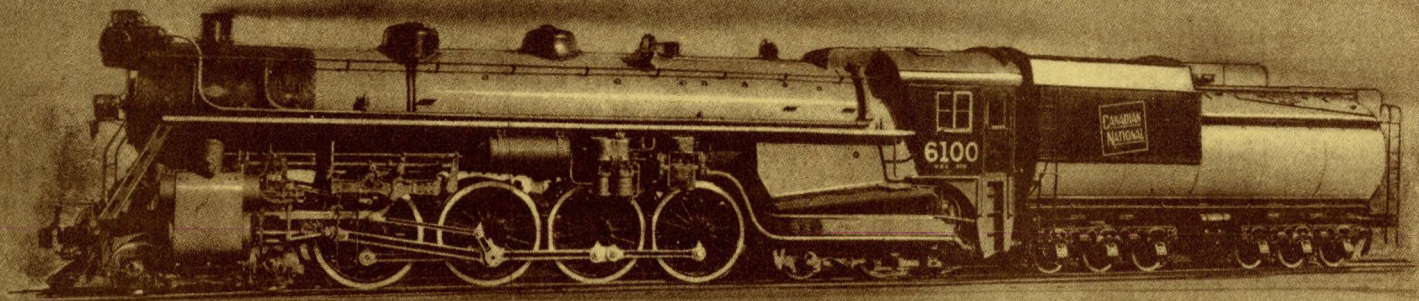


# MODERN TRAVEL IN CANADA



*The "Confederation" — new type Canadian National locomotive, one of the most powerful in the world, shown at The Fair of the Iron Horse, Baltimore, Md., September 24th to October 8th*

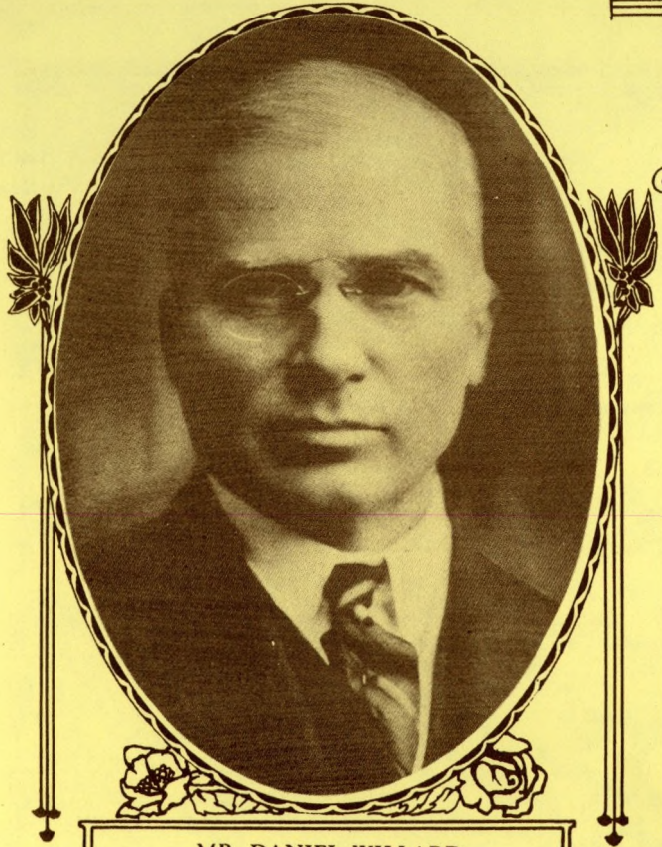
## THE CANADIAN NATIONAL RAILWAYS

*The Largest Railroad System in America.*

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# FOREWORD—



MR. DANIEL WILLARD  
President  
*The Baltimore and Ohio Railroad*

IN the pageant of a century of railroad progress marking the centenary of the Baltimore and Ohio Railroad, the Canadian National Railways, embracing within its trackage the first railway line built and operated in Canada, is keenly interested. Its Chairman and President, Sir Henry W. Thornton, accepted the invitation of Daniel Willard, President of the Baltimore and Ohio, to exhibit at the Fair of the Iron Horse one of the Canadian National Railways' 6100 class locomotives, the last word in motive power, and one of the new six-cylinder oil-electric cars devised by engineers of the National System.

On the first railway which was operated in Canada it was necessary to call upon the Baltimore and Ohio for the loan of an engineer to solve a difficult operating problem of that day. In adopting steam as a means of locomotion, Canada had not been far behind England and the United States. It was in 1832—seven years after the opening of the Stockton and Darlington Railway in England and five years after the inauguration of the first railway line in the United States—that the Legislature of Lower Canada granted a charter for the construction of the Champlain and St. Lawrence Railway, from the south shore of the St. Lawrence River, opposite Montreal, to St. Johns, sixteen miles distant, on the Richelieu River, to improve communication between New York and Montreal.

Construction of this line was commenced in 1835. In July of the following year the wooden rails, with thin, flat bars of iron protecting their

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## —The B. & O. and the C.N.R.

