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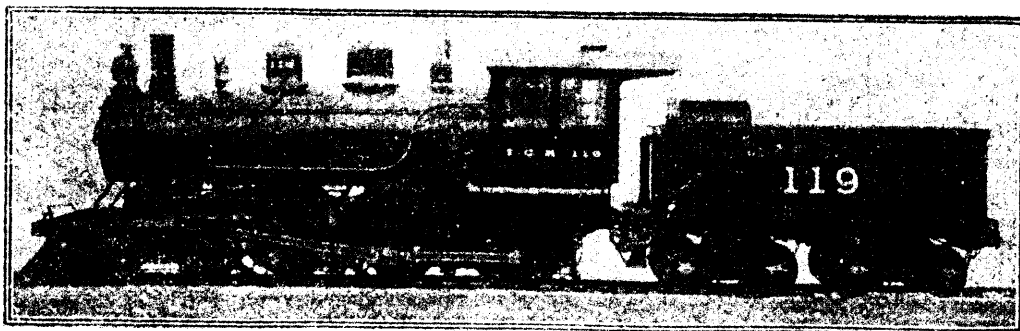
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TORONTO, CANADA, OCTOBER, 1902.

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Per Diem Charges for Freight Cars.

By W. H. Rosevear, General Car Accountant,
G.T.R.

Having spent over 48 years in railway service on the G.T.R.—the first few years in car building, and a large part of the balance in the more congenial work of car accounting, it is perhaps scarcely necessary to confess, that I have for a long time taken an active interest in the agitation for an improved method of settlement between railways for the use of freight cars. Many years' experience in the working of the mileage system revealed its many serious defects, and strengthened my convictions in favor of a more equitable plan: the subject was discussed in all its bearings year after year, and the advocates of "per diem" multiplied at each annual meeting, until at the Car Accountants' convention of 1899, I had the honor to move a resolution—"That this Association is in favor of a per diem method of settlement for use of cars," which was unanimously carried, and committed the International Association of Car Accountants and Car Service Officers to the principle of per diem.

The "mileage" method served a useful purpose in giving car interchange an easy start forward at the infancy of car service, but it lacked the necessary elasticity to meet the ever varying conditions arising from the gigantic development of interchange traffic; and owing to this want of adaptability, it had not the element of permanence, but was merely educative in character, to be superseded—as a matter of progress and evolution—by a more equitable and perfect plan. Dissatisfaction with the mileage basis would not, however, have become so general, if, as originally intended, cars had been run promptly to destination and returned to owners with a minimum of delay, but its tendency was to take account only of the interest of the "user," and often that interest was considered best served by a tie up of cars for a number of days, weeks, or even months; as there was no recognition of the fact that each car represents about \$500 of the owner's capital, on which a reasonable return should be made; but such cars were too often looked upon as players view pieces on a chess-board, to be moved so as to win the traffic game for the users, and not infrequently with little or no regard for the interest or advantage of the owners.

One great defect, therefore, of the mileage system was, that it practically estimated a foreign car to be of value to its owner only when in transit, and the deadening result on

the railway conscience is illustrated by the fact that the very long detention of, say, 1,000 to 4,000 of such cars at a railway terminal 8 to 10 months of the year, with hay, grain or other freight, and especially at the seaboard was, as a rule, only considered by the users in relation to the inconvenience caused, or the extra expense for yard space and tracks for their accommodation. Merchants and dealers also were not slow to appreciate and take advantage of this situation, and through the element of railway competition

which paralysed the business of the entire continent.

Much has been said of the unreliable character of mileage as a basis of settlement for use of cars, as it was almost, if not quite impossible, to institute a check sufficiently close to ascertain if all mileage earned was paid for; it was hoped that no intentional errors were made, but its defects were so serious that errors might occur through the employment of incompetent clerks, and a sample case of this nature came to the writer's notice during the past year, in which a car accountant, failing to obtain satisfactory explanation of apparent shortages, sent a clerk to check up, and found errors in the additions of columns in mileage books, extending over a few months, amounting to a shortage of nearly 300,000 miles. The fatal defect of the mileage plan, however, was that instead of favoring the early return of cars to their owners, it, in a large percentage of cases, worked in the opposite direction, especially in long distance traffic, as there was naturally a disinclination to pay mileage on the return empty haul of cars, if by a longer or shorter wait, loads in the direction of home could be secured.

The fact that side-tracked foreign cars under mileage involved the user road in no expense, was known to all train and station employes, and in consequence they were not likely to be educated into prompt handling of such cars; it is no wonder, therefore, that the average daily performance per railway freight car on foreign lines did not exceed 25 miles a day. Taking the average speed of freight trains at the very low figure of $8\frac{1}{2}$ miles an hour, it will be seen that even at this low rate of speed these cars have been kept moving on the average only about 3 hours out of each 24. It is reasonable, therefore, to expect that the adoption of an improved plan will largely reverse these conditions, as few, if any, roads will be disposed to allow foreign cars to lie around idle, when a daily rate of 20 cents has to be paid for them, and even if only 6 hours average running is secured out of each 24, the movement of these cars will be accelerated 100%.

Two alternative plans were offered as substitutes for the "mileage" basis—first, "mixed per diem—and mileage," and second, straight "per diem"; each had its zealous advocates, the campaign—in annual conventions, in the American Railway Association, and in the various railway journals—having been carried on for several years, and the decision was finally given in favor of straight per diem. The "mixed" plan, however, as operated between British and other European



C. W. SPENCER,

General Superintendent, Eastern Division, Canadian Pacific Railway.

they secured free "hold over" privileges, enabling them to make warehouses of thousands of cars at various points, for almost unlimited periods, loaded with hay, grain, cotton, lumber, coal, etc., often consigned to curbstone brokers, to wait sale or reconsignment after advice of arrival at fictitious destinations, and this state of things together with the delays at terminals already referred to, and more or less laxity in enforcing car service rules, were to a large extent the prolific causes of those oft-recurring car famines,

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THE RAILWAY AND SHIPPING WORLD,
Toronto.

Per Diem Charges for Freight Cars.

(Continued from page 329.)

railways, has in it some special features of
practical value, which, in the opinion of many,
make up a combination more absolutely fair
to both owners and users than straight per
diem—as it sustains a closer relation to the
actual service performed, by taking into ac-
count the distance run by each car under
load—with a scale of days for return, the per
diem being applied to all surplus days on the
borrowing roads.

It is my opinion that when per diem is firm-
ly established, experience will indicate the
desirability of bringing it into closer touch

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with the "wear and tear" of cars, (as for ex-
ample, 10 days of one car may cover in one
case 150, and in another 1,500 loaded miles,
the first producing say 1,500 ton miles with
hay, and the second 45,000 ton miles with
grain,) and when that time arrives, the great-
er adaptability of the "mixed" system will be
better understood, and ultimately, some—if
not all—of its features will be adopted by the
railways of this continent. There can be no
question, however, that the per diem basis,
which ensures payment at an agreed rate of
20 cents for each day a foreign car is held,
irrespective of its employment, will be more
equitable and more in line with up-to-date
business methods than the mileage plan.

The three leading features of the "per
diem system" are: 1. All bills for use of
cars will be susceptible of verification, and
can be checked as easily and fully as all other
railway accounts. 2. The interests of car
owners will be kept in sight and safeguarded,
by the daily recognition of the value of each
car. 3. The influence of the system will al-
ways tend in the direction of prompt move-
ment and early return of foreign cars.

The new method of settling for use of
freight cars came into force on July 1, and is
now in operation on practically all railways in
Canada and the U.S., and although it is too
early as yet to give a complete view of the
first month's operation, the full returns hav-
ing not yet come to hand, there is enough
known to substantiate the claim that per diem

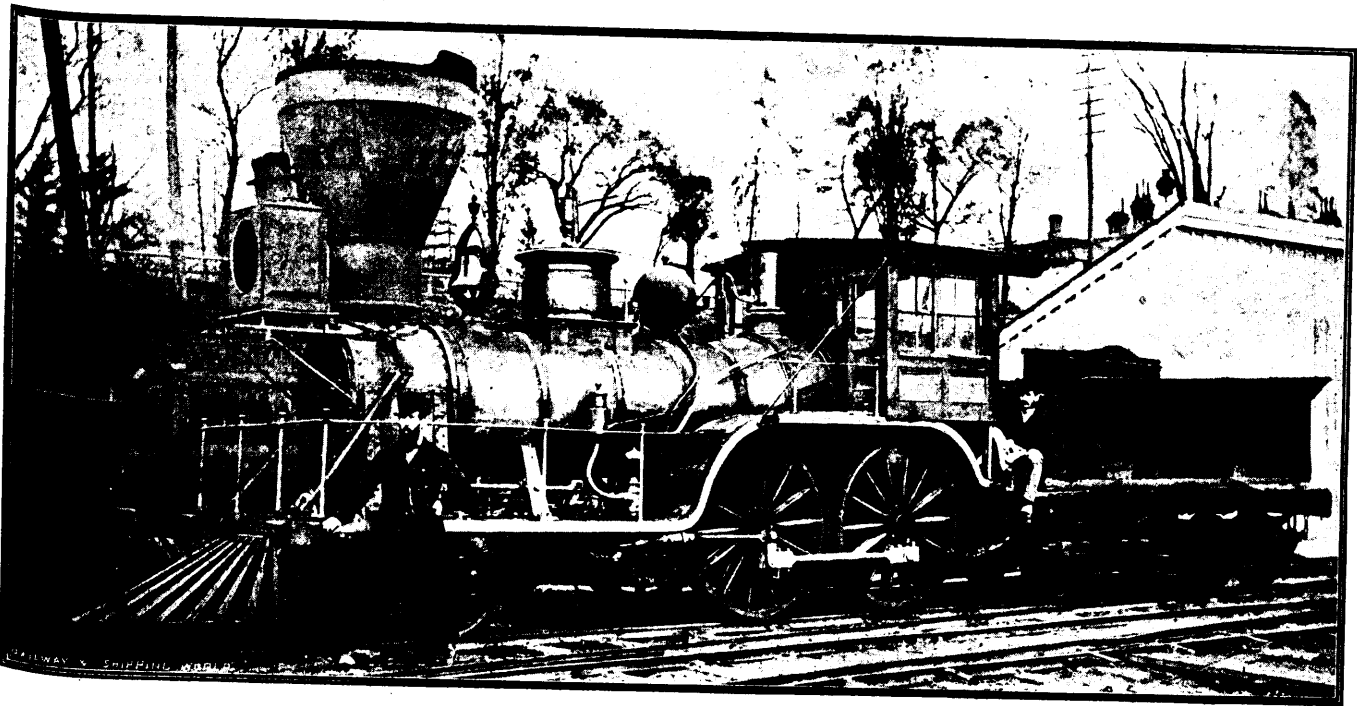
will quicken the movement of cars in a homeward direction, as after two months' trial all the large railways find that they have on hand available for traffic a much greater number of their own cars, enabling them to use a smaller number of foreign cars than at same date last year, while they are all doing a largely increased business. By way of affording owners a special means of quickening the homeward run of delayed cars, rule 3 of the per diem code, gives all railways the option of serving a notice upon any road which has held their car 20 consecutive days, to the effect that if said car is retained for 10 days longer—making 30 days in all, a penalty rate of 80 cents a day will accrue for each day so held, in addition to the ordinary rate of 20 cents a day. It is not expected that this penalty clause will be put into operation at all times and on all classes of cars, although some western roads have given notice of their intention to do so; the majority are inclined to use it only in cases where their cars are misused, or are unduly delayed, or if the home road is suffering for want of them:

considerable increase of clerical force in m.c.b. offices, has greatly reduced delay to cars and freight, and has thus removed one of the ordinary objections previously made to the adoption of the new system.

It is early yet to risk a prophetic utterance as to the future of per diem, and prophets now-a-days have been discounted so often that they seek to get a sure thing before venturing to prophesy, but we can say this much, that from a business and a practical accounting standpoint, per diem is founded upon a wholly reasonable and solid basis, and that from July 1, 1902, car owners allowing their cars to go to other roads, have for the first time in the history of railways the assurance that they will without peradventure receive a certain specified daily rental on each car, and that their property will be returned to them within a reasonable time. Comparing this satisfactory car situation, with the uncertainties and ruinous delays under the mileage plan, and realizing that the more than \$600,000,000 invested in freight car equipment, is practically owned or controlled by the ablest

Huron Ry. was opened for passenger traffic on May 16, 1853, a train being run from Toronto to Machell's corners, now Aurora, a distance of 30 miles. The train was drawn by an engine named the Toronto, which was built in Toronto by James Good at his works on Queen st., a short distance west of Yonge st. This was the first railway engine built in Canada, and was built with outside connections, the Lady Elgin being built with inside connections. Mr. Good built seven other engines for the Company, and then went out of that branch of the engineering business.

The Lady Elgin was never used in the regular passenger or freight service, although on an emergency, in the early days of the line, she hauled a few passenger trains. On the completion of the line the Lady Elgin was used as a shunting engine at Collingwood and did good service for a number of years. On the line being merged into the G.T.R., she was removed to Allandale where she lay in the yard for some time and was later on broken up, which fate not long after overtook the Toronto. The illustrations of the locomotives



THE LADY ELGIN, THE FIRST LOCOMOTIVE USED IN ONTARIO.

there is no doubt, however, that this rule—whether in force or in abeyance—will have a powerful influence in hastening the return of cars.

For the first few months it is likely that the per diem system may bear rather heavily on some of the small roads whose equipment is limited, as under the mileage plan they have grown into the habit of holding foreign cars a considerable time, and have not educated their shippers and consignees to properly estimate the daily value of cars, but in a very short time the experience under per diem will no doubt give all concerned a higher education in this respect, and the situation will be remedied from within, and should not require any assistance in the shape of concessions from the larger roads.

The master car builders have greatly aided in the introduction of per diem, by their action during the past few years in enlarging the scope of their interchange rules, allowing the more general use of defect cards, and arranging for more extensive repairs at expense of owners, in order to expedite the despatch of freight to destination: the improvement effected in these methods—while entailing

financiers of this—or any other—continent, I think we have at last a sure thing, and that without serious risk we may now prophesy that per diem has come to stay, and that there will never be a return to the time-worn and imperfect mileage method; to doubt this is to question the wisdom of the able men who conserve the interests and preside over the destinies of the great railway systems of Canada and the U.S.

The First Locomotives in Ontario.

The first locomotive used in Ontario was the Lady Elgin, built in 1852 at Portland, Me., taken by water to Toronto, put together there in Oct., 1852, and used in the construction of the Ontario, Simcoe and Huron Ry. This line commenced at the water front of Spadina avenue and ran to Barrie and Collingwood. It was afterwards merged in the Northern Ry. and later became part of the G.T.R. The old offices of the Company on the west side of Spadina avenue at Front st. west, are now used by the Railway Men's Y.M.C.A.

The first section of the Ontario, Simcoe &

are taken from photographs in the possession of Mr. John Harvie, Secretary of the Upper Canada Bible Society, Toronto, conductor of the first train on the line, and who was standing by the Lady Elgin at the time the original photograph was taken.

Annual Financial Review.—The second volume of this useful work, compiled by W. R. Houston, has recently been published in Montreal. This issue extends to 404 pages, and in addition to giving facts and figures showing the financial position of a large number of Canadian companies, or companies the shares of which are dealt in on the Canadian exchanges, publishes trade statistics and other information of use to the investor. Lists of members of the Montreal and Toronto stock exchanges are given, and a table showing the fluctuations of the different stocks, as well as a list of the principal brokers in other cities of the Dominion. The information is all conveniently arranged for reference, and has been carefully summarised and tabulated. The Annual Financial Review is a valuable book for investors.

Galena-Signal Oil Company,

Franklin, Pa., and Toronto, Ont.

Successor to Galena Oil Company and Signal Oil Company, sole Manufacturer of the celebrated Galena Coach, Engine and Car Oils, and Sibley's Perfection Valve and Signal Oils.

CHARLES MILLER,
PRESIDENT.

C.P.R. ANNUAL REPORT.

Following is the 21st annual report, addressed to the shareholders:

The result of the Co.'s operations during the fiscal year, ended June 30th, 1902, was as follows:—

Gross earnings.....	\$37,503,053 78
Working expenses.....	23,417,141 37
Net earnings.....	\$14,085,912 41
Interest earned on deposits and loans.....	\$271,424 12
Interest due from Duluth, South Shore and Atlantic Ry. on consolidated bonds held by C. P. R. Co. against debenture stock issued.....	\$604,280 00
Less advanced by C.P.R. Co.....	108,280 00
Interest from Minneapolis, St. Paul & Sault Ste. Marie Ry. Co. on bonds held by C.P.R.Co. against debenture stock issued.....	496,000 00
Interest from Mineral Range Ry. Co. on bonds held by C. P. R. Co. against debenture stock issued.....	159,720 00
31,882 52	958,826 64
Deduct fixed charges accrued during the year, including interest on land bonds ..	\$15,044,739 05
Surplus for the year.....	\$ 7,709,913 96
Deduct amount applied against cost of steamships.....	150,000 00
\$ 7,559,913 96	
From this there has been charged off the 1/2-yearly dividend on preference stock of 2%, paid April 1, 1902.....	\$ 623,420 00
And 1/2-yearly dividend on ordinary stock of 2 1/2%, paid April 1, 1902.....	1,625,000 00
2,248,420 00	
\$ 5,311,493 96	
From this there has been declared a second 1/2-yearly dividend on preference stock of 2%, payable Oct. 1, 1902.....	\$ 623,420 00
And a second 1/2-yearly dividend on ordinary stock of 2 1/2%, payable Oct. 1, 1902.....	1,625,000 00

The working expenses were 62.44% of the gross earnings, and the net earnings were 37.56%, compared with 60.75 and 39.25% respectively in 1901. The earnings per passenger per mile were 1.75 cents, and per ton of freight per mile 0.75 cents, as against 1.93 and 0.79 cents respectively in 1901.

Four per cent. consolidated debenture stock to the amount of £650,000 was created and sold on account of the construction of branch lines authorized, and for the purpose of acquiring first mortgage bonds, on which the interest is guaranteed by your Co., of the Mineral Range Rd. Co., the Columbia and Western Ry. Co., and the British Columbia Southern Ry. Co.

The sales of the Co.'s lands during the year amounted to 1,362,852 acres for \$4,442,136, being an average price of \$3.26 an acre, and the cash receipts enabled your directors to redeem and cancel 5% land grant bonds to the face value of \$1,401,000, leaving in the hands of the public at the end of the fiscal year \$1,430,000 of these bonds, all of which have since been called for redemption and cancellation.

For the purpose of improving the Co.'s position in the city of Ottawa and adjacent territory, and with a view to the ultimate shortening of the line between Montreal and Pembroke, your directors entered into an agreement for the control of the Ottawa Northern and Western, the Pontiac Pacific Junction and the Hull Electric Railway Companies, owning 151 miles of railway and the Interprovincial bridge across the Ottawa

river. The terms of the arrangement will be fully set out in the proposed agreement of lease, which will be submitted for your approval.

An agreement has been made for an extension of the Montreal and Western Ry., one of your acquired lines in the Province of Quebec, a distance of 22 miles, on a basis that will involve the payment of practically no interest or rental for a period of 12 years.

A branch line, 105 miles in length, from Kirkella, on your main line west of Brandon, to serve the country north of the Qu'Appelle river, and an extension of the Manitoba and Northwestern Ry., 40 miles in length, are now under construction with a view to their completion before winter sets in.

Four hundred and eighty miles of 80-lb. rails are being laid in the main line this season, and before the end of 1904 your directors hope to have the lighter rails replaced on all the main lines of your system.

Among the more important works completed during the year were, a diversion of the line, about seven miles in length, between Field and Ottertail on the Pacific division, and the construction of a tunnel 894 ft. long at the loop on the Crow's Nest line, for the purpose of improving gradients and alignment. Two steel grain elevators of an aggregate capacity of 3,700,000 bush. are being built at Fort William. When these are completed there will be storage at that point for 9,000,000 bush.

During the fiscal year your Co. endorsed its guarantee of interest at 4% per annum, on bonds of the Minneapolis, St. Paul and Sault Ste. Marie Ry. Co. to the amount of \$500,000, representing the cost of additional mileage constructed.

Pursuant to the resolutions adopted at the special general meeting of shareholders on March 27 last, 195,000 shares being \$19,500,000 of the common stock of the Co., were offered to the shareholders of record at par and were accepted by them with the exception of rights to the face value of \$368,000, which are being sold for account of the Co. in open market by order of your directors. The proceeds of the issue are being expended in accordance with the terms of the order-in-council of the Dominion Government granting the necessary legal authority, and of the resolution of the shareholders authorizing it.

In these busy days it is very difficult to secure additional locomotives and cars to keep pace with the growth of your traffic; contracts were made, however, for all that could be delivered during the current year. On the completion of your large locomotive and car shops at Montreal, now in course of erection, you will be able to provide these facilities more rapidly and economically.

The earnings of the Duluth, South Shore and Atlantic Ry. show some improvement, and the increase in the net revenue of the Minneapolis, St. Paul and Sault Ste. Marie Ry. is very striking, the net surplus, after the payment of all charges for the year, being \$1,286,501. A conservative and prudent policy on the part of the directors of the latter Co. will, beyond doubt, have your approval and commendation, but, with this large income, it is reasonable to expect that dividends on the shares in that Co., held in your interest, will be forthcoming in the near future.

There will be submitted for your approval an amendment of the existing by-law relating to the election of directors, providing for the retirement of only a limited number of directors at the end of each year hereafter, instead of the whole board, as was the practice heretofore. Your Co. sustained a serious loss by the death, in July last, of J. W. McKay, who had been a member of your board since 1890, and whose advice and co-operation were particularly valuable in connection with your telegraph interests.

CONDENSED BALANCE SHEET, JUNE 30, 1902.

Cost of railway and equipment.....	\$30,072,641 33
Ocean, lake and river steamships.....	\$5,814,602 58
Less amount applied against cost of construction.....	1,818,224 69
Acquired securities held (cost).....	3,996,377 89
Hotels, buildings and properties held in trust for the Co.....	39,818,943 45
Deferred payments on land sales.....	1,785,411 99
Deferred payments on town site sales.....	7,025,254 28
Advances:	195,680 97
To Montreal & Atlantic Ry., secured by \$500,000 first mortgage bonds.....	424,144 80
To Duluth, South Shore & Atlantic Ry., car trusts, etc.....	236,213 19
Advances to new lines under construction.....	2,154,473 31
Material and supplies on hand.....	4,450,526 98
Station and traffic balances, accounts receivable.....	3,207,939 97
Miscellaneous securities and advances.....	1,678,182 14
Imperial and Dominion Governments accounts due for mail transportation.....	230,758 93
Cash in hand.....	15,227,691 47
\$310,504,240 70	

In addition to the above assets the Co. owns 14,680,101 acres of land in Manitoba and the Territories (average sales past year \$3.29 per acre) and 3,922,922 acres in British Columbia.

Capital stock.....	\$ 65,000,000 00
Payments on subscription to new issue capital stock—\$10,500,000 00 ..	7,624,162 00
Four Per Cent. Preference stock.....	31,171,000 00
Four Per Cent. Consolidated Debenture Stock.....	63,532,415 86
Mortgage bonds:	
1st Mortgage Bonds 5%.....	\$34,998,633 33
Canada Central Ry. 6%.....	973,333 33
Due Province of Quebec on Q.M.O. & O. & North Shore Ry.....	7,000,000 00
Algoma Branch, 1st mortgage.....	3,650,000 00
North Shore Ry. 1st mortgage.....	616,119 67
47,238,086 33	

Land grant bonds:	
1st mortgage—Amount of issue.....	\$25,000,000 00
Less—	
Amount redeemed, surrendered and cancelled.....	\$23,570,000 00
3% land bonds.....	1,430,000 00
15,000,000 00	
16,430,000 00	

Current accounts, pay-rolls and traffic balances	5,911,699 72
Interest on funded debt and rental of leased lines:	
Coupons due July 1, 1902, including coupons overdue, not presented.....	1,478,946 76
Accrued to date, not due.....	301,618 95
1,780,565 71	

Cash subsidies from dominion and provincial government and municipalities.....	29,969,688 07
Land grant: net proceeds of sales of land.....	27,660,988 13
Surplus earnings account.....	14,185,634 88
\$310,504,240 70	

FIXED CHARGES FOR YEAR ENDED JUNE 30, 1902.

1st mortgage bonds 5% due July 1, 1915.....	\$1,749,931 66
Province of Quebec, 4 1/2%.....	283,500 00
North Shore Ry. 1st mortgage 5% bonds due April 20th, 1904.....	267 66
Canada Central Ry. 2nd mortgage 6% bonds due Nov. 1, 1910.....	58,400 00
St. Lawrence and Ottawa Ry. 4% 1st mortgage bonds due June 15, 1910.....	38,933 34
Man. South Western Colonization Ry. 1st mortgage 5% bonds due June 1, 1934.....	127,200 00
Toronto, Grey and Bruce Ry. rental.....	140,000 00
Ontario and Quebec Ry. debenture stock 5%.....	975,129 56
Ontario and Quebec Ry. (ordinary stock) 6%.....	120,000 00
Atlantic & North West Ry. 1st mortgage bonds (less Government proportion) due Jan. 1, 1937.....	136,333 34
Algoma Branch 5% 1st mortgage bonds due July 1, 1937.....	182,500 00
Rental, Farnham to Brigham Jct.....	1,400 00
Rental, Mattawamkeag to Vanceboro.....	23,800 00
Rental, New Brunswick Ry. system.....	372,829 74
Rental of terminals at Toronto.....	32,270 29
Rental of terminals at Hamilton.....	32,781 33
Rental, Hamilton Jct. to Toronto.....	40,000 00
Rental, St. Stephen and Milltown.....	2,050 00
Interest on Montreal and Western Ry. purchase.....	20,497 76
Interest on equipment leases.....	107,478 95

4% DEBENTURE STOCK.

For general purposes.....	£ 3,933,748	
For China and Japan steamers	720,000	
For Souris branch.....	1,004,000	
For Branch lines.....	437,400	
To retire Canada Central Ry.		
1st mortgage bonds.....	250,000	
For acquiring mortgage bonds		
of roads of which principal		
or interest is guaranteed by		
C.P.R.	6,709,458	
	£13,054,606	\$2,541,296 63
Interest on land grant bonds..	\$653,683 23	
Less: Interest on deferred		
payments on land sales and		
proceeds of town sites not		
covered by mortgage.....	306,458 40	347,224 83
		\$7,334,825 09

EARNINGS FOR YEAR ENDED JUNE 30, 1902.

Passengers	\$ 9,359,522 00
Freight	24,199,428 14
Mails	655,407 47
Express	737,107 82
Parlor and sleeping cars.....	530,764 89
Telegraph, grain elevators and miscel-	
laneous, including profit on Pacific	
steamships	2,020,823 46
	\$37,503,053 78

WORKING EXPENSES FOR YEAR ENDED
JUNE 30, 1902.

Conducting transportation.....	\$ 5,361,067 27
Maintenance of way and structures...	5,634,497 17
Motive power.....	7,387,065 81
Maintenance of cars	1,868,045 17
Parlor and sleeping car expenses	115,770 33
Expenses of lake and river steamers.....	468,943 88
General expenses.....	2,088,848 86
Commercial telegraph.....	492,902 88
	\$23,417,141 37

DESCRIPTION OF FREIGHT CARRIED.

	Year ended Dec. 31, 1899	Year ended June 30	
		1901	1902
Flour	4,005,226	3,735,873	4,021,993
Grain	42,763,253	32,627,468	52,719,706
Live stock, head.....	810,559	945,386	963,742
Lumber	975,702,349	899,214,646	1,033,569,377
Firewood	202,461	204,818	204,963
Manufactured			
articles..... tons..	1,795,663	1,954,386	2,288,234
All other			
articles..... tons..	1,461,144	2,206,970	2,571,136

FREIGHT TRAFFIC.

	Year ended Dec. 31, 1899	Year ended June 30	
		1901	1902
Tons carried.....	6,620,903	7,155,813	8,769,934
Tons carried 1			
mile.....	2,509,171,700	2,383,633,945	3,247,922,167
Earnings per ton			
per mile	0.74 cts.	0.79 cts.	0.75 cts.

PASSENGER TRAFFIC.

	Year ended June 30, 1901	Year ended June 30, 1902
Passengers carried.....	4,337,799	4,796,746
Passengers carried		
1 mile	419,353,393	534,777,135
Earnings per pass-		
enger per mile.....	1.93 cts.	1.75 cts.

TRAFFIC TRAIN EARNINGS YEAR ENDED JUNE
30, 1902.

	Mileage	Earnings	Earnings per traffic train mile
Passenger.....	8,300,140	\$10,961,825 88	\$1 32
Freight.....	12,828,159	23,462,413 83	1 83
Total	21,128,299	\$34,424,239 71	\$1 63

The above earnings of traffic trains include earnings from mails, express and sleeping cars, but do not include

ocean, lake and river steamers, telegraph, elevators, rents, etc., the net earnings from which amounted to \$2,116,967.31.

EXPENSES PER TRAFFIC TRAIN MILE YEAR
ENDED JUNE 30, 1902.

