a period of ten years.

The Winnipeg St. Ry. employes have met to discuss questions regarding the renewal or changing of their wage schedule, which expired with March. It has been stated that increases of pay will be demanded.

The St. Thomas, Ont., St. Ry. authorities have decided to raise the price of tickets from 8 to 7 for 25c., on account of the constantly recurring deficits. Workmen's tickets will remain at 25c. for 10. This line is owned and run by the municipality.

The Ottawa Electric Ry.'s standard passenger tariff C.R.C. 1 has been approved by the Board of Railway Commissioners, relating to rates between the Ottawa city limits and the Experimental Farm, Britannia-on-the-Bay and Rockcliffe rifle range.

The B.C. Electric Ry. is not, as previously reported, experimenting with a new fender on its cars. The company has offered to adopt any fender which the civic authorities may select, provided they thus relieve the company of liability arising from the use of such on the cars.

The British Columbia Electric Ry. proposes to add to its rolling stock during the current year: 4 interurban cars, 2 work cars, and 20 city cars; all of which will be constructed at its own car shops at New Westminster, which will be enlarged to double the present capacity.

The Montreal St. Ry. Co. has submitted

an offer to the roads committee of the Montreal City Council that it is prepared to remove the snow in the streets at a maximum cost of \$3,000 a mile, the city paying one-half, and providing a dumping ground; the contract to run for 10 years. At present disputes occur annually between the city and the company with respect to the removal of the snow.

W. G. Ross, Managing Director, and D. McDonald, Manager Montreal St. Ry., were in consultation with a committee of the city council Mar. 12, to consider the terms of a by-law to govern the carriage of freight over the company's street lines. It is stated that though no decision was arrived at, there is every prospect of a satisfactory working agreement being reached, and that the service will be commenced at an early date.

The British Columbia Legislature has before it a bill to amend the Municipal Clauses Act in a number of details, including: the addition of a new section, 242B, providing that any municipal council may with the assent of the electors as provided by section 75, "construct, maintain and operate lines of rails and street railways, and dispose of, lease, alienate or grant running rights over the same." Another new section, 242C, provides that no person, existing or future corporation shall obtain a prescriptive right on streets or highways, by reason of any possession or occupation of land forming part of such street or highway.

Hon. Col. Matheson, Provincial Treasurer, and Hon. J. S. Hendrie received a deputation from the Canadian Street Railway Association, Mar. 6, to hear arguments against the proposal in the Supplementary Revenue Act, now before the Ontario Legislature, to increase the taxes on suburban and interurban electric railways by some 50%. The deputation consisted of R. J. Fleming, General Manager Toronto Ry.; J. Anderson, Manager Sandwich, Windsor and Amherstburg Ry.; A. H. Royce, President Toronto Suburban Ry., and Counsel for the Association; C. L. Wilson, Assistant Manager Toronto and York Radial Ry.; C. B. King, Manager London St. Ry.; C. H. Ivey, Solicitor, London St. Ry.; D. J. McIntosh, Accountant Niagara, St. Catharines and Toronto Ry.; and Acton Burrows, Secretary of the Association, and Managing Director RAILWAY AND MARINE WORLD. They particularly urged the point that there be no increase in the taxation of suburban and interurban lines, which it is claimed are with two or three exceptions by no means paying investments at present.

Electric Railway Statistics.

The statistical information collected by the Department of Railways shows that for the year ended June 30, 1907, the paid-up capital of the electric railways of the Dominion was increased by \$11,337,505, bringing the total amount to \$75,195,475. The mileage, however, remained almost stationary, 814.52. The gross earnings, \$12,630,430, show an increase of \$1,663,558; and the operating expenses, \$7,737,251, show an increase of \$1,062,214. The percentage of expenses to gross earnings was 61.25, which is regarded as highly encouraging. The net earnings were \$4,971,624. The total number of passengers carried was 273,999,404, an increase of 36,344,330 over the number carried in 1905-06. The record of accidents for the year, adds the report, is distressing. The killing of 71 persons and the injuring of 1,736 others reveals the sacrifice which would appear to be inseparable from the operation of electric railways. The danger is manifestly in proportion to the

number of cars run and the population served thereby, since out of 71 fatal accidents 22 took place in Montreal and 20 in Toronto. Singularly, however, not a single passenger was killed in Montreal, while nine lost their lives in Toronto. Of the 1,736 non-fatal accidents, many of which were of a minor character, 490 occurred in Montreal and 696 in Toronto. A comparative table shows that while but one passenger in every 40,311,552 was killed in 1901 it was reduced to one in 6,782,243 in 1905, and in 1906-07 it stood at one in 10,188,126. The average for the seven years was one in 18,268,306.

A special effort was made during the year to ascertain the total amount of capital invested in the construction and equipment of electric railways in Canada, but the difficulties were for the time being insurmountable. The returns received showed a total cost of roads and rolling stock amounting to \$52,399,818; but it was not practicable to obtain reliable figures with respect to the primary outlay on seven systems which were either in process of construction or had been purchased at forced sale. A careful estimate was made of the probable investment in connection with these lines, and it was put down at not less than \$13,000,000. This would bring the total up to more than \$65,000,000. During the current year it is hoped that a complete and accurate statement may be made up.

A special schedule was issued having as its object the gathering of authentic data in relation to the employes and equipment of electric railways. This information was not hitherto available, and practically complete returns have been received. When tabulated the answers gave the following interesting results: Staff officers, 190; clerks, 483; conductors, 2,394; motormen, 2,252; other employes, 3,712; total employes, 9,031; total pay list, \$5,291,585. It will be seen that the total pay list represents 68.26% of the total operating expenses. With respect to equipment, it was ascertained that 207 cars were added during the year, of which 162 were of Canadian manufacture. Of all the rolling stock in use 75.50% was found to have been produced in the Dominion.

Following are comparative statistics for 1901, when the collecting of information was started, and for 1907:

	1901.	1907.
Total mileage.....	*674,58	814,52
Paid-up capital.....	\$39,076,018	\$73,567,795
Gross earnings.....	\$5,768,283	\$12,630,430
Net earnings.....	\$2,333,120	\$4,971,624
Earnings—passenger traffic	\$5,329,687	\$12,013,421
“ freight	\$95,082	\$344,367
“ mails and expr's	\$33,135	\$41,951
“ other sources...	\$110,377	\$233,190
Total operating expenses...	\$3,435,162	\$7,737,251
Maintenance of way and buildings.....	\$310,892	\$765,684
Cost of motive power.....	\$502,101	\$1,412,358
Maintenance of cars.....	\$322,700	\$1,060,783
General and oper't'g charges	\$2,299,468	\$4,498,424
Total car mileage.....	31,750,754	53,361,227
Passengers carried.....	120,934,656	273,999,404
Tons of freight carried.....	287,926	479,731

*Improperly included, double track and sidings.

F. E. Cox, Middleton, N.S., read a paper recently at a meeting of the Nova Scotia Press Association on Government ownership of the Dominion Atlantic and other N.S. railways.

G. S. Cantlie, Superintendent C.P.R. Car Service Department, Montreal, reported recently that there has been a marked increase in the demand throughout the Dominion for cars for the movement of freight. There has been an unprecedented movement of wheat from the head of the lakes to St. John, N.B., over 7,000,000 bush. having been hauled over the rail route so far this season, against about 4,000,000 bushels for the same period 1906-07.

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Grain Elevator Notes.

The Goderich, Ont., elevator is being enlarged to a million bushel capacity.

The Vancouver, B.C., Board of Trade favors the proposal to construct a public elevator at Vancouver.

J. Callard has been appointed Superintendent C.P.R. elevators, Owen Sound, Ont., in succession to J. H. McQueen, deceased.

J. Fisher, representing the British Consolidated Mills Co., London, Eng., who has been visiting Manitoba recently, expressed himself as in favor of the proposal to build 60 elevators in the west during the ensuing summer.

The Maple Leaf Flour Mills Co., whose mill at Kenora, Ont., was recently destroyed by fire, will commence re-erection at an early date. A by-law granting the company an exemption from taxes was passed there Mar. 13.

The Wheat City Flour Mills Co.'s business has been taken over by G. McCulloch & Sons, Souris, Man., and the complications in connection with the operations of the company's elevator at Brandon, Man., have been straightened out.

T. S. Matheson, heretofore Travelling Superintendent Winnipeg Elevator Co., has recently acquired the elevators at Caron, Midale, and Stilson, Sask., and Arrow River, Man., on the C.P.R., and is arranging to construct two additional elevators at points in the same vicinity.

A deputation from the Manitoba Grain Growers' Association recently waited on the Provincial Premier, to urge the Association's views in favor of Government ownership of internal elevators, and asked for an expression of opinion on the subject. The Premier promised to consider the matter.

The total amount expended upon the construction of the Dominion Government ele-

vator at Port Colborne, Ont., was stated by the Minister of Railways and Canals, in the House of Commons, Mar. 2, to have been \$598,700.07, and he added that it was estimated that the further amount required to complete the structure would be \$151,299.93.

Fort William grain dealers have forwarded complaints to the C.P.R. eastern and western headquarters at Montreal and Winnipeg, respectively, as to delay in furnishing cars at Fort William for the removal of grain to the seaboard. It is alleged that orders have been placed for 1,700 cars, and that non-fulfilment of these orders has caused a block in the grain trade there, while storage charges often wipe out the dealers' profits.

During Jan. the number of accidents to navigation employes in Canada was eight, 7 of which were fatal. Of the latter, 5 were due to drowning, and 1 each to a fall, and to falling material.

MARINE DEPARTMENT

Admiralty Jurisdiction in Canada.

The following resolution was moved in the House of Commons, Mar. 12, by the Minister of Justice: "That it is expedient to make better provision for the exercise of Admiralty jurisdiction within Canada in accordance with the Colonial Courts of Admiralty Act, 1890; also to provide that by way of compensation for loss of salary or emoluments of office there may be granted to each of the present Judges in Admiralty of the Exchequer Court who had office on Sept. 1, 1907, and to the Marshal of the Quebec Admiralty district an annuity equal to two-thirds of his salary; to the Registrar of the Toronto Admiralty district \$1,000; to the Registrar of the Nova Scotia Admiralty district \$1,250, and to the Registrar of the New Brunswick Admiralty district \$1,500."

Mr. Aylesworth stated that the present system was not satisfactory, and that a bill which would be introduced would take the Admiralty business out of the jurisdiction of the Exchequer Court, which he considered anomalous, and place it within the jurisdiction of the different provincial courts. It was not the intention to interfere with the present court practice, and with the exception of local Admiralty judges in Nova Scotia, Ontario and Quebec, who were not judges of the Superior Court, there would be no changes in the personnel. For the judges mentioned compensation would be provided. There appears to be considerable doubt as to the exact intention of the Government, but taken simply as read, it would imply that so far as Nova Scotia, Quebec and Ontario are concerned, Admiralty cases are to be dealt with in the ordinary courts, which may, or may not, be competent to deal with such special matters as may from time to time arise. A resolution passed at the recent annual meeting of the Dominion Marine Association strongly disapproves of any change in the jurisdiction, procedure or administration of any Canadian Admiralty Court, which may in any way impair the rights, remedies or facilities for relief enjoyed under the present law. The Association also urges that having regard to the nature of the property in dispute and of the questions placed in issue in Admiralty cases, and to the necessity for the preservation of such peculiar rights and requirements as, the action in rem, the right to arrest under

warrant by telegram, the release under bond, the preliminary acts in collision cases, and various other items of Admiralty practice, it is essential for the protection and convenience of litigants that a separate procedure be preserved, while the same special attributes and requirements, and the special laws, regulations and maritime customs governing decisions of such cases render specialization desirable on the part of the administrative officers of these courts, as well as in practice and procedure. The Association believes that the rapidly increasing growth of the merchant marine entitles the foregoing views to special attention, and that steps should be taken to extend rather than curtail any rights at present enjoyed. The Montreal Board of Trade, the Shipping Federation of Canada, the Montreal bar, and other bodies, have also memorialized the Government against the proposed change in jurisdiction.

New Steamship for P.E.I. Service.

The ice-breaking, mail and passenger steamer for service between New Brunswick and Prince Edward Island, for which tenders have been invited by the Department of Marine, and which is to be constructed with a view of overcoming the severe winter conditions existing in the Northumberland Straits, will be a vessel of great interest. During his visit to Great Britain and the Continent last summer the Minister, Mr. Brodeur, made extensive enquiries regarding the construction and work of ice-breakers and had many consultations with leading experts there, and the present design has been compiled and completed as the result of these investigations, together with the knowledge based on many years' experience of the officers of the Marine Department navigating Northumberland Straits during the winter.

The principal dimensions of the vessel are: Length b.p. 250 ft., breadth, moulded, 46 ft.; depth, moulded, 27 ft. The indicated h.p. is 6,000, and it is estimated that this power will enable the vessel to reach a speed in open water of about 17 knots. The form of the vessel is specially designed to withstand ice pressure. Longitudinally the lines show ample curvature due to the great beam, whilst vertically the sides are angled from above the water line to the bilge so that when under pressure the vessel will always have a distinct tendency to free herself, and thereby

reduce to a minimum the possibility of local distortion. The general structure is of great strength. The framing amidships and approaching the ends forward and aft is of heavy channel section spaced 18 ins. apart. At the extreme ends of the ship, where excessive flanging is necessary, the channel framing is substituted with massive angle frame and reverse frame spaced 15 ins. apart. There are nine transverse watertight bulkheads and special consideration has been given to the strengthening of these, especially at the fore end of the vessel, where the greatest shocks are experienced. The whole transverse framing is bound inside in every way practicable, thus forming a complete structure in itself independent of the outer plating.