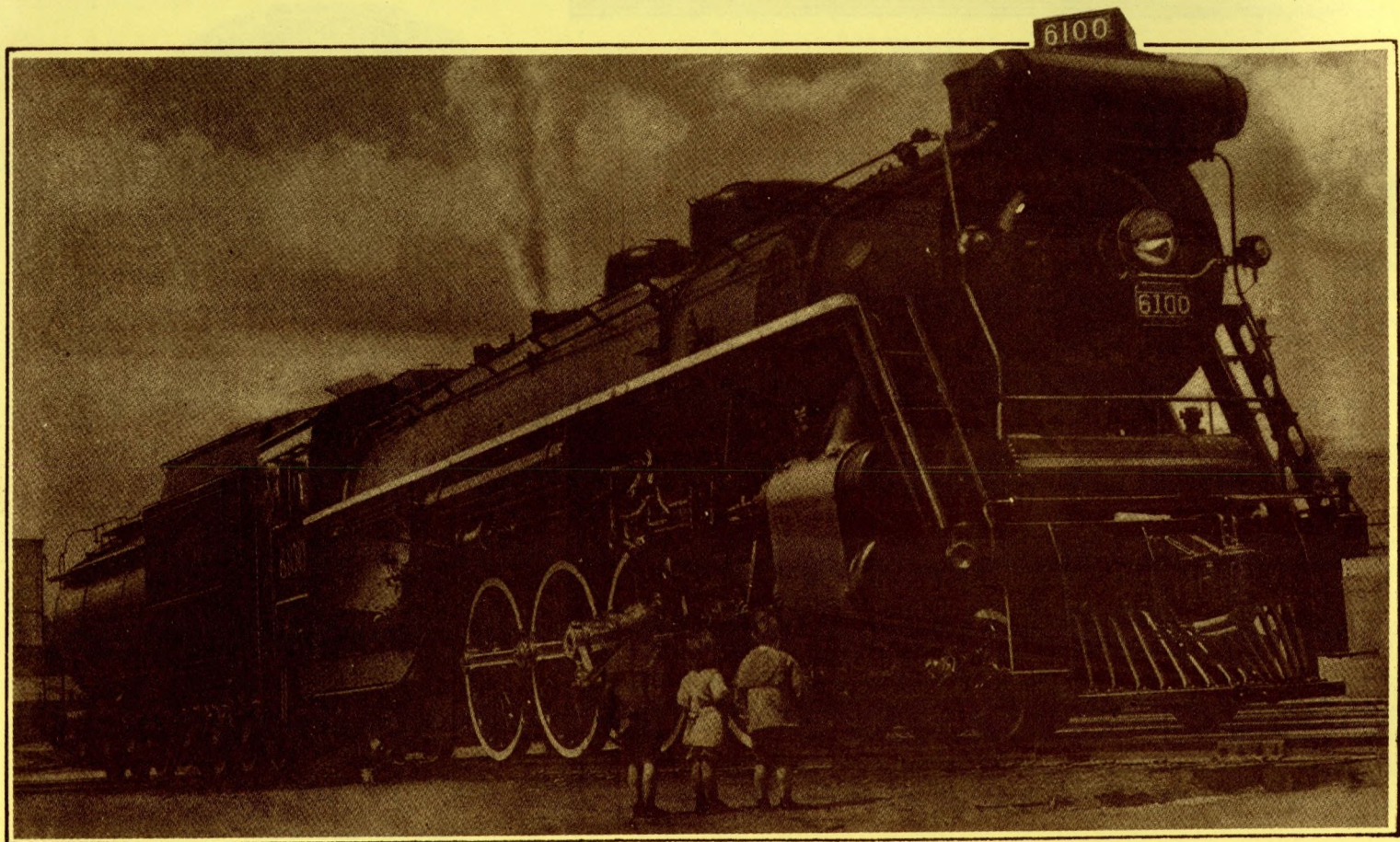
surface, were laid between the two terminals, and the first trains over the route were hauled by horses. The following year, "The Kitten," a locomotive from England, was placed on the rails. The engine was tried out under cover of darkness, and "The Kitten" refused to move. In the meantime, the Baltimore and Ohio had been successful in the operation of steam locomotives, and an engineer was brought to Canada from that line. Like the experienced garage employee who always looks for the empty gasoline tank in a stalled automobile, this engineer discovered that all "The Kitten" needed was more fuel and water. When these were supplied the locomotive developed a speed of twenty miles per hour.

From these humble beginnings grew the network of lines now comprised within the Canadian National Railways System, the largest in America, operating nearly 23,000 miles of line, with the complement of express, telegraphs, steamships, hotels and other services required for a complete transportation system. The Canadian National today is playing an important part in the development of the Dominion of Canada, and is also a great International carrier, serving through its Grand Trunk and Central Vermont lines many large centres of the United States. Its motive power, passenger and freight car equipment are the most up to date which can be constructed and its watchword, in the words of its President, Sir Henry W. Thornton, is:

*"Success by Service"*



SIR HENRY W. THORNTON  
Chairman and President,  
The Canadian National Railways



*When the first locomotive of the "6100" class emerged completed from the shops at Kingston, Ontario, she was a source of wonderment to local children who had seen many large locomotives built in their native city*

# THE "CONFEDERATION"—*One of a Great Fleet of Super-Locomotives*

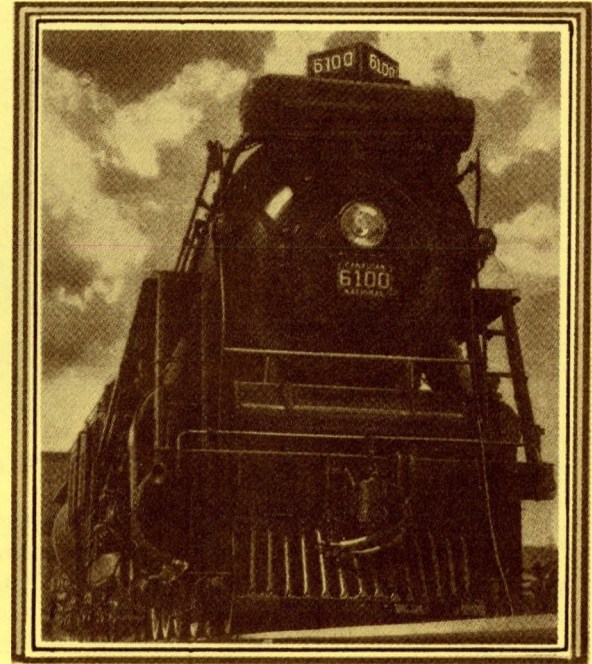
ONE of the greatest fleets of super-locomotives built for any one railroad system during recent years has been placed in service on the Canadian National Railways.