	Expenses	Expenses per traffic train mile
Maintenance of way and structure.....	\$ 5,634,497 17	0.267
Motive power.....	7,387,065 81	0.349
Maintenance of cars	1,868,045 17	0.088
Traffic and general expenses.....	7,565,686 46	0.358
	\$22,455,294 61	1.062

Mileage included in C.P.R. traffic returns.....	7,587.8
Mileage of other lines worked.....	734.5
Mileage under construction.....	324.2
	8,646.5

Mileage of Minneapolis, St. Paul & Sault Ste. Marie Ry.....	1,412.3
Mileage of Duluth, South Shore & Atlan- tic Ry.....	565.0
	1,977.3
	10,623.8

A passenger on the Toronto Ry. has been trying to see how many times he could transfer cars between two points in the city without losing time. He had made five transfers, and was stopped when he asked for a sixth. There does not appear to be any rule in regard to transfers, but it is understood that while passengers shall take the most direct way to their destination, two transfers will take a passenger from any one point to any other point on the system.

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Advertising purposes.

Railway Station Names, Switch Targets, Whistle
& Diamond Crossing Signs, Semaphore Arms,
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Signal Houses, &c. ;
Street Car Route Signs, Steamship & Ferry Signs,
Express, Telegraph & Telephone Office Signs,
and Advertising Signs, of every descrip-
tion, size and color made
to order.

Enameled Iron Plates for Doors of Stations, Offices,
Hotels, &c., carried in stock.

These signs last practically for ever, they never fade or tarnish, they are ever bright and attractive, they are absolutely impervious to heat or cold, they are the only signs that will withstand the effects of weather in all climates.

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M.C.B. Rules of Interchange.

The President of the Canadian Railway Club, E. A. Williams, recently appointed W. E. Fowler, Master Car Builder, C.P.R.; W. Alderson, General Car Inspector, G.T.R., and S. King, Master Car Builder, Intercolonial Ry., as a committee to report their interpretation of the rules of interchange as revised at the Master Car Builders' Association meeting at Saratoga, N.Y., in June. The committee has reported as follows:

It cannot fail to be very gratifying to the members of the M.C.B.A. (who have worked so hard and faithfully for several years past to bring about conditions which expedite the movement of cars between the different companies so tremendously different from those in vogue 15 or 20 years ago) to know that with each successive year the necessity, or even demand, for changes in these rules grow strikingly less. The most striking change in the rules of this year is in the elimination of the various section numbers and assigning to each section a rule number of its own, and the bringing of each subject under its proper heading. This will be admitted as a step in the right direction, and although it may, for a short time, be somewhat confusing to the different interchange inspectors (who have become so accustomed in the past to quoting from rule 3, for instance), the change must naturally be a very beneficial one.

In order that this report should not be unnecessarily long, we will only refer to those parts of the rules which were changed, the first in order being that shown on page 4, as new rule 6, requiring that duplicate defect cards shall be furnished for lost or illegible cards. This is merely a transfer of old rule 9 to its proper place in the rules.

The defect gauge for determining defects of wheels under all capacities of cars is shown in a very compact form on page 6, and will be recognized as a great improvement over the former practice of using two gauges.

A very just and equitable change has been made in old rule 3, sec. 21, which is now new rule 28, the new rule reading: "Journal bearings and journal box bolts which require renewal by reason of change of wheels or axles, for which the delivering company is responsible, regardless of the previous condition of the bearings." This rule, being placed in delivering company's responsibility location, makes it impossible to charge the owner of the car with either journal bearings or journal box bolts which may be renewed in connection with the removal of wheels on delivering company's responsibility.

Sections 12, 13 and 15 of old rule 4 have now been transferred to their proper place, and appear in the new rules as nos. 74, 69, 70 and 71, and sec. 12 of old rule 4, referring to the form of repair card, is so changed as to now show car number and initials at the bottom of the card instead of the top, for convenience in checking.

Sec. 9 of old rule 5 has been transferred from its former place under heading of "Instructions for Billing" to "Instructions to Repair Men," and now appears as new rule 72.

New rule 79 reads as follows: "For repairs made on defect cards, the card must accompany the bill as voucher for the work done, but no bill shall be rendered for repairs which have not been made." This appears to have been necessary, as in some cases there has been a suspicion that bills have been rendered for repairs which had not been made. While it is not supposed that any railway company would sanction action of this kind, it was thought best to have the rule explicit.

It will be noted in new rule 91, which takes the place of sec. 13 of old rule 5, there have been added several items referring to repairs of air-brakes. This will undoubtedly be of great assistance in making up bills, and gives

a very good idea of what the different charges for labor are based upon.

Rule 94 is also entirely new, reading: "In the application of channels they should be charged out at the market price plus the necessary labor for drilling, etc.; credit should be at prices quoted above for similar metal." This seems to have been made necessary by the increasing use of merchant shapes of rolled iron and steel.

New rule 104, which takes the place of old rule 5, sec. 21, has been modified, by providing a charge of three hours for replacing coupler with pocket attachments, as against two hours for coupler with stem attachments. This is only just and equitable, as it will take fully one hour longer to apply couplers with pocket attachments, than those with stems.

Old rule 5, sec. 22, has been cut up into new rules, 105, 106, 107 and 108. It will be noted that the last paragraph of old sec. 22 has been eliminated from the new rules, it having been considered unnecessary.

Old rule 5, sec. 23, which appears as new rule 109, represents a great deal of care in making up a schedule that is very complete and equitable, for labor charges allowed in air-brake work, and puts this part of the M.C.B. rules in a very complete and finished condition.

Old rule 5, sec. 24 and 25, which now appear as new rules 110 and 111, change the prices allowed for air-brake equipment in settling for destroyed cars, from \$36 to \$27.50. This is only proper, as it represents the actual price paid for air-brake equipment, considering the discounts allowed.

In old rule 5, sec. 24, which appears as new rule 110, the price for a 40-ft. flat car has been established, viz., \$180. As 40-ft. flat cars are coming very largely into use for carrying long timber, structural steel, etc., this addition will be very much appreciated.

Old rule 5, sec. 24, now appears as new rule 110. After considerable discussion in the convention, it was agreed that the amount of \$25 additional, which was formerly allowed for bodies of cars of 60,000 lbs. capacity or over, having journals four inches or over, when destroyed and being settled for, be increased to \$40, provided the cars had metal body bolsters. This would certainly seem to be warranted by the prices which have to be paid for new cars at present.

Old rule 5, sec. 26, now appears as new rule 112. It will be noted that tank cars (except the tanks) are now included with refrigerator and other special cars, which are to be settled for when destroyed, at present cost price, instead of at a fixed price arranged for by the rules.

Old rule 5, sec. 28, which now appears as new rule 114, adds centre pins, continuous draft keys, draft springs and couplers to the items which switching roads will be allowed to bill against car owners. This is an indication that the M.C.B. Association consider that switching roads have been somewhat hardly used in this respect in the past, and in this connection your committee would call attention to the trend of the M.C.B. rules each year, toward increasing owners' responsibility.

The effect of the new plan of settlement for service of foreign cars is apparent in the changes to old rule 6, sec. 1, which, appearing as new rule 117, now reads that "the company on whose line the bodies or trucks are destroyed shall report the fact to the owner immediately after their destruction," the word "immediately" taking the place in the new rule of the words "not later than 30 days" in the old rules. This is certainly in the line of progress, and will be very beneficial, as we have known of several cases in the past where cars had been destroyed and notification to the owners held off until 30 and even 60 days had elapsed. As under the per diem rules the per diem payment only ceases

with the notification to the owner, it is to the interest of the railway company destroying the car to see that these notifications are promptly made.

In further connection with the per diem plan of settlement, new rule 120 has been added. It reads: "The company on whose line the body or trucks of a car are seriously damaged, but not destroyed, may notify the owner and ask an appraisal on the damage done to the car as a basis for the disposal of the damaged car." This will frequently be of very great assistance in disposing of cars which are seriously damaged, and will undoubtedly enable them to be put into service with very much less delay than was formerly the case, cars having been held two and three months for some special form of material which had to be obtained from the owners. Under this new rule, however, the owner and the company responsible can come to an understanding, car be returned to the owner, proper repairs made promptly by them and car be put into service.

Old rule 7, sec. 2, which now appears as new rule 123, has also been changed to conform to the new per diem settlement conditions, and now reads as follows: "A car which is safe to run, but unsafe to load on account of serious damage caused by wreck or accident, shall be reported to the owners for appraisal and disposition, and disposed of as provided in rule 122, if the owner so elects." The section of rule 122 which is referred to reads: "If the owner elects to have it sent home, he shall furnish two home cards, noting upon them existing defects and the route over which the car is to be returned to its owner." This new rule also will be a great assistance in getting prompt movement of cars seriously damaged, and which may require some special materials which can only be furnished by the owners.

In conclusion we would state that while there are several points in the new rules which, with slight changes, would, in our opinion, very much better the situation, we do not think this is the proper time to refer to them, believing that this should come up at some time shortly before the next convention.

Minneapolis, St. Paul and Sault Ste. Marie Ry.

Following are extracts from the report for the year ended June 30, presented at the annual meeting in Minneapolis, Sep. 19:

Gross earnings from all sources	\$6,257,591 47
Operating expenses	2,941,627 40
Net earnings	3,315,964 07
Fixed charges, taxes, etc.	1,729,462 59
Surplus	1,586,501 48

During 1901 a fair grain crop was harvested along the Co.'s road, which, coupled with the excellent general business conditions, resulted in a substantial increase in gross, net and surplus earnings.

The mileage was increased by the completion of the following lines: Wishek, N.D., to Pollock, S.D., 69.82 miles; Summit Jct. to Frederick, Wis., 22.43 miles; extension of Rice Lake Branch to Birchwood, Wis., 16.19 miles, and two or three small spurs aggregating 2.01 miles—making a total increase in mileage of 110.45 miles, or about 8.5%. The gross earnings show an increase of 37.7%, the net earnings 68%, and the surplus 38.8% over 1901. The operating expenses were 47.3% of the gross earnings—compared with 56.1% of the preceding year, 49.6% in 1900, 56.6% in 1899 and 54.1% in 1898. Notwithstanding the decreased percentage of expenses, the property and equipment has been maintained in excellent condition.

During the early spring and summer of 1902 there was a very large immigration into the Northwest. The Co. has received a very liberal percentage of these settlers, and a largely increased acreage has resulted—par-

ticularly along the lines in North Dakota. The line east from Minneapolis, running through Wisconsin and Michigan, is also receiving increasing attention from settlers, and is rapidly becoming a promising agricultural section.

Only a small portion of the surplus earnings of the past and preceding years are actually on hand in cash or equivalent assets, the balance having been used for the construction of additional road, for various improvements to the main line, and for the purchase of additional equipment. Bonds amounting to \$2,484,000 covering the additional mileage constructed are available for sale when the time is opportune and advances made from surplus earnings will be replaced from the proceeds. During the year the Co. purchased and has available for the increasing business of the coming autumn, 200 flat cars, 620 box cars, 4 sleeping cars, 6 first-class passenger coaches, 5 mail cars, 1 dining car, 3 passenger locomotives, 4 freight locomotives, and an additional rotary snow plow, at a total cost of \$792,843.21.

The Co. has constructed a line from Brad-dock to Bismarck, N.D., about 40 miles, which began operation Aug. 25. Most of the work, however, was done before June 30.

The Co.'s business has increased so rapidly that additional terminals must be acquired, the cost of which will necessarily be large. The interests of the Co. also demand the construction of additional branches and extensions, which we will submit for your consideration, and hope for favorable action.

The mileage owned and operated is 1,389.22 miles, and 23.13 miles of spur lines, total 1,412.35 miles. In addition, the Co. has trackage facilities over 18.52 miles of terminal property in Minneapolis, St. Paul and Sault Ste. Marie.

EARNINGS AND EXPENSES.

Passenger	\$1,257,037 61	
Freight	4,566,222 89	
Express, mail and miscellaneous	399,127 05	\$6,222,387 55
Maintenance of way and struc-tures	\$684,160 69	
Maintenance of equipment	521,182 27	
Conducting transportation	1,556,206 13	
General expenses	140,078 31	\$2,941,627 40

Net earnings from operation..... \$3,280,760 15

REVENUE FROM OTHER SOURCES.

Interest, discount and ex-change	\$33,093 92	
Interest on bonds and stock owned	2,110 00	\$35,203 92
Total income		\$3,315,964 07

OTHER PAYMENTS.

Interest on bonds	\$1,343,180 00	
Taxes and revenue	292,054 32	
Rental of terminals	85,675 28	
Interest on equipment notes	4,623 30	
Accounts charged off	3,029 69	\$1,729,462 59

Surplus earnings	\$1,586,501 48	
Deduct amount appropriated for purchase of new equipment and for cost of im-provement to constructed road.....	\$ 300,000 00	

Net surplus for year..... \$1,286,501 48

The expenditure account for construction of new lines and equipment contains these items: Branches and extensions, \$903,-216.29; betterments to main line, \$174,-446.49; rolling stock, \$771,807.44; advances account, union stations at St. Paul and Sault Ste. Marie, \$43,100; advances account, joint terminals Sault Ste. Marie, \$53,203.55; total, \$1,945,773.77.

In the article, "Northern Routes to the Pacific," in our last issue, we gave the highest points reached by the principal transcontinental railways, with the exception of the Great Northern, U.S.A., the figures for which were not then at hand. Its highest altitude is Summit station, Montana, 5,215 ft. above sea level.

Canadian Railway Club.

The monthly meetings were resumed Sept. 9, when 41 members were present at the Windsor Hotel, Montreal, President E. A. Williams occupying the chair.

J. Livingstone read a short paper reviewing R. R. Neild's paper on the manufacture of iron and steel which was published in our June issue. A brief discussion followed.

W. H. Rosevear, General Car Accountant of the G.T.R., read a paper on the per diem system, which is published elsewhere in this issue. The paper was briefly discussed and further discussion postponed till the next meeting.

W. E. Fowler, Master Car Builder, C.P.R.; W. Alderson, General Car Inspector, G.T.R., and S. King, Master Car Builder, Inter-colonial Ry., who were appointed by the President to report their interpretation of the rules of interchange, as revised at the recent meeting of the M.C.B. Association, presented their report, which is published elsewhere in this issue.

W. E. Fowler, Master Car Builder, C.P.R., was elected a member of the Executive Committee, in place of W. H. Rosevear, Jr., who has been appointed Secretary to succeed M. P. Kelly, resigned.

RAILWAY FINANCE, MEETINGS, ETC.

British Columbia Electric Ry.—Earnings and expenses for June:

GROSS EARNINGS.	1901.	1902.	Increase.
Railway—Vancouver division	\$10,415	\$12,432	\$2,017
Victoria "	8,172	9,396	1,224
Westminster "	7,216	8,362	1,146
Lighting—Vancouver division	8,446	9,801	1,355
Victoria "	4,086	4,621	535
Total gross earnings.....	38,335	44,612	6,277
Working expenses.....	24,280	27,676	3,396
Net earnings.....	14,055	16,936	2,881

Aggregate gross earnings, for 15 months to June 30.....\$611,118 \$691,487 \$80,369

Aggregate net earnings, 15 months to June 30.....\$227,237 \$264,727 \$37,490

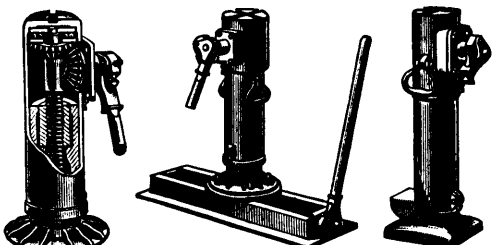
The Co., in addition to paying the union rate of wages to its employes, sets aside one-third of its net profits, after 4% dividend had been provided for the shareholders, for division among the men. General Manager Buntzen says that, in his opinion, the increased interest in the Co.'s welfare on the part of the employes, created by the new system, will add so much to the Co.'s success that the shareholders, as well as the men, will gain by the innovation.

Calgary and Edmonton Ry.—Net earnings for July \$5,436.75, against \$9,813.84 for

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July, 1901. The decrease in the net earnings is accounted for by the expenditure of \$10,734 under the head of freshets. Net earnings for 7 months ended July 31, \$165,579, against \$109,053 for same period in 1901.

Canada Atlantic Ry.—The city solicitor of Ottawa is of opinion that the city council may recover \$50,000 from the C. A. Ry., this being the amount of bonus paid by the city to secure the erection of a central station by the Co. J. R. Booth states that he has not abandoned his intention of building the station, and the council has asked that construction be commenced as soon as the site—the militia building—is vacated by the government.

Canadian Northern Ry.—Approximate earnings:—

	1902.	1901.	Increase.
July.....	\$132,300	\$ 97,000	\$45,100
Aug.....	130,900	97,000	33,900
	\$263,200	\$184,000	\$79,000

Mileage in operation in 1902, 1,244, against 828 in 1901.

Cape Breton Ry. Co.—The board of directors has been reorganized with the following officers: President, M. E. Evans; Vice-President, R. J. Campbell; Secretary-Treasurer, G. E. Johnson; other directors, A. L. Meyer, W. A. Prendergast, J. A. Minor, W. W. Orr, W. C. White, New York; and M. Guerin, Montreal.

Central Ontario Ry.—The sale of this line, ordered by the courts, which was to have taken place Sept. 10, was postponed to Oct. 15. It was stated at the time the order for postponement was obtained that the control of the stock had been changed, S. J. Ritchie, Akron, Ohio, having purchased \$780,000 of stock from the Payne estate. The annual meeting of the shareholders takes place at Trenton, Oct. 13.

Chicago and Western Indiana Ry.—The directors of the C. and W. I. Ry. Co., in which the G. T. R. is interested, have authorized the placing of a \$50,000,000 mortgage on the line, most of which will be utilized in paying off an old 6% mortgage. The new mortgage is at a lower rate.

Dominion Atlantic Ry.—Gross earnings for July \$122,000, against \$112,090 for July, 1901, making for seven months ended July 31, \$503,800, against \$454,663 for same period, 1901.

Dominion Securities Co., U.S.—At the annual meeting held in Jersey City, N.J., Aug. 28, the following directors were elected: W. E. Prendergast, T. E. Wing, W. C. White, S. Wolverton, W. H. Porter, J. G. Cannon, A. L. Meyer, A. Schaffer, H. G. Carson, H. F. Ballantyne and J. A. Minor. The Co. is interested in the Cape Breton Ry. Co., the South Shore Ry., and a number of charters in the Maritime provinces, Quebec and Ontario.

Fredericton Ry. Co.—The annual meeting called for Aug. 8 was adjourned.

Great Northern Ry. of Canada.—Statement for year ended June 30, 1902:—

From freight traffic.....	\$ 430,725
From passenger traffic.....	77,921
From mails and express.....	3,901
From miscellaneous.....	12,216
Total.....	\$ 524,763
Operating expenses:	
For maintenance of way.....	\$ 58,302
For maintenance of equipment.....	61,923
For conducting transportation.....	177,457
For general expenses.....	19,119
Total.....	\$ 316,801
Net earnings.....	\$ 207,963

Net earnings will just about meet the interest requirements on the 1st mortgage bonds. There are \$4,040,000 of these outstanding, bearing interest at 5%. It is estimated that gross earnings for the coming year will be considerably in excess of \$650,000. This estimate is based largely on the increase in the

local business for the present months over the same months last year. The earnings for next year should show a good balance earned toward dividends on the stock. A special fund has been provided sufficient to pay all the interest and a large part of the principal of the equipment bonds as they mature. These bonds amount to about \$300,000. The amount of the business of the road for March, April, May and June of 1902 has increased 16% over that of the same months of 1901. By improvements, including the purchase of larger locomotives and freight cars, and by the introduction of economics in operation, the percentage of net to gross shows an increase this year over last of about 9%.

Press reports have credited the C.P.R. with a desire to purchase the G.N.R., in order to utilize it in connection with the projected line of steamships to England. Sir Thomas Shaughnessy says that the C.P.R. has no such intention.

The Hull Electric Ry. has passed under the control of the C.P.R., the directors and officers being: President, A. R. Creelman, K.C.; Vice-President, C. W. Spencer; other directors, D. McNichol, I. G. Ogden, T. Tait, W. R. Baker, and E. Hanson.

Intercolonial Ry.—The net earnings for the year ended June 30, are claimed to be \$96,880. The increase for July and Aug. over the same months in 1901 is said to be \$180,000.

International Ry. Bridge.—The Sault Ste. Marie, Ont., town council in 1901 assessed the International Railway Bridge at \$30,000 and this year raised it to \$50,000. The C.P.R. Co. appealed and a compromise was effected with the assessor at \$40,000.

Kettle Valley Lines.—We are advised that the Attorney-General of the State of Washington has decided that the suit entered by the County Attorney of Ferry, Wash., against the Republic and Grand Forks Ry. Co. for the confiscation of the Co.'s line from the International boundary to Republic, 37 miles, with its equipment, on the ground that the majority of its stock is held by aliens, cannot be maintained, and as a consequence it has been dismissed.

W. C. Morris, formerly assistant General Manager, and the attorney for the Co. in the State of Washington, also brought an action against the Co. asking for the appointment of a receiver, and for an injunction restraining the Co. from transferring stock. The statement of claim alleged that Morris was to receive one-sixth of the stock of the Co. in return for his services in promoting the Co.'s interests in the U.S.; that it was issued to him and subsequently with all the other stock turned over to the Co. to be held in trust until the completion of the line. An interim injunction was granted, and the action set down for hearing Sept. 1. In the meantime T. W. Holland, General Manager of the Co. at Grand Forks, B.C., obtained warrants against Morris, alleging certain offences in Canada, and sought to have an arrest made in Spokane with a view to extradition proceedings being taken. We are advised that the Morris action has been dismissed, and that the proceedings initiated against him by the Co. have been dropped.

The R. and G. F. Ry. Co. is the title under which the Kettle Valley Lines constructed by the Canadian companies, of which Hon. J. R. Stratton, Provincial Secretary of Ontario, is President; T. P. Coffee, Manager of the Trusts and Guarantee Co. (Ltd.), Toronto, Vice-President; and T. M. Holland, General Manager, were constructed in the U.S.

Kootenay Central Ry.—At the annual meeting at Fort Steele, B.C., Sept. 8, the following were elected: President, H. Watt; Vice-President, C. H. Pollen; Secretary, J. T. Laidlaw; Treasurer, L. W. Patmore;

Counsel and Attorney, J. A. Harvey; other director, R. L. T. Galbraith.

London, Ont., Street Ry.—Traffic receipts:

	1902.	1901.	Increase or Decrease.
Jan.....	\$ 9,980.93	\$ 9,255.74	\$ 725.19+
Feb.....	8,740.45	8,145.76	594.69+
Mar.....	10,108.54	9,294.54	814.00+
Apr.....	9,646.42	9,495.68	150.74+
May.....	11,970.88	10,003.16	1,967.72+
June.....	12,819.56	13,917.23	1,097.67-
July.....	15,215.04	14,241.13	973.9+
Aug.....	14,768.20	14,958.55	190.35-
	\$93,250.02	\$89,311.79	\$3,938.23+

Lotbiniere and Megantic Ry.—E. W. Tobin, M. P., and F. N. McCrea have purchased the L. and M. Ry., and 60,000 acres of lands, from King Bros., Quebec. The new owners have organized the Lotbiniere Lumber Co. to operate the line and carry on a general lumbering business. The following are the officers: President, F. N. McCrea; Vice-President, B. Quinn; Secretary-Treasurer, J. A. Begin; other directors, E. W. Tobin and F. Campbell. The L. and M. Ry. extends from Lyster, on the G.T.R., to St. Jean des Chaillons, 30.34 miles, and has a junction with the I.C.R. at Kingsburg, 13 miles from Lyster. The charter was granted in 1889 for the construction of a line from St. Jean des Chaillons to Glen Lloyd, 50 miles, and the line was opened to Lyster in 1896. In addition to the 30.34 miles of track, there are 6.35 miles of sidings all laid with 56 lb. steel rails. The equipment consists of 2 locomotives, 2 box cars, 15 flat cars, 92 coal and dump cars, 4 conductors' vans, and 1 snow plough. The capital consists of \$500,000 ordinary shares, all of which has been issued, and \$50,000 has been paid up. The Dominion subsidies amounted to \$96,000, and the Quebec to \$126,994. The total cost of the railway and its equipment was \$226,467.89. Its operations for the year ended July 30, 1901, showed: train mileage (mixed), 17,505; engine mileage, 19,262; passengers carried, 7,034; freight carried, 28,148 tons. Passenger receipts, \$2,819.01; freight receipts, \$12,837.93; miscellaneous, \$81.30; total, \$15,738.24; net receipts, \$2,380.68.

A Quebec despatch stating that the line would be acquired by the I. C. R., which would also purchase the South Shore Ry., has been denied by the Deputy Minister of Railways.

Massawippi Valley Ry.—At the annual meeting, Sept. 3, the following were elected: President, Hon. W. White; Vice-President, J. G. Foster; Treasurer, J. H. Williams; other directors, O. Edwards, A. Barnes, C. H. Kathan, C. W. Cate, J. W. Dunkler, and L. Tuttle; Secretary, S. Stevens.

Midland Ry. Co.—At a meeting in Montreal, Sept. 9, the shareholders authorized the cancellation of certain bonds now existing, and decided to issue \$1,000,000 of bonds, secured on the line; \$1,000,000 of common stock, and \$800,000 of preferred stock.

Montreal Street Ry. Co.—Comparative statement of earnings and expenses for Aug:

	1902.	1901.	Increase or Decrease.
Passenger earnings.....	\$195,610.14	\$179,586.50	\$16,023.64+
Miscellaneous ".....	3,794.77	2,273.81	1,520.96+
Total.....	199,404.91	181,860.31	17,544.60+
Operating expenses.....	100,086.21	92,510.83	7,575.38+
Net earnings.....	99,318.70	89,349.48	9,969.22+
Fixed charges.....	22,950.48	21,209.80	1,740.68+
Surplus.....	76,368.22	68,139.68	8,228.54+
Expenses % of car earnings.....	51.17	51.51	.34 -

Oct. 1, 1901, to Aug. 31, 1902:—

	1902.	1901.	Increase or Decrease.
Passenger earnings.....	\$1,813,987.15	\$1,706,383.67	\$107,603.48+
Miscellaneous ".....	29,254.31	8,682.71	20,571.60+
Total.....	1,843,241.46	1,715,066.38	128,175.08+
Operating expenses.....	1,040,946.02	1,024,444.26	16,501.76+
Net earnings.....	802,295.44	690,622.12	111,673.32+
Fixed charges.....	187,178.04	125,619.28	61,559.66+
Surplus.....	615,117.50	565,002.84	50,114.66+
Expenses % of car earnings.....	57.38	60.03	2.65 -

Interest on Montreal Park and Island Ry. Co.'s bonds owned by this company not included.

Montreal Terminal Ry.—The trust deed and hypothec in favor of the National Trust Co. securing the payment of the 1st mortgage bonds issued over section 1 of the M. T. Ry. Co.'s undertaking and extension thereof, has been deposited with the Secretary of State at Ottawa.

New Brunswick Ry. Co.—At the annual meeting at St. John, Aug. 7, the following directors were elected: Lord Strathcona and Mount Royal, R. Meighan, J. Turnbull, J. Hardisty, Montreal; H. H. McLean, J. McMillan, St. John, N.B.; J. S. Kennedy, S. Thorne, J. K. Tod, D. W. James, New York, and G. R. Burpee, Bangor, Me.

New York and Ottawa Ry.—An order has been made by the U.S. Circuit Court, at Utica, N.Y., directing the sale of this line under mortgage foreclosure proceedings instituted by the Morton Trust Co. of New York. The indebtedness of the Co. was reported to be \$2,085,327. The line extends from Tupper Lake, N.Y., to the St. Lawrence River, opposite Cornwall, Ont., at which point the river is crossed by a bridge connecting the N.Y. and O. Ry. with the Ottawa and New York Ry. from Cornwall to Ottawa. The New York section of the line, 71 miles, has been in the hands of a receiver for some time, H. W. Gays, General Manager of the O. and N. Y. Ry., being in charge. The Canadian company is not affected by the order of sale.

Niagara, St. Catharines and Toronto Ry.—The Dominion Securities Co., of Toronto, recently offered for subscription \$150,000 5% 30-year bonds of the N., St. C. and T. Ry. Co. at 101 and accrued interest. The capitalization is—stock authorized \$1,000,000, issued \$802,550, bonds \$660,000. For the year ended Dec. 31, 1901, the gross earnings were \$116,721.55; operating expenses, \$72,002.88; net earnings, \$44,718.64; net revenue from Navigation Co., controlled by N., St. C. and T. Ry. Co., \$6,577.03; surplus, \$51,295.67, which is nearly double the amount of interest on bonds.

Ottawa, Brockville and St. Lawrence Ry.—At the organization meeting in Ottawa, Aug. 25, the following officers were elected: President, J. C. Kelly; Vice-President, D. W. Wales, London, Eng.; Directors, Dr. A. P. Shillington, J. Bingham, F. O'Reilly, Ottawa; J. W. Hutt, Liverpool, N.S.; J. Curry, To-

ronto; Solicitor, T. McVeity; Secretary-Treasurer, W. Thompson, Ottawa.

Ottawa, Northern and Western Ry.—Application was made to the Minister of Railways, Aug. 29, for official sanction to the amalgamation of the Ottawa, Northern and Western Ry. Co., formerly the Ottawa and Gatineau Ry. Co., and the Pontiac Pacific Jct. Ry. Co., under the above title.