There are three steel decks, and an inner bottom, which extends from the trimming tank forward to the trimming tank aft. The outer or shell plating is of Siemens-Martin ship steel. At the waterline of the vessel and running fore and aft a special belt of plating is fitted 8 ft. deep and 1 in. thick. Forward from the bottom of this belt to the keel plate and extending aft for about 85 ft. the plating is 1 in. thick, whilst at the after end in the vicinity of the ice-breaking waterline the plating is $\frac{7}{8}$ ins. thick. The shell with its internal framing forms a complete structure capable of ensuring a very high standard of resistance to pressure on every square foot of the hull. The construction in way of the rudder is designed for the purpose of forming the best possible protection to the rudder. The latter is placed about 10 ft. below the waterline, the upper portion forming a false rudder, the line of shell plating being carried to the after end of the casting for this purpose. As previously indicated the watertight subdivision is very complete. Below the main deck there are about 30 watertight compartments in all, so that, should the vessel become bilged there, little damage will be caused through the flooding of any one compartment. All the watertight doors below this deck are operated on a patent system actuated by the usual lever from the navigating position in the wheelhouse. By the fitting of this system all the doors may be closed in the short time of 30 seconds. Large trimming tanks are provided forward and aft, connected by a main drain similar to that fitted in warships and operated by a powerful ballast pump of the centrifugal type situated in the

engine room, for changing trim during ice-working operations.

The accommodation has been specially designed to give every comfort to passengers during crossings. Cabins are provided on the upper deck for about 60 first-class passengers in one, two, three and four-berth rooms. The dining saloon and pantry is situated forward of the accommodation, and is capable of seating the full complement. On the promenade deck, which is reached by internal stairways, are the deck, saloon, smokeroom and special cabins, whilst on the boat deck over is the captain and officers' quarters. On the main deck aft accommodation is provided for 20 second-class passengers, engineers, stewards, etc., whilst forward the crew, firemen and petty officers are berthed. Between these quarters the whole main deck is reserved for cargo and coaling operations, to which special consideration has been given in order to meet the special requirements at the different ports of call and departure. The vessel is fitted throughout with an extensive system of steam heating, is electrically lighted and provided with a powerful search-light of 25,000 c.p. The deck machinery consists of the usual steam windlass, winches, capstan and steering gear.

The propelling machinery of this vessel consists of two sets of triple expansion engines capable of developing a collective indicated horse-power of not less than 6,000. All the machinery is specially constructed with a view to withstanding the great strains thrown upon the working parts when the vessel is working at full power in the ice, these parts being from 25 to 50% in excess of Lloyd's and the Board of Trade requirement. The pumping arrangements are of a very complete description, and are specially designed for the service. There are two large centrifugal pumping engines which draw from the usual sea inlets, and a special connection is made to an inlet at the aft end of engine room in the event of the usual inlet being broken. These pumps are also connected to the main drain running between the trimming tanks. The ballast pump, which is of centrifugal type and capable of delivering about 300 tons of water per hour, has the usual sea connections and is also connected to the trimming tanks forward and aft through the main drain. This pump is used for changing the trim of the vessel during ice-working operations. The other machinery in the vessel includes the general service donkey pump, an independent air pump, independent bilge and sanitary pumps, fresh water service pump, two feed pumps, feed heater, and an evaporator capable of supplying 30 tons of water per 24 hours. The two dynamos and engines are situated in the engine-room and are of the enclosed type fitted with forced lubrication. The propeller blades and bosses are of cast steel and of great strength, and are calculated to be brought up standing without breaking when running at full power. The vessel is fitted with two double-ended and two single-ended cylindrical boilers working under forced draught. The boilers are 14 ft. 10 ins. mean diameter, and are fitted with Morison patent withdrawable furnaces. They are constructed to Lloyd's requirements and Board of Trade rules, and capable of standing a working pressure of 180 lbs. per square inch. Each stokehold is fitted with the usual steam and hand ash hoist, and also an installation of patent ash expellers. The total bunker capacity is about 500 tons.

From the above it will be seen that the ice-breaker to be constructed for the P.E.I. winter service is of enormous strength and great power, and whilst great attention has been given to the structure and machinery, the equipments of the ship also are such as the demands of the service require.

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The All-Red Route.

Hon. C. Sifton, in the House of Commons, Mar. 20, outlined the plan it was proposed to adopt in regard to the projected all British route between Great Britain and the Antipodes, via Canada, as follows: To build or buy steamships, equal in equipment to any on the Atlantic, with a speed of 24 knots an hour. For the Pacific, to have ships of 9,000 tons with a speed of 18 knots. With such a fleet of fast vessels, the time consumed from Liverpool to New Zealand would be: Liverpool to Halifax, 5 days; to Vancouver, 9 days; to New Zealand, 25 days; so that to New Zealand there would be 13 days' gain in the mail service. Australia would not gain any time, because her mails were carried other ways, but this would, at least, be an alternative route. The calculations of the promoters were based on Halifax as a winter, and Quebec as a summer port, but they were not committed to those ports. In distance, Halifax would have the advantage over New York of 541 knots, while by the southern route, Quebec would have an advantage over New York of 393 knots, and 225 knots via Belle Isle. The 24-knot boat would consume 4 days 12 hrs. from Liverpool to Halifax; 4 days 20 hrs. to Quebec via Belle Isle, and 5 days 6 hrs. to Quebec via Cape Race. The Lusitania's time, when she broke the record, was 5 days 18 hrs., though she had reduced this by over an hour; so that the Halifax route would be faster by 1 day 6 hrs. than the New York route. It was not considered necessary to build vessels as large as those of the Lusitania class to secure a speed of 24 knots, and such vessels would be too large for the traffic offering on this route. Regarding questions of fog and ice conditions on the proposed route, Mr. Sifton pointed out that there was less fog off the Canadian coast than off the U.S. coast, and as to ice he had authority for stating that there was little difficulty, and such as there was, could be obviated by a slight deviation to the south during the winter months. As to cost, the conclusion arrived at was that a 24-knot weekly service between Canada and Great Britain, and a fortnightly service between Vancouver and New Zealand and Australia would cost in subsidy £1,000,000 a year. The allocation of this would be as follows: Australia, £75,000; New Zealand, £100,000; Canada, £325,000, and Great Britain, £500,000, or half the entire subsidy. He was convinced that Great Britain only awaited definite conclusions on the part of the countries named to take the project up in a practical way. At present Canada paid in subsidies to Pacific and Atlantic steamship services \$680,000 a year, so that the difference between the present and the proposed service would be between \$900,000 and \$950,000 a year in additional subsidy contribution.

It has been decided to change the date of the Fulton centenary celebration at New York from Sept. 18 to Sept. 25, 1908.

The Barrington lightship broke from her moorings Mar. 16. She was taken to the Government wharf, Barrington, N.S., and subsequently replaced on her station.

The District Labor Council of Toronto, by a vote Mar. 5, decided to expel the National Association of Marine Engineers from membership. In urging the expulsion of their rivals the delegates from the International Union claimed that they had entered into individual agreements with the steamboat owners in an effort to prevent the signing of an agreement between the employers and the members of the International Union. The subject has been the cause of some friction for a considerable time.

Atlantic and Pacific Ocean Marine.

Capt. McNicoll, of the Allan Line S.S. Victorian, died at Liverpool Mar. 10.

Lord Strathcona will, it is announced, read a paper on the "all red" route, at the Royal Colonial Institute, London, Eng., April 7.

The Allan Line S.S. Hesperian, sister ship to the S.S. Grampian, is scheduled to sail from Great Britain on her maiden voyage, April 25.

Preparations are being made for another attempt to float the wrecked C.P.R. steamship Mount Temple, at Ironbound Island, N.S., as soon as the weather is fit.

The Submarine Signal Co. is installing three experimental bell buoys at points off the Nova Scotia coast, as follows: On the Willson gas buoys, at Sambro island, Egg island, and at Lunenburg.

The International Marine Signal Co., Ottawa, has received an order from the Mersey Dock and Harbor Board, Liverpool, Eng., for one of its automatic acetylene gas buoys, similar to those used in Canadian waters.

The Thomson Line will shortly replace the wrecked S.S. Kildona by a larger and more suitable vessel, but it has not yet been decided whether to purchase or to build. Most probably the latter course will be adopted.

Capt. W. Palmer, a vessel owner of Dorchester, N.B., was an officer on board the S.S. Alcarita, which sailed from Delagoa Bay, South Africa, last Aug., for Hong Kong and Baltimore, and has not since been reported.

Capt. Fraser and J. F. Welch, second officer of the Quebec Steamship Co.'s S.S. Bermudian, have been presented with a testimonial by the Governor of Bermuda, for the rescue of the crew of the four-masted schooner Mary L. Newhall, in Mid-Atlantic, Feb. 3.

The Allan Steamship Line is having eight of its vessels, viz.: Corsican, Grampian, Hesperian, Ionian, Pretorian, Tunisian, Victorian and Virginian, and the Dominion Steamship Line, three of its vessels, viz.: Kensington, Ottawa and Southwark, fitted with submarine signalling apparatus.

The Dominion Steamship Line's S.S. Alberta will, it is stated, be placed in service during the forthcoming season, and her sister ship Albany, in the 1909 season. These two vessels are being installed with a combined motive power of turbines and reciprocating engines, and have a tonnage of 14,000 gross.

The Postmaster-General stated in the British House of Commons, Mar. 12, that the gross revenue collected by the British Post Office on letter and parcel mails dispatched from Great Britain in 1907, by C.P.R. steamers, was £35,500, to which should be added £3,000 for foreign colonial mails, whereas the annual British subsidy was £45,000.

The S.S. Marama was announced to leave Sydney, New South Wales, Mar. 16, on her first voyage to Vancouver, B.C. The new vessel, which is a twin-screw, steel passenger and freight steamship of 6,500 tons, takes the place of the Miowera, which will be put on another run. The Marama is announced to leave Vancouver on the return voyage April 24.

A press report states that the C.P.R. Atlantic Line steamships will not dock at Montreal this season, on account of the congestion existing at that port, accentuated by the work still being executed on the sheds there. Three Rivers is mentioned as the probable terminus, in preference to Quebec, where labor troubles have frequently caused interruptions of work.

The New Boston, Havana and St. John Steamship Co. has applied at Boston, Mass., for a charter to provide a quick freight service between the ports named. Amongst the names mentioned in connection with the company are: D. W. Dryden, Halifax, N.S.; P. Thomson, J. H. Doody, St. John, N.B.; J. W. Wylde, J. E. Doherty, and J. Monsoon, of Boston, Mass. It is hoped to commence the service in May.

The Dominion Atlantic Ry. Co.'s S.S. Prince Arthur landed recently at Yarmouth, N.S., the crew of the brig James Daley, wrecked off Florida, Feb. 29; part of the crew of the wrecked schooner M. J. Sumner, and 22 persons from the wrecked Pickford & Black liner Beta. Those rescued from the M. J. Sumner and Beta were wrecked a second time, Mar. 14, when the steamship Silvia went ashore at Vineyard Sound.

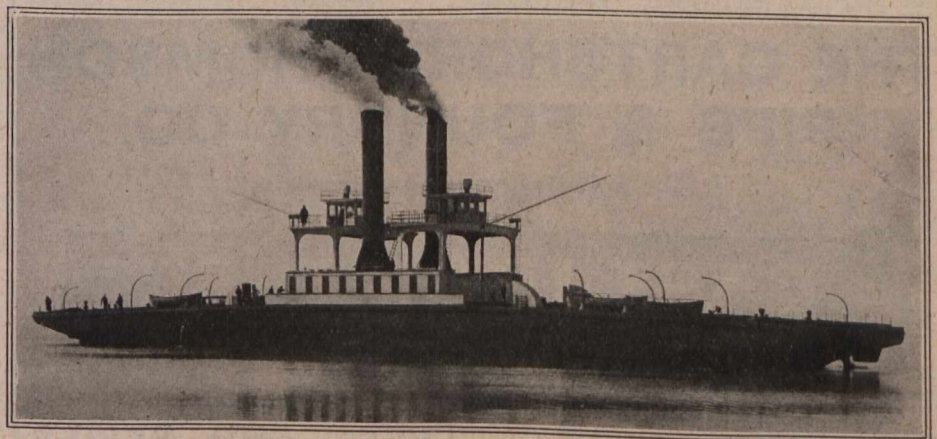
At a mass meeting held in Halifax, N.S., Mar. 13, a resolution was passed that "In the interests of the Empire, the Dominion at large and the Maritime Provinces, this meeting is of the opinion that any contract which may be entered into by the Canadian Government for the payment of a large subsidy for a fast Atlantic service, should stipulate that the Canadian terminus be at a port on the Atlantic seaboard of the Dominion the year round."

Maritime Provinces and Newfoundland.

C. W. Seeley, Halifax, N.S., has been appointed inspector of hulls and steamboat equipment for Nova Scotia.

The Port Hood Coal Co. has chartered the steamers Pors and Thordis for its coal carrying trade during the ensuing season.

It is reported that J. J. Moffatt, Manager of the Bras d'Or Steamship Co., is visiting Great Britain, for the purpose of purchasing a vessel to replace the wrecked steamship Weymouth.