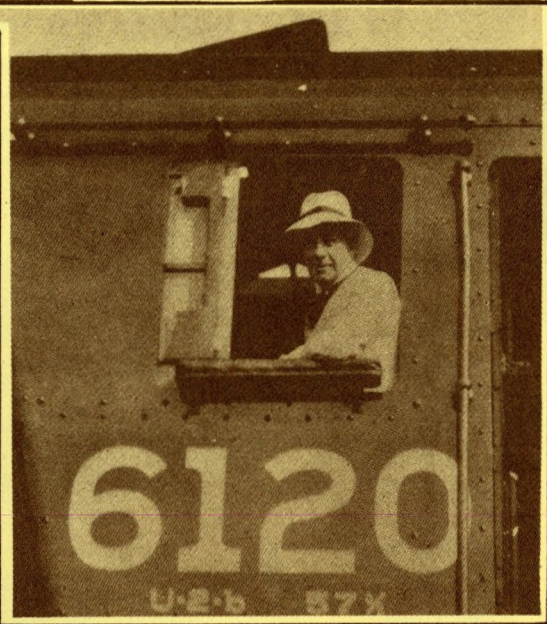
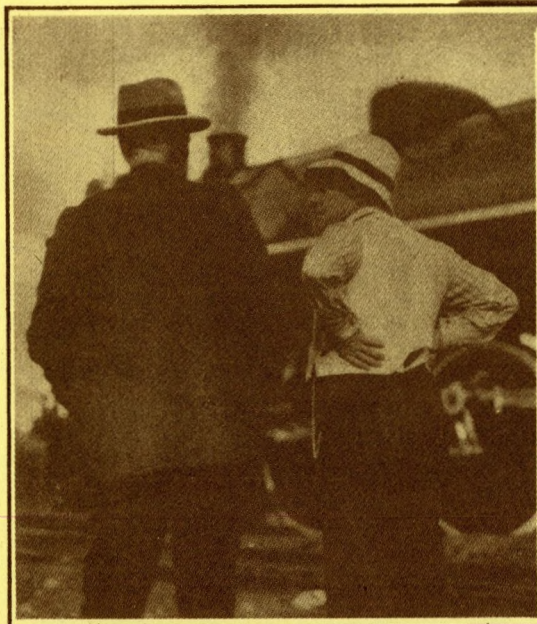
A century of time has witnessed marvelous strides in the development of rapid transportation facilities within the Dominion of Canada. From "The Kitten," the first locomotive operated in the Dominion, to the 6100 type of the Canadian National Railways, largest and most powerful locomotive in Canada and the British Empire, is a far stretch, but it has been bridged by men of vision who have striven to meet Canada's need of rapid travel. The development of adequate transportation facilities has been vital to the growth of the Dominion, and to meet that necessity has been the aim of the designers and builders of the powerful locomotives, of which the "Confederation," on exhibition at the Fair of the Iron Horse, is an example.

Canadian in their design and workmanship are the engines of the 6100 class. Forty of these Titans of the Steel Rail are being constructed and placed in service this year on the lines of the Canadian National in Canada, while another twelve have been built in the United States for service on Grand Trunk lines between Port Huron, Detroit and Chicago.

The 6100 Northern type locomotive is designed for use in fast passenger and manifest freight service on the National System. With tender, this locomotive weighs 326 tons, its length is approximately 94 feet and its height 15 feet 4 inches. This locomotive can handle a train of twelve all-steel cars, such as are used in the Canadian National transcontinental and international passenger services, at a speed of 80 miles an hour when necessary.

Ten of these locomotives are equipped with the "Booster" which gives remarkable hauling capacity. The locomotive is capable of developing more than 3200 horse-power. Its tender carries 20 tons of coal and 13,800 gallons of water. It will operate from Montreal to Sarnia, a distance of 511 miles, the longest continuous run without engine change in Canada, and from Port Huron to Chicago.





## *British Premier Interested in British Empire's Largest Locomotive*

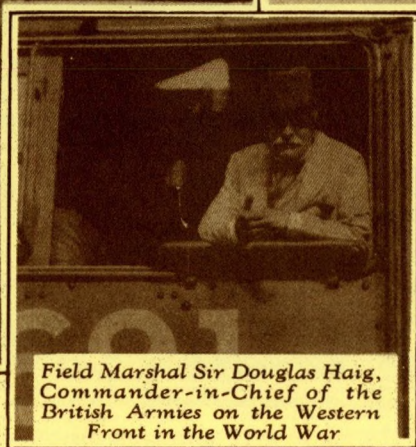
**R**IGHT HON. STANLEY BALDWIN, Prime Minister of Great Britain, during his recent visit to Canada, displayed great interest in the new "6100" Northern Type Locomotive which had just been built for the Canadian National Railways, and which was hauling the Royal Train carrying the Prince of Wales and Prince George.

Mr. Baldwin entered the cab of this monster of the rails near Toronto, and took a lesson in engine driving. At the left Premier Baldwin is shown inspecting the engine; in the centre he is seen chatting with a Canadian National equipment inspector, and at right, in the engine cab.

# Noted Travelers Impressed by Giant C. N. R. Engines



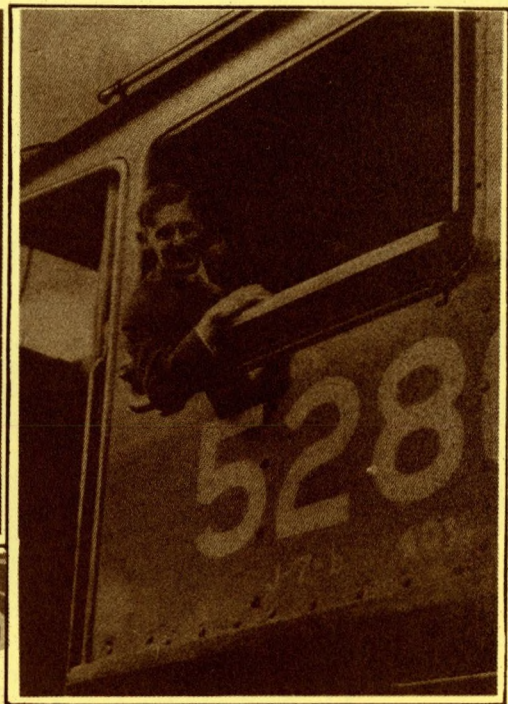
Captain Raoul  
Amundsen, famous  
polar explorer



