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Delayed Action Mines as Affecting the Railways on the British Western Front.

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Our first introduction to delayed action mines was at Peronne in the spring of 1917, but it was not till the summer of 1918 that the really "classy" article was met with. No delayed action mines were encountered previous to 1917, for the reason that there was no call for them. However, at this time, the Boche had retired at several points to his Hindenburg line, and carefully planned and set his mines before retiring. What were called "booby traps," were left behind in billets and "dug outs." Souvenirs of various kinds were placed in positions, with connections concealed, and so that when lifted, a trigger would be pulled, or a trap sprung, exploding charges of various kinds and sizes, intended to cause casualties among our men. After our first losses from this cause, warnings were sent out to everybody and consequently from that time on everyone was on the look out. Sometimes the opening of a door in a billet or dug out produced a terrific explosion, in a similar way, by pulling a cord, which released a spring or other trap, causing the exploding of the charge carefully set for the occasion. Usually when retreating the most attractive billets or dug outs were mined and often those just vacated by the German staff proved the least desirable for habitation by our own troops. They were generally looked upon with suspicion, and not reoccupied without most careful investigations by experts to take care of any "booby traps" that might be found.

The worst booby trap that was brought to the writer's notice could have been conceived by none other than the mind of the miserable Boche, with whom the British played the game as far as methods of warfare were concerned. The body of a dead German was left on a stretcher, beside the doorway, on a narrow street quite near the west end of the railway bridge we were building across the Somme Canal at Peronne during September, 1918. When a party of Australian soldiers attempted to remove the body for burial, the explosion of the charge to which it was attached caused several casualties. The writer did not see the explosion take place, but was satisfied with the authenticity of reports concerning the affair, it being his business to pass the spot for several days in succession and coming in contact with those working on the spot. He did see the corpse on the stretcher and several times over expressed the hope that it would be soon removed. There were many diabolic inventions, but what seemed so to us at first were quite commonplace towards the end of the war.

In his retirement in the spring of 1917 the Boche was not content with blowing up the bridges on the railways in the ordinary way, but trickery had to be resorted to in this also. At first when a bridge was partly "blown" we used what was left of the bridge, when possible, in the construction of the new. It was soon found that this was risky, and parties of tunnellers or miners experienced in

the laying of charges were sent ahead to examine all structures and to remove mines when encountered. Even then we had "blow ups" after we had finished our work. At this time, however, the Boche did not appear to have any refined device for exploding the mines or charges such as he developed afterwards, but it was the shock or weight of the passing train or other such cause that set off the charge.

When possible he carried off much track material as he retired, rails, ties and everything in some cases, especially just out of Peronne, but where this was not possible every rail would be blown, by using charges at every second rail joint, and frogs and switches were his speciality. He never passed them over.

The really "classy mines" as mentioned at the outset were not developed until the summer and autumn of 1918, but when they came it was with a vengeance. The speed with which the enemy retreated from Villers Brettonneaux, which is a few miles east of Amiens, will be judged by the fact that we did not meet with a single delayed mine till Roisel was reached. This mine however did not "go up" till we had actually completed our line into Caudry, and the line had been under operation for some time into Cambrai. Caudry is about 12 miles east from Cambrai, on the line to Le Cateau, and the mine in question had apparently been "set" or timed for about 30 to 35 days. It was located at the main road crossing in Roisel and had escaped detection. A very large crater resulted, and there were many casualties. Indeed so great was the damage done that the trains were held up for over two days.

In this mine, as in all others which were afterwards encountered, a very ingenious device in the way of a time fuse was used. This consisted of a percussion cap of large calibre, encased in a brass holder which also contained a plunger firing pin, operated by a stiff brass spring. The plunger was tied back against the spring in the position for striking, by a small wire encased in a tube with a stopper. A specially prepared acid was admitted to the tube, and when the acid had eaten the wire tying back the plunger, of course the spring was released, the plunger struck, and off went the charge. We found several packages of these ingenious time fuses and each contained a selection of vials of acid of varying strengths, and specially marked, so that the right one could be used to produce the explosion after the proper lapse of days and to suit the situation. These fuses were afterwards specially made, so that they would screw into the nose of a shell, and also so as to resemble the regular nose fuse of the shell. When the Boche found it necessary to abandon a portion, or all, of one of his ammunition dumps, it was quite a simple operation to remove a regular shell fuse from one of the shells and to insert one of the ingeniously timed delay

action fuses and all who would happen to be about the dump when the fuse was "ripe" would, or would not, live to tell the tale, as the case might be.

Later on, old ammunition, shells, and bombs were used in "mining" instead of the regular lines of explosive. It was a very easy way of getting rid of shells he could not take along with him in his retreat. A shell or two, of course of large calibre, buried into a culvert would destroy it, and in the railway embankments it was quite easy to dig the necessary number of wells or pits and to roll into them the proper number of shells or bombs of the proper size, one of which, in each case, fitted with the delayed action fuse, properly timed, would gain his ends in delaying our advance, as the advance could not be kept up without the railways. During the last month of the war all the mines we encountered were of this type. The bombs used were called "pigs," being much the shape of a long pig, about 3 or 4 ft. long and 18 or 20 in. in diameter. We have seen as many as eight of these taken from one charge. A charge of this size would blow a hole in an embankment, that would require from 1,200 to 1,500 yards of material to refill, and there were in the high embankments just east of Le Cateau about 20 of such mines in a distance of three miles, no road crossings being overlooked of course. The blowing of the road crossing meant the tying up of both the roadway and the railway—one stone killed two birds for the Hun.

Probably the two most outstanding cases of delayed mining we had to contend with were at Wombaix and Caudry. The former was in a deep cutting, and we had not detected it. Trains had been passing over the spot every day for about two weeks and the mine had been placed about two weeks before we built the line. It went up while one of our construction trains of track material was passing over the spot and some cars of rails which happened to be over the charge when it went up, went up also, cars and rails being pretty much scattered about the place. The front and rear ends of the train were untouched.

Caudry's main street passed under the track by a subway of steel and brick superstructure and brick abutments. It had been examined for mines and pronounced safe. It seemed quite untouched and our suspicions were aroused, so that it was examined carefully a second time. No traces of mining or disturbances of any kind being found, it was decided to operate our trains across the street, concluding that for once the Boche had overlooked something. Two weeks later, one morning at 9 o'clock it "went up." The superstructure was carried up the track a short distance and deposited down our side of the embankment. There was not sufficient left of the two abutments to tell that there had ever been any. Several civilians were killed. What had happened in this case

was that the Boche had tunnelled out from the cellar of a near by building, placed his charges and concealed his work by boarding up the cellar walls. The civilians remarked afterwards that for a long time the Boche would permit no one to go in sight of the building. This of course was when the tunnelling was going on and the excavated material was being got rid of. The delay to train operation was 30 hours, which amply justified the expense and painstaking in setting the mine.

In a large material yard at Sassignies, which contained several thousand tons of track material, which it was necessary to leave behind in his great retreat, the "pigs" were again used to great advantage in the destruction of the material. A few "pigs" placed under a pile of rails, a pile of frogs and switches, or a pile of ties, generally twisted the material out of shape, or otherwise destroyed it, as well as scattered it all over the neighborhood. Fortunately no "pigs" remained "alive" when we got there. They had all "gone up."

The enemy were certainly masters of the art as far as destruction goes and we have doubtless learned many a lesson from the many devices they used. In blowing up rails in the track, latterly they used a very simple but effective device for fuse lighting, and one which rendered possible the blowing up of miles of track in a single day. The explosive was placed at every second rail joint, as before stated. Ordinary caps and rubber covered fuse, similar to that in Canada were used, but instead of using matches or a torch for lighting the fuse, they employed a little copper cap that clipped over the end of the fuse. The copper cap, of course, had a mechanical lighting device inside it, and all that was necessary was to pull the string to start the fuse burning. In this way, once the charges were set, a man walking along the track could easily light and blow up at least 6 or 8 miles of track a day.

During the last days of the war, desperate days for the enemy, he attained even greater refinement in his work of destruction. Not being content with the blowing up of bridges as he had done it in the past, he very carefully conceived a most effective means of delaying us in the reconstruction of them. The most striking example of this was at Maubeuge. Before blowing up a very important bridge over the river there, they placed a train of cars on the bridge. The ruined cars, bridge, car wheels, axles, etc., literally filled the stream, and prevented us driving piles, which would have been the more speedy method of rebuilding the bridge.

During the two months preceding the signing of the armistice a great many mines were taken out before they had gone their time and thus before they had done their damage. The enemy were very careful to conceal all traces of their mining, but some heavy rains told the tale, and surface settlements in the road-bed showed disturbances that indicated where they had sunk shafts or driven tunnels for the placing of the charges. Tunnelling companies and miners were set to work to remove them. This was a most hazardous occupation and one that could not exactly be relished, but still in was done.

After the signing of the armistice, the Germans indicated the positions of some mines to us and as these had gone too close to their time to permit us to dig them out with any possible degree of

safety, they were "sprung" by surface charges exploded immediately over them, this process in itself being sufficiently hazardous for those engaged in the operation. The "springing" proved successful, the acid having eaten so far into the wire holding back the plunger in the fuses that the shock of the surface charges finished it.

There were other minor devices in the way of mechanical devices, infernal machines, etc., used by the enemy in connection with their mines and delayed action mines, but with the exception of the "surfaces" or "road mine" the principle features are covered above. The "road mine" was made up of an explosive encased in a metallic container, about the

size of an ordinary bake pan, and which was set into the surface of the road or highway, to be exploded by being struck with a horse's hoof, wagon or automobile, or anything passing along the road. They made a nasty little crater in the road, rendering traffic more difficult and caused some destruction, and loss of life, to the first traffic on the road after they were set, but we did not see a great deal of damage done by them.

Enough has no doubt been said to show that the Boches were past masters when it came to the art of destruction. We will take off our hats to him, when it comes to the doing of such work. He, however, has taken his hat off to us, the allies, as the winners of the war, many times since the signing of the armistice.

Birthdays of Transportation Men in October

Many happy returns of the day to:
A. Aitken, Assistant Superintendent, Toronto Terminals, C.P.R., Toronto, born at Decewsville, Ont., Oct. 12, 1872.

E. W. Beatty, K.C., President, C.P.R., Montreal, born at Thorold, Ont., Oct. 16, 1877.

Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, Ottawa, Ont., born at Perth, Ont., Oct. 13, 1874.

L. S. Brown, General Superintendent, Maritime District, Canadian National Rys., Moncton, N.B., born at Nelson, N. B., Oct. 19, 1864.

John Burns, Works Manager, Angus shops, C.P.R., Montreal, born there, Oct. 14, 1877.

F. F. Busted, formerly Engineer in charge of C.P.R. revision and second tracking, west of Calgary, Kamloops, B.C., born at Battery Point, Que., Oct. 10, 1858.

J. M. S. Carroll, Sales Manager, Canadian Consolidated Rubber Co., Montreal, born at Ballarat, Australia, Oct. 22, 1875.

C. E. Cartwright, ex-Division Engineer, C.P.R., Vancouver, B.C., born at Toronto, Oct. 13, 1864.

A. F. Dion, Traffic Manager, Quebec Harbor Commission, Quebec, born at L'Islet, Que., Oct. 1, 1871.

H. A. Dixon, Chief Engineer, Western Lines, Canadian National Rys., Winnipeg, born at Sand Hill, Ont., Oct. 7, 1878.

J. W. Doyle, General Manager, Cape Breton Ry., St. Peters, N.S., born at Summerside, P.E.I., Oct. 12, 1872.

L. V. Druce, Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., born at London, Eng., Oct. 20, 1873.

R. G. Edwards, Assistant Superintendent, Windsor Division, Ontario District, C.P.R., London, Ont., born at Maitland, Ont., Oct. 10, 1883.

A. C. Egan, Assistant to Comptroller, Canadian National Rys., Toronto, born at Winnipeg, Oct. 6, 1883.

C. E. Friend, Comptroller, Canadian National Rys., Winnipeg, born at Brighton, Eng., Oct. 12, 1871.

W. P. Fitzsimmons, Commissioner of Industries, G.T.R., Montreal, born at Detroit, Mich., Oct. 27, 1868.

C. N. Ham, Secretary, Express Traffic Association of Canada, Montreal, born at Winnipeg, Oct. 21, 1884.

G. Hodge, Assistant to Vice President, C.P.R., Montreal, born there, Oct. 2, 1874.

J. H. Hughes, Assistant Superintendent, Ottawa Division, Quebec District, C.P.R., Ottawa, Ont., born at Charlotte-

town, P.E.I., Oct. 7, 1865.

H. Irwin, Consulting Right of Way and Lease Agent, C.P.R., Montreal, born at Newgrove, County Down, Ireland, Oct. 27, 1847.

W. B. Johnson, Master Mechanic, Halifax Division, Maritime District, Canadian National Rys., Truro, N.S., born there, Oct. 8, 1872.

W. B. Lanigan, Freight Traffic Manager, C.P.R., Montreal, born at Three Rivers, Que., Oct. 12, 1861.

O. M. Lavoie, Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, born at St. Cyril de Wendover, Que., Oct. 16, 1884.

A. E. McMaster, Treasurer, Whalen Pulp & Paper Mills Ltd., Vancouver, B.C., born at Perth, Ont., Oct. 22, 1885.

Sir William Mackenzie, President, Toronto Ry., Toronto, born at Kirkfield, Ont., Oct. 30, 1849.

C. Malcolm, chief clerk, Auditor of Stores and Mechanical Accounts, Alberta District, C.P.R., Calgary, Alta., born at Tatamagouche, N.S., Oct. 18, 1881.

W. T. Marlow, General Freight Agent, Canadian Pacific Ocean Services, Ltd., Montreal, born at Limerick, Ireland, Oct. 25, 1872.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., born in Montgomeryshire, Wales, Oct. 9, 1850.

C. R. Moore, Assistant to Vice President in charge of operation, G.T.R., Montreal, born at Hamilton, Ont., Oct. 12, 1867.

Hugh Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrew, Scotland, Oct. 5, 1852.

J. W. Porter, Chief Engineer, Hudson Bay Ry., Pas, Man., born at Aberdeen, Scotland, Oct. 15, 1877.

T. F. Rahilly, ex-Superintendent, Algoma Eastern Ry., now of Marquette, Mich., born at Diorite, Mich., Oct. 6, 1892.

H. G. Reid, General Master Mechanic, Western Lines, Canadian National Rys., Winnipeg, born at Pembroke, Ont., Oct. 27, 1863.

W. S. Rollo, agent, G.T.R., St. Johns, Que., born at Dundee, Scotland, Oct. 8, 1852.

O. J. Rowe, Local Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., born at Binghamton, N.Y., Oct. 11, 1879.

J. K. Savage, Assistant General Superintendent, Ontario District, C.P.R., Toronto, born at Forreston, Ill., Oct. 5, 1876.

Lord Shaughnessy, K.C.V.O., Chairman, C.P.R., Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

T. Duff Smith, Fuel Agent, Grand

Trunk Pacific Ry., Winnipeg, born at Barking, Essex, Eng., Oct. 2, 1868.

K. Stewart, Assistant Superintendent, New Glasgow Division, Maritime District, Canadian National Rys., New Glasgow, N.S., born at Little River, N.S., Oct. 21, 1868.

C. E. Stockdill, Assistant to Vice President, Western Lines, C.P.R., Winnipeg, born at London, Ont., Oct. 25, 1881.

D. A. Story, ex-Freight Traffic Manager, Canadian Government Railways, Moncton, N.B., born at Halifax, N.S., Oct. 26, 1853.

E. N. Todd, General Foreign Freight Agent, Eastern Lines, C.P.R., Montreal, born at Huntingdon, Que., Oct. 17, 1879.

J. H. Valteau, Secretary-Treasurer, Thousand Islands Ry. and Oshawa Ry.,

Gananoque, Ont., born at Selby, Ont., Oct. 14, 1889.

J. A. Vallerand, Superintendent and General Freight and Passenger Agent, Roberval - Saguenay Ry., Chicoutimi, Que., born at Quebec, Que., Oct. 21, 1878.

R. Walton, Division Master Mechanic, Farnham Division, Quebec District, C.P.R., Farnham, Que., born at Peterborough, Ont., Oct. 16, 1880.

D. C. Coleman's Address at Calgary Industrial Congress.

D. C. Coleman, Vice President, Western Lines, C.P.R., gave the following address at the Industrial Congress held at Calgary, Alta., recently: "The balance of the world has just narrowly escaped subjugation by one nation of only seventy million people. The frightful struggle necessary to thwart the designs of this comparatively small minority was not due to any inherent mental or moral superiority in the German race as compared with others or to its martial qualities or its admittedly fine military organization, but to the development of industry on scientific lines and to the close association of the best brains of the country in the regions of finance and commerce. If the German had kept his too ready sword in its scabbard and had turned his head away from alluring visions of political power, it is altogether probable that within a few years he would have attained a dominating position in the trade and commerce of the world. When we remember how ruthless and cruel he has proved himself to be, it is fortunate for us that he chose to risk his all on an attempted rush through a bloody short cut to power and threw away the advantages which he had legitimately won by his ant-like industry, his genius for stealing the best ideas of other people and applying them to practical purposes, and his primary in the field of scientific research. In the United States and Canada we complacently thought that having no ruling caste; our best talents were devoted to business, and we flattered ourselves that we had a genius for organization; but we were too self-centered, our vision never bridged the seas, and in industry as in politics, we trusted to happy bursts of inspiration rather than to hard thinking or to wearying and consuming research. With the German, business was a study and an obsession, with us it was a game—a game which we played with the utmost spirit and with ambition and necessity holding our coats on the sidelines—but still a game.

"Having wrecked the German's dream of world-empire, it would be well for us, while the bully is still nursing his bruised, and broken head, to reflect on the factors and elements in his national life which made him so formidable, and which indeed carried him to the very threshold of victory. Having found and studied these, we should, without subscribing to or adopting his abhorrent principle of an infallible and omnipotent state, endeavor to work into the fabric and spirit of our own political and industrial organization some of the passion for successful achievement which made the Germans a nation of workers, united in the resolve that in all branches of activity they should lead the world. This very necessary examination and other similar investigation and the application of the lessons drawn therefrom serve as a justification for this congress, and the consideration of the best way in

which to develop our own resources should be influenced very greatly by the experience of other countries, where such development has been attended by conspicuous success.

"That the period of reconstruction through which we are passing is a difficult and trying one, we are all prepared to admit. The experience of the past does not help us in every particular. It has always been hard for mankind to settle down to a rational way of doing things after the convulsions brought



D'Alton C. Coleman,
Vice President, Western Lines, Canadian Pacific
Railway.

about by a great war. At such times the quack with a panacea for all social and economic ills invariably has an innings, for the excited and the overwrought are easily persuaded to try fantastic remedies. And who among us is not just now suffering from the effects of overstrain? Our special danger is when fitful and irregular gusts of passion and prejudice are reflected in legislation and executive action. In former times, when governments were less immediately responsive to public clamor, there was time for deliberation and a proper weighing of issues before a decision was taken. This fact is not advanced as an argument against our present more democratic system of government, which marks a great advance on any other system or process which man has devised, but it does indicate a real danger. The voice of the people may be the voice of God, but if so it is the voice of all the people, not that of a strident and clam-

orous faction, and that voice must express the considered view of the people. The wild ravings of a man in a delirium of pain should not and are not accepted as conveying his settled and normal aspirations and opinions, and in the same way the desires and aspirations of a people cannot always be deduced from the cries of a faction, temporarily unsettled by the acute pains caused by a sudden change from war to peace, and worked on and exploited by charlatans and adventurers. Under a democratic system of government, such as we have, those in authority are required to keep in step with public opinion, but they should not be forced to compromise with their principles in order that they may conform to every passing current of passion and prejudice, and they should be given time and opportunity to master problems as they arise, and thus be in a position to suggest to us a permanent and consistent policy.

"The cry in this country and in other democratic countries seems to be for a government which is continually doing something, and that something must be striking and novel and preferably in the direction of restriction and paternalism. There is a pathetic belief that a profusion of legislation and government interference with normal processes in business and social life and with personal liberty in some way or other leads us along the road to freedom and happiness. Such intervention, if the truth be known, takes us in an altogether different direction. The opinion may be ventured that many of the difficulties we are now encountering are the direct result of fussy and unnecessary interference by governments with commercial enterprises and with the normal action of the law of supply and demand. A certain amount of interference was probably necessary during a state of war, and was brought about by the war, but some of it can be attributed to a panicky weakening in the face of clamor for drastic action to remedy some evil which seemed to call for correction. What is needed is free and open competition with proper protection of the public against combinations which are designed to stifle that competition. A government monopoly is not usually the best remedy. We may judge what government monopoly means, by the results of government control and operation of railways in the United States. These results have been a greatly increased cost of the transportation which is sold to the public, accompanied by an inconsiderate, discourteous and much inferior service.

"We know that every man who speaks up against further experiments in the direction of government control and ownership is at once dubbed a reactionary. But is he a reactionary? No. The reactionary is the man who would place us under the heel of a bureaucracy—the man who favors state socialism. In

claiming to be a reformer he is as inconsistent as the Bolshevist agitator who tries to infuriate labor against the so-called tyranny of capital, and then browbeats and stifles the voice of the conservative majority in our trades unions. It is the man who stands for the fullest exercise of the right of the individual to develop and prosper and reap the fruits of his labor and his brains who is the true liberal, the real supporter of advancement and progress. The whole history of civilization up to the present is the record of the struggle of the individual to secure a fair opportunity to improve his condition. As civilization progressed he refused to allow tribal chiefs and despotic kings and privileged ruling classes to fix the limits to which the ordinary individual could rise. In democratic countries, he has won for himself equality of opportunity—opportunity to improve his condition and to win a proper relative reward for his work, and to secure proper recognition of his character, qualities and abilities.

The Bolshevist who prates about a re-division of the wealth of the world is simply trying to drag man back to a primitive condition, where a few Lenines and Trotskys will possess arbitrary power, and where the balance of the community will inevitably relapse into serfdom.

"It may seem a far cry from government control of industry to Bolshevism, but state socialism is only a milestone on the road to Bolshevism, and any further step in that direction we are entitled to view with suspicion. Instead of harassing our public men to rush through measures for the fettering of private enterprise and initiative, and reproaching them with indifference and inactivity, if they do not do so, we will secure much more prompt relief from our present economic troubles by relaxing burdensome regulations, and by encouraging private enterprise to resume business on the line of free competition, with the assurance that if the game is played fairly and if wealth assumes its fair

share of taxation, there will be no further retrogression in the direction of socialism and bureaucratic control.

"The best economic and social policy for Canada and for the United States is one that will provide for equal opportunity for every man, no matter in what condition born, and which will guarantee him the peaceful enjoyment of the rewards of courage, foresight, prudence, temperance and hard work. It was suggested herein that we could afford to learn from the German some lessons in thrift, pertinacity, and the application of scientific methods to industry, but it would be a sad thing if after crushing the system of politics and government for which he stood, we should embrace his pernicious idea that the state must be supreme, and that the individual can only prosper and develop along rigid pre-ordained lines, and can only enjoy such a measure of comfort and happiness as may be allowed to him by those permanently or temporarily in control of the machinery of the state."

Why Is a Hot Box?

By E. J. McVeigh, General Storekeeper, G.T.R., Montreal.

The expression "hot box" is the one generally used to describe that condition which results from the journal of a car truck becoming heated. This heating of the journal has a wide effect. It first sets fire to the waste and oil in the journal box, then it warms up the temper of the brakemen, this is transmitted to the conductor, and from him to the locomotive men. The next to hear of it is the dispatcher and he becomes "hot." Then the trainmaster comes in on the game and he heats up the superintendent and the car department. If there is sufficient fire it gets up to the president at times and great is the "passing of the buck" all along the line. The only one vitally interested who keeps cool seems to be the car knocker, who puts in the new brass and dope which costs the railway anywhere from \$5 to \$8. He seems to be a fatalist and regards the matter as an act of God, against which it would be futile for him to rage, or get hot.

I used the expression "passing of the buck" in this connection, and as I am afraid some readers may not know what I mean by that, I will explain that it is merely that regular routine of your daily life wherein you attempt to get from under, and put it on the other fellow, regardless of the merits of the case. In dealing with hot boxes, the "buck" is a lively animal, as he has a wide field to cover, but one thing we do know and that is that we are farther away from a solution of the problem today than we were 25 years ago.

Some young men of a serious turn of mind will no doubt resent me treating this matter in a semi-humorous manner. Well, you see we get that habit of late years. The boy at the front, went out after the Hun with a joke, but he knew how deadly the thing was just the same. We at home joke about the high cost of living and other serious things, while we wear our year before last underwear and get that old suit turned wrong side out for \$12 because we can't pay \$70 for a new suit, and pay for a bond at the same time. I really am not disposed to treat the hot box in a light manner. It is far too important for that. It means huge sums of money and danger to life and limb of the railway man and

the travelling public. Nor am I disposed to give that lively animal the "buck" any more exercise than I can help in dealing with this matter.

There is no effect without a cause, and behind everything is a fundamental principal. The cause in the case of the hot box is 99% neglect—the effect is bad. The first thought in the minds of some of you is to protest that word neglect, but wait awhile and see how it turns out. In dealing with hot boxes you will find the "buck" turn up under many aliases—a few of them are: bad oil, bad waste, bad brass, rough journal, rough truck, truck out of square, overload, etc. Each and everyone of these spells "neglect" by someone.

A car truck mechanically correct requires very little lubrication to keep it running with cool journals. By mechanically correct, we mean that the truck has been properly constructed to do the work it was intended it should do. The journals on which it rides are of a size to carry the load they will be called on to carry, the saddle, or wedge, of proper shape, and the journal bearing of a quality of metal that will reduce friction to a minimum.

If we start out with such a condition, and maintain it, the question of lubrication is so simple that it is practically non-existent, or it would be if the conditions surrounding the working of a car truck were not so diversified. Now let us glance at a concrete example. We will take a train load of grain from the west, or the lake ports. The cars are, when loaded, in fair condition, not perfect, but fair. Some of them have new journals and wheels, some of them have old. Some new brasses and some part worn. This train starts out with a locomotive that leaves it at the end of 125 miles. The locomotive is carefully looked over by the locomotive man and then placed in the locomotive house where other men look it over and do any repairs necessary, and it starts out on its next 125 mile run in pretty good order. At least it has had a good deal of attention paid to it.

What about the cars? They are run on to a siding and two car men start down the line to inspect the boxes. How

do they do it? They pull off the box cover, glance at the end of the packing in sight, see that there is no smoke, close the lid and go on. The locomotive man when going around his locomotive places his hand on the big end, the little end, the slide bars and many other parts to note how cool or warm they may be. He knows they are not hot, but he wants to know if they are thinking of becoming hot. Does the car man do this? He does not, and the cars start out on another 125 mile run. How many hot journals are there at the end of that run? We don't know, maybe one or six. These receive attention of a kind at this stop, and on they go again.

Before they reach the end of the next run some of those that were hot have had several brasses applied to them with more or less success. Some of them are in bad shape and must be stopped for new wheels, the journals have been cut, and some that did not give trouble at the first or second stop are giving trouble now, and so it goes on to the end of the run. Now, if these journals had all been tested with the hand at the first stop, and those showing an inclination to heat given a little attention, and the same thing done as often as the locomotive man tested his locomotive, do you believe there would have been so many hot boxes on that train?

Did any of you readers ever use a horse and buggy, and suddenly find one of the wheels sliding, and jump out and grab the nut with your fingers, and let it go again quick, because it was hot, and after it had cooled off and you removed the wheel you found plenty of oil on the journals, with the exception of a spot about half an inch wide? I have, and it made me realize that it is not necessary for a journal to be all dry to make it run hot. It is the back end of the car journal that needs attention, but how seldom it gets it until too late.

Do you agree that the hot boxes on the train we have tried to describe were due to neglect, and was that a fair skeleton description of the average train? Well, then was it not neglect to give the necessary attention that was the cause of 99% of the hot boxes. Why this neg-

lect? Here is one reason; the railways haul freight as so low a figure that they feel they cannot afford to have the number of men necessary to give the cars the proper attention. What you can't do yourself you must trust in providence for, and providence does not look after box cars.

There are many other phases of this question apart from the above, and there is one that is most difficult to deal with. This is the car left at a way station, or siding, in winter until the dope is completely frozen, but the car is thrown on to a train and must get along as best it can. However, the better attention at divisional points hinted at above would help greatly in these cases. We cannot, I believe, totally eliminate the hot box on freight cars, but we can reduce the number 75% by spending the money to do it.

The foregoing few words will, I hope, introduce the subject of hot boxes on freight cars, but we still have the question of the same trouble on our passenger equipment. Some time ago I had the pleasure of looking into this matter, and after taking the statements of trainmen, trainmasters, superintendents, car men and others into account, and also watching the "passing of the buck" along the line, I came to the conclusion that here again we come down to that word neglect.

In a Canadian winter, our cars do have a hard time of it. Shoved into a yard with snow and ice often scraping the journal boxes, with the inside heated to 100 degrees and the outside frozen solid, they cannot be in good condition to give satisfactory service. The only answer to that problem is to have the cars placed in a building as locomotives are placed in locomotive houses. Such a building should be heated to about 60 degrees and no heat applied to inside of cars. Two hours after cars are placed in such a building all snow and ice falls away from trucks and running gear, leaving the car clean for proper inspection. The dope remains in the best possible condition, and the car goes out for its run in as good shape as we can make it. I have seen cars handled in this way, and I know that the results were good. Many people will say that it is impossible to house all of our passenger equipment, or not actually impossible, but that the cost would be prohibitive. I fully appreciate the fact that the cost would be great, that is the initial cost, but it is a question if it would not be quite as wise an investment as the locomotive house. It would not be necessary to place every passenger car, mail car and baggage car inside of a building. Many of the spare cars could be left outside as now, but I believe that we should have buildings to accommodate all cars on our regular trains, with room for a reasonable number of spare cars that should be available in case of accidents. The cost of such buildings would be considerable, but against this cost, what would we save? I believe that this building could be heated with less fuel than is now used for keeping the interior of cars warm while standing out of doors, and that the number of hot boxes could be greatly reduced, or practically eliminated. It is hard to tell just what a hot box costs, but we know that they cost considerable money. I also have statements from car men to the effect that in one year they have expended sufficient money in repiping cars that have been frozen to pay for a building to protect them. This may be

exaggerating, but if the saving in this direction in five years would pay for the building, I believe it would be a good investment.

There is another phase of this question that in my opinion has not received the attention that it deserves, and that is the extent to which we are using, by wear, our journal bearings. I have made several tests of this, and have found that the quantity of brass actually used up by wear is very small indeed. We are practically running on white metal. This does not apply to any particular road, but to many roads, as I have reports from different places on the continent all bearing out what I have said. Now, what is the trouble here? I think we can all remember when journal bearings were very much more worn in service than they are today. I can remember journal bearings that had never given trouble and were finally removed because they were worn so thin that there was fear of them breaking or being worn clean through, allowing the journal to come in contact with the wedge. Such a condition, so far as I know, is practically unknown today. It may be stated that in the days when journal bearings were so worn, our cars and loads were lighter, and this is true, but in those days our journal and journal bearings were smaller. In other words, they were designed to carry the loads of that day. The journals and journal bearings in use today are supposed to be designed to carry the loads of today. They are not doing it in a satisfactory manner. Is this another case of neglect, that is, have we neglected to provide journals and bearings large enough to carry the loads?

I believe that these matters are of vital importance and they deserve all of the attention we can give them, and that any man who has an idea on the subject should feel at liberty to advance that idea. He may be wrong, as I may be in some of my ideas, but by advancing his proposition or idea he may bring out a better one, and that is what we want.

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

Deliveries on Public and Private Sidings in Montreal and Toronto Terminals.

The G.T.R. has adopted the same regulations as those applying on the C.P.R. at Toronto and Montreal, covering carload traffic received at these two points. As is generally known, the railways in Toronto and Montreal have divided their delivery facilities into what are known as "sub terminals." For example, in Montreal there is Outremont, Place Viger, etc., and in Toronto, Parkdale, West Toronto, etc. All carload shipments consigned to Toronto, are accordingly taken to Simcoe St., and all shipments consigned to Montreal, to Place Viger on the C.P.R., and Bonaventure on the G.T.R. The new arrangement which has been in vogue on the C.P.R. for some time requires that carload shipments must be consigned direct to the sub terminal, where delivery is desired. For example, a shipment from John Jones, Kingston, to William Smith, located at the Don, should be shown on the bill of lading as "William Smith, Don," followed by the words "Toronto, Ontario," in brackets.

The following circular has been issued by the G.T.R. in connection with the matter:

"Effective Nov. 18, the general system of billing carload traffic to Montreal or Toronto, as the case may be, will be discontinued and agents must ascertain from shippers the specific Montreal or Toronto terminal or sub-station within which delivery is required and see that bills of lading and waybills are issued accordingly, "Montreal" or "Toronto" being shown in brackets beneath the sub-station both at the heading and in the body of the waybill. Waybills should be made in accordance with example given below:

Local Freight Waybill.				
From King- ston, Ont.	To Don, (Toronto)	Date Nov. 12, 1918	Waybill no. 1	
Consignor, connecting line refer- ence, origi- nal car and way bill shipment	Marks consignee and destina- tion	No. of pack- ages	Articles and classification. Conditions (O.R., C.R., Rel. Gtd., etc.)	Weight
Jno. Jones	W. Smith, Don..... (Toronto)	1	Car oats.....	60,000

"Traffic must not be billed to any specific siding but to the sub-station. If consignees having more than one warehouse or receiving yard within the same sub-station, or in different sub-stations, notify the railway company of change of delivery required prior to arrival of the freight at the sub-station to which it is originally billed, no additional charge will be made, otherwise, if a change is desired from the original billed delivery, switching charges as provided in tariff S-108, C.R.C. no. E-3292 supplements thereto or reissues thereof will be assessed.

"Traffic placed for delivery at one sub-station and ordered to another sub-station, will be subject to current switching charges as per tariff S. 108 C.R.C. no. E 3292, supplements thereto or reissues thereof."

If shipments are billed merely to "Toronto" or "Montreal," they will be taken to the terminal which is considered by the railways as Toronto or Montreal, and any deliveries to any sub terminals will be charged for in addition to the rate. The Canadian Manufacturers' Association has, therefore, suggested that all interested manufacturers in these two cities should give instructions to all those from whom they receive shipments, so that the goods will be properly billed, and thus avoid additional expense.

C.P.R. Social Clubs.—During the past few years a number of social and athletic clubs have been organized at various points on the C.P.R. Western Lines for the benefit of employes. To consolidate the interests of these clubs, and bring about some uniformity of aims, etc., a convention was held recently in Winnipeg, at which delegates representing clubs having a total membership of over 4,000 were present. It was decided to form a central organization with headquarters at Winnipeg, the first officers elected were:—President, J. Bending, President of the Winnipeg club; Secretary, R. W. Beatty. It was decided that the presidents of the existing clubs form the central executive committee. Plans were discussed for the extension of the movement to other centers; the standardization of the clubs' efforts and activities; the establishment of sporting competitions, and other measures calculated to increase interest in, and to promote the welfare of the club movement. It was agreed to hold an annual convention of the clubs, different centers to be visited as agreed upon.

Railway Mechanical Methods and Devices.

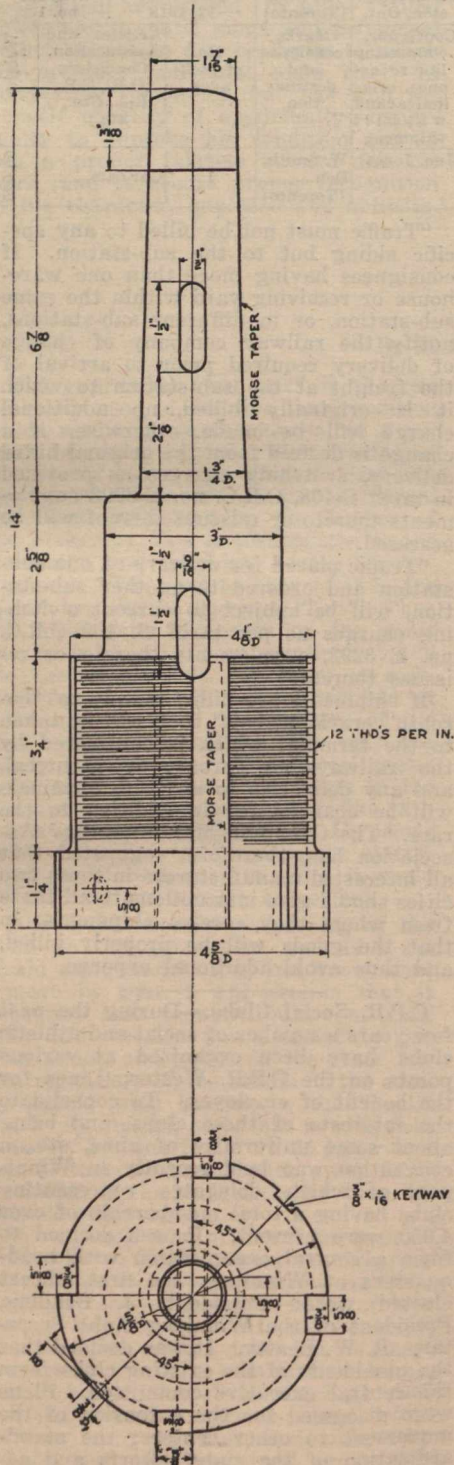
Boring Tool for Superheater Flue Holes.

The accompanying drawings show a tool for the removal of material from superheater flue holes in flue sheets. The tool consists of a body B, and adjusting collar C, a retaining collar D and cutting tools E, also an adjusting screw and 5 set screws, which are not shown in the drawing.

The main features of the body B are,

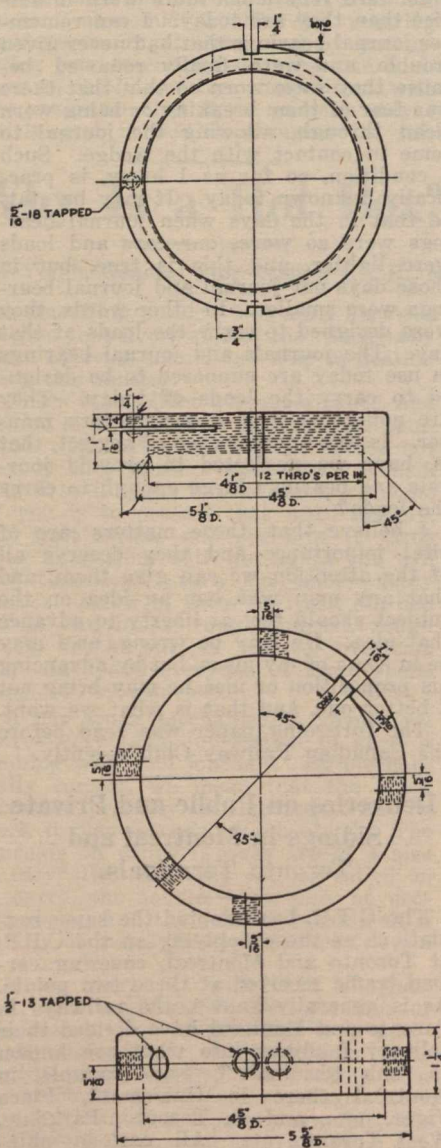
and 4 slots to receive the cutting tools. The adjusting collar C has a slot at S. The purpose of this slot is to produce a binding action upon the threads, by the use of an adjusting screw at T, so that the collar may be held in place at the proper adjustment of the cutting tools. There is also a recess at R to receive the ends of the cutting tools and help to bind them to the body of the tool. The retaining collar D is bored to a slip-fit for the largest diameter of the body B. As shown in the drawing, it is held in place by a key and a set screw. The cutting tools are made to the dimensions shown in the drawing. The angle shown

end of the threading, and held in place by the binding screw. The cutting tools are then inserted in their respective slots and the retaining collar is placed



Boring tool for superheater flue holes.

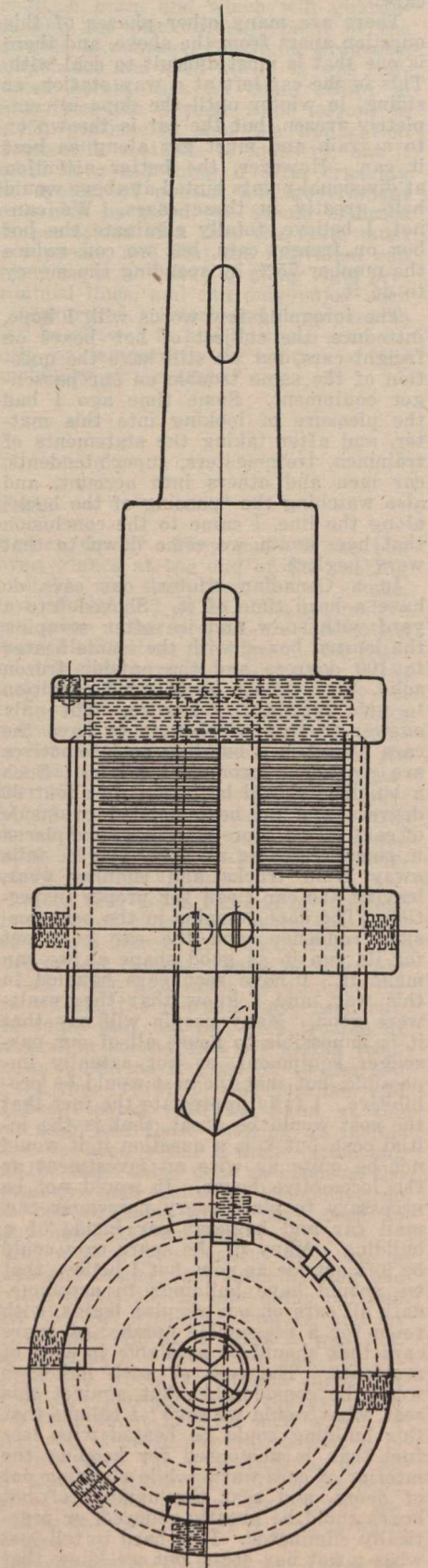
a shank of standard Morse taper; the threading, which is made to fit the adjusting collar C, a hole bored longitudinally, also to a standard Morse taper;



Boring tool for superheater flue holes.

at F is quite essential to the successful operation of the tool. This angle is made nine degrees. Two opposite tools have the high part of the cutting edge on the outside, while the other two have the high part on the inside. This not only reduces the strain on the tools, but also lessens the driving power required. The cutting tools are made of high speed tool steel, and the body and all other parts are made of machinery steel.

The complete tool is shown assembled at A. Its operation is simple. When the cutting tools are new, the adjusting collar is placed at the extreme shank

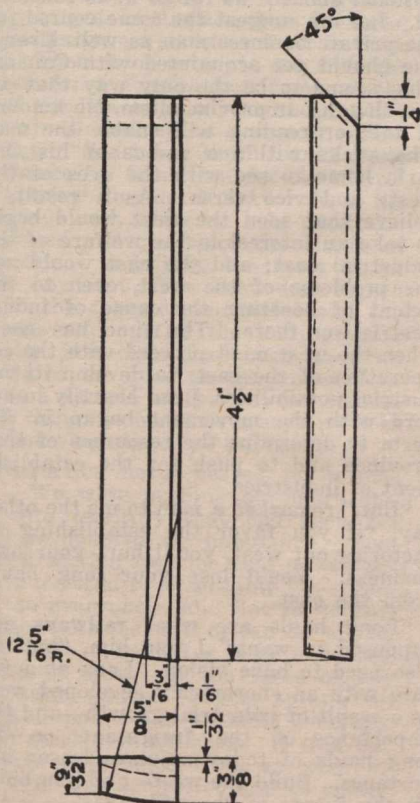


Boring tool for superheater flue holes.

on the end of the tool as shown. The set screws are then tightened, thus clamping the cutting tools, and the col-

lar is clamped to the body of the tool by another set screw. A short drill is then inserted in the end of the tool and it is ready for use. This short drill first drills a pilot hole, and then acts as a guide for the cutters.

As the cutting tools wear, all that is necessary to keep the tool in good working order is to loosen the 4 set screws holding them, loosen the binding screw, and turn the adjusting collar the proper amount. When the various screws have been tightened, the tool is again ready for use. Reference to the threading will show that this adjusting may be continued until the cutting tools are practically used up.



Cutting Tool of Boring Tool for Superheater Flue Holes.

The principal advantages of this tool, in addition to its ability to quickly cut a large hole in a comparatively thin sheet, are that it forms a means of using up drills which have become too short for any other use, and also saves the breakage of long drills, which is sure to occur in drilling holes through sheets no thicker than flue sheets.

Promoting Milling Machine Practice in Railway Shops.

From a general view point it does not appear that milling machine practice in some railway shops has been given the attention or consideration that this particular method of machining would merit, for while there are some progressive shop men who have gone into the details of this class of work and made use of advanced tools and ideas concerning their application as evidenced by the results obtained, there are many places where the field for improvement along this line is large.

The average railway shop of fair size has in its machine tool equipment one or more of the horizontal knee type milling machines, usually found located in the tool room, and used for fluting reamers and taps or machining the

shanks of such tools, also cutting shaft keyways and other miscellaneous jobs. In the main shops of large roads will also be found the larger horizontal mills commonly used for surfacing and fluting locomotive rods, machining shoes and wedges, eccentrics, etc., while the heavier vertical type machine is engaged on profiling and other irregular surface work or perhaps milling port openings in valve chamber bushings.

Some of the jobs above mentioned in connection with the different types of machines are no doubt being done by this method for the reason that it may have proved to be the best and most economical way, however, there is nearly always a chance to increase production or cut down the cost of same and it will no doubt be interesting for some to check up along this line with a view of getting more satisfactory and economical results or making a try at bettering the time on some job now being done in another way.

There is no question that modern high duty machines are conducive to more and perhaps better work, but they would be of little use if not equipped with proper cutting tools, and, in the case of milling machines, regardless of the type, design or age it is essential that good cutters be used in order to obtain the best results therefrom.

The modern type of milling cutters as now used, in most up to date shops, differ considerably from those generally in use but a few years ago, both in advantages of these new type cutters over the old style until a comparison has been made of the work each will do. The wide spacing permits of larger and stronger teeth and better clearance and escape for good large chips, consequently of greater feeds, also lessens amount of grinding necessary and tendency to heat the cutter and work while in operation. It was noticeable that very soon after the introduction of these coarse tooth type cutters the leading manufacturers accepted the advanced design and are now showing them in their catalogues. In many of these new design cutters considerable attention has been given to the matter of spiral and for the various classes of work care should be taken to secure the proper lead, pitch and form of teeth for such cutters.

In the last few years nearly all milling cutters for rapid heavy duty work have been made of high speed steel, the sign and material. The old style carbon steel cutter with many teeth, narrowly spaced, had to give way to the high speed cutter having few wide spaced teeth. It is hard to realize the ad-small sizes being cut from solid stock and the large ones usually built with bodies of cheaper material and high speed inserted teeth. There is no question that high speed steel is the proper material for such tools and will continue to be used by exacting mechanics even at the present high price. The necessity for economy in this line, however, has caused wonderful development in the design and construction of inserted tooth cutters to fully meet requirements and which are equal in performance to those made from solid material.

One of the greatest factors for efficiency in milling is proper lubrication of the cutters. Without some good means of cooling, it is impossible to get near the maximum amount of work out of any design of cutters for the limit of speed is reached when the cutter burns, therefore, in order to prevent destruction and get the most out of the cutters

it is necessary that they be kept cool. This is accomplished by the proper application of lubricants and it has been demonstrated that the nature of the lubricant is of minor importance so long as a sufficient quantity is provided. One of the prominent milling machine manufacturers after making exhaustive experiments along this line has developed a very complete system of cutter lubrication, which is featured in connection with its make of machines, special appliances being furnished for the equipment when required. This system provides for a liberal stream of fluid, which is forced upon the cutter through a hood, keeping the cutter cool and also serving to wash away the chips which adds to the life of the cutter.

The possibilities of milling with helical cutters are very great and many shops are employing this method for cutting blocks from solid in steel or iron, where formerly the job was done by drilling holes to release the block and then finishing to size on the slotter or shaper. Where proper equipment is used for such work, the time is greatly in favor of the milling process and the increasing amount of work being done in this manner bears evidence of the fact. One particularly small job of this character which may be interesting is the milling of keyways in piston rods or cross heads instead of drilling, chipping and filing them. This job may be done on a knee type milling machine, but there are some good small portable devices which were recently brought out by the use of which a considerable saving may be effected. A high speed three tooth helical cutter is used and if driven to capacity will cut keyways in piston rods in from 12 to 30 minutes each, depending upon the size and nature of the material. These rod keyways when drilled and chipped by hand usually take from three to five times as long as when done by milling process.

There are other well known operations in railway shop work which it is believed could be handled with more economy and satisfaction if a little preliminary time was given to the study and working out of the proper equipment and way to do the job. If you are interested, though doubtful, about some particular operation, which you think may be done by milling process, send in the blue print or sample of work to a good manufacturer for a guaranteed time and cost estimate of the job. This may save a lot of experimenting and they will be glad to tell you what it will cost and how it can be done.

It is always well to remember the following as essential to good results on the milling machine: Keep your machine in good condition at all times. Use arbors of as large diameter as possible to prevent chattering and springing away from the work. If a rigid intermediate support can be used with bearing close to the cutter, it will be helpful on heavy duty work. Use high speed coarse tooth cutters of design to suit your work and make them produce by keeping cool with lubrication when cutting steel. Increase the feed in proportion to the speed of the cutter to the limit of finish required. Good cutters will produce more work and stay sharp longer when used under these conditions.—C. H. Schaffer.

Steel Rail Requirements—C.M.Schwabb, of the Bethlehem Steel Corporation, is reported to have stated that United States railways will need approximately 5,000,000 tons of steel rails within a year.

Canada's Great National Asset.

By D. B. Hanna, President, Canadian National Railways.

I don't suppose many people in Canada are inclined yet to regard the Canadian National Railways as a great national asset. The general opinion—even, I am sorry to say, among those who make our laws and among newspaper men who mould public opinion—the general opinion seems to be that the railways are a liability that the country has had foisted upon it. The importance of impressing upon the people of Canada the true value from a national standpoint and the almost unlimited potentialities of the national roads cannot be overestimated. Canada must acquire a new angle of vision; the measure of our future depends upon it.

I want first to point out one way in which our ownership of a transcontinental railway can be turned to account at the present moment. We all know and all deplore, that there is not enough of the national spirit in Canada. The man in the Maritimes does not understand and, in fact, does not know very much about the people in the other provinces. In Ontario there is not much community of spirit with the people we call "Blue-noses" and even less with the hustling, wideawake citizens of the west. In the west there is a growing impatience with everything eastern. In fact, the westerner thinks in terms of the west; the Ontario man thinks in terms of Ontario; the Maritimer thinks in terms of the Maritimes. There are too few men broad visioned enough to think in terms of the Dominion of Canada.

This is bad business. Let's consider it purely and simply from a business standpoint and see what it means to us. We find the western grain grower demanding the sweeping away of tariffs, deaf to the argument that, by doing so the industrial life of the eastern provinces would be jeopardized. We find the easterner on the other hand ready and eager to tack on the ultimate fraction of protective duty, quite indifferent to the west, which he regards much as a market for his goods.

I have found the same sharp conflict between east and west in the matter of freight rates. The grain grower comes to me and complains bitterly about the way the freight rates hit him. "I get the worst of it coming and going," he declares. "When I ship my wheat to the east the charge for moving it comes off what I realize. But when I buy goods from the east, the wily manufacturer has it fixed so that the cost of the long haul is tacked on to the price I pay. I get soaked both ways."

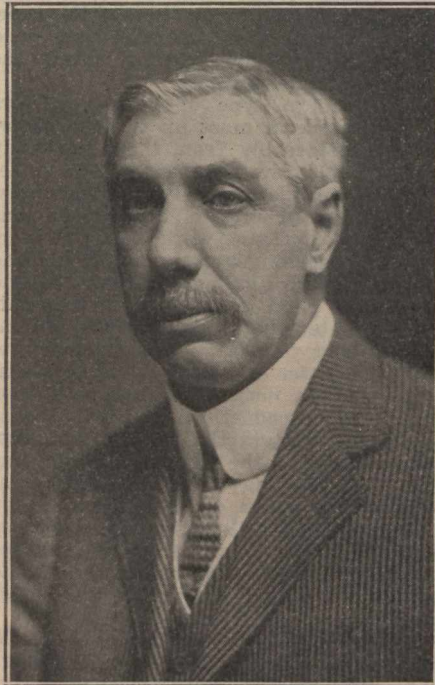
When the manufacturer in the east comes to me he has almost the identical tale of woe. "I'm paying the cost of the long haul to the west," he asserts. "When you put up your rates, you take it out of me, every last cent. The westerner gets his price for his wheat and then you bring it on down to us and assess us for the haulage—", etc.

The truth, as always, is somewhere in the middle ground. Truth is seldom found at either extreme of an argument, but there are so few men unfortunately who can find the middle ground. If we had more men who thought in terms of the Dominion of Canada instead of in terms of Saskatchewan or Ontario, it would be much easier to shape the destinies of our broad Dominion along the

lines that would give the broadest future. And right there is where the value of a national transcontinental enters. It can be used as a means of teaching Canadians to think in terms of Canada. At any rate it can be made the means of instilling the national viewpoint into the men who go to Ottawa to make laws for the Dominion.

I do not suppose that anyone will contradict me when I say that the sectional or provincial viewpoint is found at Ottawa quite as openly as anywhere. The average western member goes to Ottawa filled with the spirit of the west and convinced of the hundred per cent. justice of western conventions. The Ontario member goes to Ottawa to represent Ontario and he takes with him the viewpoint in regard to the west that prevails in the section he has been elected from.