Ottawa and New York Ry.—The following were elected directors at the annual meeting, Sept. 19:—G. F. Peabody, G. B. Moffat, H. S. Snow, R. B. Moffat, A. M. White, jr., C. J. Peabody, A. Nichols, S. Trask, of New York; H. W. Gays, of Ottawa. The report gave the following information:—

Earnings, freight	\$33,223 76
" passenger	53,694 14
	<hr/>
Operating and betterments,	\$86,917 90
Excess	83,539 07
	<hr/>
There has been expended on Ottawa terminals for shops, warehouses, tools, etc.	\$46,677 30
	<hr/>
Tons freight carried,	51,362
" one mile	1,737,134
Passengers	92,738
" carried one mile	2,480,010
Train mileage	114,993

Pontiac Pacific Jct. Ry.—See Ottawa, Northern and Western Ry.

Port Dalhousie, St. Catharines and Thorold Street Ry. Co., Ltd.—The agreement of amalgamation between this Co. and the Niagara, St. Catharines and Toronto Ry. Co., has been deposited with the Minister of Railways.

Qu'Appelle, Long Lake and Saskatchewan Ry.—Net earnings for July \$5,100.32, against \$289.94 for July, 1901. Net earnings for 7 months ended July 31, \$55,089.57, against a net loss of \$1,272.77 for same period, 1901.

Quebec Bridge Co.—At the annual meeting in Quebec, Sept. 2, the following were elected: President, Hon. S. N. Parent; 1st Vice-President, R. Audette; and Vice-President, H. J. Beemer; other directors: V. Boswell, J. Breakey, Hon. N. Garneau, J. B. Laliberte, G. Lemoine, H. M. Price and N. Rioux.

Quebec Central Ry.—Gross earnings for July \$73,268.46; working expenses, \$47,028.17; net earnings, \$26,240.29; against \$61,946.13 gross and \$22,460.32 net for July, 1901. Gross earnings for seven months ended July 31, \$363,638.07; net earnings,

\$109,103.90; against \$348,107.03 gross and \$110,283.69 net for same period 1901.

Quebec and Lake St. John Ry.—Earnings for July, \$44,818, against \$41,124 for July, 1901, making for the seven months ended July 30, \$219,774, against \$187,223 for the same period, 1901.

South Shore Ry. Co.—At the annual meeting at the Co.'s offices, St. Sacrament street, Montreal, Sept. 16, the following directors were elected:—President, H. A. Hodge; Vice-President, A. L. Meyer; Secretary-Treasurer, F. D. White; other directors, W. S. Webb, P. W. Clement, F. X. Choquette and B. P. Moore. An incident of the meeting was a claim made by Flett, Falconer and Cook, advocates, as representatives of the New York syndicate, which alleges it holds an undivided interest in the majority stock, and that A. L. Meyer had no authority to transfer it in the way he did. It was held that these gentlemen had no standing at the meeting, whereupon another meeting was held by the members of the New York syndicate at which the following were elected directors:—R. Sutro, W. F. Harriy, C. E. Kimball, H. L. Sprague, A. Schaffer, C. J. Flett and A. Falconer. It was decided to remove the offices temporarily to 157 James st., Montreal.

The South Western Traction Co., which is authorized to construct an electric line from London westerly to Glencoe, and easterly to Hamilton is offering for subscription 5,000 shares at \$100 each.

The St. Thomas Electric Ry. ceased operations Sept. 22, pending a reorganization. There was a temporary suspension early in the month, owing to the Electric Light Co. declining to supply power until outstanding accounts were met. An arrangement was made by which some cars were to be run, but this was terminated Sept. 22. The city guaranteed interest on the Co.'s bond issue of \$50,000, and it is expected that it will take possession of the line.

Sydney and Louisburg Ry.—The statutes of Nova Scotia were revised by the Legislature in 1900, and according to the Assessment Act, the municipalities claimed to assess the Dominion Coal Co. in respect of its railway, station houses, and rolling stock, which had previously been exempt. The Co. claimed that a mistake had been made in printing the Act, and that it was never intended to make the railway property assessable, consequently an act was passed

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in 1902, amending the act so as to give the Co. exemption, but the municipality claims the amount of the tax levied under the assessment of 1901. A case will be submitted to the Supreme Court to settle the matter.

Toronto, Hamilton and Buffalo Ry.—Earnings for Aug., \$35,216.77 against \$43,651.30 for Aug., 1901, making for the three months ended Aug. 31, \$104,301.70, against \$115,333.18 for the same period 1901.

Toronto Railway Co.—Car earnings compared with previous year:—

	1902.	Increase or Decrease
January	\$137,135.21	\$15,478.01+
February	127,981.01	18,468.50+
March	141,681.22	17,182.23+
April	132,946.56	9,940.56+
May	145,595.54	17,634.60+
June	132,295.85	5,888.74-
July	162,472.12	12,840.88+
August	165,164.57	11,683.95+
	\$1,145,242.08	\$97,339.99+

A dividend at the rate of 1 1/4% has been declared for the quarter ended Sept. 13.

It is stated that a proposition to issue \$1,000,000 of new stock for the purchase of suburban lines, will be submitted to a special meeting of shareholders to be held on an early date.

White Pass and Yukon Ry.—Gross earnings from July 1 to Aug. 14, \$349,511.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—The report presented at the annual meeting at Minneapolis, Sept. 16, is given on page 335, the officers for the current year are: President T. Lowry; Vice-President, J. Martin; 2nd Vice-President and General Manager, E. Pennington; other directors: Sir Wm. Van Horne, Sir Thos. Shaughnessy, W. D. Washburn, C. H. Pettit, G. R. Newell, R. B. Angus, W. H. Bradley, E. A. Young and Secretary and Treasurer, C. F. Clements; auditor, C. W. Gardner.

Consolidated Lake Superior Co.

The fourth annual report of this Co., which controls the various Clergue industries at Sault Ste. Marie, has been issued for the year ended June 30, 1902. During the year the Co. acquired all the interests of the Ontario Lake Superior Co., which brought under one management all the industrial interests centering at Sault Ste. Marie, on both sides of the river, and brought under the control of the C.L.S. Co. extensive land grants from the Province of Ontario, "the development of which constitutes the chief purpose of the various operations conducted by the Co."

In regard to the Co.'s transportation interests, the report says:—"The railway and steamship operations, which are such indispensable agencies in the development of your property, have proved, moreover, to be among the most profitable undertakings, and with the growth of the various enterprises now developing, the earnings of your transportation system are sure to increase. The Algoma Central & Hudson's Bay Ry. Co. is under construction from Sault Ste. Marie, Ont., northward to the Michipicoten iron ore region. From Sault Ste. Marie 47 miles of track have been laid and are open for traffic, as well as 32 miles of sidings on this division. The intervening section of 123 miles, from the end of rail to Josephine Jct., has been graded for the most part, and all of this grading will be completed by Nov. 15. On the Michipicoten Division, in addition to the 11 miles from Michipicoten harbor to the Helen mine, the line has been carried forward 10 miles to the Josephine mine, and both of these iron ore properties now have an outlet by rail to the lake, and thence by water to all the iron ore receiving ports on the Great Lakes. The heavy iron ore traffic over the short distance from the Helen mine to Michipicoten harbor

has enabled this division to operate with large profit, and the addition of the shipments from the Josephine mine during next season will increase the earnings of this short line. The section in operation northward from Sault Ste. Marie has carried a heavy and profitable traffic in logs, lumber, pulp wood, hard wood for charcoal, and general freight and passengers. The objective point of the main line is, of course, the Michipicoten iron ore region, to afford an outlet by rail throughout the year for the output of the Helen and Josephine mines to the blast furnaces of your Co., and for the other ore properties which await development upon the establishment of rail connections. All the way from Sault Ste. Marie to Michipicoten region the railway line traverses virgin territory, rich in timber and mineral wealth, and acquired for the most part for 11 miles on either side of the railway by your Co. Upon the opening of the through line heavy traffic will become immediately available by the development of these resources. Owing to the rugged topography of the country the construction of this line has been slow and difficult, but the work has been made to conform throughout to the highest standards. With such a roadbed, with the highest types of locomotives and modern cars of great carrying capacity, this railway will be able to handle heavy traffic at minimum cost, both for operation and maintenance. The equipment of the A.C. & H.B. Ry. is as follows:—Flat cars, 324; gondola cars, 25; box cars, 27; steel ore cars, 200; dump cars, 116; boarding cars, 14; tool cars, 2; snow plows, 3; flangers, 2; steam shovels, 4; cabooses, 12; passenger cars, 10; locomotives, 14.

"For the carriage of the output of the iron ore mines, and the various products originating upon the line of the A.C. & H.B. Ry., as well as the coal required for the operation of the different works, a fleet of steamships is operated upon the lakes in conjunction with the railway lines. A thoroughly equipped iron ore pier at Michipicoten harbor permits the economical loading of iron ore steamers without delay, and a series of docks at Sault Ste. Marie provides terminal facilities at that point for handling ore, coal, coke and miscellaneous freight. During the past year these facilities have been increased by the construction of several new docks on both sides of the river. The Co.'s fleet of ore vessels owned or chartered embraces the following steamers:—*Luzon, 5,000 tons; *Panay, 5,500 tons; *Rappanhannock, 3,400 tons; *Sacramento, 3,400 tons; Leafield, 2,300 tons; Monkshaven, 2,200 tons; Paliki, 2,350 tons; Theano, 2,300 tons; and the following barges:—Agawa, 6,000 tons; *Matanzas, 4,250 tons; *Pretoria, 4,700 tons; H. A. Barr, 2,000 tons; Barlum, 2,400 tons; total tonnage, 45,800 tons. Those prefixed with an asterisk are chartered. Of the passenger steamers owned by the Co., the Minnie M. does a profitable passenger and general freight business between Sault Ste. Marie and Michipicoten, and the steamers Ossifrage and King Edward maintain regular service between Sault Ste. Marie and Toledo, Ohio, touching at Georgian Bay ports, carrying both freight and passengers. The tug Philadelphia and several lighters complete the Co.'s vessel equipment."

The C.L.S. Co. also owns the capital stock of the International Transit Co., which has an exclusive franchise for street railway lines in Sault Ste. Marie, Ont., and the Trans-St. Marie's Traction Co. which is constructing street railway lines in Sault Ste. Marie, Mich. Of these companies the report says:—"The construction of street railway lines on both sides of the St. Mary's river under franchises owned by your Co. was commenced during the past summer, and both railways are now approaching completion and will be in operation before the close of the year. In connection

with these railway lines, ferry boats will be run on the St. Mary's river, thus making a complete system of transportation between and throughout the two cities. The shape of the two cities and the tendencies of their growth form peculiarly favorable conditions for the profitable operation of street railway lines, and these railways, in conjunction with the ferry, are sure to contribute substantially to the earnings of your Co. The money for the construction of these railways has been provided from independent sources upon a basis which gives to your Co. the ownership of their stock."

The report refers to the starting of the Bessemer steel works and rail mills of the Co.'s subsidiary, the Algoma Steel Co., early in July, 1902. The steel thus far produced there has been made from purchased pig iron, as the blast furnaces have not been completed. On their completion the report says, "it is believed that these works will be in a position to compete successfully with the best equipped mills in the manufacture of steel rails. Renewals on the 18,000 miles of railway now existing in Canada and the requirements of the new construction, which is bound to increase largely under the progressive policy of the Dominion and Provincial governments, will furnish a sure market in Canada for steel rails far in excess of the capacity of this first mill, as indicated by the orders which your Co. already has booked."

During the year the shipments of iron ore from the Helen mine were 314,750 tons, against 91,436 in the preceding year.

The report does not make any reference to the Manitoulin and North Shore Ry.

GENERAL INCOME ACCOUNT, YEAR ENDED JUNE 30, 1902.

Net income from operation—	
A.C. and H.B. Ry. Co.	\$ 382,084 34
Algoma Commercial Co.	301,986 55
Lake Superior Power Co.	619,104 93
Sault Ste. Marie Pulp and Paper Co.	77,548 93
Tagona Water and Light Co.	47,411 50
	\$1,428,136 25
Deduct C.L.S. Co. preferred stock dividends paid during year	\$1,115,403 57
General expenses	20,103 88
	\$1,135,507 45
Surplus	\$ 292,628 80
Add cash subsidy A.C. and H.B. Ry.	380,424 00
	\$ 673,052 80
Add profit and loss subsidiary companies, June 30, 1901	\$ 414,877 68
Profit and loss, C.L.S. Co., June 30, 1901	8,877 72
	\$ 423,755 40
Total credit to profit and loss, June 30, 1902	\$1,096,808 20

In addition to the \$70,151,800 of common stock outstanding, \$11,842,200 is to be issued to acquire the Algoma Steel Co. The preferred stock issued is \$23,547,250. In addition to this \$2,213,650 has been received on instalments of preferred stock, and \$9,239,100 is stated to be the balance to be received from purchasers of preferred stock in instalments for completing construction and providing working capital. This will bring the common stock up to \$82,000,000, and the preferred to \$35,000,000, total, \$117,000,000, which is the full amount the Co. has authority to issue.

BALANCE SHEET, JUNE 30, 1902.

ASSETS.	
Ownership of subsidiary companies	\$93,060,309 76
Inventories	2,510,281 65
Accounts receivable	4,040,710 04
Cash	376,353 05
	\$99,987,654 50
LIABILITIES.	
Preferred stock	\$23,547,250
Common	70,151,800
	\$93,699,050 00
Preferred stock instalment receipts, amount received from purchasers of stock	1,849,300 00
Vouchers, bills and accounts payable	3,342,496 30
Profit and loss	1,096,808 20
	\$99,987,654 50

ALGOMA CENTRAL AND HUDSON'S BAY RY.

Operations for fiscal years ended June 30, 1901 and 1902.

	1902.	1901.
Gross earnings—		
Passenger.....	\$ 92,775 80	\$ 43,062 43
Freight.....	852,009 10	329,929 52
Mail.....	1,188 14	250 00
Miscellaneous.....	90,615 12	28,859 27
	<u>\$1,036,582 16</u>	<u>\$402,101 22</u>
Operating expenses—		
Maintenance way and structures.....	\$ 36,880 92	\$ 901 30
Maintenance of equipment.....	133,702 35	93,650 07
Conducting transportation.....	466,198 59	196,050 15
General expenses.....	17,715 96	8,100 77
	<u>\$654,497 82</u>	<u>\$268,798 38</u>
Net earnings.....	\$382,084 34	\$133,302 84

Grand Trunk Ry. Betterments, Etc.

Montreal Freight Sheds.—Rapid progress is being made with the new freight sheds and offices on Chaboillez square. The front, facing the square, 300 ft., is of solid brick, two and a half stories high, and in the center of the facade is a large archway to admit the drays to the driveway between the two lines of warehouses—one for inward freight and the other for outward freight. The brick work overlooking the square is relieved with ornamental stone facings. In the front of the building will be located the local freight office. The new buildings have a depth of about 1,200 ft. from the square.

St. Bruno Station.—To replace the station which was burned some time ago, a new building was started at Montarville, Que., whereupon the St. Bruno people obtained an interim injunction to prevent the station being built away from the old site. An agreement has since been effected in regard to the site for the new station.

Brockville Shops.—Six tanks, each of 500 gals. capacity, have been erected at the shops, to replace old structures.

Port Hope to Whitby.—The work of reducing the gradients and double-tracking the line between Port Hope and Whitby Jct., Ont., a distance of some 32½ miles, is now in hand. For the purpose of securing better alignment, and more favorable grades than can be obtained on the present location, it was decided to make three deviations, viz: 1, from Port Hope to west of Newtonville, about 7½ miles; 2, from mileage 279½ to mileage

283½, 3½ miles; 3, from Bowmanville to mileage 295½, 5½ miles. Another short deviation, east of Bowmanville, is also being considered. The contracts for the earthwork on the 1st and 3rd deviations were let to P. Breen & Co., of St. Catharines, who have been at work since June. The contract for the earthwork of the 2nd deviation has just been let to Ross & McRae, of Montreal, and work has been commenced. The masonry work will, in all cases, be done by the Hon. W. Gibson, of Beamsville, Ont. The principal engineering features are as follows: Mileage 273 15-16, Port Britain gully, 20 ft. arch, 205 ft. long, under embankment 60 ft. high; mileage 279½, public road under crossing, 21 ft. arch; mileage 291½, combined road and stream arch, 21 ft.; mileage 289, public road under-crossing, 21 ft. arch. (This latter is on the contemplated diversion east of Bowmanville, and may not be required if the present location is adhered to.) All the work in connection with the lowering of the existing track and widening the embankment for the new second track, where the present location is adhered to, will be done by the Co.'s own men under the supervision of F. H. McGuigan, Manager.

Don Yards, Toronto.—The work in connection with re-arranging the Don yard is almost completed. In carrying out the alterations the Don passenger station is wiped out, and the small amount of passenger traffic originating there uses the Queen St. east station, which is situated in a more prominent and gettable point. In the old yard there were on the line between the Don and Trinity st., three curves and a tangent, and in making the changes two of these curves are done away with, and the tangent is carried from the bridge over the Don to near Cherry st., where it connects with the curve which runs to the distillery. This tangent runs north of the present Don station. Practically all the sidings lying east of the C.P.R. crossing are re-arranged. On the north of the main line there are two tracks for holding the east bound freight trains waiting for orders, and north of the northerly of these tracks is a loop, running to a new ice-house, which will enable east-bound trains to be "iced" without having to do any switching or to cross the main line, as they had to do hitherto. The tracks on the line east of Cherry st. and north of the main line are being arranged so as to make a convenient freight yard. It is the intention to remove the present freight shed from Berkeley st. and to erect a building which will do for freight shed, offices, yard-

men, operators and customs, at a convenient point. Southerly of the main line is a group of six tracks, which will be used for switching purposes and for holding west-bound trains. The re-arrangement of the yard does not add materially to the length of the tracks there, but will enable a considerably saving to be effected in the speed with which trains can be handled.

Toronto Yard Accommodation.—The G.T.R. has purchased from the Ontario Government about 11 acres of land lying east of the Central Prison, Toronto, the price paid is understood to be \$32,500. It is intended to use the land for an extension of the yards and sidings at North Parkdale station.

Magnetawan River Ry.—The line from Burk's Falls to the Magnetawan river was completed early in Sept., and the bridge over the river was expected to be ready by the end of the month when connection would be made with the short section on the opposite side of the river to the dock. The total length of the line is about 2 miles. It connects the G.T.R. with the navigable portion of the Magnetawan river. (Jan., pg. 3.)

Stayner Station.—The freight and passenger stations at Stayner, Ont., will shortly be rebuilt after the recent fire.

Collingwood, Ont.—In connection with the extension of the drydock, it was found necessary to make some slight changes in the tracks at the station and at the curve south of the drydock. The new track was put in operation at the end of Aug.

Guelph Jct. Station.—Press reports state that a new station will be erected at Guelph Jct.

Improvements at Beaverton.—Advantage has been taken of the carrying on of construction of the Trent Valley Canal, which enters Lake Simcoe north of Beaverton, Ont., to carry out a number of improvements. The tracks had to be raised in order to be carried over the canal, and in doing this work a number of gradients were reduced and several curves taken out. The heavy grade about a mile east of Lorneville Jct. has been lowered 12 ft., and several feet have been taken off the grade west of Lorneville. Other work in connection with the grade has been done, with a view, it is stated, of doubling the track between Peterboro' and Midland.

Sun Portland Cement Co.'s Track.—The works of the S.P.C. Co. in Owen Sound, Ont., adjoin the G.T.R. tracks have been

Pintsch System Car and Buoy Lighting.

This Company controls in the United States and Canada the celebrated Pintsch System of Car and Buoy Lighting. It is economical, safe, efficient, and approved by the railway managers and Lighthouse Board of the United States and Canada, and has received the highest awards for excellence at the World's Expositions at Moscow, Vienna, St. Petersburg, London, Berlin, Paris, Chicago, Atlanta and Buffalo. 112,000 cars, 4,500 Locomotives and 1,250 Buoys are equipped with this light. 160 Railroads in the United States and Canada have adopted this system of lighting, applied to over 19,000 cars.

Car Heating.

This Company's Systems have been adopted by 120 of the principal Railroads of the United States and by the great Sleeping Car Company. They consist of The Steam Jacket System of hot water circulation, The Direct Steam Regulating System and Straight Steam (plain piping).

Automatic Steam Couplers. Straight Port Type.

THE SAFETY CAR HEATING and LIGHTING CO.,

General Offices: 160 Broadway, New York.

Branch Offices: Chicago, 1017 Monadnock Building - - - St. Louis, 1015 Union Trust Building.
Montreal, Stock Exchange Building.

completed, and a siding has been run into them. In addition a spur track 2 miles in length has been constructed from the works to the marl beds at Shallow Lake.

Wlarton Spur Track.—A spur track about a mile in length has been completed from Wlarton to the new beet sugar factory in course of construction.

Spur Track to Bridgeport.—The Co. has constructed a spur line from Berlin, Ont., to the large beet sugar factory in course of construction about 1 1/4 miles from the station, and has carried the track about a mile farther into the village of Bridgeport.

Stratford Freight Sheds and Yards.—A new freight shed has been completed, and the freight yard has been modernized by the re-arrangement of a number of tracks.

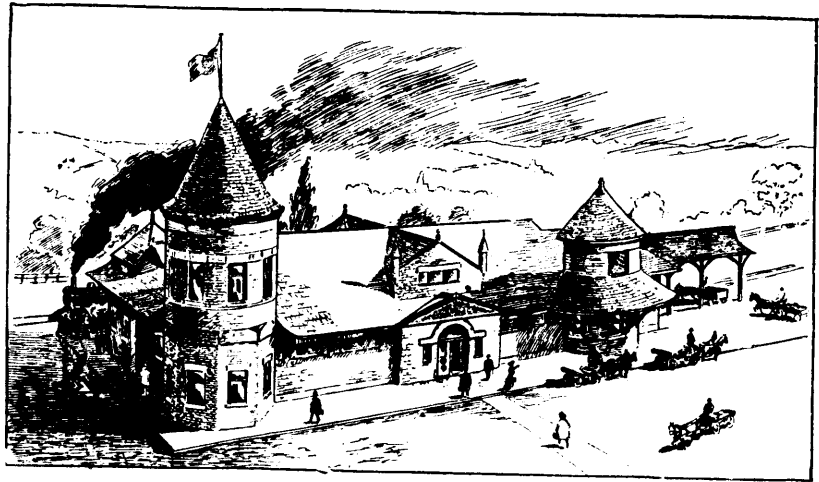
Goderich Station.—The new station now in course of erection is a convenient and commodious building. Its dimensions are: length, 83 1/2 ft.; width at north end, 30 ft.; at south end, 24 ft.; height, 32 ft.; height of tower, 50 ft. The foundation is of stone, and the building itself is of red pressed brick. The ground floor plan shows an office 15 by 18 ft.; general waiting room 24 1/2 by 22 ft.; ladies' waiting room, 24 1/2 by 22 ft.; baggage room, 22 by 17 ft. The building, of which a ground-floor plan and general view appear on this page, is expected to be ready for occupation in the fall. It is understood that the freight offices will be re-arranged.

Third Track in Hamilton.—The press report stating that a third track would be laid this year through Hamilton, so as to enable trains to run to and from King st. station and take the main line without going to the Stuart St. station, were premature, as we were recently advised that no decision had been reached.

Hamilton-Niagara Double-tracking.—We were advised Sept. 12 that five miles of the grade for the double tracking of the line between Jordan and St. Davids was ready for the rails, and that the earthwork on the remaining nine miles was expected to be completed by the end of Sept. Four of the seven spans of the bridge at Jordan have been completed, and work is in progress on the fifth span.

Brantford Deviation.—Work has been commenced on the deviation from the Hamilton-London main line at Fairchild's creek bridge, near Lynden station, which is to run into Brantford, to enable the main line trains to run through that city instead of via Harrisburg, as at present. The trains will run on to the main line again at Paris. The deviation is about 4 miles in length, and will cost about \$200,000. There is considerable rock-cutting to be done, as well as some excavation through heavy gravel.

Woodstock, Ont., Station.—The erection of a new station on a more convenient site is under consideration. It is suggested that a site at the diamond would be much more convenient for handling trains, as well as for the public.



NEW GRAND TRUNK RAILWAY STATION, GODERICH, ONT.

G.T. Western Ry. Double-Tracking.—In connection with the double-tracking of the line from Port Huron to Chicago, the contractors have struck a "sinkhole" near Haslett's Park, Mich., 106.29 miles from Port Huron. Eighteen thousand yards of gravel had been dumped into the hole up to the end of Aug., and it was expected that the steam shovel would be employed in filling the hole until Nov.

Michigan Stations.—A new brick station is being erected at Lansing. A new station is also being built at Flint.

The American Locomotive Co.

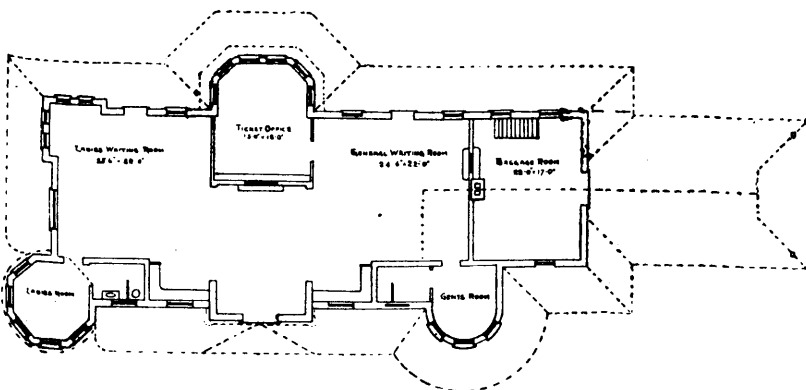
The first annual report of this Co. just issued covers from June 15, 1901, when it began business, to June 30, 1902. The capital stock consists of 7% cumulative preferred stock \$25,000,000, and common stock \$25,000,000. During the year \$1,629,227.90 were expended for additional land, new shop buildings, fixtures, machinery and other machine tools, "as a result of which the output of standard gauge locomotives has been increased more than 25% over the combined production of the constituent companies in the year preceding their amalgamation. The percentage of increase in output is far greater than the proportion which the improvement expenditures bear to the cost of the property of the Co. It is the intention further to increase the annual output of the principal plants by judicious expenditures for improvements and additional facilities, payable out of the current income." The result of the operation of the Co.'s eight plants is as follows:

Gross earnings	\$26,398,393 52
Manufacturing, maintenance and administrative expenses	23,291,216 90
Net earnings	\$ 3,107,176 62
Interest on bonds of constituent companies, etc.	105,864 58
Profit available for dividend	\$ 3,001,312 04
Dividend on preferred stock at 7%	1,750,000 00
Surplus	\$ 1,251,312 04

"The expenses include not only a liberal outlay for the maintenance and betterment of the property, but also a charge of \$602,151.05 for radical additions and improvements, the combined maintenance, replacement and improvement charges being more than sufficient to take up the theoretical amount required for depreciation on an annual percentage basis. The surplus of \$1,251,312.04, remaining after the payment of full dividends on preferred stock, has been carried to the credit of profit and loss account; but against the latter there has been charged \$1,027,076.85 for land, new shop buildings, machinery, etc. The directors have considered it wise to charge these improvements against the surplus of current income for the year, rather than to carry them to the permanent cost of property account of the Co."

The report states that the judgment of the organizers of the Co. as to the advantages of consolidation has been fully sustained by the results of the year's operations. "It has been the aim of the directors to increase the Co.'s profits through the lowering of manufacturing and administrative cost rather than by increases in the selling price of locomotives. The experience of the past year has abundantly demonstrated that this may be done to the mutual satisfaction of the railway companies and the manufacturer. Except, therefore, so far as may become necessary through advances in the cost of labor and material, the directors desire it to be understood that it is not their purpose to advance the selling price of locomotives. It is, too, the present policy of the Co. to devote its surplus remaining after the payment of dividends on the preferred stock, not only to substantial additions to the property, but also in part to the enlargement of its working capital. The outlook for 1902-03 is most satisfactory. Contracts for new locomotives in large quantities have been booked for delivery as late as the autumn of 1903; and inquiries continue to be received from every part of the country, as well as from foreign trade, reservation of much of the available shop space having been asked for to the end of the next fiscal year."

The Hiram L. Piper Co., Montreal, has issued catalogue no. 10 for mirror reflectors, gas reflectors, street hoods and window reflectors, copies of which, with discounts, will be forwarded on application.



GROUND FLOOR PLAN, G.T.R. STATION, GODERICH, ONT.

TRANSPORTATION APPOINTMENTS.

Algoma Central and Hudson Bay Ry.—T. C. Search has been appointed Treasurer, vice F. S. Lewis.

Canadian Lake and Ocean Navigation Co.—Following are the officers: President, A. E. Ames; Vice-Presidents, H. M. Pellatt, W. Petersen; Marine Superintendent, Capt. T. Donnelly.

Canadian Pacific Ry.—W. B. Bulling, Assistant Freight Traffic Manager Eastern Lines, will remove his office from Montreal to Toronto about Oct. 15.

C. W. Milestone, who was Superintendent of old district 24, from Brandon, Man., to Swift Current, Assa., on the main transcontinental line, and the branches from North Portal to Pasqua, Assa., and from Regina, Assa., to Prince Albert, Sask., has resigned, as rumored in our last issue. The portion of this district from Brandon, Man., to Moose Jaw, Assa., and from Regina to Prince Albert is now district 23. From Moose Jaw to Medicine Hat, Assa., and from North Portal to Pasqua, constitutes new district 24. W. A.

Brown, heretofore Trainmaster at Rat Portage, Ont., has been appointed Superintendent of district 23. Office at Moose Jaw. D. R. Bell, heretofore Trainmaster at Toronto Jct., has been appointed Superintendent of district 24. Office at Moose Jaw. J. Niblock remains as Superintendent at Calgary, Alta., in charge of new district 25, and R. R. Jamieson remains as Superintendent at Cranbrook, B.C., in charge of district 26, the mileage of which has not been changed.