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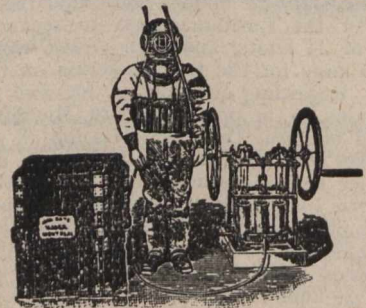
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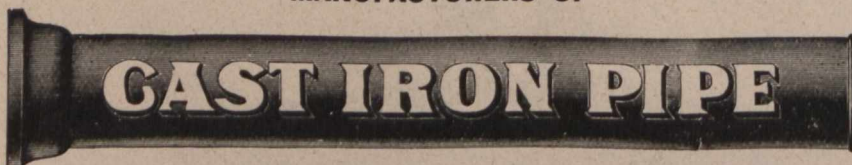
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The Dominion Government steamship *Lady Grey* returned from her supply trip to the Labrador coast, Mar. 5. The voyage was accomplished without accident, though a landing could not be made at Tadousac, on account of the heavy ice there.

The Red Cross Line steamship *Silvia*, while on her regular voyage from New York to Halifax, N.S., ran on the rocks at the entrance to Vineyard Sound, Mass., Mar. 14, during a fog, and there is reported to be but little chance of saving her.

The following appointments have been recently announced: J. W. Knowlton, harbor master, Advocate, N.S.; A. Hyson, harbor master, Mahone Bay, N.S.; G. L. McLean, shipping master, Port Hastings, N.S.; E. A. Murray, pilotage commissioner, Pugwash, N.S.

The Island Tug Co., of Charlottetown, P.E.I., is having built at Shelburne, N.S., a twin-screw steamboat of 500 tons gross, and 300 tons register. The vessel, which will be completed and placed in service within a few weeks, has been named *Wini-fred*.

It is reported that various shipping companies at St. John, N.B., have entered into an agreement to establish a uniform rate of wages for the ship laborers at that port, at 35c. an hour, and to divide the summer work between the two laborers' societies. The rate last summer was 40c. an hour.

Nova Scotia shipowners and shipbuilders are arranging to hold a conference in Halifax, for the purpose of discussing measures to promote the revival of their branches of the shipping trade. Their conclusions will be placed before the Dominion and Provincial Governments, in the hope that assistance for steel shipbuilding may be granted.

The work of dredging the channel entrance to the St. John, N.B., harbor was commenced Mar. 6, the Dominion Government dredge *W. S. Fielding* being utilized. Doubts have been expressed as to the suitability of the dredge for the work to be accomplished, and it is stated that to dredge the channel, 500 ft. wide by 30 ft. deep, for the distance required, will take two years.

The Finance Minister of Newfoundland in his budget speech recently referred to the improvement in the fishing and shipbuilding interests of the colony. He said in 1903 there were 14 sailing vessels of 1,504 tons bought abroad for use in Newfoundland, while in 1907, there were 62 vessels of 5,985 tons bought abroad. In 1903, there were built in the island 92 vessels of 3,458 tons, while in 1907, there were 131 vessels of 5,089 tons built.

Application is being made to the New Brunswick Legislature for an act to incorporate the St. John River Steamship Co., with a capital of \$48,000, and office at South Bay, N.B. The objects sought include the building or otherwise acquiring and operating of steam and other vessels for the carrying of passengers and merchandise, and for other purposes incidental to a general forwarding business. The provisional directors named in the application are: L. A. Currey, R. K. Jones, and G. R. Vincent, St. John, N.B.

During the financial year ended June 30, 1907, the Newfoundland Government expended \$65,000 upon lighthouses, and \$77,000 for other services in connection with marine and fisheries interests of the island, in addition to votes for ocean and coastal steamship services made in connection with the post office service. During the past eight years the number of lighthouses and fog alarms has increased from 56 to 96, and the Government proposes, out of balances in hand, to expend about \$10,000 in addition to the amounts to be appropriated out of revenue.

An order-in-council passed Mar. 15 proclaims the limits of Port Hastings, N.S., harbor as follows: All the navigable waters of the Gut of Canso and of streams and ponds adjacent thereto, south of a line drawn due south-west from the McMillan point lighthouse, and north of a line drawn due south-west from the extremity of the unnamed point situated 2 miles south-east of McMillan point and east of the mid-channel; and of Port Hawkesbury, N.S., harbor, as follows: all the navigable waters of the Gut of Canso and of streams, ponds, etc., adjacent thereto, south of a line drawn due south-west from the extremity of the unnamed point situated two miles south-east of McMillan point, east of the mid-channel, and north of a line drawn due south-west from the extremity of Madden point.

The Pickford and Black Line steamship *Beta*, which was wrecked, and became a total loss on Lurk's Island recently, was built at Glasgow, Scotland, in 1873, for the Cunard Co.'s West Indian mail service, in which she was engaged by that company up to 1893, when the mail contract was secured by the Pickford and Black Line, which purchased the vessel. The *Beta* underwent extensive repairs by her makers at Glasgow in 1899, and in 1907 she was generally overhauled at Dartmouth, N.S. She was equipped with triple expansion engines, with cylinders 26 ins., 33 $\frac{3}{4}$ ins., and 59 ins., diameter, by 42 in. stroke, 226 n.h.p.; her dimensions were: length, 235.1 ft.; breadth, 28.5 ft.; depth, 22.1 ft.; tonnage, 677 gross. She was valued at \$135,000, and the loss is covered by insurance.

Considerable dissatisfaction is expressed by the various coal companies which charter Norwegian vessels for the coast carrying trade with the recent order that after Jan. 1, 1909, the carrying must be done by British vessels. It is stated that Canada has no large coasting vessels, and it would be years before such vessels could be constructed here. The vessels required for this trade are of special design and capacity, and unless they entered into competition with other vessels in other parts of the world, would have to remain idle for six months every year. The statement that the whole of the vessels now utilized in the trade would transfer to the Canadian register during this year is not believed to have any foundation in fact. The argument in favor of the order is that foreign vessels are taking the carrying trade from Canadian vessels and consequently shipbuilding in the Dominion is declining. The Dominion Coal Co., Nova Scotia Steel and Coal Co., Intercolonial Coal Mining Co., and Acadia Coal Co., are the chief companies which will be affected when the order goes into force.

Province of Quebec Marine.

J. DeCaen has been appointed Government wharfinger at Paspébiac, Que.

F. X. Hamelin, Sorel, Que., has been appointed inspector of steamboat boilers and machinery by the Department of Marine.

The Richelieu and Ontario Navigation Co.'s offices at Montreal are to be considerably enlarged and improved, preparatory to the opening of the season.

Notice has been given that the water will be drawn off the Lachine canal April 1, for the execution of repairs, etc., and that it will be readmitted May 1.

A press report states that the C.P.R. has rented about half of the new Government wharf at Quebec from the Harbor Commissioners, thus giving the company 1,000 ft. of wharf frontage.

The Quebec Board of Trade, at a meeting Mar. 17, adopted a resolution favoring the

incorporation of a company to undertake contracts for the loading and unloading of vessels at that port.

A notice to mariners was recently issued, warning them of a hitherto uncharted rock near the western entrance to Watagheistic Sound, in the St. Lawrence. It is described as 14 ft. across, at a depth of 12 ft. This was where the Government steamer *Mont-calm* recently came to grief.

G. Bothwell, who operates two steamboats on the Lieve River, has obtained an injunction restraining Shearer, Brown & Wills, Ltd., contractors, Montreal, from proceeding with the work of constructing the piers and substructures of a Government bridge there on the grounds that such construction will seriously interfere with the navigation. Further litigation on the subject is threatened.

Canadian Stewart Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$100,000, and offices at Montreal, to carry on a general engineering and construction business, and in connection therewith to construct or otherwise acquire and operate steam and other vessels. The provisional directors are, C. F. Franson, New York; A. Bissett, J. T. Ostell, F. H. Shaw, D. B. Smith, Montreal.

The National Trading Co., Ltd., has been incorporated under the Quebec Companies Act, with a capital of \$500,000 and offices at Montreal, to carry on the general business of contractors and forwarders, and to construct and operate canals, wharves, elevators, steam and other vessels, and tramways, operated by electric or steam power. The provisional directors are: J. P. Mullarkey, J. Rowley, H. J. Smith, C. Lattimore; M. B. McDonnell, Montreal.

The General Construction Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$90,000, and offices at Montreal, to carry on the general business of contractors, and in connection therewith to own dredges, boats, derricks, steamshovels, dockyards, and other contractors' plant. The provisional directors are: E. A. D. Morgan, G. A. Morrison, S. R. Gauthier, L. A. Loiselle, G. C. Tunstall, Montreal.

Ontario and the Great Lakes.

Capt. John Alward, Toronto, has been appointed measuring surveyor of shipping for that port.

The Upper Ottawa Steamboat Co.'s tariff of tolls for the use of its works during 1908 has been approved by the Governor-General-in-Council.

S. D. Andrews, Collingwood, has been appointed inspector of hulls and steamboat equipment for Ontario.

C. D. Sargent, C.E., has been appointed Resident Engineer St. Lawrence canals, with headquarters at Cornwall, Ont.

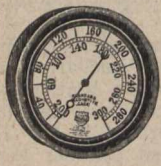
A. S. Gorner has been appointed Manager of the O'Connor Steamboat and Hotel Co., Ltd., Temagami, vice J. Malcolmson.

The Public Works Department received tenders recently for the construction of a landing pier at Chute à Blondeau, Ont.

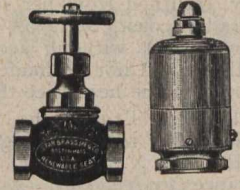
The Department of Marine has established an acetylene gas buoy at the eastern end of Brockville narrows in the River St. Lawrence. The light shown is white, and will be occulted at short intervals.

D. D. Mann, Vice-President Canadian Northern Ry., is reported as having stated that the ore docks at Key Harbor will be completed and ready for operation by the opening of lake navigation.

A press report states that the Detroit and Cleveland Navigation Co. will probably run



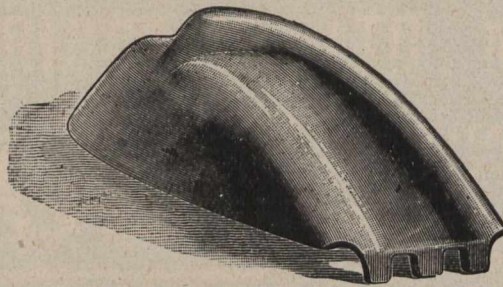
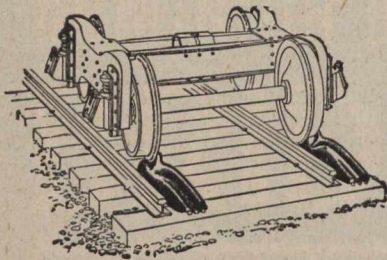
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**TRANSPORTATION
PRINTING**

the steamboat City of New York to Goderich, on a weekly schedule during the season, as a part of its Detroit-Bay City service.

Representatives of the C.P.R. and the Muskoka Lakes Navigation Co. waited on the Ontario Minister of Public Works recently, to request that steps be taken to improve the channels between some of the northern lakes.

A serious cave-in on the Welland Canal occurred Mar. 7, when about 350 ft. of the east bank, about 3 miles south of Welland, Ont., broke away. It is not expected that the opening of navigation on the canal will be delayed.

The Dominion Government will be asked shortly to open a channel in the Detroit River, on the east side of Fighting Island, to be used for upbound traffic only. At present the one existing channel is used for both up and down bound traffic.

The Montreal and Lake Erie Steamship Co., Ltd., incorporated under the Dominion Companies Act, has been licensed under the act respecting extra-provincial companies to carry on business in Ontario, with A. W. Briggs, Toronto, as its attorney.

A Windsor, Ont., man was recently charged at Detroit, Mich., with unlawfully bringing a Chinese laborer into the U.S., across the dividing river, but the case was dismissed on the ground that a rowboat was not a vessel within the meaning of the act.

The Dominion Government is carrying out an improvement to the navigation of the Winnipeg River at the Throat Rapids, near Kenora, Ont. The work, which includes the removal of a rocky islet in the middle of the river, is expected to be completed by the opening of navigation.

W. J. Pulling and Co., Windsor, Ont., have sold the steam barge Juno to Haney and Miller, Toronto. The Juno was built at Wallaceburg, Ont., in 1885. Her dimensions are: Length, 139.7 ft.; breadth, 26.8 ft.; depth, 8.8 ft.; tonnage, 288 gross, 196 register. She is a screw-driven vessel with engines of 175 n.h.p.

Haney and Miller, Toronto, have purchased the schooner Sligo, which has been transformed into a barge. The vessel was built in 1874, at St. Catharines, Ont., and has made a few trips across the Atlantic. Her dimensions are: Length, 137 ft.; breadth, 23 ft.; depth, 11.8 ft., and her tonnage, 284 registered.

Considerable feeling has been shown by vessel owners on the lakes against the Government proposal to place a duty on repairs to vessels executed in the U.S. ship yards and dry docks. It is held that there are not adequate facilities in Canada for dealing with such work, and such legislation as is suggested would be a great hardship on shipowners.

The Fischer Lumber Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of \$100,000, and office at Dryden, Ont., to carry on the business of timber and tie merchants, and in connection therewith to build or otherwise acquire, and to operate steam and other vessels. The provisional directors are: M. E. Oxenham, G. M. Wood, and R. V. LeSueur, Sarnia, Ont.

Active preparations are being made at the various lake ports for an early opening of navigation, and in addition to the ordinary annual refittings, the steamboat Canadian is being fitted with new pumps and hoisting gear, the Bickerdike with new bulwarks and stanchions, the Kenora with hoisting gear and alterations to hatches, and the Corunna is having two new boilers installed.