I would like to see the members of



David Blythe Hanna,
President Canadian National Railways.

parliament take the time to travel all over Canada. I know plenty of members from the east who have never been beyond the Great Lakes and there are western members to whom Montreal and Quebec and Halifax are geographical terms only. It would be in the interests of the country if all members took time between sessions to get around and see the whole of this man-sized country of ours. Let it be understood that it is part of their duty to find out what people are saying out beyond the Rockies and what they are thinking on the banks of the Bay of Fundy. Our legislators would become better fitted to legislate for a country that bristles with sectional interests and problems. There would be plenty of the time between sessions. In fact I am inclined to think that the sessions would be shorter if this plan were adopted. The broad plan that spells prosperity for the country as a whole can be more easily arrived at when the body of the House of Commons thinks

in terms of Canada as a whole.

Canada has a splendid transcontinental system of railways all her own, so that the facilities for travel are provided. Would it not be a wise plan to see that the men we put in charge of this huge business of Canada Incorporated get a working knowledge of the whole plant? I am suggesting a course in travel as a duty for the member of parliament. Really there should be nothing optional about it as far as he is concerned. Let me suggest the same course for the private business man as well. Everyone should get acquainted with Canada. This seems to be the only way that we can slough our provincialism. No amount of talk or reading will enable the man who sticks within a radius of his Ontario home to see with the eyes of the west; and vice versa. As a result, I believe that soon the west would begin to take an interest in the welfare of the industrial east; and the east would see the problems of the west, even to the extent of boosting the cause of industrialism there. The time has come when the west must proceed with the co-operation of the east, to develop its industrial possibilities. I am heartily in accord with the movement begun in Alberta to determine the resources of that province and to push for the establishment of industries.

"But," remarked a man to me the other day, "if you favor the establishing of factories out west, you'll hurt your own business. You'll lose your long hauls from the east."

"Long hauls are what railways are supposed to want," I told him, "but we also need to have vision. Look at a future with an enormously developed west as a result of industrial growth—and the importance of the freightage on the long hauls of today assumes lesser importance. Build the west—and you build up the future of the railways."

So much for that point. Before proceeding with what is a still more important factor of the relationship of the national railways to the future of Canada, I want to draw a moral from the history of railroading in Canada. When Mackenzie and Mann decided to build the first link of what became later the Canadian Northern System, their enterprise was considered a mad one. They decided to build a short line northwest from Gladstone, Man., to a point where Dauphin now stands. This part of Manitoba was settled sparsely. There were some hardy pioneers who had gone in despite the lack of transportation and a few settlers of the type known as "sherriff-proof," that is, men who had sought a retreat from debt. The wiseacres shook their heads when the doughty contractors, who later became so well known, decided to build through this country. "It's no good," they said. "It will never fill up. That section's off to a bad start. Anyway it's too far north and too cold."

It took nearly a year to build the 123 miles of road that had been projected. I was engaged to operate the road when it was completed and on Jan. 3, 1897, we started the first train north. The wiseacres were so far wrong that the first year we had a revenue of \$60,000 and our operating expenses were \$30,000 which was pretty good for a road doomed

to failure! Of course, it was not an easy task to make the road pay, despite the fact that settlers poured into the country rapidly. We had to watch every item and every man on the staff worked morning, noon and night. We lived on the line.

I remember one occasion when I had boarded an accommodation to get north. It consisted of a long string of freight cars, with a couple of passenger cars in the rear and we carried, as I remember it, a large number of settlers going north. A heifer strayed on to the track and our locomotive lifted it nearly into the ditch. The accident worried me a little, because I knew the owner would promptly put in a claim for damages; and claims were a serious matter in those days. Then it occurred to me that the butcher for a construction camp at the end of the line was on board. So, while the train slowed up to a stop, I picked him out. "See here, Jim," I said, "this is a chance for fresh beef for the camp." The butcher dug up a cleaver from his belongings and, while we held the train, he skinned and quartered the victim of the accident and hung the meat in an empty box car. The beef was turned over to the camp commissariat and the hide was sold. After the irate owner's perfectly just claim had been met, we were \$4 to the good on the transaction. That is a sample of the way we had to handle things to make both ends meet in the pioneering stages of the road.

Construction never ceased for a moment. We were pushing out more and more into territory that had been accepted as doubtful or impossible. This northern section was too cold or too remote or too wild to be suitable for settlement; so everyone said. But settlement kept pace with the steel or ran far ahead. People were frantic for land and they followed in droves in the wake of our construction gangs. Towns sprang up at suitable points and business generally became quickly established. It was our invariable experience that, as soon as a new link was completed and in operation, it carried enough business from the start to pay operating charges.

Mackenzie and Mann always had the big plan at the back of their minds, the grand idea of a new transcontinental. Each new bit of road built was but a link in the big plan. Gradually, as the system extended, the big plan began to show signs of coherency. They kept driving ahead toward the magnificent goal and in time every man on the system acquired a belief in the big plan and a zest for its accomplishment. If at any time the company had seen fit to forego the main objective and be content with the system as then completed, a commercial success would have been theirs. They persisted, however, until the fixed charges became too heavy to sustain through the war slump. The point I desire to make is that this line, which was persistently built out through territory that had been regarded as inaccessible and in the teeth of public indifference, opened up a tremendous new country and laid the foundations for what might be termed the greater Northwest.

No man deserves more credit for the opening up of Western Canada than the late A. D. Davidson. He became convinced that a tremendous future was ahead of the country of the Qu'Appelle Valley and in 1902, he staked everything by buying from the government part of the Qu'Appelle, Long Lake and Saskatchewan Ry. land grant to the extent of

800,000 acres at a price in the neighborhood of \$2.50 an acre. Then he entered upon a campaign to attract United States settlers. Qu'Appelle at that time was considered to be next door to the north pole. Davidson was regarded as a dreamer and men freely predicted that he would be ruined. More than that, he was regarded as almost a menace. "If he takes Americans up to that frozen land, he'll give Canada a bad name," men said openly. Senator Perley from Saskatchewan made a speech at Ottawa in which he asserted that wheat could not be successfully grown north of Qu'Appelle.

There was no stopping Davidson, however. He went across the line and organized a train load of U.S. bankers. This party he took in a special train over the Prince Albert Branch as far as what is now the Town of Davidson. They went in the middle of the growing season and the visitors were thunderstruck. They saw rich, rolling country, well watered and open for cultivation, as far as the eye could see. They got down and scooped up the soil and found it rich. The sun beat down upon them as warmly as it did in the more settled sections they had come from and with as much promise of refining quality. In fact they saw lying before them an ideal wheat country. So this train load of Joshuas went back and reported that it was indeed a promised land—that Davidson was right, and nearly all the rest of Canada was wrong. In 1902 the Western Canada Immigration Association was formed to launch a publicity campaign in the U.S. and, as a result, the huge wave of immigration from across the line started.

I am telling of these incidents to demonstrate that the opening up of new country is invariably contingent on the taking of huge risks and that the public is always sceptical. More important still the opening up has depended upon the building of a line of steel. Transportation is needed to effect permanent settlement on a large scale. Consider this in relation to the fact that Canada now owns a system of railways that stretch from Halifax and the Sydneys to Vancouver. If this system is considered as the means of opening up new territory, of developing new stretches of empire, then it becomes of tremendous importance indeed. No longer will we need to depend upon the daring and initiative of private individuals to blaze the trail to new fields; the country as a whole, which has always reaped the benefit of the pioneer efforts of our railway builders, can assume the risk and plan its own campaigns of extension.

There are already fields open for exploitation. The Peace River country has been established as a suitable field for agricultural settlement. To build a road through that northern section would be the prelude to a settlement as prosperous and successful as the Qu'Appelle. The value of the government roads from the middle prairie points to the Pacific as feeders for the Panama route can be developed. I am merely noting a few outstanding and obvious directions in which the aggrandizement of Canadian interests can be accomplished by the development of the national railways. Great things can be accomplished if the Dominion of Canada is disposed to regard railroading in the same light as the private railway builders have done in the past—as a risk that must be taken to assure a big future.—Maclean's Magazine.

A Railway's Responsibility for Goods.

The question of how far a railway company is responsible for the loss of goods came before a Quebec court in a case in which Justice MacLennan gave judgment. Sept. 3. The action was brought by Greenshields Limited, Montreal, against the Canadian Northern Ry., to recover \$1,564.43, the value of 6 cases of goods stolen from the C.N.R. carter's sleigh while it was standing in the yard at Greenshield's warehouse in Jan., 1918. After the cases had been loaded the carter went into the warehouse for some purpose in connection with the shipment, and when he came out he found the sleigh load of cases had been driven off. The sleigh and horses were recovered subsequently, but the goods were never traced. The railway company contended that as the bill of lading had not been signed it was not liable, and that the goods had been stolen from the plaintiff's yard, where protection should have been provided by the shipper. The court held that the company's carter, by leaving the goods unguarded, facilitated the theft; that the carter had authority to sign the bill of lading on completion of the loading of the goods on the sleigh; and that the delivery of goods to him was delivery to the company. Judgment was therefore given for the amount claimed and costs.

Grain Inspected at Western Points.

The following figures compiled by the Dominion Bureau of Statistics, shows the number of cars of grain inspected on railways at Winnipeg and other points in the Western Division for August, and for 12 months ended Aug. 31, 1919 and 1918, respectively:

	12 mons. to 12 mons. to	
	Aug. 1919	Aug. 31, 1918
	Bush.	Bush.
C.P.R.	2,343	70,203
C.N.R.	2,041	51,182
G.T.P.R.	286	15,311
G.N.R. (Duluth)....	15	1,025
Total	4,685	137,721
		171,080

Hamilton, Ont., Railway Yards—The Hamilton, Ont., City Council passed a resolution on Sept. 9, approving of its special railway committee's recommendation that the Hydro Electric Power Commission of Ontario be asked to survey, lay out, construct, build and operate a railway, and to acquire lands and yards, sidings and other facilities for railway traffic east of the city, and provide yards for the accommodation of the Toronto, Hamilton and Buffalo Ry. in lieu of the present Kinnear yards. In the course of the discussion it was stated that the proposal should take precedence over the Hydro Electric Power Commission of Ontario's general electric railway building, that the lands necessary for carrying it out should be acquired while the main line was being built, and that it was estimated that the suggested plans would not entail an expenditure of more than \$300,000 in addition to the amounts provided for in the bylaw passed in January.

The Delaware & Hudson Co.'s mines resumed operation Sept. 15, it being reported that the 14,000 strikers had decided to await the Anthracite Conciliation Board's decision on their complaints' referring particularly to alleged excessive dockage, unnecessary laying off of men for alleged dirty coal, and use of mechanical loaders.

Fences, Anchoring of Fences, Gates and Cattle Guards.

Following is the report of the committee on fences, anchoring of fences, gates and cattle guards, as adopted at the Roadmasters' and Maintenance of Way Association's last annual meeting:

Posts—Wooden posts, especially cedar, seem to be as yet the most favored, but the increasing scarcity of timber will eventually eliminate that kind of post. Round and split posts are being used, but the round post is preferable because the split post exposes the heart and thereby causes decay, and the dry-rot formed will easily catch on fire.

Iron posts are on the market and used to some extent, but it seems to be the opinion that they will rust off quick-

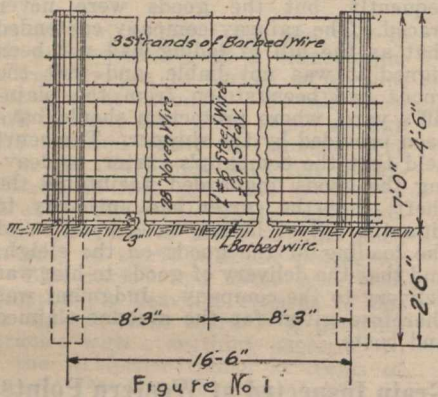


Figure No. 1

ly at the ground surface. To overcome that difficulty some chemical solution is being applied, but its effect cannot as yet be determined. The iron posts are too small for use in a right of way fence, especially in the heavy cattle countries.

Concrete posts are being manufactured and used considerably. The initial price of the concrete posts and the cost of installation is somewhat higher than that of the wooden post, but considering its lasting qualities, it is undoubtedly the most economical. A well reinforced concrete post should last forever, as fire, water and climate do not affect it. The round post is preferable, as the

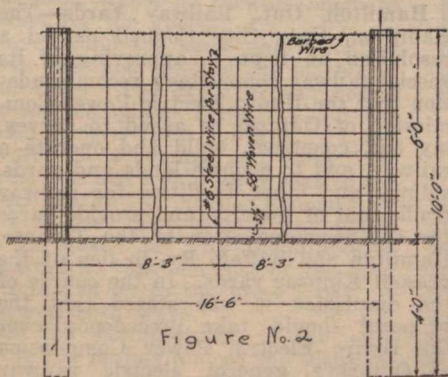


Figure No. 2

corners of the square post will chip off and weaken the post. Railways may make their own posts by installing plants at points where sand and gravel are available.

For general right of way fencing, the posts should be not less than 7 ft. and longer where necessary to suit the location. It has been suggested—in fact, some railways are using—an 8 ft. post at corners and gate openings, but it seems that a 7 ft. post is ample length, even for that purpose, when properly anchored and braced.

The 7 ft. post should be set in the ground 2½ ft. In swamp or wet ground

the post should be tapered at the lower end and driven into the ground with a wooden mallet instead of the digging of holes by auger or digger.

The posts should be placed 16½ ft. or one rod apart, except at corners and gate openings, where they should be placed 10 ft. apart. Through large towns and other places where appearance is to be considered and also to keep off trespassers, a 10 ft. post is recommended, placing it 4 ft. in the ground and 10 ft. apart.

There are some steel posts manufactured, which it is claimed give satisfactory service. One type of post is made of heat-treated spring steel, in angle form, with a beveled point, which makes it easy to drive into the ground without the use of a driving cap. In connection with this post there is a tri-

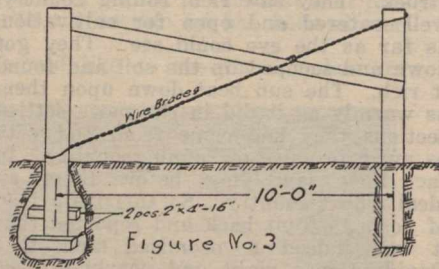


Figure No. 3

angular anchor plate that is driven into the ground, so that the post offers resistance to side thrusts. The post is punched so that ordinary size staples can be used. The installation of these posts is very cheap, as from 300 to 500 can be driven by one man in a day, and the decreased cost of installation will overcome the additional cost of the post. There is also a circular galvanized steel post, to which the fencing is fastened by clips. This post has been used to some extent by railways but more so in fencing parks and institutions and factories. The installation of this post is somewhat less than that of wooden or concrete posts, as it is driven in the ground by the use of a cap. Several steel posts can be shipped in the space occupied by one wooden or concrete post.

Wire—A combination barb and woven wire fence is recommended.

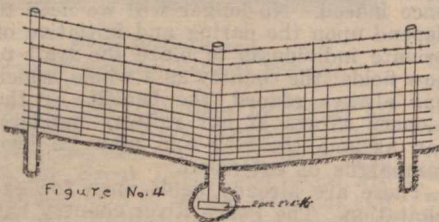


Figure No. 4

1—A barb wire at the ground, followed by a 28 in. woven wire and with 3 strands of barb wire at the top. (See fig. 1).

2—A barb wire at the ground followed by a 50 in. woven wire and one strand of barb wire at the top.

For use at station grounds when posts are set 6 ft. above ground, 58 in. woven wire with one strand of barb wire at the top. (See fig. 2).

When posts are set one rod apart, a stay of heavy wire should be placed in the middle of the panel.

The Anchoring of Fences is one of the vital factors in their permanence. The methods of anchoring vary considerably, but when wooden posts are used, the following is recommended:

The posts at corners and gate openings should have as anchors 2 pieces of 2 x 4 x 16 in. of pine lumber securely fastened to the post, one of the anchors at the lower end of the post and the other 12 in. higher.

In addition to the anchors, the posts at corners and gate openings should have a wooden brace 4 x 4 in. gained into the corner post 12 in. from the top and into the second post 24 in. from the ground and well spiked to the posts. As counterbrace, use 2 strands of no. 8 wire and twist until it becomes a hard and taut cable. (See fig. 3).

At sudden or abrupt changes of the ground along the fence line where post is liable to pull out, 2 anchors 2 x 4 x 16 in. should be fastened to the lowest point of the post. (See fig. 4).

Instead of using wooden anchors at corners and gate post, and whenever practicable, it is recommended that these

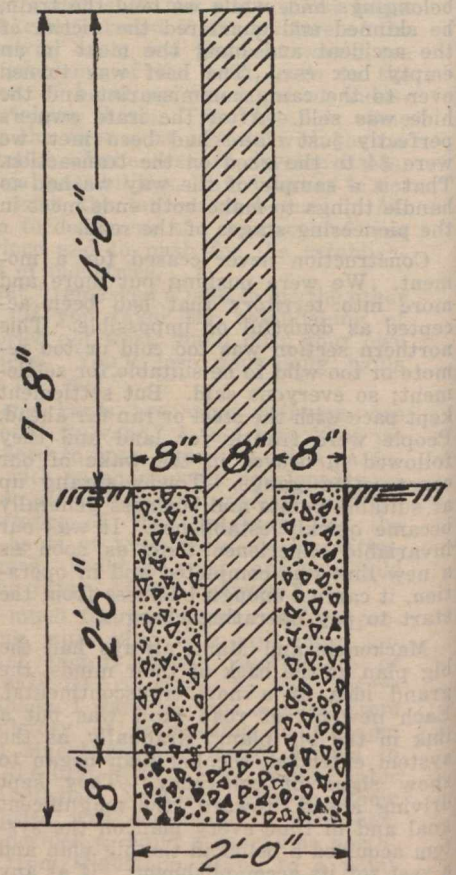


Fig. 5. Cross section showing concrete anchorage.

posts should be placed in concrete 24 in. square and 8 in. below lowest part of the post. (See fig. 5).

Gates—One of the section force's daily troubles is to keep farm gates closed and remind the farmers of same, and quite frequently the farmers refuse to keep the gates closed, due to the fact that the railway does not furnish a suitable gate. It has been shown that by furnishing light, swinging, gates the gates are kept closed more readily than with the heavy, sliding gates. The committee recommends a light, swinging, gate for use at private crossings, whenever possible, and, where ground formation allows it, that the gates should be hung so they would swing away from the track.

Cattle Guards—There are no cattle guards made that will turn cattle, and

the stock will pass over the guard, also from data gathered it can be shown that it costs more to maintain cattle guards than to pay stock claims directly due to the absence of guards, but considering the necessity at present of conserving all resources of the country, especially the foodstuffs, the committee does not wish to recommend to entirely abolish the use of cattle guards. There are several makes of surface guards, but as none of them will turn cattle, the committee failed to agree on any certain kind to recommend.

Cross and Wing Fences—Some railways are using boards 1 x 6 in. for their cross fences at highways and are spacing them 6 in. apart. The committee recommends the use of the same material in the cross and wing fences as there is in the line fence and thereby lessen the cost in material and conserve the lumber.

Maintenance of Fences—It is the intention of the railways and the maintenance officials to keep the fences in good condition at all times, but due to shortage of laborers and other work it is given the last consideration and frequently we find at the end of a working season that no repairs have been made to the fences, and material allotted for this purpose is carried over to another season. With the postponement of the work from one season to another it is natural that the fences will be in such condition that they require rebuilding, which is more expensive than if they had been properly maintained at all times.

Due to soil formation and water, the work in keeping the fences in condition is more difficult in one section than in another. The average section foreman and laborer take very little interest in the condition of the fences and, in fact, do not know how to properly repair them.

It is the committee's opinion that in order to properly keep the fences in repair, a small fencing crew, consisting of foreman and 4 or more men, should be kept on each roadmaster's or supervisor's subdivision. By this arrangement better work will be obtained and more accomplished, as the men constantly engaged in the work will be more efficient; also it will not be necessary to distribute the fence material to the various sections.

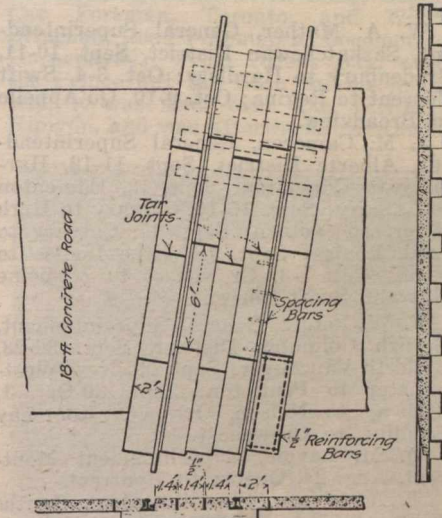
Safety—The committee recommends that laws should be enacted, prohibiting the destroying of railway fences and the opening of paths across the tracks.

A press report states that tourist and other travel on the C.P.R. transcontinental trains has increased very largely during this year, and that C.E.E. Ussher, Passenger Traffic Manager, on his present periodical trip over the company's western lines, is investigating with a view of making recommendations for the still further improvement of the company's train and hotel services.

J. D. McArthur, President, Edmonton, Dunvegan and British Columbia Ry. and its two subsidiary lines, on his return to Winnipeg recently from Edmonton, Alta., is reported to have said that during this year, 10,000 people had entered the areas served by these three railways for settlement purposes. The estimate of the grain crop in the district is from 5,000,000 to 6,000,000 bush., of which about 3,000,000 bush. will be brought out over these three railways.

Sectional, Removable Concrete-Slab Railway Crossing.

Sectional, concrete-slab railway crossings are proposed for Wayne County, Michigan road system. The general design and layout of these crossings are shown in the accompanying illustration. Each of the sections used between the rails is 6 x 1.4 ft., with a thickness equal to the height of rail. Sections outside the rail are 2 ft. wide. Reinforcement consisting of $\frac{1}{2}$ in. bars is used as shown, and tar joints bind the sections together. Those inside and next the rail have projecting spacing bars which come in contact with the web of the rail, leaving clearance for the wheel flanges.



Surveys of the various railway crossings in Wayne County have been made, and the board of county road commissioners, has suggested to the engineering departments of the various roads that they be permitted to install this slab construction at county expense, the county also to maintain it after installation. It is believed that this will make a much smoother and more serviceable crossing than the old planked crossing, and, at the same time, leave the crossing equally accessible for repairs.

Freight and Passenger Traffic Notes.

St. John and Quebec Ry. trains, will, according to a press report, be operated through to St. John, N.B., regularly at an early date.

The Canadian National Rys. started on Oct. 5 a daily transcontinental passenger service, between Toronto, Winnipeg, Vancouver and Victoria, B.C.

The Halifax, N.S., Board of Trade's Council passed a resolution recently asking the Canadian National Rys. to re-establish a fast freight service between Halifax and Montreal.

Residents between Halifax and Yarmouth, N.S., have asked the Canadian National Ry.'s officials to operate a second train each way daily between Shelburne and Yarmouth on the Halifax and South Western Ry.

The C.P.R. is reported to be preparing to handle 90 train loads of Chinese coolies, who are returning from France across Canada and on to China. They were taken over in the early days of the war for service behind the lines.

The Quebec and Saguenay Ry., has, we

are officially advised, been operating a daily train service from Quebec to Murray Bay, since July 1. The train leaves the Quebec Ry., Light and Power Co.'s station in Quebec, at 8 a.m., and returns to the same point at 8 p.m.

A Charlottetown, P.E.I., press report, Sept. 17, states that no. 1 train standard gauge, running from Charlottetown to Borden, will be made up of baggage, mail, express and first and second class passenger cars. The baggage, mail and express cars will be taken across to the mainland on the car ferry, and will be run through to Moncton, N.B.

The Grand Trunk Ry. is now operating sleeping and dining cars on a through service between Toronto and Philadelphia, Pa., over its own line, the Lehigh Valley Rd., and the Philadelphia and Reading Rd. The trains leave Toronto 5.45 p.m. daily, arriving in Philadelphia 10.25 a.m., and leaves Philadelphia 6.30 p.m., arriving in Toronto 9.40 a.m.

In reference to a large number of requests made to railway companies for reduced rates, to enable persons to go to places being visited by the Prince of Wales during his Canadian tour, it has been decided that, owing to the pressure upon the railways for equipment required to handle returning soldiers, repatriates, tourist traffic, and movement of returning harvesters from Western Canada, it would not be wise to grant general reduced rates at this time, and thereby add to the number to be carried. If, however, satisfactory arrangements for repayment, the usual military requisitions, at regular military fares, will be accepted for movement of members of the Great War Veterans' Association.

A new plan for handling freight between Truro, N.S., and eastern points, is reported to have been put in operation on the Canadian National Rys. Maritime District. Heretofore there has been one through freight train daily, each way between Truro and Mulgrave, all other freights and freight specials. Under the proposed new arrangement, traffic in both directions will originate in Truro and Mulgrave, cutting Stellarton out as a starting point for all freight, with the exception of that billed to points on the short line. The new plan will necessitate the removing of the train crews now residing in Stellarton to one or other of the terminal points of Truro or Mulgrave. It is claimed the new plan will effect a considerable saving in the cost of handling freight.

The Railway and Marine News, Seattle, Wash., says: "Every convention and a majority of the tourists coming to the Pacific northwest this summer, travelled one way over the Canadian railways. Both the Canadian Pacific and the Canadian National ably conducted an advertising campaign in the populous centers of the eastern United States. At the same time the U.S. Railroad Administration was still debating as to the advisability of advertising at all and when it did decide upon a policy it was too late in the season and the media were not well selected. Even in such a feature as this the Railroad Administration fell down and while the tourist travel to the Pacific coast has been heaviest in years, yet the fact remains that the great proportion of it was one way through Canada and the Dominion, following four years of active participation in the great war, has received untold benefits by the army of well to do tourists stopping at its famous hotels and resorts."

The Prince of Wales' Canadian Tour by Rail and Water.

After Canadian Railway and Marine World for September went to press, a slight change was made in the Prince's itinerary as published in that issue. The visits to Cobalt and Timmins, in northern Ontario, were cancelled, and instead of leaving Ottawa Sept. 1 for North Bay, the Prince went to Montreal by the C.P.R. for a flying visit. After leaving Montreal, the royal train was stopped at Dixie, where the Prince played a game of golf with W. R. Baker, C.V.O., ex-



A. B. Calder,

Assistant General Passenger Agent, C.P.R., who is representing E. W. Beatty, K.C., President, C.P.R., on the Prince of Wales' tour through Canada.

Secretary, C.P.R., and then proceeded direct to North Bay after which the schedule as published in our last issue was pretty closely adhered to. At Port Arthur the Prince officiated at the launching of the s.s. Canadian Adventurer by the Port Arthur Shipbuilding Co.

Canadian Pacific Ry. officials accompanying the royal train—As stated previously in Canadian Railway and Marine World, A. B. Calder, Assistant General Passenger Agent, represents E. W. Beatty, President, C.P.R., on the special train provided by that company for the Prince's use during his entire Canadian railway tour. On the company's lines, in addition to Mr. Calder, the general superintendent of each district travels on the train over his district, the superintendent of each division travels on it over his division, and the division master mechanic rides in the locomotive cab over his division. The itinerary of the various C.P.R. officials is as follows:

J. M. Woodman, General Superintendent, Quebec District, Aug. 24-25, Quebec to Smiths Falls; Aug. 27-28, Smiths Falls to Ottawa; Sept. 2, Ottawa to Montreal; Sept. 2-3, Montreal to Chalk River; Oct. 27, Vaudreuil to Montreal; Oct. 31, Montreal to Ottawa.

Allan Purvis, General Superintendent,

Ontario District, Aug. 25, Smiths Falls to North Toronto; Aug. 27-28, North Toronto to Smith Falls; Oct. 18, MacTier to Hamilton; Oct. 24, Windsor to North Toronto.

J. J. Scully, General Superintendent, Algoma District, Sept. 3-4, Chalk River to North Bay and Sault Ste. Marie; Sept. 8, Nipigon to Fort William; Oct. 11-12, Fort William to Biscotasing, Oct. 17-18, Biscotasing to MacTier.

A. E. Stevens, General Superintendent, Manitoba District, Sept. 8-9, Fort William to Winnipeg; Sept. 10, Winnipeg to Bredenburg; Oct. 10, Broadway to Winnipeg; Oct. 11, Winnipeg to Fort William.

W. A. Mather, General Superintendent, Saskatchewan District, Sept. 10-11, Bredenburg to Hardisty; Oct. 3-4, Swift Current to Regina; Oct. 9-10, Qu'Appelle to Broadview.

J. M. Cameron, General Superintendent, Alberta District, Sept. 11-12, Hardisty to Edmonton; Sept. 13, Edmonton to Calgary; Sept. 15-16, Calgary to High River, and return; Sept. 17, Calgary to Lake Louise; Sept. 18, Lake Louise to Field; Oct. 1-3, Crowsnest to Medicine Hat and Swift Current.

F. W. Peters, General Superintendent, British Columbia District, Sept. 20-28, Field to Vancouver; Sept. 29, New Westminster to Penticton; Sept. 30-Oct. 1, Midway to Nelson, Oct. 1-2, Kootenay Landing to Crowsnest.

O. M. Lavoie, Superintendent Montreal, Aug. 24, Quebec to Montreal.

T. A. Wilson, Superintendent, Smiths Falls, Ont., Aug. 24-25, Smiths Falls to Montreal; Oct. 31, Montreal to Ottawa.

H. J. Humphrey, Superintendent, Toronto, Aug. 25, Smiths Falls to North Toronto; Aug. 27-28, North Toronto to Smiths Falls.

H. B. Spencer, Superintendent, Ottawa, Aug. 28, Smiths Falls to Ottawa; Sept. 2, Ottawa to Montreal.

W. R. Boucher, Superintendent, Sudbury, Ont., Sept. 3-4, Chalk River to North Bay and Sault Ste. Marie; Oct. 17-18, Cartier to MacTier.

S. W. Crabbe, Superintendent, Schreiber, Ont., Sept. 8, Nipigon to Fort William; Oct. 11-12, Fort William to White River.

J. J. Horn, Superintendent, Kenora, Ont.; Sept. 8-9, Fort William to Winnipeg; Oct. 11, Winnipeg to Fort William.

T. R. Flett, Superintendent, Winnipeg, Sept. 10, Winnipeg to Minnedosa; Oct. 10, Brandon to Winnipeg.

R. Armstrong, Superintendent, Brandon, Man., Sept. 10-11, Minnedosa to Bredenburg; Oct. 10, Broadview to Brandon.

J. M. McKay, Superintendent, Saskatoon, Sask., Sept. 10-11, Bredenburg to Hardisty.

J. A. MacGregor, Superintendent, Edmonton, Alta., Sept. 11-12, Hardisty to Edmonton; Sept. 13, Edmonton to Red Deer.

G. J. Fox, Superintendent, Calgary, Alta., Sept. 13, Red Deer to Calgary; Sept. 17-18, Calgary to Field.

C. D. MacKintosh, Superintendent, Lethbridge, Alta., Sept. 15-16, Calgary to High River and return; Oct. 1-3, Crowsnest to Medicine Hat.

T. C. MacNabb, Superintendent, Revelstoke, B.C., Sept. 20-21, Field to Kamloops.

J. L. Jamieson, Superintendent, Vancouver, B.C., Sept. 21-22, Kamloops to

Vancouver; Sept. 29, New Westminster to Spence's Bridge.

W. O. Miller, Superintendent, Nelson, B.C., Sept. 30-Oct. 1, Midway to Nelson.

C. S. Maharg, Superintendent, Cranbrook, B.C., Oct. 1-2, Kootenay Landing to Crowsnest.

J. M. MacArthur, Superintendent, Medicine Hat, Alta., Oct. 3, Medicine Hat to Swift Current.

A. Halkett, Superintendent, Moose Jaw, Sask., Oct. 3-4, Swift Current to Moose Jaw.

J. H. Chown, Superintendent, Regina, Sask., Oct. 4, Moose Jaw to Regina; Oct. 9-10, Qu'Appelle to Broadview.

W. C. Guthrie, Superintendent, Chapleau, Ont., Oct. 12, White River to Biscotasing; Oct. 17-18, Biscotasing to Cartier.

F. M. Rutter, Superintendent, Toronto, Oct. 18, MacTier to West Toronto.

R. W. Scott, Superintendent, Toronto, Oct. 18, West Toronto to Toronto.

A. Williams, Superintendent, London, Ont., Oct. 24, Windsor to North Toronto.

R. McAdam, Division Master Mechanic, Montreal, Aug. 24, Quebec to Montreal.

A. A. Sheppard, Division Master Mechanic, Smiths Falls, Ont., Aug. 25, Montreal to Smiths Falls; Sept. 2-3, Montreal to Chalk River; Oct. 27, Vaudreuil to Montreal; Oct. 31, Montreal to Ottawa.



A. J. Hills,

Assistant to President, Canadian National Ry., who represented the management, on the Prince of Wales' trip over the C.N.R. from Oba to Orient Bay, Ont., and during the Prince's fishing of the Nipigon River.

C. A. Wheeler, Master Mechanic, Quebec District, Aug. 24-25, Quebec to Smiths Falls; Aug. 28, Smiths Falls to Ottawa; Sept. 1, Ottawa to Montreal; Sept. 2-3, Montreal to Chalk River; Oct. 27, Vaudreuil to Montreal; Oct. 31, Montreal to Ottawa.

W. Borbridge, Master Mechanic, Ottawa, Aug. 28, Smiths Falls to Ottawa; Sept. 2, Ottawa to Montreal.

F. Ronaldson, Master Mechanic, Toronto, Aug. 25, Smiths Falls to North Toronto.

A. H. Binns, District Master Mechanic, Toronto, Aug. 25, Smiths Falls to North Toronto; Aug. 27, North Toronto to Smiths Falls.

T. Hambley, Master Mechanic, North Bay, Ont., Sept. 3-4, Chalk River to Sault Ste. Marie.

E. Freeman, Division Master Mechanic, Schreiber, Ont., Sept. 8, Nipigon to Fort William; Oct. 11-12, Fort William to White River.

W. Workman, Division Master Mechanic, Kenora, Ont., Sept. 8-9, Fort William to Winnipeg; Oct. 11, Winnipeg to Fort William.

J. C. Ironsides, Division Master Mechanic, Winnipeg, Sept. 10, Winnipeg to Minnedosa; Oct. 10, Brandon to Winnipeg.

A. West, Division Master Mechanic, Brandon, Man., Sept. 10-11, Minnedosa to Bredenburg; Oct. 10, Broadview to Brandon.

R. A. Jones, Division Master Mechanic, Saskatoon, Sask., Sept. 11, Bredenburg to Hardisty.

G. Moth, Division Master Mechanic, Edmonton, Alta., Sept. 11 to 13, Hardisty to Edmonton and Red Deer.

E. Lemieux, Division Master Mechanic, Calgary, Alta.; Sept. 13-18, Red Deer to Calgary, Calgary to High River and return, Calgary to Field.

G. H. Nowell, Division Master Mechanic, Revelstoke, B.C., Sept. 20-21, Field to Kamloops.

W. Evans, Division Master Mechanic, Vancouver, B.C., Sept. 21-22, Kamloops to Vancouver; Sept. 29, New Westminster to Spence's Bridge.

A. A. Brown, Division Master Mechanic, Nelson, B.C., Sept. 20-Oct. 1, Midway to Proctor; Oct. 1, Proctor to Kootenay Landing.

A. Smith, Division Master Mechanic, Cranbrook, B.C., Oct. 1-2, Kootenay Landing to Crowsnest.

G. Twist, Division Master Mechanic, Lethbridge, Alta., Oct. 3, Medicine Hat to Swift Current.

A. Peers, Division Master Mechanic, Moose Jaw, Sask., Oct. 3-4, Swift Current to Moose Jaw.

W. McPherson, Division Master Mechanic, Regina, Sask., Oct. 4, Moose Jaw to Broadview.

J. H. Brookes, Division Master Mechanic, Chapleau, Ont., Oct. 12, White River to Biscotasing; Oct. 17-18, Biscotasing to Cartier.

J. S. Allen, Division Master Mechanic, Sudbury, Ont., Oct. 17-18, Cartier to MacTier.

A. Maynes, Division Master Mechanic, Toronto, Oct. 18, MacTier to West Toronto.

C. Powers, Division Master Mechanic, Toronto, Oct. 18, West Toronto to Hamilton.

C. Gribbon, Division Master Mechanic, London, Ont., Oct. 24, Windsor to North Toronto.

The trips from Vancouver to Victoria, B.C., on Sept. 22, and from Victoria to Vancouver, Sept. 29, were made on the C.P.R. s.s. Princess Alice, J. W. Troup, Manager, B.C. Coast Steamship Service, representing the company.

At Penticton, Sept. 30, a steamboat and motor trip was made, visiting Kelowna and Vernon, the C.P.R. steamboat Sicamous being used on Okanagan Lake, and on Oct. 1 the royal train was sent by ferry and rail from Nelson to Kootenay Landing, and the party left Nelson, by C.P.R. steamboat Nasookin, for

Kootenay Landing, calling at Balfour en route. Douglas Browne, Superintendent, B.C. Lake & River Steamships, C.P.R., was on the steamboats during the trips.

The Algoma Central & Hudson Bay Ry. was represented during the trip over its line from Sault Ste. Marie to Oba, Ont., on Sept. 4, by R. Home Smith, President, G. A. Montgomery, Vice President and General Manager, and R. S. McCormick, General Superintendent.

The Canadian National Rys. was represented during the trip over its line, from Oba to Orient Bay, Ont., on Sept. 4 and 5, and during the fishing and camping on the Nipigon River, Sept. 5 to 8, by A. J. Hills, Assistant to the President. The other officials of the company who travelled on the train from Oba to Orient Bay were: G. N. Goad, Superintendent, Hornepayne, Ont.; W. H. Long, General Car Foreman, Toronto, and W. G. Strachan, Road Foreman of Locomotives, Hornepayne. From Orient Bay, where the Prince left the train for his fishing trip, it was sent over the C.N.R. to Nipigon, and was afterwards returned to

represented during the trip over its line, from Regina to Edenwald, Sask., on Oct. 6, and from Edenwald to Qu'Appelle on Oct. 9, by I. A. Macpherson, Superintendent, Belleville, Sask.

The Grand Trunk Ry. will be represented on the trips over its line on Oct. 18 to 23, from Hamilton to Niagara, Brantford, Guelph, Stratford, Woodstock, Chatham, London and Windsor, and on Oct. 25 to 27, from Toronto to Kingston, Brockville and Vaudreuil, by H. R. Charlton, General Advertising Agent. S. L. Trusler, Passenger Trainmaster, will accompany the train over the Ontario Lines, and R. E. Marks, Passenger Trainmaster, will accompany it over the Eastern Lines. The following superintendents will travel on it over their respective divisions: J. H. Gordon, Hamilton Division; R. H. Fish, Stratford Division; C. E. Forrester, London Division; J. C. Crombie, St. Thomas Division; J. D. McMillan, Belleville Division; J. J. Connelly, Montreal Division.

Canadian National Railways Earnings.

Approximate earnings for July, \$7,657,402, and for 2 weeks ended Aug. 14, \$3,702,367, against \$5,733,299 and \$3,219,358, respectively for same periods, 1918.

January	\$ 6,744,018	\$ 4,696,567
February	6,000,342	4,421,504
March	6,827,491	5,710,660
April	6,909,632	7,165,890
May	7,518,244	6,580,745
June	6,009,585	6,868,864
July	7,657,402	5,733,299
August	8,274,882	8,255,942
	\$55,941,869	\$49,433,471

Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1919, compared with those of 1918:

	Gross	Expenses	Net	Increases or
				decreases
Jan. ..	\$13,028,328	\$11,474,816	\$1,553,512	\$ 385,519
Feb. ..	11,064,167	10,088,051	981,116	390,218
Mar. ..	12,374,182	10,835,138	1,539,044	*1,453,737
Apr. ..	13,108,905	11,020,281	2,088,624	*1,366,765
May ..	13,569,411	10,535,650	3,033,761	*654,015
June ..	13,577,274	10,586,852	2,990,421	178,274

\$76,722,267 \$64,535,789 \$12,186,478 *\$2,520,506
Incr. \$ 4,709,981 \$ 7,320,487
Decd. \$ 2,520,506

*Decreases.

Approximate earnings for July, \$13,238,000 and for August, \$14,873,000, against \$11,920,000 and \$12,713,000, respectively, for the same periods, 1918.

Grand Trunk Railway Earnings, Expenses, Etc.

The figures as reported are in pounds sterling, and are converted into currency at \$4.87.

Gross earnings, working expenses, net earnings and increases or decreases compared with those for 1918, from Jan. 1, 1919:

	Gross	Expenses	Net	Increases or
				decreases
Jan. ..	\$ 4,405,403	\$ 5,121,778	x\$ 716,377	*\$ 81,816
Feb. ..	4,090,800	4,401,019	x 310,219	660,372
Mar. ..	5,517,223	4,676,174	841,049	763,616
Apr. ..	5,360,896	4,604,585	756,311	93,017
May ..	5,275,671	4,606,533	669,138	*36,525
June ..	4,951,329	4,647,928	303,401	*707,611
July ..	6,025,651	4,889,480	1,136,171	*35,551

\$35,626,972 \$32,947,498 \$2,779,474 0655,502
Incr. \$ 6,300,806 \$ 5,645,304 \$ 655,502

xDeficits. *Decreases.

Approximate earnings for August, \$6,724,520, against \$6,106,215 for August, 1918.

Timiskaming & Northern Ontario Railwaymen's Patriotic Association has contributed \$99,446.50 to the Canadian Red Cross Society and the Canadian Patriotic Fund, exclusive of personal subscriptions by the commissioners and employees. This is the final total, the lists having been closed.



H. R. Charlton.

General Advertising Agent, G.T.R., who will represent that company during the Prince of Wales' trip over its lines in Ontario and Quebec.

Cameron Falls, from which point it was backed up, over the Hydro Electric Power Commission of Ontario's spur line of about three-quarters of a mile, to within a few hundred yards of the head of the 2½ mile portage that has to be made in taking the trip to Nipigon. The water below Cameron Falls is uninteresting, and rough weather may be experienced on Lake Helen, where three members of a C.N.R. engineering party were drowned some time ago, so it was thought better to take the Prince's party out at Cameron Falls, instead of at Nipigon as intended originally. From Cameron Falls the train was run over the C.N.R. to Nipigon, where it was transferred to the C.P.R.

Esquimalt & Nanaimo Ry.—The following officials travelled on the train between Victoria and Qualicum, H. E. Beasley, General Superintendent; J. Goodfellow, Superintendent; R. A. Bainbridge, Engineer; W. Byrd, Master Mechanic.

The Grand Trunk Pacific Ry. will be

Traffic Orders by Board of Railway Commissioners.

Canadian Freight Classification and Express Classification for Canada.

General order 271, Sept. 10. Re Canadian freight classification and the express classification for Canada, and sec. 322 and 360 of the Railway Act, 1919, it is ordered as follows:

1. Any reissue of the Canadian freight classification, or of the express classification for Canada, or any supplement thereto, or any supplement to the issue of either now in force, shall be submitted in printed proof form for the board's approval before it is made effective.

2. Should such proposed reissue or supplement remove any goods from a lower to a higher class, or in any other way add to the cost of transportation of any goods, notice of the submission thereof shall be published by the applicant in the next two succeeding issues of The Canada Gazette, in the following form:

"Notice is hereby given that the..... day of 19....., submit to the Board of Railway Commissioners for Canada, for its approval, the Canadian Freight Classification (or the Express Classification for Canada) no., (or Supplement no. to the Canadian Freight Classification no., or to the Express Classification for Canada no.)."

3. (a) Unless, for special reasons, exemption be granted by the board, the following symbols shall be used in the said proof, and in the approved classification or supplement.

An asterisk, to denote an addition.

A large dot, to denote an increase in the previous rating, or charge, or cost of transportation.

A solid triangle, to denote a reduction in the previous rating, or charge, or cost of transportation.

A dagger, to denote any other change.

(b) Supplements shall show against each increase or reduction a reference to the previously approved item.

4. The application to the board shall be accompanied by—(a) Three copies of the said proof. (b) The reasons for proposed changes involving increased cost of transportation. (c) A copy of the notice furnished to the King's Printer for publication in The Canada Gazette.

5. One copy of the said proof and of the said notice for publication shall be furnished by the applicant to the following bodies, with the request that fully explained objections, if any, to proposed changes involving increased cost of transportation be filed by them with the Board of Railway Commissioners within 30 days from the receipt of the said proof and notice: Canadian Manufacturers' Association, Ontario Grocers' Guild, Manufacturers' Association of British Columbia, Vancouver, British Columbia Fruit Growers' Association of Ontario, Montreal Chamber of Commerce, Boards of Trade of Belleville, Ont.; Brandon, Man.; Brantford, Ont.; Brockville, Ont.; Calgary, Alta.; Chatham, Ont.; Collingwood, Ont.; Cornwall, Ont.; Cornwall, Ont.; Edmonton, Alta.; Fort William, Ont.; Fredericton, N.B.; Galt, Ont.; Guelph, Ont.; Halifax, N.S.; Hamilton, Ont.; Kenora, Ont.; Kingston, Ont.; Kitchener, Ont.; Lethbridge, Alta.; London, Ont.; Medicine Hat, Alta.; Montreal, Que.; Nelson, B.C.; Ottawa, Ont.; Owen Sound, Ont.; Peterborough, Ont.; Port Arthur, Ont.; Preston, Ont.; Prince Albert, Sask.; Prince Rupert, B.C.; Quebec, Que.; Regina, Sask.; St. Catharines, Ont.; St. Hyacinthe, Que.; St. John, N.B.; St. Thomas, Ont.; Sarnia, Ont.; Saskatoon, Sask.; Sherbrooke, Que.; Stratford,

Ont.; Three Rivers, Que.; Toronto, Ont.; Valleyfield, Que.; Vancouver, B.C.; Victoria, B.C.; Waterloo, Ont.; Windsor, Ont.; Winnipeg, Man., Woodstock, Ont., also, in the case of the freight classification, to the railway companies which are not members of the Canadian Freight Association.

6. Previous orders or regulations of the board conflicting herewith are rescinded.

27,717, Aug. 29. Approval of special tariff on cream in cans. See under "Among the Express Companies," on page 572 of this issue.

Carriers' Liability on Outbound Freight During Interswitching.

General order 272, Sept. 19. Re carriers' liability in connection with outbound freight traffic during interswitching operations: whereas, by order 7,562 (general order 41), dated July 15, 1909, the board prescribed conditions and limitations to be endorsed upon the forms of bill of lading therein approved for use in Canada; and it having developed that shippers and carriers are not always receiving the protection of the said conditions and limitations during the time when freight, in carloads, is being inter-switched by the "terminal carrier" to the "line carrier" under the terms of the board's general interswitching order 252, Oct. 26, 1918; and it appearing to the board that such protection should be provided for, it is ordered that those terminal carriers that do not issue the bill of lading for the entire movement of such freight to its destination, and which are subject to the board's jurisdiction, shall give the shipper a local bill of lading on the appropriate form provided for in general order 41, covering the movement by interswitching service to the point of transfer to the line carrier that issues the bill of lading to the destination; or, if preferred, and in lieu thereof, shall give the shipper what is commonly known as an interline or switching ticket or receipt, which shall contain the words, "received subject to the conditions of the company's bill of lading, which are made a part hereof."

Increased Return Passenger Fares.

Assistant Chief Commissioner McLean gave the following judgment Sept. 9, as to the Toronto Board of Trade and the Border Chamber of Commerce, Windsor, Ont., complaint against the increased return passenger fares put into effect by the railways, Feb. 1, 1919:

"Canadian railways have for a considerable period provided round trip passenger rates at a reduction of one-sixth off the sum of the individual rates. This practice has been amended, effective Feb. 1, 1919, by limiting the reduction to 10%. After filing of complaints, answer and reply, the matter was set down for hearing. It has subsequently stood for further written submissions.

"The passenger rates practice involved developed, no doubt, as a means of building up traffic. In the case of round trips, between the points served by two or more lines of railway, the reduction from the sum of the rates held the traffic inbound to the line on which it had moved out. The practice, however, is general, not being limited to competitive situations. The board has approved standard passenger rates which are legally filed and published. The question is raised whether, this having been done, the board

has power, in respect of traffic moving on said rates, to direct that a round trip rate shall enjoy a charge less than the sum held lawful where each portion of the journey is performed as an isolated unit, having no connection with a return.

"It is contended, on the one hand, that the round trip rate arrangement is a special rate arrangement, and that where such a rate arrangement has once been put in by a railway, the board has the same jurisdiction it has in regard to special rates generally. It was submitted in argument that the reduction from the sum of the rates was a concession which it was not obligatory on the part of the railways to give, and that, from the standpoint of principle, the railways would be within their legal rights in making no reduction. In substance, it was contended that the reduction on the round trip was in the nature of a privilege. Inferentially, this claims an analogy with the "privilege," e.g., of milling in transit and analogous arrangements, where the railway may initiate or terminate such an arrangement subject to the inhibitions against discrimination.

"The jurisdictional point involved is not free from difficulties. The Railway Act is silent on the question of round trip passenger rates. The special freight rates to which reference is made by way of analogy are concerned with a movement in one general direction. At the same time, the incidents attaching to some of these special rates, e.g., stop-off arrangements of various kinds, are matters which are not specifically set out in the Railway Act. It does not appear necessary, however, to pass on the jurisdictional matter. The main argument was directed to the merits.

"The railways contended that the amendment made was justified by increased costs. Reference was made to the freight rate increase allowed under order in council 1,863, and it was set out that the increases obtained thereunder fell short of the increased costs under the McAdoo award. Reference was made to the additional wage increases which have since been made. It was set out that the increase herein involved was so slight that even with it passenger traffic is "still far from bearing its adequate proportion of the added expenses of the railway companies." While there was contention as to the exact amount of traffic affected by round trip rates, it would appear from the statistics submitted, as to representative points, that they affected approximately one-third of the passenger movement. On this basis, the increase represents a diminution from a 16.6% reduction to a 10% reduction on one-third of the traffic.

"The material submitted as to costs both at the hearing and in written submissions is corroborative of what has been placed before the board in other connections. The material so submitted was subjected to a careful analysis and criticism by T. Marshall for the Toronto Board of Trade. Giving weight to the criticisms so advanced, it still appears that the railways have successfully borne the burden of proof placed on them and that the board would not be justified in disallowing the round trip arrangements herein involved."

In accordance with the foregoing judgment, order 26,791 was passed Sept. 13, dismissing the complaint.

Absorption of Switching Charges.

28,693. Aug. 15. Re application of the National Elevator Co., Winnipeg, for a ruling re absorption of switching charges by a railway company, in cases where a car of grain is shipped from the applicant's elevator at Port Arthur, on the Canadian National Rys., and then switched over to the C.P.R. and billed to Cartier for orders, the applicant paying a stop-off charge and then re-billing the car to Montreal or Quebec, or other common destination: Upon hearing the application at Ottawa, Oct. 29, 1918, in the presence of counsel for Canadian Pacific and the Canadian National Rys., and what was alleged, it is declared that, under the provisions of the tariff now in effect, grain consigned to Cartier "for orders," whence it is ordered to a final destination common to the Canadian Pacific and Canadian National Rys., or their connections, is entitled to the same absorption of interswitching charges as if it had been consigned through from Port Arthur or Fort William to its ultimate destination.

Demurrage on Grain at Keewatin.

28,708. Aug. 29. Re application of State Elevator Co., Winnipeg, for a refund of demurrage charges made by the C.P.R. on grain at Keewatin, Ont. Upon hearing the application at Winnipeg, Mar. 3, 1919, the Canadian Freight Association being represented, no one appearing for the applicant company, and what was alleged; and upon the report and recommendation of the board's Chief Traffic Clerk, it is ordered that the application be dismissed.

Commercial Travellers' Rates.

28,809, Sept. 20. Re order 27,718, Sept. 28, 1918, made upon the complaint of the Dominion Travellers' Association, the Northwestern Canada Travellers' Association of Montreal, and the Commercial Travellers' Association of Canada, Toronto, and suspending certain schedules of the Quebec, Montreal and Southern and the Napierville Junction Railways, cancelling reduced fares and special baggage allowance for commercial travellers: Upon hearing the matter at Ottawa, Oct. 16, 1918, the complainants, the Ontario commercial travellers, and the railway companies being represented at the hearing, and what was alleged; and upon reading the further submissions filed, it is ordered that the following schedules, cancelling reduced fares and special baggage allowance for commercial travellers, be disallowed, viz:

Quebec, Montreal & Southern Ry., supplement 6 to C.R.C., 160; supplement 1 to C.R.C., 236; supplement 2 to C.R.C., 263.

Napierville Junction Ry., supplement 3 to C.R.C., 31; supplement 2 to C.R.C., 69; supplement 1 to C.R.C., 94.

Quebec Central Railway's Freight Tariff.

28,810. Sept. 22. Approving Quebec Central Ry.'s standard freight mileage tariff, C.R.C., 681.

Quebec Central Railway's Passenger Tariff.

28,811, Sept. 22. Granting application of Quebec Central Ry., under sec. 334 of the Railway Act, 1919, for approval of its standard passenger tariff, C.R.C., 174, on the basis of 3½c a mile:

Demurrage During Influenza Epidemic.

28,812, Sept. 17. The application of Imperial Oil Limited, of Sarnia, Ont., for a ruling in the matter of claims against the C.P.R. for a refund of demurrage charges which accrued during

the epidemic of Spanish influenza, on a shipment detained at Shawinigan Falls: Upon hearing the application at Ottawa, Sept. 16, 1919, Imperial Oil Ltd., the Canadian Car Demurrage Bureau, and the C.P.R., being represented at the hearing, and what was alleged, it is ordered that the application be refused.

Milling in Transit Rules.