W. J. Coulter, heretofore chief clerk in the Toronto freight agent's office has been appointed agent at Owen Sound, Ont., succeeding H. G. Coram.

H. G. Coram has been appointed Freight Agent at Fort William, Ont., in charge of freight sheds and docks, in place of H. R. Patriarche, transferred to other duties.

A. Olsen has been appointed Roadmaster between Schreiber and White River, Ont., vice E. Desharnois, transferred.

Bridge and Building Master Stocks has been given charge of district 26, from Dunmore Jct., Assa., to Kootenay Landing, B.C. Under him are Bridge and Building Inspector McKinnon in charge of crews east of Crow's

Nest, and Bridge and Building Inspector McKenzie, in charge of crews west of Crow's Nest.

T. H. Mason, hitherto Assistant Roadmaster of the Boundary section, with headquarters at Eholt, B.C., has been appointed Roadmaster of the Lardo Section.

Chicago, Rock Island and Pacific Ry.—Alex. Jackson has been appointed District Passenger Agent in charge of Canadian territory, with office at Montreal.

Dominion Government Telegraph Service.—A. Boyer, C.E., is reported to have been appointed Superintendent of the Government telegraph and cable lines in Quebec and the Maritime provinces.

Grand Trunk Ry.—W. S. Rollo, formerly chief clerk to the Manager, has been appointed joint agent of the G.T.R. and Central Vermont Ry., at St. John's, Que.

Great Northwestern Telegraph Co.—A. Cox, Treasurer and Superintendent of Supplies, having resigned, G. T. Perry, heretofore Secretary and Auditor, has been appointed Secretary-Treasurer and Superintendent of Supplies. A. C. McConnell, heretofore chief

JAS. W. PYKE & COMPANY

CANADIAN REPRESENTATIVES

FRIED. KRUPP, ESSEN, GERMANY.

Wrought Iron Steel-Tyred Disc Wheels FOR STEAM AND ELECTRIC RAILWAYS.
Locomotive and Car Wheel Tyres.
Axles, Crank Pins, Forgings, Etc.

OFFICE: MERCHANTS BANK BUILDING **MONTREAL.**
205 ST. JAMES STREET,

ASK FOR **Ogilvie Oats**

DELICIOUS FLAVOR. FREE FROM HULLS. WARRANTED PURE.

Put Up in All Sized Packages.

Ogilvie's Hungarian

AS NOW MANUFACTURED. THE GREAT FAMILY FLOUR.

Insist on getting "OGILVIE'S" as they are better than the BEST.

HAVE NO EQUAL

clerk in the Auditor's office, has been appointed Auditor.

Intercolonial Ry.—J. E. Muhlfeld, Superintendent of Machinery and Rolling Stock, has resigned. Press reports say he will enter the Baltimore and Ohio Rd.'s service.

We are officially informed that "the special work for which E. T. Horn, Manager's Assistant, was employed having been completed, he has left the service."

The position of Master Mechanic at Moncton, to which N. L. Rand has been appointed, is a new one. His jurisdiction is over the St. John and Halifax district. He was previously employed as road foreman on that district, which office has been abolished.

G. Skeffington's jurisdiction as Chief of Police has been extended over the whole line.

The New York Central and Hudson River Rd. has opened a ticket office at 69½ Yonge St., Toronto, for its own line and its leased line the West Shore Rd. L. Drago, Canadian Passenger Agent, is located there, and F. Foy, son of John Foy, Manager of the Niagara Navigation Co., has been appointed City Ticket Agent.

Rutland Rd.—A. G. Adams has been appointed Purchasing Agent and Storekeeper with office at Rutland, Vt., vice J. W. Smith, resigned to re-enter the Canada Atlantic Ry.'s service. Mr. Adams also acts as secretary to the President.

White Pass and Yukon Ry.—Press reports, mentioned in our last issue, stated that D. S. Wagstaff had been appointed Superintendent of Transportation. The President of the Co. advises us that no such appointment has been made.

Travelling Passenger Agents.—In connection with the recent meeting of the American Association of Travelling Passenger Agents in Montreal, G. T. Bell, General Passenger Agent of the G. T. R., speaking upon the subject of certain statements that the travelling passenger agents would soon disappear as recognized factors of railway management, said that such statements were without foundation. The travelling passenger agents of the past had made some mistakes, but in this respect the agent was no different from his president. The work of the travelling passenger agent of to-day was to create new, rather than to attract to his own particular line the already existing traffic. He believed that the general passenger agents of America, whose association will meet at Portland in October, and who will travel over the G. T. R. by special train, stopping a short time at Toronto and Montreal, would see fit to request the General Baggage, Travelling Passenger and Ticket Agents' Associations to select a representative from each association to confer with them at the annual conventions upon the means of advancing the good of the entire passenger service. He believed that passenger transportation was still capable of immense development.

The Reid Newfoundland Co. has issued an illustrated souvenir of the island colony, printed on enameled paper, and presenting in page, half-page and smaller cuts, 83 admirable views of the best points of Newfoundland and the Labrador coast. The views of the island scenes show the points reached by the Co.'s railway, and those on the Labrador coast, the points reached by the Co.'s steamers. The Co. also issues leaflets containing information of special interest to anglers and other sportsmen, which tell all that is necessary to know about the salmon fisheries, and the cariboo hunting on the island.

The C. P. R.'s tri-weekly Imperial Limited train, between Montreal and Vancouver, has done so well this year that it may be run daily next summer.

October Birthdays.

Many happy returns of the day to E. P. Allen, Travelling Passenger Agent, C. P. R., at Syracuse, N. Y., born Oct. 21, 1839.

E. N. Bender, General Purchasing Agent, C. P. R., at Montreal, born at Quebec, Oct. 3, 1858.

T. C. Burgess, Commercial Agent, G. T. R., at Minneapolis, Minn., born at New York City, Oct. 2, 1853.

James Conmee, M. L. A., railway contractor, etc., Port Arthur, Ont., born at Sydenham, Ont., Oct. 13, 1848.

C. Cooper, Assistant Treasurer, Secretary and Auditor, Halifax and Yarmouth Ry. at Yarmouth, N. S., born in New Jersey, Oct. 18, 1869.

G. L. Courtney, Traffic Manager, Esquimalt and Nanaimo Ry. at Victoria, B. C., born at Chatham, Ont., Oct. 7, 1868.

S. W. Cummings, General Passenger Agent, Central Vermont Ry. at St. Albans, Vt., born at Frankfort, Me., Oct. 20, 1843.

J. Earls, Secretary and Treasurer, Canadian Freight Association at Toronto, Ont., born in Ireland, Oct. 30, 1838.

W. P. Fitzsimons, Manager, Lackawanna-Grand Trunk Line, at Buffalo, N. Y., born at Detroit, Mich., Oct. 27, 1868.

C. F. Gildersleeve, General Manager Richelieu & Ontario Navigation Co. at Montreal, born at Kingston, Ont., Oct. 17, 1833.

A. H. Harris, General Traffic Manager Quebec Southern Ry. at Montreal, Que., born in Devonshire, Eng., Oct. 15, 1855.

S. Hopkins, ex-Manager G. T. R. Despatch, born at Boston, Mass., Oct. 13, 1846.

J. F. Lee, Traffic Manager White Pass & Yukon Route at Seattle, Wash., born at London, Eng., Oct. 23, 1851.

Jas. W. Leonard, General Superintendent Western Division, C. P. R., at Winnipeg, born at Epsom, Ont., Oct., 1858.

A. Leslie, General Auditor and Accountant Lake Erie & Detroit River Ry. at Walkerville, Ont., born at Toronto, Oct. 3, 1864.

R. Marpole, General Superintendent C. P. R. Pacific Division, at Vancouver, born in Montgomeryshire, Wales, Oct. 9, 1850.

I. G. Ogden, Third Vice-President C. P. R. at Montreal, born at New York City, Oct. 10, 1844.

G. Olds, ex-General Traffic Manager C. P. R., born at Stapleton, Gloucestershire, Eng., Oct. 29, 1832.

H. Paton, Secretary-Treasurer Shedden Forwarding Co., director Bell Telephone Co., Montreal, born at Johnstown, Renfrew, Scotland, Oct. 5, 1852.

D. Pottinger, General Manager Canadian Government Rys. at Moncton, N. B., born at Pictou, N. S., Oct. 7, 1843.

J. E. Price, General Superintendent I. C. R. at Moncton, N. B., born at Petitcodiac, N. B., Oct. 18, 1854.

G. B. Reeve, ex-Second Vice-President and General Manager G. T. R. La Mirada, Cal., born at Surrey, Eng., Oct. 23, 1840.

E. W. Rathbun, President Bay of Quinte Ry., Deseronto, Ont., born at Auburn, N. Y., Oct. 5, 1842.

Sir Thomas G. Shaughnessy, President C. P. R. at Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

C. W. Spencer, Vice-President and General Manager Ottawa, Northern and Western Ry., Pontiac Pacific Ry., Hull Electric Ry. and Kingston and Pembroke Ry., and General Superintendent C. P. R. Eastern Division at Montreal, born at Kemptville, Ont., Oct. 31, 1857.

W. S. Taylor, Treasurer C. P. R. at Montreal, born at Dornoch, Sutherlandshire, Scotland, Oct. 18, 1839.

L. H. Wheaton, ex-Chief Engineer and

General Superintendent Halifax and Yarmouth Ry., born at Sackville, N. B., Oct. 5, 1866.

E. A. Williams, Superintendent Rolling Stock, C. P. R. at Montreal, born at Wiscasset, Me., Oct. 4, 1848.

J. Woodman, Division Engineer C. P. R. at Winnipeg, Man., born Oct. 5, 1861.

Mainly About People.

F. H. Clergue is building a \$30,000 house at Sault Ste. Marie, Ont.

Robert McLeod, of the ship building firm of J. & R. McLeod, Black River, N. S., died recently, aged 63.

Mrs. D. McNicoll, wife of the 2nd Vice-President of the C. P. R., and her family, have returned from Europe.

A. Young, Superintendent of the Shedden Forwarding Co., at Montreal, died there suddenly, Sept. 12, aged 63.

Wm. Robertson, Locomotive Foreman of the G. T. R., at Eldsen, Ill., has resigned to go into railway supply business.

E. G. Russell, who recently resigned the position of Manager of the Intercolonial Ry., is living at 908 Elmwood Avenue, Buffalo, N. Y.

R. J. Armstrong, Travelling Engineer and Road Foreman of the C. P. R. at Fort William, Ont., died there Sept. 19, aged 46, of Bright's disease.

The father of F. F. Backus, General Freight and Passenger Agent, Toronto, Hamilton and Buffalo Ry., died recently at Rochester, N. Y.

Sir Thos. Shaughnessy, President of the C. P. R., who is also a director of the Reid Newfoundland Co., has been visiting Newfoundland.

C. H. Bevington, Superintendent of the Rutland Rd., has resigned. He was formerly Trainmaster of the G. T. R., at Island Pond, Vt.

F. W. Morse, Third Vice-President of the G. T. R., has been elected a director of the Montreal Warehousing Co., succeeding C. Percy, resigned.

Mrs. Burpee, mother of T. C. Burpee, Engineer of Maintenance of Way and Works, Intercolonial Ry., died at Sheffield, N. B., Sept., 23, aged 87.

J. Hardwell, Assistant General Freight Agent of the Intercolonial Ry., at Montreal, recently underwent an operation at the Montreal General Hospital.

J. M. Little, who was Secretary-Treasurer of the Sandwich, Windsor and Amherstburg Electric Ry. Co., since 1893, died at Windsor, Ont., Sept. 8, aged 50.

W. S. Kinnear, recently appointed Chief Engineer, Michigan Central Rd., has removed from St. Thomas, Ont., and taken up his residence in Detroit, Mich.

Mrs. Macdonald, mother of C. A. Macdonald, General Passenger Agent of the Northern Navigation Co., Collingwood, Ont., died at Hamilton, Ont., recently.

E. T. Horne, who recently resigned his position as Manager's Assistant on the Intercolonial Ry., was presented with a handsome loving cup by business men of St. John, N. B.

H. M. Perry, who recently resigned his position as Master Car Builder of the Algoma Central and Hudson Bay Ry., has re-opened his office in the Monadnock Block, Chicago.

T. G. Holt, Manager of Construction of the Halifax & Southwestern Ry., has arrived at Bridgewater, N. S., where he will make his headquarters, accompanied by Mrs. Holt and family.

Archer Baker, European Traffic Manager, C.P.R., and Mrs. Baker, are on a tour through Canada. They were accompanied to Winnipeg by W. R. Baker, Assistant to the 2nd Vice-President.

Allan Royce, father of J. C. Royce, Chief Engineer of the Cramp Steel Co., Collingwood, Ont., and of G. C. Royce, Manager, Toronto Suburban Ry., died at Toronto Jct., Sept. 13, aged 68.

The committees of the Master Car Builders' Association for the current year have been named, W. Apps, of the Algoma Central and Hudson Bay Ry., being a member of that on "Cast Iron Wheels."

Angus Sinclair, C.E., who is superintending the erection of the Inverness Ry. & Coal Co.'s dock at Port Hastings, N.S., will probably take a contract to build a portion of the Halifax & Southwestern Ry.

H. G. Coram, who recently resigned his position as C.P.R. agent at Owen Sound, Ont., to go to the Western division of the line, was presented with an address and a cabinet of silverware by Owen Sound people.

F. W. Thompson, who has been appointed General Western Agent, Chicago, Rock Island and Pacific Ry., at San Francisco, Cal., was born at Whitby, Ont., Oct. 9, 1859. His entire railway experience has been in the U.S.

C. B. Jarvis, who was recently appointed New England Agent of the Lehigh Valley Rd., was born at Stratford, Ont., 1870, and is a brother of T. N. Jarvis, Assistant General Traffic Manager, Lehigh Valley Rd., at New York.

A. E. Cooper, who has been appointed Division Passenger Agent, Chicago, Rock Island and Pacific Ry., at Topeka, Kan., is a native of Toronto, and entered railway service as a telegraph operator in 1885 with the C.P.R. at Toronto.

E. P. Saylor, who has been appointed Superintendent of the Western Union Telegraph Co.'s night district at Pittsburg, Pa., was born in Canada in 1859. He entered the Dominion Telegraph Co.'s service as an operator at Tilsonburg, Ont., in 1874.

Sir Wm. Van Horne, Chairman of the C.P.R. board, left Montreal Sept. 20, for a trip over the road to the Pacific Coast, accompanied by General Dodds and T. Tait, Manager of C.P.R. Transportation. He returned to Montreal at the end of the month.

A. R. Creelman, K.C., Chief Solicitor of the C.P.R., has returned to Montreal after a three months' trip to Europe, during a portion of which time he and Mrs. Creelman were guests of Lord Strathcona, at Glencoe, Scotland. Mrs. and the Misses Creelman are still in England.

G. Barnett, father of J. D. Barnett, formerly Superintendent of the G.T.R. shops at Stratford, Ont., and who was himself chief draughtsman at the shops of the Great Southern and Western Ry., Dublin, and of the Great Western Ry. at Wolverhampton and Swindon, Eng., died at Stratford, Ont., Sept. 16, aged 80.

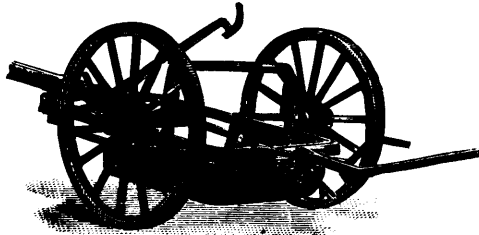
J. B. McTaggart, who has been appointed C.P.R. Bridge and Building Inspector between Swift Current and Laggan, was born at Burgoyne, Bruce County, Ont., 1870, and entered the C.P.R. service in 1889 as carpenter on construction of branch lines west of Winnipeg, and has been successively carpenter, foreman and Bridge and Building Master at Fort William, Ont., Moose Jaw and Calgary.

W. R. Baker, Assistant to the Second Vice-President of the C.P.R., returned to his office in Montreal early in September after several weeks' absence owing to an operation for appendicitis. He, however, under medical advice, found it necessary to go away again,

and left on Sept. 10 for Winnipeg, where he has been quietly resting since. He hopes to be able to take up his work again at an early date.

C. S. Maharg, who has been appointed C.P.R. Trainmaster districts 8 and 9, with

office at Toronto, was born in Dufferin county, Ont., Feb., 1867, and entered railway service April, 1885, as freight brakeman, C.P.R., since which his record has been: Feb., 1888, to 1893, freight conductor, 1893 to Dec. 1901, passenger conductor; Dec.,



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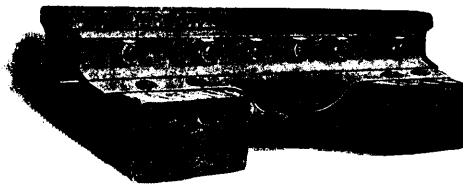
BARRETT TRACK JACKS.

TRACK TOOLS.

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BONZANO RAIL JOINT



Was Awarded the only
Medal and Diploma
for Rail Joints
at the National Export
Exposition
Philadelphia, 1899;

Also the Highest Medal awarded for Rail Splices at the Paris
Exposition, 1900.

Nearly one million of these joints are now in use. None of the splices have broken, and no rails have broken inside the splices. Low joints are impossible, nor can spreading of tracks take place at the splice. The joint is absolutely as strong as the rail. By its use the track labor saved will alone amount to a sum that will pay the cost of renewals of rails and splices.

In use on the following railroads: The Pennsylvania, Baltimore and Ohio, Canadian Pacific, Southern Pacific, Cuba Railway, Chicago & Alton, Southern Railway, Intercolonial Railway, Grand Trunk, Wisconsin Central, Michigan Central, Choctaw, Oklahoma & Gulf.

THE BONZANO RAIL JOINT.

A. BONZANO and THOS. C. CLARKE, Joint Owners of Canadian Patent No. 55,700,
MONTREAL ROLLING MILLS CO., Montreal,
Sole Manufacturers and Sales Agents for the Dominion of Canada,
East of Sudbury.

1901, to June, 1902, rule instructor, all this service being with the C.P.R.

Barlow Cumberland, steamship and railway ticket agent, Toronto, and Vice President of the Niagara Navigation Co., has gone to London, Eng., as Assistant Supreme Secretary of the Independent Order of Foresters. The appointment is for a year, but of course it may be renewed. Mr. Cumberland's Toronto ticket agency is being continued under his name, in charge of Stanley Brent, who has been with him for some time.

J. V. Paul, who has been appointed Locomotive Fuel Inspector of the C.P.R., was born at Mokelumne Hill, Cal., Dec. 29, 1863, and entered railway service Jan., 1894, as locomotive fireman at Tucson, Ariz., leaving it to join the railway department of the International Correspondence School, Scranton, Pa., as instructor on machinery, air brake and combustion, and was so acting on the C.P.R. when given his present appointment.

J. D. Farrell, President of the Pacific Coast Co., Seattle, Wash., who, it is reported, will be appointed President of the Great Northern Steamship Co., entered railway service in 1877, as a track laborer, and from July, 1882, to March, 1887, he was in the employ of the C.P.R., acting as chief clerk and foreman of bridges, building and water departments at Winnipeg, and Assistant Superintendent of bridges until Aug., 1884; and as brakeman, freight and passenger conductor and station agent to 1887.

J. P. Gay, who has been appointed Division Freight Agent, G.T.R., at Stratford, Ont., was born in Hamilton, Ont., April 26, 1857, and entered railway service with the old Great Western Ry. at Hamilton in 1873, continuing with the G.T.R. on the amalgamation. He was employed in the mileage and local freight offices at Hamilton and London, in the division freight office, western division, G.T.R., under J. Earls, and latterly has been chief clerk to the Division Freight Agent at Detroit, Mich.

W. Apps, who has been appointed Master Car Builder, Algoma Central and Hudson Bay Ry., at Sault Ste. Marie, Ont., was from May, 1881, to Oct., 1887, General Foreman Car Department, St. Paul, Minneapolis and Manitoba Ry.; Oct., 1887, to May, 1891, Master Car Builder, Western Ry. of Alabama, and Atlantic and West Point Ry.; June, 1891, to Sept., 1891, Master Car Builder, Chicago and Eastern Illinois Rd.; Oct., 1891, to Dec., 1895, Master Car Builder, Illinois Central Rd., at Chicago; Dec., 1895, to 1902, Master Car Builder, C.P.R., Montreal.

Robert Crawford, who has been appointed City Freight Agent of the Canadian Northern Ry., at Winnipeg, was born near Kingston, Ont., Feb. 21, 1870, and entered railway service in April, 1890, since which his record has been to Oct., 1895, clerk in freight foreman's office, abstract clerk, billing clerk, collector and freight checker, Northern Pacific and Manitoba Ry., at Winnipeg; Oct., 1895, to Oct., 1899, freight foreman, same road at Winnipeg; Oct., 1899, to May, 1901, chief clerk and cashier, local freight office, same road at Winnipeg; May, 1901, to Aug., 1902, Local Freight Agent, Canadian Northern Ry., at Winnipeg.

E. G. Erickson, who has been appointed acting Superintendent of the C.P.R. at Schriber, Ont., was born in Sweden in 1857, and entered railway service in 1879, since which his record has been: 1879 to 1881, with survey party on construction of the Northern Pacific Ry. west of Bismarck, N.D.; 1881 to April, 1882, engaged in business as railway contractor in Montana; April, 1882, to Aug., 1884, foreman of track-laying gang, C.P.R., between Oak Lake, Man., and Columbia River, B.C.; Aug., 1884, to 1887, in charge of

extra gangs at Field, B.C.; 1887 to Nov., 1898, Roadmaster in charge of the Mountain section, including the field grade; Nov., 1898, to Aug., 1902, Trainmaster and General Roadmaster, Crow's Nest Pass branch.

C. W. Spencer, whose portrait appears on page 329, was born at Kemptville, Ont., Oct. 31, 1857, and entered railway service May 7, 1871, since which he has been consecutively to 1874 operator and clerk at Ottawa station; 1874 to May, 1880, assistant agent at Ottawa; May, 1880, to Jan., 1881, assistant train dispatcher; Jan. to May 11, 1881, Chief Train Dispatcher; May 11 to June 29, 1881, Traffic Superintendent; June 29, 1881, to Aug. 1, 1884, Assistant Superintendent; Aug. 1, 1884, to Sept. 30, 1887, Assistant General Superintendent; Oct., 1887, to date, General Superintendent, eastern division, at Montreal, entire service on C.P.R. He is also Vice-President and Managing Director of the Kingston & Pembroke, the Pontiac Pacific Jct., and the Ottawa Northern & Western railways.

J. E. Price, who has been re-appointed General Superintendent of the Intercolonial Ry., was born at Petitcodiac, N.B., Oct. 18, 1854, and entered railway service in 1867 as a telegraph operator on the I.C.R. In 1873 he became train dispatcher at Moncton, and



BARLOW CUMBERLAND,

Steamship and railway ticket agent, Toronto, and Vice-President Niagara Navigation Co., who has gone to England as Assistant Supreme Secretary of the Independent Order of Foresters.

three years later Assistant Superintendent of the Moncton & Campbellton division. In 1879 he went to Campbellton as train dispatcher, where he remained until 1881, when he was appointed District Superintendent of the Moncton & Ste. Flavie district. From 1892 to 1898 he held a similar position on the Halifax & St. John district, and in 1898 became General Superintendent. In the fall of 1901 the position of General Superintendent was abolished, and he went to the Moncton & Ste. Flavie district as Superintendent, where he remained until appointed to his present position on Aug. 15. His entire railway service has been with the I.C.R.

Canadian railway companies are represented on the committees of the American Railway Engineering and Maintenance of Way Association for the current year as follows: Committee on roadway—W. McNab, Assistant Engineer, G.T.R., chairman; A. C. Dennis, Divisional Engineer, C.P.R.; W. F. Tye, Assistant Chief Engineer, C.P.R. Committee on track—G. A. Mountain, Chief Engineer, Canada Atlantic Ry.; D. MacPherson, Divisional Engineer, C.P.R. Committee on wooden bridges and trestles—F. P. Gutelius, Engineer of Maintenance of Way, C.P.R. Committee on signs, fences, crossings and cattle guards—T. L. Hanley, Assistant Engineer, G.T.R. Committee on records, reports and

accounts—G. H. Webster, General Tie Agent, C.P.R. Committee on uniform rules, organization, titles, etc.—J. Osborne, General Superintendent, Atlantic Division, C.P.R. Committee on yards and terminals—M. S. Blaiklock, Superintendent, G.T.R., Montreal.

N. L. Rand, who has been appointed Master Mechanic of the Halifax and St. John district of the Intercolonial Ry., at Moncton, N.B., was born Oct. 28, 1843, at Shediac, N.B. He entered railway service on the European and North American Ry., which extended from St. John to Shediac, as an apprentice in the machine shops at Shediac in 1859, and after serving his apprenticeship, continued in the same shop as machinist until 1866, when he went on the road as fireman for 18 months, then he was a locomotive driver until 1875, when he was made Locomotive Foreman of the new shops of the Intercolonial Ry. at Moncton, the European and North American Ry. having been merged with the Intercolonial Ry. He was in charge at Moncton shops for 23 years, until 1898, when he was appointed General Roundhouse Foreman. In 1900 he was appointed Road Foreman of Engines on the St. John and Halifax district and on Aug. 7 of this year became Master Mechanic of the same district.

J. F. Stevens, who has been appointed General Manager of the Great Northern Ry., U.S., was born at West Gardiner, Me., April 25, 1853, and entered railway service 1876, since which he has been consecutively, 1876 to 1879, in charge of surveys and Chief Engineer Sabine Pass and Northwestern Ry.; 1879 to 1880, Assistant Engineer Denver and Rio Grande Ry.; 1880 to 1882, Assistant Engineer, Chicago, Milwaukee and St. Paul Ry.; 1882 to 1886, Assistant and Division Engineer, Canadian Pacific Ry.; 1886, Assistant Engineer, Chicago, Milwaukee and St. Paul Ry.; 1887 to 1889, Principal Assistant Engineer, Duluth, South Shore and Atlantic Ry.; 1889, Assistant Engineer, Spokane Falls and Northern Ry.; 1890 to 1893, Principal Assistant Engineer, Great Northern Ry., U.S.; 1893 to 1895, Assistant Engineer; 1895 to June 16, 1898, Chief Engineer, same road; June 16, 1898, to April 1, 1899, engaged in railway contracting; April 1, 1899, to 1902, Chief Engineer, Great Northern Ry., U.S.

Arthur White, who has just resigned his position as Division Freight Agent of the G.T.R. at Toronto, was born at Hadleigh, Suffolk, Eng., Nov. 17, 1840, and entered railway service, 1859, since which he has been consecutively 1859 to 1866 on the Great Eastern Ry., England; 1866 to 1873, G.T.R., 4 months, checking freight, 4 years, clerk, 2 years 8 months, agent; 1873 to 1876, Assistant General Freight Agent, same road; 1876 to 1878, General Freight Agent, Great Western Ry.; 1878 to 1880, General Freight and Passenger Agent, Midland Ry.; 1880 to 1884, Traffic Manager, same road; 1884 to May, 1885, District Traffic Manager, Midland division, G.T.R.; May to Aug., 1885, Division Freight Agent, same division, same road; Aug., 1885, to June, 1892, District Freight Agent, same road; June, 1892, to July, 1902, Division Freight Agent, same road, at Toronto. Mr. White left Toronto early in September for the west and intends to spend several months visiting the principal points in Manitoba, the Northwest Territories and British Columbia, so as to thoroughly familiarise himself with the freight conditions there.

W. S. Kinnear, who has succeeded the late A. Torrey, as Chief Engineer of the Michigan Central Rd., is 38 years of age. He began railway work in 1884 as an axeman with the Atchison, Topeka and Santa Fe, and has been engaged since that time as rodman, draftsman and transitman on the Southern Kansas and rodman and Assistant Engineer for the Kansas City, Clinton and Springfield. For one year he was Assistant Engineer of

Maintenance of Way on the Missouri Pacific at Kansas City, but resigned to go with the Gulf, Colorado and Santa Fe as a Division Engineer. For two years he practised civil engineering at Los Angeles, Cal. He then went with the North and South American Construction Co. as office Engineer, Assistant Chief Engineer and Acting Chief Engineer at Santiago, Chili. In 1890 he went with the Michigan Central as Assistant Engineer of Maintenance of Way, remaining there five years, when he became Supervising Engineer of Construction on the Toronto, Hamilton and Buffalo. In Jan. 1896, he returned to the Michigan Central as Principal Assistant Engineer at Detroit, Mich., being promoted in Oct., 1902, to Assistant Engineer of the Canada division, and for two months held the Assistant General Superintendency.

Travelling Passenger Agents' Meeting.