The Dominion Storage and Forwarding Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of \$40,000, and office at Toronto, to carry on the business of a navigation, transportation, warehousing, wharfinger and forwarding company, and in connection therewith to own and operate vessels, warehouses, docks, elevators, etc. The provisional directors are: F. B. Duffett, N. G. Duffett, J. N. McKendry, C. E. Starr, and J. Donnelly, Toronto.

The Canadian Pacific Car and Passenger Transfer Co.'s car ferry Charles Lyon, built by the Polson Iron Works, Ltd., Toronto, was given her final trial Mar. 20. She was given a run of five hours at full speed, and everything passed off satisfactorily under the charge of Capt. D. H. Lyon, Ogdensburg, President of the owning company. It is understood that she will be placed on the route between Prescott and Ogdensburg about April 1. A description of the vessel was given in our Jan. issue.

St. Joe Island and Sault Line Ltd. has been incorporated under the Ontario Companies Act, with a capital of \$40,000, and office at Sault Ste. Marie, Ont., to construct, own, charter and navigate steam and other vessels; to construct and use docks, warehouses, etc., and to carry on the general business of general carrier of passengers and merchandise, and of forwarder, wharfinger, warehouseman and navigation company. The provisional directors are: A. Carney, A. L. Carney, G. G. Farwell, Sault Ste. Marie, Ont.

The question of the construction of a dam across a portion of the St. Lawrence River, near Cornwall, was brought before the House of Commons, Mar. 6, when correspondence relating to the matter was submitted, together with a report made on a similar proposal in 1903, and the protests recently made against the present proposal by the various Canadian associations whose interests would be effected, should the dam be constructed. E. Lafleur and W. J. Stewart, engineers of the Public Works and Marine Departments, respectively, have been associated with the Department of Railways and Canals' engineers to ascertain what effect the proposed construction would have on navigation, but have not yet made their report.

Manitoba, Saskatchewan, Alberta, Etc.

The Wm. Peason Co., Ltd., Winnipeg, has made application for the issue of supplementary letters patent to increase its capital stock from \$250,000 to \$500,000.

The Dominion Government has purchased the steamer Lady of the Lake, on Lake Winnipeg, paying \$8,000 therefor. In giving the information in the House of Commons, the Minister of Marine stated that the vessel had been left at one of the small wharves on the lake, a caretaker at \$45 a month being in charge. The Lady of the Lake was built at Selkirk, Man., 1897, and was owned by the Northern Fish Co., Winnipeg, her dimensions being: Length, 105 ft.; breadth, 18.5 ft.; depth, 8.9 ft.; tonnage—201 tons gross, 155 tons register. She is a screw steamer fitted with engines of 13 h.p.

An injunction has been granted against the Pioneer Navigation and Sand Co., restraining it from removing sand or gravel from the bed of the Assiniboine river at Winnipeg, opposite F. L. Patton's property. The Attorney-General of Canada was added as a defendant, and the defence was that the river is a navigable stream, and that the bed and banks were vested in the Crown. The judgment above quoted refers only to the dredging of that part of the river near which plaintiffs' property is situated, and on that part of the case he obtains costs, but pays the Crown's costs on the issue on which he fails.

B.C. and Pacific Coast Marine.

W. B. Shiles has been appointed harbor master at New Westminster.

A scow 100 ft. long, 32 ft. beam, and having a depth of 8 ft., has just been completed at Crane's yard, Lulu Island, Vancouver, B.C.

The C.P.R. steamship Princess Beatrice has been withdrawn from the northern route, and placed on the run between Victoria and Seattle, Wash.

The paddle wheel steamer Hamlin, trading on the Fraser River, between Chilliwack and Vancouver, B.C., is being given a general overhaul at New Westminster.

The Boscowitz Steamship Co.'s steamship Vadso having been repaired and thoroughly overhauled after her recent accident, has resumed service to Port Simpson and northern ports.

The Union Steamship Co.'s steamship Camosun is making weekly trips between Vancouver and Prince Rupert, where passengers for points beyond are transferred to smaller steamers of the same company.

The C.P.R. steamship Princess May has undergone a thorough overhauling, and resumed her service on the northern route Mar. 13, where she is running on a weekly schedule alternately with the Princess Royal.

The Jedway Lumber and Development Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of \$20,000, with power among other things to construct and operate wharves, docks, steam and other boats, scows and barges.

A press report states that J. W. Troup, Superintendent of the C.P.R. Pacific Coast steamship service, is about to sail for Great Britain in connection with the building of the vessel of the Princess type, by the Fairfield Shipbuilding Co., Glasgow, for the Pacific coast service.

The steamship J. P. Douglas was launched recently at Victoria, and was subsequently towed to Vancouver for the installation of machinery. She has been built for Garvey and Gates, who intend to run her between Chilliwack, Harrison Mills, and Harrison Hot Lake. It is expected she will be on the route during April.

It has been announced that a five-day service will be given, starting early in April, between Victoria, B.C., and San Francisco, Cal., the repairs to the steamboat Queen having been completed. Latterly the service has been a seven-day one, the vessels engaging in the trade being the Umatilla and the City of Pueblo.

The Eastern B.C. Lumber Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of \$500,000, and power, amongst other things, to build, purchase or otherwise acquire, and operate, steam and other vessels, tramways, logging railways, telegraph and telephone lines, wharves, etc., in connection with its business.

The B.C. Legislature voted the following subsidies at its current session for steamship services: \$2,500 for a service on the Columbia River above Revelstoke; \$1,500 for a service on North Thompson River; \$1,250 for a service on Columbia River above Golden; \$1,500 for a service on Duncan River to Healey's Landing or north.

A project for the improvement of the Fraser River from New Westminster, B.C., to the sea is under consideration, and a Cleveland, Ohio, engineer has completed a survey of the route. A report as to the improvements necessary, together with an estimate of the cost, is being prepared, and will be submitted to the Dominion Government on behalf of the city.

The Dominion Carbolineum Works, Ltd., has been incorporated under the B.C. Com-

panies Act, with a capital of \$100,000, to carry on the business of lumbermen, and to deal in railroad ties, etc., and in connection therewith to construct, own and operate steam and other vessels, wharves, docks, dry docks, marine railways, etc., and to carry on the business of vessel owners, carriers by land and water, and for the repairing and wrecking of vessels.

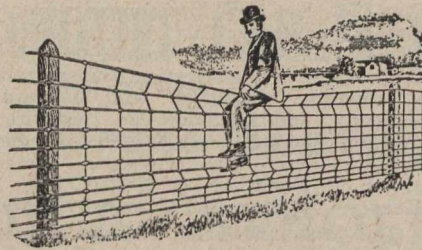
The Vancouver civic market and industries committee has had under discussion recently the question of transportation from points on the Fraser River to Vancouver market. Two proposals were received from A. McLean and D. F. Page, each of whom required free wharfage and water facilities and a small subsidy until the service was on a paying basis. The matter of dredging the channel up to the market wharf was also taken up, and it was decided to make representations to the Dominion Government on the subject.

Plans and specifications for the proposed Canadian Government fisheries protection cruiser for the Pacific coast have been filed, and tenders are to be invited at an early date. The total cost is estimated at \$400,000. Following are the principal dimensions, etc.: Length, 240 ft.; breadth, 32 ft.; depth, 17 ft.; displacement, 1,400 tons; twin triple-expansion engines with cylinders 20½, 32 and 50½ ins. diam., by 27 ins. stroke, 4,500 i.h.p., boilers, of water tube type, working pressure, 200 lbs.; coal capacity, 300 tons; speed, 19 knots on trial trips. R. L. Newman, Victoria, consulting architect to the Department of Marine, is the designer.

The Canadian Government hydrographic steamer Lillooet was launched recently at Esquimaux. Her measurements are: Length, 163 ft. between perpendiculars; breadth, 27 ft.; depth, 15 ft.; displacement, 780 tons, with a coal capacity of 150 tons on a draught of 11 ft. 3 ins. She in a twin-screw steamer, driven by triple-expansion engines with cylinders 11½, 18 and 24 ins. diam. by 24 ins. stroke, at 120 revs., developing about 900 h.p., supplied with steam by two Scotch boilers, 10¼ ft. long by 11½ ft. diam., fitted with forced draught, at a pressure of 180 lbs., at a speed of 11½ knots an hour. A full description of her, with plan, elevation and cross section views, was given in our Oct. and Nov., 1906, issues.

The regulation respecting the coasting trade of Canada, which comes into effect Jan. 1, 1909, has raised the question as to whether the carriage of goods in U.S. vessels from Vancouver to destinations in Yukon, via Skagway, Alaska, would be a breach of the Act. The Pacific Marine Review has taken the question up, and has produced a letter from the Canadian Customs Department, from which the following is an extract: "The carrying of goods by U.S. vessels from Vancouver to Skagway would not appear to be a carrying of goods from one port of Canada to another since the settlement of the Alaska-Yukon boundary. I do not desire, however, to engage in controversy on this subject, as there is no change as yet in the regulations for the shipment of goods from British Columbia ports to the Yukon via Skagway and White Pass."

The U.S. Government statistics of traffic on the Great Lakes for the season of navigation of 1907, show a total of 83,387,919 net tons, an increase of 10% over the figures for 1906. The iron ore shipments, exclusive of 275,000 tons shipped to Canada, were 40,727,972 gross tons. The quantity of wheat carried eastward through the Sault Ste. Marie canals was 98,135,775 bush., and the total traffic through the canals was 45,544,319 net tons.



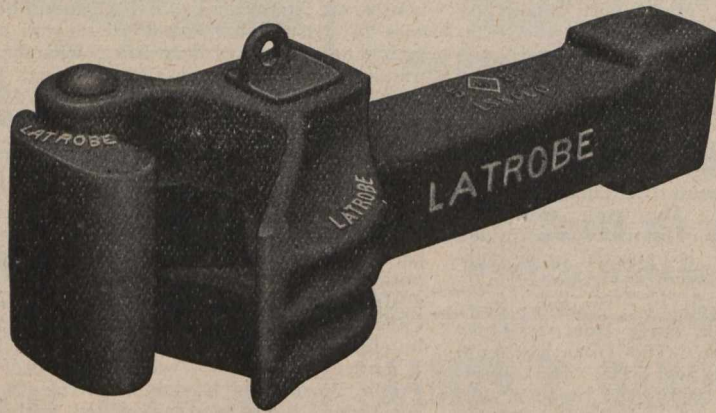
The
"DILLON"
 HINGE-STAY **FENCE**

MANUFACTURED IN THREE WEIGHTS AND VARYING FROM
 FOUR WIRES 36" HIGH TO TWELVE WIRES 58" HIGH

All Strands are **HIGH CARBON HARD Steel Wire**

Owen Sound Wire Fence Co.
 Owen Sound, Ontario **Limited**

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POSITIVE
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LATROBE STEEL AND COUPLER CO.

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Steamship Agent, Port Arthur and Fort
 William, Ont.

Address all letters and telegrams to
 Port Arthur, Ont.

Notices to Mariners.

The Dominion Department of Marine has issued the following notices:—

No. 7. Jan. 30.—12. New Brunswick, south coast, Bay of Fundy, off Negro head, submarine fog bells established. 13. Nova Scotia, south coast, submarine bell attached to Sambro gas and whistling buoy. 14. Ireland, south coast, Kinsale head, character of light and fog signal altered.

No. 12. Feb. 13.—26. British Columbia. Juan de Fuca strait approach, Swiftsure bank, gas whistling and bell buoy replaced in position. 27. Queen Charlotte islands, Hecate strait, Skidegate inlet, change in position of Lawn point gas and bell buoy. 28. Japan. Todo-yaki, auxiliary light established. 29. Hiroshima bay, Shirashi beacon light, characteristic. 30. Ishikari light-house, description of light. 31. Kagenojima, change in light.

No. 13. Mar. 3.—32. New Brunswick, south coast, Bay of Fundy, Quaco, temporary light on eastern breakwater pier. 33. Nova Scotia, south coast, Port Hebert, light improved. 34. Nova Scotia, Cape Breton island, south coast, Louisburg harbor, change in characteristic of fog alarm. 35. England, west coast, Bristol channel, Flat Holm island, fog signal established.

No. 14. Mar. 11. 36.—Quebec.—River St. Lawrence, chart, Montreal to Longue Pointe issued. 37. River St. Lawrence, chart, Ste. Emelie to Deschambault, issued.

No. 15. Mar. 12.—38.—Ontario Light-house Division.—Quebec, Ottawa River, Allumette lake, Allumette island, Lower Narrows light pole replaced by tower. 39.—Ontario.—Lake Ontario, west end, Burlington channel, south pier damaged, front range lighthouse destroyed, temporary outer range lights on north pier. 40.—Ontario. Lake Simcoe, Fox island, light still maintained.

No. 16. Mar. 14.—41. British Columbia.—Strait of Georgia, Ballenas islands, fog alarm established. 42.—British Columbia, Vancouver island, west coast, Clayoquot sound, Hecate passage, Halftide rock, change in position of buoy.

No. 17. Mar. 17.—43. Ontario Light-house Division.—Quebec, River St. Lawrence, Lake St. Louis, above St. Bernard or Nun's island, gas buoy established. 44. Ontario, Lake Ontario, Bay of Quinte, Trenton, gas buoy established. 45. Ontario, Lake Huron, Goderich, gas buoy to be established south of damaged breakwater off entrance to harbor.