28,813, Sept. 18. Re complaint of Dominion Millers' Association and Canadian Manufacturers' Association against new milling in transit rules filed by the railway companies operating in Canada east of Lake Huron and the Detroit and St. Clair Rivers, to become effective Sept. 1: Upon hearing the complaint at Ottawa, Sept. 19, 1919, the complainants, the Montreal and Toronto Boards of Trade, the Grand Trunk, Canadian Pacific and Canadian National Railways, and the Canadian Freight Association being represented, it is ordered that the complaint be dismissed.

Grand Trunk Pacific Ry. Co. Defaults in Its Interest Payments.

The Secretary of the London, Eng., committee issued the following circular, Aug. 29:

"As you are no doubt aware, the Canadian Government took possession of the Grand Trunk Pacific Ry. some months back, by the appointment of the Minister of Railways as receiver of the undertaking, and in consequence the London committee of the G.T.P.R. Co., have no funds at their disposal out of which to defray the interest due on Sept. 1, upon the 4% debenture stock.

"The committee ask me to express their regret in having to make this announcement, but they feel that you ought to have notice of the position, as up to the present they have no information from Canada as to what arrangements, if any, the receiver is prepared to make for payment of the interest. The committee cannot call upon the Grand Trunk Ry. Co. of Canada, under the guarantee given by it, until it is ascertained whether the net revenue of that company for the year ending Dec. 31 next shows a surplus available for the purpose after payment of fixed charges."

English Railway Appointments—Chas. Addington has been appointed General Manager, Great Western Ry., succeeding Frank Potter, who died recently, after being in the company's service since 1869, and General Manager for 7 years. Mr. Addington has been in the company's service continuously for 36 years, except from 1899 to 1902, when he was Traffic Superintendent, Central London Ry. He was appointed Assistant General Manager, G.W.R. last spring, immediately previous to which he was Superintendent of the Line. F. J. C. Pole, heretofore Assistant to the General Manager, has been appointed Assistant General Manager, G.W.R. W. J. Grinling, Chief Traffic Manager, Great Northern Ry., has resigned after being in the company's service since 1871, and occupying his recent position since 1902.

Capreol Railway Y.M.C.A.—Tenders are reported to have been asked for the erection of a railway Y.M.C.A. building at Capreol, Ont., at an estimated cost of \$75,000. The building was planned originally by the Canadian Northern Ry. and is said to have been approved by the Canadian National Rys. management.

Canadian Pacific Railway Construction, Betterments, Etc.

Chateau Frontenac Extension—A Quebec press report states that it is expected that work will be started early next spring upon the foundations for a new wing of the Chateau Frontenac at Quebec.

Three Rivers Station—A perspective view of the exterior of the station to be built at Three Rivers, Que., together with a plan of the ground floor lay out in contrast with the present station's layout were given in Canadian Railway and Marine World for September. A short general description of the building was also given, and we are now enabled to give the following information as to the dimensions. The total length will be 127 ft., the width of the center block being 55 ft., and of the 2 wings, 35 ft. The central block will contain a general waiting room 50 x 70 ft., smoking room, ticket offices, news stand, women's waiting room, and lavatory accommodation. The two waiting rooms will be each 20 x 26 ft. The left wing will contain a buffet dining room, 56 x 32 ft., with seating capacity for 50, the kitchen being at the extreme end. The right wing will contain a baggage office and room 49 x 32 ft., and connected with this by a covered way will be the express room, 62 x 32 ft. The exterior is designed in the French chateau style. The building will have a concrete foundation, brick walls, reinforced concrete floors and roof, steel frame, main walls of Citadel, Quebec, brick, trimmed with Deschambault limestone, copper roof. The main waiting room walls will be marble wainscote and Caen stone or marble above tile floor. The lunch room and lavatories will be finished with marble dadoes and tile floors. The wood trimming generally will be red oak.

Place Viger Hotel—A Montreal press report states that the company proposes to rebuild the Place Viger Hotel, converting it into a 10 story building.

Wymark to Archive—A press report states that J. Sandgren, has arrived at Wymark, Sask., with his contracting outfit, and is preparing to start work on grading towards Archive, for 25 miles. J. Armstrong is reported to be making agreements with farmers along the route for men and teams. The general contract for the work was let to J. W. Stewart Construction Co., Vancouver, B.C.

Leader to Cantaur—A press report states surveys for a projected line from Leader, Sask., on the Swift Current-Empress-Bassano line, to the Bech Stich Lake, and thence to a junction with the same branch at Cantaur, Sask., have been completed, and that construction will be started at an early date. (Sept., pg. 489).

The Railways and Canals Department is reported to be undertaking a survey in survey in the neighborhood of Cardinal for the construction of a canal to take the place of the present system of canals between Cardinal and Cornwall. This work, it is stated, is to be undertaken, owing to the impossibility of accommodating Welland Canal size vessels farther down the river than Prescott on account of the size of the canal locks. The plan which is said to be under consideration, will do away with the locks at Cardinal, Morrisburg, Farran's Point and Cornwall, and will provide a new canal back from the river.

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

Alaska—The U.S. House of Representatives on Sept. 6, voted an additional appropriation of \$170,000,000 to complete the construction of the government railway from Seward to Fairbanks, Alaska. The original appropriation was \$35,000,000, but the increased cost of labor and materials during the last five years has necessitated the additional expenditure. The main line is completed for 227 miles at one end, and for 106 miles at the other, with a gap of 138 miles between. The first section, with 32 miles of branch lines, serves the ports of Anchorage and Seward, with the interior settlements of Matanuska, Wasitla, Talkertua and the Mabanuska coal fields, while the second section, with 37 miles of branch lines, serves Fairbanks and Nenana, with their coal fields.

The present position of construction is 371 miles of line have track laid, and are being operated, and 34.5 miles of sidings are in place. Construction is in progress in various stages on other portions, but there is a gap between miles 265 and 365 from Seward, upon which no work has been done. (Aug., pg. 431).

Athabasca, Grande Prairie, Fort Vermilion Ry.—The failure of the application to the Dominion Parliament for the incorporation of a company with this title at the first session this year, was recalled in the Senate, Sept. 4, when Sir James Loughheed stated that an order in council, dated July 1, authorized the cancellation of 8 coal mining leases dated Aug. 29 and 30, 1918, issued in favor of A. E. Austin, W. Barnett, R. W. McClung, A. H. Weir, C. W. Coppock, G. E. H. Hauff, J. A. Leask and W. R. Gouin, all of which had been assigned Jan. 27, 1919, to C. A. Barnard, K.C., Montreal, and A. T. Shillington, M.D., Ottawa. The leases had accordingly been cancelled, and the rights described in the same had been reserved to the crown. C. A. Barnard, is a member of the legal firm who acted for the promoters of the company, among whom was Dr. Shillington. (Aug., 1919, pg. 433).

Calgary South Western Ry.—We are officially advised that it has been decided not to do any construction on this projected railway from Calgary, to the coal fields in Sheep Creek district of Alberta at present. Should the conditions then warrant it, construction may be started early in 1920. (July, pg. 381).

Dolly Varden Mines Ry.—A Vancouver, B.C., press report of Sept. 3, states that the railway from the Dolly Varden and Wolfe mines in the Kitsault River valley to the sea coast on Alice Arm, B.C., 18 miles, has been completed and was opened for traffic Aug. 28. The railway is to be used mainly for mineral traffic. The work has been done by the Taylor Engineering Co., which took over the entire property early in the year. (Aug., pg. 431).

Edmonton, Dunvegan and British Columbia Ry.—Application is being made to the Board of Railway Commissioners for a recommendation to the Dominion Government to sanction an agreement entered into between the company and the Alberta and Great Waterways Ry., May 3, 1918. The Edmonton, Alta., Board of Trade's council is giving consideration, through a special committee, to the position and prospects of the E. D. and B.C.R., and its subsidiaries, the Alberta and Great Waterways Ry. and the Canada Central Ry. The physical

condition of the E.D. and B.C.R., including its branch to the Grande Prairie District, is unsatisfactory and the committee has been in consultation with the Alberta Government as to steps to be taken to have it put in condition for operation. A solution of the problem has not yet been received, but it was reported, Sept. 10, that a certain amount of work was being done on the worst parts of the line, to ensure safe operation, and that the additional rolling stock and motive power necessary would be obtained from other railway companies.

The question of the extension of the line to Dawson, Yukon, has been considered, on the invitation of the Dawson people, but the committee declined to express any opinion upon it, until the line from Edmonton to the Grand Prairie district is put in good condition. (Aug., pg. 431).

Esquimalt and Nanaimo Ry.—We are officially advised with respect to a recent press report that tenders would shortly be invited for the construction of a 12 mile extension from near Alberni towards the Great Central Lake, that the proposed extension will start from the present line at a point between Bainbridge and the Alberni terminus. The route has been located as far as Great Central Lake, about 12 miles; the surveys having just been completed. No date has been fixed for starting construction. The extension will be built to the same standard as the existing line to Alberni. When completed the extension will form part of any line to be built in the future to Ucluelet and Clayoquot, in one direction and to Comox Lake in another. No construction is contemplated at present beyond Great Central Lake. (Sept., pg. 491).

Grand Trunk Ry.—A press report states that negotiations are in progress for the erection of a coal terminal at Prescott, Ont. It is stated that it is proposed to operate a car ferry from Ogdensburg, N.Y., to Prescott, to carry coal and other freight cars over the river, and distribute them thence to eastern Ontario points. (Sept., pg. 491).

Kettle Valley Ry.—A recent press report states that J. J. Warren, President and General Manager, and A. McCulloch, Chief Engineer and General Superintendent, have completed an inspection of the proposed route for an extension of the line southerly, and that it is likely that construction will be started in 1920. (Sept., pg. 491).

Newfoundland Railway Extension—A press report states "it is understood that a railway will be constructed from Port aux Basques to Curling, Nfld., 130 miles." Port aux Basques is the terminus of the Reid Newfoundland Ry., whence steamship connection is maintained with Sydney, N.S., and Curling is a station on the line at mile 406 from St. John's. The mileage of Port aux Basques from St. John's is 546, the present railway distance between that point and Curling being 140 miles.

Pacific Great Eastern Ry.—A. F. Proctor, Chief Engineer, returned to Victoria, B.C., recently, after having completed an inspection trip over the line. He is reported to have said that track had been laid at the line of his visit to within 19 miles of Williams Lake, townsite and that it was expected to reach that place with the track by Sept. 15. This is expected to be the extent of tracklaying work this

year. Beyond Williams Lake a gang is putting in the foundations for the bridge over Deep Creek, a structure which is estimated to cost \$500,000. This work will be completed early in 1920, when track will probably be laid to the Fraser River at a point whence navigation is open to Prince George. (Sept., pg. 491).

Pas, Man., Northwesterly—A Winnipeg press of Sept. 25 stated that the Premier of Manitoba, on his return from Ottawa, announced that he had met with considerable success in impressing the Dominion ministers with the necessity of providing railway connection with the mining district northerly from Pas, Man. The projected line would be about 75 miles long, and it has been reported from Winnipeg that in the event of the Dominion Government declining to build the line the Manitoba Government would consider the feasibility of constructing it. This is probably the same line a project for the construction of which was submitted to the Canadian National Rys. directors in March, by the Flin Flan Mining Syndicate.

Quebec and Saguenay Ry.—We are officially advised that during this year about 30 miles of track has been laid with steel rails, and that its ballasting has been completed. (Sept., pg. 491).

The St. John and Quebec Ry. is now completed and in operation between Centerville and Westfield, N.B., has a total length of 158 miles, and is reported to have cost approximately \$7,400,000. The most important piece of work on the line from an engineering standpoint was the rock cut at Nerepis, which cost about \$1,500,000. The gradient is 0.4% to Westfield, the junction with the C.P.R., over which the through trains are operated into St. John. The gradient on the C.P.R. section operated over is 1%, and the length of the section is 14 miles. (Sept., pg. 491).

Algoma Central and Hudson Bay Ry. and Algoma Eastern Ry. Reports.

The Lake Superior Corporation director's report for the year ended June 30, deals with the operation of the Algoma Central and Hudson Bay Ry., and the Algoma Eastern Ry., as follows: The Algoma Central & Hudson Bay Ry. net earnings for the year, after depreciation, were \$263,293, against \$439,218 in the previous year. The decrease was largely due to falling off in freight traffic which, prior to the armistice, had consisted largely of munitions and raw materials for war supplies. Industrial development and settlement is proceeding along the line and should provide additional revenue.

The Algoma Eastern Ry. shows a deficiency for the year of \$31,076, against a deficiency for the previous year of \$130,615. Temporary shut-down in mineral production along the line decreased the earnings, but these operations are to be immediately resumed.

A committee of directors visited London in July and reached a tentative agreement with the Algoma Central Ry., and Algoma Central Terminals bondholders committee with a view to settling the Lake Superior Corporation's obligations under its guarantee of principal and interest. Full interest is being paid on the corporation's income bonds.

Re-employment of Returned Soldiers by Canadian Pacific Railway.

The re-employment of returned soldiers has been carried out by the C.P.R. so whole-heartedly that, according to the official records up to the end of August, actually more returned soldiers have been given employment than left the company for service overseas. The figures are as follows:

Total reported as joining the army.....	10,538
Dead	1,000
Wounded	1,952
Re-employed in the service.....	5,024
Other soldiers given employment.....	5,543
Total soldiers given employment to date.....	10,567

In finding employment for returned soldiers, the C.P.R. has found by experience that in most cases it is advisable to reinstate them in the same department as that in which they worked previous to enlistment. The freight handler, who has ambitions to become a dining car waiter, is not encouraged to change his vocation unless he can prove that he learned some thing about waiting, for instance, at an officers' mess during his military life. His military experience has probably made him a better man than before for handling freight, but has not qualified him for the skilled trade of a dining car waiter. Baggage men who have served in the army come back as a rule all the better for their experience, but the army training has not qualified them to be sleeping car conductors or ticket clerks, and if they prove to be misfits at a new job the only result is friction and discontent. The general experience, however, is that the normal returned man who goes back to his old or a similar job is all right, indeed is often improved by the discipline and teamwork which he has learnt in the army. The C.P.R.'s policy is to find a position for a returned man at least as good as the position given up, and this policy has been carried out in the higher ranks of the service as well as in the lower ranks. The following are examples:

T. S. Acheson, who was General Agricultural Agent at Winnipeg, enlisted in Oct., 1915, and was re-employed in the same capacity Jan. 1, 1919.

G. W. Curtis, who was Industrial Agent at Montreal, enlisted in Nov., 1916, and was re-employed Jan. 1, 1919, in the same capacity.

M. L. Duffy, who was Chief Clerk, Freight Department, London, Eng., enlisted October, 1914, and was re-employed Mar. 1, 1919, as Agent at Glasgow.

F. A. Gascoigne, who was Superintendent of Car Service, Montreal, enlisted July, 1915, and resumed duty as Secretary-Treasurer, Canadian Pacific Ocean Services Ltd., Montreal, Oct., 1918. He is now Lieut.-Col. Gascoigne, D.S.O.

Gerald Hiam, who was District Freight Agent at Fort William, enlisted in June, 1915, and returned to duty Mar. 15, 1919, as District Freight Agent, at Cleveland, Ohio.

W. M. Kirkpatrick, who was Assistant Freight Traffic Manager, at Montreal, and enlisted in Sept., 1915, resumed duty Feb. 1, 1919, as Assistant Freight Traffic Manager at Winnipeg. He is now Major Kirkpatrick, M.C.

T. M. Leask, who was Chief Surgeon, Moose Jaw, Sask., enlisted in Feb., 1916, and resumed duty as Chief Medical Officer at Moose Jaw, June 1, 1919.

B. H. Muckleston, who was Division Engineer, Natural Resources Depart-

ment, Calgary, Alta., enlisted in April, 1916, and resumed duty, as Division Engineer, Mar. 17, 1919.

G. G. Ommanney, who was Special Assistant Engineer, Montreal, enlisted in Aug., 1915, and resumed duty as Assistant Engineer, Chief Engineer's Department, Montreal, July, 1919.

L. C. Ord, who was Assistant Works Manager, Angus shops, Montreal, enlisted in Sept., 1915, and resumed duty in the same capacity in May, 1919.

C. W. P. Ramsey, who was Engineer of Construction, Montreal, and who took command of the Canadian Overseas Railway Construction Corps in Feb., 1915, resumed duty as Relieving Superintendent on Eastern Lines in Mar., 1919. He is now Col. Ramsey, C.M.G.

M. J. Robertson, who was Assistant to Manager, Real Estate Department, Montreal, enlisted in June, 1916, and returned to duty in his former position in Mar., 1919.

H. B. Yewdall, who was Purchasing Agent, Right of Way Department, Winnipeg, enlisted in Nov., 1914, and resumed his former position in June, 1919.

The British Commander in Chief's Special Train.

Owing to the abolition of censorship, the following information is now available: On April 10, 1917, the London and North Western Ry. of England, was asked to provide a train of 10 cars for the Commander in Chief of the British Army and his staff in France. Five cars left Wolverton on May 5, and the remaining five on May 12, so that the complete train of 10 cars was provided in a month from the date of the order. A further request for 4 additional cars was received later, and these were fitted up and sent out on July 20, 1917.

Car 1 comprised a dressing-room, bedroom and sitting room for the Commander in Chief; no. 2 a bedroom, bathroom and office for the Chief of Staff and his assistants; nos. 3, 4, 5 and 6 provided sleeping and office accommodation generally. No. 6 had an assembly room, and was placed next to the officers' mess car, no. 7. No. 8 was the kitchen car, and this also contained the electric lighting set and accumulator room. No. 9 was a car for officers' orderlies, servants, etc. No. 10 provided more sleeping accommodation, chiefly for junior officers. No. 11 gave a large office, and an officers' bed and bathroom. No. 12 was a telegraph and telephone vehicle. No. 13 was a stores van, and in this was fitted a small locomotive boiler for providing steam to heat the train when standing. No. 14 was an ordinary brake van for stores and other impedimenta. With the exception of the telephone and the two brake vans, the whole of the cars were converted from 42 ft. x 8½ ft. bogie picnic saloons taken from stock, and, so far as lights and doors were concerned, lent themselves very well to the scheme without much structural alteration.

The train was electrically lighted by a petrol driven lighting set, steam heated by the locomotive when running and by a boiler fitted in the brake and stores car when standing, and was fitted with Westinghouse brakes. The telegraph and telephone car was fitted up with the ne-

cessary instruments, etc., by the General Post Office Engineering staff, but the vehicle itself and all furniture, counters, etc., were provided by the railway. There was telephone and bell communication throughout the train, and means were provided and cable carried on the telephone car for connecting up to any telegraph and telephone system in proximity to the train.

The interior painting was principally white enamel, while the exterior was finished off in lead color. Ventilation was studied, and there is an ample supply of fans and roof ventilators, while all the drop lights were fitted with louvres and gauze that could be used in the opening when lights were dropped.—Railway Magazine.

Arm the Railway Mail Clerks.

Dispatches about the robbery of the Ocean Limited on the Canadian National Rys., 25 miles below Levis, indicate that \$100,000 was stolen. It is stated that the Postoffice Department regulations forbid mail clerks from carrying arms of any kind, and that the only weapon they had when attacked was a penknife. Such an improvident regulation ought to be rescinded at once. The railway clerks are entrusted every day with large sums of money, and important and negotiable documents, and they ought to be provided with the means of defending their trust. Bank clerks, express messengers, and others in charge of valuables are well armed for such emergencies, though the fact seems to be forgotten sometimes. The courage of the bank manager at Agincourt, near Toronto, and his woman assistant recently, in fighting off two burglars, will remind the underworld for many a day of the danger they run in attacking these institutions. On the other hand, the Postoffice Department's announcement that the railway mail clerks are unarmed will invite another attack, particularly when it is added that the amount carried on that train frequently runs up to \$200,000—Toronto Globe.

Coal Shipments From United States—

The Canadian Railway War Board has issued the following circular:—Reports received by the board indicate that the shipment of coal from mines in the United States is being reduced as a result of insufficient car supply. Any serious shortage in the output of coal will mean a corresponding reduction in the amount of fuel shipped on Canadian orders. Canadian consumers, including both the public and the railways, can assist in avoiding or reducing the anticipated fuel shortage by eliminating all unnecessary delay in the handling of coal cars. The railways are requested, therefore, to bring to the notice of all consignees concerned the vital importance of unloading cars within the shortest possible space of time. Hopper or self-clearing cars must, immediately upon release, be returned empty to the United States lines designated by existing orders of the U.S. Railroad Administration. Flat bottom cars may be used for return loading to U.S. points in accordance with current instructions when such loading will not involve undue delay.

The Caraquet and Gulf Shore Ry., has asked the Dominion Government to disallow an act passed at the New Brunswick Legislature's last session, ordering the making of certain repairs and the provision of an adequate train service.

Railway Rolling Stock Orders and Deliveries.

The C.P.R. has ordered 1 van, 29 ft. long from its Winnipeg shops.

The Canadian Car & Foundry Co. has received an order for 15 car underframes and trucks from Bliss, Dallett & Co., New York, for Dorado Extension Ry., a European company.

The C.P.R., between Aug. 14 and Sept. 17, received 7 steel baggage and express cars, 70 ft. long, 1 steel tourist car, 6 freight refrigerator cars and 4 Pacific type locomotives from its Angus shops, Montreal.

The G.T.R., between July 11 and Sept. 11, received one switching locomotive from its Montreal shops, completing an order for 20 and 44 steel frame box cars, 2 steel frame stock cars and 9 all steel mail cars from Canadian Car & Foundry Co.

The National Steel Car Co. has received an order from the Government of Jamaica for 30 box cars, 30 tons capacity each, and delivered, between Aug. 14 and Sept. 12, 146 stock cars and 96 box cars to Canadian National Rys., and continued deliveries of railway material to the Federated Malay States Government Rys., the Paris Lyon, and Mediterranean, and the Midi Rys. (France).

The Canadian Car & Foundry Co., between Aug. 15 and Sept. 23, delivered 10 tourist car frames, completing an order for 30, and completed 20 tourist cars at its Montreal shops, and 213 stock cars at its Amherst, N.S. shops for Canadian National Rys., 42 box cars and 9 hopper cars for the Grand Trunk Ry., and 441 repaired cars, out of an order for 1,500 repaired cars, for Grand Trunk Pacific Ry.

The 44 box cars which the G.T.R. has received from Canadian Car & Foundry Co. are single sheathed, with steel superstructure and underframe, outside metal roof, friction draft gear, and Westinghouse K.C., 8 x 12 air brake, and the 2 stock cars also received from Canadian Car & Foundry Co., are open single sheathed with inside metal roof. The general dimensions of both types are:

Length inside clear.....	36 ft.
Length over end sills.....	37 ft. 2 1/2 in.
Length over striking plate.....	37 ft. 11 1/2 in.
Length center to center of bolster.....	26 ft. 10 in.
Length center of bolster back to end sill.....	5 ft. 2 1/4 in.
Width inside clear.....	8 ft. 6 1/2 in.
Width over side sills.....	8 ft. 9 1/2 in.
Width over all at eaves.....	8 ft. 11 1/2 in.
Width of door opening.....	6 ft.
Height from top of floor clear.....	8 ft.
Height rail to center of coupler.....	2 ft. 10 1/2 in.
Height rail to side sill channel.....	3 ft. 3 1/4 in.
Height rail to top of floor.....	4 ft. 1 in.
Height rail to eaves.....	12 ft. 4 in.
Height rail to top of running board.....	12 ft. 11 1/2 in.
Height rail to top of brakemast.....	13 ft. 11 in.
Height of door.....	7 ft. 7 15-16 in.

The 9 mail cars which the G.T.R. is having built by Canadian Car & Foundry Co. will be of the 6 wheel cast steel truck type with M.C.B. axles 5 x 9 in., and Simplex type of clasp brake; underframes of the fish belly type, center sills, bolsters and crossbearers of pressed steel, steel platform castings and pressed steel floor beams; superstructure of steel plate, reinforced with pressed channel posts and special rolled belt rail; wood roof, with roofing canvas for upper and lower deck; Westinghouse automatic air brake with hand brake at each end; Safety Car Heating & Lighting Co.'s electric light system with body hung generator; Vapor Car Heating Co.'s heating system, with an emergency stove; Mudge peerless ventilating system. All the interior fittings, are in accordance with the Canadian railway mail service specifications for mail cars. Following are the chief dimensions:

Length over couplers.....	63 ft. 7 1/2 in.
Length over end sills.....	60 ft. 10 in.
Width over side sills.....	9 ft. 9 1/2 in.
Width at eaves.....	10 ft. 2 1/4 in.
Height from rail to side sill.....	3 ft. 7 7/8 in.
Height from rail to eaves.....	11 ft. 2 1/2 in.
Height from rail to top of roof.....	14 ft. 1 1/2 in.

The 9 dining cars which Canadian National Rys. have on order with Canadian Car & Foundry Co., will be of steel throughout, except the interior, which will be of quarter sawn oak, and the roof, which will be of poplar, with canvas for upper and lower decks. The steel underframe will be with center sill of the built up fish belly type, with pressed steel bolster and cross bearer, steel platform castings, with pressed steel floor beams. The braking system will comprise Westinghouse automatic air brakes type L.N. 18-12, with hand brakes at each end, one being operated from the inside and the other from the outside. The cars will be equipped with electric lighting system, with body hung generators, air pressure water raising system, Mudge peerless ventilating system, with one exhaust fan and a hurricane ventilator in the kitchen. Following are the chief dimensions:

Length over end sills.....	73 ft. 6 in.
Width over side sills.....	9 ft. 9 1/2 in.
Width at eaves.....	10 ft. 2 1/4 in.
Length of car coupled.....	81 ft. 10 1/2 in.
Truck centers.....	57 ft. 6 in.
Truck wheel base.....	11 ft.
Total wheel base.....	68 ft. 6 in.
Height from rail to side sill.....	3 ft. 7 7/8 in.
Height from rail to eaves.....	11 ft. 2 1/4 in.
Height from rail to top of roof.....	14 ft. 1 1/2 in.

The 20 mail cars which Canadian National Rys. are having built by Canadian Car & Foundry Co., will be of steel throughout except the roof and interior fittings. The trucks will be of the 6 wheel type of cast steel with 5 x 9 in. M.C.B. axles and Simplex clasp brake. The underframe will be of the built up fish belly type center sills, with bolsters and cross bearers of pressed steel. Platform castings will be of steel with pressed steel floor beams. The superstructure will be of steel plate reinforced with pressed steel posts and special rolled shape belt rail. The roof will be of wood with canvas roof for upper and lower decks. Westinghouse automatic air brake with hand brake at each ends will be supplied, and the lighting will be the United States Heating and Lighting Co.'s system with body hung generators. Mudge peerless ventilators will be used, and all interior fittings will be in accordance with the requirements of the Canadian railway mail service specification for mail cars. Following are the chief dimensions:

Length over end sill.....	73 ft. 6 in.
Width over side sill.....	9 ft. 9 1/2 in.
Width at eaves.....	10 ft. 2 1/4 in.
Height from rail to side sill.....	3 ft. 7 7/8 in.
Height from rail to eaves.....	11 ft. 2 1/2 in.
Height from rail to top of roof.....	14 ft. 1 1/2 in.

The 20 first class passenger cars which Canadian National Rys. has on order with Canadian Car & Foundry Co., will be of steel throughout except interior finish and roof. The steel underframes will have center sill of the built up fish belly type with pressed steel bolsters and cross bearers; platform castings of steel and pressed steel floor beams. The vestibule will be of the wide type with 33 in. steps at each end of the car, Westinghouse air brakes with hand brakes at both ends will be supplied, and the

Safety Car Heating and Lighting Co.'s system of electric lighting with body hung generators, and the Vapor Car Heating Co.'s duplex coil hot water heating system with thermostat control, will be used. Gravity water system with other well tanks will be installed, also Mudge peerless ventilators. The seats in the general section will be upholstered in standard plush, and in the smoking room in leather. Following are the chief dimensions:

Length over end sill.....	73 ft. 6 in.
Width over side sill.....	9 ft. 9 1/2 in.
Width at eaves.....	10 ft. 2 1/4 in.
Length of car coupled.....	81 ft. 10 1/2 in.
Truck center.....	57 ft. 6 in.
Truck wheel base.....	11 ft.
Total wheel base.....	68 ft. 6 in.
Height from rail to side sill.....	3 ft. 7 7/8 in.
Height from rail to eaves.....	11 ft. 2 1/4 in.
Height from rail to top of roof.....	14 ft. 1 1/2 in.

The 18 sleeping cars which Canadian National Rys. have ordered from Canadian Car & Foundry Co., are being built under the general scheme of standardization, adopted recently for passenger car equipment by the C.N.R., details of which have been given in previous issues. The construction will be of steel throughout, except the interior and the roof, the former being of figured mahogany, with small marquetry design on the berth fronts only, and the latter will be of wood, with canvas for upper and lower decks. The steel underframe will be of steel, with center sill of the built up fish belly type, with pressed steel bolster and cross bearer, steel platform castings and pressed steel floor beams, and wide vestibule with 33 in. steps at each end of the car. Westinghouse automatic air brakes, with hand brakes at both ends, will be supplied, also an electric lighting system, with body hung generators, Vapor Car Heating Co.'s duplex coil hot water heating system with thermostat control, and air pressure water tanks. The water for washstands will be heated by steam, controlled by the temperature regulator. The berth light switches and push buttons will all be arranged with radiant caps, making them visible in the dark, and the cars will be equipped with floor lamps, lighting the passage way at night for the convenience of passengers. Mudge peerless ventilators and also one exhaust fan will be installed. Following are the chief dimensions:

Length over end sill.....	73 ft. 6 in.
Width over side sill.....	9 ft. 9 1/2 in.
Width at eaves.....	10 ft. 2 1/4 in.
Length of car coupled.....	81 ft. 10 1/2 in.
Truck centers.....	57 ft. 6 in.
Truck wheel base.....	11 ft.
Total wheel base.....	68 ft. 6 in.
Height from rail to side sill.....	3 ft. 7 7/8 in.
Height from rail to eaves.....	11 ft. 2 1/4 in.
Height from rail to top of roof.....	14 ft. 1 1/2 in.

The 13 observation cars which Canadian National Rys. has on order with the Canadian Car & Foundry Co. will be of steel throughout except the interior, which will be figured mahogany and the roof will be of poplar with canvas roofing for upper and lower decks. The cars will be arranged with four compartments, one drawing room, one buffet, and one observation room, 25 ft. 2 3/4 in. long. The trucks will be of the 6 wheel type of cast steel with 5 x 9 in. axles and Simplex clasp brake. The underframe will be of steel throughout, center sills of built up fish belly type with pressed steel bolsters and cross bearers, steel platform, castings and pressed steel floor beam. There will be a wide type vestibule at one end and observation platform at the other end, with steps 3 ft. wide

and with special design of platform railing, which will be fitted with C.N.R. standard illuminated end sign. Westinghouse automatic air brakes will be supplied with hand brakes at both ends. The electric light system will be the Safety Car Heating & Lighting Co.'s system with body hung generators, and the heating will be by the Vapor Car Heating Co.'s duplex coil hot water system with thermostat control. The cars will be equipped with air pressure, water raising system, and the hot water, which will be heated by steam will be controlled

by a temperature regulator. Mudge peerless ventilators will be used for ventilation. The upholstery in the compartment will be in friezette and the cars in the observation room will be upholstered in Spanish leather. Following are the chief dimensions:

Length over end sills	73 ft. 6 in.
Length of car coupled	82 ft. 1½ in.
Truck centers	57 ft. 6 in.
Truck wheel base	11 ft.
Total wheel base	668 ft. 6 in.
Width over side sill	9 ft. 9½ in.
Width at eaves	10 ft. 2¼ in.
Height from rail to side sill	3 ft. 7½ in.
Height from rail to top of roof	14 ft. 1½ in.

Aerial Transportation Notes.

A. Baddeck, N.S., press report states that a hydroplane built there under the direction of Dr. Graham Bell, made a speed of 71 miles an hour on a recent test.

An aerial survey party, under Capt. Owen, is reported to have been landed on the Labrador shore, by the steamship Granville, which returned to Halifax, Sept. 7.

The British Columbia Department of Lands is reported to have had photographic survey of the head waters of Harris Creek, near Vernon, B.C., made by means of an aeroplane.

In Mar., 1918, the Liberty motor developed 432 h.p. for a weight of 808 lb., or 1.86 lb. per h.p. At present, the Liberty motor is developing a maximum of 450 h.p. for a weight of 825 lb., or 1.83 lb. per h.p.

The average consumption of fuel decreased from about 0.8 lb. per h.p. in 1903 to 0.55 lb. in 1918, and for the Liberty engine to 0.50 lb. The present consumption is about 0.46 lb. per h.p.

The dirigible R-33, sister ship to the airship which made the round trip between England and the United States recently, has completed a trip over the continent, visiting Holland, France and Belgium. The passengers were people interested in promoting commercial air navigation.

The Northern Canadian Traders Ltd., is being organized at Ottawa, with a capital of \$75,000 to explore and establish trading posts in the north lands of Canada, particularly in Ungava. E. L. Janney, formerly of the R.A.F., and others in Ottawa, are reported to be interested.

Mayor Gray of Winnipeg, is reported to have expressed the opinion that within the next 18 months an aerial mail and passenger service will be provided for the city, and that the question whether the Dominion Government or the city should provide the air docks will have to be given serious consideration in the near future.

A London, Eng., cable states that a committee of leading financial representatives has been appointed to discuss with the Imperial Air Ministry, the ultimate disposal of government air ships, the use of government aerodromes, and the extent of government assistance to be given for the development of commercial flying.

A New York press dispatch of Sept. 21 said that Carl Riddick a former member of the United States aerial air service, had left for Toronto to complete plans for the establishment of a daily passenger and mail aerial service between Toronto and New York, and that he intended to buy a plane in Toronto

with which to inaugurate the international service.

The route of the New York-Toronto and return aeroplane race carried out recently, was across Lake Ontario and on to Buffalo, thence to Syracuse and Albany, and thence to Moncton on Long Island, N.Y. The fastest trip was made in 564¼ minutes, by a Vought, VE-7 training plane, manned by Lieut. B. W. Maynard, and Major R. W. Schreider, of the U.S. army. According to regulations, these officers cannot accept the \$10,000 prize, was was consequently awarded to a Curtis JN-4 plane, piloted by R. H. Depew, a civilian.

The United States National Advisory Committee for Aeronautics has issued the development in airplanes which has been made since 1903. The first man carrying airplane flights were made in Dec., 1903, with the Wright Bros. engine, developing 12 h.p. and weighing 152 lb., or 12.7 lb. per h.p. In 1910, the average horsepower for aeronautic engines had increased to 54, and the weight had decreased to 5.7 lb. per h.p. After another seven years, in 1917, the average power output had advanced to 243 h.p., and the weight had decreased to 2.8 lb. per h.p.

Under the authority of the Act to Authorize the Appointment of an Air Board for the Control of Aeronautics, passed at the Dominion Parliament's first session this year, the following were appointed members of the Air Board, without salary: Hon. A. L. Sifton, Minister of Customs and Inland Revenue, Chairman; Col. O. M. Biggar, Judge Advocate General, Militia Department, Vice Chairman; Hon. C. C. Ballantyne, Minister of Marine and Naval Service; Hon. S. C. Mewburn, Minister of Militia; R. M. Coulter, Deputy Postmaster General; J. A. Wilson, Director of Stores, Naval Service Department; E. S. Busby, Chief Inspector, Customs and Inland Revenue Departments.

Confidential Information Not to Be Disclosed.—The Quebec Superior Courts decided recently that E. W. Beatty, K.C., President, C.P.R., was not in contempt in declining to answer questions put to him by a commission appointed to take evidence in Canada in a munitions case now before United States courts, the answering of which would involve the giving of confidential information which came into his possession as General Counsel, C.P.R., in 1915.

Steel Freight Cars for British Railway.—Cammell, Laird & Co., Sheffield, Eng., are reported to have acquired from the Imperial Government the ordnance factory operated during the war at Nottingham, and to be about to adopt it for building steel freight cars.

Grand Trunk Pacific Railway Operation by Receiver.

During the House of Commons current session, E. W. Tobin, M.P., for Richmond and Wolfe, Que., asked the following questions:

"1. Is the Grand Trunk Pacific Ry. still being operated by Hon. J. D. Reid, Minister of Railways and Canals, in his capacity of receiver?"

"2. If so, in virtue of what authority was he so appointed?"

"3. If by order in council, is it the intention of the government to introduce legislation during the present session to confirm the said order in council?"

The Minister of Railways, Hon. J. D. Reid, replied as follows:

"1. Yes.

"2. Order in council 517, dated Mar. 7, 1919, as amended by order in council 547 dated Mar. 13, 1919, and ratified and confirmed by act of parliament passed June 6, 1919, chap. 22, Statutes of Canada, 1919.

"3. Already confirmed by above mentioned act."

Railway Finance, Meetings, Etc.

Canadian Northern Ry.—There has been filed with the Secretary of State at Ottawa, duplicate original of collateral trust agreement dated Aug. 1, made between the C.N.R. Co. and Central Union Trust Co. of New York, securing an issue of 66 collateral trust gold notes.

Cumberland Ry. and Coal Co.—The National Trust Co., Montreal, recently invited proposals for the sale of 5% first mortgage bonds maturing Oct. 1, 1940, of the Cumberland Ry. and Coal Co., to be paid for by \$22,782,04 lying at the credit of the sinking fund under the terms of the trust deed of Oct., 1910.

Grand Trunk Pacific Ry.—The annual meeting of shareholders called to be held in Montreal, Sept. 16, was adjourned until further notice.

Timiskaming & Northern Ontario Ry.

	June, 1919	June, 1918
Passenger earnings	\$78,793.85	\$54,449.64
Freight earnings	167,977.65	150,056.74
Total earnings	246,771.50	204,506.38

Hudson Bay Enquiry.—The Senate on Sept. 5, on motion of Hon. G. W. Fowler, appointed a committee to take evidence and report at the current session upon the navigability and fishery resources of Hudson Bay and Strait, and upon the character of the ports of Hudson Bay with regard to their fitness as railway terminals. The committee consists of Senators Bostock, Casgrain, Dandurand, Damel, De Veber, Fowler, Loughheed, Michener, Schaffner, Sharpe, Watson and Willoughby. A similar committee was appointed during the 1918-19 session, but although a considerable volume of evidence was taken, the session came to a termination before the committee completed its work. A suggestion was made, but not acted upon, that the committee be authorized to continue its work after the close of the session and to make a report when ready. The present committee will have before it the work done by its predecessor.

The Board of Grain Supervisors for Canada, has issued notice that it will conclude its operations at an early date and close up all financial matters in which it is concerned. Accounts should be sent to the Secretary, 325 Grain Exchange Building, Winnipeg, before Nov. 1.

Mainly About Railway People Throughout Canada.

J. E. Armstrong, M.P., for East Lambton, Ont., was re-elected chairman of the House of Commons' committee on railways, canals and telegraph lines at the current session.

W. R. Baker, C.V.O., ex-Secretary, C.P.R., and Mrs. Baker, expect to leave Montreal for Europe shortly.

E. W. Beatty, President, C.P.R., has given \$10,000 to assist in paying off the Vancouver General Hospital's debt. He has taken A. E. Holt's house, 570 Pine Ave. West, Montreal, for the winter. On Oct. 15 he will be installed as Chancellor of Queen's University, Kingston, Ont.

Lady Bury, wife of Sir Geo. Bury, ex-Vice President, C.P.R., and now President, Whalen Pulp & Paper Mills Ltd., Vancouver, B.C., has gone on a trip to Japan, accompanied by her son, Major G. A. E. Bury, and his wife.

A. B. Calder, Assistant General Passenger Agent, C.P.R., Montreal, who is representing the company's President, E. W. Beatty, on the company's special train during the Prince of Wales' Canadian tour, gave two luncheons while in Winnipeg, en route to the west. **D. C. Coleman, Vice President, Western Lines**, was the chief guest at one of them, and **C. E. McPherson** at the other, the representatives of overseas newspapers accompanying, the Prince being at both. Mr. Calder was born at London, Ont., Aug. 24, 1867, and from 1882 to 1887 was in various capacities on C.P.R. construction west of Brandon, Man. He entered C.P.R. service in 1887, since when he has been, to 1889, in Passenger Department, Winnipeg; 1889 to Oct., 1893, ticket clerk, Tacoma, Wash.; Oct., 1893 to July, 1895, Travelling Passenger Agent, Tacoma, Wash.; July, 1895 to Dec., 1897, Travelling Passenger Agent, San Francisco, Cal.; Dec., 1897 to Nov., 1904, Travelling Passenger Agent, Tacoma, Wash.; July, 1895 to Dec., 1897, Travelling Passenger Agent, San Francisco, Cal.; Dec., 1897 to Nov., 1904, Travelling Passenger Agent, Seattle and Tacoma, Wash.; Nov., 1904 to Nov., 1910, General Agent, Passenger Department, Seattle, Wash.; Nov., 1910, to Sept., 1911, General Agent, Passenger Department, Chicago, Ill.; Sept. 1, 1911 to Jan., 1916, associated with his father in a general ticket agency at Winnipeg, and since Jan., 1916, Assistant General Passenger Agent, C.P.R.

Mrs. A. D. Cartwright, wife of the Secretary, Board of Railway Commissioners, returned to Ottawa early in September, with her son, after spending several weeks at the Pacific coast.

Hon. F. B. Carvell, Chief Commissioner, Board of Railway Commissioners for Canada, presided, for the first time, at the board's sitting in Ottawa, Sept. 16.

Mrs. H. R. Charlton, wife of the General Advertising Agent, G.T.R., returned to Montreal early in September, after spending some time at Old Orchard Me.

H. R. Charlton, General Advertising Agent, G.T.R., who will represent the company during the portion of the Prince of Wales' Canadian tour over its line, was born Feb. 6, 1866, and after engaging for three years in newspaper work at St. John's, Que., was on railway survey work in 1883 and 1884, on the Waterloo and Magog Ry. He was in commercial business in St. John's, Que., until 1887, when from Feb. to June he travelled with the C.P.R. exhibition car, and after four years of newspaper work

was given charge of the C.P.R. advertising department in April, 1891, remaining there until April, 1896, when he again went into business. In Jan., 1898, he was appointed to his present position as advertising agent of the G.T.R., and was subsequently appointed to act in a similar capacity for the Grand Trunk Pacific Ry. He has been the company's representative on various Canadian tours of important personages during the last 20 years. Following Prince Fushimi's visit to Canada, the Emperor of Japan gave him the Order of the Sacred Treasure.

Hon. Francis Cochrane, M.P., until recently, Minister of Railways and Canals, died of Bright's disease, at Ottawa, Sept. 22, after a long illness. He was born at Clarenceville, Que., Nov. 18, 1852, and for many years conducted a hardware business at Sudbury, Ont., and was also largely interested in mining, lumbering and other industrial operations. He serv-



Capt. A. H. Kendal, M.C.,
Master Mechanic, Quebec District, Canadian Pacific Railway.

ed several terms as mayor of Sudbury. In June, 1905, he was elected to the Ontario Legislature as member for East Nipissing and in 1908 was elected for Sudbury. He was appointed Minister of Lands and Mines in the Ontario Government in 1905, the title being changed subsequently to Minister of Lands, Forests and Mines. He acted as a member of the Royal Conservation Commission in 1909, and was also a vice president of the Dominion Forestry Association. He entered the Dominion Government in 1911 as Minister of Railways and Canals and retired from that position in 1917 on account of ill health, but remained a member of the government for some time without portfolio. The funeral took place at Mount Pleasant Cemetery, Toronto, Sept. 24, when Hon. J. D. Reid, Minister of Railways and Canals; Sir Henry Drayton, Minister of Finance, and

Major Graham A. Bell, Deputy Minister of Railways and Canals, attended.

D. C. Coleman, Vice President, Western Lines, C.P.R., was reported Sept. 29 to be confined to his house in Winnipeg, as the result of an accident at Spirit River, Alta.

Thomas Collins, who has been appointed Superintendent, Montreal Terminals Division, Quebec District, C.P.R., Montreal, entered C.P.R. service, Sept. 2, 1885, since when he has been, to Mar. 7, 1887, brakeman, West Toronto, Ont.; Mar. 7, 1887, to Aug. 1, 1896, conductor, West Toronto, Ont.; Aug. 1, 1896, to Sept. 1, 1896, construction trainmaster, Guelph and Goderich Branch; Sept. 1 to Oct. 15, 1897, Trainmaster, London, Ont.; Oct. 15, 1897, to Jan. 1, 1908, construction trainmaster, double tracking, Montreal to Smiths Falls, Ont.; Apr. 15, 1908, to June 1, 1909, construction trainmaster, double tracking, Montreal to Smiths Falls, Ont.; June 1, 1909, to June 1, 1912, Assistant Superintendent, Smith Falls, Ont.; June 1 to Dec., 1912, Superintendent, District 2, Lake Superior Division, Chapeau, Ont.; Dec., 1912, to May 1, 1916, Superintendent, District 4, Ontario Division Toronto; May 1, 1916 to Aug. 1919, Superintendent, District 2, Ontario Division, London, and Superintendent, Toronto Terminals Division, Ontario District, Toronto.

Theodore Cooper, who died in New York, N.Y., recently, was one of the best known consulting engineers in the United States, and an outstanding authority on bridge design and construction. His first work of engineering responsibility was in connection with the construction of the Hoosac tunnel, on the Troy & Greenfield Rd., in 1861, the contractors for this work being the late Frank and Walter Shanly, both well known Canadian engineers. He was a consulting engineer in connection with the Quebec bridge construction.

C. Dowling, who resigned from the position of Traffic Manager, Edmonton, Dunvegan & British Columbia Ry., at Edmonton, Alta. recently, has been appointed Purchasing Agent, Co-operative Supply Department, United Grain Growers Ltd.

J. M. R. Fairbairn, Chief Engineer, C.P.R., and **W. F. Tye, formerly Chief Engineer, C.P.R.**, were two of the arbitrators between the Cook Construction Co., and the City of Montreal recently, on claims connected with the contract for the enlargement of the Montreal aqueduct and the break in the water supply conduit.

John Gordon, who has been appointed Assistant Electrical Engineer, Western Lines, Canadian National Rys., Winnipeg, was born at Forres, Scotland, Jan. 29, 1884, and served an apprenticeship as mechanical and electrical engineer in Scotland, and later served in the Electrical Department, North Eastern Ry., in England. He entered railway service in Canada in 1909, since when he has been, to 1910, machinist and draftsman, C.P.R. Winnipeg; 1910 to 1911, mechanical draftsman, Grand Trunk Pacific Ry., Rivers, Man.; 1911 to 1914, Electrical Engineer, same road, Winnipeg; 1914 to 1918, General Electrical Foreman, Western Lines, Canadian Government Rys., Winnipeg; 1918 to July 31, 1919, Signal and Electrical Engineer, same road, Winnipeg.

F. Green, Roadmaster, C.P.R., Kamloops, B.C., was killed between Spences

Bridge and Kamloops towards the end of August, when his motor car was run down by a train in rounding a curve. He was for some time yardmaster at Brandon, Man.

Jas. Hardwell, Chief Traffic Officer, Board of Railway Commissioners, and Mrs. Hardwell, have returned to Ottawa after spending a month at Ocean Park, Me.

Mrs. Hays, widow of the late C. M. Hays, formerly President, Grand Trunk and Grand Trunk Pacific Rys., returned to Montreal recently, after spending the summer at Cushings Island, Me.

Mrs. Hills, wife of A. J. Hills, Assistant to President, Canadian National Rys., met with an accident in Toronto, Sept. 5, when the automobile in which she was driving, accompanied by her sister, was struck by a Toronto Ry. car at a street intersection. Mrs. Hills was badly cut about the right eye, several stitches being necessary to close the wound. Her sister was severely shaken, and the automobile was considerably damaged.

Sir Herbert Holt, one of the C.P.R. directors, has returned to Montreal from England.

C. R. Hosmer, one of the C.P.R. directors, and Mrs. Hosmer, returned to Montreal recently, after spending the summer at their house at St. Andrews, N.B., where he recuperated after undergoing two operations in the Royal Victoria Hospital, Montreal. He has resumed attendance at his office on Hospital street.

Capt. Albert H. Kendall, M.C., who has been appointed Master Mechanic, Quebec District, C.P.R., Montreal, was born at Aspatia, Cumberland, Eng., April 4, 1878, and entered railway service in June 1901, since when he has been, to Jan., 1904, locomotive foreman, C.P.R., Nakusp and Revelstoke, B.C.; Jan. to Nov., 1904, locomotive foreman, G.T.R., London, Ont.; Nov., 1906 to July, 1913, gang foreman, erecting shop foreman, and general foreman, successively, Angus shops, C.P.R., Montreal; July to Dec., 1913, locomotive inspector, C.P.R., Kingston, Ont.; Dec., 1913 to April, 1915, general foreman, C.P.R., North Bay, Ont.; April, 1915, to Aug. 28, 1916, Assistant Works Manager, Angus locomotive shops, C.P.R., Montreal; Aug. 28, 1916 to Jan., 1917, Master Mechanic, Ontario District, C.P.R., Toronto. In Jan., 1917, he entered military service as Captain, no 1 section, Skilled Railway Employes, and was later transferred to the 58th Broad Gauge Operating Co., B.E.F., in France. He was awarded the Military Cross, in the latter part of 1918, for superintending evacuation under heavy fire, and keeping lines running until the last moment.

O. M. Lavoie, who has been appointed Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, was born at St. Cyrille de Wendover, Que., Oct. 16, 1882, and entered railway service in March, 1889, since when he has been, to April, 1900, telegraph operator, Intercolonial Ry.; Apr., 1900, to Sept., 1902, telegraph operator, Quebec, Montreal and Southern Ry.; Sept., 28, 1902 to July, 1909, operator, C.P.R.; July 19, 1909 to Jan. 15, 1916, dispatcher, C.P.R., Farnham, Que.; Jan. 15, 1916, to Oct. 30, 1917, Chief Dispatcher, Farnham Division, Quebec District, C.P.R., Farnham, Que.; Oct. 30, 1917 to Aug. 1, 1919, Superintendent of Car Service, Eastern Lines, C.P.R., Montreal.

Lieut. M. P. MacLeod, son of M. H. MacLeod, Vice President, Operation,

Maintenance and Construction, Canadian National Rys., Toronto, who was in the Royal Air Force in France, and on the borders of Belgium up to the close of the war, has been awarded the Distinguished Flying Cross, and the Belgian Government has given him the Croix de Guerre.

Sir Wm. Mackenzie, ex-President, Canadian Northern Ry., is stated to be the highest assessed person by the City of Toronto for income, his assessment this year being on a sworn statement for \$125,700, against \$225,000 fixed by the assessment commissioner in 1918.

Col. Frederick Mears, formerly of the 31st United States Engineers, and in charge of transportation of U.S. forces in France, has been appointed Chairman and Chief Engineer of the Alaska Engineering Commission, which is building the U.S. Government Railway in Alaska.

Mrs. Mills, wife of James Mills, formerly a member of the Board of Railway Commissioners for Canada and now the Board's librarian, died in Ottawa, Sept. 10.

Hector King Morrison, who was appointed recently Division Engineer, Superior Division, Canadian National Rys., Hornepayne, Ont., was born at Dartmouth, N.S., Oct. 12, 1885, and entered railway service in 1903, since when he has been, to 1904, chainman, Halifax and Southwestern Ry.; 1904 to 1905, rodman, same road; 1905 to 1906, topographer, Canadian Northern Quebec Ry.; 1906 to 1907, levelman, Canadian Northern Ontario Ry.; 1907 to 1910, transitman; same road; 1910 to 1912 in charge of location party, same road; 1912 to 1914 Resident Engineer, same road, Pembroke, Ont.; Jan. to June 16, 1919, Resident Engineer, Canadian National Rys., Hornepayne, Ont.

Capt. George Porteous, formerly chief draftsman, Division Engineer's office, C. P.R., Calgary, Alta., has returned to Canada after five years in active service and has resumed his profession. He enlisted with the Corps of Guides in Aug., 1914, at Calgary, and was later transferred to the Imperial Forces. He was twice wounded and at the time of the signing of the armistice was acting Major, 38th Division Tunnellers.

Allan Purvis, General Superintendent, Ontario District, C.P.R., Toronto, has been elected a vice president of the Old Time Telegraphers and Historical Association.

Osborne Scott, General Passenger Agent, Canadian National Rys., Winnipeg, is a son of Archdeacon Scott, Winnipeg, who died there recently, following an operation for appendicitis.

Lord and Lady Shaughnessy, and the Hon. Marguerite Shaughnessy, returned to Montreal early in September, after spending most of the summer at Fort Tipperary, St. Andrews, N.B.

The Hon. Mrs. Alfred Shaughnessy, daughter-in-law of Lord Shaughnessy, and her children, have returned to Canada from England.

Hon. Arthur Lewis Sifton, M.P., who has been appointed Minister of Public Works, of Canada, and member of the Privy Council, was born at St. Johns, Ont., Oct. 26, 1858, and educated in Ontario public schools, Estley College, Winnipeg, Victoria University, Cobourg, Ont., and Alberta University. He commenced practice as a barrister in 1883 in the Northwest Territories and was made a Q.C., in 1892. He represented Banff in

the Alberta Legislature from 1899 to 1903, and from 1903 to 1905 was Chief Justice of the Supreme Court, N.W.T., from 1905 to June, 1910 was Chief Justice of the Supreme Court of Alberta, and from June, 1910 to 1917, Premier of Alberta, holding the offices of President of the Council, Provincial Treasurer, and Minister of Public Works, and from 1917 to his present appointment, Minister of Customs and Inland Revenue in the Dominion Government.

Sir Thos. Tait, President, Fredericton & Grand Lake Coal & Ry. Co., and Lady Tait and daughter, have returned to Montreal, after spending the summer at St. Andrews, N.B.

T. Walklate, General Tie & Lumber Agent, C.P.R., Mrs. Walklate, and family, have returned to Montreal from Pine Point, Me.