The 30th annual convention of the American Association of Travelling Passenger Agents was held in Montreal, Sept. 15 to 17. This is the first time for 20 years that the association has met in Canada. The main body of the party, about 300 in number, one half of whom had never previously visited Canada, travelled by special G.T.R. train from Chicago to Toronto, and spent Saturday, Sept. 13, in Muskoka, reaching Kingston in the evening, from which point they travelled to Montreal by Richelieu and Ontario Navigation Co.'s steamer. At Montreal they were received by a committee of Canadian transportation officials, who did everything possible to make things pleasant for their guests. The association met last year in San Francisco, Cal., and it was stated that as a direct result there was a large increase in the flow of winter excursion

traffic thither. At the different business sessions held much information was given the members in regard to Canada, and its attractions to tourists, hunters, anglers and others, while the excursions arranged for were such as to bring out the strong points of the Canadian resorts. The report of the Secretary-Treasurer showed a membership of 691, and a balance of \$784 on hand. It was decided to meet at New Orleans in November, 1903. The following officers were elected: President, T. F. Fitzgerald, Los Angeles, Cal.; Vice-President, F. Burnett, New York City; Secretary-Treasurer, L. W. Landman. After paying a visit to Ottawa, via the Canada Atlantic Ry., the party went by boat to Quebec and the Saguenay, and on the return journey to Chicago, travelled over the C.P.R. The Quebec Central and the Central Vermont Rys., and the Niagara Navigation Co. also joined in granting transportation to the members.

The G.T.R. and a Toledo Line.

Frequent reports have appeared in the daily papers to the effect that the G.T.R. had acquired the Toledo, St. Louis and Western Rd., with a view of providing an entrance for the G.T.R. into St. Louis, Mo. G.T.R. officials denied these reports as they appeared, C. M. Hays, on his return from meeting the directors in England, stating that the Co. had no present intention of extending its lines in the U.S. A few days later a Detroit press report stated that it is understood that the G.T.R. has purchased the Detroit and Toledo Shore Line, an electric railway, from the Everett-Moore Syndicate, and on Sept. 4, a Cleveland despatch said that the sale has been effected, the G.T.R. assuming all the outstanding indebtedness of the D. and T. S.

Line, about \$1,500,000. There is no confirmation of this statement, but on the other hand R. S. Logan, Assistant to the 2nd Vice-President, in an interview says that "there is not a word of truth in the report that the G.T.R. has purchased or secured any interest in any line to Toledo. We are getting tired contradicting the story."

Canadian Pacific Railway Land Sales.

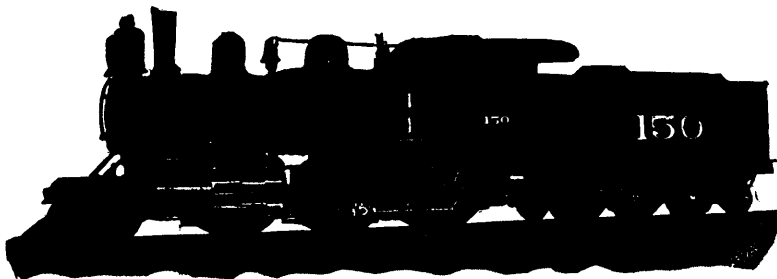
	Acres.		Amount.	
	1902-03	1901-02	1902-03	1901-02
July...	155,344.93	49,089.96	\$562,876.50	\$154,646.84
Aug...130,723.83		50,747.82	473,064.85	165,871.16
	286,068.76	99,837.78	\$1,035,941.35	\$310,517.00

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

Gross earnings, working expenses, net profits, increases or decreases over 1901-02, from July 1, 1902 :-

	Earnings.	Expenses.	Net Profits.	Increase or Decrease
July	\$3,246,620.51	\$2,070,909.26	\$1,175,711.26	\$79,844.32+
Aug.	3,554,184.56	2,101,283.11	1,362,901.45	57,269.36+
	\$6,800,805.07	\$4,262,192.11	\$2,538,612.71	\$137,113.68+

The Canadian Freight Association has issued its amended car service rules in pamphlet form. The principal change is that two free days instead of three are allowed for the unloading of coal, coke, cordwood, stone, lime, ore, scrap-iron, bark, and lumber. This period is longer than is allowed by most of the U.S. roads, and the rental charged is also less. The reduction in the time has been necessitated by the increased demand for cars.



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- RICHMOND LOCOMOTIVE WORKS, RICHMOND, VA.
- COOKE LOCOMOTIVE WORKS, PATERSON, N. J.
- RHODE ISLAND LOCOMOTIVE WORKS, PROVIDENCE, R. I.
- DICKSON LOCOMOTIVE WORKS, SCRANTON, PA.
- MANCHESTER LOCOMOTIVE WORKS, MANCHESTER, N. H.

President . . . S. R. Callaway | Second Vice-President . . . R. J. Gross | Treasurer . . . C. B. Denny | Mechanical Engineer . . . J. E. Sague
Vice-President . . . A. J. Pitkin | Secretary . . . Leigh Best | Comptroller . . . C. E. Patterson | General Purchasing Agent . . . H. C. Hequembourg

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Railway Equipment Notes.

The Brantford Electric Ry. has added two motor cars to its equipment.

The Cramp Steel Works, Collingwood, Ont., has purchased a locomotive.

The South Shore Ry. is in the market for 200 box cars of 60,000 lbs. capacity.

The Great Northern Ry., U.S.A., is using 70-ton steel cars between Rossland, B.C., and Northport, Wash.

The Brockville, Westport and Sault Ste. Marie Ry. has added a combination passenger and baggage car to its equipment.

The Nova Scotia Steel and Coal Co. has ordered one 19 in. by 26 in. double-end mogul locomotive from the American Locomotive Co.

The Great Northern Ry. of Canada has ordered two 10-wheel, 18 by 24 in. passenger locomotives from the American Locomotive Co.

The Reid Newfoundland Co. has recently added to its equipment 150 box cars, 40,000

lbs. capacity; eight passenger coaches, and one sleeping car.

The Prince Edward Island Ry. has received two locomotives for the Murray Harbor branch; they were taken from Georgetown to Murray River on scows.

The British Columbia Electric Ry. Co. is pushing the construction of its car shops at New Westminster. The first cars turned out will be 30 ft. long over all.

The car equipment for the Levis County Ry. is under construction in Canada. It will consist of 12 open and 12 closed cars, of which 6 were to be delivered by Sept. 1.

The Algoma Central and Hudson Bay Ry. Co. has added to its equipment 107 flat cars, 80,000 lbs. capacity; 13 flat cars, 50,000 lbs. capacity; 1 tool car, and 2 steam shovels.

The Minneapolis, St. Paul and Sault Ste. Marie Ry. has ordered 6 locomotives from the American Locomotive Co. Three are to be 22½ by 35 by 30 inch compound consolidations and three 21 by 32½ by 26 compound moguls.

The G.T.R. shops at Montreal will, it is said, finish by the end of Dec. the last of the year's order for 26 locomotives. It is said that about 40 locomotives will be built at these shops next year.

The North Shore Power, Ry. and Navigation Co. has purchased 2 heavy locomotives and 20 flat cars from the I.C.R., and has placed an order with Rhodes, Curry & Co., Amherst, N.S., for 15 flat cars of 60,000 lbs. capacity.

The C.P.R. Co. has placed an order for 15 switching locomotives to be built at its Montreal shops, 11 baggage and express cars to be built at its Hochelaga shops, and 54 vans to be built at Farnham. An order has also been placed for a 50-ton wrecking crane.

The C.P.R.'s order for 1,000 box cars to be built at Montreal shops is about completed. Their length inside is 34½ ft., width 8 ft. 4 in., height 7 ft. 1 in. at side, capacity 30 tons. The special equipment includes Simplex bolsters, Westinghouse brakes and Susemihl side bearings.

ADJOURNED JUDICIAL SALE OF RAILWAY AND RAILWAY PROPERTY.**TORONTO GENERAL TRUSTS CORPORATION vs. THE CENTRAL ONTARIO RAILWAY**

Pursuant to the Judgment in this action of The Toronto General Trusts Corporation vs. The Central Ontario Railway, dated May 27th, 1902, the Order dated 2nd September, 1902, and the Order dated 10th September, 1902, there will be offered for sale by public auction, with the approbation of the Master of the Supreme Court of Judicature at Belleville, at the Auction Rooms of C. T. Townsend & Co., No. 68 King Street East, in the City of Toronto, on Wednesday the 15th day of October, 1902, at the hour of twelve o'clock, noon, ALL AND SINGULAR the Railway and property of The Central Ontario Railway, that is to say, the said Company's Railway, extending from the Town of Picton through the Township of Hallowell, the Village of Wellington and the Townships of Hillier and Ameliasburgh, in the County of Prince Edward, through the Township of Murray, in the County of Northumberland; and through the Town of Trenton and the Townships of Sidney, Rawdon, Marmora, Madoc, Tudor, Limerick, Wollaston, Dungannon and Farrady, in the County of Hastings, all inclusive of the line as laid out and surveyed, including the right of way and the lands occupied thereby, and also the superstructure and tracks, and all rails, ties and other material belonging to the Company, placed or used thereon, with all bridges, viaducts, culverts, fences, stations, station grounds, buildings and erections thereon, and all machine-shops and other shops held or acquired for use in connection with the said Company, or the business thereof, and including also all locomotives, tenders, cars and other rolling stock, and all machinery, tools, implements, fuel and materials for constructing, operating, repairing or replacing the said railway, or any part thereof, or any of its equipments or appurtenances, and also all franchises connected with or relating to the said railway, or the construction, maintenance or use thereof, and all corporate and other franchises held or exercised by the said Central Ontario Railway, together with all and singular the tenements, hereditaments and appurtenances thereto belonging or in any wise appertaining, and the reversions, remainders, tolls, franchises, incomes, rents, issues and profits thereof, and all the estate, right, title, interest, property, possession, claim and demand whatsoever, as well in law as in equity of the said Central Ontario Railway.

The property will be sold in one block.

Any person bidding at the said sale shall immediately upon making his first bidding, deposit with the Auctioneer the sum of \$10,000 cash, or by certified check, payable to the Vendors' solicitors as security for the completion of his purchase in case he shall become the purchaser, which check shall be forthwith returned in case he shall not become the purchaser, and the purchaser shall at the time of sale pay to the Vendors or their solicitors sufficient money, with the amount previously deposited by him to make up twenty per cent. of the purchase money of the said railroad; the residue of the purchase money is to be paid into Court to the credit of this action, within thirty days after the sale, without interest.

All the parties to the action, with the exception of the Plaintiffs, are to be at liberty to bid.

The Vendors shall not be required to produce any abstract title deeds, or copies thereof, or any proof or evidence of title, or any deeds, papers, documents, or copies of any deeds, papers and documents, in regard to the property sold, other than those in their possession, AND IT IS DISTINCTLY UNDERSTOOD that the purchaser is entitled to and shall receive only such title as the Central Ontario Railway has to the property sold, or any portion of it.

The purchaser is to investigate the title at his own expense.

The Vendors shall not be bound to give the Purchaser a deed containing any covenants except that they have not made any incumbrance, and such a deed shall contain a provision against implied covenants on the part of the said Vendors.

The property will be sold subject to taxes for the current year.

Any purchaser who shall have paid \$10,000 as hereinbefore provided, shall be entitled for the purpose of making settlement or payment in respect of the remainder of his purchase money, to turn in any bonds, and any matured and unpaid coupons and bonds secured by the Indenture of Mortgage to The Toronto General Trusts Corporation, bearing date the 1st day of April 1882, in order that there may be credited as paid on account of such purchase money the sums which would be payable out of any proceeds of such sale to the holder of such bonds and coupons as his rateable share of such net proceeds, without, however, including the said sum of \$10,000 as part thereof, and such Purchaser shall be credited on account of the purchase money of the property purchased with the sums payable out of such net proceeds of the bonds and coupons so turned in, and any bondholder or bondholders may bid for and purchase the property and make payment therefor as herein provided; the amount to be so credited in respect of such bonds to be determined and fixed by the said Master.

In other respects the conditions will be the standing Conditions of Sale of this Court.

For further particulars apply at the Law Offices of MESSRS. McCARTHY, OSLER, HOSKIN & HARCOURT, corner Victoria and Adelaide Streets, Toronto; MESSRS. BELL & BIGGAR, Belleville; and MESSRS. BEATTY, BLACKSTOCK, NESBITT, FASKEN & RIDDELL, 58 Wellington St. East, Toronto.

As directed by the Master at Belleville.

DATED at Belleville, the 7th June, A.D. 1902.

(Sgd.) S. S. LAZIER, Master.

The said property to be sold subject to a reserve bid.

This is the adjournment of the sale directed by the Judgment herein which was advertised to take place on Wednesday, the 10th day of September, 1902, as adjourned by order to Wednesday, the 15th day of October, 1902.

McCARTHY, OSLER, HOSKIN & HARCOURT,

AGENTS FOR BELL & BIGGAR,

Vendors' Solicitors.

The G.T.R. has completed the construction of eight 2nd class passenger cars, with a capacity for 68 passengers each, also two 60-ft. baggage cars, at its Montreal shops. Fifty flat cars of 60,000 lbs. capacity have been completed at the Co.'s Port Huron, Mich., shops.

The Canadian Northern Ry. has placed an order in the U.S. for 400 box cars, to be delivered in Oct. and Nov. Length over end sills, 34 ft. 7 $\frac{3}{4}$ in.; width, inside in the clear, 8 ft., to be built of wood with wooden underframes. Special equipment includes Westinghouse brakes.

The G.T.R. car equipment has been re-numbered and is now reported to consist of 923 passenger cars of all kinds, 17,652 box cars of various sizes, 446 furniture cars, 298 refrigerator cars, 1,194 stock cars, 4,575 flat cars, 1,783 coal cars, 56 oil tanks, 395 cabooses, 688 auxiliary cars and 1,083 miscellaneous cars.

The Central Vermont Ry. is having six compound mogul freight engines built at the G.T.R. shops at Montreal; four have been delivered and the remaining two are to be delivered in Dec. They are of the 900 G.T.R. class, and will be used in handling the international business between the C.V.R. and the G.T.R.

A handsome monument will be erected to the memory of Matthew Baldwin, the founder of the Baldwin Locomotive Works, in Philadelphia, which recently completed its 20,000th locomotive. It will be a bronze effigy on an imposing base, and will be placed in a small park which belongs to the city, but which faces the offices of the company.

The Safety Car Heating and Lighting Co., New York, has issued a booklet containing a number of new designs of lamps for Pintsch gas, and for combination gas and electric lights. A number of the designs are quite different from those in general use and are said to be proving very popular with the railway officials who have seen them.

The C.P.R. car equipment statement as corrected to Aug. 1, shows a total of 28,684 cars of all descriptions, consisting of 16,446 box cars, 1630 stock cars, 30 baggage cars, 30 refrigerator cars, 20 fruit express cars, 6,035 flat, coal, etc., 3 tank cars, 413 cabooses,

885 passenger cars, 193 ventilator cars, 100 furniture cars, 722 maintenance of way cars.

The Owen Sound Times speaks of "a freak double-header" once used on the old Toronto, Grey and Bruce Ry., "which had a stack at each end and the cab and coal and water capacity in the centre." We should like to get a full description of this locomotive, and a photograph of it if there is one in existence. Any reader who can assist us in this will confer a favor by communicating with the Editor.

The Great Northern Ry. Co. of Canada reported its freight equipment, up to Sept. 1, to consist of: 100 box cars, 40,000 lbs. capacity; 33 box cars, 50,000 lbs. capacity; 291 box cars, 60,000 lbs. capacity; 109 flat cars, 40,000 lbs. capacity; 20 flat cars, 50,000 lbs. capacity; 50 flat cars, 60,000 lbs. capacity; 69 gondola cars, 60,000 lbs. capacity; 39 stock cars, 35,000 lbs. capacity; and 9 vans.

The Canadian Northern Ry. has increased its equipment by the addition of 495 box cars of 60,000 lbs. capacity, and 7 refrigerator cars of 60,000 lbs. capacity. Its freight equipment on Sept. 1 consisted of 250 box cars, 40,000 lbs. capacity; 1,278 box cars, 60,000 lbs. capacity; 25 stock cars, 40,000 lbs. capacity; 392 flat cars, 40,000 lbs. capacity; 280 flat cars, 60,000 lbs. capacity; 25 cabooses; 10 refrigerator cars and 6 steam shovels.

The Lake Erie and Detroit River Ry. reports the receipt of the following additional freight equipment: 10 flat cars, 60,000 lbs. capacity; 5 flat cars, 50,000 lbs. capacity; 15 gondola cars, 50,000 lbs. capacity; 106 gondola cars, 60,000 lbs. capacity; and 1 boarding car. There is a reduction of 47 flat cars, 40,000 lbs. capacity, which have been converted into gondola cars. Five first class passenger cars have been taken out of service, and the following added: 1 2nd class passenger car, 4 combination cars, and 1 official car.

The Canada Atlantic Ry. is building a 65-ft. 1st class passenger coach at its Ottawa shops. It will be up-to-date in every respect, 6 wheeled steel trucks, finished outside in cherry, inside in mahogany, smoking rooms, closets, ladies' toilet compartment, etc. The body of the car will be of the Co.'s standard. On the ends there will be iron combination



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re-inforcing parts, standard steel platforms and vestibules. There are a large number of engines and cars to overhaul, and with the painting of equipment for next year the shops will be kept fairly busy until next season.

The G.T.R. has at Battle Creek, Mich., a car for the temporary storage of ice that is used in the passenger service. It was made by fixing over a box car of ordinary size. A new roof was built over the top of the original roof of the box car, to a good pitch, and the space between the two was left open. Two circular holes were then made in each gable end of the car to obtain circulation in this air space between the two roofs. The inside of the car is ceiled up, leaving an air space of about 6 inches on the sides and overhead. On either side of the car there are double-hinged doors tightly closing. The car stands on side-track, convenient to passenger trains which stop at the station, which is at the end of a division, and as often as the supply is consumed the car is taken to the ice house and refilled.—Railway and Engineering Review.

The Reid, Newfoundland Co. has ordered 2 narrow gauge consolidation locomotives from the Baldwin Locomotive Works, to be delivered early in 1903. Following are the general dimensions: Gauge, 3 ft. 6 in. Cylinder, 18x24 in. Valve, balanced. Boiler—type, straight; diameter, 56 in.; thickness of sheets, $\frac{5}{8}$ in.; working pressure, 180 lbs.; Fuel, soft coal; staying, crown bars, 6x $\frac{3}{4}$ in. Firebox—material, steel; length, 103 in.; width, 29 in.; thickness of sheets, sides $\frac{3}{8}$ in., back, $\frac{3}{8}$ in., crown, $\frac{1}{2}$ in., tube, $\frac{1}{2}$ in.; water space, front, 4 in., sides, 3 in., back 3 in. Tubes—material, iron; wire gauge, no. 13; No. abt. 200; diameter, 2 in.; length, 13 ft. Driving wheels—diameter outside, 48 in.; diameter of center, 42 in.; journals, 7x8 in. Engine truck wheels (front), diameter, 28 in.; journals, 5x8 in. Wheel base—driving, 14 ft.; total engine, 21 ft. 4 in. Tank capacity, 3,000 gals. Tender—wheels, no. 8, diameter 30 in.; journals, 4 $\frac{1}{2}$ x8 in. Service, freight; rails, 50 lbs. per yard; grade, 2%; curves, 14°.

The Minneapolis, St. Paul and Sault Ste. Marie Ry. has ordered from the Baldwin Locomotive Works four 10 wheeled passenger locomotives to be delivered early in 1903. Their general dimensions are as follows: Cylinder, 20x26 in. Valve, balanced. Boiler—type, extended wagon top; diameter, 62 in.;

thickness of sheets, $\frac{1}{4}$ and $\frac{3}{8}$ in.; working pressure, 200 lbs.; fuel, soft coal; staying, radial. Firebox—material, steel; length, 120 in.; width, 41 $\frac{1}{2}$ in. depth,; front, 75 $\frac{1}{2}$ in.; back, 65 in.; thickness of sheets, sides, $\frac{1}{2}$ in., back, $\frac{3}{8}$ in., crown, $\frac{3}{8}$ in., tube, $\frac{1}{2}$ in.; water space, front, 4 in., sides, 3 $\frac{1}{2}$ in., back, 3 $\frac{1}{2}$ in. Tubes—material, iron; wire gauge, no. 11; number, 312; diameter, 2 in.; length, 15 ft. Heating surface—firebox, 186 sq. ft.; tubes, 2437 sq. ft.; total, 2623 sq. ft.; grate area, 34.29 sq. ft. Driving wheels—diameter outside, 69 in.; diameter of center, 62 in.; journals, main, 9 $\frac{1}{2}$ x11 in., others, 8 $\frac{1}{2}$ x11 in. Engine truck wheels (front), diameter, 33 in.; journals, 6 $\frac{1}{2}$ x11 in. Wheel base—driving, 14 ft. 10 in.; total engine, 25 ft. 10 in.; total engine and tender, 55 ft. 4 $\frac{1}{2}$ in. Weight—on driving wheels, 12,210 lbs.; on truck, front, 36,620 lbs.; total engine, 156,830 lbs.; total engine and tender, 270,000 lbs. Tank—capacity, 6,000 gallons. Tender—wheels, No. 8, diameter, 33 in.; journals, 5 $\frac{1}{2}$ x10 in.

The Minneapolis, St. Paul and Sault Ste. Marie Ry. has recently put in service four sleeping cars having some new features in interior design. Their length over sills is 72 ft., and over all, approximately, 79 ft.; they are 9 ft. 10 $\frac{1}{2}$ ins. wide over side sills. The framing of the cars is after a new standard recently adopted to give the greater strength and rigidity required by the increasing weight and speed of passenger trains. The ends have wide vestibules, standard steel platforms and antitelescoping device. The bodies are carried on 6-wheel trucks, having 40-in. steel-tired wheels. The notable feature about these cars is a change in the design of the main room, the end arrangement of the room being different from the usual straight bulkhead. The new feature is called an "interior vestibule," and, while greatly improving the appearance of the main room, its utility was also considered in its introduction. The concave sides of the vestibules, which are semi-circular in plan, face the main room, and in each is built a seat large enough to accommodate two persons. These seats are for the use of passengers while having their berths made up, relieving them of the necessity of occupying neighbors' seats. The seats will also be a convenience to passengers who are waiting to be assigned. The vestibules are surmounted by art-glass domes. The car is of eastern India style, and the details have been carefully worked out from the carpets to the ceiling decorations.

The Intercolonial Ry. is having 27 locomotives built by the Canadian Locomotive Co.; of these 5 are simple moguls, with trailing truck, for passenger service, to be delivered Feb., 1903; 20 are Richmond cross compound consolidation for freight service, to be delivered in Feb., 1903, and 2 are simple switching locomotives, to be delivered in Oct., 1902. Following are the general dimensions. Passenger locomotives:—Weight on drivers, 124,000 lbs.; total weight, 175,000 lbs.; diameter of cylinders, 21 ins.; stroke of pistons, 28 ins.; diameter of drivers, 79 ins.; type of boiler, extended wagon top with wide fire-box; working steam pressure, 250 lbs.; tubes—number 340, material steel, outside diameter 2 $\frac{1}{4}$ ins., length 20 ft.; firebox—length 84 ins., width 80 ins.; tank, capacity for water 7000 gals.; coal, capacity 12 tons. Freight locomotives—weight on drivers, 148,850 lbs.; total weight, 163,420 lbs.; diameter of cylinders, 23 ins. and 36 ins.; stroke of pistons, 28 ins.; diameter of drivers, 56 ins.; type of boiler, straight top; working steam pressure, 250 lbs.; tubes—number 389, material steel, outside diameter 2 ins., length 14 ft.; firebox—length 114 $\frac{1}{2}$ ins., width 41 $\frac{1}{4}$ ins., material steel; tank, capacity for water, 6,000 U. S. gallons; coal capacity, 12 net tons. Switching locomotives—weight on drivers, 142,000 lbs.; total weight, 142,000 lbs.; diameter of cylinders, 20 ins.; stroke of pistons, 26 ins.; diameter of drivers, 51 ins.; type of boiler, straight radial stayed; working steam pressure, 225 lbs.; tubes—number 309, material seamless steel, outside diameter 2 ins., length 12 ft. 5 ins.; firebox—length 96 ins., width 41 $\frac{1}{4}$ ins., material steel; tank, capacity for water, 5,000 U. S. gallons; coal capacity, 5 tons. They will all be equipped with Westinghouse air brakes and Canada Switch and Spring Co.'s springs.

Hon. A. Lyttleton, K.C., M.P., C. C. Gregory, K.C., and P. S. Archibald, C.E., the arbitrators in the claim of the Reid Newfoundland Co. against the Newfoundland Government, recently spent a week in an inspection trip over the Co.'s railway with a view to a better understanding of the questions at issue in the case. They were accompanied by Sir Wm. Whiteway, one of the counsel for claimants, and C. Emerson on behalf of the Government.

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Talks to Ticket Agents.

By F. B. Sankey, Pittsburg, Pa.

INTRODUCTION.—The object desired in presenting these talks is to instil into agents' minds the importance of their position, to give a few words of advice on the subject of fitness, courtesy, ambition, and some practical pointers culled from every-day experience, as to the handling of passengers expeditiously. The writer is free to admit that there are many ticket agents who know far more than he about soliciting passenger traffic, and handling the same after it has been secured. It is not the intention to give advice on any subject pertaining to the auditing department. The talks have only to do with soliciting passengers, furnishing them tickets, and handling them properly. During several years' experience in passenger work, the writer has come in contact with many passenger and ticket men, and has endeavored to gather new and fresh ideas from all of them, keeping in mind the old adage, "We are never too old to learn." The fact of the matter is that in this enlightened age, the older we become, the less we seem to know. At all events, the more we learn from general observation and by reading, the more vividly we see how little we really do know. We can learn something new every day. Therefore, we trust no agent will take offence at anything said in all these talks, but will take it in the spirit in which it is given. We only hope to be able to impart some new ideas which have not struck you before, and if any of this hodge-podge seems to have merit or worth, kindly follow the advice of Bacon who said to not only swallow it, but to chew and digest it. The most effective work is rendered by the men who have ambition enough to post themselves properly on all matters pertaining to passenger business, who are always on the alert, and not afraid of doing too much work. These are they for whom the managing officers are looking when a good man is wanted to fill a vacancy. In these days of progression, there is no town entirely free from competition, whether it is a local point or not. There may not be a competitive line in the same town, but unless an agent shows the proper interest, passengers will look elsewhere for rates. These hints are offered in the hope that they will kindle a flame of ambition in the heart of some agent that will light the way to success.

(To be continued.)

Great Northwestern Telegraph Co.—At the annual meeting in Toronto, Sept. 25, the following directors and officials were elected: President and General Manager, H. P. Dwight; Vice-President, Adam Brown; other directors, H. N. Baird, Col. R. C. Clowry, R. Fuller, J. Hedley, A. S. Irving, W. C. Matthews, Hon. Wm. McDougall; Secretary-Treasurer and Superintendent of Supplies, G. D. Perry; Auditor, A. C. McConnell. A resolution was passed expressing regret at the retirement of Arthur Cox from the position of Treasurer and Superintendent of Supplies and the directors' high appreciation of his long and useful services. The Co. does not furnish a copy of its annual report, but a director states that the aggregate revenue for the year ended June 30 last was over \$100,000 more than that for the preceding fiscal year.

F. W. Holt, C.E., and G. Robertson, of St. John, N.B., who have been appointed to investigate the cattle guard question, in view of the promised legislation in the Dominion Parliament, are visiting different railway centres to meet railway officials and others interested. They will also visit different points in the U.S., and will report to the Minister of Railways.

The Rosedale Art League, Toronto, entertained Arthur Cox, Ex-Treasurer of the Great Northwestern Telegraph Co., and Mrs. Cox, at an At Home, on the occasion of their removal from Toronto. Mrs. Cox was presented by the members with a writing case, and made honorary President of the League.

Mrs. Wallis, wife of H. Wallis, late of the G.T.R. engineering and mechanical department at Montreal, died there recently.

The Albert Manufacturing Co., Hillsboro, N.B., has bought a small locomotive for its works.



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Grain Elevator Notes.

A. P. Stewart, a London, Eng., grain importer, is promoting a company for the construction of another large elevator at Montreal.

The Winnipeg Elevator Co. has built 10 new elevators this year at different points in Manitoba; has six under construction, and proposes to build four others.

Licenses have been issued for the erection of 157 elevators, with a total capacity of 4,524,400 bush., during the present season in Manitoba and the Northwest Territories.

H. Mooers & Co., Kingston, Ont., are negotiating with the Sarnia, Ont., council with a view of obtaining a guarantee of \$75,000 of 4% bonds, to be retired in 20 years, to enable them to construct a 500,000 bush. elevator there.

The G. T. R. has transferred to the Montreal Warehousing Co. its contract with the Montreal Harbor Commissioners to construct a grain elevator at Windmill Point. The M. W. Co. is to all intents and purposes a G. T. R. organization.

The Ogilvie Flour Mills Co. has built 8 elevators of 32,000 bush. each at points in Manitoba this year, and intends building 14 more. This will bring up the number of its elevators to 83, with a capacity of over 3,000,000 bush. A flour storage warehouse is also to be built by the Co. at Winnipeg.

The Department of Trade and Commerce at Ottawa reports that on July 1, 1902, there were in Manitoba and the Northwest, including Fort William and Port Arthur, 544 elevators having a total storage capacity of 23,100,000 bush., an increase of 118 structures and of 3,220,000 bush. in the storage capacity.

The Winnipeg Elevator Co. (Ltd.) owns and operates 74 elevators in Manitoba, 16 of which have been erected this season, or are in course of erection, and four others are to be built. In addition \$50,000 was expended on repairs and improvements to old elevators. The Co. started business five years ago with 14 elevators.