No. 18. Mar. 17.—46. British Columbia, Vancouver island, east coast, Stuart channel, Oyster harbor entrance, Coffin islet, Wigham light replaced by gas-lighted beacon. 47. British Columbia, Vancouver island, east coast, Nanaimo harbor, Gallows point gas-lighted beacon. 48. British Columbia, Strait of Georgia, off Sechelt peninsula, White islet, Wigham light replaced by gas-lighted beacon. 49. British Columbia, Strait of Georgia, Malaspina strait, Lund, Ragged islands, Wigham light replaced by gas-lighted beacon.

No. 19. Mar. 20.—50. Ontario Light-house Division.—Quebec, Ottawa river, Lake of Two Mountains, Graham, change in color of lights, back range light raised. 51. Ontario—River St. Clair, Stag island shoal light carried away, temporary float light. 52. Ontario—Lake Nipissing, off mouth of Sturgeon river, dredged channel, gas buoy established.

No. 20. Mar. 21.—Quebec—53. River St. Lawrence, ship channel between Quebec and Montreal, Nicolet, range lights established. 54.—Quebec. River St. Lawrence, ship channel between Quebec and Montreal, Nicolet traverse, gas buoys established.

The following notices have been issued by the U.S. hydrographic office:

No. 11. Mar. 14.—405. Niagara river, Strawberry island channel, range lights established.

Coast, Lake and River Officers for 1908.

The following appointments have been made by navigation companies engaged in the coast, lake and river routes for their various steam and sailing vessels, tugs and barges for the current year. In the first column is given the name of the vessel, in the second that of the captain, and in the third, that of the chief engineer:

ALGOMA CENTRAL STEAMSHIP CO., SAULT STE. MARIE, ONT.

Agawa	W. C. Jordan	J. L. Smith
John J. Barlum	(bge.) C. Staley	
King Edward	W. Bemrose	G. Sylvester
Leafield	F. J. Davis	J. Cameron
Paliki	R. H. Boyle	W. Harmon

BOSCOWITZ STEAMSHIP CO., VICTORIA, B.C.

Vadso	B. L. Johnson	W. G. Maxwell
Venture	M. Goulding	C. Arthur

BURNHAM, MORRILL CO., HALIFAX, N.S.

Robie M.	C. G. Giffin	G. E. Scott
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CALVIN CO., LTD., KINGSTON, ONT.

Chieftain	E. Felix	T. Gray
D. D. Calvin	G. Houston	G. Boyd
Frontenac	J. Harris	B. Lappen
India	G. Coons	T. Smith
Parthia	D. Lefave	G. Sauve
Simla	P. Sullivan	R. Veesh
W. Johnston	W. Felix	E. Compeau

CANADA ATLANTIC TRANSIT CO., LTD., MONTREAL.

Arthur Orr	J. Simonds	G. Larson
Geo. N. Orr	H. Joenke	J. Murnan
Kearsaige	W. Baxter	T. Kelley
Ottawa	A. Birnie	W. Paws

CANADIAN FISHING CO., VANCOUVER, B.C.

Celestial Empire	A. Freeman	J. Dick
Flamingo	A. Dawe	H. Hewitt

CANADIAN LAKE AND OCEAN NAVIGATION CO., LTD., TORONTO.

A. E. Ames	A. McIntyre	S. Gillespie
H. M. Fellatt	W. H. Anderson	W. H. Durham
J. H. Plummer	W. McLean	R. Chalmers
Scottish Hero	P. McIntyre	R. R. Foote
Turret Cape	R. D. Simpson	P. Bonham
Turret Chief	H. Boulton	A. E. Kennedy
Turret Court	R. McIntyre	L. McMillan

CANADIAN LAKE TRANSPORTATION CO., LTD., TORONTO.

CORUNNA	W. H. Brian	R. W. Ross
Kenora	E. L. Stephen	W. Byers
Nevada	J. Cavanagh	W. Linton
Regina	P. McKay	C. J. McSorley

CANADIAN NORTH-WEST STEAMSHIP CO., LTD., TORONTO.

Neebing	J. Ewart	A. F. Foote
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C.P.R. BRITISH COLUMBIA COAST SERVICE, VICTORIA, B.C.

Amur	L. P. Locke	J. Petticrew
Beaver	C. A. Gardner	W. Beadle
City of Nanaimo	D. Brown	T. Moffat
Czar	T. S. Guns	G. C. Brownlee
Joan	J. Ritchie	J. M. Greenshields
Princess Beatrice	W. O. Hughes	J. Wallace
Princess Ena	W. H. Whiteley	R. Moffat
Princess May	J. McLeod	J. McGraw
Princess Royal	P. J. Hickey	J. Heritage
Princess Victoria	T. O. Griffin	A. L. Brownlee
Tees	J. O. Townsend	J. Thaw
Transfer	W. L. Gilchrist	J. Hay

CANADIAN PACIFIC CAR AND PASSENGER TRANSFER CO., PRESCOTT, ONT.

Charles Lyon	W. Hemway	G. M. Hazlett
City of Belleville	A. Black	G. Piche

C.P.R. DETROIT RIVER CAR FERRIES, WINDSOR, ONT.

Michigan	C. H. Jenkins	F. Merrill
Ontario	J. Corney	W. McDonald

C.P.R. UPPER LAKE SERVICE, OWEN SOUND, ONT.

Alberta	M. McPhee	C. Butterworth
Assiniboia	E. B. Anderson	A. Cameron
Athabasca	A. Brown	W. Lockerbie
Keewatin	L. Pyette	W. Lewis
Manitoba	J. McIntyre	J. Gregg

CAPE BRETON ELECTRIC CO., LTD., SYDNEY, N.S.

Hygeia	A. McLeod	W. H. Scott
Pawnee	J. Brown	A. Campbell
Peerless	I. H. Lewis	A. McNeil

CENTRAL CANADA COAL CO., LTD., BROCKVILLE, ONT.

Samuel Marshall	H. M. Russell	W. J. Brown
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CHARLOTTETOWN STEAM NAVIGATION CO., CHARLOTTETOWN, P.E.I.

Empress	A. Cameron	J. A. Rowe
Northumberland	A. McLean	C. Cuming

EASTERN MANITOULIN ROYAL MAIL STEAMSHIP LINE, LITTLE CURRENT, ONT.

Iroquois	E. Mackie	W. Terry
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DOMINION ATLANTIC RY. CO., YARMOUTH, N.S.

Boston	W. Mackenzie	N. A. Currie
Prince Albert	D. W. Holmes	A. McInnis
Prince Arthur	E. Kenney	D. Campbell
Prince George	A. MacKinnon	D. Ferguson
Prince Rupert	A. G. Porter	J. Pendrigh
Yarmouth	N. S. MacKinnon	J. Ross

EMPRESS TRANSPORTATION CO. OF MIDLAND, LTD., MIDLAND, ONT.

Empress of Mid'l'd J.	Woolner	A. Abbey
J. B. FAIRGRIEVE, HAMILTON.		

Arabian	G. A. Brien	W. Taylor
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FARRAR TRANSPORTATION CO., LTD., COLLINGWOOD, ONT.

Collingwood	F. A. Basset	P. McLeod
Meaford	F. Scott	J. Smith

G.T.R. DETROIT RIVER CAR FERRIES, WINDSOR, ONT.

Great Western	M. Busetto	W. Belsom
Huron	O. Lalonde	J. Ladds
Lansdowne	J. Jackson	J. F. Taylor

HALIFAX AND CANSO STEAMSHIP CO., HALIFAX, N.S.

Scotia	A. Reed	J. G. Clark
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HALIFAX AND SHEET HARBOR STEAMSHIP CO., LTD., HALIFAX, N.S.

Margaret	P. J. Cooper	J. W. Gunn
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F. E. HALL & CO., MONTREAL.

Carleton	J. A. Smith	N. Lazure
Iona	B. Bowen	L. Toupen
Ralph T. Holcomb	E. Groulx	E. Scott
G. H. Warrington (bge.)	S. Lebœuf	

HAMILTON STEAMBOAT CO., HAMILTON, ONT.

Macassa	J. Henderson	O. Flumerfelt
Modjeska	P. J. Walsh	W. Hoonan

ISLAND TUG CO., LTD., CHARLOTTETOWN, P.E.I.

Fred. M. Batt	J. McIsaac	W. A. McEachern
Islander	D. A. Sangster	G. E. Batt
Winifred	J. Ryan	

KINGSTON SHIPPING CO., LTD., KINGSTON, ONT.

Prince Rupert	A. H. Malone	
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LA COMPAGNIE DU NORD, CHICOUTIMI, QUE.

Roberval	E. N. Angers	O. Creteau
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LA HAVE STEAMSHIP CO., WEST LA HAVE, N.S.

Samson	A. D. Oakes	W. Morgan
Trusty	J. Crouse	A. Zuriker

LAKE ERIE NAVIGATION CO., LTD., WALKERVILLE, ONT.

Marquette Bes- semer No. 1	M. M. Rowan	R. Leitch
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LAKE ONTARIO AND BAY OF QUINTE STEAMBOAT CO., KINGSTON, ONT.

Aletha	J. A. Roys	D. McSoley
Caspian	W. Bloomfield	D. J. Leslie
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NOTICE is hereby given that the annual meeting of the Shareholders of the Canadian Northern Quebec Railway Company will be held on Monday, the 13th day of April, A.D. 1908, at the hour of 12 o'clock noon, at the Company's Offices, 1 Toronto Street, Toronto, for the election of a Board of Directors and for the transaction of such business as may be brought before the Shareholders at an Annual Meeting.

By order of the Board.

W. H. MOORE,

Secretary The Canadian Northern Quebec Railway Company.

Toronto, March 9th, 1908.

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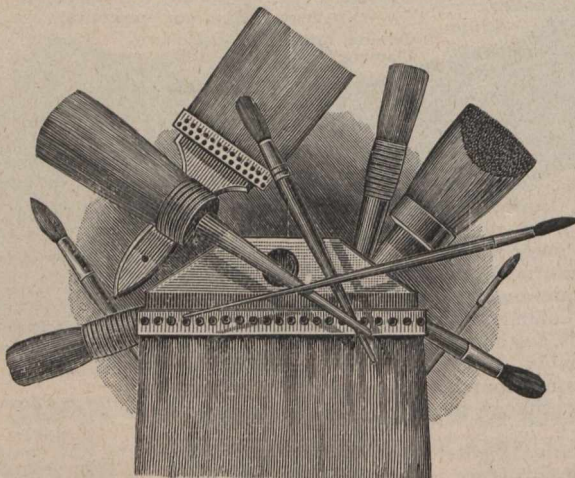
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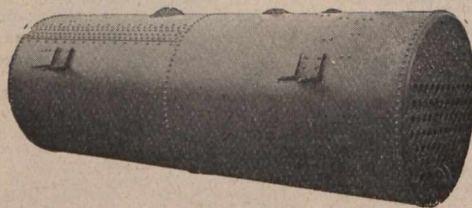
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Harbor and River Works in 1906-07.

During the nine months ended Mar. 31, 1907, the Department of Public Works expended \$7,155,396.06 on various works, of which \$1,532,255.77 went for improvements on harbors and rivers, \$1,964,529.28 for dredging, and \$98,636.08 on slides and booms for facilitating the bringing down of logs. The total revenue of the department during the same period was \$279,484.15, of which \$86,837.98 came from slides and booms, and \$30,652.79 from graving docks. The amounts received from the several graving docks were: Esquimalt, B.C., \$19,627.04; Kingston, Ont., \$4,365.93; Levis, Que., \$6,659.82. The receipts from the Esquimalt dock were greater than in the financial year 1905-06, but those for Kingston and Levis showed a considerable decrease.

Works of improvement upon harbors and rivers, other than dredging, have been carried on at 376 different points in the Dominion during the period under review, these works mainly consisting of the construction of wharves, piers, etc., their repair, improvement and reconstruction. During the year an important work under the control of the department was completed, viz., the high level pier in the lower division in the harbor of Montreal at Maisonneuve, the work having been executed in a very satisfactory manner by W. J. Poupore & Co., Ltd. Another work which was also handed over was the dock constructed in the harbor of Three Rivers, Que., by Randolph Macdonald, Toronto. This work has been placed under the management of the Harbor Commission of Three Rivers, and it is understood that the space which it affords has been immediately occupied by various companies trading with that port. The work was handed over to the department in very good condition, and reflects great credit on the contractor and engineers who have designed and superintended it. The contract called for the construction of 1,968 lineal feet of deep water wharf, and was entered into in 1903. The work should have been completed in Nov., 1905, but owing to the high water in the river during the summer of 1905, the work could not be carried on with the celerity desired, and the contractor was not able to complete the concrete work until the season of 1906. The work done and materials delivered on contract (\$330,730) from beginning of work to Mar. 31, 1907, was about 97.27%, \$321,732.60; amount to be deducted for work done up to June 30, 1906, being about 63.07%, \$208,473.69, leaving a balance of \$113,258.91, representing 34.20% of the work to be done by contract, as the value of the work performed during the nine months. On account of extra work there was supplied material to fill the gap between the 100 ft. embankment and the C.P.R. loop line to the value of \$10,193.91.

In the Maritime Provinces dredging operations have been carried on at 23 different points by the department dredges, while work has been performed at St. John, N.B., by dredge belonging to G. B. Mayes, the work having been awarded after a public call for tenders. This work is now being continued by Mr. Mayes' dredge and by another owned by the Dominion Dredging Co. It is intended to add the dredge W. S. Fielding to the two other dredges in order to improve the entrance to the harbor, and to provide necessary berths for the steamships which are engaged in carrying on the winter trade between Canada and European ports. In Quebec province dredging was performed at 38 points; while in Ontario 34 places were improved. A large contract was given for dredging in the Kaministikwia and Mission

rivers, and in Port Arthur harbor, these contracts being intended to extend over several years, and to provide sufficient water for the navigation which will require to use these channels when the work will be completed. Improvements of the same nature were also made by the department's plant in Manitoba and British Columbia.