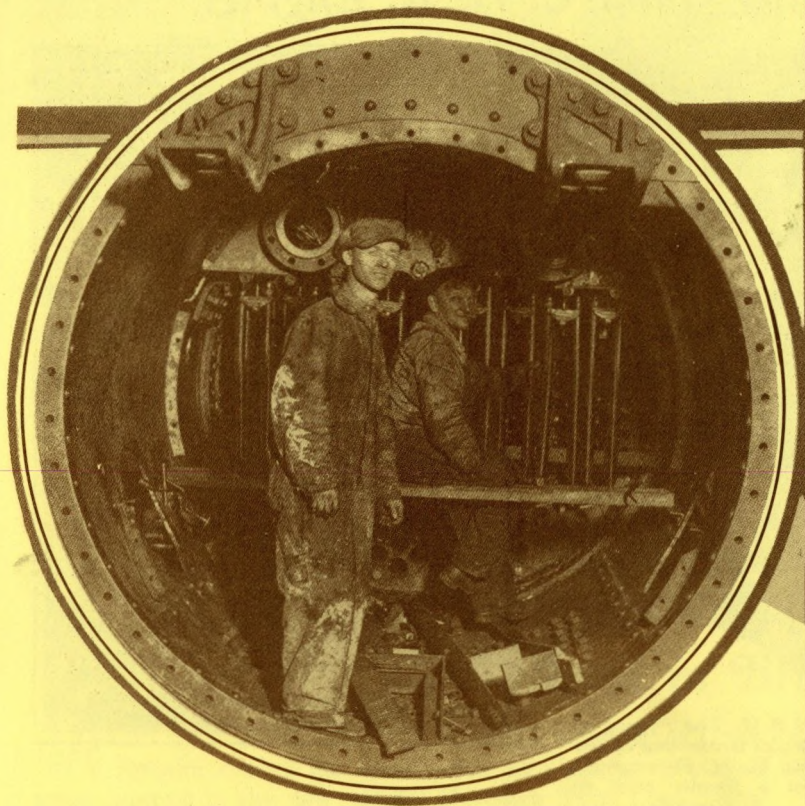
Field Marshal Sir Douglas Haig,  
Commander-in-Chief of the  
British Armies on the Western  
Front in the World War



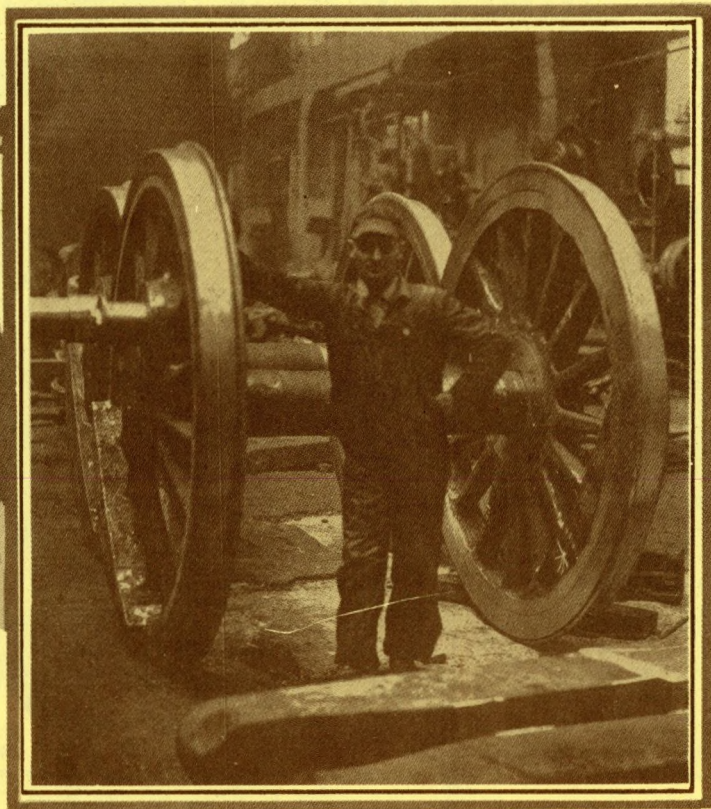
H.R.H. The Prince of  
Wales drove one of the  
big C. N. R. engines,  
on a former visit to  
Canada