SHIPPING MATTERS.**Canadian Vessels for Northwest Wheat.**

The following recent telegram from Port Arthur to the Toronto Globe, sizes up the situation very correctly: "Not much stock is taken by marine men here in the cry which has gone up from Montreal with regard to the impossibility of Canadian steamers successfully handling the Northwest wheat crop this fall. It is looked upon as an agitation, started purely for the purpose of getting the coasting privileges thrown open to U.S. bottoms, which would put an effectual damper on any increase of Canadian shipping on the Great Lakes. Putting the capacity of the present lake steamers, not including those building, at 1,500,000 bush., and allowing for one round trip a week from the head of the lakes to Georgian bay and Lake Huron ports, means that between September 20 and December 5, 75 days in all, they can move out of Port Arthur and Fort William over 15,000,000 bush. of wheat. Placing the wheat receipts of the two railways at both ports at 20,000,000 bush., which is a fair estimate, judging from the past, there would be less than 5,000,000 bush. more wheat received than Canadian bottoms are available to carry out. A large proportion of the Northwest crop is always exported via Buffalo and New York. This route is, of course, available for U.S. vessels. There are always plenty of them available in the fall for wheat, and the

rate via Buffalo regulates the rate via the Canadian route. If the railways should succeed in bringing out of the west before navigation closes 30,000,000 instead of 20,000,000 bush., it can be handled. The same cry was raised last year, and, notwithstanding the enormous crop, when navigation closed there was less than 300,000 bush. of all grades in store at Port Arthur and Fort William, and not enough of export grades to make a 100,000-bush cargo. In taking into account the capacity of the Canadian steamers no allowance has been made for the three C.P.R. steamers, capacity 150,000 bush. a week; for the Northern Transportation Co.'s boat, 200,000 bush. a week, and Clergue's five British bottoms, with a capacity of 500,000 bush. a week.

A New Navigation Company.

The Canadian Lake and Ocean Navigation Co. (Ltd.), has been incorporated under the Dominion Companies' Act, with a capital of \$3,000,000 in \$100 shares, to carry on a general navigation business in Canada, to own and operate elevators, to deal in cereals, and to invest in the stock of, or to otherwise aid similar companies. The application for the charter was signed by R. P. Ormsby, R. Richardson, stenographers; S. R. Wilkie, R. Gowans, solicitors' clerks; A. W. Anglin, R. C. H. Cassels, and W. Gow, solicitors, all of Toronto, who are only nominally interested, the organization of the Co. having been completed with the following directorate: President, A. E. Ames; vice-presidents, H. M. Pellatt and W. Petersen; other directors: F. Nicholls, J. H. Plummer, Z. A. Lash, K.C., and E. R. Wood. It is understood that among others interested in the company are Hon. G. A. Cox, W. Mackenzie, D. D. Mann, B. E. Walker, F. B. Polson, of Toronto; B. W. Folger, of Kingston, and H. Sutherland, of Winnipeg.

The Co. will take over from Wm. Petersen & Co. (Ltd.), a British Company, four steamers of the turret deck type, which have been operated for five years between Sydney, N.S., and Montreal, by the Dominion Coal Co. This type of vessel is a distinct novelty on the upper lakes, but it has proved to be a most serviceable and economical model of freight carrier in the Gulf trade and on the British coast, as well as in Australia. The model was first introduced in 1892, when the Turret was built at Sunderland, Eng., by W. Doxford & Sons, for Petersen, Tate & Co.; and was followed by the Turret Age in 1893; the Turret Bay in 1894; the Turret Cape and the Turret Crown in 1895; the Turret Chief and the Turret Court in 1896. The four latter of these steamers were brought out to Canada, and considerable attention was attracted to the type owing to the fact that a contract, since cancelled, was entered into between Petersen, Tate & Co. and the Dominion Government for a fast line to England, to be operated by turret steamers. The peculiar feature of the construction of the turret deck vessels is that the hull curves inward and upwards from the water line, so that the deck is barely one-half of the beam measurement. It is a distinct departure from the whaleback type; a cross-section amidships giving the appearance of a wide-mouthed bottle. This construction reduces the cubical area for measurement in such a way that a vessel of the turret deck type will carry a considerably larger cargo on the net register tonnage than an ordinary type steamer of similar size, thereby effecting a considerable saving in tonnage dues in Great Britain. The steamers are all built of steel, with cellular double bottoms, and tanks for water ballast, and are self-trimmers. Their dimensions are:

Turret Cape and Turret Crown—length, 253 ft. B.P.; breadth, 44 ft.; moulded depth,

21.9 ft. Deadweight capacity, 3,250 tons; gross, 1,827 tons, register, 1,141. Cubical capacity, 149,663 ft.; equal to carrying 108,000 bush. on a draft of 17 ft. 6 in. These steamers are fitted with 3 Clyde water tube boilers, supplying steam to triple expansion engines with cylinders 21½, 36 and 59 in., by 42 in. stroke, capable of developing 1,150 h.p. The engines are placed aft. Bunker capacity, 154 tons.

Turret Chief and Turret Court—length, 253 ft.; breadth, 44 ft.; moulded depth, 21.8 ft. Deadweight capacity, 3,225 tons; gross, 1,881 tons; register, 1,196 tons; cubical capacity, 151,765 ft. The engines and boilers are similar to those in the Crown and Cape, but are placed amidships. Bunker capacity, 272 gross tons.

The facilities for loading and unloading are first class, the Crown and Cape having three large hatchways each, and the other two steamers two each, 60 ft. by 14 ft. 6 in. They have recently been inspected and placed in the highest class at Lloyds, inland as well as ocean survey.

It is understood that Capt. T. Donnelly, of Kingston, will be Marine Superintendent at Toronto. The Turret Chief reached Toronto Sept 16, and was given some slight repairs owing to an accident received in coming through the Soulanges canal. She sailed for Cleveland, Ohio, to load coal for Port Arthur. The Turret Court and Turret Chief went through to Fort William, and the Turret Crown will join them.

Notices to Mariners.

The Department of Marine has issued the following notices to mariners:—

No. 72. Aug. 21—Quebec—253. Ottawa river, lake of Two Mountains, Ste. Placide, back light of the down-stream range. Ontario—254. Lake Erie, Buffalo to Detroit, dangerous wreck. 255. Detroit river, Elliott point range lights, change in character of illuminating apparatus. 256. Georgian bay, west side, Flowerpot island, sounding of fog bell temporarily discontinued. 257. Lake Superior, Thunder Bay, shoal reported.

No. 73. Aug. 22—New Brunswick—262. North coast, Chaleur bay, Stonehaven, change in color of light.

No. 74. Aug. 25—Quebec and Ontario—264. River St. Lawrence, buoyage between Montreal and Prescott.

No. 75. Aug. 26—Ontario—265. Lake Superior, Michipicoten harbor, Little Gros Cap, lighthouse established.

No. 76. Aug. 27—Nova Scotia—266. Bay of Fundy, Basin of Mines, Kingsport pier lighthouse. New Brunswick—267. Bay of Fundy, Gannet rock, periodicity of light.

No. 77. Aug. 28—Quebec—268. River St. Lawrence, Matane, bell buoy established.

No. 78. Aug. 29—Ontario—269. River St. Lawrence, shoal east of Wolfe island, dredging.

No. 79. Aug. 30—British Columbia—270. Burrard inlet, Vancouver harbor, hydrographic note.

No. 80. Sept. 10—Nova Scotia—272. Cape Breton, Sydney harbor, Cranberry head, fog alarm. Labrador—273. Chateau Bay and Belle Isle, wireless telegraph stations established.

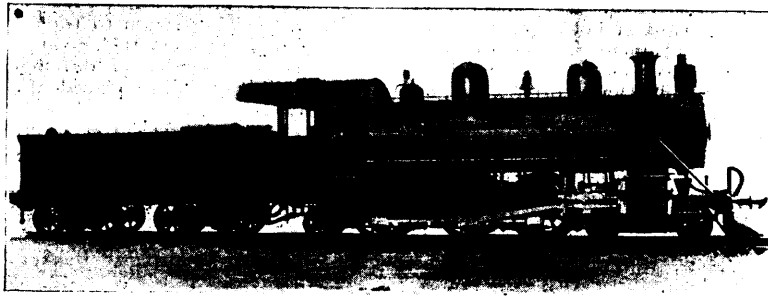
The following notices have been issued by the U.S. Hydrographic office:—

No. 36. Sept. 6—1204. Detroit river, Limekiln crossing, north light vessel replaced by relief light vessel. 1255. Detroit river, Limekiln crossing, depth of water.

No. 37. Sept. 13—Lake Superior—1298. Thunder bay, existence of shoal doubtful, caution. Lake Ontario—1302. Braddock point light station, wreck.

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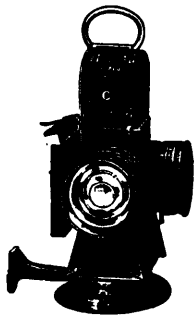


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The Canadian Pacific Railway lands consist of the odd-numbered sections along the Main Line and Branches, and in Northern Alberta and the Lake Dauphin District. The Railway Lands are for sale at the various agencies of the company in Manitoba and the North-West Territories at the following prices:

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TERMS OF PAYMENT.

In the case of an actual settler who goes into residence upon and cultivates the land, the aggregate amount of purchase money and interest is divided into ten instalments, as shown in the table below; the first to be paid at the time of purchase, the second two years from date of purchase, and the remainder annually thereafter.

- 160 acres at \$3.00 per acre, 1st instalment \$71.90, and nine equal instalments of \$60.
- 160 acres at \$3.50 per acre, 1st instalment \$83.90, and nine equal instalments of \$70.
- 160 acres at \$4.00 per acre, 1st instalment \$95.85, and nine equal instalments of \$80.
- 160 acres at \$4.50 per acre, 1st instalment \$107.85, and nine equal instalments of \$90.
- 160 acres at \$5.00 per acre, 1st instalment \$119.85, and nine equal instalments of \$100.
- 160 acres at \$5.50 per acre, 1st instalment \$131.80, and nine equal instalments of \$110.
- 160 acres at \$6.00 per acre, 1st instalment \$143.80, and nine equal instalments of \$120.

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

DISCOUNT FOR CASH. If land is paid for in full at time of purchase, a reduction from price will be allowed equal to ten per cent. of the amount paid in excess of the usual cash instalment.

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

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Mr. Tarte's Lake Tour.

The Minister of Public Works spent a month during the summer on the Lord Stanley, making a tour of the Great Lakes and visiting in addition to Canadian points, Buffalo, Cleveland, Detroit, Chicago, Milwaukee and Duluth. The trip was undertaken to inspect the harbor works in progress at the different points, and to determine what additional works should be undertaken at Canadian ports to enable them to successfully compete for freight with those in the U.S. In the course of his speeches at dinners, or in reply to deputations the Minister stated what he thought the Government should do, and what he would advise should be done at a number of points. At Toronto the Government would be prepared to carry out large works if the city would do its part in constructing a trunk sewerage system. At Amherstburg a promise was given that provision would be made for dredging along the front of the docks. At Midland an intimation was given that if the people took the necessary steps the Minister would recommend the voting of money for the construction of docks and the dredging of the harbor to a uniform depth of 22 ft. The Collingwood people received a promise that more money would be voted so as to enable a first-class harbor to be provided and maintained. The French River project was referred to by the Minister in a speech at Chicago, in which it was stated that this would be the first great link in the new projected route from the Great Lakes to the ocean, and that \$5,000,000 would be provided for the work. Part of the plans had been adopted, others were under consideration, but the whole project would not be decided upon for a little time. At Sault Ste. Marie, Mr. Tarte referred to the necessity for proper approaches to the canal, which would cost \$300,000, before the question of building docks was taken up, and promised to press these matters on the Government. At Port Arthur a promise was given that the harbor would be dredged to a depth of 22 ft., which he thought should be the uniform depth of all lake harbors. Other work would have to be done at Port Arthur and Fort William to equip them as they should be equipped, and L. Coste, an engineer of the Department of Public Works, was directed to prepare plans showing what was required to be done at each place.

After a few days spent in Ottawa on returning from the Great Lakes, Mr. Tarte proceeded to St. John, N.B., where he inspected the harbor and heard the views of the local authorities as to the additional facilities required.

Maritime Provinces and Newfoundland.

A large tugboat is being built at Hillyard's shipyard, St. John, N.B., for J. E. Moore.

The St. John, N.B., city council has under consideration tenders for effecting considerable improvements at McLeod's wharf.

A steam launch has been completed at Port Hawkesbury, and engined at New Glasgow, N.S., for the Department of Marine.

The residents of the Magdalen islands are asking the Dominion Government to arrange for a bi-weekly instead of a weekly steamer service.

The str. Mira, which went ashore at Chebogue point, near Yarmouth, N.S., in Feb., was floated off in Aug., and is being offered for sale privately.

A large workshop has been erected in connection with the marine slip at Dartmouth, N.S., and equipped with the necessary machinery for repairing iron and steel vessels.

A dredge 90 ft. in length for the Dominion Government has been constructed at River John, N.S. It is intended to replace an old one, from which the machinery is being transferred.

A small str. Ostera has been built at Yarmouth, N.S., for the Department of Marine, for use in connection with the protection of the oyster beds in the Maritime provinces.

The company operating the str. Bauta between St. John, N.B., and Jamaica proposes to put on a second steamer, and to make the service a fortnightly instead of a monthly one as at present.

The steamer recently built on the Clyde for the Department of Marine for lighthouse and buoy service on the Atlantic coast, has been named the Lady Laurier. The new steamer is expected at Halifax by the end of Oct.

Press reports state that it is the intention of the Reid Newfoundland Co. to place the str. Glencoe on the route between North Sydney and Port aux Basques, Nfld., as well as the Bruce, and thus maintain a daily service.

The Dominion Government has taken proceedings against the St. John, N.B., city council for violation of the Steamboat Inspection Act, by permitting the ferry str. Ouanoudy to carry more than her licensed number of passengers.

The St. John Steamship Co., which operates the str. Beaver between St. John, N.B., and Albert County ports, has the following directors: W. H. Thorne, T. McAvity, W. H. Barnaby, H. W. de Forest, G. D. Prescott, and S. T. Stevens.

The Dominion Coal Co. has purchased the Robertson wharf property, St. John, N.B., for \$100,000. It is the Co.'s intention to make extensive improvements at the wharf so that vessels can be promptly unloaded and a large quantity of coal stored.

The Eastern Coastal Steamship Co. purposes building a steamer at a cost of about \$30,000 to trade between Halifax, Canso and intermediate Nova Scotian ports. A Nova Scotia subsidy of \$2,000 a year, and a Dominion subsidy of \$4,000 a year, are reported to be available for the service.

Thomson & Co., St. John, N.B., propose putting a 13-knot steamer on the route between St. John, N.B., and Yarmouth, and other ports in Nova Scotia to Halifax. An effort is being made to obtain a Provincial subsidy of \$5,000, and a Dominion subsidy of \$7,000 a year for the service.

The St. John, N.B., Police Magistrate is considering the question of what is an excursion, in connection with the prosecution of Capt. Mabee, of the str. Clifton, which left St. John for Beulah camp on a recent Sunday and returned the same day. The proceedings are taken under section 5 of the Lord's Day Act.

The Hantsport Graving Blocks Co. (Ltd.) has been incorporated under the Dominion Companies' Act, with a capital of \$2,000 to carry on a shipbuilding and repairing business at Hantsport, N.S. The incorporators are: H. S. Parker, C. Lawrence, S. H. Mitchener, J. D. Dorman, and DeL. T. Faulkner, Hantsport.

Shipbuilding continues to be brisk at the yards in the Maritime provinces, among the launches taking place in Sept. being the following: a 340 ton schooner at Port Greville, N.S.; a 400 ton schooner at Spencer's Island, N.B.; a 100 ton and a 300 ton schooner at Lunenburg, N.S., and a 50 ton schooner at Port Clyde, N.S.

LeGasse Bros., St. Pierre, Miquelon, have secured the contract for a service between that port, North Sydney, Halifax, N.S., and Boston, Mass., and it is reported will have a steamer built for the route. The str. Pro Patria has hitherto been on the route, and pending the building of the new steamer, the Harlaw will carry the mails and passengers to and from St. Pierre.

The Advance Co. (Ltd.), has been incorporated under the Dominion Companies' Act for the purpose of carrying on a general navigation business.

The capital is fixed at \$16,000, and the incorporators are: W. H. Chase, C. R. and R. E. Burgess, of Wolfville, N.S.; A. Potter, of Canning, N.S., and G. E. Higgins, of New York city. Under a second charter the same persons are incorporated as the Advent Co. (Ltd.)

Province of Quebec Shipping.

The Department of Public Works has under consideration tenders for the improvement works at Quebec harbor, the estimated cost of which is \$800,000.

The electrical apparatus for operating locks 19 and 20 of the Cornwall canal has been fully installed, and similar installations are being made at locks 16, 17 and 18.

The Shawinigan Power Co. has submitted to the Minister of Marine a plan for the lighting of the channel of the St. Lawrence between Montreal and Quebec, by a double row of electric lamps.

The dredge Sir Wilfrid, for W. J. Poupore, Montreal, has been completed by the Polson Iron Works, Toronto, and will be towed to Three Rivers, Que., to be used on the harbor construction work there.

The Montreal Harbor Commissioners have decided to purchase a new steel tug for use in harbor improvement works at a cost of \$16,000 to \$18,000, or if a fire pump is added at a cost of an additional \$5,000.

A test has been made of acetylene gas as an illuminant at Father Point lighthouse, and it has been well spoken of. The tests will be continued at other lighthouses and on a number of gas buoys in the St. Lawrence.

The steamer Druid, recently built on the Clyde for the Department of Marine, for use in the Quebec district for placing buoys, to replace a vessel of the same name sold out of the service in 1901, has reached Quebec, and has been placed in service.

Recently there were no less than three large steamers waiting their turn to get into the Quebec dry dock for repairs. The Montreal Harbor Commissioners have decided to ask the Minister of Public Works to consider the desirability of constructing a dry dock at Montreal.

U.S. capitalists are dredging a canal from the U.S. channel of the St. Lawrence at Heart island, to the Lake of the Isles, in the Thousand Islands. The canal is to be 70 ft. wide, 10 ft. deep, and is estimated to cost \$100,000. It is intended for the accommodation of the yachts of residents on the islands.

By direction of the Minister of Marine an investigation is being held by Commander Spain, Capt. W. Simons, Port Warden of Quebec, and Capt. Clift, marine surveyor, of Montreal, into the circumstances attending the stranding of so many vessels on the St. Lawrence route during the present year. The investigation is an informal one and is for departmental purposes only.

An effort is being made to secure capital in New York for the construction of the Lake Champlain and St. Lawrence ship canal, which was incorporated by the Dominion Parliament in 1898, to construct a canal from some point on the St. Lawrence river, in the county of Chambly, to some point on the Chambly canal or Richelieu river. In 1902 the incorporators were changed, and an extension of time was given to commence the work.

The Department of Marine has purchased from the British Admiralty the steel screw schooner-rigged str. Guldner, specially built at Scotstoun, Scotland, 1893, for the Hydrographic service. Her dimensions are: length, 137 ft.; breadth, 20.5 ft.; depth, 13.6 ft.; tonnage, gross, 262 tons; register, 106 tons, and she is fitted with triple expansion direct act-

ing engines, with cylinders 13 in., 20 in. and 33 in., with a piston stroke of 24 in., to which steam is supplied from a cylindrical return tubular type boiler, 11 ft. 6 in. diameter, and 9 ft. 3 in. in length, with a steam pressure of 160 lbs., Lloyds test. The engines give 96 revolutions a minute, and are of 64 h.p. The Gulnare has only been in actual service five months in each year since she was built, consequently the hull, boilers and machinery are in good condition, and it is not likely that much overhauling will be required to fit her for tidal survey work. The Gulnare will be refitted at Quebec.

Ontario and the Great Lakes.

The Niagara, St. Catharines and Toronto Navigation Co.'s net revenue for 1901 was \$6,577.03.

The St. Lawrence River Steamboat Co. has been authorized to increase its capital from \$35,000 to \$60,000.

It is reported that a large dry dock is to be constructed at Sault Ste. Marie, Ont., in connection with the different Clergue enterprises.

The Algoma Central Steamship Co. purposes replacing the Ossifrage on the Toledo-Sault Ste. Marie route, with a larger steamer next year.

The Port Stanley Navigation Co.'s new steamer Winona will be placed on the Windsor-Amherstburg route for the remainder of the season.

Surveys are being made on the St. Clair river by the U.S. Government for a new canal at the flats, for which \$330,000 has been appropriated by Congress.

W. Mackenzie, of Mackenzie, Mann & Co., has had a 16½ h.p. gasolene launch built by the Polson Iron Works, Toronto, for use at his summer residence, near Lindsay.

A life-saving station has been established by the Department of Marine at Long Point, Lake Erie, where a special crew will be stationed from Sept. to Nov. every year.

The Knapp roller boat will roll no more; a propeller having been affixed to one end, and an orthodox bow to the other. She will now be engaged in the ordinary freight business.

A new steamer for the Dominion Fish Co. will be launched early in Oct. at Owen Sound. She will be put on the Owen Sound-Manitoulin Island route in the spring, in place of the Hiram R. Dixon.

The C.P.R. and the Canadian Salt Co. have secured jointly 150 ft. frontage on the river at Windsor, Ont., adjoining the railway yards, for the purpose of erecting docks and shipping warehouses.

A new steamer, the Comet, which had just been completed at Opemican, on the Ottawa river, for the Lumsden line on Lake Temiskaming, was totally destroyed by fire recently. The hull and machinery were valued at \$20,000.

A proposition is under consideration among Hamilton shipping men in reference to the starting of a new line of steamers to Toronto. Mackay Bros. are interested, but nothing definite can be ascertained as to the details of the project.

The str. Pittsburg, hitherto trading between Detroit, Mich., and Sault Ste. Marie, Ont., has been placed on the run to Sault Ste. Marie, Ont., and to Gore Bay, Ont., making one round trip from Owen Sound to each place weekly.

Of the 29 lake steamers being built by the American Shipbuilding Co. 10 are for the Great Lakes and St. Lawrence River Transportation Co. Their dimensions are: length, 255 ft.; breadth, 41 ft.; depth, 18 ft.; and they will cost \$150,000 each.

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Grand Trunk Elevators, No. 1 and No. 3, Portland, Me.	2,500,000	
Export Elevator, Buffalo, N.Y.	1,000,000	
J. R. Booth Elevator, Depot Harbor, Ontario	1,000,000	
Cleveland Elevator Company's Elevator, Cleveland, O.	500,000	
Erie R. R. Transfer & Clipping House, Chicago, Ill.	100 cars in 10 hrs.	
Manchester Ship Canal Co.'s Elevator, Manchester, Eng.	1,500,000	
Burlington Elevator Co., Peoria, Ill.	500,000	
Canada Atlantic Railway Elevator, Coteau Landing, Que.	500,000	
Northern Grain Co., Manitowoc, Wis.	1,350,000	
Union Elevator, East St. Louis, Ill.	1,100,000	
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The Department of Railways and Canals is removing the old central pivot swing bridges over the Welland canal, and replacing them with bridges that will leave the whole width of the waterway clear. There are about a dozen bridges to be removed, the cost of which is estimated at about \$500,000.

The Hamilton and Fort William Navigation Co. purposes adding a third steamer to its fleet. The new steamer, which will be built in Great Britain, will be of full canal size, but the plates, etc., for an additional 100-ft. section will be brought out, and built in after she arrives on the Upper Lakes.

The Ontario Department of Public Works has expended a considerable sum this summer in improving the navigation on the Muskoka lakes, notably at Port Carling, Port Sandfield and along the Joseph river. These will permit the passage of larger boats along the channels connecting the different lakes.

The Huntsville, Lake of Bays and Lake Simcoe Navigation Co. purposes constructing for next season's business a boat to have a speed of 16 miles an hour, and with accommodation for 500 passengers. It is also intended to overhaul and improve the existing fleet, and to construct a dry dock on Lake of Bays.

The str. Rival has been sold by the Collins' Bay Rafting and Forwarding Co., to Capt. Roys, of the str. Aletha, who purposes fitting her up for the passenger trade. The Rival is a sidewheel steamer, built at St. Columbe, Que., 1873, her dimensions being: length, 120 ft.; breadth 23 ft.; depth, 8.4 ft.; tonnage—gross, 125, register 36.

The Algoma Navigation Co. has placed an order in Toronto for the construction of a steel steamer for its Owen Sound-Sault Ste. Marie line, of the following dimensions: length, 190 ft.; breadth, 35 ft., and a speed of 16 miles an hour. She will have 50 staterooms, giving accommodation for 110 passengers, and a capacity for 700 tons of freight.

The New Ontario Steamship Co., of which A. B. Mackay, Hamilton, is Managing Director, is reported to have purchased two steamers in Great Britain, and to be negotiating for two more. The Co. proposes to do a package freight and grain carrying business on the Upper Lakes, and will probably put a steamer on a route to Montreal.

Writing to the Globe on the alleged scarcity of Canadian bottoms to carry Canadian grain, J. H. G. Hagarty, Managing Director, St. Lawrence Navigation Co., says its str. Algonquin has had to go to Chicago to look for a cargo there, and its str. Rosedale recently returned from Lake Superior, light, because there was no cargo available at Port Arthur or Fort William.

The gas buoy at Bar Point, Lake Erie, has been cast adrift several times recently and has been replaced by the Canadian Government. The buoy is being constantly run over by vessels, and it is stated that it will not be replaced again unless the vessel striking it pays the damage. "The buoy is placed there," says the Marine Review and Record, "to mark the channel and not as some vessel men appear to think as a target."

The traffic passing through the Canadian and the U.S. canals at Sault Ste. Marie, from the opening of navigation to Aug. 31, was 18,163,288 tons against 13,156,276 tons in 1901. The following are the figures for the Canadian canal:

	1902	1901
Apr. 5 to May 31.....	532,188	151,679
June.....	1,118,564	1,235,055
July.....	523,936	276,624
Aug.....	639,858	295,175
Total.....	2,814,546	1,958,533

Press reports have been current all summer to the effect that the 12 steamers owned by the

Folger Bros., of Kingston, and operated by them as the Thousand Islands Steamboat Co., and the St. Lawrence River Steamboat Co., had been sold to the New York Central Rd. Co. On Aug. 28, a Kingston despatch said the reports of the sale had been "officially confirmed;" on Sept. 3, another despatch said they were "officially denied," and a Kingston paper said the "'yarn' had been exploded."

The Morden Transit Co., which was incorporated under the Ontario Companies' Act, in July, has its offices at Midland, Ont., and was formed to take over the following vessels owned by G. H. Morden, lake captain, Oakville: United Lumberman, screw steamer, built at Dresden, Ont., 1884; length, 139.2 ft.; breadth, 31.6 ft.; depth, 11.7 ft.; tonnage—gross, 399; register, 259. Dolly Morden, schooner, built at Dresden, Ont., 1881; length, 120.7 ft.; breadth, 26.1 ft.; depth, 9 ft.; register tonnage, 198. H. M. Stanley, schooner, built at Port Dalhousie, Ont., 1873; length, 132.3 ft.; breadth, 25.6 ft.; depth, 11.7 ft.; register tonnage, 305.

The International Transit Co., one of the Clergue enterprises at Sault Ste. Marie, recently purchased the str. Fortune, from the Detroit, Belle Isle and Windsor Ferry Co., and under a charter from the Dominion Parliament has been operating it between Sault Ste. Marie, Ont., and the U.S. shore of St. Mary's river. The Sault Ste. Marie Ferry Co., which operates a ferry between the same points under a lease granted by the Dominion Government in 1897, sought to obtain an injunction in the Ontario courts to prevent the I.T. Co.'s ferry doing business. The court declined to grant the injunction, but directed the I.T. Co. to keep an account of its earnings pending the settlement of the question whether or not the S. Ste. M. F. Co. has an exclusive franchise. The old ferry charges 10c. for passengers, and the new one 5c. It is reported that on the Clergue interests offering to buy the S. Ste. M. F. Co. out, they were asked \$187,000. The stock of the old company is said to be quoted at 250.

Manitoba and the Northwest Territories.

During the season 48 boats have been built at Edmonton for different points on the Saskatchewan river.

Z. Malhoit, C.E., reports that 2,920,000,000 gallons of water passed through the canal at Fairford, on Lake Manitoba daily during the season. The water in the lake has been very high all summer.

At a public meeting recently held at Edmonton, it was decided to take steps to place a steamer on the Saskatchewan, and a committee was appointed to collect further information. U.S. firms have been approached and a tender has been submitted for a steamer 130 ft. long, 28 ft. beam, to carry 75 tons on a draft of 18 inches. It is estimated that \$15,000 will pay for such a steamer and operate it for a year.

Application will be made at the next session of the Dominion Parliament for an act to incorporate the Lake Superior and Rocky Mountain Navigation Co. The project outlined is to connect Lake Superior with the waterway leading into Rainy Lake, and via the Lake of the Woods to the Red river, and from the Red river through Lake Winnipeg to the headquarters of the north branch of the Saskatchewan. An alternative route is suggested via the Assiniboine river and lakes Manitoba and Winnipegosis to the Saskatchewan river. It is claimed that the only really heavy portion of the work lies in the 20 miles at Lake Superior. McLeod Stewart, Ottawa, is one of the promoters. It was intended to have proceeded with this application in 1902, but nothing was done.

B.C. and Pacific Coast Shipping.

The Yukon river str. Eldorado was recently sold at auction at Dawson to J. Burke, of the Yukon saw mills, for \$2,300.

The str. Hazleton, built at Vancouver last year for the Skeena river trade, has been wrecked in the river, and is a total loss.