The bulk of the fleet of privately owned dredges is found in Ontario and Quebec. In New Brunswick there is only one point where a private dredge is at work. In Nova Scotia, Prince Edward Island, Manitoba and British Columbia, all the work of that nature was being performed by dredges owned by the department. There were altogether 31 of these, distributed as follows: Maritime Provinces, 10; Ontario and Quebec, 15; Manitoba, 3; British Columbia, 3; with attending scows of various kinds. Some difficulty was experienced in getting the dredges towed from one place to another, especially for conducting the new dredging machines. For that purpose a large sea-going tug is required, and its cost will soon be covered when it is considered that during the season under review the sum of nearly \$30,000 was expended in towage outside of that done by vessels owned by the department.

Newfoundland Shipbuilding

An act for the encouragement of shipbuilding has recently been enacted in Newfoundland, by which all vessels built in accordance with schedule B, detailed in the Act, may be classed for 10 years, and shall receive a bounty of \$8 a ton on builders' measurements. All vessels built in accordance with schedule C, detailed in the Act, may be classed for 7 years, and shall receive a bounty of \$5 a ton on builders' measurements. All vessels built in accordance with schedule D, detailed in the Act, and not of greater tonnage than is therein provided, may be classed for 5 years, and shall receive a bounty of \$4 a ton on builders' measurements. All vessels classed at Lloyd's under schedule A, detailed in the Act, shall receive a bounty of \$10 a ton.

Certificates will be granted, in the case of vessels constructed to schedule B, after surveys, when the vessel is in full frame; when the planking is completed; and on completion of the vessel. In the other cases certificates may issue on a survey made when the vessel is completed. The owner or master of every ship surveyed for the purpose of being classed, or for obtaining bounty, shall before receiving his certificate pay to the treasury 10 cents for each registered ton of his vessel, and such sums may be recovered in any competent court, in the name of the Minister of Customs. An Inspector of Shipping, with deputies, will be appointed for the purpose of carrying out surveys, and penalties for making false statements in any reports of surveys are fixed at a fine of \$500, or in default, one year's imprisonment.

Northern Navigation Co.'s New Vessel.

As announced in the annual report, published in our Feb. issue, the Northern Navigation Co. of Ontario arranged early this year for another steamship for service on Lakes Huron and Superior. The details have since been settled and the contract for construction executed. A brief description of the plans prepared was given in our June issue and the following additional particulars have been given us by H. H. Gildersleeve, Manager: The vessel will be a single screw package freight and passenger steamer of 5,000 gross tons, with a displacement of 6,500 tons. Her speed, when fully loaded, will be 17 miles an

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The hull is to be built on the channel system with solid longitudinals extending from the top of floors to the inner bottom, chocked to shell plating and continued fore and aft as far as possible. The spar and main decks are to be steel throughout the entire length of the steamer. The highest grade of steel will be used. The hull will contain nine bulkheads, after peak, engine room, two coal bunker bulkheads, boiler bulkhead, three bulkheads in cargo hold and a forward collision bulkhead. A double bottom will extend from stem to stern of the steamer, being 4 ft. in depth from collision bulkhead to after end of boiler room, and 5 ft. 9 ins. from engine room after to peak bulkhead. The cabins will be spacious and will include many new features. Accommodation will be provided for 500 first and second-class passengers. Running hot and cold water will be provided in every room. A large observation and ball room, 80 by 30 ft., will be on the upper deck. The interior of the cabins will be finished in mahogany and artistically finished from end to end.

The propelling power will consist of a vertical quadruple expansion engine, with cylinders 24, 35, 52 and 80 ins. in diameter, and a stroke of 42 ins. These will be supplied with steam by six Scotch marine boilers, 12½ x 11 ft., with a working pressure of 250 lbs. of steam to the sq. inch. These boilers will be set on the tank top, athwart ship, three on a side, all facing one firehold running fore and aft. The boilers will be fitted with the forced draft system. Each boiler will contain 264 3-in. tubes, and two corrugated steel furnaces, 44 ins. inside, and 2,030 square feet of heating surface. The coal bunkers will be both fore and aft of the boilers, with a trunk feeder fore and aft. A complete refrigerating plant will be installed in the engine room, where also will be an electric lighting plant. The navigation end of the steamer will be supplied with the most modern instruments and all the latest and most improved appliances.

The plans have been prepared by H. Calderwood, Toronto, with F. Kirby, of Detroit, Mich., as consulting naval architect. Mr. Calderwood will also act as inspecting engineer during construction. Delivery is to be made in the spring of 1909.

Reciprocating Engines vs. Turbines.

From the Scientific American.

A remarkable demonstration of the fact that the marine turbine does its best work when running at high speed, and that it ceases to be economical at low speed, occurred recently on the Great Lakes in connection with an attempt to capture the passenger traffic between two points, by placing upon the route a new and fast turbine steamer. The old-established service was operated by two boats, run by reciprocating engines at the very moderate speed of 16 miles an hour. The new company ordered a 21-knot turbine-driven boat from a British yard, placed her in service, and immediately began to secure the cream of the traffic. A representative of the old company, happening at this time to meet in England an engineer who had been prominently associated with the development of the turbine-driven steamship, told him of the conditions, and sought his advice as to the best way to meet

the competition. The turbine engineer asked what was the speed of the boats of the competing lines, and on learning that it was respectively 16 and 21 knots, stated that it would be a very easy matter for the old company to drive the new fast boat off the route, by the very simple expedient of dropping the speed of their boats from 16 to 13 or 14 knots, and making the big reduction in fares which the reduced running expenses of the boats would render possible. He stated that the company owning the turbine steamer could never meet the cut in rates, for the reason that the reduction of the running speed of their vessel would not bring any corresponding reduction in the coal consumption. The company determined to make the experiment; and, after running their boats for a few months at a lower speed and a lower rate, they found that they not only recovered the passenger traffic which they had lost, but that the reduction in running expenses was so great, that they made more money than they had done under the old conditions. Furthermore, it was not many months before the turbine steamer was laid off the route and offered for sale.

It should be understood, however, that the conditions were peculiar at this point, and that the patrons of the line consisted largely of working people, to whom the reduction in fare, even if gained at the expense of time, was a decided consideration. Under average conditions the faster boat would have held the traffic, even at the high rates. We record the incident merely as showing in an interesting way the limitations imposed upon the marine turbine by its inability to run economically at low speed.

Tonnage of Vessels Registered.

The Minister of Marine, in reply to a question in the House of Commons recently, gave the following figures, showing the tonnage of vessels registered in the various provinces during the statistical year ended June 30, 1907:

	STEAM.				SAILING.			
	Wood.		Steel.		Wood.		Steel.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
New Brunswick.....	220	153	44,938	29,140	1,511	1,417	560	543
Nova Scotia.....	771	467	1,650	990	6,373	5,502	1,318	1,226
Quebec.....	622	402	3,623	2,145	4,385	4,154	5,394	978
Ontario.....	5,629	3,448	14,006	8,880	5,983	5,394	1,227	978
Prince Edward Island.....	211	98	351	185	117	95	1,496	1,380
British Columbia.....	5,247	3,313	351	185	1,250	1,238	1,496	1,380
Manitoba.....	438	283	.....	.....	.....	.....	.....	.....
Yukon.....	141	89	.....	.....	.....	.....	.....	.....
Saskatchewan.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	13,279	8,253	64,568	41,340	19,619	17,800	4,601	4,217

For the same period the Customs Department paid the following sums for drawback on ships: Ontario, \$10,747; Nova Scotia, \$4,132.34; Quebec, \$2,012.83; Prince Edward Island, \$125.51; New Brunswick, \$120.64; British Columbia, \$78.01.

Quebec's Future as a Port.

The future of the port of Quebec was the subject upon which a lengthened interview was recently given by J. G. Scott, General Manager of the Quebec and Lake St. John Ry. In his view the future of the port is bound up with the development of the great territory northward and eastward and westward. The first railway to enter this territory was the Quebec and Lake St. John Ry., and it has done a great work in opening up land for settlement, in creating trade and adding to the wealth of the community. As a result there were, it was claimed, at least 10,000 men working during the present winter along the line. The construction of the Transcontinental Railway would bring in a large amount of trade to the port, while the Canadian Northern Ry. would also make the port a shipping point upon its transcontinental line. Then there was also the projected Trans-Canada Ry., with a route 100 to 300 miles further north than the transcontinental G.T. Pacific Ry. This would be the shortest route from Port Simpson to the Atlantic coast. It might seem Utopian to speak of a fourth transcontinental line, but he was of opinion that there would be business for it. The wheat belt of the great North-west extended 400 miles further north than the projected railway, and being over 300 miles north of the U.S. boundary would be a safer military line than any of the others.

The vital question for Quebec, however, Mr. Scott said, was terminals at the port. It would take quite as long to construct the docks, elevators and other terminal facilities as it would to complete the National Transcontinental Ry. Unless these terminals were ready when the railway was the traffic would be diverted elsewhere, and lost entirely. The Terminal Company had a plan for a splendid system of docks stretching from Diamond Harbor to Sillery, and the construction work should be undertaken without delay. The Louise docks are insufficient even for the comparatively small trade brought to Quebec by rail at the present time, and the proposed extension of these docks on the St. Charles side will be none too much for the business of the C.P.R. and the Canadian Northern Ry. There is only one berth at the Louise docks where a cargo of rails can be landed, or a general cargo shipped. "What kind of port is this," said Mr. Scott in conclusion, "for handling the business of three transcontinental railways?"

Dominion Coal Company.

Following are extracts from the annual report for 1907:

The weather experienced throughout the winter and the spring was abnormally severe, thereby delaying the opening of navigation at Sydney by about four weeks, and owing to the presence of drift ice along the Nova Scotia coast and in the Gulf, the regular shipments to the St. Lawrence did not begin until June 6. These unusual conditions rendered it impossible to get up the full quantity of coal required for St. Lawrence points during the season of open navigation; supplementary shipments had to be made via Portland, Me., after the closing of the river, entailing heavy additional cost of railway carriage from that port to Montreal. The delays to steamers also caused an increase in the freighting costs.

In response to the invitation of the Federal Government to tender for the establishment of a wrecking plant to afford aid to wrecked, disabled or stranded vessels within the coastal waters of the Maritime Provinces and the Gulf of St. Lawrence, an offer was submitted by the company which was accepted, and an agreement entered into for five years. Cer-

tain of the company's steamers have been assigned to this duty and a complete salvage outfit purchased. During the eight months of its existence assistance has been rendered to 11 vessels.

Owing to the great difficulty experienced in obtaining schooners to carry on the coast-wise trade, a specially designed steamer was built in Scotland to the company's order. This steamer, the Cabot, arrived at Sydney on Sept. 21, and has been continuously employed in the trade since that date.

A trestle and chute have been erected at Glace Bay Harbor to provide return cargoes for sailing craft coming in with lumber and produce, and the berth in this harbor dredged to enable vessels to lie alongside. These facilities have proved advantageous to the company.

Among the Express Companies.

H. M. Creighton, father of H. C. Creighton, Superintendent of the Canadian Ex. Co., St. John, N.B., died in that city recently, aged 86.

The Board of Railway Commissioners has extended the time within which express companies shall file and receive approval of their tariffs of tolls to June 1.

The financial statement of Newfoundland for the year ended June 30, 1907, recently presented to the Legislature, shows that \$14,000 was received from the tax on banks and express companies.

The Winnipeg Messenger Co., Ltd., has been incorporated in Manitoba, with a capital of \$20,000 and offices in Winnipeg, with power to carry on the businesses of general carriers, railway and forwarding agents, warehousemen, bonded and common car men, and express and transfer agents. The provisional directors are: W. Halpenny, Jr., R. Lawrie, W. Halpenny, J. T. Haig, Winnipeg.

Telegraph and Cable Matters.

The Board of Railway Commissioners has extended the time within which the North American Telegraph Co. shall file and receive approval of its tariffs of tolls to June 1.

The Marconi Wireless Telegraph Co. transmitted about 14,000 words across the Atlantic on the day it opened the Canada-Ireland general service.

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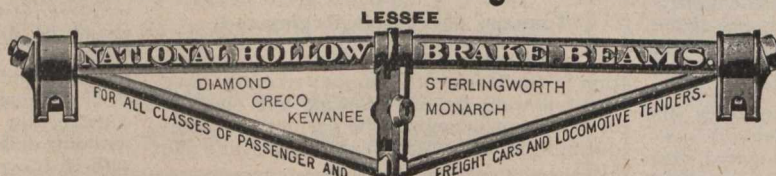
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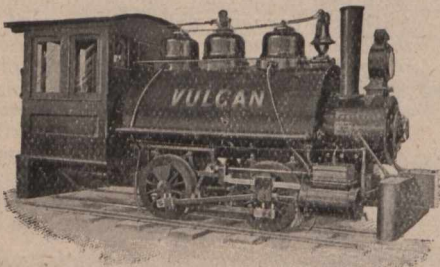
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R. N. Vyvyan, Chief Engineer Marconi Wireless telegraph station at Glace Bay, N.S., is reported to be about to retire from that position and to return to Great Britain.

The Western Union Telegraph Co. has opened offices at Bridgewater, Canso, Hawkesbury, Kentville, Lunenburg, Port Hastings, Port Mulgrave, Westville, Weymouth, and Windsor, N.S.; Edmundston, Sussex, and Woodstock, N.B., and Phoenix, B.C.