Prince Nicholas of Roumania

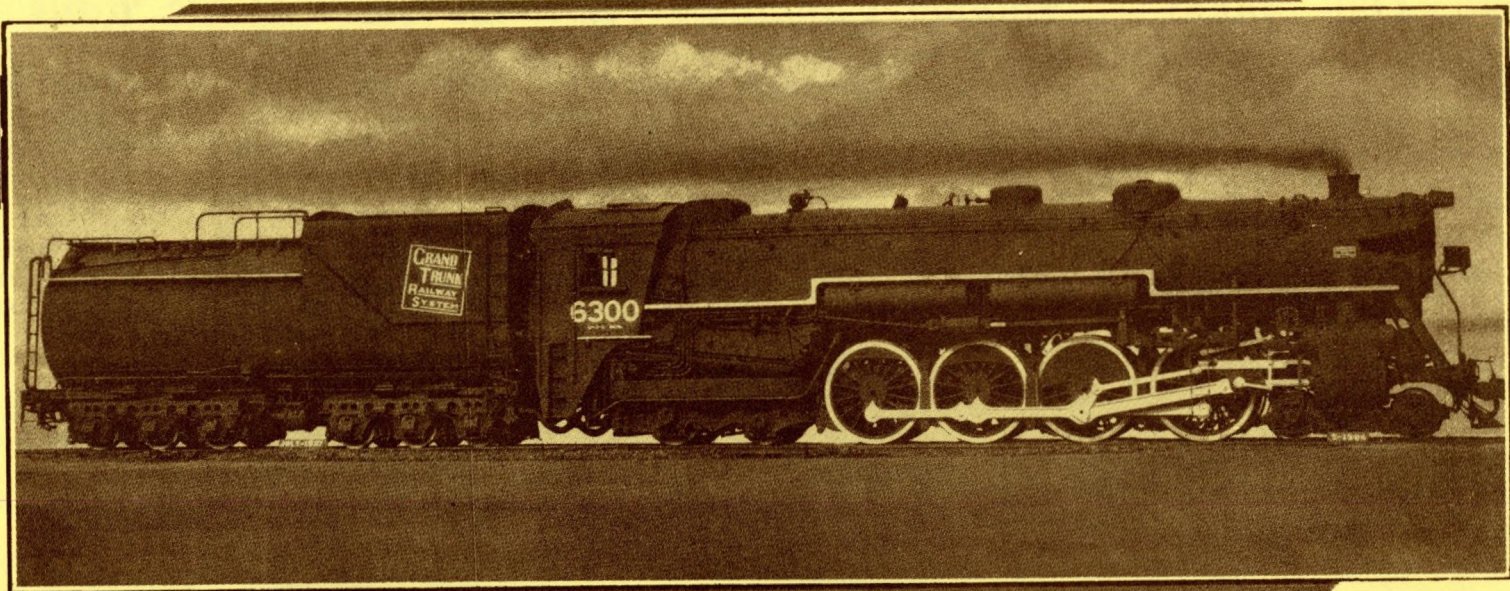


*The immensity of the boilers of the new "6100" Northern Type locomotives can be seen by a glance at this photograph which shows two workmen adjusting the mechanism in the interior of one of the boilers*



*The big driving wheels of the "Confederation" are six feet one inch in diameter.*





## *The United States Edition of THE "CONFEDERATION"*

**T**WELVE giant locomotives, similar to The "Confederation," have been constructed for use on the Grand Trunk Western Lines of the Canadian National System. This United States edition, known as the 6300 type, is essentially the same as the 6100 type used in Canada, but is slightly heavier and more powerful. The length of these locomotives is the same but the weight of the U. S. locomotives is 666,500 pounds against 650,500 pounds total weight of the Canadian engine. The United States locomotives are built with trucks capable of installing "Boosters" but these are not part of their equipment, while ten of the Canadian locomotives have "Boosters."

The weight in working order of Canadian and United States engines respectively is: Engine truck, Canadian 65,000 lbs.; United States, 66,000 lbs.; Driving, Canadian, 230,000 lbs.; United States, 234,500 lbs.; Trailing truck, Canadian, 84,000 lbs.; United States, 98,500 lbs.

The maximum tractive effort of the Canadian engines is shown as 56,800 lbs. without booster, while the United States engines have a tractive effort of 60,200 pounds. The maximum tractive effort of the Canadian engines equipped with booster is 69,700 lbs. The factor of adhesion in the United States engines is 3.89 against 4.05 in the engines used on Canadian lines.

# THE "6000"—*Another Canadian National Giant of the Rails*

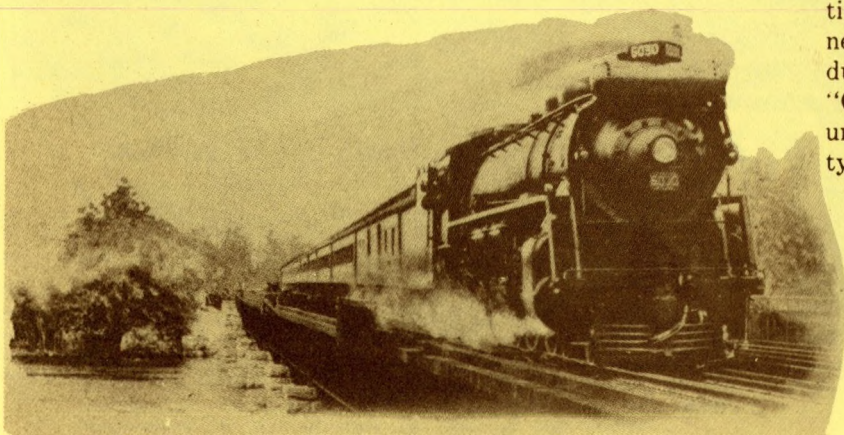
**T**HE predecessor of the 6100 type engine was the 6000 type. An important development in the construction of modern passenger locomotives in Canada came with the building of the first of the "6000" engines. There are now forty-two of these in use on the Canadian National Railways, handling fast passenger service on the transcontinental runs of the system and between Canadian and United States cities.

In designing this locomotive, Canadian National engineers kept in view two cardinal points: service and economy of operation. On the 6100 type, the cost of operation on high-speed, long-distance runs was reduced to a minimum. This loco-

tive is 90 feet in length, and has four pairs of driving wheels, each 73 inches in diameter. It was necessary to design for it a new type tender with two six-wheel trucks instead of two four-wheel trucks.

The weight of Engine 6000, with tender, is more than 290 tons and it is capable of handling, at high speed, the heaviest trains operated on transcontinental and international runs. When placed in service, with its tractive power of 49,600 pounds, the 6000 was 20 per cent more powerful than the largest engine then in passenger service in Canada.

Like all other new locomotives of the Canadian National System, the 6000 is equipped with every modern safety device and every improvement which makes for economy in operation. From the point of appearance, its stream lines gave it a new beauty of design and this, coupled with its power, endurance and economy of operation, earned for it the title, "Queen of the Road," the last word in Canadian locomotives until the coming of its big sister machines, the 4100 and 6100 type locomotives.