A hull 80 ft. in length and 18 ft. in breadth, is being built at Kelowna, B.C., for Lequime and Lloyd-Jones, in which the engines of the old Penticton will be placed.

The British str. Cutch, formerly in the Yukon trade, and latterly rebuilt in the U.S., and registered there as the Jessie Banning, has been sold to the Colombian government and refitted as a war vessel.

It is reported that early in Oct. an additional freight vessel will be placed on the Vancouver-Australia route by the Canada-Australia Steamship Co., to alternate with the Foreric, the 5,000 ton freight steamer put on in Aug.

A contract for a steel barkentine, to have a capacity of 1,000,000 ft. of lumber, has been placed with the B.C. Marine Ry. Co., Esquimalt, B.C., to be completed early in 1903. The Co. has also secured a contract to build a 1,000 ton schooner.

The new freight str. Cascade, built at False Creek, Vancouver, B.C., for H. McNab, was launched recently. Her dimensions are: length, 105 ft.; breadth, 22 ft.; depth of hold, 8 ft. 8 in.; dead weight capacity about 200 tons. She will be fitted with fore and aft compound engines built in Glasgow, Scotland.

W. Ericksen & Son, Vancouver, are promoting an enterprise for the building of lumber-carrying vessels at Vancouver, and a syndicate has been formed to construct the first one. The model prepared is of a four-masted brigantine of 200 ft. keel, 44 ft. beam, 16 ft. depth of hold, and capable of carrying 1,200,000 ft. of lumber. The cost of building and equipping this vessel is \$64,000.

The Victoria Shipmasters' Association of B.C., at the end of its first six months of existence, had 108 members, excluding 18 elected by the Yukon committee. One of the results of the Association's work has been the obtaining of a declaration from Ottawa that all persons applying for certificates must give information as to the places in which they had resided for three years prior to making application.

During the season of navigation considerable work has been done on the improvement of the Yukon river channel. The new channel at Upper Laberge, 125 ft. wide, with an average depth of about 6 ft., has been completed, and considerable progress made with the work of removing rocks at the Five Fingers rapids. P. E. Mercier, of the Department of Public Works engineering staff, has charge of the work.

The Western Steamboat Co. of New Westminster has paid a dividend of 10% on its capital stock, in addition to spending \$1,500 on improving its steamer, and carrying over a substantial balance. The following officers were elected at the recent annual meeting: President, T. J. Trapp; Vice-President, T. S. Annandale; Treasurer, J. A. Cunningham; Manager, F. R. Glover; other directors, F. J. Hart and L. A. Lewis.

The Terminal Steamship Co. has placed on the Vancouver and Howe Sound route the new passenger str. Britannia. Her dimensions are: length, 114 ft.; breadth, 22 ft. 5 in.; depth of hold, 8 ft. 5 in.; and she is fitted with a single screw driven by triple expansion engines 10 in., 16 and 25 1/2 in. cylinders, with a piston stroke of 16 in.; to which steam is supplied by a 10 ft. by 8 ft. 6 in. boiler, at a pressure of 180 lbs. The hull was built on False

Creek, and the engines were brought from Glasgow, Scotland.

The Department of Marine proposes improving the aids to navigation on the B.C. coast, and in order to decide what is necessary, a special survey is being made by the Chief Engineer. The routes to be protected are: first, the route outside Vancouver island on the great circle route to Japan, principally for the safety of the C.P.R. steamers; second, the inside routes to Ladysmith and other coal shipping centres, for the protection of the large freight steamers now engaged in carrying coal to U.S. and other ports, a traffic that is rapidly increasing; and third, the coasting trade of B.C., largely increased by the rapid development of lumbering, fishing and mining industries and Yukon trade in all the inlets and inside passages from the boundary line north to Fort Simpson.

St. Lawrence Route Improvements.

In connection with the discussion now going on in the daily papers in connection with the projected fast line from a Canadian port to Great Britain, it is of interest to note the very large works in progress or in contemplation under the charge of the Department of Public Works and the Department of Marine of the Dominion. The Public Works Department has in charge the widening and deepening of the channel between Quebec and Montreal, so as to allow vessels of 30 ft. draught to reach the wharves at the latter port at the lowest water level of the St. Lawrence. For this work several new dredges have been built, the largest being the J. Israel Tarte, constructed last year by the Polson Iron Works, Toronto, and placed in operation at the opening of the present season. Next to having a channel deep enough and wide enough to enable the largest ocean-going vessels to navigate the river from the Gulf to Montreal, is the provision of the necessary lights, buoys and fog signals to mark it out, so that navigation may be safe and continuous. The number of strandings of large

vessels, accompanied by a greater or less loss to the underwriters of marine risks, in the past has led to the imposition of such high rates that shipowners and agents claim the trade is being driven away from the St. Lawrence thereby. In order to meet the requirements of the shipping interests in this matter, the Dominion Parliament at its last session voted \$280,000 for the purpose of providing additional aids to navigation, principally on the St. Lawrence route, including the purchase of a steamer for tidal and surveying purposes.

The Minister of Marine, Hon. Jas. Sutherland, in submitting this vote to the House of Commons, pointed out that strong representations had been made for many years that the lighting and other aids to navigation on the St. Lawrence were deficient; that the pres-

ent rates of insurance charged on vessels navigating the St. Lawrence were on a vessel valued at \$500,000, \$5,000 per voyage, or \$25,000 a season of five trips more than on a similar vessel sailing from a U.S. port; and that the reason for this high rate was the many casualties that had happened on the St. Lawrence route. Representations had been made by the shipping interests to the Government that by the provision of improved aids to navigation the rates would be materially reduced, and the marine insurance interests had concurred in these representations. After a conference with the different interests concerned it had been decided to carry out the following improvements, some of which it will be seen are under way, or have been already completed:

DOMINION BRIDGE CO. Limited

MONTREAL, P. Q.

BRIDGES **TURNTABLES** :: ::
ELECTRIC CRANES
ROOF TRUSSES :: ::
STEEL BUILDINGS
Structural METAL WORK of All Kinds

Beams, Channels, Angles, Plates, Etc., in Stock



Department of Railways and
Canals, Canada.

LACHINE CANAL.

NOTICE TO CONTRACTORS

Sealed tenders, addressed the undersigned, and endorsed "Tender for Rebuilding Portions of and Extending Locks No. 1 and No. 2, at entrance to Lachine Canal, Montreal," will be received at this office until 16 o'clock on Thursday, the 2nd October, 1902.

Plans and specifications can be seen on and after the 15th of September, 1902, at the office of the Superintendent Engineer of the Quebec Canals, Royal Insurance Building, Montreal, where forms of tender can be obtained.

In the case of firms there must be attached to the tender the actual signatures of the full name, the nature of the occupation and the residence of each member of the same; and further, an accepted bank cheque for the sum of \$15,000 must accompany the tender. This accepted bank cheque must be endorsed over to the Minister of Railways and Canals, and will be forfeited if the party tendering decline entering into contract for the work at the rates and on the terms stated in the offer submitted.

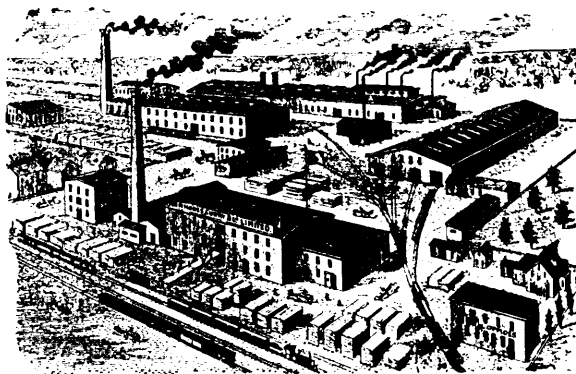
The accepted cheque thus sent in will be returned to the respective parties whose tenders are not accepted.

The Department does not bind itself to accept the lowest or any tender. By order,

L. K. JONES,
Secretary.

Department of Railways and Canals, Ottawa, 9th September, 1902.

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



Car Wheels, Castings, Forgings, &c.
AMHERST, NOVA SCOTIA.

**Rhodes,
Curry & Co.,**

Ltd.,

**Railway and
Street Cars**

of all descriptions.

Special Cars for Coal, Ore,
Lumber, &c., with Ball-
Bearing Wheels.

Ebbitt House

WASHINGTON, D.C.

American Plan.

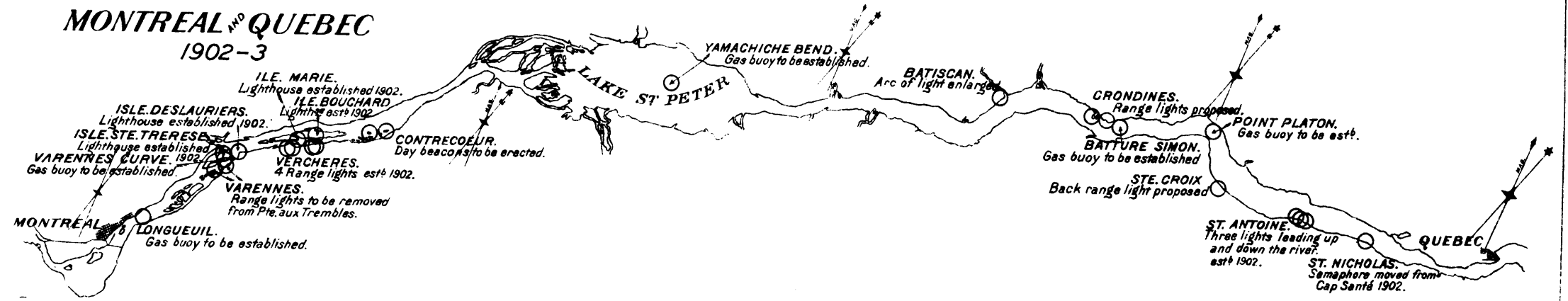
Army and Navy Headquarters, also Headquarters
Canadian Ticket Agents' Association.

H. C. BURCH, Manager.

PROPOSED IMPROVEMENTS IN AIDS TO NAVIGATION

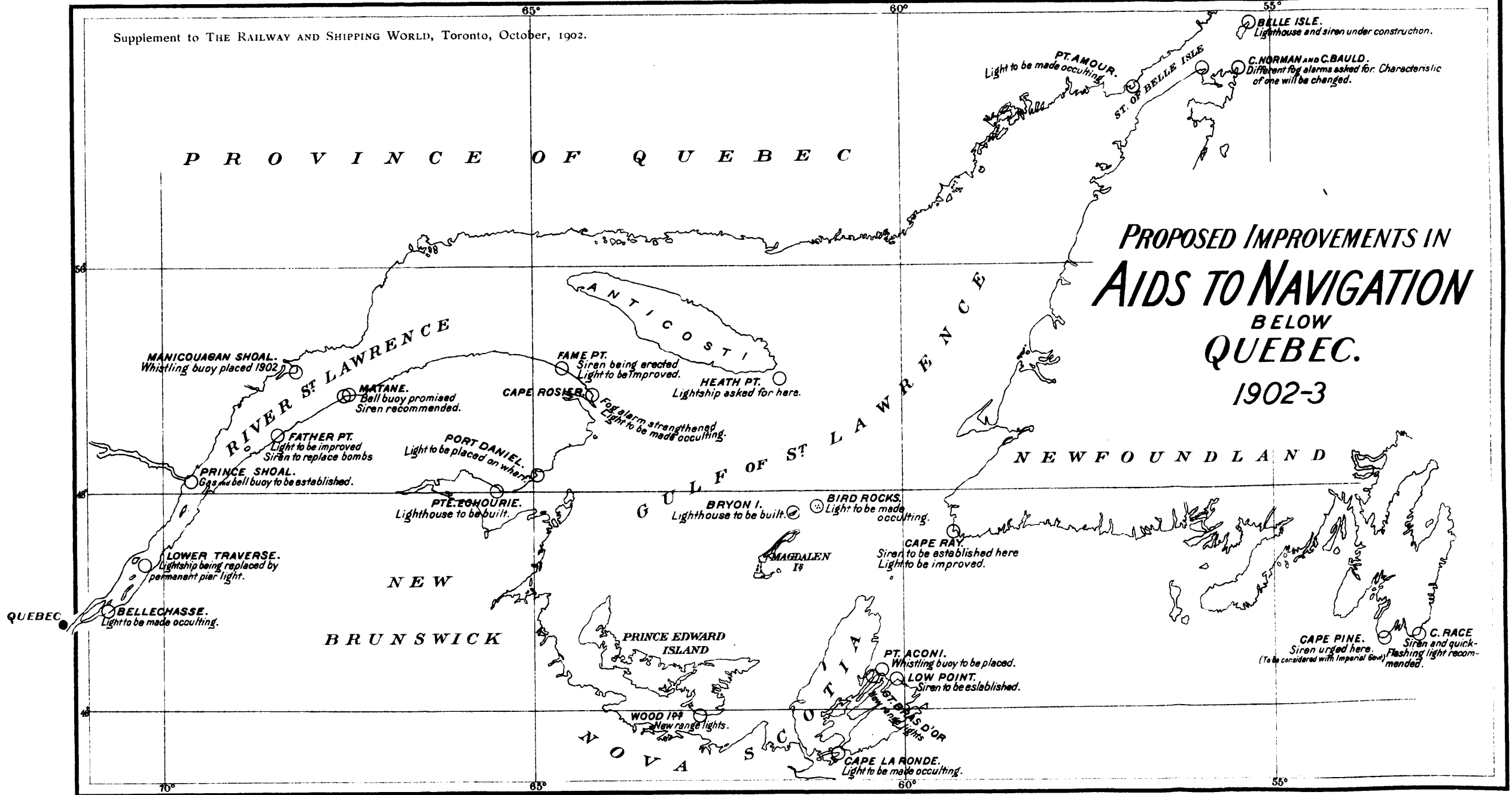
BETWEEN
MONTREAL AND QUEBEC
1902-3

Supplement to THE RAILWAY AND SHIPPING WORLD, Toronto, October, 1902.



P R O V I N C E O F Q U E B E C

PROPOSED IMPROVEMENTS IN
AIDS TO NAVIGATION
BELOW
QUEBEC.
1902-3



Entering the St. Lawrence by Cape Race or the southern route :—
 Cape Race.—A quick flashing light to be established and whistle changed to syren.
 Cape Pine.—A first-rate light and fog signal to be established here, and, as this is in Newfoundland, it is proposed to invite the Imperial and Colonial Governments to cooperate with us.
 Cape Ray.—Improvement of light and signal, to be done this fall.
 Bird Rocks.—Light to be made occulting, this fall.
 Bryon Islands.—Light to be established.
 Cape Rosier.—Fog alarm to be strengthened and light made occulting, this fall.
 Fame Point.—A syren is now being erected and light improved. The syren was expected to be in operation by Sept. 22.

Lower Traverse.—A pier light with fog alarm being erected. The pier is partially completed; the permanent light has been established, and a fog whistle will be in operation in the fall.

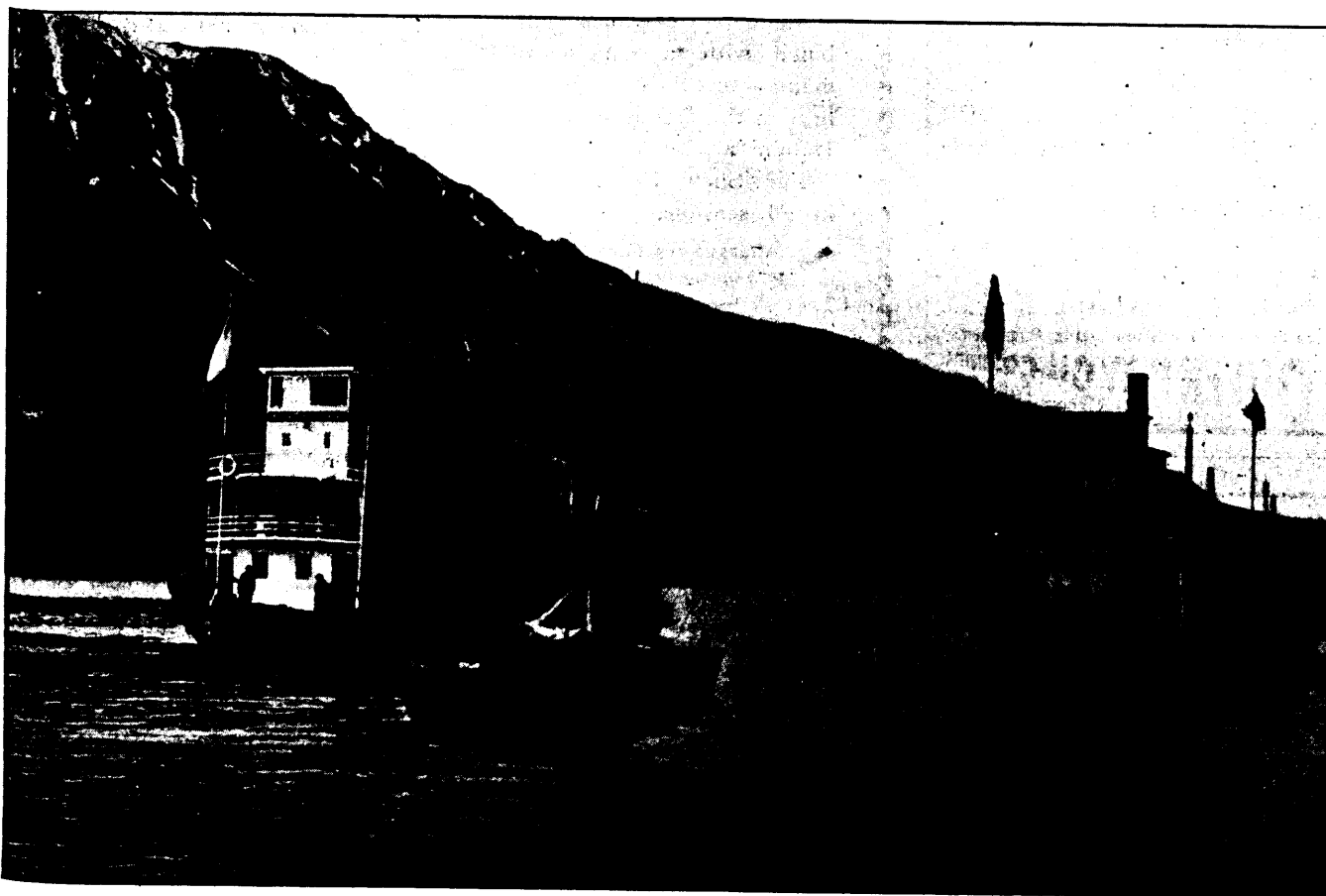
Bellechasse.—Light being made occulting.
 West end of Island of Orleans.—Occulting light was established at this point last autumn to guide vessels on making the turn at Quebec harbour.

With regard to the channel from Quebec to Montreal, the Minister of Marine stated that it was the intention of the Government to mark out each section as the improvements were completed with buoys and range lights. On May 1 three new range lights were established at St. Antoine, and three pairs of range lights were established near Vercheres. Since that date the following additional works had

posed improvements as outlined by the Minister of Marine, one map showing the work in the Gulf and the river to Quebec, and the second the work between Montreal and Quebec.

List of Canadian Shipping.

The Department of Marine has just issued the list of vessels on the registry books of the Dominion corrected up to Dec. 31, 1901. The total number of vessels on the books at that date, including old and new vessels, sailing vessels, steamers and barges, was 6,792, measuring 664,483 tons register tonnage, an increase of 57 vessels and of 4,949 tons register over 1900. The number of steamers on the books on the same date was 2,177 with a



STEAMERS ON LAKE BENNETT, BRITISH COLUMBIA

Entering the St. Lawrence by the Strait of Belle Isle or northern route :—
 Belle Isle.—New lighthouse under construction, and with the syren will be in operation by end of season.
 Cape Bauld or Cape Norman.—One of the fog alarms will be changed.
 Point Amour.—Light has been made occulting.
 East end Anticosti.—Lightship will be placed. Tenders have been asked for it.
 Between the points where these two routes join, namely, Fame Point and Quebec :—
 Matane.—Bell buoy has been placed on extremity of shoal, a syren is being established at station and light improved.
 Father Point.—The light has been improved and a syren is expected to be in operation by end of season.
 Prince Shoal.—This danger at the mouth of the Saguenay has been marked by a combined gas and bell buoy.

been completed between Montreal and Quebec: Gas buoy placed at Longueuil; range lights placed at Varennes; beacons placed at Coutrecœur; gas buoy placed at Batture Simon; back range lights placed at Ste. Croix; and the removal of the semaphore at Cap Santé, where the dredging had been completed, to another portion, so as to show the depth of water over St. Augustine bar, which is now the shoalest point above Quebec. It is proposed to follow up this work, improving the aids to navigation in the dredged cut at Pointe Aux Trembles, and as soon as the deepening of Lake St. Peter is completed to rearrange the lights. The deepening of Lake St. Peter is expected to be completed in two years, and will be well lighted soon after, when there is no doubt that it will be possible to carry on navigation by night as well as by day.

We publish with this issue, as supplements, two maps showing the pro-

gross tonnage of 298,421 tons. Assuming the average value to be \$30 a ton, the value of the registered tonnage in Canada on Dec. 31 last, would be \$19,934,490. Following is a summary showing the number of vessels and number of tons on the books on Dec. 31, 1901:

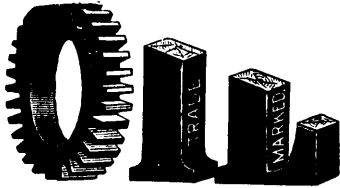
	Sailing ships and steamers.	Steamers.	Gross tonnage steamers.	Net tonnage of sailing ships and steamers
New Brunswick....	915	126	10,303	75,293
Nova Scotia.....	1,980	153	17,764	214,560
Quebec.....	1,265	351	86,805	142,664
Ontario.....	1,635	1,076	110,400	145,227
P. E. Island.....	180	21	3,966	14,729
British Columbia..	676	351	58,465	62,102
Manitoba.....	130	88	6,751	7,445
Yukon district.....	11	11	3,967	2,463
Total.....	6,792	2,177	298,421	664,483

Quebec city has the largest number of vessels on its register, 638, of which 495 are sailing vessels; while Montreal has the largest tonnage, 95,798; and Toronto has the largest number of steamers registered, 220.

Twelve ports show no steamers on the registers, and only one, Dawson, Yukon, shows no sailing vessels.

The number of new vessels built and registered in the Dominion during last year was

335, measuring 34,481 tons register tonnage. Estimating the value of the new tonnage at \$45 a ton, it gives a total value of \$1,551,645 for new vessels. The new vessels were built and registered as follows:



**For Steamboats
AND
RAILWAYS**

Vacuum Oils Reduce Friction, thus saving Coal and preserving Machinery.

VACUUM 600 W. CYLINDER
VACUUM No. 1 MARINE ENGINE (better than Lard)
ELDORADO ENGINE
RENOWN ENGINE
ARCTIC CUP GREASE
MINERAL SEAL OIL

300 Fire Test, for Illuminating Purposes

THE QUEEN CITY OIL CO. LIMITED
SAML. ROGERS PRES. TORONTO

FURS AND HATS

Our stock is now replete with the latest designs, from inexpensive productions to the most luxurious and costly.

Taste and elegance combined with a solidity of manufacture have placed our firm in the first rank in the Dominion.

Fur Show Rooms open at all seasons.

Catalogue and Price List sent on application.

Holt, Renfrew & Co.
TORONTO and QUEBEC.

MANITOBA

The Government Crop Bulletin issued Dec. 13th, 1901, gives the following statistics for the year:

CROPS.

ACRES.	YIELD.	AVERAGE	TOTAL.
Wheat.....2,011,835	25.1 bus.		50,502,085 bus.
Oats.....689,951	40.3 "		27,796,588 "
Barley.....191,009	34.2 "		6,536,155 "
Potatoes...24,429	196. "		4,797,433 "

STOCK.

Number of stock in the Province, July 1, 1901:

Horses.....142,080	Sheep.....22,960
Cattle.....263,168	Pigs.....94,680

Value of Dairy Products.....\$926,314

18,375 FARM LABORERS

Came from Eastern Canada to assist in the harvest fields of Manitoba in 1899—and the demand was not fully satisfied.

MANITOBA FARMERS ARE PROSPEROUS.

Farmers erected, this year, farm buildings valued at one and one-half million dollars.

MANITOBA LANDS—For sale by the Provincial Government. Over 1,600,000 acres of choice land in all parts of the Province are now offered at from \$2.50 to \$5.50 per acre. Payments extend over nine years. **Special Attention** is directed to 500,000 acres along the line of the Manitoba and Northwestern Railway at \$3.50 and \$4.00 per acre.

FREE HOMESTEADS are still available in many parts of the Province.

For full information, maps, etc., **FREE**, address **HON. R. P. ROBLIN**, Minister of Agriculture and Immigration, Winnipeg, Manitoba.
Or **JAMES HARTNEY**, Manitoba Emigration Agt., 77 York Street, Toronto, Ont.

All C.P.R. Agents in

**MANITOBA,
ASSINIBOIA,
ALBERTA and
BRITISH COLUMBIA**

sell through tickets to the Old Country cheaper than if passengers bought railway tickets to New York or Montreal, and then re-booked.

They also sell prepaid tickets to passengers coming from the old country, cheaper than the rate obtainable in Europe, and on favorable terms.

Apply to any agent Port Arthur and west, or to

W. P. F. CUMMINGS,
C.P.R. Offices,
WINNIPEG.

Illinois Central R.R.



Efficiently Serves a Vast Territory

by through service to and from the following cities:

Omaha, Neb.	Chicago, Ill.
St. Paul, Minn.	St. Louis, Mo.
Minneapolis, Minn.	Peoria, Ill.
Hot Springs.	Evansville, Ind.
Memphis, Tenn.	Nashville, Tenn.
Cincinnati, Ohio.	Atlanta, Ga.
Louisville, Ky.	Jacksonville, Fla.
New Orleans, La.	Vicksburg, Miss.

Weekly through service between Chicago and between Cincinnati

AND THE PACIFIC COAST
and three times a week with the **CELEBRATED SUNSET LIMITED.**

Fast and Handsomely Equipped Steam-Heated Trains—Dining Cars—Buffet-Library Cars—Sleeping Cars—Free Reclining Chair Cars.

Particulars of agents of connecting lines, or **C. B. WYLLIE, 220 ELLICOTT SQ., BUFFALO.**

A. H. HANSON, Gen'l Pass'r Agent, CHICAGO

A. E. Ames	A. E. Wallace
E. D. Fraser	H. R. Tudhope

A. E. Ames & Co.

BANKERS,

18 King St. East, TORONTO.

Members of the Toronto Stock Exchange.

Execute orders for the purchase and sale of

Investment Securities.

Buy and Sell

GOVERNMENT, MUNICIPAL AND CORPORATION BONDS.

Transact a

General Financial Business.

THE FIRSTBROOK BOX CO., LIMITED.

CROSS ARMS, TOP PINS, AND SIDE BLOCKS,

TORONTO.

PRINTING

The HUNTER, ROSE CO. Limited
TEMPLE BUILDING — TORONTO

BOOKBINDING

LELAND HOUSE, Winnipeg, Man., W.

D. Douglas, Proprietor. Rooms en suite with baths and all modern conveniences. Rates \$2 to \$4 a day. Special rates for families and large parties, according to accommodation and length of time. Though moderate in price the Leland is first-class in every respect. It is especially adapted to please the commercial trade. It is in the centre of the wholesale and retail district. It is in direct communication with all parts of the city by car lines. It is supplied with the purest spring water from flowing well on the premises.

NORTHERN IRON WORKS,

Winnipeg.

ENGINEERS MACHINISTS FOUNDERS

Manufacturers and Importers of Iron Products. Get our prices before ordering. They are low.

	Vessels.	Tons.
New Brunswick.....	35	1,141
Nova Scotia.....	133	14,660
Quebec.....	43	7,421
Ontario.....	62	2,665
Prince Edward Island.....	6	589
British Columbia.....	62	7,728
Manitoba.....	3	112
Yukon district.....	1	165
	335	34,481

In point of ownership of net tonnage Canada stands eight among the nations, those having over 100,000 tons being as follows:

British, including Canada and the Colonies.....	10,304,338
United States.....	2,318,876
German.....	2,106,885
Norwegian.....	1,393,096
French.....	961,259
Italian.....	947,079
Russian.....	850,695
Canadian.....	664,483
Swedish.....	607,862
Spanish.....	561,668
Japanese.....	510,175
Dutch.....	451,949
Danish.....	387,727
Austrian.....	322,894
Grecian.....	320,797
Turkish.....	235,792
Brazilian.....	168,517
Belgian.....	124,129

The Department's list of shipping is only issued once in three years, the last edition having been printed in 1898. We would suggest to the Minister of Marine the great desirability of issuing it annually. It is of great importance for reference, and to be of real value it should be up-to-date and not behind private publications. A large proportion of the blue books issued annually at Ottawa are of much smaller importance than the list of shipping.

The Blue Book of American Shipping for 1902, published by the Marine Review Publishing Co., Cleveland, Ohio, contains many improvements upon previous issues. In the present one greater attention has been devoted to Canadian shipowners and vessels, with the result that the work is rendered much more valuable than formerly to vessel-owners and shippers in the Dominion. The division of vessel-owners into two sections, those operating vessels on the Great Lakes, and those operating vessels on the coasts and western rivers, is a good one, and the devotion of a section to a list of captains and members of the Shipmasters' Association of the Great Lakes, is a new feature. Among the other useful information given is a list of dry-docks on the Great Lakes with their dimensions; ship and engine builders, naval architects, etc. The list of vessels given is of those operating on the Great Lakes, and those registered in Canada are given under a separate heading; particulars being given of about 800 vessels actually engaged in carrying freight and passengers or in towing.