E. Garth White, whose appointment as Superintendent of Department of Colonization and Development, C.P.R., Montreal, was announced in our last issue, was born at Charlottetown, P.E.I., Aug. 2, 1886, and is a son of the late W. C. White, at one time Commissioner of Public Lands of Prince Edward Island. He entered C.P.R. service in Apr., 1906, since when he has been, to Jan., 1910, clerk, Land Department, Calgary, Alta.; Jan., 1910, to Mar., 1912, clerk, Land and Irrigation Department, Calgary, Alta.; Mar., 1912, to Mar., 1913, chief clerk, Department of Natural Resources, Montreal; Mar., 1913 to Aug., 1919, Assistant to Manager, Department of Natural Resources, Montreal.

International Ry. of New Brunswick Transferred to Dominion Government—The ownership of the International Ry. of New Brunswick, extending from Campbellton to St. Leonards, 111.30 miles of single track, and 5.76 miles of yard track and sidings, was transferred to the Dominion Government on Aug. 1. The then Minister of Railways on Aug. 1, 1914, entered into an agreement with Thos. Malcolm, of Campbellton, since deceased, to buy, subject to certain encumbrances, the railway, its rolling stock and other property, for \$2,700,000. Pending the completion of the purchase, the government was to lease the property for \$90,000 a year. The property was turned over to the Canadian Government Rys. for operation on Aug. 1, 1914, since which date the rent has been paid, it being assigned to the Royal Trust Co., which acted as trustee. The agreement was confirmed by the Dominion Parliament in 1915, but owing to the war the payment of the purchase was deferred until recently, when it was made, and the ownership was transferred on Aug. 1, as stated above.

Light Railway in Arabia—One of the war's benefits to Arabia has been the completion of a narrow gauge railway, approximately 30 miles long, from Aden, the seaport of Arabia, to Lahej capital of the Abdali tribe in southwest Arabia. The first eight miles were built in 1915 as a supply route for British forces operating against the Turks in that region. The remainder is an after the armistice development. All work was done by the Royal Engineers. With the completion of the line to Lahej, its extension to the Yemen plateau, 200 miles north of Aden, where the world's supply of Mocha coffee is grown, becomes a matter of serious discussion.

The Canadian National Rys. freight offices at Brandon, Man., were broken into recently by burglars who secured about \$2,000.

Transportation Appointments Throughout Canada.

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

Algoma Eastern Ry.—R. E. KING has been appointed Assistant Comptroller, Sault Ste. Marie, Ont.

A. A. PINKNEY has been appointed Comptroller, vice T. H. Rahilly, resigned. Office, Sault Ste. Marie, Ont.

Canadian National Rys.—JOHN GORDON, heretofore Signal and Electrical Engineer, National Transcontinental Ry., Transcona, Man., has been appointed Assistant Electrical Engineer, Mechanical Department, Western Lines, Canadian National Rys. Office, Winnipeg.

R. W. HANNINGTON, heretofore City Solicitor, Victoria, B.C., has been appointed General Attorney, C.N.R., Vancouver, B.C., and not Solicitor, as stated in our last issue. This is a new position.

A. M. MACGILLIVRAY, heretofore Resident Engineer, Fort William, Ont., has been appointed District Engineer, Saskatoon, Sask.

W. C. ROBERTS, heretofore Auditor of Stores and Mechanical accounts, Canadian Government Rys., Moncton, N.B., has been appointed Auditor of Stores and Accounts, Canadian National Rys. Office, Leaside, Ont.

E. W. ROBINSON, has been appointed Resident Engineer, Fort William, Ont., vice A. M. MacGillivray, promoted.

ERNEST SCHRANTZ, heretofore Supervisor, Electrical Maintenance, Canadian Northern Ry., Winnipeg, has been appointed Electrical Supervisor, Mechanical Department, Western Lines, Canadian National Rys. Office, Winnipeg.

The Electrical Department, Western Lines, consisting of the installation, operation and maintenance of all electrical equipment at the different shops and locomotive houses, train lighting, and the installing and maintaining of electric lighting in all buildings on Western Lines, which heretofore has been under the jurisdiction of the Superintendent, of Electrical and Telegraph Maintenance, H. McConkey, has been transferred to the mechanical department, and in future all matters in connection with electrical equipment will be handled directly with the Mechanical Superintendent's office. JOHN GORDON has been appointed Assistant Electrical Engineer and ERNEST SCHRANTZ has been appointed Electrical Supervisor, both with headquarters at the Mechanical Superintendent's office, Winnipeg. H. McCONKEY retains jurisdiction over construction and maintenance of telegraph and telephone lines and offices, west of O'Brien and Port Arthur, Ont.

Canadian Pacific Ry.—J. A. BERRY, heretofore Car Service Agent, Moose Jaw, Sask., has been appointed Car Service Agent, Winnipeg, vice G. S. Lytle, transferred to Moose Jaw, Sask., as announced in our last issue.

E. R. BRUCE, Director of Exhibits, Department of National Resources, Calgary, Alta., is reported to have been transferred to Montreal.

T. COLLINS, heretofore Superintendent, Toronto Terminals Division, Ontario District, Toronto, has been appointed Superintendent, Montreal Terminals Division, Quebec District, vice R. A. Sewell, whose appointment as Superintendent of Car Service, Eastern Lines, Montreal,

was announced in our last issue. Office, Montreal.

JAS. COWLEY, Assistant Publicity Agent, Department of National Re-



H. J. Humphrey,
Superintendent, Trenton Division, Ontario District, C.P.R.



M. F. Tompkins,
Assistant General Freight Agent, Canadian National Rys., Moncton, N.B.

sources, Calgary, Alta., is reported to have been appointed Publicity Agent there, vice N. F. Rankin, transferred.

G. FITZPATRICK, returned recently from military service overseas, has been appointed storekeeper, Sutherland, Sask., vice O. Gardner, resigned.

Capt. A. H. KENDALL, M.C., formerly Master Mechanic, Ontario District, Toronto, and latterly in military service overseas, has been appointed Master Mechanic, Quebec District, vice C. A. Wheeler, transferred. Office, Montreal.

O. M. LAVOIE, heretofore Superintendent of Car Service, Eastern Lines, has been appointed Superintendent, Laurentian Division, Quebec District, vice H. J. Humphrey, transferred. Office, Montreal.

C. L. LEIGHTY, heretofore Chief Dispatcher, Smiths Falls, Ont., has been appointed Assistant Superintendent, Montreal Terminals Division, Quebec District. Office, Montreal.

C. J. MCGREGOR has been appointed Assistant Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont.

N. F. RANKIN, Publicity Agent, Department of National Resources, Calgary, Alta., is reported to have been appointed Special Publicity Agent, same department, Montreal.

E. J. SEMMENS, heretofore chief clerk to Industrial Commissioner, Department of Colonization and Development, Calgary, Alta., has been appointed Travelling Agent, same department, Calgary.

A. A. SHEPPARD, heretofore Division Master Mechanic, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has resumed his former position as Locomotive Foreman, Ottawa.

J. F. SWEETING, Industrial Commissioner, Department of Colonization and Development, Western Lines, has had his office removed from Calgary, Alta., to Winnipeg.

C. A. WHEELER, heretofore Master Mechanic, Quebec District, Montreal, and recently on vacation, has been appointed Division Master Mechanic, Smiths Falls Division, Quebec District, vice A. A. Sheppard, who has resumed his former position. Office, Smiths Falls, Ont.

W. H. WORTMAN, heretofore Division Master Mechanic, Cranbrook Division, British Columbia District, Cranbrook, has been appointed Division Master Mechanic, Kenora Division, Manitoba District, vice J. Neill, transferred. Office, Kenora, Ont.

Edmonton, Dunvegan and British Columbia Ry., Alberta and Great Waterways Ry., Central Canada Ry.—C. DOWLING, Traffic Manager, having resigned from the service, all traffic matters are being handled by the General Manager and Chief Engineer, W. R. SMITH, Edmonton, Alta.

Grand Trunk Ry.—J. O. ADAMS has been appointed General Eastern Freight Agent, Lines in Canada, New York City, vice S. E. Dewey, deceased. Office, 1450 Woolworth Building.

French Railway and Tunnel Projects.—Studies are reported as being made in France of a plan for a great international railway from Bordeaux to Odessa. There is also a committee studying the project of constructing a tunnel under the English Channel and another through the Vosges Mountains, west of Alsace.

The Denver, Boulder & Western Rd., which served various Colorado mountain resorts, has been authorized to cease operation entirely, a series of cloud bursts having destroyed the line in many places.

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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application. ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of publication.

TORONTO, CANADA, OCTOBER, 1919.

PRINCIPAL CONTENTS.

Appointments, Transportation.....	542
Birthdays of Transportation Men.....	522
Board of Railway Commissioners,—	
Orders by, Summaries of.....	544
Traffic Orders.....	534
Canada's Great National Asset.....	528
Canadian National Ry. Construction.....	535
Canadian Pacific Ry., Re-employment of Returned Soldiers.....	537
Construction, Etc.....	535
Delayed Action Mines Affecting Railways at the Front.....	521
Electric Railway Department.....	547 to 556
British Columbia Electric Ry., Basis for Appraisal.....	550
Finance, Meetings, Etc.....	556
Freight and Passenger Rate Increases.....	552
Hydro Electric Railway Projects in Ontario.....	547
Montreal Tramways Co.'s Report.....	556
Niagara, St. Catharines and Toronto Ry. Strike.....	549
Projects, Construction, Etc.....	553
Quebec Ry., Light, Heat and Power Co.'s Report.....	551
Toronto Ry. Report on Track.....	555
Wages and Working Conditions.....	554
Express Companies, Among the.....	572
Fences, Anchoring of Fences, Gates and Cattle Guards.....	530
Marine Department.....	557 to 572
Canadian Government Merchant Marine, Shipbuilding, Operation, Etc.....	560
Canadian Steamship Control by Great Britain.....	563
Montreal Harbor Commissioners' Terminal Railway Electrification.....	557
St. Lawrence River Navigation and Power Development.....	566
Sault Ste. Marie Canals, Additional Lock... ..	564
Sault Ste. Marie Canals Traffic.....	569
Shipbuilding in Canada, General.....	567
Vessels Registered.....	570
Mainly About Railway People.....	540
Marconi Wireless Telegraph Co.'s Annual Meeting.....	574
National Industrial Conference.....	546
Prince of Wales' Canadian Tour.....	532
Railway Development.....	536
Railway Earnings.....	533
Railway Finance, Meetings, Etc.....	539
Railway Mechanical Methods and Devices.....	526
Railway Rolling Stock Orders and Deliveries.....	538
Telegraph, Telephone and Cable Matters.....	573
Telegraph Profession, The.....	573

Railway Freight Delays in Great Britain.

From the Birmingham, Eng., Chamber of Commerce Journal.

"It is no exaggeration to say that the difficulties experienced by traders in connection with the collection and delivery of their railway traffic have never been greater than they are at present. We have before us a few instances of the kind of irritation which manufacturers are compelled to put up with. Here are a few:—

"1—Consignment to A handed to railway Apr. 3, returned to trader, reaccepted by railway Apr. 11, again returned, reaccepted April 22, once more returned, then transferred to another railway on April 30, which also returned it. Finally accepted by a third railway on May 12 and carried to B, whence it had to be conveyed by local carrier to destination.

"2—A consignment for C accepted Mar. 25, returned, reaccepted Mar. 29, again returned, finally accepted Apr. 28.

"3—Consignment to D handed to railway Mar. 24, returned Mar. 25, recollected April 5, again returned, finally collected April 20.

"4—Consignments for E and F ready for dispatch May 15; on June 17 still awaiting collection.

"If our information is correct, these—which are only samples of the complaints of one trader—are typical of the difficulties experienced by hundreds of others. It is no consolation to be told over and over again that the congestion has been caused by the almost entire cessation of coastwise shipping, which previously carried traffic to the extent of 75,000,000 tons a year. We make no complaint whatever against the local railway managers and their subordinates. On the contrary, we gratefully recognize that they are doing their utmost, and we believe that they are as much dissatisfied with the present position as the traders. If the country is to recover from the terrible effects of the war, however, it is essential that something drastic should be done, and done quickly; and for ourselves we believe something would be done if the government control of railways were abandoned, the Railway Executive Committee abolished, and the railway companies left free to deal with the problems which confront them."

American Railway Tool Foremen's Association.

This association's annual convention was held at Chicago recently. The meetings were devoted largely to the discussion of a number of papers were of interest to tool foremen engaged in railway work, and also to the consideration of the reports made by the several standardization committees, which were appointed at the last annual convention, to recommend such standards as would be advisable for general adoption in the toolrooms of railway shops. The principal work done was in connection with the development of standards for locomotive frame taper reamers. It was recommended that the standard taper reamers to be carried in stock should have a taper of 1-16 in. per foot, a shank 1 1/4 in. long, and the flutes should be milled with a left-hand spiral. Various lengths and sizes were specified for stock, and certain other features were noted in the committees' recommendations.

Committees were appointed to report at the next annual convention on the following subjects: standardization of boiler and staybolt taps; heat treatment of steel in locomotive shops; jigs and devices for use in locomotive and car repair shops; standardization of power press punches and ties for locomotive and car shops; issuing and checking of tools in locomotive and car shops.

How Parliament's Time is Wasted on Petty Questions.

During the House of Commons' current session, Jos. Archambault, M.P., for Chambly and Vercheres, Que., asked the following questions:—"Did the government, in any way, select or order the selection of the volumes of Canadian literature which were placed in the special car for the use of His Royal Highness the Prince of Wales? If so, were volumes of French-Canadian literature placed in the library of the special car for the use of His Royal Highness the Prince of Wales, who very well reads and speaks the French language? If not, why were such volumes not placed in the said library?"

Hon. N. W. Rowell replied as follows: "The works of reference placed on the royal train by government officials at Ottawa consisted largely of maps and statistical information. The selection of general literature was left to the officers of the C.P.R. Co., and there is no information in Ottawa as to what books were placed on board, or in what languages they were written."

International Railway General Foremen's Association.

This association held its annual meeting at Chicago, Ill., Sept. 2 to 5. The general feeling expressed was that better times may soon be in sight for the railways, which will enable many of them to make such improvements around their shops as they have been desiring of making for years past; consequently, the discussion of present methods and future plans was of great interest to those actively engaged in this work.

Considerable discussion was aroused on the topic of safety first as it can be applied both in the shops and locomotive house service, and many of the general foremen described the methods which have been adopted not only in their own shops, but in shops throughout the entire systems for attaining a minimum record in the matter of accidents in the shop. Many of the accident-prevention schemes which have been recommended and are being tried, have involved a system of reward to those shops or portions of railway systems which are most successful in reducing the percentage of accidents.

The welding of locomotive parts and castings, and particularly of locomotive cylinder by both autogenous and electric welding, was also the subject of discussion for a whole morning session. Several papers were presented upon draft gears.

The G.T.R. ran its first train between Montreal and Toronto, Oct. 27, 1856.

Grand Trunk Ry.—A press report states that the city engineer is completing plans for the building of the approaches to the subway, under the G.T.R. at St. Pauls Ave., Brantford, Ont., and that tenders for the work will be asked at an early date.

Orders by Board of Railway Commissioners for Canada.

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

28,667. Aug. 14.—Extending to Nov. 14, time within which G.T.R. shall complete siding for McClary Mfg. Co., London, Ont.

28,668. Aug. 13.—Approving G.T.R. plan of proposed change in location of westbound home signals at crossing of Pere Marquette Rd. at Chatham, Ont.

28,669. Aug. 14.—Rescinding order 27,688, Sept. 16, 1918, re G.T.R. train service at Oakville, Ont.

28,670. Aug. 15.—Authorizing C.P.R. to cross 63 highways with its Moose Jaw Southwesterly Branch from Assiniboia to Consul, Sask.

28,671. Aug. 1.—Ordering C.P.R. to rebuild bridge crossing at Elora St., Harriston, Ont., to provide for maximum highway grade of 6% and overhead clearance of 22½ ft., over track, work to be completed by Oct. 31.

28,672. Aug. 13.—Approving location of C.P.R. Langdon North Branch, from mile 71 to 84, Alta.

28,673. Aug. 16.—Authorizing Saskatchewan Government to make highway across Grand Trunk Pacific Ry. in n.w. ¼, sec. 25, Tp. 35, Range 14, west 3rd meridian, Sask.

28,674. Aug. 11.—Relieving C.P.R. from providing further protection at Valley Road crossing, mileage 32.1, St. Stephen Subdivision, N.B.

28,675. Aug. 16.—Rescinding order 25,998, Apr. 10, 1917, which authorized building of branch line from Buckeye Machine Co. in s.e. ¼, Sec. 14, Tp. 24, Range 29, west 4th meridian, South Alberta District.

28,676. Aug. 16.—Granting application of L'Air Liquide Society for modification of paragraph 1861 of regulations for transportation of explosives and other dangerous articles, and specifications for shipping containers approved by the board in respect of transportation of compressed acetylene gas.

28,677. Aug. 16.—Authorizing Farnham West Tp., Que., to make crossing over C.P.R., in Lot 370, St. Romuald Parish, Que.

28,678, 28,679. Aug. 16, 15.—Ordering Canadian National Rys. to appoint station agents at Sandy Lake, Man., by Sept. 1, and at Hamton, Sask., by Sept. 15.

28,680. Aug. 20.—Ordering Grand Trunk Pacific Ry. to file within 30 days detail plans of station as directed by order 22,995, to be built between Oak and Ash Sts., Prince George, B.C.

28,681. Aug. 20.—Authorizing Winnipeg Joint Terminals to rebuild Water St. subway, Winnipeg, to accommodate west approach to Provencher Ave. traffic bridge.

28,682. Aug. 20.—Recommending to Governor in council for sanction, agreement between Western Canada Telephone Co., and British Columbia Telephone Co.

28,683. Aug. 20.—Authorizing Grand Trunk Pacific Ry. to build extension to branch for Humberstone Coal Co. in s.w. ¼, Sec. 7, Tp. 53, Range 23, west 4th meridian, Alta.

28,684. Aug. 20.—Authorizing G.T.R. to build extension to siding for Massey-Harris Co., Toronto.

28,685. Aug. 21.—Authorizing C.P.R. to build spur for Cannmore Coal Co., in Rocky Mountain Park, Alta.

28,686. Aug. 21.—Ordering G.T.R. to move home and distant signals in Chatham yard, Ont., to north of the siding, so as provide a 6 ft. clearance from the gauge side of the rail.

28,687. Aug. 19.—Ordering G.T.R. and C.P.R. to rebuild bridges carrying Weston Road, Toronto, over tracks upon new location of the road.

28,688. Aug. 21.—Authorizing C.P.R. to build spur for Alberta government telephones, Calgary.

28,689. Aug. 20.—Authorizing Hydro Electric Power Commission of Ontario to divert Michigan Central Rd. to rebuild bridge where the railway crosses the Welland River, to build a temporary bridge, and to lay diverted track across Water St., Chippawa, Ont.

28,690. Aug. 14.—Authorizing G.T.R. to connect with joint railway tracks about 150 feet west of west boundary of Strachan Ave., Toronto.

28,691. Aug. 21.—Authorizing British Columbia Government to make highway crossing over C.P.R. at Rampart.

28,692. Aug. 16.—Ordering C.P.R. to appoint grain agent from Sept. 15 to Dec. 31, each year, and to lengthen platform at Congress, Sask.

28,693. Aug. 15.—Authorizing absorption of interswitching charges on grain consigned from Fort William and Port Arthur to Cartier, Ont., for orders, as if it had been consigned through to its ultimate destination.

28,694. Aug. 21.—Authorizing Canadian National Rys. to rebuild bridge over North River at mile 53.19 from Joliette, Que.

28,695. Aug. 21.—Authorizing Canadian National Rys. to build bridge over Rolling River at mile 95.7, Swan River Subdivision, Man.

28,696. Aug. 21.—Authorizing Canadian National Rys. to cross and divert highway in s. ¼

of Sec. 31, Tp. 59, Range 11, west 4th meridian, Alta.

28,697. Aug. 21.—Authorizing C.P.R. to build bridge to serve Alberta Government telephones, Calgary, Alta.

28,698, 28,699. Aug. 21.—Authorizing Canadian National Rys. to cross and divert highways at two points between Sec. 36, Tp. 38, and Sec. 1, Tp. 39, and between Sec. 36, Tp. 38, Range 22, and Sec. 6, Tp. 39, Range 21, west 2nd meridian, Sask.

28,700. Aug. 21.—Authorizing Canadian National Rys. to double track bridge over Rosebud River, Alta.

28,701, 28,702. Aug. 21, 21.—Authorizing Canadian National Rys. to build bridges over Rosebud River, at mileage 322.8, Sec. 7, Tp. 28, Range 19, west 4th meridian, Alta., and mileage 321.1, Calgary Subdivision, Alta.

28,703 to 28,705. Aug. 21, 22.—Authorizing Canadian National Rys. to rebuild bridges over Black Rapids Creek, Nepean Tp., Ont.; over Green's Creek, mileage 106.84 from Montreal, and over Black River, mileage 86.90, from Toronto.

28,706. Aug. 22.—Authorizing G.T.R. to take additional lands at St. Agapit, Que., for approach to new station.

28,707. Aug. 30.—Authorizing C.P.R. to build spur for Vernon Storage Co., Vernon, B.C.

28,708. Aug. 29.—Dismissing application of State Elevator Co., Winnipeg, for refund of demurrage charges made by C.P.R. on grain at Keewatin, Ont.

28,709. Aug. 22.—Relieving G.T.R. from providing further protection at Carr's Crossing, near Cobourg, Ont.

28,710. Aug. 28.—Authorizing G.T.R. to extend Charles St. spur, Kitchener, Ont., for Ames-Holden Tire Co., and Lang Tanning Co.

28,711. Sept. 2.—Authorizing Michigan Central Rd. to connect with Hydro Electric Power Commission of Ontario's track in Niagara Tp., Ont.

28,712. Sept. 2.—Dismissing Montreal Tramways Co.'s application for leave to cross C.P.R. between Atlantic and Beaumont Aves., Montreal.

28,713. Aug. 30.—Rescinding orders 790 and 793, Nov. 28 and 30, 1905, re interswitching at Lindsay, Ont.

28,714. Aug. 27.—Authorizing Canadian National Rys. to take extra land for right of way and retaining walls at Athabasca St., Moose Jaw, Sask.

28,715. Aug. 26.—Authorizing Grand Trunk Pacific Ry. to build spur for U.G.G. Sawmills, Ltd., at mile 1,217.3, Cariboo District, B.C.

28,716. Aug. 29.—Extending to Nov. 29, time within which the C.P.R. may build spur for Gunns Ltd., Toronto.

28,717. Aug. 29.—Approving special tariff on cream in cans, C.R.C., no. E.T.-672, effective Sept. 1.

28,718. Aug. 27.—Approving Pere Marquette Rd. interlocking plant at Blenheim, Ont.; speed restricted to 15 miles an hour.

28,719. Aug. 27.—Extending to Nov. 27, time for completion of additional tracks on Talbot and Kain Sts., St. Thomas, Ont., by London & Port Stanley Ry.

28,720. Aug. 23.—Authorizing Canadian National Rys. to replace part of trestle bridge over Thunder River, at mileage 101.7 Blue River Subdivision, B.C., by a single 100 ft. through girder span on concrete substructure.

28,721. Aug. 26.—Authorizing G.T.R. to build spur for Public Highways Department.

28,722 to 28,724. Aug. 26.—Authorizing Canadian Northern Saskatchewan Ry. to cross highways at three points.

28,725. Aug. 29.—Authorizing Canadian National Rys. to build siding over north and south government road allowance between Sec. 6, Tp. 39, Range 2, and Sec. 1, Tp. 39, Range 3, west 3rd meridian.

28,726. Aug. 28.—Approving location of C.P.R. Bassano Easterly Branch, Empress to Mildred, mileage 217.45 to 254.14, and authorizing crossing of 40 highways.

28,727. Aug. 26.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur for H. W. Farr & Co., Hamilton, Ont.

28,728. Aug. 27.—Approving location of Canadian National Rys. 3rd class station at Durban, Man.

28,729. Aug. 27.—Authorizing G.T.R. to install improved type of bell at Martin St. crossing, Beachville, Ont.

28,730, 28,731. Aug. 28.—Authorizing Canadian National Rys. to cross highways at two points in Tp. 45, Range 18, west 3rd meridian.

28,732. Sept. 4.—Authorizing G.T.R. to build spur for Wm. Clark Ltd., St. Remi Parish, Que.

28,733. Aug. 26.—Authorizing C.P.R. to remove portion of Motherlode spur from junction switch at Greenwood, B.C.

28,734. Aug. 26.—Extending to Nov. 24 time within which C.P.R. shall improve permanent culvert near Golden, B.C., as required by order 28,544, July 4.

28,735 to 28,738. Aug. 26, 30.—Authorizing Canadian Northern Saskatchewan Ry. to cross highways at 8 points.

28,739. Aug. 29.—Authorizing C.P.R. to build sidings 1,040 and 345 ft. long for North Amer-

ican Magnesite Co. at mileage 60, Lachute Subdivision, Que.

28,740. Aug. 26.—Amending order 28,569, July 24, Canadian National Rys. crossing of highway between Secs. 14-15, Tp. 40, Range 21, west 3rd meridian.

28,741. Aug. 28.—Authorizing Canadian National Rys. to cross highway between Secs. 13 and 18, Tp. 45, Range 17, west 3rd meridian.

28,742. Aug. 29.—Amending order 2,139, Dec. 6, 1906, as amended by order 8,897, Dec. 11, 1909, form, size and style of tariffs of tolls to be charged by telephone companies.

28,743. Aug. 27.—Relieving G.T.R. from providing further protection at crossing near Forest station, Ont.

28,744. Aug. 27.—Amending order 28,606, July 26, re highway crossing over Canadian National Rys. in s.w. ¼, Sec. 18, Tp. 15, Range 12, west 2nd meridian.

28,745. Aug. 26.—Extending to Nov. 1, time within which G.T.R. shall complete erection of station at Mille Roches, Ont.

28,746. Sept. 4.—Authorizing Alberta Public Works Department to make highway crossing over C.P.R. in Samson Indian Reserve 137, Tp. 44, Range 24, west 4th meridian.

28,747. Sept. 4.—Ordering Grand Trunk Pacific Ry. at once to comply with order 21,937, and complete facilities for stock pen with platform and loading chute; also spur between Tofield and Deville, Alta.; work to be completed by Oct. 15.

28,748. Sept. 5.—Amending order 23,133, Jan. 12, re Canadian National Rys. and Grand Trunk Pacific Ry. closing at night, interlocking plant at Empire Ave., Fort William, Ont.

28,749. Sept. 3.—Approving Vancouver, Victoria & Eastern Ry. & Nav. Co.'s (G.N.R.) plan of interlocking appliances to be installed at the crossing of British Columbia Electric Ry., Georgia St., Vancouver, B.C.

28,750, 28,751. Sept. 4.—Approving Bell Telephone agreement with La Cie. de Telephone, St. Ours, Richelieu, St. Yacinthe and Vercheres counties, Que., Aug. 18; and Crews Telephone Co., Northumberland County, Ont., June 11, 1915.

28,752. Sept. 5.—Authorizing Ottawa Electric Ry. to carry wires across C.P.R. at Queen Mary St., Overbrooke, near Ottawa.

28,753. Sept. 8.—Authorizing G.T.R. to build spur for T. Davidson Mfg. Co., Montreal Parish.

28,754. Sept. 8.—Authorizing G.T.R. to build spur for Lefebvre and Mahon, Lachine Parish, Que.

28,755. Sept. 6.—Authorizing C.P.R. to build spur for York Shaw Fuel Co., Calgary, Alta.

28,756. Sept. 10.—Authorizing C.P.R. to build spur for Crescent Collieries, Bienfait, Man.

28,757. Sept. 6.—Authorizing G.T.R. to build spur for Crushed Stone, Ltd., near Kirkfield, Ont.

28,758. Sept. 8.—Authorizing Niagara, St. Catharines and Toronto Ry. to build branch for Imperial Oil Co., Welland, Ont.

28,759. Sept. 9.—Approving plant of G.T.R. overhead bridge, as authorized by order 27,838, Nov. 8, 1918, in Bayham Tp., Ont.

28,760. Sept. 6.—Authorizing C.P.R. to build spurs for Merritt Collieries at mileage 41.2 from Spences Bridge, B.C.

28,761. Sept. 8.—Authorizing Niagara, St. Catharines & Toronto Ry. to connect with Doheny, Quinlan and Robertson's tracks at Thorold, Ont.

Steel Rails for Canadian Railways.

We are officially advised, with reference to deliveries of 85 lb. steel rails by the Algoma Steel Corporation and the Dominion Iron and Steel Co., on orders placed by the Dominion Government during the autumn of 1918, a total of 204,870 gross tons have been delivered, of which, 100,188 tons were by the Algoma Steel Corporation, and 104,682 tons by the Dominion Iron and Steel Co. The following table shows the shipments to the various railways:

Algoma Steel Corporation.	
	Gross tons
Canadian National Rys.	54,618
Canadian Pacific Ry.	39,500
Kettle Valley Ry.	2,670
Timiskaming and Northern Ontario Ry.	3,000
Toronto, Hamilton and Buffalo Ry.	400
Total	100,188
Dominion Iron and Steel Co.	
	Gross tons
Canadian Government Rys.	36,153
Canadian National Rys.	2,865
Canadian Pacific Ry.	30,500
Grand Trunk Ry.	35,003
Timiskaming and Northern Ontario Ry.	161
Total	104,682

Canadian National Railways Construction, Betterments, Etc.

Prince Edward Island Ry.—A press report of Sept. 14, stated that the first standard gauge train on the line made a trip from Borden, to Summerside and to Charlottetown and return, on that day as a test. This marks the completion of the laying of a third rail on this section of the line. The distance between Summerside and Charlottetown, through Emerald Jct., is 48 miles, and the branch from Emerald Jct., to Borden is 13 miles, making a total of 661 miles on which standard gauge traffic can be moved. It was reported that regular freight and passenger traffic, with standard gauge trains, would be operated over this mileage from and after Oct. 1.

Dartmouth and Salt Springs Stations—Tenders are under consideration for the erection of a frame station building and platforms at Salt Springs, N.S. We are officially advised that a contract has been awarded to the Standard Construction Co., Halifax, N.S., for the erection of a station and freight shed at Dartmouth, N.S.

We are officially advised that the new station building at Dartmouth, N.S., will be of frame construction on concrete foundation, size 120 ft. 2 in. x 29 ft. 8 in.; the freight shed will also be of frame construction, 208 x 30 ft.

Sydney, N.S., Stores Building—We are officially advised that the contract for the erection of a stores building at Sydney, N.S., has been let to Chappell Bros. Co., Sydney. It will be a one-story frame structure 81 x 32 ft., on a concrete basement, with outside platforms and bins for storing castings. Oil storage equipment will be installed.

Sunny Brae-Guysboro-Mulgrave, N.S.—A press report states that a petition is being signed throughout the district asking the Dominion Government to build a railway from Sunny Brae to Guysboro and thence to Mulgrave, N.S., and that a strong delegation will go to Ottawa shortly to press the matter.

The present Intercolonial Ry. line between Ferrona Jct., via New Glasgow, and Mulgrave, is 87 miles, and owing to gradients and alignment, it is claimed not to be capable of carrying the present heavy traffic economically. There is a branch from Ferrona Jct. to Sunny Brae, 13 miles, and it is reported that a route has been surveyed from that point via Guysboro to Mulgrave, about 91 miles long. The gradients on this survey are said to be such that freight trains carrying from 50 to 60% more tonnage than it is possible for trains to carry over the existing routes, could be operated over it. Members of the railway's engineering staff are reported to have gone over the route recently and an additional report is to the effect that an engineering party is going over some sections of the route to obtain additional information.

Courtenay Bay Branch—A press report states the work was started Sept. 19 on a branch line at Courtenay Bay, St. John, N.B., to give greater yardage there. The new track starts at the foot of Duke St., and runs parallel to the present branch line as far as the Imperial Oil Co.'s works, 1,680 ft.

Fredericton to McGivney Jct.—A press report states that Engineer McIsaac and staff are completing surveys for grade reduction and curvature elimination work on the section of the old Canada East-

ern Ry., between Fredericton and McGivney Jct., where the Transcontinental Ry. is crossed. The work, it is reported, will cost about \$1,500,000, exclusive of the strengthening of the bridge over the St. John River at Fredericton, the cost of which is put at \$1,000,000.

Edmundston, N.B., Car Shop—We are officially advised that the contract for the erection of a car shop at Edmundston, N.B., on the National Transcontinental Ry., has been let to Jos. Gosselin, Ltd., Levis, Que. The building will be of frame, 200 x 48 ft., on concrete pedestals, and mill type roof. Offices, stores and lavatory space will be provided in a lean-to erection on one side of the main structure.

St. Malo, Quebec, Shops—A press report of Sept. 10 stated that about a fourth of the machinery for the locomotive and car shops at St. Malo, Quebec, had been installed. The passenger car repair shops are being operated, but owing to the slow arrival of machinery no repair work is yet being done in the locomotive shops. It is expected, however, to have all the machinery installed by Dec. 31.

Ouareau River Bridge—We are officially advised that plans for the renewal of one deck span of 105 ft., and the reinforcing of a similar span, on the bridge crossing the Ouareau River, mileage 7.20 from Joliette, Que., on the Lachute Subdivision, have been completed, but that part of the field work has been done.

Port Arthur Terminals—A. E. Warren, General Manager, Western Lines, and other officials, inspected the railway and steamship terminals at Port Arthur, Ont., Sept. 2. It is reported to have been stated that practically all the maintenance and betterment work for 1919 had been completed. The improvements and extensions necessary to meet future needs was discussed with the operating staffs.

Kindersley Subdivision Culverts.—We are officially advised that a contract for building concrete culverts on the Kindersley subdivision, Sask., has been let to Carter, Halls, Aldinger Co., Winnipeg.

Gravelbourg—Swift Current Extension—We are officially advised that in addition to the 27 miles of grading on the Gravelbourg extension, for which Gibbs Bros. have the contract, it is possible some further work will be done this year.

Prince Albert to Paddock Wood, Sask.—We are officially advised in respect of a press report that construction was to be started immediately on a branch line from Prince Albert to Paddock Wood, Sask., that a survey party is running a line from Prince Albert northeasterly for probably about 40 miles. Nothing has been announced in regard to construction.

North Battleford to Edmonton—A large amount of work is reported to have been done this year between North Battleford, Sask., and Edmonton, Alta. About 35 miles have been relaid with new 85 lb. rails, replacing 60 lb. rails; passing tracks have been provided at Kitscoty, Minburn, Innisfail, Lavoy, Chipman, and Bruderheim, and additional storage tracks have been provided at Vegreville, where the line southerly to Drumson Jct., Drumheller and Calgary, branches off.

Munson Jct. to Calgary—Munson Jct. is the point at which the line from Saskatoon, Sask., and the line from Vegreville, Alta. join, and then continue to Calgary, Alta. General betterments have been done on the Vegreville-Munson line, and a considerable amount of work has been done on the Hanna-Munson section of the line from Saskatoon, including passing tracks at Mecheche, Delta and Carrgynyle. Extensive works have been carried out or are in progress between Munson and Wayne. A second track has been completed, according to a recent press report, from Munson to Drumheller, 11 miles, and is being extended to Wayne, a further distance of 7 miles. On this stretch a 300 ft. tunnel is being built, together with a number of diversions, to eliminate a number of trestles and bridges along the Rosebud and Red Deer River valleys, for which contracts were let in March. At Drumheller new freight yards, giving accommodation for 750 cars, and a new locomotive house, are reported to have been completed.

Oliver-St. Paul de Metis Line—A recent press report from Edmonton, Alta., stated track had been laid to mile 105 from Oliver towards St. Paul de Metis, that ballasting was in progress, and that the grading of the 23 miles into St. Paul de Metis, was almost completed, and it was expected to have the track laid into the town before many weeks. The telegraph line is reported to have been extended almost to the end of the track at present laid. Material for the erection of stations, section houses, etc., is being delivered.

Edmonton Terminal Yards—A press report states that the expenditure on the C.N.R. terminal yards at Edmonton, Alta., for this year will be in excess of \$100,000. In addition to the laying of additional tracks, the work done, or in progress includes the addition of 4 stalls to the locomotive house, and the building of a new coal dock.

Sangudo to Whitecourt—A branch line from Peace River Jct., 36 miles westerly from Edmonton, Alta., is in operation to Sangudo, 31 miles. On the suspension of work for the season in 1914, grading had been practically completed upon an extension of this line to Whitecourt, a further distance of 42 miles. A recent press report states that gangs are restoring this 42 miles of grading and preparing it for tracklaying. About 100 cars of rails and other construction material was reported to have been delivered at Sangudo, at the end of August.

Nitinat Lake Extension—The Lumni Bay Canning and Packing Co. is reported to have asked the British Columbia Government's help to get railway communication opened up from the Canadian Northern Pacific Ry. Victoria-Alberni line to Nitinat Lake, and a press report states that the B.C. Premier has taken up the matter with D. B. Hanna, President, Canadian National Rys. The suggestion is that the route graded during the war for a logging railway to reach the spruce areas could be utilized for the 6 mile line asked for by the company. (Sept., pg. 485).

Leaside Terminals, Toronto, Canadian National Rys., have not yet been opened for general transportation operation, but a portion of them is being used to do general locomotive repairs, Matthew Neil being the Superintendent of Shops.

Electric Railway Department

Hydro Electric Railway Projects in Ontario.

There is a good deal of activity at present in connection with the various projects for the construction of electric railways under the Ontario Hydro Electric Railways Act of 1914 and its amendments. Three different lines have been projected, for which plans were prepared and bylaws passed and the present activities aim at the starting of construction on these lines and extension of them.

The first line was projected to run from Toronto easterly, and was fully described and a plan given in Canadian Railway and Marine World for Nov., 1913, pg. 540. The total estimated cost of this line, including branches, was estimated, at the time the bylaws were voted on in 1914, at \$4,346,938. The bylaws were passed by Scarborough, Markham, Pickering, Whitby and Reach townships; Whitby town, and Markham, Stouffville and Port Perry villages, and was defeated by Uxbridge and Whitchurch townships, and the Uxbridge and Newmarket towns. The bylaws passed were confirmed by the Ontario Legislature in 1915, and the plans were changed to suit the altered conditions. The four municipalities where the bylaws were defeated were struck out of the contract, and the routes were re-arranged somewhat, the estimated cost of the revised project being put at \$3,159,234. This act also gave the Hydro Electric Power Commission of Ontario power to acquire any existing electric railway and to utilize it as part of any of the lines to be built by the commission.

The second line was projected to run from Toronto westerly, in the following sections: Toronto terminal—Humber River; Humber River—Port Credit; Port Credit—Milton; Milton—Guelph; Guelph—Berlin; Berlin—Stratford; Stratford—St. Marys; St. Marys—London; at an estimated cost of \$13,734,155. Bylaws approving of the building of this line were passed by London, Trafalgar, Waterloo, Blanshard, Wilmot, Downe, South Easthope, Toronto, Nassagawaya, Guelph, Etobicoke, North Easthope, Bidulph, Esquesing, Puslinch, Eramosa, Nelson, Ellice, East Zorra, townships; Toronto, London, Guelph and Stratford, cities; Waterloo, St. Marys and Milton, towns; and Mimico, New Toronto, Port Credit, and New Hamburg, villages, and were confirmed by the Ontario Legislature in 1916. The City of Berlin was the only municipality which failed to pass the bylaw, the estimated cost of the line there being \$774,040.

The third line was projected to connect Toronto with the Niagara peninsula, and was to be in two parts, viz: Part one—Port Credit-Hamilton section; Hamilton city section; Hamilton-St. Catharines section, the estimated cost of which was \$11,360,363. Part two—Welland-Port Colborne to Bridgeburg, estimated cost, \$2,208,716. Bylaws for the part one lines were passed in 1917 and 1919 by Toronto, Trafalgar, Nelson, East Flamboro, Barton, North Grimsby, Clinton, Louth and Grantham, townships; Grimsby and Beamsville, villages; Oakville and Burlington, towns, and Hamilton and St. Catharines, cities.

West Flamboro and Saltfleet, town-

ships defeating the bylaw in both 1917 and 1919. The proposed debenture issues in these townships are \$66,669 and \$1,002,296, respectively. The bylaws for the lines mentioned in part 2, were carried by all the municipalities interested in 1917, viz: Humberstone, Crowland and Bertie, townships; Port Colborne, Fort Erie and Humberstone, villages, and Welland and Bridgeburg, towns. All these bylaws were confirmed by the Ontario Legislature in 1919. This act authorized the municipalities passing the bylaws to assume their proportionate part of the cost of the line through municipalities which had declined to participate in the building of the line.

The commission's attention so far as construction activities are concerned, is apparently been given principally to the lines west of Toronto. Under the act of 1919, the municipalities interested in the building of the Toronto-London, and the Toronto-St. Catharines lines, are being asked by the commission to take up the liability of the dissenting municipalities, viz: Berlin, on the first mentioned line, and West Flamboro and Saltfleet on the second. It is reported that a number of the municipalities have already signed the supplementary bylaw but no definite information is available as to how many have. One statement reported to have been made by Sir Adam Beck, is that the City of Guelph is holding up progress in connection with the Toronto-London line, by not signing, and another statement is to the effect that a considerable number of the municipalities interested have not signed.

The surveys for the line from Toronto to Hamilton are reported to have been completed. The route, it is stated, is closely parallel to the G.T.R. from Toronto to Clarkson, thence southerly to Oakville, crossing the town about a quarter of a mile north of the Toronto-Hamilton highway, and then on to Hamilton, by a route some distance north of the Hamilton Radial Electric Ry. at Burlington. The terminus in Toronto, will, it is stated, be at Yonge St., while the exact route into Hamilton has not been definitely decided. Engineers are reported to be checking up the surveys for this part of the line, and it is said that as soon as this work is completed steps will be taken to buy the right of way.

In connection with the section of the line in the Niagara peninsula, surveys were reported to have been started recently between Bridgeburg and Port Colborne.

During the progress of the recent campaign in Guelph against the passing of the bylaw to lease the Guelph Radial Ry. to the Grand River Ry. Co., plans were suggested for linking up the Toronto-Hamilton-Niagara Falls line with the Toronto-Guelph line, and for making Galt the center of a system of lines radiating to all points in that district. It was reported recently, that engineers were in various parts of the district looking over the territory, and laying down possible routes. Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario had a conference in Guelph with the mayor on Aug. 21. It

is reported that he advised the mayor that until Guelph signed the additional agreement assuming a portion of the liability for the municipalities rejecting the bylaws, nothing could be done, and that the Guelph City Council should enter into an agreement with the commission for the operation of the Guelph Radial Ry. St. George residents are petitioning the commission to locate the proposed Hamilton-Galt line through that village. Sir Adam Beck is reported to have stated Aug. 29, that the estimates of the cost of the proposed electric railway from Hamilton to Galt, and other points in that area would be ready in time to have bylaws submitted to the various municipalities interested at the annual elections in Jan., 1920.

So far as the lines east of Toronto are concerned, it appears from a speech of Sir Adam Beck at Brougham, Ont., before the Pickering Township Council, Sept. 17, that the plans, as discussed and voted upon in 1913, have been re-arranged, and practically a new project initiated. This project is based on the acquisition from the Canadian National Rys. of the partially constructed Toronto Eastern Ry., and its completion from Toronto, where terminals will be provided, to Bowmanville. The position of the Toronto Eastern Ry. in connection with the railway plans of the Hydro Electric Power Commission of Ontario has been under consideration for some time, and various proposals have been discussed.

Sir Adam Beck is reported to have said that the present project is based on an offer by the Dominion Government to sell the Toronto Eastern Ry., at a reasonable price. It is intended to build a first class line from Toronto Bowmanville, and to provide adequate terminals in Toronto. The commission's engineers who had gone into the matter and prepared estimates, were of opinion that the line would be self sustaining from the beginning. "The Dominion Government," he said, "is adverse to building a radial railway in Ontario, because if it undertakes the construction of radials in Ontario it will be requested by other provinces to do the same, and it does not contemplate the construction of municipal railways. The Province of Ontario has enunciated a radial railway policy of its own and having electricity in abundance to operate them, it is obvious that it is not a function of the Dominion Government to undertake the radial projects." He then stated that in the event of the Dominion Government taking over the Grand Trunk Ry., the Canadian Northern Ry. lines between Toronto and Napanee would be abandoned, and that the Minister of Railways had suggested that these lines could be handed over to the commission or to the municipalities for electrification.

The report of F. A. Gaby, Chief Engineer of the commission, gave the following details regarding the proposal:

Route—Commencing at Toronto terminal, the line runs easterly over Toronto Harbor Commission property across Queen St. near the junction of Kingston Road, thence northerly to a point near St. Clair Ave., overcrossing present

C.N.R. Toronto-Ottawa line, providing for grade separation from Toronto terminal to the above mentioned point. The line then extends easterly, roughly paralleling St. Clair Ave., extension to an undercrossing of the C.N.R. Toronto-Ottawa line, thence northeasterly roughly paralleling Kingston road at a distance of three quarters of a mile until Kingston Road is undercrossed by line near crossing of road with G.T.R. main line. Dunbarton, the old location of the Toronto Eastern, has been adopted, extending through Pickering, Whitby, Oshawa and Bowmanville. Estimated mileage, 43.5.

Capital Cost—Right of way, grading, track and overhead:

Yonge St. terminal to line between townships to undercrossing of C.N.R. mile 35.11 from Bowmanville	\$4,132,212
From C.N.R. undercrossing, mile 35.11 from Bowmanville to mileage 19.60 from Bowmanville	
Estimated value of work done by Toronto-Eastern Ry. between Pickering (mile 19.60) and Bowmanville (mile 0.0), and cost of completing and repairing Toronto-Eastern Ry. partially constructed line from Pickering to Bowmanville	2,578,581
	\$6,510,794

Rolling Stock, Car Barns, Etc.

Locomotives, interurban and suburban cars, car barns, sub stations and equipment	\$1,830,000
Total	\$8,360,794

Distribution of Cost—The following table shows the distribution of capital cost between the various municipalities:

Township of York.....	\$ 381,587
Township of Scarborough.....	892,686
Township of Pickering	482,050
Township of Whitby	280,304
Township of East Whitby.....	299,943
Township of Darlington.....	429,680
Town of Whitby.....	277,955
Town of Oshawa.....	771,894
Town of Bowmanville.....	216,030
City of Toronto.....	4,328,665
	\$8,360,794

Estimated Traffic—The estimated traffic is based upon an hourly passenger service between terminals, 6 a.m. to 12 p.m., together with 10 minute suburban service from Toronto to C.N.R. overcrossing, 6 miles from Toronto terminal. Two or three freight trains will be provided each week day, and in addition, switching locomotives at Toronto and Oshawa.

Estimated Annual Revenue:

Passengers: suburban, interurban, and tributary districts voted upon.....	\$ 873,140
Freight: gross package freight, express and milk business.....	244,863
Total	\$1,118,003

Estimated Annual Operating Expenses:

Maintenance of track, buildings, and equipment; stations, operation and dispatching, way stations, terminals, per diem charges, general expenses.....	\$ 658,135
Interest at 5%	41,828
Net annual revenue.....	\$ 41,828

Following the reading of the report from which the above particulars are taken, Sir Adam Beck, went on to say that it was estimated that the radial system would expend altogether about \$5,000,000 on terminals in Toronto. There would be a central terminal at the foot of Bay St., with a loop around Queen St. to Bay St., south to Richmond St., and east to Church St. The radial lines would operate an express system. Construction on the line could go ahead at once.

After discussion it was agreed that Pickering Township ratepayers would be asked to vote on a bylaw on Oct. 12.

The Prime Minister of Ontario, Sir Wm. Hearst, in a pre-election address to the people, issued Sept. 23, read: "Though the construction of hydro elec-

tric radial railways by the power commission has been delayed by the war, the time has not been lost. Investigations and surveys have been actively pushed forward. Enabling legislation has been enacted and all orders in council have been passed and all steps recommended by the commission have been taken to permit of active prosecution of this important work. We believe that as soon as the Dominion Government has acquired the G.T.R. certain of its lines should be transferred to the Hydro Electric Power Commission to be electrified, thereby avoiding duplication, and bringing to the farmer and urban dweller the advantage of cheap transportation."

A press report states that a meeting representing Woodstock, Ingersoll, Brantford and Beachville, met in Brantford, Sept. 16, to discuss a project for an electric railway under the Hydro Electric Railways Act; from Brantford, via Woodstock and Ingersoll to a junction with the London and Port Stanley Ry. between London and St. Thomas. A committee was appointed to arrange for a general conference of all the municipalities interested. It is suggested that the Brantford and Hamilton Ry., owned by the Dominion Power and Transmission Co., and running between Hamilton and Brantford, should be acquired in connection with the project.

Fenelon Falls, Ont., Village Council, proposes to ask the Hydro Electric Power Commission of Ontario to build an electric railway from Port Perry, via Lindsay and Fenelon Falls, and on through Victoria County. The Lindsay Town Council has already asked for the building of a line to Lindsay, and there have been a number of meetings of residents in Haliburton County, at which resolutions have been passed favoring the building of a line through Minden to Haliburton.

Hydro Electric Railway Association of Ontario's Meeting.

The Hydro Electric Railway Association of Ontario held its annual meeting in Toronto, Aug. 29, when the following resolution was passed: "That the time is now ripe for the construction and operation of hydro electric railways in Ontario, and that the construction of all such railways which have received the necessary consent of the ratepayers of the municipalities interested, and are considered advisable by the commission, should be proceeded with at once by the Hydro Electric Power Commission of Ontario, and that the Lieut.-Governor in council be requested to issue all orders in council.

Officers were elected as follows: Hon. President, Sir Adam Beck, Hon. Vice President, Hon. I. B. Lucas; President, J. W. Lyon, Guelph; Vice Presidents, T. L. Church, Toronto; A. F. Wilson, Markham; C. R. Somerville, London; Geo. Duncan, Peterborough; G. C. Brooker, Hamilton; W. B. Burgoyne, St. Catharines; F. Milman, Picton; John Derbyshire, Brockville; P. Ray, Waterdown; Secretary, T. J. Hannington, Guelph; Treasurer, G. P. Hamilton, Guelph.

Sir Adam Beck in the course of his address to the delegates, is reported to have said that as regards the London to Toronto line, he wished to inform the Guelph members that it could not at present be constructed, for the simple reason that Guelph had not yet joined with the other municipalities in assuming responsibility for the share of the four municipalities, which had not passed bylaws in connection with it. For the present the whole system from Toronto

to Port Credit and London was held up until Guelph took this step, or the four municipalities in question passed bylaws endorsing its construction. Because that section of the Toronto-St. Catharines line between Toronto and Port Credit constituted part of a system for which bylaws had not been passed by all the municipalities it touched, this line also was held up, although he had advised the municipalities concerned to request the government for permission to proceed with it regardless of this. The St. Catharines-Niagara branch also hinged on this section. Construction of the Port Colborne-Bridgeburg division hinged on the acquisition from the Dominion Government of of the existing line between St. Catharines and Port Colborne, and, pending the outcome of negotiations for the nationalization of the G.T.R., which has a line parallel to the road in question, the purchase of this link from the government had not been accomplished.

Sir Adam said that surveys on the Toronto and Eastern division had been completed, and that he had applied to the Ontario Government to submit agreements on it to the municipalities.

With reference to the passing of orders in council for the construction of radial railways, he pointed out that the radials were entirely a municipal affair. The government could not be made liable unless the municipalities were to become bankrupt. He could see no justification or reason for a refusal to pass orders in council.

The delegates passed resolutions to the effect that candidates for election to the legislature be asked to give a pledge to support the hydro electric railway's plan as well as the commission's power plans; calling upon the Province of Ontario to make a definite statement as to the government's attitude towards the hydro electric railways, and calling upon the Dominion Government to take over the G.T.R.

Proposed Municipal Purchases of Electric Railways.

Niagara, Welland & Lake Erie Ry.—A press report states that the Welland, Ont., City Council, has arranged for the company's books to be audited, with a view of negotiating for the purchase of the line by the city. The mayor is reported to have stated that \$350,000 is asked for the company's property.

Sandwich, Windsor & Amherstburg Ry., Windsor, Ont.—City Council instructed its solicitor, recently, to notify the company of the city's intention to take over the railway, on the expiration of the franchise, in Dec., 1922.

Fort William Municipal Ry.—Port Arthur Civic Ry.—In connection with the recently reported statement of Sir Adam Beck respecting the willingness of the Hydro Electric Power Commission of Ontario to take over the electric railway lines in Port Arthur and Fort William, and the interurban line connecting the two cities, at present operated by them under separate managements, it was stated at a meeting of the Port Arthur City Council, recently that the proposition was a trifle premature. Alderman I. L. Matthews is reported to have stated that he did not think the commission would take over and operate the lines. The lines could be run more economically and more efficiently under one management than under two as at present. (Sept., pg. 504).

The Niagara, St. Catharines and Toronto Ry. Employees Strike.