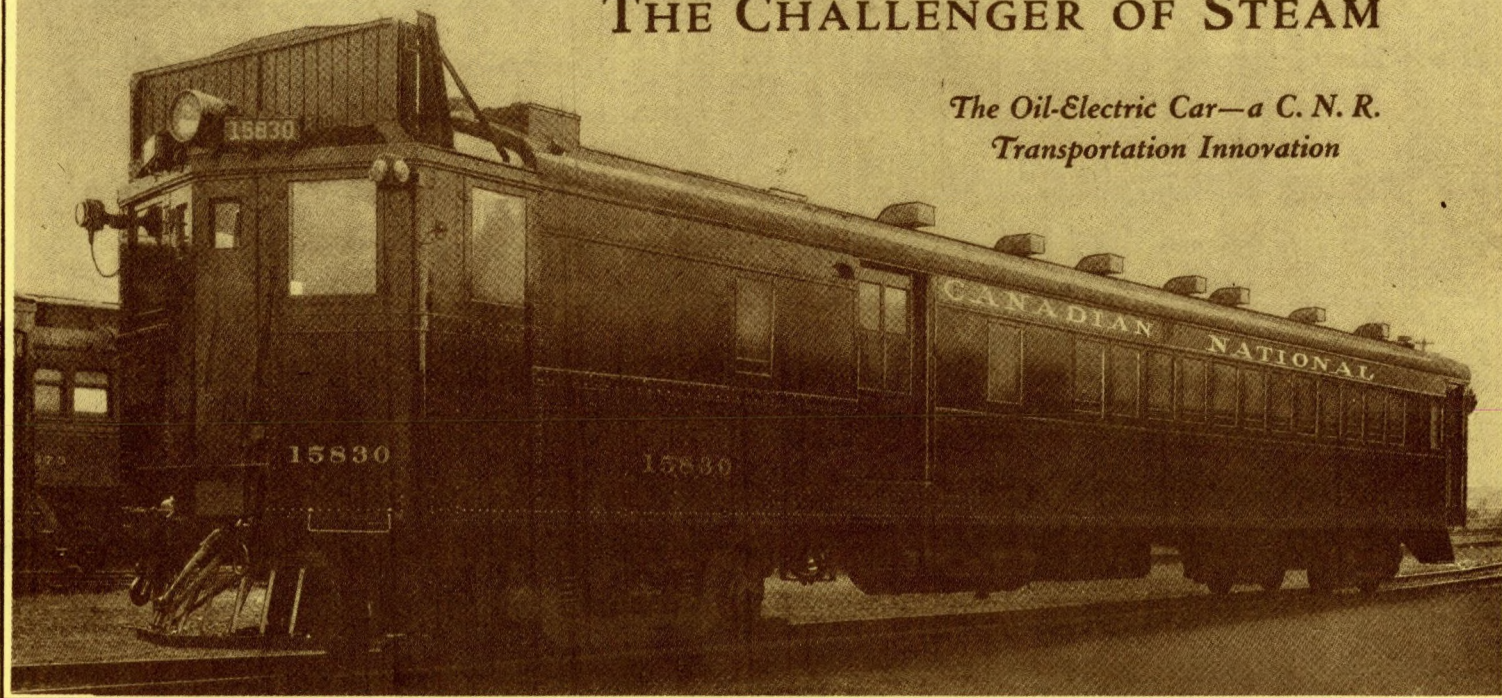




*Every day in the year the big "6000" type locomotives handle the famous "International Limited" and "The Maple Leaf," east and westbound, between Montreal and Chicago over the Canadian National - Grand Trunk double track route*

# THE CHALLENGER OF STEAM

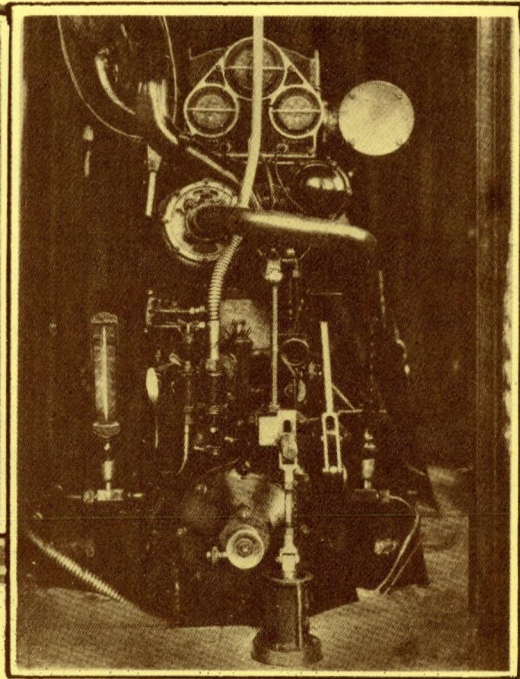
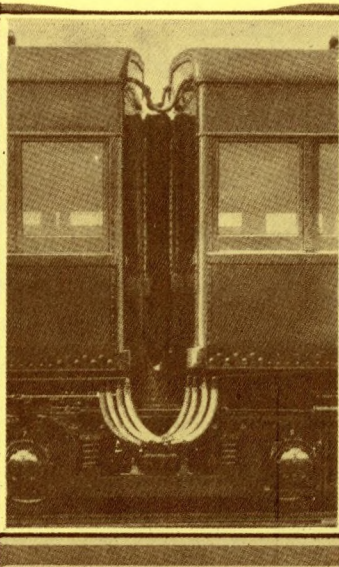
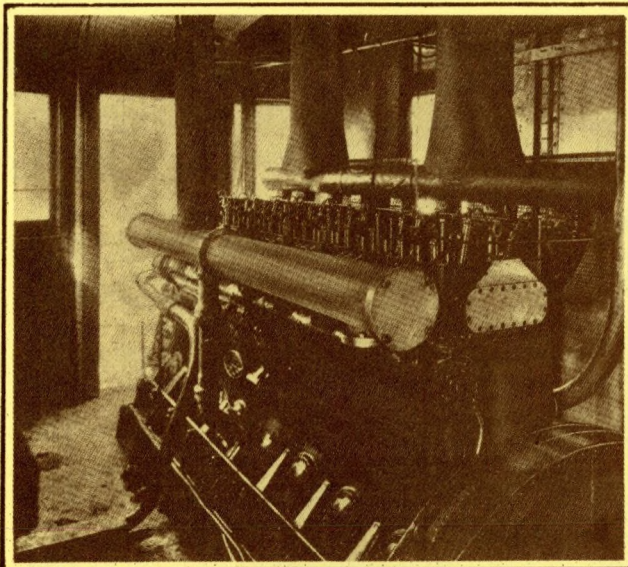
*The Oil-Electric Car—a C. N. R.  
Transportation Innovation*