Beeson's Marine Directory of the North West Lakes for 1902, which has recently been issued by H. C. Beeson, Chicago, contains a number of illustrations of the most recently completed vessels, separate lists of U.S. and Canadian vessels on the Great Lakes, the latter list occupying 17 pages; at the head of the list being a cut of the Niagara Navigation Co.'s str. Corona; a list of vessels lost during the season of 1901, and a large amount of general and legal information of interest and value to vessel-owners, officers and shippers.

U.S. statistics show that there were exported up to Aug. 1, this season, through Canadian ports, 11,613,896 bush. of grain, against 4,899,371 through New York. The Canadian exports showed an increase of 3,034,289 bush. over 1901, and the New York exports a decrease of 4,394,189 bush. from 1901.

Among the Express Companies.

The Western Ex. Co. has opened an office at Garnet, Mich.

The Alaska Pacific Express Co.'s Office at Dawson, Yukon, is the most northerly express office in the world.

The Great Northern Ex. Co. has extended its service over the new line from Marcus to Republic, Wash., part of which line is in B.C.

E. J. Harding, chief clerk in the Dominion Ex. Co.'s St. Thomas, Ont., office, has left the service and has entered that of the C.P.R.

The Canadian Ex. Co. has opened offices at Cedar Springs and Darlington, Ont.; and has closed its offices at Alton and Port Hastings, N.S.; and Lacolle Jct., Que.

The Dominion Ex. Co. has opened offices at Gutelius, Steveston, Gerrard and Trout Lake City, B.C.; St. David, Me.; Rockcliffe, Ont.; Morin Flats, and La Valtrie, Que.

The Alaska Pacific Ex. Co. has opened an office at Valdez, Alaska, and is operating a service on the Pacific Clipper Line steamer calling at intermediate Alaskan ports to Valdez.

The Western Ex. Co.'s stock, \$25,000, appears as an asset in the annual statement of the Minneapolis, St. Paul and Sault Ste. Marie Ry. Co. just issued. The express earnings for the year ended June 30, 1902, were \$101,723.52.

The Canadian Ex. Co. has extended its service over the 60 miles of the Inverness Coal and Ry. Co. from Port Hawkesbury to Broad Cove, N.S., and has opened offices at several stations on the line, the agents also acting as express agents.

The Canadian and Dominion Ex. Co.'s on Sept. 1, 1902, cancelled the printed matter special rate heretofore in force of 4c. a pound (5 lbs. and under), with a minimum of 7c., and substituted the following:—1½ lb., 10c., and 1c. for each additional 2 oz. or fraction thereof, with a minimum charge of 10c.

The C.P.R. Co.'s annual report for the year ended June 30, 1902, includes among the miscellaneous securities and investments the Dominion Ex. Co.'s stock amounting to \$113,750, which represents the cost of the original equipment and organization. All this stock is held in the C.P.R. Co.'s treasury.

The Canadian Northern Express Co. has extended its service over the C. N. Ry. from Fort Frances to Port Arthur, Ont., and has opened offices at Mine Centre, Atikokan, Kashabowie, Fort William and Port Arthur, and also over the Carman branch, with offices at Homewood, Sperling and Carman, Man.

The Canadian Northern Ex. Co. has adopted a form of money order, series A. The interchange of money orders is now authorized between all offices of the Canadian Northern, Dominion and Canadian Ex. Co.'s and agents have been authorized accordingly. The money orders of the Canadian Northern Ex. Co. are also payable at par at any branch of the Canadian Bank of Commerce.

Telegraph and Cable Matters.

The C.P.R. telegraph department is stringing a wire from Lardo to Trout Lake, B.C.

The Commercial Cable Co. has declared the usual quarterly dividend of 1¼%, payable Oct. 1.

The C.P.R. telegraph department has installed a commercial wire between Leamington and St. Thomas, Ont.

The C.P.R. Telegraph department purposes stringing a new copper wire between Calgary and Edmonton.

The U.S. cable from Skagway to Juneau, Alaska, is reported to have been so badly laid that it is useless, and that a new cable will have to be constructed and laid.

Permanent stations and houses for the operators are being constructed at Chateau bay, and other points on the Government line along the Gulf of St. Lawrence.

The Dominion Government telegraph line between Port Essington and Aberdeen, B.C., about 5 miles apart, on opposite sides of the Skeena river, has been completed.

C. H. Mackay, of the Postal Telegraph Co., denies the press reports that negotiations are in progress for the amalgamation of the Postal and the Western Union Telegraph Companies.

D. H. Keeley, Superintendent of the Government Telegraph Service, states that he prefers the Marconi system of wireless telegraphy to the cable system for use at the straits of Belle Isle.

J. E. Dicketts, for some years connected with the Direct Cable Co., at Halifax, N.S., has been appointed chief operator at the Fanning island station of the all-British Pacific cable, now being laid.

On appeal to the County Court Judge the value of the G.N.W. Telegraph Co.'s real estate in Collingwood was fixed at \$250 for tax purposes. The assessor wished to raise it to \$1,000.

A steamer is on the way from London, Eng., with 2,400 miles of cable to be laid from San Francisco, Cal., to Honolulu. This is the first section of the Commercial Cable Co.'s cable from the U.S. to the Philippines.

A telegraph line 70 miles in length is in course of construction for the Dominion Government from 150 mile house, Cariboo road, and Quesnel Forks, via Horsefly, B.C. J. C. Shields, of Ashcroft, B.C., has the contract.

The break in the cable laid in 1901 between Belle Isle, Nfld., and the mainland at Chateau bay, has been repaired. It is reported that the wireless telegraph apparatus between the same two points is in perfect working order.

The U.S. Government telegraph line from Valdez, Alaska, to the Canadian boundary, near Dawson, Yukon, is reported to be completed, and a system of wireless telegraphy has been adopted from Valdez to St. Michael, Alaska.

The new copper wire being strung by the C.P.R. telegraph department between Sydney, N.S., and Montreal, will eventually be used for the transmission of messages across the Dominion, in connection with the trans-Pacific cable now being laid.

The Department of Public Works is building a number of telegraph stations on the Labrador coast and on Anticosti island, where messages will be received and transmitted by the Marconi wireless system. F. Breton is in charge of the work.

The Government str. Tyrian has recently completed laying six miles of cable between Scatari island and Main à Dieu, N.S.; a similar length of cable, to replace overhead wires, on the sand banks at Magdalen islands. The cable to connect the Magdalen islands with Anticosti island is expected to be laid this fall.

Some difficulties between the linemen and operators on the Government telegraph line to Dawson and the Superintendent having been reported, J. B. Charleson, who had charge of construction of the line, has gone to Dawson to investigate the trouble and effect a settlement on the part of the Department of Public Works.

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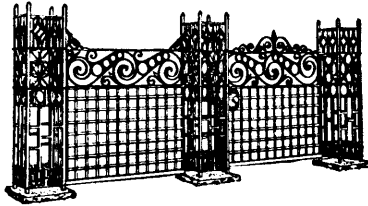
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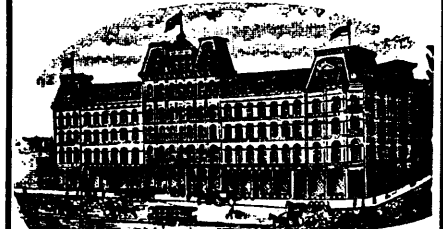
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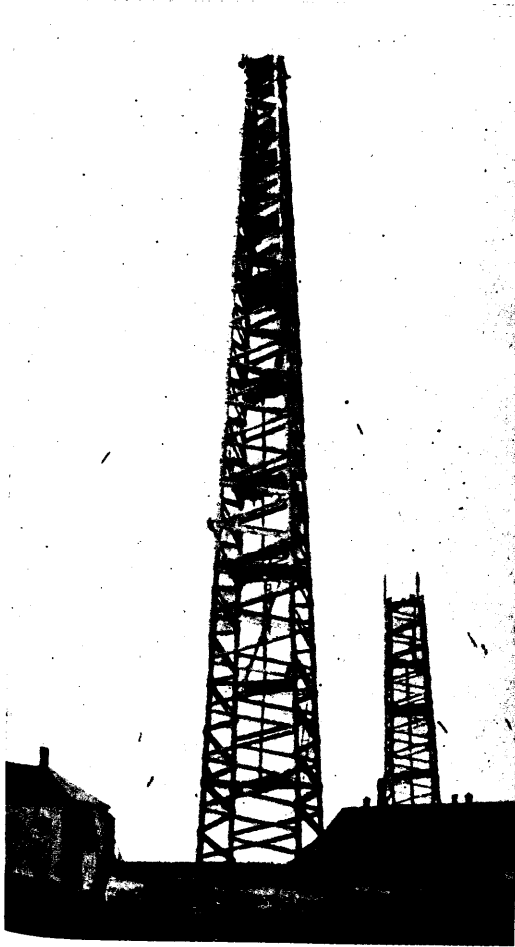
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ONE OF THE MARCONI TOWERS, SHOWING DETAILS OF CONSTRUCTION.

The G.N.W. Telegraph Co. has opened the following new offices:—Bala, Kintail, Lochlin, and Prairie Siding, Ont.; Charettes Mills, De Lotbiniere, Notre Dame du Portage, Rosseau's Mills, and Salmon Lake, Que. The following offices have been closed:—Fairfax and Myrtle, Man.; Kenilworth and Millington, Ont.; Riviere du Chene (now De Lotbiniere); and St. Audre Jct., Que.

The Dominion Department of Public Works has let contracts for the following additional lines in Nova Scotia:—St. Peter's to Main à Dieu, 84 miles, Ahearn & Soper (Ltd.), Ottawa; Gaberouse to North Sydney, 35 miles, and Mabou to Port Hawkesbury, 40 miles, R. McInnes, Port Hood, N.S.; St. Peter's to Port Hawkesbury, 30 miles, and from Port Mulgrave via Guysboro to Canso, 55 miles, to M. Cameron, Mabou, N.S.

In connection with the proposed pension fund for telegraphers a meeting was held in New York, Aug.

18, at which letters were read from C. R. Hosmer, C.P.R., and H. P. Dwight, G.N.W. Telegraph Co. Mr. Hosmer referred to the fact that the C.P.R. shareholders had authorized the establishment of a pension fund for its employees, and added that the details of a plan to this end were now being worked out by the officials of the Co., consequently its employees would have to be left out of the proposed scheme. Mr. Dwight stated that the necessity for some such plan was apparently greater in the U.S. than in Canada; "if any plan can be reached in the interest of all concerned we shall be very glad to take our part in the matter."

The cable str. Colonia, with the 3,500 miles of line to connect Bamfield Creek, Vancouver island, with Fanning island, the mid-ocean station of the all-British Pacific cable, started work paying out the cable early in Sept., and will proceed laying it at the rate of 150 miles a day. It is expected that the work will be completed by Dec. 1, by which time the section from Suva to Fanning island will also be completed. The contract calls for the handing over of the cable in complete working order by Dec. 31. The land lines on Vancouver island in connection with the cable are nearly all completed, as well as the station and the houses for the manager and operators. The instruments have all arrived and have been installed. The receivers are of the siphon recorder and mirror type, invented by Lord Kelvin, the most modern and expensive cable instrument. On the short sections of the line between Suva and Australia, at least, Muirhead's duplex system, by which two messages, one from each end, pass through the wire simultaneously, will be employed.

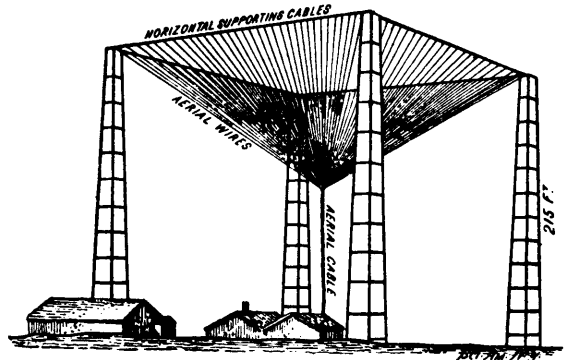
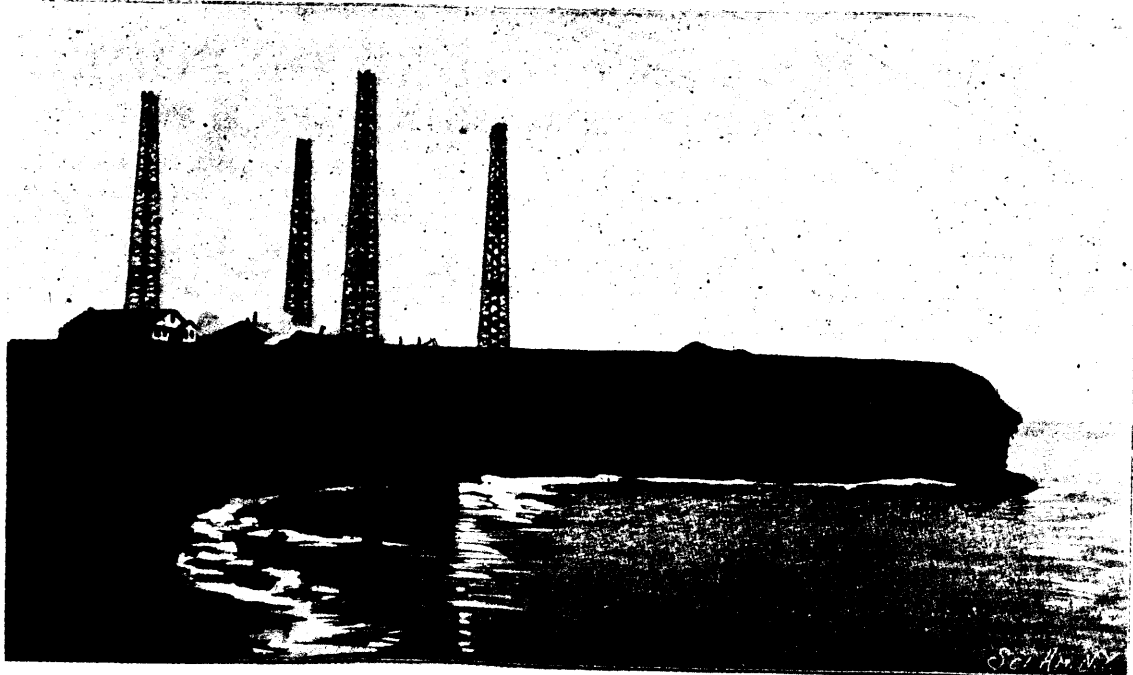


DIAGRAM SHOWING METHOD OF STRINGING THE 150 AERIAL WIRES AT THE MARCONI STATION AT GLACE BAY.

The Nova Scotia Wireless Telegraph Station.

Immediately after the first successful transmission of signals across the ocean by the Marconi wireless system, the work of constructing three stations, two in America and one in England, for the regular transmission of commercial messages, was put in hand. The English station is situated at Poldhu, Cornwall. On this side of the ocean the station used in the original experimental work was erected on a lofty point at the entrance to St. John's harbor, Newfoundland, but on account of the opposition of the Anglo-American Telegraph Co., which holds a monopoly of transatlantic telegraphic rights in Newfoundland, Marconi abandoned that site and selected two new locations, one on the easterly coast of Cape Breton, N.S., and the other at Cape Cod, Mass. The station at Glace Bay, N.S., of which illustrations are given, is located on a promontory, whose surface lies about 70 ft. above mean high water. The plant consists of four huge towers for carrying the vertical wires, and a group of one-story buildings arranged at the base of the towers, in which are contained the powerful electrical plant which has been specially constructed for the station.

The towers take the place of the familiar single mast that is used where transmission is to be conducted over moderate distances.



THE NEW MARCONI WIRELESS TELEGRAPH STATION AT GLACE BAY, NOVA SCOTIA.

For the regular transmission of commercial messages over distances measured by the thousand miles a vastly greater capacity is necessary, both in the generation and the reception of the Hertzian waves, than suffices for the ordinary messages over from 50 to 100 miles, of which we have heard so much of late. Hence the truly gigantic proportions of the aerial system which is herewith illustrated. The necessary height for the vertical wires has been attained by the erection of four braced wooden towers, each 215 ft. high, at the four corners of a square which measures about 200 ft. on a side. Each tower consists of four legs, built up of 3 x 12-in. plank, the legs being braced together on each face of the tower by 3 x 9-in. braces. The planking of which the legs are built is laid up so as to break joints as much as possible and secure the approximate strength of a solid 12 x 12-in. stick. The legs are spaced 30 ft. from center to center at the base and 9 ft. from center to center at the top platforms. The foundation of each tower consists of a mass of concrete formed in a hollow square, in which are embedded the 12 x 12-in. sills and the first panels of the lateral bracing. In section this concrete mass is 6 ft. in width by 8 ft. in depth, the external dimensions of the foundation being 36 x 36 ft. and the internal dimensions 24 x 24 ft.

The experience had with previous attempts to carry a set of lofty aerial wires, more particularly that at Cape Cod, which was wrecked in a heavy gale, proves that the weakest feature in those structures was the system of guy-ropes with which they were held in position. The fall of the Cape Cod structure was due to the parting of the extreme weather guy-ropes, the method of tying the towers adopted having been such that practically the whole strain fell upon a few stays. In the present case the towers are tied in such a way that the stress on each tower will be transmitted directly to its own set of cables, every one of which will be doing useful work. The wires are carried from three points on the towers (the lower and upper third and the summit), all wires having an inclination of 45°. The ropes are all made of the best plow steel, the majority of them being 2½ in., and a few 3 in. The method of carrying the aerial wires upon the structure is as follows: Four 3-in. cables are strung from platform to platform at the top of the towers, as shown in the accompanying diagram, and from these cables depend 150 aerial wires. These are drawn together and united in the center of the tower into a single cable, which descends vertically to enter the transmitting and receiving house below. The average length of the aerial wires before they meet in the common central cable is about 140 ft.

During a recent visit of the writer to the Nova Scotia station Mr. Vyvyan, the engineer in charge of the station, stated that Marconi has ceased to use the coherer and has substituted a receiver of much greater reliability and capacity. It was always difficult to secure an absolutely reliable coherer of the old type, since out of a hundred of these little instruments 30 or 40 might be good, 30 would be poor and 30 would be absolutely unusable. The new method of receiving adopted by Marconi has a capacity, should it be required, of several hundred words a minute. This improvement, taken with the great power and capacity of the plant, render it practically certain that, when in the course of a few weeks the station is opened, it will prove to be capable of dealing with any class of commercial messages that may be required. Mr. Vyvyan further stated that it would be possible to send and receive messages to and from San Francisco, the earth resistance being very much less than is popularly supposed. The power of the new installation was far greater than would be demanded for transmission to Europe, and it is probable that be-

fore the close of the present year messages will be sent direct from Cape Breton or Cape Cod to Cape Town, South Africa.

General Telephone Matters.

The Bell Telephone Co. has declared a dividend of 2%, payable Oct. 15.

The Bell Telephone Co. is stringing a new line between Lindsay and Bobcaygeon, Ont.

The telephone system on Vancouver Island has been extended to the Tyee mine at Mount Sicker.

H. C. Jenks is the proprietor of the private exchange of 50 telephones recently installed at Parrsboro', N.S.

The Bell Telephone Co. has completed the laying of its wires underground on a number of the streets of Brantford, Ont.

The Bell Telephone Co. has considerably improved its service in Prince Albert, Sask. A night and day service is now provided.

W. J. Galliford, Inspector of the Bell Telephone Co. at Ingersoll, Ont., has been appointed to a similar position in London, Ont.

The Bell Telephone Co. has purchased 31 and 33 Temperance St., adjoining the present premises in Toronto, for the purpose of extending its exchange facilities.

The Bell Telephone Co. is adding an additional story to the building on Aqueduct st., Montreal, occupied by the Northern Electric Manufacturing Co., at a cost of \$20,000.

The Tilsonburg, Lake Erie and Pacific Ry. Co. has strung a line between Tilsonburg and Port Burwell, Ont., and will use the telephone instead of the telegraph for the operation of its line.

The Dominion Coal Co. has completed the installation of a telephone system, comprising 75 instruments, at its mines at Glace Bay, N.S., and connected with the Eastern Telephone Co.'s lines.

A short private line has been operated for some time between Smithdale and Singhamp-ton, Ont., and a project is now under consideration to extend it to Collingwood, via Duntrou and Nottawa.

A committee appointed by the Hamilton city council has been visiting a number of cities in the U.S. where independent telephone companies are being operated, and will report to the council.

The Yukon Electric Co. (Ltd.) has taken over the telephone lines in Whitehorse, Yukon Territory, and has reduced the charges to \$1.25 a week for instruments in business houses and 75c. a week in residences.

The Eastern Telephone Co. has moved into its new offices in Sydney, N.S. The switchboard from the old exchange was put in temporarily, while the new one was being installed by the Northern Electric and Manufacturing Co.

The Toronto city engineer reports that during 1901 the Bell Telephone Co. laid 41,000 feet of underground ducts, and recommends that the council employ a competent electrical engineer to supervise this and other electrical work in the city.

The Bell Telephone Co. has been refused by the Judicial Committee of the Privy Council, leave to appeal from a decision of the Ontario Court of Appeal fixing the basis of the assessment of the property of the corporation by the Toronto city council.

E. S. Harrison, of Winnipeg, has entered into a contract with the Carberry, Man., town council to install a telephone system by Sept. 1, 1903, and to construct branch lines to Pleasant Point, Wellwood, Brookdale and intervening points by Jan. 1, 1904.

The Bell Telephone Co. purposes putting in an extended switchboard at its Winnipeg exchange. There are over 1,900 telephones connected with the exchange, and the daily number of calls averaged 27,439.

C. F. Sise, Jr., Superintendent of the Bell Telephone Co.'s toll lines, has been over the route between Calgary and Edmonton, Alberta, but is of opinion that the present business outlook is not favorable to the establishment of a long distance line between the two points.

A private telephone line is in operation on Big Island, adjoining the mainland, and a portion of Sophiasburg, including the villages of Northport and Demorestville, Prince Edward county, Ont. The rate charged is \$8 a year. It is hoped shortly to extend the line to Pictou.

The Nova Scotia Telephone Co. has put in a new exchange at River Herbert, which is connected with Amherst by a metallic long distance line. New long distance lines have been completed from Amherst to Springhill; from Oxford to Pugwash; from New Glasgow to Pictou; and from Mahone Bay to Lunenburg. A new exchange has also been put in at Tatamagouche.

The Nipissing Telephone Co. (Ltd.) has been incorporated under the Ontario Companies' Act, with a capital of \$5,000, to construct a telephone line in Sturgeon Falls, Ont., and from Sturgeon Falls to Cache Bay, and other points in the Nipissing district. The provisional directors are C. W. Rantoul, O. Aubin, A. J. Young, G. Gordon, H. E. and T. E. McKee, L. E. Bolster.

In connection with the building of a line from Winnipeg to the U.S. boundary, C. F. Sise, Jr., Superintendent of the Bell Telephone Co.'s toll lines, stated that a branch line will be strung from this main line at Rosenfeld Jct., to Morden, and that stations will be opened at Plum Coulee, Winkler, Gretna, Rosenfeld, Morris and La Salle. Mr. Sise also states that additional circuits will be built as far as Portage la Prairie, and that offices will be opened at Oakville and Eli.

J. H. Young and T. A. McDermott, two young farmers on St. Joseph's Island, near Sault Ste. Marie, Ont., installed a telephone between their houses, and gradually extended the system until there are now 70 miles of line on the island. The line is worked on the bridging system, each subscriber buys his own telephone at a cost of \$15, pays \$1.50 for installing it, and \$5 for his share of poles, wires and insulators, making \$21.50. The annual cost is divided up among the subscribers. The officers of the Co. are: President, J. Campbell; Secretary, J. H. Young; Treasurer, A. Grexton; other directors, J. Robinson, and F. H. Court. T. A. McDermott is the electrician and had charge of the construction of the line.

The special committee appointed by the Ottawa city council to consider the question of establishing a municipal telephone system, has recommended that this be not done, but that a new agreement be entered into with the Bell Telephone Co. on the following terms: An annual cash payment of \$4,000 to the city and an increase at the rate of \$2 a 'phone when the subscribers exceed 2,500. The rate for stores is to be \$40 a year, for residences \$25, with a reduction to \$20 where three-year contracts are entered into. The Co. to have the right to erect, under supervision of the City Engineer, poles as much higher than 40 ft. as may be necessary in place of the smaller poles. The latter, however, will be permitted for distribution purposes.

The Canada Atlantic Ry. has completed a metallic circuit between Ottawa and Depot Harbor, Ont., 265 miles. The work was started from the Ottawa end by the C. A. Ry.'s telegraph department, and from the

Depot Harbor end by R. Anderson, of Ottawa, early in July, and the line was in operation Aug. 15. Of the 265 miles, the Co.'s men strung 201 miles and Mr. Anderson the remaining 64. The particulars of the circuit are as follows: Metallic circuit Ottawa to Depot Harbor, 265 miles. No. 14 copper wire strung on telegraph poles, 35 to the mile. Transposed every mile, except three miles in the City of Ottawa, where the transposition takes place every quarter mile to overcome induction from the many power lines in the neighborhood over which it crosses, etc. The line is equipped with long distance phones at Ottawa, Madawaska, 130 miles west of Ottawa, and Depot Harbor. No special difficulties were met with in the construction of the line, which was built under the supervision of F. L. Lamplough, the Co.'s Supt of Telegraph Lines at Ottawa. No serious trouble in operating this wire is anticipated, and it is believed it will be of great use in handling the Co.'s business to all agents and the yards and office about Ottawa.

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- H. PARRY**, Genl. Agent, BUFFALO, N. Y.
- GEORGE H. DANIELS**, Genl. Passr. Agent, Grand Central Station, NEW YORK.

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To New York, Philadelphia, Atlantic City, Baltimore, Washington and the South. The Grand Trunk Railway in connection with the

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The Co. has direct connection with all stations east of Ottawa over the Bell Telephone Co.'s lines as far as Valleyfield, 87 miles east of Ottawa. This line will be worked in conjunction with the Co.'s private system in Ottawa, but we were advised, Sept. 22, that the connections had not been made, and that the circuit had worked with great quickness and satisfaction.

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Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns, and by responsible and worthy financial, fiduciary and business corporations. Specific terms may be obtained by addressing the Company at any of its offices.

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(Continued from third page of Cover.)

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James Cooper. Montreal.
Rice Lewis & Son. Toronto.
W. H. C. Mussen & Co. Montreal.
- Tramway Equipment**
James Cooper. Montreal.
J. J. Gartshore. Toronto.
- Trucks (Electric Car)**
Baldwin Locomotive Works. Philadelphia, Pa.
Canada Switch and Spring Co. Montreal.
- Trucks (Warehouse and Express)**
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- Turntables**
Dominion Bridge Co. Montreal
- Varnishes**
McCaskill, Dougall & Co. Montreal.
- Vessels**
Polson Iron Works. Toronto.
- Waste**
Rice Lewis & Son. Toronto.
N. L. Piper Ry. Supply Co. Toronto.
The Queen City Oil Co. Toronto.
- Wheelbarrows**
James Cooper. Montreal.
Rice Lewis & Son. Toronto.
- Window Blinds**
The Hudson's Bay Company.
- Wines and Liquors**
The Hudson's Bay Company.
- Wire & Wire Rope**
Dominion Wire Rope Co. Montreal.
Rice Lewis & Son. Toronto.
W. H. C. Mussen & Co. Montreal.
The Wire and Cable Co. Montreal.
- Wire, Copper**
E. F. Phillips Electrical Works, Ltd. Montreal.
- Wire, Electric**
E. F. Phillips Electrical Works, Ltd. Montreal.
The Wire and Cable Co. Montreal.
- Wire, Insulated Copper**
E. F. Phillips Electrical Works, Ltd. Montreal.
- Wire, Telegraph and Telephone**
E. F. Phillips Electrical Works, Ltd. Montreal.
The Wire and Cable Co. Montreal.
- Yachts**
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Boiler Iron Works Polson Iron Works Toronto.	Life Insurance Independent Order of Foresters Toronto. Travelers' Insurance Co. Montreal.	Station Name Signs Acton Burrows Co. Toronto.
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Cables, Electric The Wire and Cable Co. Montreal.	Locomotives (Steam) Baldwin Locomotive Works, Philadelphia, Pa.	Steel Rice Lewis & Son Toronto.
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Chains Rice Lewis & Son Toronto.	Milepost Numbers Acton Burrows Co. Toronto.	Telegraph Office Signs Acton Burrows Co. Toronto.
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Fencing Page Wire Fence Co. Walkerville, Ont.	Rails (New) James Cooper Montreal. J. J. Gartshore Toronto. Rice Lewis & Son Toronto.	Window Blinds The Hudson's Bay Company..... Toronto.
Ferry Signs Acton Burrows Co. Toronto.	Rails (for relaying) James Cooper Montreal. J. J. Gartshore Toronto.	Wines and Liquors The Hudson's Bay Company..... Toronto.
Flags Rice Lewis & Son Toronto. The Hudson's Bay Company..... Toronto.	Rail Saws F. E. Came Montreal.	Wire & Wire Rope Rice Lewis & Son Toronto. The Wire and Cable Co. Montreal.
Foghorns Rice Lewis & Son Toronto.	Rope Rice Lewis & Son Toronto. The Hudson's Bay Company..... Toronto.	Yachts Polson Iron Works Toronto.
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