Canadian Railway and Marine World for September had a brief reference to the N., St. C. & T. R. employes' strike, which started Aug. 21, and ended Aug. 25 in a complete victory for the company. The strike commenced at 4 a.m., and the St. Catharines afternoon paper of that day contained the following as an advertisement:—

"The Niagara, St. Catharines & Toronto Ry. regrets that its service has unavoidably been temporarily discontinued, commencing this morning at 4 o'clock. This cessation of operation is due to the action of some of our employes refusing to remain on duty as a protest against the dismissal from the service of certain conductors. This railway is owned by the Dominion Government and operated under the Canadian National Rys. board. In view of these facts the management feels that it will serve the best interests of all concerned to give the public some of the facts which have resulted in the cessation of service. We have found it necessary to release from our service certain conductors against whom we have corroborative evidence that they have defrauded the company with regard to the collection of fares on the cars. Several months ago the management was confronted with indisputable evidence that a large amount of revenue was being lost through the dishonesty of certain employes. A request was accordingly made to have the line properly checked by government detectives. A thorough investigation for an extended period was made by officers. Sufficient evidence was collected to warrant the company in relieving several men from its employ, since their retention would have cast reflection on the honesty of a large number of faithful operators on our lines and would have placed them in a false position in the eyes of the public. The following data is taken from the reports made by the government operatives showing the results of investigation on single trips on the various lines:

Date—Division	Fares Collected	Fares Reported	Short age
July 14—Local line.....	54	48	6
" 18—Lake shore.....	100	93	7
" 22—Welland.....	61	57	4
" 28—Main line.....	92	76	16
" 30—Main line.....	132	107	25
" 30—Pt. Dalhousie..	109	81	28
" 30—Pt. Dalhousie..	56	45	11
" 30—Pt. Dalhousie..	26	22	4
" 31—Pt. Dalhousie..	71	58	13
" 31—Main line.....	92	72	20
Aug. 7—Pt. Dalhousie..	49	42	7
" 8—Main line.....	63	59	4
" 8—Main line.....	105	95	10
" 9—Main line.....	66	61	5
" 9—Pt. Dalhousie..	62	52	10
" 10—Main line.....	134	115	19
" 11—Main line.....	89	74	15
" 11—Pt. Dalhousie..	51	45	6

"Realizing that, under certain conditions, the collection of fares may be omitted by the conductor without reflection upon his honesty, the government operatives have, in such cases, reported the number of people so carried, but have not included them in the above figures. This is the only part of the evidence which is in the company's possession and which we refused to hand over to the employes for their perusal, as the same is reserved for the use of the Department of Justice in any action that they may see fit to institute.

"In order to show the public at large that these men are not underpaid, we quote the amounts paid to 20 of our con-

ductors and motormen selected at random. Only men who were in the service on Sept. 15 last have been considered and the totals show what has actually been paid to them from Sept. 15, 1918, to Aug. 1, 1919, a period of 10½ months. On this basis the earnings for a full year are computed for comparative purposes."

Sept. 15, 1918, to		Sept. 15, 1919, to	
Aug. 1, 1919	Yearly basis	Aug. 1, 1919	Yearly basis
\$1419.64	\$1623.45	\$1479.98	\$1691.41
1159.55	1325.20	1367.08	1562.38
1353.00	1546.29	1285.38	1469.01
1300.72	1486.53	1296.01	1481.15
1315.06	1502.92	1321.17	1509.91
1120.72	1280.33	1297.99	1483.42
1351.36	1544.41	1101.42	1258.77
1546.64	1767.59	1223.48	1398.26
1498.69	1712.79	1217.04	1390.92
1463.06	1672.07	1012.21	1156.85

"The management is pleased to report a large number of cases were instanced by the government operatives in which honesty, courtesy and attention to the travelling public was commented upon. The company feels gratified that it has in its employ so many men of high standard. In fairness to the employes, in fairness to the company, and in sincerity to the public, representing the owners, we take the ground that the existence of dishonesty in the service cannot be tolerated.

"It is the aim of the officials to bring the service of the Niagara, St. Catharines & Toronto Ry. up to the highest possible degree of efficiency. To achieve this, we earnestly solicit the co-operation of the public and our employes."

The company also published the following advertisement, addressed to its employes:—

"The management feels that a large number of employes have failed to report for duty through some misunderstanding of the facts which led to the removal of certain men from the service. We have endeavored to place certain evidence before you to make the issue a clear-cut one of honesty vs. dishonesty. We would fail in our duty to the greater portion of our employes, to ourselves and to the public in general if we did not insist upon honesty in every form.

"An attempt has been made to accuse the management of being hostile to the employes' organization. Any statements of this character are not based upon facts. The company has recognized the right of its employes to organize, and such right is clearly shown in the existing agreement; but in a straight case of criminal dishonesty, the management will not consider whether the offender is a member of an organization or not. We claim the right in such cases to deal with the man in question as an individual.

"We trust that the spirit of friendly co-operation shown by so many of our employes in past years will continue in the future. The company's attitude to its employes in the past justifies our request for their loyal support; we fully realize the necessity of having this as well as the support of the general public in order to serve the district covered by our lines in the most efficient manner. It is perhaps doubtful if any organization in this section of the province has done more to advance the interests of its employes than the Niagara, St. Catharines & Toronto Ry. Active assistance has been given to various sports, celebrations, every victory loan,

patriotic fund, every unit organized for the front and to many men returning from overseas.

"The strike which has been declared by our employes is illegal under the provisions of the Lemieux Act. By this legislation, each employe is liable to incur a penalty by thus deliberately absenting himself from the service. The company does not wish at this stage to take advantage of the act in this respect, and, after placing before our men the statements which have appeared officially in the press, we hereby give notice that all employes not concerned in the charges in respect to which we have evidence may return to the service on or before Aug. 25 at 10 a.m., and be reinstated in their former positions. Any employe who has not returned to duty by that hour will be considered as having permanently left the service."

The Ottawa Electric Railway's Insurance and Benefit Plan.

F. D. Burpee, Superintendent, Ottawa Electric Ry., issued the following bulletin, Sept. 15: "The company's insurance and benefit plan has been completed, and will be put into operation on Oct. 1. The following benefits can be obtained by enrolment:

"1. In case of death from any cause, \$1,000 will be paid to the family, wife, mother, or other beneficiary named.

"2. Upon retirement from the service, at the age of 65 or over, \$1,083, in cash, will be paid to each member, or he can take a payment of \$100 a year for the balance of his life, with a total payment of \$1,000 guaranteed, in case he dies before the age of 75.

"3. If an employe leaves the service for any cause at any time before reaching the age of 65, the total money paid in by him will be returned to him, with interest at the rate of 3% per annum; or if he wishes he can continue the policy getting credit for a like amount. At such time the employe might not be in physical condition to secure insurance, so that he has this policy guaranteed to him, in any case.

"4. If an employe is off duty, due to sickness, or accident, occurring when not at work for the company, he will receive \$10 a week, but no payment shall be made for disability resulting from venereal disease or from any disease for which he is not treated by a physician, nor for the first 7 days of disability, nor for disability in excess of 26 consecutive weeks duration.

"5. When absent from duty, on account of illness, or accident, as above mentioned, free medical attendance will be provided.

"The weekly sick benefit is open to all employes who are paid by the hour or day, but not to those on a monthly salary. The assessment for the above benefits will be \$1.50 a month, to be deducted from the pay roll. No entrance fee, or charge of any kind, except the monthly assessment, will be made. To those who are paid by the month, and who do not participate in benefits 4 and 5, the monthly assessment will be \$1.25.

"The above plan is open to all employes. Those who have not enrolled to date, can do so by giving their names to Mr. Lang, at 248 Albert St. (ground floor)."

The Winnipeg Electric Ry., early in September, received 2 semi steel cars from Ottawa Car Manufacturing Co.

Basis for Appraisal of the British Columbia Electric Railway's Plant Contributory to its Railway Activities.

The British Columbia Public Utilities Commissioner in giving judgment in this matter recently, detailed the contentions of the City of Vancouver's solicitors and the company's representatives regarding the basis of the appraisal, and said:

"To deal first with the request that the appraisal should be made by a board of three members—one to be appointed by the municipalities, two to be appointed, either by this commission, or one by the company, and one (the chairman) by this commission. A board so constituted and selected does not appear likely to ultimately differ in any material respect from an ordinary board of arbitration, members of which usually resolve themselves into two opposing partisans and a referee or chairman. I cannot agree that to leave the appraisal, which may well prove to be the crucial element of the enquiry, to the decision of such a board is in conformity with my duties as laid down in the act, or with what has been referred to as the spirit of the legislation which created the act. I am directed by the act to make a special enquiry to determine the just and reasonable rate to be charged by the British Columbia Electric Ry. for the carriage of passengers on any line of electric railway which enters or traverses any portion of the City of Vancouver. To carry out such enquiry, I am authorized to ascertain the value of the company's property, by an appraisal, if in my opinion it is necessary. In my opinion, it is necessary, and I may thus select and appoint persons to carry out such appraisal, under my direction. I have no authority to delegate appointment, and, as appointment and selection are so interlaced as practically to constitute one act, I consider I should not delegate selection. In carrying out my duties under the act, I am acting for the people of the province, through the legislature, and I cannot agree that the representatives of any particular city or other municipal area or district, or of any particular company, should exert the authority which has been given to me in the interest of the people of the whole province. The representatives of local municipal areas already differ as to the expediency of such a suggestion. This commission will, therefore, select and appoint the appraiser or appraisers.

"As to the request that the appraisal be conducted by a board of three members, all selected and appointed by this commission. The reasons for my decision as to selection are applicable also, in a measure, to a decision as to this request. With the precedent of my own appointment, viz., that the legislature of this province has enacted that the duties of this commission are to be carried on by one person, I consider that I am justified in deciding that a subsidiary duty can also be properly so carried on. This commission will, therefore, appoint one chief appraiser, who will be assisted by such assistant appraisers as in the judgment of the chief appraiser, in consultation with this commission, are required for the proper consideration of the different technical units of the company's property. Such chief appraiser will direct the assistant appraisers, receive and co-ordinate their reports, and make use of the information so derived in his own report. The chief appraiser will be subject to cross-examination by

the company and the assistant appraisers will also be retained with a view to such cross-examination, if the necessity arises. I reserve a decision as to cross-examination by the representatives of the city and municipalities, or by others who may later appear and be admitted by me as interested parties, until I can obtain the advice of the law officers of the crown.

"It seems probable that I shall have to further define or perhaps amend my ruling as to procedure, of June 10 last, which I also quoted at the hearing of Aug. 18 last, and in which I said 'A copy of the appraiser's report will be supplied to the company and interested parties. Both sides may then examine the appraiser in relation to his report, produce and examine witnesses and make their argument as provided above.' It now appears, that the company having, in compliance with the act, as regards burden of proof, commenced its case by, among other things, giving the book value of its properties, this commission in making an appraisal to check the accuracy of such value, is acting, as described above, viz., in the interest of the people of the province and thus of such particular units of the people as have seen fit to aid this commission by appearing. It therefore, does not seem logical that the representatives of such units should cross-examine the appraisers, who will be, in effect, their own witnesses; or expedient, inasmuch as such representatives will not have access to all the data on which such appraisers will base their reports. It does seem logical, however, that, following cross-examination of the appraisers by the company, such representatives should aid this commission in arriving at a just decision of re-examining such appraisers. However, I am waiting for competent legal advice in this matter. In the meantime, I shall be glad of an expression of opinion from the legal gentlemen present on behalf of the city and municipalities.

"I agree with all that has been said as to the necessity of obtaining the services of expert and unbiased authorities as appraisers. With this essential in view, I have addressed the principals of Toronto, McGill and Dalhousie Universities, the Board of Railway Commissioners and the Manitoba Public Utilities Commission, asking them to suggest the names of persons qualified, in their opinion, to carry out the duties of chief appraiser. I propose to exercise equal care in selecting assistant appraisers, who would be of the highest reputation, technically and otherwise. In this connection, I shall be glad to receive suggestions from those appearing on behalf of the public.

"The legal point raised by Mr. McCrossan, viz., that lines which are not in this commission's jurisdiction, should not be dealt with in the appraisal, I have also referred for competent legal advice. I take it, however, there can be no objection to a consideration of the effect of the operation of such lines by the company as I note that sec. 35 (1) of the act authorizes this commission to 'enquire into every fact which in its judgment has any bearing' on the value of the company's property.

"Coming now to the very important question of the instructions to be given

the appraiser. Before dealing with the proposals in this respect put forward by Mr. McCrossan for the City of Vancouver, and by Mr. Kidd for the B.C.E.R. Co., in their arguments at the hearing of Aug. 18, I will briefly review how far, in my opinion, the act itself and my rulings as already given under the act, have given such instructions. The Public Utilities Act, sec. 11 (4) specifies the reason for the appraisal viz., 'to determine the just and reasonable rate to be charged by the B.C.E.R. Co. for passenger traffic, on any line of electric railway which enters or traverses any portion of the City of Vancouver.'

"Sec. 26 (2) gives the following mandate: 'In fixing any rate the commission shall have due regard, among other things, to give the public utility company a fair and reasonable return upon the appraised value of the property of the company.'

"Sec. 35 (1) says 'Whenever in the opinion of the commission it is necessary for the purpose of carrying out any of the provisions of this act, the commission may, by appraisal, from time to time, ascertain the value of the property of any public utility company, and may inquire into every fact which in its judgment has any bearing on that value, including the condition and value of the undertaking of the company as a going concern, and the amount of money actually and reasonably expended in that undertaking in order to furnish service reasonably adequate to the requirements of the community served by the company as that community exists at the time of the appraisal.'

"My ruling of Aug. 6, as to scope of evidence admissible, admits evidence as to the company's investments of capital, either directly, or through its subsidiary companies, in its electric railway system, as constructed and operated in the District of Vancouver (being the area contiguous to and inclusive of the Delta of the Fraser River, the Cities of Vancouver and New Westminster, the Municipalities of Point Grey, South Vancouver and Burnaby, the City and District of North Vancouver and the districts served by the New Westminster and Chilliwack line, and whether directly or through its subsidiary companies, in its power and electric lighting systems in said district, and also admits evidence as to the present values of the properties covered by such investments. I excluded the company's investments in land or other property in such district, for any purpose except directly for the purpose of its power, light and railway systems, and its investments in its gas system. Therefore, as the appraisal is for the purpose of producing evidence, I have thus instructed the appraiser to ascertain the amount invested by the company in such properties and also to ascertain their present values.

"I have thus also given instructions essential to compliance with the proposals made at the hearing of Aug. 18, by both Mr. Kidd, or the B.C.E.R. Co. and Mr. McCrossan for the City of Vancouver. Such instructions, however, by no means cover in detail the points raised in their proposals. In my opinion, the fundamental difference between Mr. Kidd's and Mr. McCrossan's proposals arises out of their respective interpretations of the meaning of the words

'value' and 'property,' in the mandate of the act. Out of this fundamental difference arise their differing suggestions for ascertaining value. I find that the same differences as to meaning have arisen in many important appraisals, to the extent that the advisability of establishing a recognized legal definition of the word 'value' in its relation to the appraisal of public utilities, has been suggested in the United States. The question has concerned the highest legal authorities in that country, where the operations of public utilities commissions are more general than in Canada, and, in default of a standardized definition of 'value,' I find that a principle has been accepted, viz., that the problem of valuation should be worked out with reference to what is just and reasonable for the specific purpose involved. This principle, I unhesitatingly adopt in the present enquiry. I am not prepared, until I am more fully informed, to accept either Mr. Kidd's or Mr. McCrossan's proposals as to what is just and reasonable. I consider that this problem can only be justly worked out by the appraiser, as the appraisal proceeds. Until the appraisal has progressed, there is not sufficient information available to justify anyone arriving at definite conclusions as to how the appraisal should be made. I therefore do not propose to further instruct the appraiser, for the present, except to now decide that all the economic, financial and physical circumstances which attend the formation of the company and the acquisition and construction of its property and plant as limited above shall be considered by the appraiser in arriving at its value. I leave the appraiser to decide how they shall be considered. I shall place before him, all the proposals and suggestions which have been or may be received from interested parties and the company, and, if difficulties arise during the appraisal, I shall be prepared to hear all parties and to give a decision as to how the appraiser should proceed."

Port Arthur Civic Railway's Financial Position.

The city auditor's report on the accounts for the calendar year 1918, of the public utilities operated by the City of Port Arthur, Ont., has been issued by the Public Utilities Commission. The following information is given concerning the Port Arthur Civic Ry.

The Public Utilities Commission came into existence in its present form at the end of 1914, and the deficits on the operation of the electric railway since then have been as follows:

1915	\$61,268.79
1916	51,311.16
1917	43,837.79
1918	30,154.90

The auditors draw attention to the fact that the reserves for depreciation in all the utilities are very inadequate.

The following remarks are made on the electric railway department:

"There was paid off during the year the final instalment of serial debentures under bylaw 656, the original amount of which was \$10,000. This liability now having been paid off, an entry was made reducing the amount of instalment (or serial) debenture reserve on the other by \$10,000. No new debentures were issued in 1918, but we understand that an issue is contemplated by the city to cover capital expenditure made which has not already been provided for by the

issue of debentures. This capital expenditure amounts to \$19,118.36, but extends back for a number of years, \$13,360.65 being on the books at Dec. 31, 1915, and we trust that before issuing debentures, a careful scrutiny will be made of these assets and the original amounts reduced by the depreciation for the length of time between the construction or purchase and the issue of the debentures, and the term of the debentures will be made to correspond with the remaining expected lifetime of the assets. The point to be kept strictly in view is that the amount of the debentures to be issued must be accumulated and on hand either by way of sinking fund or depreciation, or by both sinking fund and depreciation, at the end of the expected productive lifetime of the assets created.

"We notice that an effort has been made to provide for depreciation in 1918, but this has been done in an arbitrary way and the provision of \$4,689.72 was not based upon any specific rate. This is one of the difficult problems to be dealt with by the commission and, in view of the overcapitalized state of the railway, we must urge that a policy in regard to providing ample depreciation be adopted. To guide you in this, it would be necessary to make up an inventory of the assets, so far as it is possible to obtain details, from the books, showing a classification according to the lifetime of the various assets, and base a rate of depreciation according thereto.

"We have reported in previous years upon the balance at debit of this account, and our information now is that all possible enquiry has been made to locate this shortage in the stores inventory, without success. This account should be closed, and, as the shortage was discovered in years previous to 1918 and as there is no person who can be held responsible therefor, it should now be written off to surplus and deficiency account.

"There is a credit balance of \$514.21 upon which we have reported in previous years, and we think that it should now be written off to credit of surplus and deficiency account or carried to the credit of depreciation reserve."

Granting of Transfers in South Vancouver Ordered.

J. L. Retallack, Public Utilities Commissioner for British Columbia, on Sept. 4, granted South Vancouver Municipality's application for transfers between the British Columbia Electric Ry.'s Main St. and Fraser St. lines. These lines are from 4 to 6 blocks apart for some 3 miles, and the company's contention was, that to grant transfers from one line to another at their junction point in Vancouver, would result in the company being defrauded by people returning home by one or other of these lines. The commissioner said:

"I do not accept the company's evidence that people might better walk from Fraser to Main, or vice versa, than to take the transfer sought. There are people, old and young, unable to walk. The municipality has made its application on behalf of such people and of others who do not wish to walk, and its commissioner has testified under oath that the matter is a serious one. I accept the company's argument that the principle of refusing transfers between parallel streets is generally recognized

and acted on by street railway companies, but without now examining into the merits of the principle, I do not consider its application in the present instance affords just and reasonable service to South Vancouver.

"The municipality has granted or acquiesced in concessions valuable to the company. Thus by the agreement of July, 1918, it agreed to fares being raised to 6c, and it previously acquiesced in the company ceasing to operate on 34th St. The municipality is entitled to a return for such concessions beyond the company's normal service, which principle the company itself acquiesced in, when, in the agreement of July, 1918, it agreed to transfers between all points in the municipality, and as the municipality deals as a separate municipal entity, with the company, the municipality is entitled to be specially considered by the company. The municipality is now asking a concession which its commissioner testified is very important to its welfare, and which the company's Traffic Superintendent testified may result in the company being defrauded by a negligible number of persons. The company has power to make bylaws to protect itself against such frauds.

"I therefore consider that the subsisting agreement as to points between which transfers may be made should continue in effect, or that if it is amended, such amendment should not alter its existing provisions as to transfers between any place in the municipality to any other place in the municipality, and, if such agreement is cancelled, a new agreement should not deprive the municipality of such existing rights of transfer."

Quebec Railway, Light and Power Co. Annual Report, Etc.

The following report for the year ended June 30, was presented at the annual meeting, Dec. 9:

The gross earnings from operation were \$2,077,621.43, compared with \$1,797,852.83, an increase of \$279,768.60. The operating and maintenance expenses were \$1,444,516.08 compared with \$1,235,724.33, an increase of \$208,791.75, leaving a net revenue of \$633,105.35 compared with \$562,128.50, being an increase of \$70,976.85. After adding miscellaneous income \$27,722.61, not including earnings on Quebec & Saguenay Ry. Co.'s securities, and deducting fixed charges, taxes, depreciation on cars, etc., of \$726,101.55, there remains a deficit of \$65,7273.59, leaving a balance at the credit of surplus account to date of \$682,464.20.

The railway between St. Joachim and Nairn's Falls under construction for the Quebec & Saguenay Ry. Co., one of this company's subsidiaries, has been acquired by the Dominion Government. This sale took place Mar. 4, 1919, and the trustees are now in possession of the funds for disposal in accordance with the bondholders' instructions. The construction of the road is being continued by the government, and, when completed, should prove a valuable source of revenue for the Quebec Ry., Light & Power Co.'s Montmorency Division. A train service to Murray Bay, operated by the contractors, has been in effect since July 1, the results of which have proved satisfactory.

It is with feelings of deep regret that your directors have to report the death in February last of Sir Rodolphe Forget,

President, who devoted much time to the company's organization and operations. On Feb. 27, Senator D. O. L'Esperance was appointed a director and subsequently appointed Vice President. The directors desire to express their appreciation of the efficient services rendered by the

officials and staff.

The following were elected directors for the current year: Lorne C. Webster, President; Hon. D. O. L'Esperance, Vice President; Paul Galibert, C. G. Greenshields, J. N. Greenshields, K.C.; Brigadier General A. E. Labelle, Chas.

Lavigne, Arthur Picard, T. J. Stewart, M.P., L. J. Tarte, Senator Jules Tessier. The following, who were directors before, were not re-elected: Chas. Donohue, J. T. Donohue and L. G. Morin. W. J. Lynch is General Manager and Arthur Le Moine, Secretary.

Increases in Electric Railway, Freight and Passenger Rates.

British Columbia Electric Ry.—In presenting the company's case recently for no reduction of the 6c fare in Vancouver, George Kidd, General Manager, informed the Public Utilities Commissioner that there was a possibility that a 7c fare might be necessary to pay increased wages. He stated that the company was preparing an application for the increase of fares on its interurban lines, and if the application of the employes for another increase in wages was granted it would mean a corresponding increase in expenses with a necessity for further revenue. Wages have gone up from 20c an hour, when the company started operations in 1897, to 51c at present. The men are asking for 65c as the maximum for day work and 70c for night work.

See also "Basis for Appraisal of B.C. E.R. Co.'s Plant, etc." on another page of this issue.

Dominion Power and Transmission Co.—A press report states that this company, which owns and operates the Hamilton, Grimsby and Beamsville Electric Ry., and the Brantford and Hamilton Ry., issued an order, Sept. 10, that students' tickets are to be sold only to scholars under 18 attending public institutions. Under this order students in neighboring villages who are enrolled in Hamilton business colleges are refused the special tickets, which in the past they bought at greatly reduced rates. Hamilton's City Solicitor is reported to have stated that there is no provision in the franchises of the several lines nor is there any general law providing for special rates to students. The Board of Railway Commissioners could, however, issue an order to stop discrimination if it was practised. The Hamilton, Grimsby and Beamsville Electric Ry., and the Brantford and Hamilton Ry., are under the Board of Railway Commissioners' jurisdiction, while the other two are subject to the Ontario Railway and Municipal Board. The steam railways issue books of tickets at a specially reduced rate to students up to 18 years of age, on production of a monthly certificate signed by the principal of the school they are attending.

A press report of Sept. 15 states that the chairman of Hamilton's City Council's street railway committee, had been assured by G. E. Waller, General Superintendent Dominion Power and Transmission Co., that the Hamilton and Dundas Electric Ry. proposed to put on a half hourly service on its line as far as West Hamilton, the cars to be of the ordinary city type. The fares charged will be 6 tickets for 25c, good to Garth St., but no transfers from the Hamilton St. Ry. lines will be accepted; 5c each way to and from Ainslie's Woods; 10c single to and from West Hamilton, with a 15c return fare. The service was reported to have been put in operation Sept. 17.

Montreal Tramways Co.—The following decision was given by the Montreal Tramways Commission, Aug. 29:

Whereas an operating allowance of 24.7c per revenue car mile for cars equip-

ped with motors and an operating allowance of 17.4c per revenue car mile for trailers, used for transportation of passengers, have been granted, this day, to the Montreal Tramways Co. for its operating expenses and taxes for the year ending June 30, 1920;

Whereas a maintenance allowance of 8.54c per revenue car mile for cars equipped with motors and a maintenance allowance of 7.05c per revenue car mile for trailers, used for the transportation of passengers, have been granted, this day, to the Montreal Tramways Co. for its maintenance and renewal expenses for the year ending June 30, 1920;

Whereas under the contract executed between the City of Montreal and the Montreal Tramways Co. on Jan. 28, 1918, the company shall receive, yearly, out of gross revenues: 1.—As its annual return upon the capital value therein fixed, 6% on such capital value. 2.—On all amounts added to the capital value of the company, since Dec. 31, 1917, an annual return of 6% and an additional return of 1% per annum. 3.—Upon the working capital furnished by the company, during the year ending June 30, 1920, a return at the rate of 6% per annum. 4.—For the purpose of covering the expenses to be incurred by the company, in procuring additional capital, an amount of \$181,431.47.

All these charges being estimated by the Montreal Tramways Commission, at \$2,491,303.13 for the year ending June 30, 1920.

Whereas the City of Montreal shall receive, out of gross revenues, over and above all other amounts to which it may be entitled under the said contract, \$500,000 a year. Whereas a sum equal to 1% of the gross revenues must be paid into the contingent reserve fund, during said year. Whereas the company's gross revenues in the year ended June 30, 1919, were insufficient to provide for the payment of all sums payable in accordance with article 92 of the contract, leaving a deficit of \$1,264,111.14 for the year, and that such deficit must be made up. Whereas the Montreal Tramways Commission must increase the tariffs to the extent necessary to provide sufficient gross revenues to meet all the payments hereinabove mentioned;

Be it resolved: that the following tariffs be established for passengers carried by the Montreal Tramways Co., in the uniform tariff territory comprising the City of Montreal, as it exists at present, and the cities or Towns of Westmount, Outremont, Verdun, St. Laurent, Mount Royal, also the territories of that portion of St. Laurent Parish, and of that portion of the municipality of Cote St. Luc lying to the east of the line of the Montreal Tramways Co., running from Snowdon Jct. to Cartierville, including the land occupied by the said line:

(a) Day tariff—From 5 a.m. to midnight, 7c cash, or a ticket to be sold in series of 4 for 25c.

(b) Special day tariff—A ticket to be sold in series of 5 for 25c, to be good

only between 6 and 8 a.m. and between 5 and 7 p.m., on week days only.

(c) The present night tariff and school children tariff shall remain in force.

For municipalities outside of the uniform tariff territory, the present tariffs remain in force, with the exception of the City of Lachine, where the following tariffs are established: Local tariff: (a) Day tariff—From 5 a.m. to midnight, 5c cash, or a ticket to be sold in series of 8 for 25c. (b) Night tariff—From midnight to 5 a.m., 10c. Interurban tariff—For persons travelling from any place within the limits of the City of Lachine to the western limits of the uniform tariff territory and vice versa, the present tariffs remain in force.

Note: the local tariff in Lachine providing for 8 tickets for 25c, is said to be a reduction.

The new tariffs were to go into effect on Sept. 15, unless appealed against. On Sept. 5, the Montreal Administrative Commission instructed the City Attorney to appeal to the Quebec Public Utilities Commission, on the ground, among others, that the estimates of expenditure made by the Tramways Commission could be considerably curtailed. The Cities of Westmount and Verdun have also appealed. The going into effect of the new fares is therefore delayed until the Public Utilities Commission gives judgment, and the necessary eight days public notice of the change is given thereafter.

The Montreal Tramways Co. has also appealed against the Montreal Tramways' Commission's decision, fixing the fare rate for the current year in uniform territory, and asking for revision by the Quebec Public Utilities Commission of various amounts arrived at by the Tramways Commission for maintenance, upkeep, and renewal and the remuneration of the capital value of the company. The company also appeals from the Tramways Commission's decision, rejecting various items which it is claimed by the company should be added to the capital value for power-house equipment, a turbo generator costing \$195,195.40, motor generator, William St., power house, \$39,263.21, and three transformers, St. Denis St. substation, \$9,000. An amount of \$534,055.08 is claimed by the company and which was refused by the Tramways Commission, as representing the reproduction costs of stores in hand, and, accordingly withdrawn from the amounts of working capital for which interest at the rate of 6% is claimed by the company from Feb. 10 to June 30.

The hearing of the appeals was commenced before the Quebec Public Utilities' Commission in Montreal, Sept. 23. Counsel for the City of Montreal asked that the hearing be adjourned and that B. J. Arnold, Chicago, Ill., be engaged to make an investigation of the affairs of the company's affairs and report thereon. The commission decided to permit the city to engage Mr. Arnold as its expert to enquire into the company's operating and maintenance expenses, but

declined to grant an adjournment until the report was presented. Certain statements were put in by the company as to operating and maintenance costs, and on Sept. 24, the commission refused the city's application for the appointments of accountants to examine the statements put in. After some evidence had been given by J. E. Hutcheson, General Manager, the further hearing was adjourned to Oct. 2.

Moose Jaw Electric Ry.—The Moose Jaw, Sask., City Council was reported to have passed a bylaw, Aug. 27, subject to the ratepayers ratification agreeing to amend the company's franchise along the lines suggested by the company. The matter has been under discussion for a considerable time. The new agreement is reported to permit the charging of a 6c fare, and the operation of one-man safety cars, and the company agrees to resume within six months the operation of cars over the South Hill belt line, and within the same period to complete and commence operations on the Hall St. line. The city agrees to suspend until the franchise is completed all debts of the company to the city, and to accept 80% of the net profits after provision has been made for a dividend of 6% a year to the shareholders, and the setting aside of \$20,000 a year as a sinking and renewal fund for all repairs and maintenance of equipment.

The Quebec Ry., Light and Power Co. is applying to Quebec City Council for authority to advance fares on its city lines.

W. J. Lynch, General Manager has written the Quebec City Council asking authority to charge increased rates for gas, and increased fares on the electric railway in the city. Following are extracts: "During the past six months as you are aware, great inconvenience has been caused to the travelling public in many cities in Canada and the United States, due to the suspension of railway operations on account of the delay in meeting the demands made by employes for increases in wages or in granting by regularity bodies permission to various companies to increase fares. There is in effect between this company and our street railway conductors and motormen, an agreement covering rules and wages and which agreement does not expire until Mar., 1921. Notwithstanding this fact, however, in June last our employes, due to the continued high cost of living, requested an increase in wages which increase the company granted in part effective July 1, 1919, and further will grant an additional increase to these employes, just as soon as the following demands, which we herewith apply for, are granted by you:

"We request that the following tariff be authorized: Seven cent cash fare. Seventeen tickets for \$1. Eleven tickets for 50c (workmen's tickets), good between 6 and 8 a.m., and 5 and 7 p.m. Not good on Sundays. Rules at present in force. Two cent transfer. School children and children same fare as at present in effect. Fare after midnight, same as at present, viz: 10c cash fare.

"Also, that the payment to the city of Quebec of 4% on gross earnings of city street railway be discontinued, and that this company be no longer obliged to bear the cost of paving and maintenance of roadway between the tracks, and limited space on either side. This, in our opinion, is an unreasonable charge and is simply a continuance of the principle in effect at the time of the operation of horse cars. At that time, due to the

constant wear and tear in the center of track by horses drawing cars, the street railway companies were obliged to maintain the roadway between the tracks. In the operation of electric cars, however, the center of tracks is not used by street railway companies and therefore the maintenance of same should not be borne by the company."

Winnipeg Electric Ry.—A press report states that the company's application for authority to charge increased fares will be heard by the Manitoba Public Utilities Commissioner, at the October sittings.

When the company's application to the Public Utilities Commission for authority to charge a 6c fare came up for hearing, Sept. 26, the city solicitor opposed it and an adjournment was made for a week. The city solicitor opposed it and is reported to have said that he would apply for an injunction if higher fares were granted and would question the commissioner's constitutionality.

Mainly About Electric Railway People.

J. Davidson, director and acting Secretary British Columbia Electric Ry., London, Eng., and managing director British Empire Trust Co., has been visiting Vancouver, for the first time since 1907.

J. F. Fozzard has been appointed Accountant, Lethbridge Municipal Ry., Lethbridge, Alta., succeeding E. H. Duricott.

G. Gordon Gale, Vice President and General Manager, Hull Electric Co., Mrs. Gale and family, have returned to Ottawa from their summer house at Aylmer, Que.

Jas. Gunn, Superintendent, Toronto Ry., who died recently, left an estate valued at \$23,190.

R. C. Harris, City Works Commissioner, Toronto, has declined to accept a cheque for \$500 sent him by the Toronto Ry. Co., under the Ontario Railway & Municipal Board's direction, as remuneration for acting as manager of the railway for a few days recently, when it was taken over by the O.R. & M. Board, owing to the conductors' and motormen's strike. He said he could not accept any payment, as he was in receipt of his salary from the city at the same time.

H. M. Mallison, heretofore managing director, Nova Scotia Tramways and Power Co., has been appointed Secretary-Treasurer.

W. H. Moore, General Manager, Toronto & York Radial Ry., has written a novel, "Polly Masson," dealing with relations between the English and French in Canada.

N. N. Oille, heretofore Special Agent, International Ry., Buffalo, N.Y., which also operates the Niagara Falls Park & River Ry., in Canada, has been appointed Secretary, International Ry. Co.

P. C. Reinhardt, heretofore Assistant Treasurer, International Ry., Buffalo, N.Y., which also operates the Niagara Falls Park & River Ry. in Canada, has been appointed Treasurer, International Ry. Co.

S. Rosevear, Electrical Engineer, Toronto Suburban Ry., has also been appointed Superintendent of Electric Lines, F. Mitchell, having left the company's service and gone to England.

Theodore P. Shonts, President, Interborough Rapid Transit Co., New York, N.Y., died there Sept. 21.

Lorne C. Webster, Montreal, has been elected a director of the Montreal Tramways Co. He is also President, Quebec Ry., Light, Heat & Power Co.; President, Webster Steamship Co., and a director of the Quebec and Levis Ferry Co.

W. L. Weston has been appointed Manager, Nova Scotia Tramways and Power Co., Halifax, N.S. He first entered the electric railway and lighting business in Fort Worth, Texas, in 1906, and subsequently occupied the position of Manager, Tampa and Sulphur Springs Traction Co., Tampa, Florida; Manager, Paducah Traction Co., and Paducah Light and Power Co., Paducah, Kentucky, and Manager Houghton Traction Co., and Houghton Electric Light Co., Houghton, Mich. Previous to going to Halifax, he served in the United States army for about 18 months.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—A press report states that as a result of conferences between the company's officials and C.P.R. officials, it has been arranged that the line on Granville St. South will be extended from the corner of King Edward Ave., southward past the golf links, and will be joined up to the track on Wilson Road, which was laid two or three years ago, but which has not been used. (Sept., pg. 501).

Calgary Municipal Ry.—We are officially advised that there is under construction 1.25 miles of single track on Center St., and 0.75 mile of single track on 29th St. West, and 23rd Ave., Calgary, Alta. T. H. McCauley, Calgary, is Superintendent.

A recent press report stated that the Center St. extension had been so far completed that it was expected to have it in operation Oct. 1. A decision is reported to have been reached to recommend the city council to authorize a further extension of the line to 20th Ave.

Grand River Ry.—A press report states that 85 and 90 lb. rails are being laid on the line between Preston and Kitchener, Ont., and that the rails being taken up will be laid on the 2 mile revision being built between Preston and Hespeler. Work on these two sections is said to have been restarted Aug. 29, after having been held up on account of shortage of labor.

A press report states that the Kitchener, Ont., City Council has before it an application for the construction of a switch from the company's line to the Ames-Holden Tire Co. plant. (Sept., pg. 501).

Moose Jaw Electric Ry.—Under an agreement entered into between the company and the Moose Jaw, Sask., City Council, Aug. 27, the company agrees to complete and put in operation the Hall St. line, within six months.

Niagara, Welland and Lake Erie Ry.—A press report states that the company proposes to extend its line from Welland, Ont., to Parkway Heights.

Winnipeg Electric Ry.—A press report states that the rerouting of the car line in the vicinity of the Tuxedo Hospital, Winnipeg, has been completed and that the new line runs within 25 ft. of the building, whereas previously it ran half a mile away. (June, pg. 324).

The Ottawa Traction Co. has declared a dividend of 1%, payable Oct. 1.

Electric Railway Employes' Wages, Working Conditions, Etc.

The British Columbia Electric Ry.'s employes decided at a meeting in Vancouver, Aug. 30, to apply for the appointment of a board of conciliation to arbitrate as to increases of wages, and altered working conditions asked for. The last agreement terminated Sept. 8, and the employes ask that any new scale put in force under the arbitration proceedings be made retroactive to that date.

Dominion Power and Transmission Co.—A Hamilton, Ont., press report says that Hamilton St. Ry. employes have asked for increases of 25%, which the company says it cannot pay.

Fort William Municipal Ry. employes' wages have been advanced, dating from June 16, to the following rates per hour: Conductors and motormen, first 6 months, 45c; next 18 months, 47½c; third year, 50c. On one-man cars, 2½c an hour extra. One uniform free a year. Overcoat free every two years.

Barn employes: Foreman, \$150 a month; armature winder, \$135 a month; pitmen, first class, 53c an hour; second class, 47½c an hour; cleaners, 45c an hour; carpenters, 57c an hour; painters, 55c an hour.

Guelph Radial Ry.—A board of conciliation was appointed by the Labor Department recently to adjust differences as to wages and working conditions. H. Mahoney of Guelph, representing the City of Guelph, and T. Hall, of Guelph, representing the employes. Judge C. G. Snider, of Hamilton, was appointed chairman, on the recommendation of the two other members of the board.

Niagara, St. Catharines and Toronto Ry.—A press report of Sept. 11, stated that representatives of the company and the employes, had agreed to the appointment of a board of conciliation in regard to wages and working conditions. The men are reported to be asking for an 8-hour day, and for an increase in wages of approximately 35%.

The Quebec Railway, Light & Power Co. has increased its shopmen's wages 4c an hour, dating from July 1, and they are now as follows:

	An hour
Day car foreman.....	41c
Armature winders	41c
Blacksmiths	40c
Blacksmiths' helpers	32c
Carpenters, car and bench, 1st class.....	36c
Carpenters, car and bench, 2nd class.....	32c
Electricians, 1st class.....	34c
Electricians, 2nd class.....	31c
Machinists, 1st class.....	39c
Machinists, 2nd class.....	32c
Painters, letterers	37c
Painters, helpers	30c
Pitmen	32c
Troublemens	32c
Truckmen	32c
Night car foremen.....	30c
Brake inspectors	29c
Controller inspectors	28c
Motor inspectors	28c
Others	28c
Car cleaners	26c
Apprentices, 1st year.....	17c
Apprentices, 2nd year.....	20c
Apprentices, 3rd year.....	22c
Apprentices, 4th year.....	26c

No change has been made in the working hours.

Toronto Civic Ry.—The City Works Commissioner wrote the Board of Control, Sept. 8, as follows:—Since July 4 last, the Toronto Ry. Co.'s employes of the classes indicated below, have been paid the wages therein set out, these rates forming part of majority finding of a board of conciliation. I recommend that increased rates be paid the Toronto

Civic Railway employes, dating from July 4 last, as per the following schedule, viz.:

Conductors and motormen:	
Existing hourly rates	Proposed hourly rates
1st 6 mons.....	40½c
1st 3 mons.	50c
2nd 6 mons.....	43½c
Next 9 mons.	52½c
2nd year.....	45½c
2nd year and	
3rd year and after.....	48c
after	55c
Shedmen.....	44½c
.....	50c
Car repairers.....	48c
.....	55c

"In order that the rates for roadmasters, mechanics and foremen will conform to those of the employes scheduled above, I recommend that roadmasters, be increased from 50½c to 57c, and that mechanics and foremen, be increased from 51½c to 65c. Owing to civic railway employes receiving two weeks' annual vacation, with pay, additional allowance is not made for overtime, except on Sundays, when conductors, motormen and roadmasters receive an extra 4c an hour, and shedmen, car repairers, mechanics and foremen, an additional 2½c an hour. The payment of the rates recommended will entail an additional expenditure of \$16,907, from July 4 to Dec. 31.

The City Council approved the report.

Toronto Ry. and Toronto Electric Light Co.—On Aug. 19, the Minister of Labor, on the application of electrical workers, machinists, blacksmith, pattern makers, brass moulders and core makers of these companies, appointed a board of conciliation, consisting of W. H. Moore, representing the companies; F. Bancroft, representing the men, and County Judge Denton as chairman. Subsequently F. Bancroft resigned and W. H. Harper was appointed in his place. After the board had been appointed a dispute arose between the Toronto Power Co., and certain of its employes at Niagara Falls, members of the International Brotherhood of Electrical Workers which was also referred to the board. The Toronto Power Co. consented to the board dealing with the dispute with its electrical employes in Toronto, but not as to those employed at Niagara Falls, and the board therefore limited its action accordingly. At the board's first meeting, it was stated that the dispute between the companies and their machinists, blacksmiths, pattern makers and core makers, had been amicably adjusted, so the board confined its hearings to the electrical workers. On Sept. 2, the chairman of the board and the employes' representative, W. H. Harper, signed a report recommending certain increases in wages and changes in working conditions, the companies' representative, W. H. Moore, making a minority report. The board's decision was communicated to the companies' General Manager, R. J. Fleming, on Sept. 3, the employes demanded an immediate answer, and as this was not forthcoming at 5 p.m. they struck, stopping the entire street railway traffic in the city and causing great inconvenience, not only to citizens, but to thousands of visitors who were at the Exhibition. At 8 p.m. Mr. Fleming signed his acceptance of the award and the car service was resumed at 9.30 p.m.

Winnipeg Electric Ry.—A press report of Sept. 18 stated that the employes had decided to accept the award of the board of conciliation, presided over by Justice Mathers. The text of the award is not yet to hand, but the report says that the men's original demand was 60c an hour for the second six months, and 70c

an hour for the second year and thereafter. The award, which they have accepted, gives 46c for the first six months; 49c for the second six months; 52c for the second year and 55c for the third year and thereafter. It also provides for an 8-hour day, instead of 9 hours as heretofore. The nine-hour rate was 39c, 41c, 44c and 47c, respectively.

Electric Railway Notes.

The International Ry., Buffalo, N.Y., has been refusing to accept Canadian coins on its lines on the United States side of the Niagara River, since Aug. 3. Similar action is reported to have been taken at other boundary points.

The Regina, Sask., City Council, has under consideration an offer from the Canadian Street Car Advertising Co., of \$1,700 a year, with an additional \$50 a year for every additional car beyond the 34 at present operated, for advertising in the Regina Municipal Ry. cars.

The Toronto Suburban Ry. will, a press report states, shortly put a number of new cars in service between Keele St., Toronto, and Guelph. During the past year the regular service has been three trips a day in each direction, on week days and four trips in each direction on Sundays.

The Levis County Ry. has ordered a single truck snow sweeper with steel underframe and wood body, from Ottawa Car Manufacturing Co. The sweeper brooms are to be driven by bevel gears, and the car will have the following chief dimensions: length, over all, 28 ft. 2 in.; length, over cab, 24 ft.; width of cab, 7 ft. 1½ in.; height, top of rail to top of roof, 11 ft. 10 in.

Tourist traffic on the Quebec Ry., Light and Power Co., Montmorency Division, between Quebec and Ste. Anne de Beaupre, is reported to have increased about 300%. Without taking into account the regular pilgrimage traffic, the company operated four special trains daily to handle the tourist traffic during the past summer, in comparison with a single train of two cars in previous summers.

Winnipeg Electric Ry. employes have formed an athletic association which, in point of numbers, is one of the strongest in western Canada. The association is encouraged in every way by the company, and A. W. McLimont, Vice President and General Manager, takes a personal interest in its activities. The association's annual meet on Sept. 6, is said to have been the biggest success of any athletic meet ever held in the city. There were over 30 events, including 9 championship contests, and over 4,000 people attended.

The Nova Scotia Power Commission, appointed under a statute passed recently, held its first meeting Sept. 9, and decided to appoint an engineer to prepare plans and estimates for the development of the water power on Indian River, about 15 miles from Halifax. It is proposed simply to develop current and to deliver it to municipalities for distribution.

Waterloo-Wellington Ry.—The Kitchener, Ont., Light Commissioners have recommended the City Council not to accept the offer to lease this line to the city for a year for 12% of the gross receipts, but that it be bought by the city if it can be secured at a price in accordance with its earning power.

Report on Condition of Toronto Railway Co.'s Tracks.

H. W. Middlemist, Consulting Engineer, Bridges and Substructures of Railways, Ontario Railway and Municipal Board, who was instructed recently by A. B. Ingram, Vice Chairman, to examine the Toronto Ry. tracks on a number of street, has reported as follows:

Parliament St., between Carlton and Gerrard Sts., length 797 ft. Double track, laid in 1893, with Dick, Kerr & Co. rails, section 56 A, on ties, with concrete slab in between to support the block paving. These rails are completely worn out, the heads split and crushed and the grooves cut away. The paving is also in very bad condition. This section is in the same state as that reported by me on June 12, 1918, on the same street from Gerrard to Queen Sts., and I consider it a waste of time and money to attempt any repairs.

Gerrard Street, from the Don bridge to Broadview, length 645 ft. Double track, laid in 1893, with Dick, Kerr & Co., 73 lb. grooved section. Block paving between rails. This track is constructed the same as Parliament St. mentioned above, and is, if anything, worse. The sooner it is removed the better, more particularly as it is on a steep grade, descending to the bridge. I picked up bolts, with the nuts on, that had been broken off the cars coming in contact with the paving.

Ossington Ave., from Queen to College Sts., length 3,691 ft. Double track, laid in 1893. Intersection at Queen St., much worn. The section between King and Dundas Sts., is laid with 669 lb. grooved section, Dick, Kerr & Co., rails, on ties with concrete between. The whole street is paved with bricks, which are very dilapidated between the rails. The rails are all worn away and spit, the grooves tearing off in long shreds. I understand that repairs have been made recently, but, in my opinion, they are useless. This section can only be made good by entirely new track. The special work at Dundas St. is badly worn.

From Dundas St. to College St. the rails are 73 lb. grooved section, laid on a concrete slab, with brick paving between the rails. The repair gang was working here trying to shim up the joints and putting in new tie rods in places. The slab is, I understand, broken away and sunk. The rails here are the best I have seen, and some are still in a serviceable state, but of course, could not be laid down again on a new base. The paving is badly worn, but, with the unsound condition of the slab, it would be no use renewing it, unless the track is relaid with new rails on a solid base. The intersection at College St. is good and sound.

Bathurst Street, from Queen St. to King St., length 1,036 ft. Double track laid in 1893, with 73 lb. grooved section Dick, Kerr & Co rails. The crossing at Queen St. requires refixing, but is still good for use. The tracks are on ties, with concrete between. The paving is of brick between the rails, and is in a bad state of repair. Rails are completely worn out and are beyond repair. The intersections at Adelaide and King Sts. are good.

While passing along Bathurst St. to go to this section, I examined the track from Bloor St. to Dundas St. It was laid at the same time, with the same

section of rail. The paving is of brick, which is in very bad repair. The rails are quite worn out and no amount of repairs will do any good. This section was not mentioned on the list for examination in your letter, but I feel it my duty to report what I saw. Its length is 4,730 ft.

Lansdowne Ave., from Dundas St. to College St., length 215 ft. Double track laid in 1893, with 69 lb. grooved Dick Kerr & Co. rails, laid on ties, with concrete between. Brick paving between rails badly worn. The rails are practically worn out and the whole need renewing. The intersection at College St. is good, but that at Dundas St. will have to be taken out and a new one put in.

Dundas St., to Howard Park Ave. to Ritchie St., length, 586 ft. Double track laid in 1893 on ties with concrete between. Brick paving between rails, and in better condition than I have seen on the other streets, but will have to be renewed if new tracks are laid. The rails are 69 lb. grooved Dick Kerr & Co., section, and are worn out. The intersection at Howard Park Ave. needs renewing.

All lengths giving are street measurements which will have to be multiplied by four to get the rail length required.

I also went over some of the sections I reported on last year, and see no reason to change the opinion I then formed, except that I would urge the renewal of the same as speedily as possible, and in this I would include the additional sections mentioned in this report. In fact, I do not understand how the cars keep on the rails on most of them, the latter being so completely worn out, and I am afraid if this condition continues much longer, there may be bad derailments.

I understand that tenders are being called for the reconstruction of the Broadview Ave. line from Danforth Ave. to Queen St., all of which is in a very bad condition.

I looked over the rails the company has in hand in its yard and found that the total quantity was 28,285 lin. ft., made up as follows: 524, 90 lb. grooved rails, each 62 ft. long, equals 28,024 ft.; 2 90 lb. grooved rails, 59 ft.; 2 90 lb. rails, 58 ft.; 2 90 lb. rails, 56 ft.; 2 90 lb. lb. rails, 46 ft.; 2 90 lb. rails, 42 ft.; equals 261 lin. ft.; making a total of 28,024, plus 261, equals 28,285 lin. ft., or 37 tons.

Taking the length of street inspected by me, I make the street measurements 797, plus 645, plus 3,691, plus 1,036, plus 215, plus 586, equals 6,970 lin. ft. total, which, multiplied by 4, give 27,880 lin. ft. of rail, or 373 tons. If Bathurst St., between Bloor St. and Dundas St. is added, it would be 27,880, plus 4,730 ft., multiplied by 4, equal to 46,880 lin. ft. of rail, or 627 tons.

In addition to these, there are the streets mentioned in my last year's report, which, excluding the Spadina Ave. section already renewed, is made up of the following streets: Ossington Ave., from Queen to Dundas, 1,850 ft.; Carlton St., between Sherbourne and Parliament, 1,205 ft.; Parliament St., from Gerrard to Queen, 2,197 ft.; Broadview, from Gerrard to Queen, 2,265 ft.; Gerrard St., from Broadview and Carlaw, 2,587 ft. Total, 10,104 ft. This multiplied by 4,

equals 40,416 lin. ft. of rail, which, multiplied by 30 lb. equals 541 tons required. If the whole of Broadview Ave. is to be done, for which I believe tenders are being asked, the street measurement will be increased by 2,871 lin. ft., equal to 11,484 ft. of rails, or 154 tons.

The total quantity of rails required to complete all the streets mentioned in my report of June 12, 1918, and this report will be 373, plus 541, equal to 914 tons, not counting the addition to Broadview Ave., which will make 154 tons more, or a total of 1,068 tons. Bathurst St., between Bloor and Dundas, is not included in this total, as it was not on the list of streets to be inspected. It would add another 255 tons.

Waterloo-Wellington Railway Offered for Sale.

Canadian Railway and Marine World for August contained an article under the above heading, in which there were two typographical errors, one in the first paragraph, where some lines of type were accidentally dropped and the other in the second paragraph, where the omission of a decimal point, gave the length of the line as 35 miles instead of 3.5 miles. The article should have read as follows:

A press report states that the electric railway owned by the Berlin and Bridgeport Electric St. Ry., the title of which was changed in 1912 to the Berlin and Northern Ry., and which was further changed at the Ontario Legislature's last session to the Waterloo-Wellington Ry., has been offered to the City of Kitchener, Ont., which already owns the street railway in the city. The line extends from Kitchener to Bridgeport, and the act above referred to authorizes the company to extend its line from Bridgeport to Elora and Ferris. The present franchise has three years to run. W. H. Breithaupt, Kitchener, Ont., is President.

We were officially advised that the proposal was being considered by the Kitchener Light Commissioners who have charge of the city's street railway department. Under the terms of the franchise the city has the option of taking over the railway in 1922, but W. H. Breithaupt is willing to sell the line, plant, etc., at once. The property consists of 3.5 miles of line, with a park and casino at Bridgeport; 1 double truck car and 2 single truck cars. Power is supplied from the Kitchener and Waterloo St. Ry.'s plant.

We have since been advised that the Kitchener Light Commissioners, to whom the offer was referred, have reported that it would be inadvisable for the city to buy the line until the expiration of the franchise on April 11, 1922, as there is a difference of approximately \$40,000 between the commissioners' estimate of the value of the road and the price asked by the company.

After the presentation of the report referred to, W. H. Breithaupt, President, Waterloo-Wellington Ry., made a new proposition to the City of Kitchener, viz.: that the city lease the line for a year at the rate of 12½% of the gross receipts.

The Hydro Electric Power Commission of Ontario will, it is announced, erect an exhibit building on the National Exhibition grounds at Toronto, in time for next year's exhibition.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and Allied Companies:

	July, 1919	July, 1918
Gross	\$642,090	\$413,968
Expenses	492,981	394,803
Net	149,109	19,165

Edmonton Radial Ry.—The Edmonton, Alta., City Comptroller reports that for July the public utilities operated by the city had a surplus, inclusive of capital and depreciation charges, of \$13,854.33, against a deficit of \$1,993.52 for July, 1918. The gross earnings of the public utilities for the seven months ended July 31 were, \$1,148,314.40; operation and maintenance expenses, \$618,526.92; net earnings, \$529,787.48, against \$468,426.84, for corresponding period of 1918. The capital and depreciation charges, and the deficit on the Edmonton Radial Ry. were \$383,279.99, leaving a net surplus of \$85,146.85. The figures for the E.R.R. are not given separately, but the report concludes:—"For the first occasion within several years, there is a net surplus of \$2,218.67 for July, in the operation of the street railway department, after providing for capital and depreciation charges, against a net deficit for the same month last year of \$7,514.98."

The Montreal Tramways Co's annual meeting called for Aug. 27 was adjourned until Sept. 25, after a resolution had been adopted, changing the date from August to September for the future.