*The latest type of Oil-electric car developed by the Canadian National Railways.*

CANADA is a land of splendid cities but it is also a country of great distances. With comparatively few people residing along some of its lines of railway it was necessary to develop a unit of transportation which

would provide rapid and frequent branch line service with a greater economy in operating costs than could be obtained with the ordinary type of passenger train. This problem was faced by engineers of the Canadian National



*Side elevation of one of the oil-electric engines showing the relationship of the engine to the electric generator.*

*View showing the articulated joint in the large or articulated oil-electric cars of the Canadian National Railways.*

*Front view of one of the engines in the oil-electric cars of the Canadian National Railways.*

Railways, and the result has been the evolution of the oil-electric car, one of which is being exhibited at the Fair of the Iron Horse.

The problem is yet in the course of solution, but the advent and successful operation of the oil-electric car has brought that solution nearer, for it has provided a light, economical unit with which frequent and rapid service may be maintained on lines where density of population does not exist.

It was a car of this type which crossed the Dominion of Canada in a test run from Montreal to Vancouver in 67 hours—a feat previously unheard of for the distance of 2,937 miles. A grasp of what that time means may be gained from the fact that the time of the fastest Canadian transcontinental steam passenger train is 98 hours.

Recently another time record was set, when Car 15830, one of the new six-cylinder type similar to that exhibited at Baltimore, ran from Montreal to Toronto, a distance of 334 miles, in the actual running time of 5 hours 40 minutes.

The oil-electric car represents the latest achievement in car construction of this type, and is a tribute to the foresight of such men as S. J. Hungerford, Operating Vice-President, C. E. Brooks, Chief of Motive Power, G. E. Smart, Chief of Car Equipment, and others of the National System, whose



*Interior of Canadian National Oil-Electric Car.*

work and interest in the development of these cars made them possible.

The six-cylinder oil-electric car is a radical departure from previous cars of this type. The Canadian National commenced with single and articulated cars, with four and eight-cylinder engines respectively, which are being operated with success on different sections of the 23,000 miles of Canadian National trackage. The new car, however, is six-cylinder. It is 73 feet 9 inches in length, and for the convenience of the traveling public it is divided into four compartments. These are engine room, baggage, smoking and general passenger accommodation.

Inside, the car is handsomely finished in birch stained mahogany, with cream colored ceiling and it is electrically lighted throughout. The general passenger compartment seats are upholstered in grey mohair and accommodate three persons on one side and two on the other. In the smoker, the seats are similarly arranged but the upholstery is of leather. All told, there is seating capacity for 57 passengers.

The engine used in this car was manufactured by William Beardmore and Company of Glasgow and London and is a modified Diesel type, arranged with six cylinders in a row. These have an  $8\frac{1}{4}$  inch bore and 12 inch stroke and develop 300 horse-power at 750 revolutions per minute. The engine and fly-wheel weigh approximately 6,900 pounds and one of the special features is the low weight per horse-power, obtained entirely by a scientific use of materials. Apart from the engine, the car is of Canadian manufacture and was built at the Point St. Charles (Montreal) shops of the railway, where the engine was assembled.

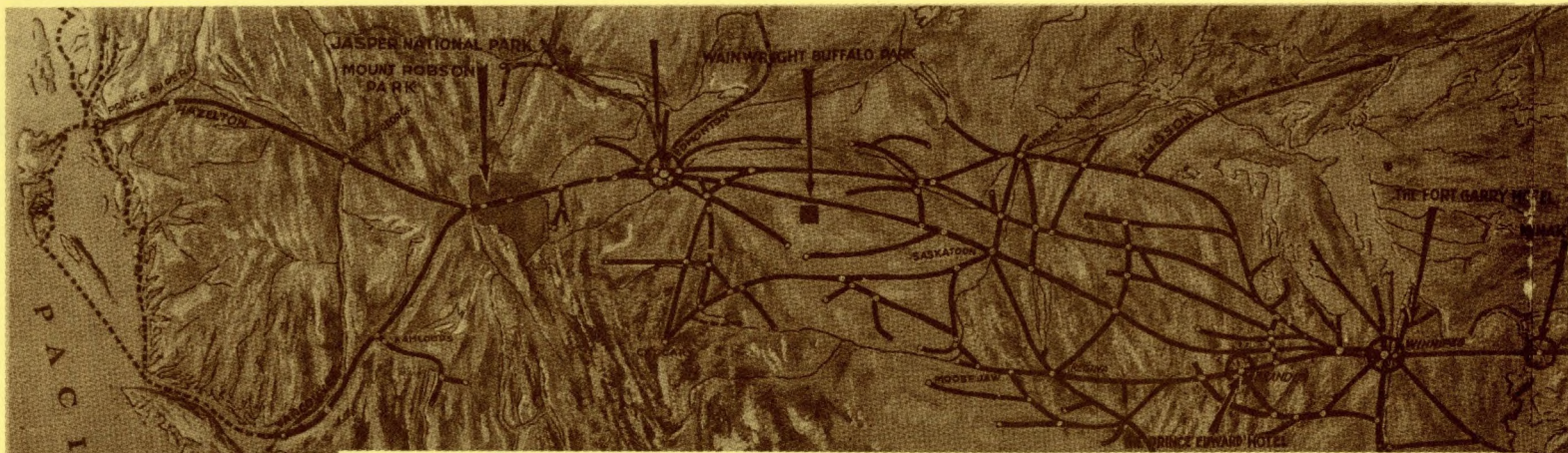
The new type of oil-electric car weighs, with equipment, approximately 70 tons and burns crude oil which operates the engine. The engine, in turn, operates a generator, from which the electrical energy is secured to operate the car.