The Minister of Railways recently received a deputation of I.C.R. telegraph operators, who submitted their arguments for an increase of wages. This interview was arranged to take place a few months ago, but was deferred on account of the Minister's illness.

The Dominion Government is arranging, according to a Vancouver, B.C., despatch, to establish a wireless telegraph or cable service between Prince Rupert and Queen Charlotte Island, and between various of the larger islands off the coast of British Columbia.

The Manitoba Legislature has under consideration an act creating a department to have control of telegraph and telephone

interests within the province. The Minister will be given power to construct, purchase or lease telegraph and telephone lines, and to operate same.

G. Marconi, while in Liverpool, Eng., recently, stated that when the installation of the latest apparatus was accomplished, which would be about June, he fully expected that the Marconi Wireless Telegraph Co.'s trans-Atlantic stations would be able to deal with, at least, 20,000 words a day.

Speaking at the Royal Institution, London, Eng., Mar. 13, G. Marconi said up to the end of Feb., 119,945 words had been accurately and expeditiously transmitted between Glace Bay, N.S., and Clifden, Ireland; by means of the wireless telegraph system. In seven years the range of wireless telegraphy had increased from 200 to 2,500 miles, and he hoped eventually to be able to send messages round the world.

C. P. Edwards, Inspector of the Marconi Wireless Telegraph Co., who arrived at St. John, N.B., Mar. 1, from England, stated that several new stations are to be constructed in the Maritime Provinces, and that prior to his leaving England, the ap-

paratus had been installed on the C.P.R. steamship Lake Manitoba. The C.P.R. has ordered that all its vessels are to be similarly equipped before leaving the Liverpool docks.

Of the total revenue of Newfoundland for the year ended June 30, 1907, amounting to \$2,750,690, the receipts from post office and telegraphs amounted to \$50,673, and from telephone and telegraph tax (two years), \$44,514. The expenditures amounted to \$2,625,336, and included \$391 for postal and telegraph services, which covers a number of ocean and coastal steamship subsidies. When the telegraph service was taken over from the Reid Newfoundland Co. in 1902, there were 53 offices with 859 miles of line; at present there are 109 offices with 2,783 miles of line. During the same period the revenues from the service increased from \$13,313 to \$50,673, and the expenditures from \$27,911 to \$61,829.

The Shedden Forwarding Co. has instituted an action against the Montreal City Council for \$20,000 damage to its business on account of the bad condition of the city streets.

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Canadian Ry. Accident Ins. Co. Ottawa, Ont.

Advertising Matter

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Aerated Waters

E. L. Drewry Winnipeg.

Air Brakes and Fittings

Canada Foundry Co. Toronto.

Canadian Westinghouse Co. Hamilton, Ont.

Ales

E. L. Drewry Winnipeg.

Angle Bars

Hamilton Steel & Iron Co. Hamilton, Ont.

Anti Rail Creepers

Belle City Malleable Iron Co. Racine, Wis.

Automobiles

Polson Iron Works, Ltd. Toronto

Axes

James Smart Mfg. Co. Brockville, Ont.

Axe Steel

Montreal Steel Works Montreal.

Axles

James Hutton & Co. Montreal.

Jas. W. Pyke & Co. Montreal.

Rhodes, Curry & Co. Amherst, N.S.

Taylor & Arnold Montreal.

Badges

R. Woodman Mfg. & Supply Co. Boston, Mass.

Baggage Checks

R. Woodman Mfg. & Supply Co. Boston, Mass.

Beacons

International Marine Signal Co. Ottawa.

Bearings, Side

Chicago Railway Equipment Co. Chicago, Ill.

Blankets and Bedding

The Hudson's Bay Co. Montreal.

Blasting Powder

Standard Explosives Limited. Montreal.

Boilers

Babcock & Wilcox (Ltd.) Montreal.

Canada Foundry Co. Toronto.

Jno. McDougall, Caledonian Iron Works Co. Montreal

Polson Iron Works Toronto.

Boilers, Portable

Canada Foundry Co. Toronto.

Robb Engineering Co. Amherst, N.S.

Boilers, Stationary and Marine

Babcock & Wilcox (Ltd.) Montreal.

Boiler, Staybolt Iron or Steel Bars

Falls Hollow Staybolt Co. Cuyahoga Falls, Ohio.

Boilers, Steam

Babcock & Wilcox (Ltd.) Montreal.

Boilers, Water Tube

Babcock & Wilcox (Ltd.) Montreal.

Jno. McDougall, Caledonian Iron Works Co. Montreal

Boilers Tubes

Jas. W. Pyke & Co. Montreal.

Bolsters

Dominion Car and Foundry Co. Montreal.

Bolts, Bridge

Toronto Bolt and Forging Co. Toronto.

Bolts, Carriage and Machine

Toronto Bolt and Forging Co. Toronto.

Bolts, Track

Toronto Bolt and Forging Co. Toronto.

Box Car Loaders

Mussens Limited Montreal.

Brake Beams

Chicago Railway Equipment Co. Chicago, Ill.

Dominion Car and Foundry Co. Montreal.

Brake Shoes

American Brake Shoe & F'dry Co. . Mahwah, N.J.

Canadian Iron and Foundry Co. Montreal.

N. J. Holden Co. Ltd. Montreal.

Railway Materials Co. New York City.

Brass and Copper Cloth

The B. Greening Co. Hamilton, Ont.

Bridge Numbers

Acton Burrows Limited Toronto.

Bridges

Canada Foundry Co. Toronto.

Canadian Bridge Co. Walkerville, Ont.

Dominion Bridge Co. Montreal.

Steel Concrete Co. (Ltd.) Montreal.

Buckets, Coal, Ore and Concrete

Canadian Fairbanks Co., Ltd. Montreal.

Kilgore-Peteler Co. Minneapolis, Minn.

Bumping Posts

McCord & Co. Chicago, Ill.

Buoy Lighting

Safety Car Heating and Lighting Co. . New York.

Buoys

International Marine Signal Co. Ottawa.

Cables, Electric and Feeder

E. F. Phillips Electrical Works, Ltd. Montreal.

The Wire and Cable Co. Montreal.

Caboose Heaters

Geo. R. Prowse Montreal.

Car Castings

American Brake Shoe & F'dry Co. . Mahwah, N.J.

Canadian Iron and Foundry Co. Montreal.

Car Cleaner

Modoc Soap Co. Philadelphia, Pa.

Car Closets

Duner Co. Chicago, Ill.

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N. J. Holden Co., Ltd. Montreal.

Car Heating

Wm. C. Baker Heating & Supply Co. . New York.

Canadian Gold Car Heating & Lighting Co. Montreal.

Safety Car Heating and Lighting Co. . New York.

Car Jacks

Canadian Fairbanks Co., Ltd. Montreal.

F. H. Hopkins & Co. Montreal.

Mussens Limited Montreal.

Car Kitchen Equipments

Geo. R. Prowse Montreal.

Car Lighting

Bliss Electric Car Lighting Co. . . Milwaukee, Wis.

Consolidated Ry. Electric Light. & Equip. Co., N.Y.

Canadian Cold Car Heating & Lighting Co. Montreal.

Safety Car Heating and Lighting Co. . New York.

Car Movers

Canadian Fairbanks Co., Ltd. Montreal.

F. H. Hopkins & Co. Montreal.

Mussens Limited Montreal.

R. Woodman Mfg. & Supply Co. . . Boston, Mass.

Car Ranges

Geo. R. Prowse Montreal.

Car Replacers

Alexander Car Replacer Mfg. Co. . . Scranton, Pa.

N. J. Holden Co., Ltd. Montreal.

F. H. Hopkins & Co. Montreal.

Car Seals

R. Woodman Mfg. & Supply Co. . . Boston, Mass.

Car Wash Brushes

Wolfe Brush Co. Pittsburg, Pa.

Cars

Canada Car Co., (Ltd) Montreal, Que.

Crossen Car Mfg. Co. Cobourg, Ont.

Dominion Car and Foundry Co. Montreal.

J. T. Gardner Chicago, Ill.

Hart-Otis Car Co. (Ltd.) Montreal.

Kilgore-Peteler Co. Minneapolis, Minn.

Preston Car and Coach Co., Ltd. . Preston, Ont.

Rhodes Curry & Co. Amherst, N.S.

Cars, Coal

Kilgore-Peteler Co. Minneapolis, Minn.

Cars, Mine

Canadian Fairbanks Co., Ltd. Montreal.

Kilgore-Peteler Co. Minneapolis, Minn.

Car Windows

O. M. Edwards Syracuse, N.Y.

Castings

Crossen Car Mfg. Co. Cobourg, Ont.

Castings, Brass

Canadian Bronze Co. Montreal.

Canadian Iron and Foundry Co. Montreal.

Kerr Engine Co. Walkerville, Ont.

St. Thomas Brass Co. St. Thomas, Ont.

Castings, Iron

Canada Car Co., Ltd. Montreal.

Canadian Iron and Foundry Co. Montreal.

Kerr Engine Co. Walkerville, Ont.

Castings, Iron and Steel

American Brake Shoe & F'dry Co. . Mahwah, N.J.

Castings, Malleable

Taylor & Arnold Montreal.

Castings, Steel

Canadian Iron and Foundry Co. Montreal.

Montreal Steel Works Montreal.

Rhodes Curry & Co. Amherst, N.S.

Cast-Steel Hammers

American Brake Shoe & F'dry Co. . Mahwah, N.J.

Cast-Steel Track Tools

American Brake Shoe & F'dry Co. . Mahwah, N.J.

Cast-Steel Wrenches

American Brake Shoe & F'dry Co. . Mahwah, N.J.

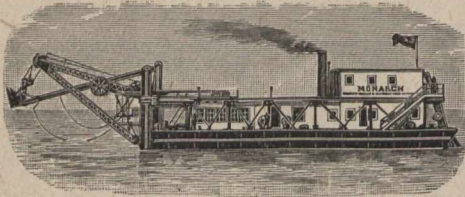
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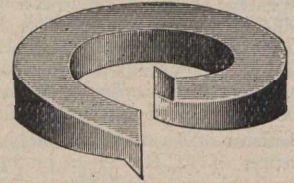
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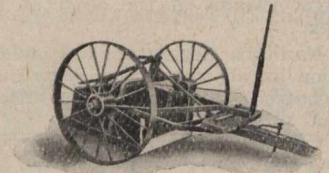
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Gartshore-Thompson Pipe & F'dry Co., Hamilton.

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Derailing Devices
Hayes Track Appliance Co.....Geneva, N.Y.

Derrick Ropes
Dominion Wire Rope Co.....Montreal.
The B. Greening Co.....Hamilton, Ont.

Derricks
M. Beatty & Sons.....Welland, Ont.
Miller Bros. & Toms.....Montreal.
Mussens Limited.....Montreal.

Dies
Butterfield & Co.....Rock Island, Que.

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Mussens Limited.....Montreal.

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O. M. Edwards.....Syracuse, N.Y.

Door Signs
Acton Burrows Limited.....Toronto.

Draft Gear
Farlow Draft Gear Co.....Baltimore, Md.
McCord & Co.....Chicago, Ill.
Standard Coupler Co.....New York City.

Drawing Materials
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Dredges
M. Beatty & Sons.....Welland, Ont.

Drills
W. Abbott.....Montreal.

Drills, Twist
Baldwin Steel Co.....New York.

Dry Goods
The Hudson's Bay Co.....

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F. H. Hopkins & Co.....Montreal.
Kilgore-Peteler Co.....Minneapolis, Minn.
Toronto Pressed Steel Co.....Toronto.

Dynamo and Electric Castings
American Brake Shoe & F'dry Co., Mahwah, N.J.

Economizers
Babcock & Wilcox (Ltd.).....Montreal.

Electric Car Route Signs
Acton Burrows Limited.....Toronto.

Electric Cranes
Babcock & Wilcox.....Montreal.
Canada Foundry Co.....Toronto.
Canadian Fairbanks Co., Ltd.....Montreal.
Dominion Bridge Co.....Montreal.
Mussens Limited.....Montreal.

Electric Ry. Brake Shoes
American Brake Shoe & F'dry Co., Mahwah, N.J.

Electrical Fuses
Standard Explosives Limited.....Montreal.

Enameled Iron Signs
Acton Burrows Limited.....Toronto.

Engineers' Supplies
Canadian Fairbanks Co.....Montreal.

Engines, Gasoline
Canadian Fairbanks Co.....Montreal.
Goold, Shapley & Muir Co.....Brantford, Ont.
Ontario Wind Engine and Pump Co.....Toronto.

Engines, Hoisting
M. Beatty & Sons.....Welland, Ont.
Canadian Fairbanks Co., Ltd.....Montreal.

Engines, Stationary and Marine
Polson Iron Works.....Toronto.

Explosives
Standard Explosives Limited.....Montreal.

Express Office Signs
Acton Burrows Limited.....Toronto.

Fencing
Banwell-Hoxie Fence Co.....Hamilton, Ont.
Canada Foundry Co.....Toronto.
McGregor Banwell Fence Co.....Walkerville, Ont.
Owen Sound Wire Fence Co., Owen Sound, Ont.
Page Wire Fence Co. Ltd.....Walkerville, Ont.

Fire Brick
Mussens Limited.....Montreal.

Flags
The Hudson's Bay Co.....

Flour
The Hudson's Bay Co.....

Fog Signals
International Marine Signal Co.....Ottawa.