Regina Municipal Ry.—The City Auditor's report on Regina, Sask., finances for the seven months ended July 31, shows that the deficit on the operation of the Regina Municipal Ry. was \$22,217.39, and an estimated deficit for the 12 months to Dec. 31, of \$27,911.

Regina Municipal Ry.—A press report states that the deficit increased from \$22,217 on July 31 to \$23,848 on Aug. 31.

St. Thomas Municipal Ry.—A press report states that the deficit in operation for July was \$1,000.

Toronto & York Radial Ry. and Allied Companies:

	7 mons. to 7 mons. to		July 31, July 31,	
	July, 1919	July, 1918	1919	1918
Gross	\$997,262	\$1,049,936	\$7,110,558	\$7,406,105
Expenses	695,027	589,964	4,338,323	4,045,377
Net	282,235	459,972	2,772,235	3,360,728

Toronto Railway:

	8 mons. to 8 mons. to			
	Aug. 31, 1919	Aug., 1918	1919	1918
Gross earnings	\$629,540	\$551,709	\$4,565,553	\$4,369,545
City percentage..	125,908	111,142	871,073	832,606

Windsor, Essex and Lake Shore Rapid Ry.—For the annual meeting of shareholders called to be held at Windsor, Ont., Sept. 22, the following business was on the agenda;—The consideration and confirmation of the report of the directors with the accompanying financial statements and the confirmation of the adjustments of certain of the assets and the adjustment and settlement of certain of the company's liabilities and other financial arrangements recommended by the directors, confirmation of bylaws amending the present general and special bylaws and presenting the duties of the officers of the company and reducing the number of directors to five and fixing their remuneration, and the election of directors and auditors of the company and such

other business as may lawfully be transacted by the annual general meeting or a special general meeting of shareholders.

The Windsor, Essex & Lake Shore Rapid Ry. Co's annual meeting was held at Windsor, Ont., Sept. 22, among other business transacted being the completion of arrangements for refinancing, which will provide funds for betterments and other requirements. The following are the directors and officers for the current year: President, G. R. Cottrelle, Secretary, Board of Management, I.O.F., Toronto; Vice President and General Manager, A. Eastman, Kingsville, Ont.; Secretary Treasurer, W. R. Phillimore, Chatham, Ont., J. W. McColl, Toronto, and T. P. Pinkard, Windsor, Ont.

Winnipeg Electric Ry.—A recent press dispatch stated that the Winnipeg Electric Ry. had been given one week by the city to make some statement regarding what it intended doing in connection with overdue taxes, aggregating \$400,000, and that if a satisfactory agreement was not made at the expiration of the week the city would enforce payment by seizure of the company's property. The company states that the city overcharged it \$300,000 for pavements, and has suggested that it be relieved of pavement charges, as they necessitate higher fares.

Winnipeg Electric Ry. and Allied Companies:

	7 mons. to 7 mons. to		July 31, July 31,	
	July, 1919	July, 1918	1919	1918
Gross	\$337,978	\$288,155	\$2,212,618	\$2,099,493
Expenses	283,014	218,454	1,741,501	1,603,747
Net	154,964	69,701	471,117	495,746

There was a net deficit after allowing for fixed charges for July, of \$9,732.95.

Montreal Tramways Co's Annual Report, Etc.

The following report for the year ended June 30, was presented at the adjourned annual meeting, Sept. 25:

Your directors, in submitting their eighth annual report, wish to point out that for the first period of operations, being from Feb. 10, 1918, to June 30, 1919, the revenue has not been sufficient to meet the requirements under the new contract, the shortage being \$1,364,111.74, of which amount \$692,694.05 is payable to the City of Montreal, when received. As the amounts to be received by the company from revenue for account of the City of Montreal of \$692,604.05, and for the contingent reserve fund of \$115,722.10, are only to be paid when received, these amounts have not been brought into the statement of assets and liabilities, but are shown on statement of operations under new contract. The gross income accruing to your company from all sources for the year was \$2,303,783.50, and the expenses, \$1,800,537.25, leaving a balance carried to the credit of the general surplus account of \$503,246.25, which, added to \$536,571.61 at the credit of this account last year, after sundry deductions, makes a total of \$1,039,817.86.

Under the authority of a resolution of the shareholders, adopted Sept. 30, 1919, your directors during the year authorized an issue of \$4,000,000.00 of 5% debenture stock, to be disposed of from time to time as required. Of this amount, \$1,000,000.00 was sold during the year.

The board regrets that the increase in the rates of fares during the past

year did not provide sufficient revenue to meet the whole of the company's interest allowances, and in consequence the regular quarterly dividends on the common stock for the year were deferred.

In January last the employes made a general demand for an increase in wages to start from Feb. 1, but in view of the conditions of the franchise, under which the necessary allowances for expenditures are provided for yearly, this could not be entertained. Upon the demand of the employes a board of conciliation, as provided under the Industrial Disputes Act, 1907, was authorized. The board, after consideration, authorized a general increase in wages to all employes, effective from July 1, 1919, amounting approximately to \$1,000,000.

The Tramways Commission, after due consideration of the operations of the past year, and after taking into consideration the requirements for the forthcoming year, rendered its decision on Aug. 29, granting a further increase in the rates of fares, which decision has been appealed from to the Quebec Public Utilities Commission by the City of Montreal and some of the other municipalities, and this company.

During the year F. H. Wilson tendered his resignation as Vice President and director. The board desires to place on record its appreciation of the very valuable services rendered by him to the company. Lorne C. Webster was elected a director to fill the vacancy caused by F. H. Wilson's resignation.

Your directors desire to place on record their appreciation of the valuable and faithful services rendered by the officers and employes.

Statement of Operations Under New Contract, Feb. 10, 1918, to June 30, 1919.

Gross earnings	\$11,572,210.48
Operating expenses and taxes	\$6,640,715.22
Operating profit	45,927.82
Maintenance and renewals	2,098,120.81

Total

Balance

Allowances due company:

6% on capital value.....	\$3,019,224.42
6% on working capital..	40,645.44
7% on addition to capital	32,919.35
Expenses of financing....	251,353.01

Total

Balance dr.

Payable when earned:—

City of Montreal rental \$	692,694.05
Contingent reserve.....	115,722.10

Total

Balance dr.

During the 16 2-3 months covered by the report, \$980,801.58 was spent on new construction.

Proposed Purchase of London Street Railway—

A special meeting of the London, Ont., City Council's committee in charge of street railway matters, was called to be held at the end of September to discuss the terms upon which the city would be willing to take over the line. Some time ago the company offered to sell its stock in the company at \$50 per \$40 share, and this was followed by some negotiations between the mayor and the company's President. The committee desires that progress be made in the matter so that a bylaw may be voted upon at the elections in Jan., 1920. Under the terms of the franchise the city can take over the line at any time upon terms fixed by arbitration. The mayor is opposed to arbitration and desires to have a price fixed by agreement.

Marine Department

Montreal Harbor Commissioners' Terminal Railway Electrification.

The Montreal Harbor Commissioners have taken the first step toward the electrification of their 55.35 miles of steam operated lines along the waterfront. The first portion of the lines to be electrified will be those north of Beaudry St., extending to the Canada Cement Co.'s works, comprising the equivalent of about 20 miles of single track. The intention is to electrify the whole of the harbor railway terminals, but at present only the electrification of the high level part and a portion of the lower level will be done. It is said that this will be the first harbor in the world to be electrified.

The overhead construction will be of the cross-span cantenary type, with wooden poles spaced 150 ft. on tangent track, using one 0000 grooved copper trolley wire, located in the center of each track 20 ft. above the head of the rails. All the rails will be bonded with 0000 bonds.

sion, in the switchboard, of blank panels, for the future installation of a second set of the same capacity. This 1000 k.w. set is specially designed for very heavy over-load capacity, for a short period, to meet railway operating conditions, and must be capable of carrying 250% load for 5 minutes. The set is to consist of a 3 phase, 60 cycle, 5 unit, 6 bearing synchronous motor generator set, rated as follows, to operate on 62½ cycles:

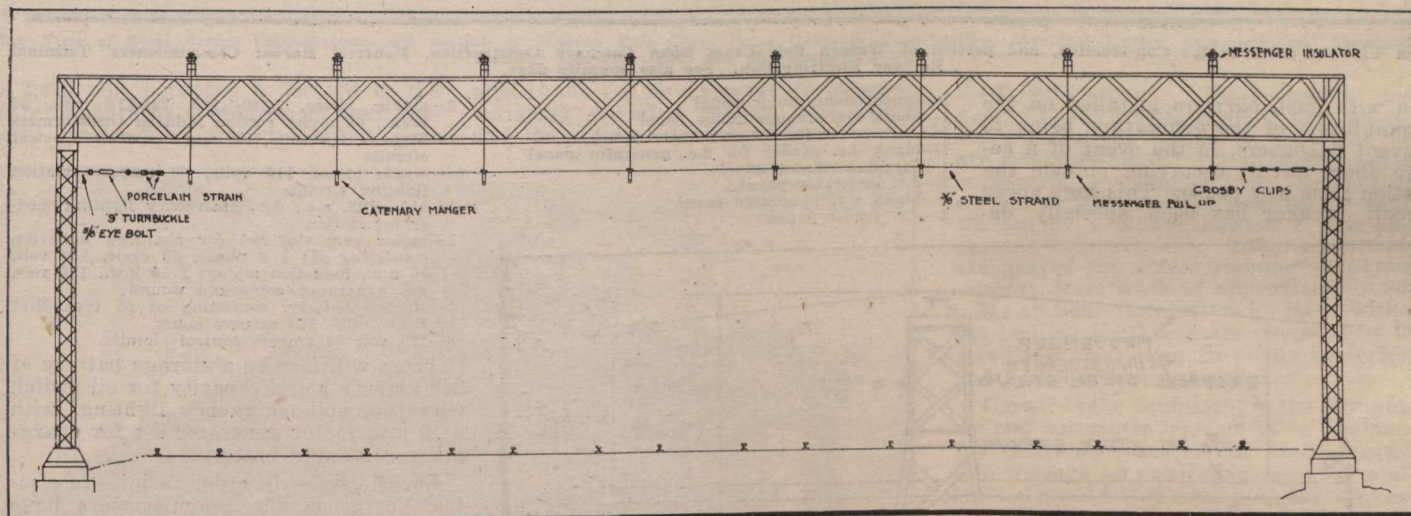
- 1—1,450 h.p. 2,300 volt, 3 phase, 60 cycles, 720 r.p.m., self starting synchronous motor.
- 2—500 k.w. 1,200 volt, 720 r.p.m. compound wound, commutating pole d.c. generators.
- 1—Exciter, shunt wound, 20 k.w., 125 volts, 720 r.p.m., for the excitation of the synchronous motor.
- 1—Exciter, 15 k.w., 125 volts, 720 r.p.m. for the excitation of the generator fields.

The above set, consisting of 2 500 k.w. compound wound, commutating pole generators wound for 1,200 volts, insulated for 2,400 volts, will be direct connected to the synchronous motor.

so connected as to directly oppose the armature reaction, thus ensuring satisfactory operation under any of the specified loads, or over-loads, without necessitating a machine that is normally underrated.

Motor Field—The field spider of the revolving motor field will have ample strength to resist any stresses to which it may be subjected under normal operating conditions. The field poles will be built up of steel laminations, securely fastened to the spider, while the field coils will consist of copper strip, wound on edge, and clamped firmly between the pole tip and field spider.

The Generator Armature will be of the drum type, the core being constructed of thin laminated steel, with large radial air ducts for ventilation, and mounted on a cast iron spider. Cast iron flanges will be used to hold the core together, and support the end windings. The armature windings will be made up



Elevation of Steel Bridge Construction, Montreal Harbor Commissioners' Terminal Railway Electrification.

The substation will be on the commissioners' property at the foot of Beaudry St., and in addition to the apparatus for the electric railway operation, will contain the compressor sets for the cold storage building, which is now being built by the commissioners.

The extension of the overhead construction which will later on be carried out over the lines south of Beaudry St., will utilize steel bridges for spanning the tracks and supporting catenary construction. The general design of these steel bridges will be as shown in the accompanying plan, and their location along the water front, with reference to the main piers, will also be as indicated in the plan. The same height of trolley wire above the head of the rail will be maintained as in the present construction, namely, 20 ft.

Motor Generator Unit—The first installation for the railway service will consist of 1 1000 k.w. motor generator set, with provision for a second duplicate set. This motor generator set will conform to the following specifications: The substation equipment is laid out on the basis of the present installation of 1 1000 k.w. motor generator set for the supply of energy of 2,400 volts d.c., with provi-

Base, Bearings and Shaft—The direct current generators, the synchronous motor will be mounted on a common cast iron base, which will carry the standards and self aligning, self oiling bearings, each machine having its own shaft.

Generator Field—The pole pieces, both main and commutating, will be of laminated steel, and bolted to a cast steel magnet frame. All the field windings will be wound on insulated spools, copper strip will be used in the series and commutating field construction. The pole face winding, series and commutating field windings, will all be connected on the ground side of these machines, so that the armatures will be the only portion of the direct current generators subjected to the full line potential of 2,400 volts. The shunt field of the direct current generators, and the synchronous motor field will be arranged for 125 volt excitation. This set will be equipped with a voltage limiting device to de-energize the separately excited generator fields whenever the circuit breaker is opened.

Pole Face Winding—The heavy over-load capacity of this machine will be obtained by the use of a compensating, or pole face winding; this winding to be

of thin strip copper, varnished and insulated with mica and asbestos.

Motor Armature—The stationary armature frame will be provided with ventilating openings, so as to allow a free circulation of air through the ducts in the laminated core, and the ends of the windings. The core to be built up of the best grade of thin sheet iron, and provided with slots on the inner circumference, to receive the windings, and with dovetails on the outer circumference, by which the laminations are to be attached to the frame. The windings will be form wound and placed in open slots. The insulation will be of high dielectric strength, and of such a quality that no appreciable deterioration will take place when subjected to normal temperatures.

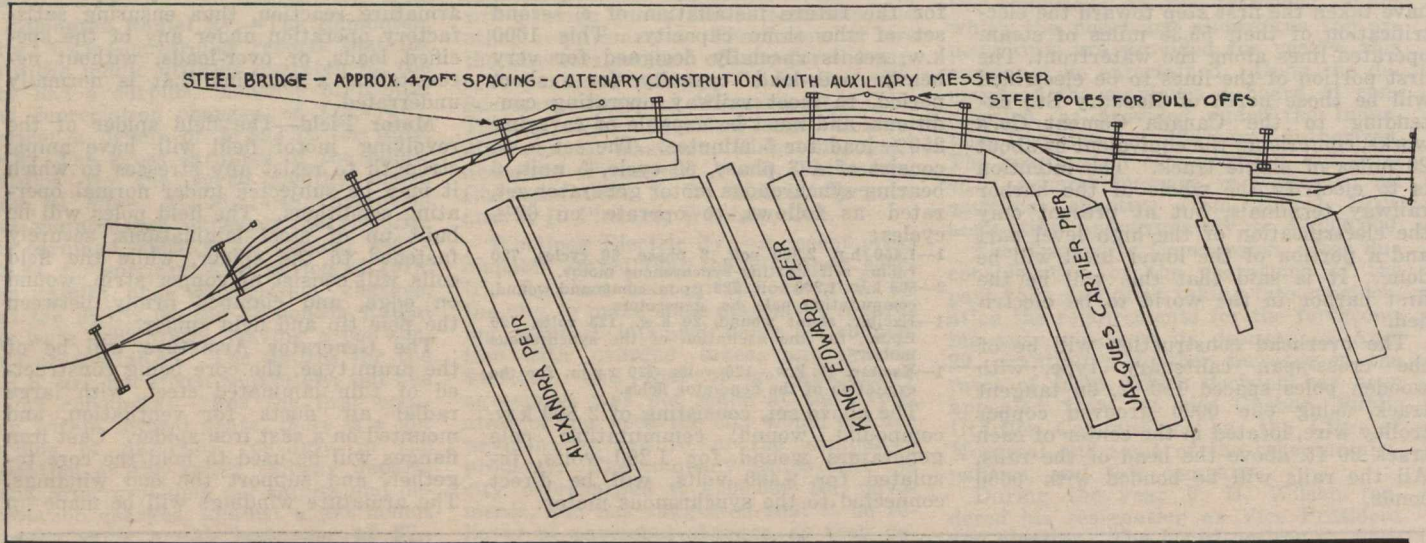
The Commutator will be built up of hard drawn segments of copper insulated throughout with mica, and held by iron clamping rings mounted on a cast iron shell. The armature spider and commutator will be keyed to the shaft, so that no movement between the two can take place.

Brush Mechanism—Carbon brushes are to be used for the generators, being carried in individual adjustable holders, bolted to cast iron brackets, or arms.

The arms will be bolted to a heavy iron ring, or yoke, which, will be in place by special supports from the base, or frame.
High Speed Circuit Breaker—A special feature in connection with the installation of the motor generator set will be the use of a high speed circuit breaker. The function of this breaker, in conjunc-

- 1—charging generator set panel
- 1—blank distribution lighting panel
- 2—distribution lighting panels
- 1—single phase station lighting service panel
- 1—single phase incoming line panel
- 1—blank station power panel
- 1—3 phase station power service panel
- 1—3 phase recording panel
- 1—3 phase incoming line station power panel
- 1—3 phase incoming line panel

- (motor)
- 1—15 k.w. 125 volt exciter (for d.c. generator)
- 1—motor generator set as above (future)
- 3—1,200 ampere, 2,400 volts, d.c. feeders.
- 1—3 phase, 2,300 volts, 73 amp., 63 cycles incoming line.
- 3—single phase, 2,200-1,100, 550-275 volt, 50 k.v.a., 60 cycles station power transformers.
- 1—single phase, 2,300 volts, 75 amps., 63 cycles incoming line



Plan View of Steel Bridge Construction, and portion of Wooden Pole Cross Span Catenary Construction, Montreal Harbor Commissioners' Terminal Railway Electrification. See also opposite page.

tion with flash barriers installed on the commutators of the generators, being to prevent flashovers, in the event of a severe short circuit occurring outside the station from any cause. This high speed circuit breaker has been specially de-

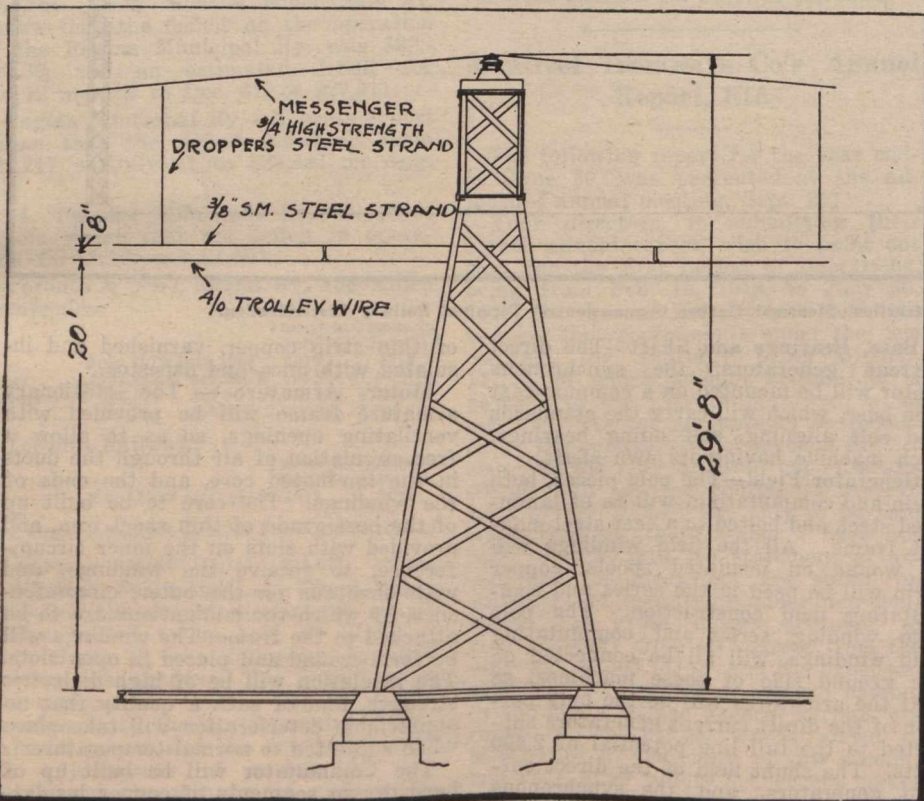
- 1—synchronous motor panel
- 1—blank synchronous motor panel
- 1—d.c. exciter for d.c. generator panel
- 1—blank d.c. exciter for d.c. generator panel
- 1—Tirrell regulator panel
- 1—d.c. generator panel
- 1—blank d.c. generator panel
- 3—d.c. feeder panels.

- 3—single phase, 2,200-1,100, 220-110 volt, 50 k.v.a., 60 cycles station lighting transformers
- 1—3 phase, 550 volts, 150 amperes, station power circuits
- 24—single phase, 110 volts, 60 amperes station lighting circuits
- 1—110 volts, a.c., d.c., emergency lighting feeder for station
- 1—motor generator set for charging batteries, consisting of: 1 3 phase, 60 cycle, 550 volt, 15 h.p., induction motor; 1 10 k.w., 125 volt, d.c. generator, compound wound
- 1—storage battery, consisting of 65 type E-11 E.s.b. cells, 200 ampere hours
- 6—125 volt 50 ampere control circuits.

There will also be a storage battery of 240 ampere hours capacity for oil switch operation and emergency lighting, with a 10 k.w. motor generator set for charging the storage battery.

Locomotives—In order to initiate electric operation, the commissioners have leased from the Canadian National Rys. 2 of the 83 ton, 2,400 volt d.c. locomotives at present operating in the Mount Royal tunnel zone. The general features of these locomotives are as follows: The weight of the complete locomotive is 83 tons. The locomotive has 4 axles, with all of the weight of the locomotive upon the 8 driving wheels, thus securing the maximum adhesive weight on drivers. The running gear consists of two 4 wheel trucks, articulated together by a heavy hinge. The equalization of the trucks is accomplished by a heavy, locomotive type, semi-elliptic leaf spring, over each journal box, connected through spring hangers to the frame and to the equalizer bars. Practically a 3 point suspension is thus supplied through the side equalization of one of the trucks, and both cross and side equalization of the other truck. With the friction draft gear mounted in the end frame casting of this truck, this type of construction restricts the hauling and buffing stresses to the truck side frame and articulated joint, instead of through the cab center plate.

Both the box cab and platform are built of plates, sheets, angles and heavy channels and are thoroughly reinforced throughout. The box cab is divided into 3 compartments; the apparatus compartment in the center and the 2 oper-



Side View of Steel Bridge Construction, Montreal Harbor Commissioners' Terminal Railway Electrification.

veloped in connection with electric railway operation, and has already secured remarkable protective results when used for this work.
 The Switchboard will consist of 21 panels of blue Vermont marble, made up as follows:

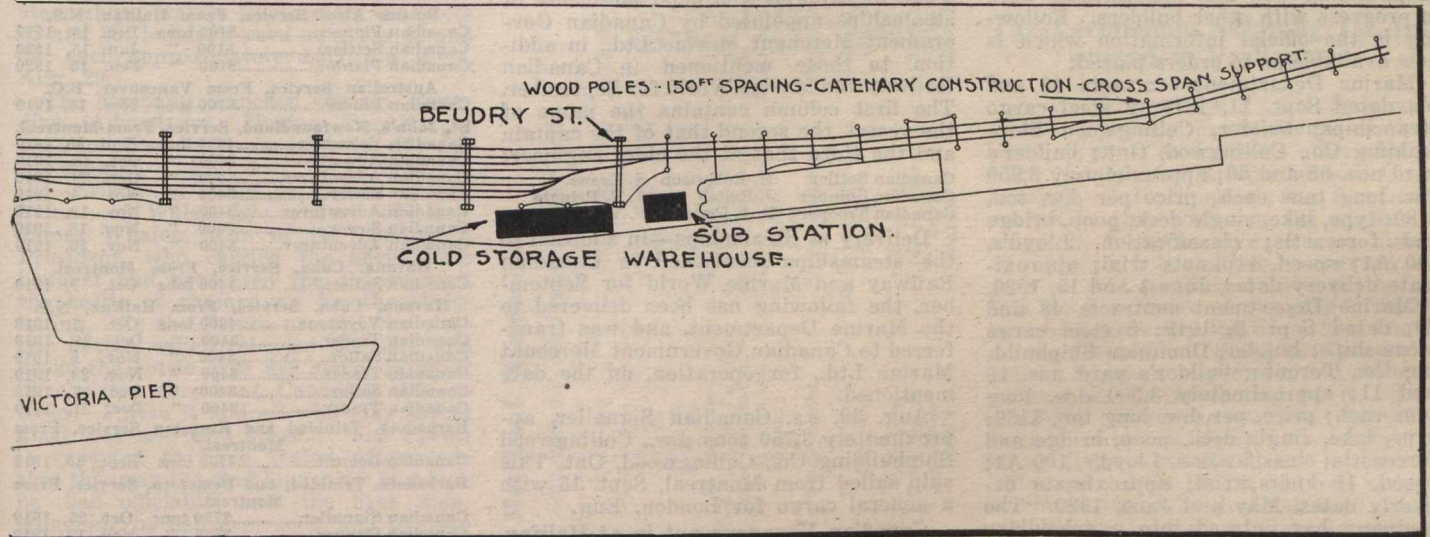
- The switchboard will control:
- 2—3 phase, 2,300 volts, 650 amps. 63 cycles, incoming lines
 - 1—motor generator set, consisting of one 3 phase, 2,300 volts, 1,450 k.v.a., 60 cycle synchronous motor.
 - 2—500 k.w. 1,200 volt, d.c. generator (permanently connected in series)
 - 1—20 k.w. 125 volt exciter (for synchronous

ator's compartments at the ends. Each operator's compartment has a full complement of apparatus, consisting of controller, control switches, meter, air brake control apparatus, air gauges, pantograph control and heaters, thus providing the locomotive with a complete double end control. All apparatus subject

M multiple unit double end control equipment is used on these locomotives, all the control points being proportioned and adjusted so as to secure a smooth and even acceleration, at all times, corresponding to a current consumption near the slipping point of the wheels. The transition between series and series par-

vided as part of the air brake equipment. Two air operated slider pantographs are located upon the roof.

The motor equipment consists of 4 CGE-229 commutating pole type motors, wound for 1,200 volts, and insulated for 2,400 volts, so that two may be connected permanently in series and operated on a



Plan View of Steel Bridge Construction, and portion of Wooden Pole Cross Span Catenary Construction, Montreal Harbor Commissioners' Terminal Railway Electrification. See also opposite page.

to 2,400 volt potential is located in the center apparatus compartment and properly screened to protect against acci-

dentally effected by a special electro pneumatically operated change over switch and the motor fields are always on the

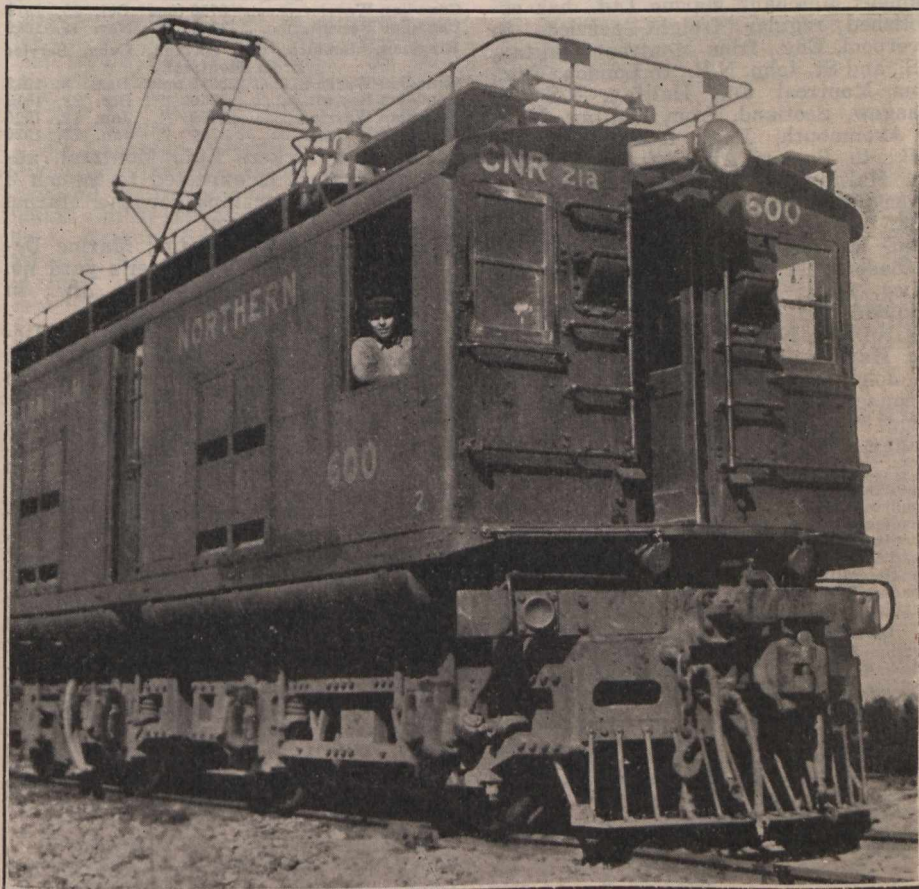
2,400 volt circuit. These motors are geared to the wheels through twin gears, there being one pinion on each end of the armature shaft. The CGE-229 motor is especially designed for locomotive service and is provided with forced ventilation by a blower located in the apparatus compartment. The locomotives are geared for a free running speed on tangent, level track of approximately 30 miles an hour (locomotive by itself without trailing load) and are operated by 2 speed machines with 10 points in series and 9 points series parallel.

The air brake equipment is the straight air and automatic type, so as to combine the desirable features for train operation through an equalizing reservoir and the independent operation of the brakes upon the locomotive. Provision is made for the multiple operation of the compressors upon all locomotives when operating in multiple, so as to distribute the duty upon all the compressors in the train. Each locomotive is provided with 2, 2,400 volt electric heaters, one for each of the operating compartments.

The Harbor Commissioners will probably require 5 or 6 electric locomotives, which it is expected will be similar to the Canadian National Rys. ones described above, but they will probably have a higher gear ratio, to reduce speed and give greater tractive effort with corresponding current input.

The commissioners applied recently to the Board of Railway Commissioners for authority to carry a railway track along a portion of Common St. and to connect its tracks with the G.T.R. tracks on Common St., also for authority to cross the Canadian National Rys. tracks in order to reach the Canada Cement Co.'s yard at Pointe Aux Trembles, and the Imperial Oil Ltd. refinery.

The Canadian General Electric Co. has the contract for supplying the complete substation equipment and a portion of the overhead line material, and built the electric locomotives which will commence the service under electrical operation. The electrification work will be done by the commissioners' own forces.



Electric Locomotive, Canadian National Railways.

Two of these locomotives have been leased by the Canadian National Rys. to the Montreal Harbor Commissioners, to be used in connection with the terminal railway electrification. A number of similar locomotives will probably be ordered by the commissioners in the near future.

dental contact. The location and general arrangement of this apparatus is such as to provide easy access from all sides, for inspection, cleaning and repairs.

The Sprague-General Electric type

ground side of the armature. A motor generator set supplies 125 volt energy for the operation of the control, and a 2,400 volt air compressor of 100 cubic feet free air piston displacement is pro-

Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

Orders for Steamships—As stated in Canadian Railway and Marine World for August, the Minister of Marine had decided to give orders for 2 more steel cargo steamships to the Collingwood Shipbuilding Co., and negotiations were in progress with other builders. Following is the official information which is now available as to orders placed:

Marine Department contracts 46 and 47; dated Sept. 11, 1919; 2 steel cargo steamships; builder, Collingwood Shipbuilding Co., Collingwood, Ont.; builder's yard nos. 65 and 66; approximately 3,950 d.w. long tons each; price per d.w. ton, \$180; type, lake, single deck, poop, bridge and forecabin; classification, Lloyd's, 100 A1; speed, 11 knots trial; approximate delivery dates, June 1 and 15, 1920.

Marine Department contracts 48 and 49; dated Sept. 2, 1919; 2 steel cargo steamships; builder, Dominion Shipbuilding Co., Toronto; builder's yard nos. 10 and 11; approximately 3,500 d.w. long tons each; price, per d.w. long ton, \$180; type, lake, single deck, poop, bridge and forecabin; classification, Lloyd's, 100 A1; speed, 11 knots trial; approximate delivery dates, May and June, 1920. The company has entered into a subsidiary contract with the department to install twin decks in each ship. The keels will probably be laid early in October.

Canadian Vickers Ltd., Montreal, are reported to have offered the Marine Department to build 4 more steel cargo steamships of approximately 8,400 d.w. tons each, at about \$170 a ton, as against \$188 for the contracts placed previously for very similar ships. It is said that British quotations are now only very slightly lower, viz.: about \$166 a ton. We were advised, Sept. 23, that contracts were being arranged for 4 steamships, but had not been signed.

Negotiations are also said to be in progress with the Midland Shipbuilding Co., Midland, Ont.

Keels Laid—Since Canadian Railway and Marine World for September was published, we have been advised of the laying of the following keels:

Marine Department contract 30; builder's yard no. 2; approximately 8,100 tons d.w., Harbour Marine Co., Victoria, B.C., Aug. 9.

Marine Department contract 32; builder's yard no. 43; approximately 4,300 tons d.w., Port Arthur Shipbuilding Co., Port Arthur, Ont., Aug. 29.

Marine Department contract 33; builder's yard no. 44; approximately 4,300 tons d.w., Port Arthur Shipbuilding Co., Port Arthur, Ont., Aug. 29.

S.S. Canadian Fisher; Marine Department contract 15; builder's yard no. 7; approximately 5,100 d.w. long tons; Tidewater Shipbuilders Ltd., Three Rivers, Que., Sept. 20.

Launchings of Steamships—Since Canadian Railway and Marine World for September was published we have been advised of the following launching:

S.S. Canadian Adventurer; Marine Department contract 19a; builder's yard no. 41; approximately 3,400 tons d.w., Port Arthur Shipbuilding Co., Port Arthur, Ont., Sept. 8.

S.S. Canadian Settler; Marine Department contract 13; builder's yard no. 5; approximately 5,100 d.w. long tons, Tidewater Shipbuilders Ltd., Three Rivers, Que., Sept. 20.

Names of Steamships—We were officially advised Sept. 5, that no additional

names for steamships had been decided on by the Marine Department, since those published in Canadian Railway and Marine World for September.

Officers of Steamships—Following is a list of captains and chief engineers of steamships appointed by Canadian Government Merchant Marine Ltd., in addition to those mentioned in Canadian Railway and Marine World for September. The first column contains the name of the vessel, the second that of the captain and the third that of the chief engineer:

Canadian Settler	M. Robertson	S. Evans
Canadian Spinner	J. Reitch	J. R. Pringle
Canadian Trooper	R. J. Fisher	F. W. Wilson

Delivery of Steamships—In addition to the steamships mentioned in Canadian Railway and Marine World for September, the following has been delivered to the Marine Department, and was transferred to Canadian Government Merchant Marine Ltd., for operation, on the date mentioned.

Aug. 30, s.s. Canadian Signaller, approximately 3,750 tons d.w., Collingwood Shipbuilding Co., Collingwood, Ont. This ship sailed from Montreal, Sept. 15 with a general cargo for London, Eng.

Canadian Voyageur put in at Halifax, N.S., Sept. 14, on account of her high pressure cylinder cover having been blown off while at sea. An emergency cover was made at sea and the damage was permanently repaired at Halifax.

Sailing of Steamships—Canadian Government Merchant Marine Ltd., has established regular freight services to Liverpool, Eng., from Montreal, Halifax, N.S., and St. John, N.B.; to London, Eng., from Montreal and Halifax, N.S.; to Glasgow, Scotland, from Halifax, N.S.; to Avonmouth, Eng., from St. John, N.B.; to Buenos Aires, from Montreal and Halifax, N.S.; to Australia, from Vancouver, B.C.; to St. John's, Newfoundland, from Montreal, to Havana, Cuba; from Montreal and Halifax, N.S.; to Barbadoes, Trinidad, and Kingston, Jamaica, from Montreal; to Barbadoes, Trinidad and Demerera, from Montreal and Halifax, N.S.; to Kingston, Jamaica, and Havana, Cuba, from Montreal and St. John, N.B.; and sailings have been announced as follows, the dates given being "on or about" and subject to change without notice:

Liverpool Service, From Montreal.		
Canadian Miller	8100 tons	Sept. 25, 1919
Canadian Ranger	8100 "	Sept. 28, 1919
Canadian Seigneur	8100 "	Oct. 10, 1919
Canadian Navigator	4300 "	Oct. 20, 1919
Canadian Trooper	4300 "	Oct. 25, 1919
Canadian Miller	8100 "	Nov. 12, 1919
Canadian Ranger	8100 "	Nov. 15, 1919
Canadian Spinner	8100 "	Nov. 24, 1919

Liverpool Service, From Halifax, N.S.		
Canadian Seigneur	8100 tons	Nov. 28, 1919
Canadian Rancher	5100 "	Dec. 4, 1919
Canadian Miller	8100 "	Dec. 29, 1919
Canadian Ranger	8100 "	Jan. 2, 1920
Canadian Spinner	8100 "	Jan. 10, 1920
Canadian Seigneur	8100 "	Jan. 15, 1920
Canadian Rancher	5100 "	Jan. 22, 1920

Liverpool Service, From St. John, N.B.		
Canadian Hunter	5100 tons	Dec. 5, 1919
Canadian Trooper	4300 "	Dec. 10, 1919
Canadian Hunter	5100 "	Jan. 20, 1920
Canadian Trooper	4300 "	Jan. 26, 1920

London Service, From Montreal.		
Canadian Voyageur	4300 tons	Nov. 15, 1919
Canadian Volunteer	4300 "	Nov. 21, 1919

London Service, From Halifax, N.S.		
Canadian Voyageur	4300 tons	Dec. 31, 1919
Canadian Volunteer	4300 "	Jan. 5, 1920
Canadian Voyageur	4300 "	Feb. 15, 1920

Glasgow Service, From Halifax, N.S.		
Canadian Trapper	5100 tons	Nov. 28, 1919
Canadian Navigator	4300 "	Dec. 5, 1919
Canadian Aviator	5100 "	Dec. 30, 1919
Canadian Trapper	5100 "	Jan. 12, 1920
Canadian Aviator	5100 "	Feb. 14, 1920

Avonmouth Service, From St. John, N.B.		
Canadian Beaver	3750 tons	Jan. 7, 1920
Canadian Navigator	4300 "	Jan. 15, 1920
Canadian Beaver	3750 "	Feb. 22, 1920

Buenos Aires Service, From Montreal.		
Canadian Settler	5100 tons	Oct. 15, 1919
Canadian Planter	8100 "	Nov. 25, 1919

Buenos Aires Service, From Halifax, N.S.		
Canadian Pioneer	8100 tons	Dec. 15, 1919
Canadian Settler	5100 "	Jan. 15, 1920
Canadian Planter	8100 "	Feb. 15, 1920

Australian Service, From Vancouver, B.C.		
Canadian Raider	5100 tons	Nov. 15, 1919

St. John's, Newfoundland, Service, From Montreal.		
Canadian Volunteer	4300 tons	Sept. 30, 1919
Canadian Adventurer	3400 "	Oct. 15, 1919
Canadian Adventurer	3400 "	Oct. 29, 1919
Canadian Sower	3400 "	Nov. 1, 1919
Canadian Adventurer	3400 "	Nov. 12, 1919
Canadian Sower	3400 "	Nov. 15, 1919
Canadian Adventurer	3400 "	Nov. 26, 1919

Havana, Cuba, Service, From Montreal.		
Canadian Sailor	3400 tons	Oct. 7, 1919

Havana, Cuba, Service, From Halifax, N.S.		
Canadian Voyageur	4300 tons	Oct. 7, 1919
Canadian Trader	3400 "	Oct. 26, 1919
Canadian Sailor	3400 "	Nov. 9, 1919
Canadian Trader	3400 "	Nov. 23, 1919
Canadian Sailor	3400 "	Dec. 7, 1919
Canadian Trader	3400 "	Dec. 21, 1919

Barbadoes, Trinidad and Kingston Service, From Montreal.		
Canadian Recruit	3750 tons	Sept. 30, 1919

Barbadoes, Trinidad, and Demerera, Service, From Montreal.		
Canadian Signaller	3750 tons	Oct. 25, 1919
Canadian Gunner	3750 "	Nov. 12, 1919

Barbadoes, Trinidad, and Demerera, Service, From Halifax, N.S.		
Canadian Signaller	3750 tons	Dec. 12, 1919
Canadian Gunner	3750 "	Jan. 10, 1920
Canadian Signaller	3750 "	Jan. 29, 1920
Canadian Gunner	3750 "	Feb. 16, 1920

Kingston, Jamaica, and Havana, Cuba, Service, From Montreal.		
Canadian Warrior	3750 tons	Oct. 29, 1919
Canadian Recruit	3750 "	Nov. 18, 1919

Kingston, Jamaica, and Havana, Cuba, Service, From Montreal.		
Canadian Warrior	3750 tons	Dec. 8, 1919
Canadian Recruit	3750 "	Dec. 28, 1919
Canadian Warrior	3750 "	Jan. 12, 1920
Canadian Recruit	3750 "	Jan. 27, 1920

Canadian Vickers Ltd., Montreal, advise us that it is expected to launch 3 steel cargo steamships for the Marine Department as follows:

S.S. Canadian Navigator; Marine Department contract 23; builder's yard no. 73; approximately 4,300 tons d.w., in October.

S.S. Canadian Spinner; Marine Department contract 27; builder's yard no. 71; approximately 8,100 tons d.w., in November.

S.S. Canadian Planter; Marine Department contract 28; builder's yard no. 72; approximately 8,100 tons d.w., in November.

Collingwood Shipbuilding Co., Collingwood, Ont., having completed the s.s. Canadian Signaller; Marine Department contract 11; builder's yard no. 63; approximately 3,750 tons d.w., delivered her to the Marine Department, and she was transferred to Canadian Government Merchant Marine Ltd., Aug. 30, and sailed for Erie, Pa., for a cargo of coal, with which she arrived at Montreal, Sept. 7.

Dominion Shipbuilding Co., Toronto—For particulars of orders for 2 steel cargo steamships see under sidehead, "Orders for Steamships," in an earlier part of this article.

Harbour Marine Co., Victoria, B.C., which has contracts from the Marine Department for 2 steel cargo steamships, approximately 8,100 tons d.w. each, for Canadian Government Merchant Marine Ltd., and which laid the keel for its yard no. 1, July 14, laid the keel for its yard no. 2, Aug. 9.

Nova Scotia Steel and Coal Co., New Glasgow, N.S.—The employes at the company's shipbuilding plant struck work Sept. 5, demanding an 8-hour day, the

Halifax scale of pay, and the recognition of their union. The company has 2 steel steamships of approximately 2,800 d.w. tons capacity each, under construction for Canadian Government Merchant Marine Ltd., the keels of which were laid Mar. 27 and 31, respectively.

Port Arthur Shipbuilding Co., Port Arthur, Ont., laid keels for 2 steel cargo steamships, Marine Department contracts 32 and 33; builder's yard numbers 43 and 44; each approximately 4,300 d.w. tons, Aug. 29.

The company launched the s.s. Canadian Adventurer, Marine Department contract 19a; builder's yard no. 41; approximately 3,400 d.w. tons, Sept. 8, the christening being performed by the Prince of Wales, by request of Mrs. James Whalen, wife of the company's President, who carried the christening bouquet and presented the Prince with the bottle of champagne for the christening. As the Prince pressed the electric button which released the ship and broke the bottle over her stern, he said: "I christen this boat Canadian Adventurer. I wish it and all who may sail it good luck and God speed." The Prince is reported to have stated afterwards that this was the first launching at which he had officiated, and the first side-launching he had ever seen, and to have expressed his pleasure that it had taken place in the very heart of Canada and that the vessel is to be one of the Canadian Government Merchant Marine fleet, to carry Canadian cargoes throughout the world. He was keenly interested in the method of launching, and particularly on learning that by pressing the electric button he would trip the trigger that would release the boat. He complimented the company's General Manager, J. F. Paige, and his organization, on the success of the launching.

The Canadian Adventurer, during the launching, flew the Union Jack at her bow and the Canadian Government Merchant Marine ensign at her stern, the Port Arthur Shipbuilding Co.'s flag being in the center. Code flags, stretched from stem to stern, spelled out the name Canadian Adventurer. The ship is a full canal sized ocean freighter, approximately 3,400 d.w. tons, length over all 260 ft., breadth moulded, 43½ ft.; depth moulded, 23 ft. She is built to British Lloyd's 100 A1 classification, the fitout being in accordance with British Board of Trade rules. The propelling machinery, to develop about 1,500 h.p., will be placed amidships. The 3,400 ton ships are, generally speaking, the same as the 3,750 ton type built for the Marine Department, a full description of which was published in Canadian Railway and Marine World for September, 1918.

The company expects to launch the s.s. Canadian Sower, Marine Department contract 20a; builder's yard no. 42; approximately 3,400 d.w. tons, about the end of September or early in October.

Tidewater Shipbuilders Ltd., Three Rivers, Que., launched the steel cargo steamship Canadian Settler; Marine Department contract 13; builder's yard no. 5; approximately 5,100 d.w. long tons; Sept. 20; and immediately afterwards laid the keel for the s.s. Canadian Fisher; Marine Department contract 15; builder's yard no. 7; approximately 5,100 d.w. long tons.

The company expects to launch the s.s. Canadian Ranger, Marine Department contract 14; builder's yard no. 6; about Oct. 10; immediately after which it will lay the keel for the s.s. Canadian Forester, Marine Department contract

16; builder's yard no. 8; approximately 5,100 d.w. long tons.

Wallace Shipyards Ltd., North Vancouver, B.C., delivered the s.s. Canadian Trooper, approximately 4,300 tons d.w., to the Marine Department on Aug. 26.

She was transferred next day to Canadian Government Merchant Marine Ltd., loaded lumber at Fraser Mills, Vancouver, and sailed for Panama about August 13.

The company advised us Aug. 29 that it expected to launch the s.s. Canadian Aviator, approximately 5,100 tons, for the Marine Department, about Sept. 14.

The Carmichael Shipping Co. Discussed in Parliament.

J. W. Edwards, M.P., for Frontenac, Ont., in speaking in the House of Commons, Sept. 5, said among other things: "The member for Antigonish and Guysborough (J. H. Sinclair), has frequently spoken in this house on the subject of shipping, to such an extent as almost to make us believe that he was an expert on that matter. Where did he obtain his knowledge of shipping? In his part of the country there is a firm known as the Carmichael Shipping Co., and I believe he has a very direct and personal interest in its prosperity of it. That company before the war was receiving freight rates on deals and lumber of 35 shillings a standard, and during the latter part of the war it received as high as 350 to 380 shillings a standard. There are pirates in this country as well as profiteers. Some men take their profit on the land and others on the water, and I confess that I must take with a liberal amount of salt any statements made by the member for Antigonish and Guysborough to the effect that he is greatly concerned about the bleeding of the people by the profiteers. He has had considerable experience along that line. He has profited very materially in the shipping business, and who will deny that the shipping business and freights on the water have a very important effect on the cost of living? Unquestionably they do."

Mr. Sinclair rose to a question of privilege in the house on Sept. 8, quoted Mr. Edwards' remarks, as given above, and said: "This statement is untrue and has not the slightest foundation in fact. I do not say that the hon. member deliberately made a false statement, because I have no doubt that this story was told him by some malicious person. Whoever told it to him must have had some knowledge of the deal trade, because the hon. member is about correct in regard to the rates. The company in question carried no deals since the war broke out. It owned only one steamship which was commandeered by the Admiralty early in the war. She was placed on duty in the most dangerous part of the coast of Europe, carrying goods to the army at Salonika. She made five trips to Salonika and on the sixth, when bound for an Italian port, was torpedoed by an enemy submarine and is now at the bottom of the Mediterranean. Her captain and chief engineer were confined for 19 months in a German prison and during that time their wages were paid by the company that owned the vessel. This was the only steamship owned by the company and there could be no question of profiteering, for the Admiralty paid monthly freight at what was known as the blue-book rate, which was less than one-third of the commercial rate current at the time. I would not have troubled the house with this explanation but for the fact that the statement of the hon. member involves to some extent the reputation of an important business firm that has borne an honorable name in Nova Scotia for over 100 years."

Details of the Different Types of Steamships for Canadian Government Merchant Marine Ltd.
The following are comparative details of the seven different types of steamships being built for Canadian Government Merchant Marine Ltd.:

	2,800 ton.	3,400 ton.	3,750 ton.	4,300 ton.	5,100 ton.	8,100 ton.	10,500 ton.
Length, overall.....	280 ft.	260 ft.	260½ ft.	333 ft.	344 ft.	413 ft.	445 ft.
Length, bet. perpendiculars.....	270 ft.	251 ft.	251 ft.	320 ft.	331 ft.	400 ft.	430 ft.
Breadth, moulded.....	38 ft.	43½ ft.	43½ ft.	44 ft.	46½ ft.	52 ft.	56 ft.
Depth, moulded.....	20½ ft.	23 ft.	26 ft.	25 ft.	25½ ft.	31 ft.	38 ft.
Draft, loaded.....	17¼ ft.	20 ft.	22 ft.	21 ft.	21 ft.	25 ft.	29 ft.
Type.....	S.d., p.b. & f.c.'s'le	S.d., p.b. & f.c.'s'le	Lake, s.d., p.b. & f.c.'s'le	S.d., p.b. & f.c.'s'le	S.d., p.b. & f.c.'s'le	2d, p.b. & f.c.'s'le	3d, p. & f.c.'s'le
Engines—Type.....	Tri-compound	Triple expansion	Triple expansion	Triple expansion	Triple expansion	Triple expansion	Triple expansion
Cylinders, diam.....	17½ x 23¾ x 47 ins.	20½ x 28 x 56 ins.	18 x 30 x 50 ins.	25 x 41 x 67 ins.	25 x 41 x 68 ins.	27 x 44 x 73 ins.	29½ x 50 x 80 ins.
Stroke.....	33 ins.	40 ins.	38 ins.	45 ins.	45 ins.	48 ins.	54 ins.
Ind. h.p.....	875	1,300	1,200	1,800	2,500	3,000	4,000
Boilers—Type.....	Single ended	Single ended	Single ended	Single ended	Single ended	Single ended.	Single ended
No.....	2	2	2	2	3	3	4
Diam. and length.....	12¾ x 10¾ ft.	15 x 11 ft.	14 x 10¾ ft.	15½ x 11½ ft.	14 x 11½ ft.	15½ x 11¾ ft.	15½ x 11¾ ft.
Working pressure.....	185 lbs.	190 lbs.	180 lbs.	180 lbs.	180 lbs.	180 lbs.	180 lbs.
Furnaces—No.....	2	6	6	6	9	9	12
Grate surface.....	80 sq. ft.	135 sq. ft.	100 sq. ft.	132 sq. ft.	156 sq. ft.	198 sq. ft.	270
Heating surface.....	3,000 sq. ft.	4,670 sq. ft.	3,900 sq. ft.	5,162 sq. ft.	7,275 sq. ft.	7,743 sq. ft.	10,500 sq. ft.
Speed.....	8½ knots	9 knots	9 knots	11 knots	11 knots	11 knots	12 knots
Classification.....	Lloyd's	Lloyd's	Brit. Corp.	Lloyd's	Lloyd's	Lloyd's	Lloyd's

Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w." and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

The following contractions are used in the column giving the type of the vessels to be built:—s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p., poop; b., bridge; f'c's'le, forecastle.

Contract no.	Contract date	Builder	Yard no.	Long tons d.w.	Price per ton d.w.	Total price	Type	Classification	Speed, knots	Approximate delivery date	Keel laid	Launched	Name
1	Mar. 4, 1918	Canadian Vickers Ltd., Montreal	66	*4,575	\$207.	\$ 947,025	S.d., p., b. and f'c's'le.....	Lloyd's	11	Dec. 31, 1918	June 11, 1918	Nov. 23, 1918	Canadian Voyageur
2	May 22, 1918	"	67	*8,408	180.	1,513,440	2.d., p., b. and f'c's'le.....	"	11	Jan. 31, 1919	July 17, 1918	Dec. 3, 1918	Canadian Pioneer
3	May 18, 1918	Collingwood Shipbuilding Co., Collingwood, Ont.	61	*3,995	205.	818,975	Lake, s.d., p., b. and f'c's'le	Bri. Corp.	9	May 1, 1919	Not stated	Dec. 21, 1918	Canadian Warrior
4	Mar. 15, 1918	Wallace Shipyards Ltd., North Vancouver, B.C.	100	*4,530	207.	937,710	S.d., p., b. and f'c's'le.....	Lloyd's	11	Mar. 31, 1919	Oct. 1, 1918	Apr. 5, 1919	Canadian Volunteer
5	Nov. 25, 1918	"	106	4,300	217.	933,100	S.d., p., b. and f'c's'le.....	"	11	May 31, 1919	Nov. 15, 1918	Nov. 15, 1918	Canadian Trooper
6	Nov. 25, 1918	"	101	5,100	210.	1,071,000	S.d., p., b. and f'c's'le.....	"	11	July 31, 1919	Apr. 5, 1919	Apr. 5, 1919	Canadian Aviator
7	Nov. 25, 1918	"	102	5,100	210.	1,071,000	S.d., p., b. and f'c's'le.....	"	11	Sept. 30, 1919	May 31, 1919	May 31, 1919	Canadian Raider
10	July 5, 1918	Collingwood Shipbuilding Co., Collingwood, Ont.	62	*3,964	205.	812,620	Lake, s.d., p., b. and f'c's'le	Bri. Corp.	9	May 15, 1919	June 3, 1918	May 3, 1919	Canadian Recruit
11	Oct. 17, 1918	"	63	3,750	205.	768,750	Lake, s.d., p., b. and f'c's'le	"	9	July 15, 1919	Jan. 16, 1919	June 28, 1919	Canadian Signaller
12	Oct. 17, 1918	"	64	3,750	205.	768,750	Lake, s.d., p., b. and f'c's'le	"	9	July 1, 1919	Feb. 10, 1919	Feb. 10, 1919	Canadian Gunner
13	Aug. 9, 1918	Tidewater Shipbuilders Ltd., Three Rivers, Que.	5	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	Lloyd's	11	Aug. 1, 1919	Jan. 8, 1919	Sept. 20, 1919	Canadian Settler
14	Aug. 9, 1918	"	6	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Sept. 1, 1919	Jan. 10, 1919	Jan. 10, 1919	Canadian Rancher
15	Jan. 24, 1919	"	7	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Nov. 15, 1919	Sept. 20, 1919	Sept. 20, 1919	Canadian Fisher
16	Jan. 24, 1919	"	8	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	May 15, 1920	.....	.....	Canadian Forester
17	Sept. 4, 1918	Davie Shipbuilding & Repairing Co., Lauzon, Que.	459	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Nov. 1, 1919	Mar. 11, 1919	.....	Canadian Trapper
18	Sept. 4, 1918	"	460	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Nov. 8, 1919	Mar. 23, 1919	.....	Canadian Hunter
19	Sept. 4, 1918	Port Arthur Shipbuilding Co., Port Arthur, Ont.	39	*3,341	205.	684,905	Lake, s.d., p., b. and f'c's'le	"	9	June 1, 1919	Dec. 9, 1918	May 5, 1919	Canadian Trader
19a	Mar. 1, 1919	"	41	3,400	210.	714,000	Lake, s.d., p., b. and f'c's'le	"	9	Sept. 30, 1919	Mar. 31, 1919	Sept. 8, 1919	Canadian Adventurer
20	Sept. 4, 1918	"	40	*3,357	205.	688,185	Lake, s.d., p., b. and f'c's'le	"	9	July 1, 1919	Dec. 10, 1918	May 31, 1919	Canadian Sailor
20a	Mar. 1, 1919	"	42	3,400	210.	714,000	Lake, s.d., p., b. and f'c's'le	"	9	Oct. 31, 1919	Mar. 31, 1919	.....	Canadian Sower
21	Sept. 13, 1918	Halifax Shipyards, Ltd., Halifax, N.S.	1	8,100	195.	1,579,500	2.d., p., b. and f'c's'le.....	"	10	Dec. 19, 1919	Feb. 24, 1919	.....	Canadian Mariner
22	Sept. 13, 1918	"	2	8,100	195.	1,579,500	2.d., p., b. and f'c's'le.....	"	10	Apr. 1920	Mar. 15, 1919	.....	Canadian Explorer
23	Oct. 11, 1918	Canadian Vickers Ltd., Montreal...	73	4,300	215.	924,500	S.d., p., b. and f'c's'le.....	"	11	May 27, 1919	Jan. 22, 1919	.....	Canadian Navigator
24	Oct. 11, 1918	"	68	*8,382	188.	1,575,816	2.d., p., b. and f'c's'le.....	"	11	May 1, 1919	Aug. 26, 1918	Apr. 19, 1919	Canadian Ranger
25	Oct. 11, 1918	"	69	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	June 1, 1919	Nov. 30, 1918	May 7, 1919	Canadian Seigneur
26	Oct. 11, 1918	"	70	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	July 1, 1919	Dec. 2, 1918	Aug. 16, 1919	Canadian Miller
27	Oct. 11, 1918	"	71	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	Aug. 1, 1919	Apr. 23, 1919	.....	Canadian Spinner
28	Oct. 11, 1918	"	72	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	Sept. 1, 1919	May 10, 1919	.....	Canadian Planter
29	Jan. 24, 1919	Harbour Marine Co., Victoria, B.C.	1	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Jan. 31, 1920	July 14, 1919	.....	.....
30	Jan. 24, 1919	"	2	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Nov. 30, 1920	Aug. 9, 1919	.....	.....
31	Dec. 11, 1918	Collingwood Shipbuilding Co., Kingston, Ont.	15	3,750	205.	768,750	Lake, s.d., p., b. and f'c's'le	Brit. Corp.	9	Nov. 1, 1919	Apr. 7, 1919	.....	Canadian Beaver
32	Mar. 1, 1919	Port Arthur Shipbuilding Co., Port Arthur, Ont.	43	4,300	215.	935,250	S.d., p., b. and f'c's'le.....	Lloyd's	10½	Nov. 1, 1919	Aug. 29, 1919	.....	.....
33	Mar. 1, 1919	"	44	4,300	215.	935,250	S.d., p., b. and f'c's'le.....	"	10½	Nov. 15, 1919	Aug. 29, 1919	.....	.....
34	Nov. 22, 1918	J. Coughlan & Sons, Vancouver, B.C.	11	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	July 31, 1919	Apr. 26, 1919	.....	Canadian Importer
35	Nov. 22, 1918	"	12	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Aug. 31, 1919	May 3, 1919	.....	Canadian Exporter
36	Nov. 22, 1918	"	13	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Sept. 30, 1919	July 24, 1919	.....	Canadian Inventor
37	Nov. 22, 1918	"	14	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Oct. 31, 1919	.....	.....	Canadian Prospector
38	Dec. 10, 1918	Halifax Shipyards Ltd., Halifax, N.S.	3	10,500	197½	2,073,750	3.d., p., and f'c's'le.....	"	12	Aug. 1, 1920	.....	.....	.....
39	Dec. 10, 1918	"	4	10,500	197½	2,073,750	3.d., p., and f'c's'le.....	"	12	Nov. 1, 1920	.....	.....	.....
40	Mar. 31, 1919	Nova Scotia Steel & Coal Co., New Glasgow, N.S.	5	2,800	210.	588,000	S.d., p., b. and f'c's'le.....	"	8½	Oct. 1919	Mar. 27, 1919	.....	Canadian Sealer
41	Mar. 31, 1919	"	6	2,800	210.	588,000	S.d., p., b. and f'c's'le.....	"	8½	Nov. 1919	Mar. 31, 1919	.....	Canadian Miner
42	Feb. 21, 1919	Prince Rupert Dry Dock and Engineering Co., Prince Rupert, B.C.	1	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Feb. 1920	.....	.....	.....
43	Feb. 21, 1919	"	2	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	June 1920	.....	.....	.....
44	Jan. 23, 1919	British American Shipbuilding Co., Welland, Ont.	4	4,350	215.	935,250	S.d., p., b. and f'c's'le.....	Brit. Corp.	10	Nov. 1919	Mar. 29, 1919	.....	Canadian Otter
45	Jan. 23, 1919	"	5	4,350	215.	935,250	S.d., p., b. and f'c's'le.....	"	10	June 1920	July 14, 1919	.....	Canadian Squatter
46	Sept. 11, 1919	Collingwood Shipbuilding Co., Collingwood, Ont.	65	3,950	180.	711,000	Lake, s.d., p. b., and f'c's'le	Lloyd's	11	June 1, 1920	.....	.....	.....
47	Sept. 11, 1919	"	66	3,950	180.	711,000	Lake, s.d., p. b., and f'c's'le	"	11	June 15, 1920	.....	.....	.....
48	Sept. 2, 1919	Dominion Shipbuilding Co., Toronto	10	3,500	180.	630,000	Lake, s.d., p., b. and f'c's'le	"	11	May 1920	.....	.....	.....
49	Sept. 2, 1919	"	11	3,500	180.	630,000	Lake, s.d., p., b. and f'c's'le	"	11	June 1920	.....	.....	.....
				280,202		\$55,659,626							

Control of Canadian Steamships by Great Britain.

Montreal press dispatch:—The Dominion Steel Corporation has received back three steamships from the British Shipping Control, the Lord Strathcona of 11,000 tons, and the Wabana and Kamouraska of 7,500 tons each. Two of the largest, the Rose Castle and the Daghill, are still over there, undergoing repairs, it is reported, and it may be months before they are sent back. Constant protests, it is understood, have been sent to the Shipping Control against the detention of those boats, but the time has dragged on. Meanwhile the Steel Corporation is prevented from carrying any but a small portion of the coal it mines to Montreal, as its own fleet is required on the coast. There is beginning to be an impression among the various companies thus handicapped, either by Canadian vessels being detained so long overseas, or British vessels under control in Canada, that the higher profits made overseas by those who had control of the vessels, may have had some influence on their return to Canada. The three boats now received by the Dominion Steel Corporation will help, of course, to provide a market for the coal that is produced.

The President of the Privy Council, Hon. N. W. Rowell, said in the House of Commons, Sept. 10: "For a considerable time the Canadian Government have had under consideration the question of securing the transfer to Canadian registry of Canadian owned ships at present on the United Kingdom registry. Many Canadian owners wish to make this transfer, but in view of the pressing need for tonnage the Minister of Shipping has heretofore refused to sanction such a course. As a result, however, of representations recently made by the Canadian Government, the government of the United Kingdom have consented to alter their policy in this respect, and they have agreed to the announcement of the change in the following terms set forth in a telegram from the Colonial Secretary, dated Aug. 16:

"Subject to adequate safeguards of the maintenance of our present rights in regard to the carriage of government cargo by liners, it is proposed that all ships that were Canadian owned before the war, and any ships transferred to Canadian owners during the war, are now to be transferred to Canadian registry if their owners desire it."

"A subsequent telegram from the Colonial Secretary, dated Aug. 19, explains that the above proposal concerning transfer to Canadian registry is not intended to apply to cases where there has been a special stipulation to the contrary. This refers to cases of the sale by British owners to Canadian purchasers of ships of British registry. Owing to the great demand it was found necessary to retain rigid control of British ships and no British owners were permitted to transfer their ships without definite stipulation that such a transfer should not carry with it any rights other than those of the seller. The purchaser, therefore, in that case would receive the ship, subject to the government right of requisition, and of preventing transfer to another registry."

Mr. Rowell, also said in the House of Commons on the same day: "The leader of the opposition asked me yesterday if I could give any information whether ships not British, which were under charter to Canadian companies, and which were commandeered by the British Government, will be returned to the former

charterers, and I promised to enquire and make answer today. The question doubtless refers to ships owned in Great Britain and registered there, under long term charter, to Dominion Coal Co. These ships were requisitioned during the period of the war by the British Government. Immediately following the termination of the war, representations were made by the Canadian Government to the British Government, requesting that these vessels should, with the least possible delay, be returned to the chartering company. In a dispatch from the Secretary of State for the Colonies to the Governor General dated June 26, the contents of which dispatch were communicated to the House of Commons by the Prime Minister on July 1, it is stated that the 5 vessels in which the Dominion Coal Co. are interested, 3 have been released from requisition and returned to the owners, and the remaining 2 are to be released as soon as present cargoes are discharged. It is understood that these 2 were undergoing extensive repairs, and if they have not already been released to the owners, they will be as soon as they are ready to be placed in commission. We have not heard that they have not been released."

London, Eng., press cable, Sept. 12, Hon. N. W. Rowell is reported as having stated in the Canadian House of Commons that the British Ministry of Shipping had agreed to transfer to Canadian registration all Canadian-owned ships now under British registration. W. Grant Morden told the Canadian Press today that this was incorrect. He had seen a copy of the cable sent by the Colonial Secretary, which said that they would be transferred after August, 1920, but that in the meantime the British Ministry's control over the ships would not be affected, "which means," said Mr. Morden, "we are no better off than before."

A. R. McMaster, M.P., for Brome, Que., in speaking in the House of Commons recently, said in part: "Canada could improve her constitutional position by insisting upon all those sovereign rights which she does not now possess, the acquisition of which will make her a sister nation equal with the United Kingdom of Great Britain and Ireland. What are those rights? Great Britain has complete command of her own ships; we have not. While the war was on the British Admiralty commandeered Canadian ships without, I think, obtaining the consent of this parliament. Am I wrong in that?"

Hon. N. W. Rowell, President of the Privy Council: "I think my hon. friend is mistaken. I think the Dominion Government took the position that the British Government had no right to commandeer our ships, that that action could only be taken by this government; and I think we co-operated in the action taken."

Mr. McMaster: "The government has not continued to co-operate. It has asked for the return of those ships. They are being returned subject to certain obligations placed upon them when they were under the control of the British Government."

Mr. Rowell: "I speak subject to correction, because I am not familiar with the details of the matter which my hon. friend is now discussing. But I think that the hon. gentleman is incorrect in that. Certain ships are being returned subject to certain conditions imposed by

the British Admiralty, but these are ships that were transferred from British registry to some other registry, the British Admiralty imposing the condition on the transfer that they should be subject to all obligations to which they would have been subject had they not been transferred."

Mr. McMaster: "As I understand it, these ships which are being transferred from British to Canadian registry are Canadian ships, owned by Canadian companies or individuals. I am not criticizing the government for this action. I am merely pointing out that if we are to have a status equal to that of Great Britain, we should absolutely control the fate of our own ships."

Sales of Imperial Steam Wooden Drifters.

The Anderson Co. of Canada, Montreal, advise us that they have made the following sales of steam wooden drifters, built in Canada during the war for the British Government through the Canadian Naval Service Department.

Nos. 30 and 46 6to Empresa de Pesca Vianese Limitada, Portugal. On Sept. 16 the ships were being outfitted at Halifax, and were expected to sail within a few days thereafter.

No. 35 to Job Bros., St. John's, Nfld.

Nos. 90 and 92 sold through the Anderson Co.'s New York office to the W. R. Grace Co.

No. 50, sold by the Naval Service Department to the Marine Department.

The Great Lakes Dredging Co. Ltd., the incorporation of which was announced in our last issue, with office at Union Bank Building, Ottawa, is, as stated, an amalgamation of the Great Lakes Dredging and Contracting Co. and the Thunder Bay Contracting Co. The officers are: President, Senator M. J. O'Brien, Renfrew, Ont.; Vice President, J. A. O'Brien, Ottawa; Managing Director, Lt.-Col. L. T. Martin, Renfrew, Ont.; other directors, W. O. Matthews, Ottawa, and J. L. Murray, Renfrew, Ont.; Secretary-Treasurer, T. Fisher, with office at Port Arthur, Ont. The company is carrying on dredging at Port Arthur and is building a slip at Ojibway, which will be the largest on the Great Lakes, for the Canadian Steel Corporation. The company's plant consists of 8 dipper dredges, 1 hydraulic dredge (Shuniah), 9 tugs, one of which, the E. C. Whalen, is suitable for ice breaking, 2 single derrick barges, and 1 double derrick barge, together with a number of steel and wood scows, barges, floating pile driver, etc.

The Dredge P.W.D., No. 106, was offered for sale by tender, Sept. 25, as she lay at the Marine Department's shipyard at Sorel, Que. The dredge is owned by the Public Works Department, and is equipped with two 9 x 12 engines and one upright boiler 4½ x 7 ft. The dimensions of the vessel are: length, 54.8 ft.; breadth, 24.1 ft.; depth, 4.9 ft.; tonnage, 110.

Canada Steamship Lines Ltd. is reported to have earned over \$1,000,000 more on its excursion business during the past season than in 1918. The overseas freight business is also reported to be in excess of 1918. J. W. Norcross, President, is reported to have stated in London, Eng., Sept. 18, that the company is preparing plans for large expansion.

Additional Canal Lock at Sault Ste. Marie.

A fourth lock in the United States Sault Ste. Marie canals, was opened for traffic Sept. 18, making, with the lock on the Canadian side, five locks for handling traffic through the St. Marys River.

The first canal was built on the Canadian side of the river in 1798, with a lock 38 ft. long, 8 3/4 ft. wide with a lift of 9 ft., and with a tow path alongside for the oxen utilized in hauling boats through. This was destroyed by U.S. troops in 1814.

The first ship canal was built on the U.S. side in 1855, and was 1 1/2 miles long, 64 ft. wide at bottom and 100 ft. wide on the water surface. There were 2 tandem locks, each 350 ft. long, 70 ft. wide, with a lift of about 9 ft., a canal depth of about 13 ft.; and a lock depth of about 11 1/2 ft. These locks were razed in 1888 during the excavations for the present Poe lock.

The first of the existing U.S. locks, the Weitzel lock, was completed in 1881, and is 515 ft. long, 8 ft. wide in the chamber, and 60 ft. wide at the gates, with 17 ft. of water on the sills. At that time the canal was deepened and widened to 160 ft.

The Canadian canal, 1 1/2 miles long, was completed in 1895, and is 150 ft. wide, and 23 ft. deep. The lock is 900 ft. long, 60 ft. wide, with 22 ft. of water on the sills. The second U.S. or Poe lock, was completed in 1896, and is 800 ft. long, 100 ft. wide, with 23 ft. of water on the sills.

The third U.S. lock was opened for traffic Oct. 21, 1914. It is 1,350 ft. long, 80 ft. wide and has 24 1/2 of water on the sills.

While the third U.S. lock was under construction, it was decided to duplicate it, and this, the fourth lock, is the one just opened for traffic, and which has been named Sabin, after the Superintendent of the canal. The second (Poe) lock, was 100 ft. wide, so as to enable two vessels to be locked through side by side, but in operation this was found to cause delay in getting the vessels into position, and passing them through the gates, so it was decided not to follow the same course in the later locks.

The traffic passing through these canals is greater than passes through any other canal in the world, the volume for 1918 being 85,680,327 tons. There were 20,610 vessels passages, the vessels having a registered tonnage of 661,100,244. Prior to 1881, the U.S. canals were operated by the State of Michigan and tolls were charged to cover operating expenses, but since that year, when control was taken

over by the U.S. Government, no tolls have been charged, vessels of all nations being granted free use, as on the Canadian canal.

Mainly About Marine People.

Sir H. Montagu Allan, formerly of the Allan Steamship Co., made a trip from Montreal to the Pacific coast recently, with other directors of the Merchants Bank of Canada, of which he is President.

Hon. C. C. Ballantyne, Minister of Marine, who, as stated in Canadian Railway and Marine World for September, after returning from recuperating at St. Andrews, N.B., had to re-enter the Royal Victoria Hospital in Montreal, on Aug. 7, was able to be removed to his house early in September, but he had to return to the hospital again in a few days, as he missed the treatment which he had been receiving there and was not making satisfactory progress without it. We were advised Sept. 20 that he hoped to be able to leave the hospital in about a week thereafter. The date on which he will start for the Pacific coast depends largely on circumstances which may arise after his return to Ottawa, which is hoped to be early in October.

Lient.-Col. A. E. Dubuc, D.S.O., is reported to have been appointed Superintendent of Canals for the Province of Quebec, vice E. Marceau, deceased.

Capt. Bertram Hayes, commander of the White-Star Line's s.s. Olympic, has been made a Knight Commander of the Order of St. Michael and St. George in recognition of his services, while in command of this vessel which acted as a troop transport during the war. During his services, while the vessel was under government requisition, thousands of troops were conveyed across the ocean without a life being lost.

Mrs. F. S. Isard, wife of the Director of Finance, Canada Steamship Lines, and her family, returned to Montreal recently after spending the summer at Elizabethtown, N.Y.

J. W. Norcross, President, Canada Steamship Lines, and W. Grant Morden, M.P., a member of the company's London, Eng. advisory board, are reported to have made a record air trip from Paris to London recently, in an hour and 55 minutes.

Jno. Barton Payne, heretofore General Counsel, United States Railroad Administration, has been appointed Chairman of the U.S. Shipping Board, and President of the Emergency Fleet Corporation.

S. McC. Smith, who died at Victoria, B.C., Sept. 7, was associated with ship-

building and ship repairing work on the Pacific coast for over 40 years. He was born at Maitland, N.S., and went first to San Francisco, Cal., and later settled in Victoria, B.C. He was for some time before starting business on his own account, Superintendent, B.C. Marine Railway Co., Esquimalt, and supervised the building of several of the larger vessels used in the Pacific coasting trade.

E. K. Spinney, M.P., for Yarmouth and Clare, N.S., was elected chairman of the House of Commons Committee on Marine and Fisheries, at the recent session, replacing Hon. W. S. Fielding.

Mrs. Thom, widow of James Thom, formerly Manager of the White Star-Dominion Line at Montreal, has returned there, after spending some four years in England, while her sons, Lieutenants Balfour and Gordon Thom, were in Belgium and France.

Robert Weddell, harbor and marine contractor, Trenton, Ont., died there Sept. 11.

F. A. Weiss, Passenger Agent, Canadian Pacific Ocean Services Ltd., Shanghai, China, was found murdered, in the outskirts of that place, Aug. 24. He went from Montreal to Shanghai in March, 1917, and was appointed Passenger Agent there in June last.

The Louisburg Drydock and Shipbuilding Co., is stated, in a dispatch from Sydney, N.S., to have been incorporated to build a dry dock at Louisburg, N.S., to cost approximately \$5,000,000. J. W. Maddin, who is said to be interested in the project, is reported to have stated that the plans and specifications have been completed and placed in the hands of the government, with an application for aid under the Dry Docks Subsidies Act. We have been officially advised that an application has been made to the Public Works Department for a subsidy, for the construction of a drydock at an approximate cost of \$2,500,000. The dimensions of the proposed dock are: length, 650 ft.; width, 85 ft.; depth, of sill at high water spring tide, 30 ft.

British Shipbuilding experienced a rather healthy improvement during the second quarter of 1919; 782 vessels, of a gross tonnage of 2,524,050, being under construction. This was an increase of 269,000 tons on the amount under construction at the end of March and 709,000 tons more than the amount building a year ago. Records show that 181 vessels of 514,240 tons were launched during the second quarter, which compares with 72 vessels of 203,966 tons launched during the first quarter of 1919.

United States Shipbuilding—The Bureau of Navigation states that during the 12 months ended Aug. 31, the output of U.S. shipyards reached 4,187,670 gross tons of merchant vessels officially numbered by the bureau. The bureau also reports 236 sailing, steam, gas, and unrigged vessels of 454,887 gross tons, built in the U.S., and officially numbered during August.

Bonus for Shipbuilding Steel—The Welland, Ont., Board of Trade has passed a resolution in favor of the Dominion Government granting a bonus of \$10 a ton on all steel entering Canada, during the next 10 years, for use in building vessels.

The Canadian Towing and Wrecking Co.'s steam tug James Whalen, which has been operating under lease in the lower St. Lawrence and on the Atlantic coast, for the last two or three years, returned to Port Arthur, Sept. 16.

Vessels Added to and Deducted From the Canadian Register During July and August, 1919.

	No.	Steam.— —Tonnage—		No.	Sailing.— —Tonnage—	
		Gross.	Registered.		Gross.	Registered.
Added.						
Built in United Kingdom.....	1	592	302	.....	.....	.....
Built in Canada.....	51	20,753	12,632	34	6,862	6,257
Purchased from foreigners.....	10	10,066	6,767	8	2,155	2,090
New registers.....	6	9,152	6,095	1	62	62
Totals.....	68	41,023	25,800	43	9,979	8,409
Deducted.						
Wrecked or otherwise lost.....	5	896	415	2	160	160
Broken up or unfit for use.....	7	251	145	13	965	946
Sold to foreigners.....	7	1,877	1,305	3	1,919	1,854
Transferred to United Kingdom.....	2	5,642	2,907	.....	.....	.....
Transferred to British possessions.....	1	52	35	1	392	306
New registers.....	1	231	149	5	143	140
Totals.....	23	8,949	4,956	24	3,579	3,460

Customs Requirements re Coastwise Clearances and Entries.

As stated in Canadian Railway and Marine World for March, in the report of the Dominion Marine Association's annual meeting, a letter was read from C. H. Nicholson, Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, inviting general support in a movement for relief from alleged unnecessarily onerous customs requirements, in the matter of coastwise clearances and entries, and it was decided to advise Mr. Nicholson that there was fairly general satisfaction with existing conditions on the Great Lakes in respect of the matters mentioned, and to ask for particulars of difficulties experienced on the Pacific coast.

We are now advised that the proposal from the Pacific coast for the abolition of the requirements for clearing ships at customs, where the business is purely coasting, meets with the general approval of the Dominion Marine Association's members, who believe the requirement, enforced as it is, for purely statistical purposes, throws a much heavier burden upon ship owners than is justified by the benefits received, and it is desired that, as in many countries, transires be issued good for an extended period.

United States Shipping Board Notes.

The board announces that of the 512 steamships which it requisitioned for war purposes, it had, up to Sept. 2, released 478 with total tonnage of 2,727,421 d.w. This does not include 87 Dutch ships, aggregating 579,975 tons d.w., which were released some time ago.

The board has issued a statement giving analysis of commerce carried in vessels under the board's control. A fleet of 293 freighters steamed from U.S. ports during June, carrying 1,177,444 tons of cargo. Of these 243 went out of Atlantic ports, 33 from Gulf ports and 17 from Pacific.

P. A. S. Franklin, President, International Mercantile Marine, expressed himself recently, as optimistic about the outlook for U.S. shipping if the Federal government will turn over steamships it controls to private firms for operation in passenger and freight business to all parts of the world.

The U.S. War Department announced Sept. 11 that during August 151,000 d.w. tons of shipping were redelivered to commercial owners and 74,000 tons to the U.S. Shipping Board, making a total of 225,000 for the month. This brings total redeliveries to 3,282,000 tons. There are in operation in the army's transatlantic fleet 519,000 d.w. tons of shipping.

New York press dispatch, Sept. 8:—Local shipowners were inclined today to interpret the announcement by the Shipping Board that less than 35 privately owned ships remain under its requisition, as further indication that government operation of ships will eventually cease. Recent reports that the chairmen of both the Senate and House committees are opposed to government competition with private shipping concerns were well received and sentiment is much improved over the general outlook. Of course, most shipowners realize that new shipping legislation must await the disposition of such matters as the rati-

fication of the peace treaty and the framing and enacting of a new railway bill, but shipping affairs have started to shape toward a definite end, and there are many who believe that a real solution of the U.S. merchant marine problem will come much sooner than had been generally expected.

Proposed Control of Steamships by Board of Railway Commissioners.

In the House of Commons, Sept. 12, J. E. Armstrong, M.P., for Lambton, Ont., introduced a bill to amend the Railway Act, in reference to which he said: "This bill is for the purpose of bringing under the control of the Board of Railway Commissioners, ships plying on our inland waters and engaged in coastwise trade. At present only a few ships connected with the railways are under the control of the commissioners. The intention is to make such ships as I have mentioned subject to that control as regards tariffs, tolls, trade agreements, time of call, duration of stay, and many things of public importance connected with transportation on our waters. There are 4,500 ships on the Canadian register, and they employ 45,000 people. The bill is pretty nearly the same as the one I presented last year. Then I asked that the board should have control as regards maximum freight rates. That is embodied in this bill. But there is another clause which exempts sailing vessels and small boats."

At the time of writing (Sept. 23), the bill had been read a first time, and it was not considered likely that it would make much further progress without being referred to a committee, probably the railway committee, so that evidence of interested parties might be heard. The bill, like its predecessors, is meeting with the continued opposition of the leading boards of trade, commercial organizations, shippers and water carriers throughout the country, and of the Dominion Marine Association.

The Sydney Dry Dock and Engineering Co. has applied to the Dominion Government under the Dry Dock Subsidies Act for aid in the construction of a dry dock of 15,000 tons lifting capacity at Sydney, N.S. The application is being dealt with by the Public Works Department's engineering branch, and it is not expected that a decision will be announced for some little time. In this connection the Sydney Foundry & Machine Co. has applied to the Dominion Government for the granting of a water lot at Anderson's Point, Sydney, N.S., for the construction of a dry dock, and the Sydney Dry Dock and Engineering Co. is, apparently, a subsidiary company for the carrying out of the work.

Wireless Telegraph Installations—The 40 wooden steamships which are being built at the Pacific coast, for the French Government, are being equipped by the Marconi Wireless Telegraph Co. of Canada. The sloop *Algerine*, sold recently by the Dominion Government to the Pacific Salvage Co., and which has been remodelled for use as a salvage vessel, by Yarrows, Ltd., has been equipped with a Canadian Marconi 2 k.w. installation.

Ocean Cargo Carriers Co. Ltd., has been granted supplementary letters patent converting it from a private company into a public company.

Cargo Shipbuilding in Canada for British Government.

J. Coughlan & Sons, Vancouver, B.C.—With the launching of the s.s. *War Chariott* at this yard, September 24, the last of the steel steamships ordered on the Pacific coast by the Imperial Munitions Board for the British Government, was floated and, on its equipment, the contracts with the Imperial Munitions Board will have been completed. These steel steamships were of approximately 8,800 tons d.w. capacity each, and 9 of this type were ordered for the British Government, and in addition, the s.s. *Alaska*, a vessel of a similar type and capacity, which was under construction in the early stages of the war for Norwegian interests, was taken over by the British Government.

Shipbuilding in Australia.

The Australian Government's shipbuilding programme covers the construction of 14 steel steamships of the shelter deck type, from 5,500 to 6,000 d.w. tons, of the following approximate dimensions: length, between perpendiculars, 331 ft.; breadth, moulded, 48 ft.; depth, moulded to shelter deck, 33 ft. 7 ins. It is reported that the cost of these vessels is about \$141 a d.w. tn, the prices during May, averaging from \$140 to \$165 a d.w. ton. The contract price of the 5,100 ton steel steamships which are under construction in Canada for Canadian Government Merchant Marine Ltd., is \$210 a d.w. ton for those being built on the Pacific coast, and \$200 a d.w. ton for those building on the St. Lawrence. No figures are available as to wages paid in Australia, so that it is not possible to make any comparisons, but in one case cited, the rate in Canada is nearly double that paid in Australia.

The Frontenac Dredging Co. Ltd., has been incorporated under the Ontario Companies Act with \$75,000 capital, and office at Toronto, to carry on a general dredging, contracting and construction business, to own and operate dredges and dredging plants, and to take over the dredging and contracting business formerly carried on by Manley and Co.

Port Colborne Elevator Disaster—At the inquest into the cause of the explosion at the Dominion Government elevator at Port Colborne, Ont., Aug. 9, which caused the death of 8 men, it was stated that the explosion was caused by sparks from a defective motor setting fire to an accumulation of dust in a confined space. During the parliamentary recess, a Governor General's warrant for \$400,000 was issued, for the reconstruction of the elevator.

The Motor Schooner *Neophyte*, owned by the Railways and Canals Department which was offered for sale by tender, as she lay at Port Nelson, Hudson Bay, has not been sold, only one tender being received and it was considered too low. Owing to the lateness of the season, it will not be possible to get the schooner out until next year.

The Easton Fish Co. Ltd., has been incorporated under the Manitoba Companies Act to carry on a general fishing and fish dealing business, and to own and operate steam trawlers, steamships and vessels, of all descriptions, wharves, docks, and works for the improvement of navigation. The head office is at Pas, Man., and the authorized capital is \$40,000.

Proposed Development of St. Lawrence River Navigation and Power.

Ottawa press dispatch, Sept. 18.—Preliminary steps in the direction of the preparation of an international scheme for the improvement of facilities for navigation on the St. Lawrence River and also for the development of the vast power potentialities of that stream, have been taken by both the Canadian and the United States Governments. Inasmuch as the St. Lawrence from Lake Ontario to Cornwall, a distance of 113 miles, is a boundary river, joint action by the two countries is necessary in this important enterprise. The U.S. Government, acting upon an instruction from Congress, has asked Canada to be a party to the submission of the question to the International Joint Commission, composed of representatives of both countries, for a report upon the feasibility, desirability and cost of such an undertaking. Canada, through her government, has consented to associate herself with the reference. Both governments have, therefore, named representatives, whose duty will be to prepare the questions to be laid before the International Joint Commission. The U.S. Government has appointed as its representative, Lieut.-Col. Charles Kellar, of the War Department. The Canadian Government has selected W. J. Stewart, of Ottawa, Dominion Hydrographer.

Mr. Stewart and Lieut.-Col. Kellar will meet shortly, probably at Washington, to consider the scope of the reference to the International Joint Commission. F. H. Keefer, M.P., who was formerly counsel for the Canadian and the Ontario Governments before the commission, and who is now Parliamentary Secretary for External Affairs, when questioned as to the progress of the negotiations looking to the development of the St. Lawrence for navigation and power purposes, spoke of the appointments which have been made and expressed the opinion that the question should be ready for submission to the commission within a month. The commission, he said, will then be in a position to proceed with its enquiry. In the meantime in anticipation of the investigation, certain surveys have been carried on on behalf of the Dominion Government. The Hydro-Electric Power Commission of Ontario, too, has been securing data and preparing plans, according to a recent announcement by its chairman, Sir Adam Beck.

The course of action being taken through the International Joint Commission is entirely in accord with the policy which has been laid down on behalf of Canada by Sir Robert Borden and his government. On several occasions, notably last year, when an application was made to the Joint Commission by a U.S. corporation for permission to construct a weir at the Long Sault Rapids, to increase the head of water in its power canal, the government declared itself opposed to piecemeal development by private interests, but announced its willingness to enter into negotiations with a view to the adoption of a general scheme of development of both the navigation and power possibilities of the river by the two governments. Several of the Canadian ministers at that time went to Washington to impress this view upon the U.S. Government. The result of the application was that the corporation was authorized to erect a temporary weir, because it was engaged in the manufacture of war materials. This weir, it was decided, should be removed

when the war was over.

The U.S. Government made no pronouncement upon the proposal that a joint scheme of development be undertaken. Within the past year, however, a new factor has entered into the question. Many interests in the interior states realized the importance to them of a deep waterway from the head of Lake Superior to the Atlantic. They saw that with the completion of the new Welland Ship Canal by Canada the barrier which prevented ocean freighters from penetrating to the heart of the continent could be removed by the deepening of the St. Lawrence route between Lake Ontario and Montreal. They have formed an organization, known as the Great Lakes-St. Lawrence-Tidewater Association, with official and civic support in ten states, to educate public opinion to the importance of the project they have in view and to press for action by the U.S. Government. As a result, in some measure at least, of the activity of this association, Congress took official action last spring. To the Rivers and Harbors Appropriation Act, approved on March 2, 1919, Congress added a section directing "that the International Joint Commission be requested to investigate what further development of the St. Lawrence River between Lake Ontario and Montreal is necessary, to make the same navigable for ocean going vessels, together with the estimated cost thereof, and to report to the Canadian Government of Canada and to the U.S. Congress with its recommendation for co-operation between the U.S. and Canada in the improvement of the said river."

Upon this enactment, the U.S. Government acted in requesting a joint reference to the International Joint Commission. The project which the commission will consider will have, as has been indicated, two aspects: first, the improvement of navigation on the St. Lawrence, and, second, the development of water powers in the stream. Both aspects are of immense importance to Canada. If an arrangement was made whereby the St. Lawrence waterway would conform in depth to the new Welland Ship Canal which is to have 25 ft. of water with 30 ft. on the sills, nine-tenths of the seagoing vessels of the present time would be able to steam from the Atlantic to the head of the Great Lakes. Any ordinary ocean going ship would thus be able to travel 2,100 miles inland from the Gulf of St. Lawrence and the Great Lakes would be transformed into an American Mediterranean, discharge their cargoes at any of the Great Lakes' ports.

Furthermore, the 500-ft. grain carriers which ply on the upper lakes and which now can proceed seaward only as far as Port Colborne, the Lake Erie terminus of the Welland Canal, would be able to carry their half million bushel cargoes to Montreal, there to be discharged into ocean going ships. Hitherto large lake freighters have been compelled to discharge their cargoes into the government elevator at Port Colborne, from which it has been loaded into smaller boats capable of passing through the St. Lawrence Canals. A waterway which would permit large vessels to carry the grain from the head of the lakes to sea-board would, it is contended, materially reduce carrying charges and facilitate the movement of

the western wheat crop. It would also provide water transportation for other products of the great inland territory tributary to the Great Lakes and westward and for the manufactured articles of the industrial centres at less than rail rates.

As a power proposition, the project is also a great one. It has been estimated that the water powers of the St. Lawrence could generate 3,000,000 h.p. of electricity, if not more. As yet a comparatively small proportion of this has been developed. The value of this for industrial and other purposes is not difficult to realize. Between Lake Ontario and Cornwall, where the St. Lawrence constitutes the International Boundary line, it is estimated that 1,000,000 h.p. of electricity could be delivered for the common use of the two countries. The International Joint Commission will be called upon to consider by what method the navigation and power of the river should be developed, whether by canalization of the river channel itself by the construction of storage dams at two or three points with lock gates, or by a system of canals parallel to the river after the fashion but on a larger scale than the existing St. Lawrence Canals.

The commission's report will be submitted to the Dominion and U.S. Governments, each of which will be free to approve or reject the plan it proposes. The undertaking would, no doubt, involve a large investment. It will be some time, however, before the details of the scheme can be worked out by the engineers and be reported upon by the International Joint Commission, probably several years.

Navigable Waters Protection Act Amendment.

The Minister of Public Works, Hon. A. L. Sifton, introduced a bill in the House of Commons on Sept. 16, to amend the Navigable Waters Protection Act, in reference to which he said: "The bill has reference to an amendment which was made a year or so ago in the Navigable Waters Act in connection with permission given by the Public Works Department for the construction of bridges or wharves upon navigable waters. The act that was passed provided for this permission, but not for the removal of obstructions if people should build without having obtained permission. The purpose of this bill is to authorize the department, in the event of the violation of the law, to remove obstructions from navigable waters."

The bill was read a third time and passed in the Commons, Sept. 24.

Princess May Steamship Co. Ltd. has been incorporated, under the Dominion Companies Act, with authorized capital of 10 shares without nominal or par value, but with the proviso that the business shall be carried on with a capital of \$125,000 and with office at 701 Dominion Express Building, Montreal. The President of the company is S. Di Giorgio, President of Di Giorgio, Inc., fruit merchants, New York, and the Secretary is J. Fechtig, Jr., New York. The company has been formed to own and operate the s.s. Princess May, purchased recently from the C.P.R., as mentioned in our last issue.

General Shipbuilding Matters Throughout Canada.

Acadia Shipbuilding Co., Saulnierville, N.S., launched the tern schooner *Nettie C.*, Sept. 16. She has been classed in Bureau Veritas for 12 years. Her dimensions are: length, over all, 150 ft.; breadth, 33.4 ft.; depth, 13.1 ft.; tonnage, 515 gross, 450 net.

Annapolis Shipbuilding Co., Annapolis, N.S., launched a 3 masted schooner, 287 tons gross at the end of August, which was named *Peaceland*. Her dimensions are: length, over keel, 100 ft.; beam, 29 ft.; depth of hold, 10½ ft.; tonnage 261 register. She was launched fully rigged with all masts and top masts.

Canadian Vickers Ltd., Montreal—The s.s. *Alsace* was launched at this yard, Sept. 27. She is being built for French interests.

I. M. Comeau & Co., Little Brook, N.S., launched the schooner *Charlotte Comeau*, 799 gross tons, at the end of August. She is classed in Bureau Veritas for 12 years, and is equipped with a 12 h.p. engine for hoisting, pumping, etc. Her dimensions are: length, over all, 172 ft.; length, over keel, 150 ft.; breadth, 37.4 ft.; depth, 13.4 ft.; tonnage, 728 register.

J. Coughlan & Sons, Vancouver—A press report stated recently that J. J. Coughlan was in Ottawa negotiating for further orders for steel cargo steamships. He has advised Canadian Railway and Marine World that his firm is open to accept orders for its standard steel cargo steamships, approximately 8,800 d.w. tons; length, over all, 427 ft.; beam, 54 ft.; depth, moulded, 29¾ ft.; three Scotch marine boilers, 15½ x 11 ft.; triple expansion engines, 27 x 44 x 73 x 48 in.; stroke, sea speed 11¼ knots; delivery March, April and May, 1919, and one a month thereafter.

Davie Shipbuilding and Repairing Co., Lauzon, Que., is building a new bow section to the stern end of the s.s. *North West*. The work is expected to be completed within the next few weeks and is being supervised by N. E. McClelland & Co., Ltd., naval architects, marine engineers, etc., Montreal. The s.s. *North West* was owned formerly by the Northern Steamship Co., Buffalo, N.Y., and was taken over by the U.S. Shipping Board for ocean service, and cut in two at Buffalo for passage through the various canal locks. While passing through the lakes, the bow end of the vessel was lost during a storm and the stern end was taken on to Quebec and drydocked at Lauzon.

Dominion Shipbuilding Co., Toronto—The s.s. *General Williams*, which was completed by this company, and delivered to the owners, Sept 25, is one of 6 similar type vessels built and under construction. She is of steel, with 2 holds, and 1 screen and 4 watertight bulkheads, double bottom fore and aft peak for 672 tons; 4 cargo hatches, each 22 x 18 ft. She is of the single deck type, with poop, bridge and fore-castle, steel texas on bridge, with wing deckhouses, chart room and pilot house above, and is constructed on the transverse system. Her dimensions are: length, over all, 261 ft.; length, between perpendiculars, 251 ft.; breadth, moulded, 43½ ft.; depth, moulded, 24 ft 2½ in.; tonnage, 2,489.79 gross; 1,518.56 net; cargo capacity, 181,793 cu. ft. grain with bridge; 150,197 cu. ft. grain without bridge; deadweight capacity, including bunkers, 3,550 tons;

draft loaded, 21 ft.; draft light, 7 ft. 2 ins. The propelling machinery consists of triple expansion engines with cylinders 20, 33 and 54 in. diam. by 40 in. stroke; 165 n.h.p.; 1,250 i.h.p., at 87.5 r.p.m., placed amidships, and supplied with steam by 2 Scotch boilers, each 14½ ft. diam. by 11 ft. long, at 180 lb. under forced draft; heating surface, 2,730 sq. ft. in each boiler, coal consumption in 24 hr., 23½ tons for an average speed of 10.2 knots an hour. The bunker capacity is 436 tons with bridge, and 186 tons without bridge. She is equipped with 8 reversible single drum, 2-speed, 7 x 12 in. cargo winches, and an 8 x 8 in. anchor windlass, and 7 x 7 in. steam steering gear. The crew's accommodation is arranged in the bridge and the poop decks, for 35 officers and men.

William Lyall Shipbuilding Co., North Vancouver, B.C.—It is announced that this yard is to close down, Oct. 1, on the completion of the contract with the French Government for 8 wooden steamships. The yard was established chiefly to build wooden steamship hulls under orders from the Imperial Munitions Board for the British Government, and since completing these orders, the company has built several for the French Government, and also some on its own account.

A. McLellan, Campbellton, N.B. launched the 4 masted schooner, *Harry A. McLellan*, 719 tons gross, at the end of August. She is to be rated at Lloyd's in the first class for her type of vessel. Her dimensions are: length over all, 186 ft.; length, over keel, 157½ ft.; beam, 35 ft.; depth of hold, 14 ft.; tonnage, 643 net. This is the first vessel launched at Campbellton since 1860.

Miramichi Construction Co., Newcastle, N.B., launched a 4 masted schooner, 600 tons register, at the end of August, she was completed and ready for sea by the end of September.

The National Shipbuilding Co., Goderich, Ont., has commenced the reconstruction of the lake freight steamship *Lehigh* at its shipyard at Levis, Que., for Cuban shipowners, for which purpose the ship was taken out of the water on the company's marine railway and has since been dismantled. The work consists of removing and replacing all damaged shell plates and frames, the construction of new poop and fore-castle of steel, with new accommodations throughout, construction of new main deck with cargo hatches, new masts, cargo booms, with all standing and running rigging, new rudder post and rudder stock, etc. The contract calls for the delivery of the vessel completed and ready to sail for Cuba before the close of this navigation season. The company is preparing plans and estimates for considerable extensions to the Levis yard in view of important contracts now under negotiation.

Nova Scotia Shipbuilding and Transportation Co., Liverpool, N.S., launched the tern schooner, *Audrey Brown*, Sept. 13. Her dimensions are: length overall, 138 ft.; breadth, 28 ft.; depth of hold, 11½ ft.; tonnage, 240 net. She is owned by Ritcey Bros., Riverport, N.S. The company is laying keels of two similar schooners for delivery during the winter.

Port Arthur Shipbuilding Co., Port Arthur, Ont. In connection with the launching of the s.s. *Canadian Ad-*

venturer on Sept. 8 for the Marine Department, this company states that it is the largest shipbuilding company and has the largest drydock on the Canadian Great Lakes. In 1918 it built and delivered six ocean freight steamships, aggregating 21,400 d.w. tons for the British Government, 6 trawlers, aggregating 1,767 gross tons, for the Naval Service Department, and an ocean going tug of 240 gross tons for private owners. This output is said to have been second only to Canadian Vickers Ltd., for the whole Dominion. The company built the largest bulk freighter on the great lakes, the *W. Grant Morden*, 14,000 tons d.w., of the Canada Steamship Lines freight fleet; also the Northern Navigation Co.'s s.s. *Noronic*, the largest Canadian passenger steamship on the Great Lakes.

The Sorel Shipbuilding & Drydock Co., which was incorporated recently with \$350,000 capital and office at Sorel, Que., has taken over the plant of the Leclair Shipbuilding Co., which had a contract from Christoffer Hannevig, Inc., New York, for building a number of trawlers at \$160,000 each. The Sorel Shipbuilding & Drydock Co. is controlled by C. Hannevig, who is President, and who is chiefly interested in the Dominion Shipbuilding Co., Toronto, and Pusey and Jones Co., Wilmington, Del.

Three Rivers Shipyards Ltd., Three Rivers, Que., is reported to have received an order to build 4 steel steamships. The company, which was organized originally to build wooden steamship hulls under orders from the Imperial Munitions Board for the British Government, was sold subsequently to the National Shipbuilding Corporation, of Delaware, which latter company completed and remodelled the yards to enable steel vessels to be built. Orders were received for 2 wooden steamship hulls 3,080 tons d.w. capacity for the British Government and these were launched Oct. 15 and Nov. 2, 1918, and named *War Mingan* and *War Radnor*, respectively. Another order was received for the construction of 10 wooden steamships of 1,500 tons d.w. capacity each for the French Government.

Yarrows, Ltd., Victoria, B.C., which was reported to be tendering for the construction of steel freight steamships suitable for the fruit trade between the West Indies and New York, for the Di Giorgio Co., of New York, had not, we were advised recently, submitted any tender for such vessels, and very little has been done so far as the proposal to build them was concerned. The s.s. *Princess May*, owned formerly by the C.P.R., and which was purchased recently by the Di Giorgio Co., as stated before, is being altered and overhauled at Victoria. Extensive alterations are being made, which will convert her into a fruit carrying steamship, and the hull, engine and boilers are being thoroughly overhauled. Yarrows, Ltd., has made 2 manganese bronze propellers to replace the old built up cast iron propellers, thus giving her greater speed. The existing fuel oil burning system on the vessel is being changed from the steam atomizing system to the Dahl pressure system. When the alterations, which will cost approximately \$70,000, are completed, the vessel will be classified in the American Bureau of Shipping.

Atlantic and Pacific Ocean.

The s.s. Kerry Range, owned by the Steam Navigation Co. of Canada, Montreal, has had its name changed to Blossom Heath.

Canadian Pacific Ocean Services Ltd. has commenced an ocean steamship service between Canada and Norway. The Canadian summer port will be Montreal; the winter port, St. John, N.B., and the Norwegian port, Christiania.

S. McRae of Vancouver, second engineer of the s.s. Melville Dollar and five Chinese firemen of the same vessel were reported to have been killed on board while the steamship was on the Chinese coast, Sept. 4. The nature of the accident has not been reported.

The Royal Mail Steam Packet Co.'s s.s. Chaudiere ran ashore at Bermuda towards the end of August while navigating the Two Rock Passage and tore a hole in her starboard side. She was able to reach her dock safely and remained there until some repairs were made.

Toyo Kisen Kaisha Steamship Line announces acquisition of 7 more steamships. One is a 20,000 ton passenger ship for Orient and Yokohama service; 3 for South American trade and 3 for other points. British Columbia ports are reported to have shipped 19,776,814 ft. of lumber in August.

The s.s. Imperator, owned formerly by the Hamburg-American Steamship Co., and one of the steamships forfeited by Germany according to the terms of the armistice, will in future be operated by the Cunard Line, in conjunction with the steamships Aquitania and Mauretania, in a weekly service between Southampton, Eng., Havre, France, and New York.

The three steamships which Canadian Pacific Ocean Services Ltd. is having built for its Atlantic service are expected to be ready in about a year. They will be named Montcalm, Metapedia and Montmorency, and the approximate dimensions will be: length, b.p., 566 ft.; breadth, 70 ft.; depth, 51½ ft.; tonnage, 16,000 gross. The first two steamships are under construction by John Brown & Co., Clydebank, and the third one by Fairfield Shipbuilding & Engineering Co., Govan, Scotland.

Maritime Provinces and Newfoundland.

The Pauline Martin Shipping Co. Ltd., St. John's, Nfld., is being wound up voluntarily, with E. R. Watson as liquidator.

White Point, N.S., harbor limits, have been fixed as from Cape Egmont to Cape North, including all the navigable waters in Aspy Bay.

The Dominion Public Works Department will receive tenders to Oct. 6, for the construction of a grain conveyor without equipment, at West St. John, N.B.

Bay St. Lawrence, N.S., harbor limits, have been proclaimed as extending from Cape North, N.S., to the division line between Victoria and Inverness counties.

Farquhar and Co., Halifax, N.S., have inaugurated a steamship service between North Sydney, N.S., and St. John's, Nfld., with the s.s. Sable leaving North Sydney on Saturdays.

Bowring Bros., are reported to have arranged to build a steamship to replace the s.s. Stephano of the Red Cross Line which was sunk by a German submarine while on a short visit to the Canadian Atlantic coast.

The St. John Drydock and Shipbuilding Co. has purchased the dredge Leaconfield for use on its improvement work in Courtenay Bay. It had previously been sold to an English company, and was about to be removed to England.

St. John Steamship Co.'s stockholders were informed at a meeting at St. John, N.B., Sept. 3, that the damage to the company's s.s. Glenhome, which ran ashore at Spencers Island recently, was not extensive, and that the vessel would soon be able to resume service to Minas Bay points.

The British s.s. Chelston, owned by the Waverley Shipping Co., Glasgow, Scotland, was reported badly aground on St. Paul's Island, between Cape Breton and Newfoundland, Sept. 12. She was stated to be in a precarious position, being on a rocky bottom and exposed to high seas. She was en route from Chatham, N.B., to Glasgow.

The United States s.s. Westmoreland, was towed into Halifax, Sept. 8, in a disabled condition, owing to a breakdown of her turbines, while en route from Baltimore to Rotterdam with coal. The s.s. Mackinaw towed the Westmoreland about 400 miles, both vessels being heavily laden, and subsequently continued her voyage to London, Eng.

Two channels have been dredged to a depth of from 11 ft. at the outer end to 5 ft. at the inner end, on the east and west sides of the head of Queen's wharf, Alberton, P.E.I., the channel on the east side of the wharf is 110 ft. long with a least width of 60 ft. at the shore end, and 70 ft. at the outer end. The channel on the west side is 150 ft. long and otherwise of the same dimensions.

A board of conciliation has been appointed by the Labor Department to deal with the dispute between the Bedford Construction Co., sub-contractors for the St. John Drydock & Engineering Co.'s harbor and drydock works at St. John, N.B., and their employees. Brig.-Gen. C. L. Hervey, D.S.O., represents the company, J. E. Tighe, the employees, and Sir Ezekiel McLeod is chairman.

Sir Edgar Bowring, High Commissioner for Newfoundland, in London, Eng., and of the firm of Bowring & Co., in a speech at a Board of Trade dinner at Smithville, Nfld., Sept. 2, said that an offer had been made in London to build a breakwater between Newfoundland and Labrador at a cost of £500,000 to prevent Arctic ice from passing down the straits of Belle Isle and thereby improve the climate in the neighbourhood of the Dominion.

The Quebec Salvage and Wrecking Co. has salvaged the s.s. Admiral Hastings, which was wrecked on Bagots Bluff, Anticosti Island, recently, and taken her to Halifax for overhaul and repair. The damage is not so serious as was at first anticipated, but it is stated that she was driven about 3 ft. bow on, on the rocks. During the salvaging operations about 1,000 tons of her grain cargo was jettisoned, to hasten the salvaging operation, as the vessel was exposed on all sides to the severity of the weather.

The s.s. Codorus, owned formerly by the Anchor Line, Buffalo, N.Y., and

taken over by the U.S. Shipping Board for war purposes, and which was wrecked at Escuminac Point, N.B., while on the way from the Great Lakes to the ocean about two years ago, has been salvaged by the Maritime Wrecking and Salvage Co., and taken to Halifax. She appears to be in good condition, but whether she will be repaired at Halifax or taken to a U.S. port had not been decided upon at the time of writing.

Province of Quebec Marine

The s.s. Captain Dan, which was wrecked at the Louise docks breakwater, Quebec, recently has been sold to The National Shipbuilding Co., Levis, who will probably salvage the vessel before the winter sets in.

Canada Steamship Lines' s.s. Syracuse, completed her summer service Sept. 9, and has been berthed at Sorel for the winter. She was formerly known as Geronia, and is one of the vessels taken over when the Ontario and Quebec Navigation Co. was absorbed.

The National Shipbuilding Co., Levis, who have purchased the wreck of the Dominion Government s.s. Montmagny, which has been lying submerged off the Isle of Orleans for the past four years, were working on the salvage of the vessel recently, and it was expected that it would be raised and placed in their yard during September.

The Quebec Harbor Commission is carrying out a number of improvements and repairs to the Louise docks, a new roadway is being laid to the recently erected freight sheds, and the freight sheds are being reinforced with concrete facings. Shed 27 is being raised 18 in. and other sheds will be similarly raised along the breakwater.

A green spar buoy has been placed on the west side of the wrecked barge Bangalore, which lies on the east side of the Richelieu River, below Ste. Victoire wharf, and a red spar buoy has been placed on the west side of the channel opposite, to mark the width of the navigable channel. As soon as the wreck is removed the buoys will be discontinued.