Forgings
Canada Car Co., Limited.....Montreal.
Crossen Car Mfg. Co.....Cobourg, Ont.
Hamilton Steel & Iron Co., Ltd., Hamilton, Ont.
Standard Steel Works.....Philadelphia, Pa.

Fuse Batteries
Standard Explosives Limited.....Montreal.

Fuse Detonators
Standard Explosives Limited.....Montreal.

Gaskets
McCord & Co.....Chicago, Ill.

Gas Pipe (Cast Iron)
Gartshore-Thompson Pipe & F'dry Co., Hamilton.

Gates
Banwell-Hoxie Fence Co.....Hamilton, Ont.
Canada Foundry Co.....Toronto.
McGregor Banwell Fence Co.....Walkerville, Ont.
Owen Sound Wire Fence Co., Owen Sound, Ont.
Page Wire Fence Co. Ltd.....Walkerville, Ont.

Glue Brushes
Wolfe Brush Co.....Pittsburg, Pa.

Grain Elevators
John S. Metcalfe Co.....Chicago, Ill.

Groceries
The Hudson's Bay Company.....

Hammers
James Smart Mfg. Co.....Brockville, Ont.

Handcars
Canadian Fairbanks Co., Ltd.....Montreal.
Crossen Car Mfg. Co.....Cobourg, Ont.
F. H. Hopkins & Co.....Montreal.
Mussens Limited.....Montreal.
Rice Lewis & Son.....Toronto.
Toronto Pressed Steel Co.....Toronto.

Hardware
The Hudson's Bay Co.....Toronto.
Rice Lewis & Son.....Toronto.

Headlights
The N. L. Piper Railway Supply Co.....Toronto.
Pyle National Electric Head Light Co.Chicago, Ill.

Headlinings
Crossen Car Mfg. Co.....Cobourg, Ont.

Hoisting Machinery
Brown Hoisting Machinery Co., Cleveland, Ohio.
Canadian Fairbanks Co., Ltd.....Montreal.

Hollow Staybolt Iron and Steel Bars
Falls Hollow Staybolt Co., Cuyahoga Falls, Ohio.

Hoppers, Car (Wet or Dry)
Duner Co.....Chicago, Ill.

Hydrants
Canadian Fairbanks Co., Ltd.....Montreal.
Kerr Engine Co.....Walkerville, Ont.

Illustrations
Acton Burrows Limited.....Toronto.

Inspections
R. W. Hunt & Co.....Montreal.

Instruments, Surveying and Engineering
James Foster.....Toronto.

Interlocking Signals
Montreal Steel Works.....Montreal.

Iron and Steel Bars
Hamilton Steel & Iron Co., Ltd., Hamilton, Ont.

Iron, Bar
Taylor & Arnold.....Montreal.

Iron, Pig
Hamilton Steel & Iron Co., Ltd., Hamilton, Ont.

Iron Signs
Acton Burrows Limited.....Toronto.

Iron Staybolt Bars
Falls Hollow Staybolt Co., Cuyahoga Falls, Ohio.

Jacks
James Smart Mfg. Co.....Brockville, Ont.

Japans
McCaskill, Dougall & Co.....Montreal.

Journal Bearings
Canadian Bronze Co.....Montreal.
Crossen Car Mfg. Co.....Cobourg, Ont.
Kerr Engine Co.....Walkerville, Ont.
Jas. W. Pyke & Co.....Montreal.
St. Thomas Brass Co.....St. Thomas, Ont.

Journal Boxes
N. J. Holden Co., Ltd.....Montreal.
McCord & Co.....Chicago, Ill.

Kalsomine Brushes
Wolfe Brush Co.....Pittsburg, Pa.

Lager Beer, &c.
E. L. Drewry.....Winnipeg.

Lamps, Incandescent
Canadian Westinghouse Co.....Hamilton, Ont.

Lamps and Lanterns
The Hudson's Bay Company.....
The Hiram L. Piper Co.....Montreal.
The N. L. Piper Railway Supply Co.....Toronto.

Launches
Polson Iron Works.....Toronto.

Lights, Contractors' and Wrecking
Canadian Fairbanks Co., Ltd.....Montreal.
F. H. Hopkins & Co.....Montreal.
Mussens Limited.....Montreal.

Locomotive Driver Brake Shoe
American Brake Shoe & F'dry Co., Mahwah, N.J.
Canadian Iron and Foundry Co.....Montreal.

Locomotive Lagging and Covering
Taylor & Arnold.....Montreal.

Locomotives (Compressed Air)
Burnham, Williams & Co.....Philadelphia, Pa.
Canadian Locomotive Co.....Kingston, Ont.
Montreal Locomotive Works (Ltd.).....Montreal.
H. K. Porter Co.....Pittsburg, Pa.

Locomotives (Electric)
Burnham, Williams & Co.....Philadelphia, Pa.
Canada Foundry Co.....Toronto.
Montreal Locomotive Works (Ltd.).....Montreal.

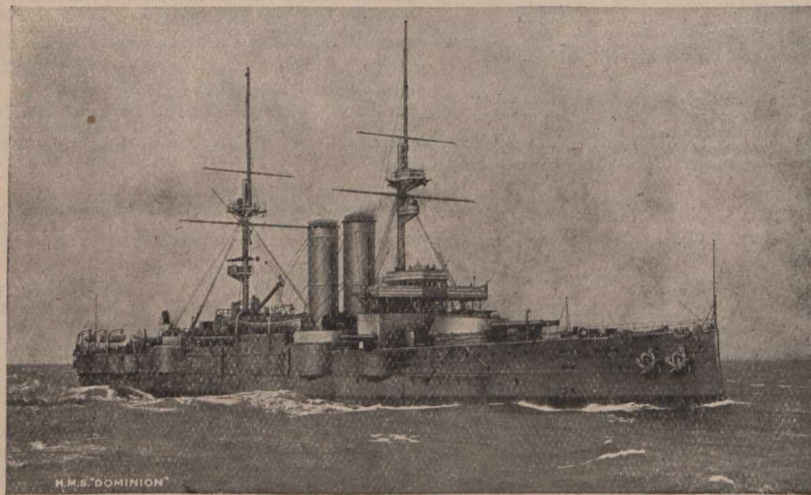
Locomotives (Logging)
Burnham, Williams & Co.....Philadelphia, Pa.
Canadian Locomotive Co.....Kingston, Ont.

Locomotives (Rack)
Burnham, Williams & Co.....Philadelphia, Pa.
Canadian Locomotive Co.....Kingston, Ont.
Montreal Locomotive Works (Ltd.).....Montreal.

Locomotives (Steam)
Burnham, Williams & Co.....Philadelphia, Pa.
Canada Foundry Co.....Toronto.
Canadian Fairbanks Co., Ltd.....Montreal.
Canadian Locomotive Co.....Kingston, Ont.
J. T. Gardner.....Chicago, Ill.
The W. H. Kelson Co.....Montreal.
Montreal Locomotive Works (Ltd.).....Montreal.
H. K. Porter Co.....Pittsburg, Pa.
Vulcan Iron Works.....Wilkesbarre, Pa.

Locomotive Staybolts
Falls Hollow Staybolt Co., Cuyahoga Falls, Ohio.
Flannery Bolt Co.....Pittsburg, Pa.

Lubricators McCord & Co.....Chicago, Ill. Taylor & Arnold.....Montreal.	Painters' Dusters Wolfe Brush Co.....Pittsburg, Pa.	Railway Pile Drivers F. H. Hopkins & Co.....Montreal. Mussens Limited.....Montreal.
Machine Tools W. Abbott.....Montreal. Canadian Fairbanks Co.....Montreal.	Painters' Scrubs Wolfe Brush Co.....Pittsburg, Pa.	Railway Supplies Canadian Fairbanks Co.....Montreal. The W. H. Kelson Co.....Montreal. The Hiram L. Piper Co.....Montreal. The N. L. Piper Railway Supply Co.....Toronto. Rice Lewis & Son.....Toronto.
Machinery, Power Jno. McDougall, Caledonian Iron Works Co. Montreal	Painters' Wall Brushes Wolfe Brush Co.....Pittsburg, Pa.	Reamers W. Abbott.....Montreal. Baldwin Steel Co.....New York. Butterfield & Co.....Rock Island, Que.
Machinery Special Miller Bros. & Toms.....Montreal	Paints Canadian Oil Co.....Toronto.	Refrigerators Geo. R. Prowse.....Montreal.
Machinery, Transmission Canadian Fairbanks Co., Ltd.....Montreal. Miller Bros. & Toms.....Montreal.	Pictorial Post Cards Valentine & Sons Publishing Co.....Montreal.	Rivets, Boiler, Bridge and Structural Toronto Bolt and Forging Co.....Toronto.
Manganese Steel Castings Montreal Steel Works.....Montreal.	Pinch Bars The N. L. Piper Railway Supply Co.....Toronto.	Rolled Wheels Standard Steel Works.....Philadelphia, Pa.
Manhole Frames and Covers American Brake Shoe & F'dry Co., Mahwah, N.J. Canadian Iron and Foundry Co.....Montreal.	Pipe and Pipe Coverings Wm. C. Baker Heating & Supply Co., New York.	Roof Trusses Canadian Bridge Co.....Walkeville, Ont. Dominion Bridge Co.....Montreal.
Marine Supplies Rice Lewis & Son.....Toronto.	Pipe Stocks Butterfield & Co.....Rock Island, Que.	Rope F. H. Hopkins & Co.....Montreal. The Hudson's Bay Co.....
Milepost Numbers Acton Burrows Limited.....Toronto.	Platforms, Steel Standard Coupler Co.....New York City.	Rotary Snow Ploughs Crossen Car Mfg. Co.....Cobourg, Ont.
Milling Cutters W. Abbott.....Montreal. Baldwin Steel Co.....New York.	Ploughs, Contractors' Mussens Limited.....Montreal. Toronto Pressed Steel Co.....Toronto.	Roundhouses Steel Concrete Co. (Ltd.).....Montreal.
Motors McCord & Co.....Chicago, Ill.	Pneumatic Tools N. J. Holden Co., Ltd.....Montreal.	Sash Balances O. M. Edwards.....Syracuse, N.Y.
Nickel The Orford Copper Co.....New York.	Porter E. L. Drewry.....Winnipeg.	Sash Locks O. M. Edwards.....Syracuse, N.Y.
Nickel for Nickel Steel The Orford Copper Co.....New York.	Portable Boilers Babcock & Wilcox (Ltd.).....Montreal. Robb Engineering Co.....Amherst, N.S.	Saw Steel Montreal Steel Works.....Montreal.
Numbers Acton Burrows Limited.....Toronto.	Power Houses Steel Concrete Co. (Ltd.).....Montreal.	Scoria Blocks W. H. Knowlton.....Toronto.
Nut Locks Positive Lock Washer Co.....Newark, N.J.	Printing The Hunter Rose Co.....Toronto. The Mail Job Printing Company.....Toronto.	Scrapers (Wheel and Drag) Bechtels Limited.....Waterloo, Ont. F. H. Hopkins & Co.....Montreal. Mussens Limited.....Montreal. Toronto Pressed Steel Co.....Toronto.
Nuts, Square and Hexagon Canada Foundry Co.....Toronto. Toronto Bolt and Forging Co.....Toronto.	Pumps S. F. Bowser & Co., Limited.....Toronto. Canadian Fairbanks Co.....Montreal. Canada Foundry Co.....Toronto. Goold, Shapley & Muir Co.....Brantford, Ont. Ontario Wind Engine and Pump Co.....Toronto. James Smart Mfg. Co.....Brockville, Ont.	Screw Plates Butterfield & Co.....Rock Island, Que.
Oakum The Hudson's Bay Company.....	Pumps (Centrifugal) M. Beatty & Sons.....Welland, Ont.	Screws, Coach and Lag Toronto Bolt and Forging Co.....Toronto.
Office Fittings Canadian Office & School Furniture Co., Preston, Ont.	Rail Benders, Roller F. H. Hopkins & Co.....Montreal. Montreal Steel Works.....Montreal.	Semaphore Arms Acton Burrows Limited.....Toronto.
Office Signs Acton Burrows Limited.....Toronto.	Rails (new) Dominion Iron & Steel Co.....Sydney, N.S. Drummond, McCall & Co.....Montreal. J. T. Gardner.....Chicago, Ill. J. J. Gartshore.....Toronto. F. H. Hopkins & Co.....Montreal. Kilgore-Peteler Co.....Minneapolis, Minn.	Semaphores The N. L. Piper Railway Supply Co.....Toronto.
Oil Furnaces Railway Materials Co.....New York City.	Rails (for relaying) F. H. Hopkins & Co.....Montreal. J. J. Gartshore.....Toronto. Mussens Limited.....Montreal. Jas. W. Pyke & Co.....Montreal.	Sewer Pipe (Cast Iron) Gartshore-Thompson Pipe & F'dry Co., Hamilton.
Oil Tanks S. F. Bowser & Co. Limited.....Toronto.	Rail Joints The Rail Joint Co. of Canada.....Montreal.	Shade Rollers O. M. Edwards.....Syracuse, N.Y.
Oils Canadian Oil Co.....Toronto. Galena Signal Oil Co., Franklin, Pa., and Toronto.		Shafting, Hollow Falls Hollow Staybolt Co., Cuyahoga Falls, Ohio.
Packing Canadian Fairbanks Co., Ltd.....Montreal. The N. L. Piper Railway Supply Co.....Toronto.		Shaking Grates Babcock & Wilcox (Ltd.).....Montreal.
Paint Brushes Wolfe Brush Co.....Pittsburg, Pa.		



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