Sincennes - McNaughton Line, Ltd., Montreal, has put into service the steam tugs Andree Dupre, Fredmac and Virginia, which have been built at Sorel. The Andree Dupre is screw driven, by engine of 66 n.h.p., and her dimensions are: length, 109.2 ft.; breadth, 25.5 ft.; depth, 10.8 ft.; tonnage, 233 gross, 30 net. The Fredmac is screw driven by engine of 54 n.h.p. and her dimensions are: length, 81.1 ft.; breadth, 23.5 ft.; depth, 10.7 ft.; tonnage 159 gross; 44 net. The Virginia is screw driven by engine of 54 n.h.p., and her dimensions are: length, 80.8 ft.; breadth, 23.5 ft.; depth, 10.8 ft.; tonnage, 159 gross; 14 net.

Ontario and the Great Lakes.

The Northern Navigation Co. has denied the report that it had purchased land in Sarnia for park purposes.

The Canadian Towing and Wrecking Co., Port Arthur, has purchased the s.s. Vulcan from the U.S., and has changed her name to Vinmount.

The Dominion Towing & Wrecking Co.'s steam tug Strathbell, was running during August in excursion service between Fort William, Port Arthur and Silver Islet.

The s.s. Imperial, owned in Montreal, commenced a weekly freight and passenger service between Montreal and Trenton, Sept. 18. Capt. H. Rinfret, formerly of the s.s. Alexandria, has been appointed master

Masters of steamships are advised to exercise care in passing the shoal near the international boundary in the St. Clair River, between the mouth of the Black River, Mich., and Sarnia, Ont., as a dredge will at times be working in that neighbourhood.

The Detroit and Windsor Ferry Co. has been granted a supplementary license under the act respecting extra provincial corporations, authorizing it to use in Ontario a capital of \$1,000,000, provided that if it uses any larger amount than authorized the license may be suspended or revoked.

The G.T.R. is reported to be conducting negotiations for the organization of a coal terminal at Prescott, and in connection therewith to operate a car ferry service to connect with the New York Central Rd., at Ogdensburg, N.Y. At present coal is carried across the St. Lawrence River to the G.T.R. at Cobourg by the Ontario Car Ferry Co.'s vessels from Charlotte, N.Y.

The United States Lake survey reports the stages of the Great Lakes in feet above mean sea level for August, as follows: Superior, 602.59; Michigan and Huron, 581.14; St. Clair, 575.92; Erie, 573.14, and Ontario, 247.33. Compared with the average Aug. levels for the last ten years, Superior was 0.03 ft. above; Michigan and Huron, 0.29 ft. above; Erie, 0.52 ft. above; Ontario, 0.84 ft. above.

The wooden steamship Toltec, owned in Detroit, Mich., was destroyed by fire near Prescott, after having been beached. She was en route from Montreal to Buffalo in ballast. The crew were saved and taken ashore by the Dominion Government s.s. Alert. The Toltec was built at Marine City, Mich., in 1889, and was extensively repaired in 1911. She was of the following dimensions: length, 191 ft.; breadth, 32½ ft.; depth, 15 ft.; tonnage, 767 gross; 621 net.

The Pittsburg Steamship Co.'s s.s. Charles R. Van Hise, which was taken over by the U.S. Shipping Board, last

year, and which was cut in two to pass through the Welland Canal to the ocean, has been sold to the Morrow Steamship Co., Cleveland, Ohio. Owing to her width, 50 ft. beam, it was decided to attempt to pass her through the Welland Canal on her side, but the experience gained in passing the first section through the first lock, was sufficient to cause the abandonment of the scheme. The two sections have since been towed to Buffalo, where they are to be rejoined.

Canada Steamship Line, Ltd., has purchased the s.s. Cherokee, owned formerly in Saginaw, Mich., and has transferred her to the Canadian register under the name of Maple Grove. She was built at Marine City, Mich., in 1889, and underwent extensive repairs in 1913. She is of the well deck type, with oak hull, with diagonal strapping on frames, steel arches, and bow sheathed for navigation in ice. Her dimensions are: length, b.p., 208 ft.; breadth, moulded, 35¾ ft.; depth, moulded, 14 ft.; tonnage, 1,177 gross; 636 net. The propelling machinery consists of a fore and aft compound engine with cylinders 25 and 50 in. diam., by 40 in. stroke, 575 h.p. at 86 r.p.m., supplied with steam by a single fire box boiler, 11 ft. 4 in. diam. by 16 ft. long at 124 lb.

The s.s. Cabotia, which ran aground at the Main Ducks near Kingston, recently, has been abandoned, having broken in two. She was owned by the Cabotia Steamship Co., Montreal, and was built at Gibraltar, Michigan, in 1889, when she was named Hiawatha. She had an oak hull, with diagonal strapping on frames, and steel boiler house. She was equipped with fore and aft compound engines, with cylinders 21 and 50 in. diam., by 46 in. stroke, 700 i.h.p., 85 r.p.m., supplied with steam by one Scotch boiler 12 x 12½ ft. at 125 lb. Her dimensions were: length, 234 ft.; breadth, 36 ft.; depth, 30 ft.; tonnage, 1,530 gross, 932 net. The wreck is reported to have been sold to the Donnelly Wrecking & Salvage Co., and to have been refloated.

The s.s. F. P. Jones, owned formerly by the Geo. Hall Coal Co., Ogdensburg, N.Y., and latterly under requisition by the United States Shipping Board has been sold to Jas. Playfair, Presi-

dent, Great Lakes Transportation Co., Midland, Ont. She was built at Wyandotte, Mich. in 1913, and is of steel construction, on the channel system, with steel tank top where no wood ceilings are fitted, 3 watertight and 2 non watertight bulkheads, steel boiler house, steam pump wells, electric lighting equipment, and with hatches spaced 24 ft. centers. She is equipped with triple expansion engine, with cylinders 18, 29 and 48 in. diam. by 40 in. stroke, 900 i.h.p., at 85 r.p.m., and supplied with steam by two Scotch boilers, 12 x 11½ ft. at 170 lb. Her dimensions are: length, 244 ft.; breadth, 43 ft.; depth 21 ft.; tonnage 1,706 gross, 1,059 net. She was wrecked off Connecticut during the war, and was repaired at the U.S. navy yard, Brooklyn, N.Y.

The Cleveland-Erieau Steamship Co., has notified the London and Port Stanley Ry. that an all winter freight and passenger service will be maintained between Cleveland, Ohio, and Port Stanley, Ont., commencing, Sept. 25, passengers and package freight will be handled. It is announced that the s.s. Pere Marquette No. 8 has been secured from the Chicago and South Haven Steamship Co. for the service. The Pere Marquette No. 8 was built at South Haven, Mich., in 1888, and rebuilt in 1897. She is of the awning deck type, with oak hull, wooden boiler house, windlass between decks, with no efficient bulkhead abaft same, electric lighting equipment, and was formerly known as Tennessee. Her dimensions are: length, 171 ft.; breadth, 35 ft.; depth, 20 ft.; tonnage, 691 gross, 548 net. She is equipped with fore and aft compound engine, with cylinders 18 and 36 in. diam. by 30 in. stroke, 375 i.h.p. at 100 r.p.m., and supplied with steam by a single Scotch boiler 11 x 12 ft. There is cabin accommodation for 60 passengers and large freight carrying capacity.

British Columbia and Pacific Coast.

The Grand Trunk Pacific Coast Steamship Co. is reported to be considering the establishment of a ferry service between Prince Rupert, B.C., and Ketchikan, Alaska.

The C.P.R. s.s. Princess Mary has been overhauled and repaired at Victoria, and was placed on the Alaska route, Sept. 9, the s.s. Princess Alice being transferred to the Gulf route.

The C.P.R. s.s. Princess Ena left Victoria at the end of August, after having been repaired by the Victoria Machinery Depot Co., subsequent to grounding on Ripple Rock early in August.

The British Columbia Express Co.'s s.s. B.X. was wrecked near Woodpecker Island recently, the vessel and cargo being a total loss, but the crew were saved. She was a paddle wheel steamship, with engine of 27 n.h.p. and was built at Victoria in 1910, her dimensions being: length, 127.5 ft.; breadth, 28 ft.; depth, 5.1 ft.; tonnage, 513 gross; 323 net. The service is being continued by a motor launch.

With reference to the report mentioned in our last issue that the C.P.R. was considering the building of additional car barges and steamships for its British Columbia coast service, we are officially advised that no additional plans have been made and no expenditure authorized. It is very likely that a decision will be arrived at about the end of the year.

The s.s. Bleu Quesada has been libelled

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during August, 1919:

ARTICLES.	Eastbound.		
	Can. Canal	U.S. Canal	Total
Lumber.....m. ft. b. m.	1,132	38,067	39,199
Flour.....Barrels	399,040	536,660	935,700
Wheat.....Bushels	1,068,001	419,217	1,487,218
Grain, other than wheat.....Bushels	3,089,867	2,194,874	5,284,741
Copper.....Short tons	1,340	8,873	10,213
Iron Ore.....Short tons	63,456	4,664,538	4,727,994
Pig Iron.....Short tons	175	.....	175
Stone.....Short tons	5,887	4,175	10,062
General Merchandise.....Short tons	3,098	4,610	7,708
Passengers.....Number	6,645	3,075	9,720
Westbound.			
Coal, soft.....Short tons	42,300	1,147,258	1,189,558
Coal, hard.....Short tons	5,700	179,687	185,387
Iron Ore.....Short tons	.....	1,034	1,034
Mfd. Iron and Steel.....Short tons	17,414	6,696	24,110
Salt.....Short tons	1,253	10,271	11,524
Oil.....Short tons	.....	41,901	41,901
Stone.....Short tons	.....	14,654	14,654
General Merchandise.....Short tons	30,881	30,261	61,142
Passengers.....Number	7,653	2,917	10,570
Summary.			
Vessel passages.....Number	519	1,584	2,103
Registered tonnage.....Net	730,822	4,407,378	5,138,200
Freight—			
Eastbound.....Short tons	210,779	4,869,872	5,080,651
Westbound.....Short tons	97,548	1,431,762	1,529,310
Total Freight.....Short tons	308,327	6,301,634	6,609,961

by Wallace Shipyards, Ltd., North Vancouver, on a claim for \$17,600 for repairs and supplies between Aug. 26 and Sept. 4. There is also litigation between two parties in Vancouver on a claim for \$13,000 commission on the sale of the vessel, which has had a rather romantic career. She was formerly a motor driven ship named Bowler, and prior to that she was known as Zafiro, and under this last name was utilized as a coaling vessel for Admiral Dewey's flag ship at Manila Bay during the Spanish-American war. After the war was over she was bought by Capt. S. McKenzie, Vancouver, and remodelled, but was idle for a number of years.

Resumption of Normal Passenger Business.

Montreal press dispatch, Sept. 18—Indications point to an early ending of the requisition of passenger space for government requirements on both the Canadian and United States routes, and from British ports. A circular was received today at the White Star offices advising that third-class bookings could now be accepted on the steamships Lapland and Adriatic, sailing from Southampton to New York, beginning with the sailing of the Lapland from Southampton, Sept. 16. This is taken as the

beginning of the end of war activities, and will open the way to the resumption of normal ocean travel. It was stated that the indications are that plenty of space on all lines will soon be available for civilian travel, on both the New York and Canadian lines to British ports. Probably the end of October will see the close of the military monopoly of passenger service, which has caused so much dislocation during the war.

Port Wade Shipbuilding Co., Port Wade, N.S., has launched the schooner Jean F. Anderson, 443 net tons. Her dimensions are: length, 140 ft.; breadth, 33.3 ft.; depth, 12.7 ft.

Vessels Registered in Canada During July and August, 1919.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing vessels of less than 100 tons register.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	N.h.p.	Owners or managing owners
141145	Algerine (1)	Victoria, B.C.	Devonport, Eng. 1895	188.8	32.5	14.6	592	302	104 sc.		Pacific Salvage Co., Victoria, B.C.
141379	Andree Dupre	Montreal	Sorel, Que. 1919	109.2	25.5	10.8	233	30	66 sc.		Sincennes McNaughton Line Ltd., Montreal.
141377	Canadian Sailor (1)	"	Port Arthur, Ont. 1919	251.0	43.8	20.7	2186	1283	157 sc.		Minister of Marine and Fisheries, Ottawa
141368	Can. Seigneur (1)	"	Montreal 1919	400.6	52.3	28.4	5757	3554	266 sc.		" " "
141479	Can. Signaller (1)	"	Collingwood, Ont. 1919	251.0	43.6	23.6	2415	1455	124 sc.		" " "
141376	Canadian Trader (1)	"	Port Arthur, Ont. 1919	251.0	43.8	20.7	2186	1283	157 sc.		" " "
141431	Can. Trooper (1)	"	North Vancouver, B.C. 1919	320.0	44.2	22.9	3180	1953	226 sc.		" " "
130226	E. D. M. Purvis	Owen Sound, Ont.	Gore Bay, Ont. 1913	71.0	18.0	8.0	87	59	14 sc.		J. Purvis, Gore Bay, Ont.
141471	Fredmac	Montreal	Sorel, Que. 1919	81.1	23.5	10.7	159	14	54 sc.		Sincennes McNaughton Line, Ltd., Montreal.
141996	General Turner (1)	Toronto	Toronto 1919	251.0	43.6	21.2	2490	1519	146 sc.		Dominion Shipbuilding Co., Toronto.
138217	Glenbrae (2)	Midland, Ont.	Buffalo, N.Y. 1890	276.0	40.0	21.3	2350	1423	136 sc.		Great Lakes Transportation Co., Midland.
138216	Glencairn (3)	"	" " 1893	266.0	41.0	22.4	2152	1633	117 sc.		" " "
138218	Glenstriven (4)	"	" " 1889	274.0	42.2	20.5	2152	1585	114 sc.		" " "
113497	Iver Heath	Montreal	Wallsend, Eng. 1901	469.5	56.2	31.9	9170	5853	406 sc.		Bishop Navigation Co., Montreal.
141375	John Rugee	"	Halifax, N.S. 1919								A. Hutchinson, Montreal.
141378	Maple Grove (5)	Montreal	Milwaukee, Wis. 1888	223.5	35.3	18.8	1261	765	69 sc.		Canada Steamship Lines, Ltd., Montreal
141269	Merle C.	Parrsboro, N.S.	Marine City, Mich. 1889	208.0	35.9	14.0	1057	637	104 sc.		K. J. Cochrane, Fox River, N.S.
141380	Virginia	Montreal	Fox River, N.S. 1919	124.6	30.5	11.0	277	217	24 sc.		Sincennes McNaughton Line, Ltd., Montreal.
141352	Weldon	Ottawa	Sorel, Que. 1919	80.8	23.5	10.8	159	14	54 sc.		Chats Falls Navigation Co., Ottawa.
117073	Westerian	Montreal	Aylmer, Que. 1919	88.4	19.0	6.9	107	65	24 sc.		Thomas Hall, Montreal.
94717	Winona	Midland, Ont.	Buffalo, N.Y. 1871	217.5	32.6	14.0	988	672	81 sc.		James Purvis, Gore Bay, Ont.
			Montreal 1913								
			Port Stanley, Ont. 1902	110.0	22.0	8.9	233	158	24 sc.		
			Wiarton, Ont. 1919								

(1) Equipped with wireless. (2) Formerly Brazil. (3) Formerly Granville A. Richardson. (4) Formerly America. (5) Formerly Cherokee.

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner.
141475	Alonzo F. Burt	Montreal	Scow	.....	96.2	17.5	7.8	125	125	Century Coal Co., Montreal.
138769	Amy G. McKeen	Halifax, N.S.	Schr.	Tufts Cove, N.S. 1919	141.4	33.3	12.4	465	465	W. K. McKeen, Halifax, N.S.
141477	Beatrice Robert	Montreal	Scow	Whitehall, N.Y. 1903	96.1	17.7	7.5	127	112	Richelieu Transportation Co., Montreal.
141436	Cresley No. 19	Vancouver, B.C.	"	Portland, Ore. 1913	138.4	36.7	9.3	330	330	Whalen Pulp and Paper Mills, Ltd., Vancouver, B.C.
141437	Chesley No. 20	"	"	" " 1913	138.1	36.7	9.3	329	329	" " "
138404	County of Richmond	Sydney, N.S.	Schr.	Johnstown, N.S. 1919	107.3	31.0	12.4	263	245	Cape Breton Shipbuilding Co., North Sydney, N.S.
138858	D. 68	Port Arthur, Ont.	Dry dock	Superior, Wis. 1909	100.0	70.0	8.0	774	774	Great Lakes Dredging Co., Port Arthur, Ont.
141427	Dollar VI	Vancouver, B.C.	Scow	Dollarton, B.C. 1919	136.2	39.0	9.6	452	452	Canadian Robert Dollar Co., Vancouver, B.C.
141404	E. C. Adams	Lunenburg, N.S.	Schr.	Bridgewater, N.S. 1919	126.2	30.9	11.2	388	330	Howard G. Corkum, M.O., Lunenburg, N.S.
141403	Ethlyn	"	"	Mahone Bay, N.S. 1919	128.6	28.6	11.0	225	169	Henry W. Adams, M.O., Lunenburg, N.S.
138598	Eva A. Danenhower	St. John, N.B.	"	Camden, N.Y. 1882	116.6	30.2	8.7	226	199	C. T. White & Son, Apple River, N.S.
140877	General Plumer	Liverpool, N.S.	"	Allendale, N.S. 1919	102.4	26.6	10.3	177	149	G. C. Harris Grand Bank, Nfld.
141381	Gordon E. Moulton	LaHave, N.S.	"	Dayspring, N.S. 1919	122.6	27.6	10.7	224	195	J. T. Moulton, Berge, Nfld.
138620	Harry A. McLennan	Chatham, N.B.	"	Campbellton, N.B. 1919	178.4	35.5	14.4	719	644	McLennan Foundry and Machine Works, Campbellton, N.B.
141253	J. Duffy	Yarmouth, N.S.	"	Saulnierville, N.S. 1919	115.0	26.9	10.6	115	115	Duffy Blinn Shipbuilding Co., Saulnierville, N.S.
141391	Jean F. Anderson	Digby, N.S.	"	Port Wade, N.S. 1919	140.0	33.3	12.7	499	443	Port Wade Shipbuilding Co., Port Wade, N.S.
141270	Jennie V. Merriam	Parrsboro, N.S.	"	Port Greville, N.S. 1919	156.4	35.0	12.8	503	454	R. A. McInnis, Parrsboro, N.S.
141480	Laura Allard	Montreal	Scow	Champlain, N.Y. 1907	96.8	17.9	7.2	118	109	Richelieu Transportation Co., Montreal.
141401	Lila E. D. Young	Lunenburg, N.S.	Schr.	Lunenburg, N.S. 1919	122.3	27.3	10.6	193	155	J. B. Young, Lunenburg, N.S.
94665	Louis Luby	Halifax, N.S.	"	Chezetcook, N.S. 1889	63.1	19.6	8.7	62	62	I. A. Hopkins, Halifax, N.S.
141435	M. W. W. No. 4	Vancouver, B.C.	Scow	East Jeddore, N.S. 1919						
141290	M. O. Crowell	LaHave, N.S.	Schr.	New Westminster, B.C. 1919	97.1	33.9	8.2	229	229	McNeil, Weleh and Wilson, Vancouver, B.C.
141406	Mary G. Duff	Lunenburg, N.S.	"	Ship Harbor, N.S. 1919	135.0	32.2	12.0	416	416	M. J. Parks, M.O., LaHave, N.S.
141263	Minas Prince	Parrsboro, N.S.	"	Chester Basin, N.S. 1919	143.0	32.5	11.6	393	349	Mary G. Duff Shipping Co., Lunenburg, N.S.
141513	Whiteway	"	"	Spencers Island, N.S. 1919	149.5	35.8	13.0	504	457	H. Gillespie, Parrsboro, N.S.
141473	Wm. C. Bloomingdale	Montreal	Scow	Parrsboro, N.S. 1919	154.0	35.0	12.4	458	418	C. T. White & Son, Sussex, N.B.
				Champlain, N.Y. 1897	96.3	17.8	7.4	126	112	Richelieu Transportation Co., Montreal.
				St. Hilaire, Que. 1919						

Grain Shipping Statistics.

The following statements, prepared by the Board of Grain Commissioners, show the total quantities of each kind of grain, shipped in vessels from Fort William and Port Arthur, during the crop year 1918-1919, according to the ports at which the cargoes were discharged, and also the comparative figures for the crop year just before the war, and for the five war years. In addition to the figures given below, 16,171,288 lbs. of sample mixed grain was shipped to Canadian ports in Canadian vessels, 9,749-0700 tons of elevator screenings in Canadian vessels, and 18,178-1870 tons of elevator screenings in U.S. vessels, to Canadian and U.S. ports.

	Wheat. Bush.	Oats. Bush.	Barley. Bush.	Flax. Bush.	Rye. Bush.
To Canadian ports—					
Collingwood	266,820—30	.....	.....	.....	.....
Depot Harbor	6,071,743—30	.....	.....	27,500—00	.....
Goderich	10,118,483—30	1,854,207—16	100,863—43	455,088—04	.....
Kingston	176,828—30	.....	60,685—20	81,449—03	.....
Montreal	331,893—30	975,147—26	1,395,234—14	105,937—16	.....
Midland	10,858,938—30	1,068,608—10	618,157—14	.....	326,271—16
Port Colborne	20,323,288—40	504,690—29	3,621,440—15	.....	58,907—14
Port McNicoll	23,286,128—20	589,109—31	1,121,387—08	50,972—38	6,519—04
Port Stanley	136,679—50	.....	.....	.....	.....
Tiffin	14,505,829—20	184,723—08	1,350,995—09	.....	.....
Total	86,076,634—10	5,176,487—18	8,268,763—27	720,947—05	391,697—34
To United States ports—					
Buffalo	2,797,037—30	1,406,418—26	833,313—30	281,561—14	29,684—14
Chicago .....	.....	.....	.....	.....	.....
Cleveland .....	.....	.....	.....	34,150—00	.....
Detroit	121,673—30	.....	.....	.....	.....
Duluth-Superior	988,285—50	.....	.....	387,518—49	273,737—38
Port Huron	58,000—00	.....	.....	.....	.....
Total	3,964,996—50	1,406,418—26	833,313—30	713,230—07	303,421—52
Lost in wreck.....	390,151—40	.....	.....	.....	.....
Grand total	90,431,782—40	6,582,906—10	9,102,077—09	1,434,177—12	695,119—30
Crop year 1913-1914—					
788 cargoes in Canadian vessels	64,121,076—43	25,276,164—16	5,942,638—35	2,218,179—14	.....
350 cargoes in U.S. vessels	62,105,746—00	14,351,323—22	4,031,185—25	9,927,058—05	.....
Total	126,226,822—43	39,627,488—04	9,973,824—12	12,145,237—19	.....
Crop year 1914-1915—					
617 cargoes in Canadian vessels	58,732,476—50	15,505,597—22	1,837,021—32	1,448,747—42	.....
95 cargoes in U.S. vessels	18,813,926—40	1,130,202—21	690,854—07	3,035,977—01	.....
Total	77,546,403—30	16,635,800—09	2,527,875—39	4,484,724—43	.....
Crop year 1915-1916—					
1019 cargoes in Canadian vessels	109,516,553—00	42,622,650—33	5,852,179—18	1,033,999—34	.....
830 cargoes in U.S. vessels	147,613,134—30	17,171,859—08	3,102,635—44	3,650,649—20	.....
Total	257,129,687—30	59,794,510—07	8,954,815—14	4,684,648—54	.....
Crop year 1916-17—					
683 cargoes in Canadian vessels	76,749,071—10	32,342,495—12	4,000,267—42	1,698,326—04	.....
451 cargoes in U.S. vessels	61,824,965—40	15,344,189—30	2,810,565—36	4,659,769—45	.....
Total	138,574,036—50	47,686,685—08	6,810,833—30	6,358,095—49	.....
Crop year 1917-1918—					
390 cargoes in Canadian vessels	47,029,045—20	9,420,105—26	4,352,101—46	1,009,518—49	.....
270 cargoes in U.S. vessels	52,700,813—30	8,422,003—13	676,867—46	2,322,023—47	63,585—14
Total	99,729,858—50	17,842,109—05	5,028,969—44	3,331,542—40	63,585—14
Crop year 1918-1919—					
457 cargoes in Canadian vessels	67,880,062—00	8,266,933—11	8,268,763—27	908,524—02	440,211—43
102 cargoes in U.S. vessels	22,551,720—40	315,972—33	833,313—30	525,653—10	254,907—43
Total	90,431,782—40	6,582,906—10	9,102,077—09	1,434,177—12	695,119—30

British Columbia vs. Great Britain for Shipbuilding.

The Canadian Gazette, London, Eng., says: "Englishmen will be wise if they look facts in the face and realize the possibilities of their displacement in leadership on the sea. Harold E. Yarrow, of the famous Scottish-Canadian shipbuilding firm, tells the Briton quite bluntly in the London Evening Standard that he is profoundly mistaken in supposing that Americans cannot build ships because of want of experience. He says the truth is that Americans are building ships not less efficiently than we are, and that their costs of construction are slowly but surely approximating to our own. They are being greatly helped by the 'ca' canny' policy of British trade unions and their passive resistance to pneumatic tools and other labor-saving appliances. Yarrow & Co. have no illusions on the subject. 'We have,' says Mr. Yarrow, 'a yard on the Canadian Pacific coast as well as one on the Clyde, and are therefore in a position to know exactly how costs of production compare. We are ready to increase our output in British Columbia and reduce it here if and when the circumstances demand. Our yard at Scotstoun is one of the best equipped on the Clyde, and, given a chance, it can turn out work as well and as cheaply as any yard in the country. But we have no intention of waiting until the business there gives us up. We shall give it up before it gives us up.' There is no mistaking the tone and meaning of that warning."

Marconi Wireless Telegraph Co. of Canada's Annual Meeting.

The report for 1918 was presented at the annual meeting held at Montreal, Sept. 17. The profits were \$138,647, compared with \$114,953 for 1917. After providing for interest on advances, \$25,057, and reserve for depreciation, \$19,216, a balance of \$293,787 was carried forward, compared with \$198,413 from 1917. It was announced that the company had a contract with the Dominion Government for equipping 40 of the steamships built and under construction in Canada for Canadian Government Merchant Marine Ltd. Ship rentals increased from 34 in 1913 to 132 in 1918. A tribute was paid Hon. C. C. Ballantyne, Minister of Marine, for his services in securing permission to resume commercial operation of the trans-Atlantic wireless telegraph service.

The President, J. N. Greenshields, K.C., in dealing with the action of the Canadian and British Government with regard to the company's stations during the war, said: "No settlement has been arrived at with the Canadian Naval Service Department in respect of the company's claim for compensation for the closing down of east coast stations for the period subsequent to Aug., 1916. Claim has also been presented against the British Admiralty for loss of revenue owing to the closing down of the company's high power stations at Glace Bay and Louisburg, and steps have been taken to press for an early settlement of same. Your company had still to contend with adverse traffic conditions during practically the whole year, and government restrictions on wireless working deprived the company of much traffic revenue. After the signing of the armistice on Nov. 11, 1918, a gradual

The German Submarines which were allotted to the Japanese Navy arrived in Japan recently after a voyage of over 10,000 miles under their own power. It is said that almost no difficulty was encountered on the voyage which speaks volumes for the durability of the Diesel engine as built for the Germany Navy.

The Northern Navigation Co., recently offered to moor one of its steamships at the foot of Brush St., Detroit, Mich., for use as a winter hotel to relieve hotel congestion there. We have been officially advised that this matter was duly considered, but owing to difficulties, which were considered insuperable, the pro-

posal will not be carried out by that company.

The Public Works Department received tenders during September for the rebuilding of the lock and dam at Bobcaygeon on the Trent Canal. This work has been rendered necessary on account of the worn out and leaky condition of the existing lock. The new lock will be 175 ft. long; 33 ft. wide and with 8 ft. 4 ins. of water on the miter sills, the same as the other locks on the Ontario-Rice Lake Division. Both the lock and dam will be of concrete, and the work will include some dredging at both the upper and lower entrances.

relaxation of war restrictions took place. East coast stations, which had been closed down or taken over by the Canadian Naval Service Department, were turned back to the company for operation, and every effort made to rebuild a profitable service. During the concluding weeks of the year, revenue from this source showed great promise and your directors look forward confidently to increased returns in the future."

J. N. Greenshields, K.C., was re-elected President; Thos. Robb, heretofore General Manager, was elected Vice President, and A. H. Morse, heretofore representative of the English company, was appointed Managing Director, with a seat on the board, vice E. J. Nally, New York, who retired.

Following the annual meeting, a special meeting of shareholders was held to ratify a bylaw reducing the amount of the common stock from \$5,000,000 to \$2,500,000, by reducing the par value of the shares from \$5 to \$2.50, and providing for the issue of \$1,250,000 additional shares of stock. The English company is taking \$1,000,000 of the new issue.

Among the Express Companies.

The Dominion Ex. Co. has added a number of 5 ton motor trucks to its equipment in London and Liverpool, Eng., owing to the remarkable increase of package traffic there, to and from Canada.

The Canadian National Ex. Co. has opened a waybill office at Neelin, Man., and an agency at Dropmore, Man. The offices at East Selkirk, Scantbury, Grand Beach, and Victoria Beach, Man., were closed for the season Sept. 3.

The Canadian National Ex. Co. has opened offices at Graysville, Sandy Lane, and Erickson, Man., and temporary offices at Dropmore, Man., and Kylemore, Sask., for the rush of grain traffic. The offices at Port Carling and Rosseau, Ont., and Alberta Beach, Alta., were closed Sept. 1, and Sept. 17, for the winter.

The Winnipeg Board of Trade Shippers' Bureau requested the Board of Railway Commissioners recently to postpone the going into effect of the new express rate schedule from Sept. 1. to Oct. 1, it being claimed that the new rates discriminate against the west and that they contain many discrepancies.

The Board of Railway Commissioners passed order 28,784, Sept. 18 as follows: Re application of Central Canada Express Co., under section 323 of the Railway Act, for approval of bylaw 10, passed at a meeting of the directors, Sept. 6, authorizing C. Hope, Assistant Superintendent of the company, to prepare and issue all tariffs of tolls to be charged by the company for the carriage of express, upon the report and recommendation of the board's Chief Traffic officer, it is ordered that the said bylaw be approved, and that order 26,419, Aug. 14, 1917, approving the company's bylaw 7, be rescinded.

The Board of Railway Commissioners passed order 28,717, Aug. 29, as follows: Re application of Express Traffic Association of Canada on behalf of Canadian, Canadian National, and Dominion Express Companies, for approval of a special tariff on cream in cans, with or without jackets, to be charged by those companies, separately, between points east of and including Fort William, Ont. Upon its appearing that the said tariff provides rates 5c a can lower than for-

merly in effect, which rates do not include waggon service; with the option to the consignee of requiring waggon delivery by the express companies at an additional charge of 5c a can, subject to notice to that effect by the consignee as set out in the tariff, it is ordered that the said tariff C.R.C., no. ET-672, published to take effect Sept. 1, 1919, be approved. And it is further ordered that order 14,594, Aug. 21, 1911, be rescinded.

Express companies operating in Canada put into force Sept. 1 a new set of tariffs and a classification, applying on Canadian traffic only, and not on business to or from the U.S. A joint directory of express stations throughout Canada has been issued, giving a complete list of express offices arranged alphabetically by provinces. An important change has been made in connection with the collection and delivery of express matter, the companies not now being required to collect or deliver above the ground floor of any building, any articles of such size or weight as cannot be handled by one man, unless elevator facilities are available; companies are also not required to collect or deliver shipments of extraordinary weight or bulk, such as boats, pianos, live animals not in crates, etc. Such shipments may be delivered to the company by an independent carter. In the special commodity tariffs thus provided, no cartage will be performed on commodities at special carload rates; on l.c.l., carried at such rates, no collection service will be given, but delivery will be made at destination where a cartage service is maintained, and companies will not be required to collect returned empty cream cans.

Express Rates on Fish From Selkirk to Chicago.

In 1916 Booth Fisheries Co. complained to the U.S. Interstate Commerce Commission of the express rates on fresh fish from Selkirk, Man., to Chicago, Ill., and the following decision was given recently:

Complainant is a corporation engaged in the business of catching and selling fish. By complaint filed May 3, 1916, it is alleged that the rates of \$3 and \$3.20 per 100 lb., charged for the transportation of fresh fish, in less than carloads, from Selkirk, Man., to Chicago, Ill., in Oct., 1914, and June, 1915, were excessive, unreasonable, unjust, and unduly discriminatory, in violation of sections 1, 2, 3, and 4 of the act to regulate commerce in so far as said rates exceeded \$2.60. It asks for reparation on 4 shipments, 2 of which moved in Oct., 1914, and 2 in June, 1915. That portion of fourth section application 4,306 of American Express Co., by which authority is sought to continue to charge lower rates on shipments of fresh fish from Selkirk to Detroit, Mich., and Buffalo, N.Y., than to Chicago and other intermediate points was assigned for hearing with the complaint.

The shipments moved via Dominion Express to Emerson, Man., on the International Boundary, thence via Western Express to St. Paul, Minn., and American Express to Chicago. The Western Express Co. was not made a defendant. The transportation performed by the Dominion Express Co. was beyond the boundaries of the U.S.

In their answers and at the hearing the defendants questioned our authority to award the reparation sought. We have

held that our jurisdiction over through rates from points in Canada to points in the U.S. is limited to the portion of such transportation performed by the carriers from the port of entry. No evidence was submitted by complainant to show that the portion of the rate which accrued to the U.S. lines was unreasonable, unjustly discriminatory, or unduly prejudicial. It relied solely on the lower rate to Buffalo applicable over the route through Chicago.

At the time the shipments moved the American Express Co. concurred in a rate of \$2.60 per 100 lb. from Selkirk to Detroit, and Buffalo, and this rate was applicable over the route through Chicago and intermediate points. A fourth section application was filed for authority to maintain the rate of \$3 to Chicago, but no further application was filed for authority to increase the rate to that point to \$3.20, and to thereby increase the spread between Chicago and the farther distant points. It is asserted for the defendants that the rate to Detroit and Buffalo is controlled by the Dominion Express Co., which performs all the transportation from and to those points over routes almost entirely outside of the boundaries of the U.S. In a letter filed subsequent to the hearing, complainant admitted that no shipments have been forwarded to Detroit and Buffalo through Chicago by express, such shipments as may have moved via that route were by freight. Since this case was submitted the fourth section departure as to Chicago has been removed. At the hearing witness for complainant stated that no shipments were then being made by express to Chicago, but that they were handled by freight from Selkirk to Winnipeg and thence by express to Chicago. The complainant's interest in the case is therefore solely on the question of reparation on the particular shipments which had moved.

We find that the rates assailed are not shown to have been unreasonable or unduly prejudicial. There is no proof of damage by reason of the maintenance of a lower rate to Detroit and Buffalo than to Chicago, and, following *Appalachia Lumber Co. v. L. & N.R.R. Co.*, 25 I.C.C., 193-197, and *Iten Biscuit Co. v. C., B. & Q.R.R. Co.*, 50 I.C.C., 724, ante 729, reparation is denied.

No evidence was offered in justification of departures from the provisions of the fourth section, and since they have been corrected an order will be entered denying the application to the extent that it is involved.

Commissioners McChord and Meyer dissented.

W. H. Burr represented the Dominion Express Co.

Armament on Canadian Steamships—Ship owners are instructed that guns which have been mounted on steamships during the war need not now remain. The policy with regard to British register vessels is as follows: On removing the guns, the gun seating is to remain in vessels of 3,000 tons gross, and stiffening to remain in all cases, except in vessels under 1,600 tons, where, in the opinion of the naval authorities, it materially affects cargo or passenger accommodation; the stiffening for howitzers may also be removed if it interferes with cargo or passenger accommodation. A similar policy is recommended for Canadian vessels and the Naval Service Department requests vessel owners to advise as to what action they propose to take in the matter.

The Telegraph Profession.

By H. Hulatt, Manager of Telegraphs, Grand Trunk Ry., and Grand Trunk Pacific Ry., Montreal.

The head of a telegraph organization is very frequently asked by parents: "What prospects has a young man entering the telegraph service?" Personally my invariable reply has been that prospects are good, provided the applicant aims to become something more than an ordinary operator, by taking steps through constant study to equip himself for the bigger positions, thereby keeping abreast of the times. In this connection it is well for us all to realize that today the telegraph profession is entering a period of new development and of great changes.

Not so many years ago, if a railway superintendent of telegraph could use the Morse code, had a knowledge of wire testing, understood the proper care of gravity batteries, how to set up a duplex or quad, coupled with a rough and ready knowledge of construction matters, he, to use a common expression, filled the bill. Needless to say such requirements did not call for highly trained technical men, and as a result salaries could not be said to be attractive. Are prospects today any brighter?

It can probably be stated without fear of contradiction that the first move to place the railway telegraph profession on a higher plane, was the inauguration of telephone train dispatching, necessitating apparatus developed mainly, not by telegraph men, but, by the highly trained technical men of the telephone profession, and affiliated manufacturing interests. As a result of this development, railway telegraph men have gradually been obliged to study and be able to intelligently and efficiently handle simplexes, private long distance telephone circuits, also the phantoming of circuits, the installation and maintenance of motor generators, installation and care of printer telegraphs, telautographs, and other types of electrical and mechanical labor and time-saving devices. These developments have also as a result brought prominently before superintendents of telegraphs and their staffs that most complex problem "inductive interference," and necessity for close study of same by keeping posted on the results of the various researches made by experts making a specialty of such problems.

A perusal of the report of committee no. 5, of the Telegraph and Telephone Division of the American Railroad Association, presented at the Chicago meeting of the division in June last, covering as it does recent developments in telegraph and telephone practice and apparatus, indicates very clearly that we are just entering an era of great changes. There is little doubt that in the near future such problems as multiple telephony, wireless telephony and telegraphy, also many new methods of multiplying the use of existing facilities without the erection of additional outside plant will have to be considered by the men of the railway telegraph departments.

While there are undoubtedly exceptions, and some extremely bright ones,—as a general rule are the employes of railway telegraph departments technically equipped to meet the everchanging conditions? Frankly, I think it must be admitted that they are not, and in their own interests, and particularly in the interests of their employers they should

undoubtedly take prompt steps to remove the disability under which they are laboring. Such action on their part will be to the benefit of their companies, and incidentally do much toward improving their own financial status.

Our profession has entered into what may be termed the higher technical field, and the necessity is present for us all, whether we be officers or privates, to endeavor to equip ourselves mentally for the much greater problems and responsibilities we shall undoubtedly be called upon to study and assume in the coming years. If we fail to measure up to requirements, our employers can easily replace us by securing from the outside men having the requisite technical training; consequently I am writing this article from a selfish point of view, feel-



H. Hulatt,
Manager of Telegraph, Grand Trunk Ry., and
Grand Trunk Pacific Ry.

ing as I do that the plums from the tree should be for those who are members of the family, therefore we, who are in the profession or family, should ensure that we have the ladder to reach the fruit, and that ladder, to my mind, is better education and technical training.

I can imagine some old timer (and by the way we of the younger generation have a great deal to thank the old timers for) on reading this, saying: "Technical training only creates theorists; what we need is practical men." This prejudice against theory is out of date; the law of gravitation is a theory—no man ever saw it actually in operation. As Dr. J. F. Johnson, Dean of the New York University School of Commerce, Accounts and Finance, states in his really wonderful book, "Business and the Man":

"Our railways, steamships, bridges, and factories, with all their machinery have been constructed in harmony with theories that have been carefully thought out and tested. If man theorized no more and began to forget what theory has already taught him, in a few generations the human race would again be in a state of barbarism."

What we need is a thorough knowledge of theory, and the best method of applying it in practice.

It is possible I have in the foregoing looked upon the dark side, but it has always seemed to me, especially within the past eight to ten years, that the rank and file and also subordinate officers of railways, in so far as promotion is concerned, have been satisfied to adopt a policy of watchful waiting, in the hope that the man above them would retire, be promoted, or transferred, and that if they were lucky possibly they might be promoted to the higher position.

The majority of such men are doing their level best to give their company one hundred cents or more for every dollar of salary they receive, yet, it has not seemed to dawn upon them that a much more rapid promotion awaits them provided they equip themselves mentally over and above their competitors by studying not only the technical features of their work, but, what is even more important, by securing a thorough knowledge of the laws and principles governing business phenomena, and the practical application of same.

The executive today (and to be one should be the ultimate aim of the latest messenger boy added to the pay roll), must be an intellectual power, aggressive, and broadminded. Such attributes he can only attain by practical experience backed up by thorough and ever progressive education.—Telegraph and Telephone Age.

Telegraph, Telephone and Cable Matters.

The British cable ship *Colonia* has completed the laying of a new telegraph cable between England and Brazil.

Mrs. W. M. Camp, wife of the Assistant Manager, C.P.R. Telegraphs, Montreal, spent part of the summer at Sharbot Lake, Ont.

Senatore Marconi is reported as saying that wireless telephony, when less expensive, will speedily become a necessity to business.

Miss M. B. Campbell has been appointed local manager, Western Union Telegraph Co., Glace Bay, N.S., vice Mrs. P. H. Roach, resigned.

G. G. Ward, Vice President, Commercial Cable Co., is reported as stating that a second cable from San Francisco to Japan, by way of Midway Island, is practically assured.

By means of the "Great Voice," a wireless magnifying telephone, installed at the direction of the Chief Signal Officer, United States Army, the address of Vice President Marshall, delivered at Trinity Church Forum, Washington, recently, was heard throughout a radius of approximately 4 miles.

The Board of Railway Commissioners issued order 28,742 Aug. 29, amending order 2,139, Dec. 6, 1906, as amending by order 8,897, Dec. 11, 1909, substituting a new clause, providing that tariff and telephone tolls thereafter filed with the board shall be printed on sheets, or in books, of a size not to exceed 11 in. long by 8½ in. wide. Order 8,897, Dec. 11, 1909, has been rescinded.

The Commercial Cable Co. is reported to have decided to lay a second cable

across the Pacific Ocean from San Francisco, Cal., to Japan, via Midway Island. It is stated that the company is not asking any financial assistance or guarantee from the U.S. or Japanese governments, merely asking landing rights. It is also announced that Japanese interests in Tokio have formed a company, with a capital of \$25,000,000, to lay a cable between Japan and the U.S.

The British House of Commons, has, it is stated, voted \$850,000 for the commencement of an Imperial wireless telegraph service for commercial messages. Construction of the terminal station in England is said to have been commenced at Leafield, Oxfordshire, and the first eastern station is said to have been located in Egypt. This report should be treated with some reserve, on account of the comparative smallness of the vote mentioned, and of the reported location of the terminal station in England.

The Great North Western Telegraph Co. has opened offices at Summit, N.B., Langlade, Pointe a la Fregate, Que., Allandale, Banning and Glenorchy, Ont.; Dropmore, Ericksdale, Fork River, Graysville, Neelin and Sandy Lake, Man.; Hamton, Sask.; and Radway Center, Alta.; and has closed its offices at Bellevue Jct., Clarenceville, Manoir Richelieu, Mount Johnson, Sabrevois, St. Barnabe, St. Demase, and St. Louis de Bonsecour, Que., Minataree, Queen's Royal Hotel, Royal Muskoka Hotel, Shakespeare, Smithville and Vankleek Hill, Ont.

The 36th annual meeting of the Old Time Telegraphers and Historical Association was held at Cleveland, Ohio, Sept. 18. G. D. Perry, General Manager, Great North Western Telegraph Co., was elected President; and E. R. Wood, President, Dominion Security Corporation, J. J. Seitz, President, United Typewriter Co., and Allan Purvis, General Superintendent, Ontario District, C.P.R., all of Toronto, were elected vice presidents for the current year. Following the usual custom of holding the meeting at the home town of the President, the 1920 meeting will be held at Toronto.

R. N. Young, Superintendent of Telegraphs, British Columbia District, C.P.R., is reported to have stated at Penticton, early in September that the C.P.R. intended completing a commercial telegraph line between Penticton and Princeton, B.C., in order to give Similkameen a direct wire outlet to the coast, that in the meantime the section to Princeton will be completed and the Princeton business handled via Penticton and Vernon, and that when the portion to Hope is erected, the Princeton business will go that way and Penticton will have its own commercial wire, as well as one north to Vernon and thence to the coast.

Sir Charles Bright in addressing the British Association in London, Eng., Sept. 12, urged the need for Imperial cable communication to be established on a satisfactory basis. He said that the present Atlantic link in the proposed all-red route is the old German cable which was seized during the war and which at best is a poor affair. He proposed the duplication of the Pacific cable and said that the only satisfactory method of communication to Australia would be a direct line from London to Melbourne, and he considered that the government should lay a cable. He also urged the establishment of an all British wireless chain, with every Imperial cable supplemented by wireless.

Construction on the Canadian Pacific Ry.'s telegraph lines has been practically

ANNUAL REPORT OF The Quebec Railway, Light, Heat and Power Co., Limited

FOR THE
FISCAL YEAR ENDING 30TH JUNE, 1919

Submitted at the Annual Meeting held in Montreal on the 9th September, 1919.

TO THE SHAREHOLDERS:—

Your Directors beg to submit the following report and Financial Statement of the Company's operations for the fiscal year ended 30th June, 1919.

The Gross Earnings from Operation for the year were \$2,077,621.43 as compared with \$1,797,852.83, being an increase of:

\$279,768.60

The Operating and Maintenance Expenses were \$1,444,516.08 as compared with \$1,235,724.33, being an increase of:

\$208,791.75

leaving a Net Revenue of \$633,105.35 as compared with \$562,128.50, being an increase of:

\$70,976.85

After adding Miscellaneous Income \$27,722.61, not including earnings on Quebec & Saguenay Railway Company's securities, and deducting Fixed Charges, Taxes, Depreciation on Cars, etc., of \$726,101.55, there remains a deficit of \$65,273.59, leaving a balance at the credit of Surplus Account to date of:

\$682,464.29

The line of railway between St. Joachim and Nairn's Falls under construction for the Quebec & Saguenay Railway Company—one of this Company's subsidiaries—has been acquired by the Dominion Government. This sale took place under date of March 4th, 1919, and the Trustees are now in possession of the funds for disposal in accordance with the bondholders' instructions. The construction of the road is now being continued by the Government and, when completed, should prove a valuable source of revenue for the Montmorency Division of the Quebec Railway, Light & Power Company.

The accounts of the Company have been duly audited and certified to by Messrs. P. S. Ross & Sons, Chartered Accountants, Montreal.

In conclusion, the Directors desire to express their appreciation of the efficient services rendered by the officials and staff of the Company.

Respectfully submitted on behalf of the Directors,

LORNE C. WEBSTER, President.

Statement of Assets and Liabilities at 30th June, 1919.

ASSETS

Investments, Stocks, Bonds and Interest in other Corporations.....	\$19,212,318.70
Treasury Bonds	1,487,800.00
Advanced to Controlled Companies for Construction, etc.....	1,734,834.18
General Construction, etc.	531,817.14
Bond Discount	177,730.55
Cash on hand and in Banks.....	247,762.34
Accounts and Bills Receivable.....	897,359.84
Stores and Supplies on hand.....	236,400.76
Prepaid Expenses, etc.	29,006.08
	\$24,555,029.59

LIABILITIES.

Capital Stock	\$10,000,000.00
Less: Unissued	500.00
	9,999,500.00
Bonds	\$14,600,000.00
Less: In escrow to redeem bonds of subsidiary Companies.....	\$3,411,000.00
Less Cancelled	144,000.00
	3,555,000.00
Bills Payable	11,045,000.00
Accounts Payable, etc.	648,633.29
Sundry Loans	486,790.81
Accrued Interest	223,218.23
Deferred and Unclaimed Interest.....	108,995.40
Accrued Charges	1,034,920.63
General Suspense and Reserves.....	62,877.63
Surplus	262,629.31
	682,464.29
	\$24,555,029.59

Certified correct:

(Signed) H. G. BOSSE,
Comptroller.

(Signed) A. E. LABELLE,
Director.

Quebec, 4th September, 1919.

(Signed) L. G. MORIN,
Director.

Audited and verified as per Report of September 4th, 1919, annexed.
(Signed) P. S. ROSS & SONS, Chartered Accountants.

For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meeting, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under
 Positions Wanted and Positions Vacant, 3c per word.
 Equipment for Sale advertisements, 4c per word.
 Allow five words where replies are to be sent to a box number. Minimum order—\$1.
 Rates under other headings and for display advertisements on application.

FOR SALE

Str. Frank B. Stevens

146'-0" x 29'-3"
 x 11'-0" depth

Oak—carries 600
 tons coal.

The American Box Co.

1900 West Third St., Cleveland, O.

in abeyance for the past few years on account of war conditions, but the company has now commenced extending its system. On the prairie sections, extensions to branches of 208 miles of pole line carrying 2 wires, have been authorized. On existing lines 6,275 miles of 210 lb. copper wire has been authorized and most of the stringing has been completed. This includes wires from Halifax to Montreal, 2 from Montreal to Winnipeg, 1 from Toronto to Winnipeg, 1 from Toronto to Port Arthur and Fort William, Toronto to Windsor, Ont., etc. The company is also installing a telephone despatching circuit between Port Arthur, Ont., and Winnipeg (including the Molson Branch), covering 468 miles of track. This fills in the last gap in telephone train despatching on the line between St. John, N.B., and Vancouver, B.C. The company has also authorized considerable sums for reconstruction and renewals.

Trade and Supply Notes.

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

B. J. Coghlin Co. Ltd., railway supplies, etc., Montreal, has been granted supplementary letters patent under the Dominion Companies Acts, authorizing it to increase its capital from \$200,000 to \$500,000 by the issue of 3000 shares of \$100 each.

Davis Bournonville Co., Niagara Falls,

Non-Sweating Railway Lamps

We manufacture
SWITCH MARKER CLASSIFICATION SEMAPHORE
 to R. S. A. Specification.

The Hiram L. Piper Company, Limited, Montreal

Our No. 31 Catalogue illustrates them all.



Capital Authorized.....\$10,000,000
 Capital Paid up..... 7,000,000
 Reserve Fund..... 7,500,000

Head Office: Toronto.

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the World.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches throughout the Dominion of Canada.

Ont., has developed a number of mechanically operated welding and cutting oxy-acetylene torches. The latest development is the camograph no. 2, an automatic hole cutting machine, for boiler shops, fabricating plants, shipyards, and other users of steel plates.

Edison Storage Battery Co. — John Kelly, who for a number of years was New York District Manager, Edison Storage Battery Co., and who on July 1 was appointed Assistant General Sales Manager, has been appointed General Sales Manager, at Orange, N.J. He was a salesman for Westinghouse Storage Battery Co. for two years; for Swinehart Tire & Rubber Co., for three years; for Firestone Tire and Rubber Co. for two years, and for New York Edison Co. for nearly four years, and was District Manager, Edison Storage Battery Co.'s New York office for 9½ years.

Mudge & Co., Chicago, have arranged with Canuck Supply Co., Montreal, to represent them in the sale of Mudge motor cars in Canada.

Nova Scotia Steel & Coal Co.—A press dispatch says that large extensions at Sydney mines are under consideration, including a plant to handle by-products which will cost some \$2,000,000. New ovens now being erected will call for an enlargement of the present plant, and a new blast furnace that will cost about \$1,500,000.

Canadian Pacific Ocean Services, Ltd., has moved its Chicago passenger offices from 140 South Clark St. to 40 North Dearborn St. R. S. Elworthy is General Agent, Passenger Department, there.

GRIFFIN & BRINKERHOFF

P.O. Box 97, Windsor, Ont.

Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe. Best Wheel Grinders in the World.

Transportation Conventions in 1919

Oct. 6-10.—American Electric Railway Association, Atlantic City, N.J.

Oct. 21-23.—American Railway Bridge and Building Association, Cleveland, Ohio.

Oct. 21-23.—Maintenance of Way and Master Painters' Association, St. Louis, Me.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pingston, Belleville, Ont.

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 305 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Railway War Board—W. M. Neal, Montreal.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.


Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacramento Street, Montreal.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.


Transportation Club of Vancouver—H. W. Schofield, 556 Church Street, Vancouver, B.C.



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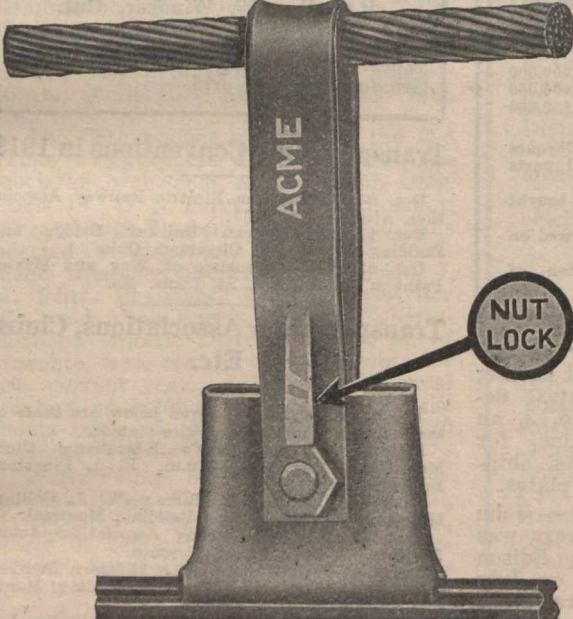
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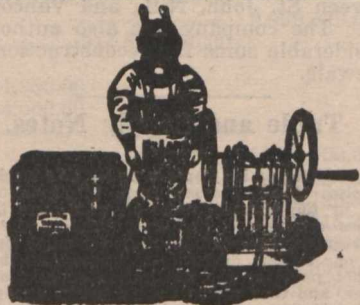
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