While oil-electric cars are now being operated by other lines in America, the Canadian National Railways car is unique and is the only one of its type in use.



**I**N addition to its large steam mileage, the Canadian National operates four electric railways, in the provinces of Ontario and Quebec, and owns a series of powerful electric locomotives. The trains of the system

operating between Chicago, Toronto and Montreal are drawn through the St. Clair Tunnel, linking Michigan with Ontario, by powerful locomotives of the type shown in the illustration.



**C**ANADIAN NATIONAL RAILWAYS SYSTEM is an amalgamation of the lines of the Grand Trunk, Canadian Northern, Intercolonial, National Transcontinental and Grand Trunk Pacific Railways, constituting the largest single railway system in America.

CANADIAN NATIONAL serves every important city and seaport in the Dominion of Canada, and is the great international carrier reaching many of the large cities in the United States through its Grand Trunk and Central Vermont lines.

CANADIAN NATIONAL TELEGRAPHS operate 106,000 miles of wire with direct exclusive connection with Western Union Telegraph Company.

CANADIAN NATIONAL EXPRESS operates on all lines of the Canadian National Railways.

CANADIAN NATIONAL operates a fleet of oil-burning steamships in Pacific Coast waters between Vancouver, Prince Rupert and Alaskan ports.

CANADIAN NATIONAL operates the Canadian Government Merchant Marine, carrying Canada's product across the Seven Seas.

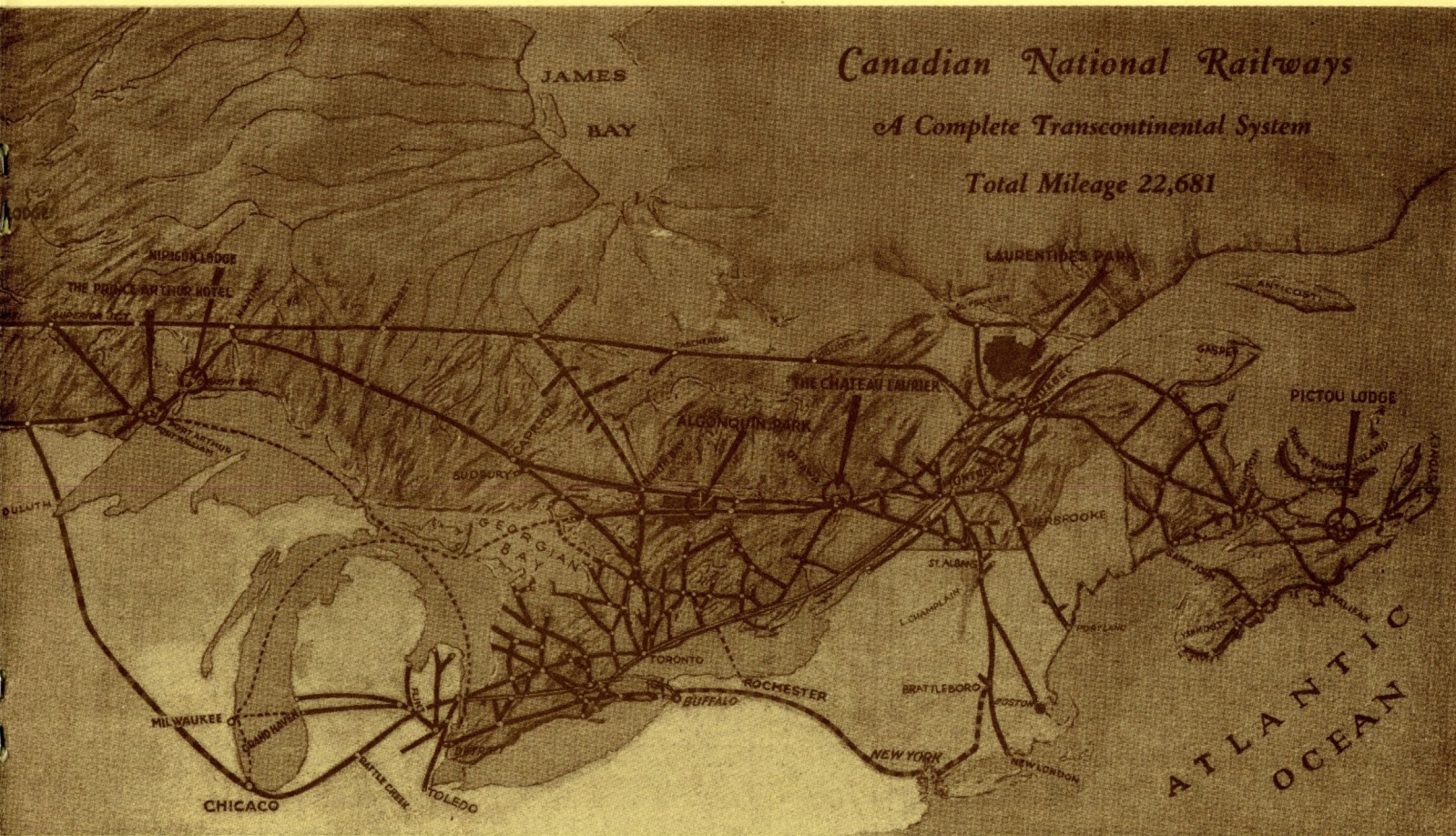
CANADIAN NATIONAL owns and operates a great chain of hotels in Canadian cities and summer resorts.



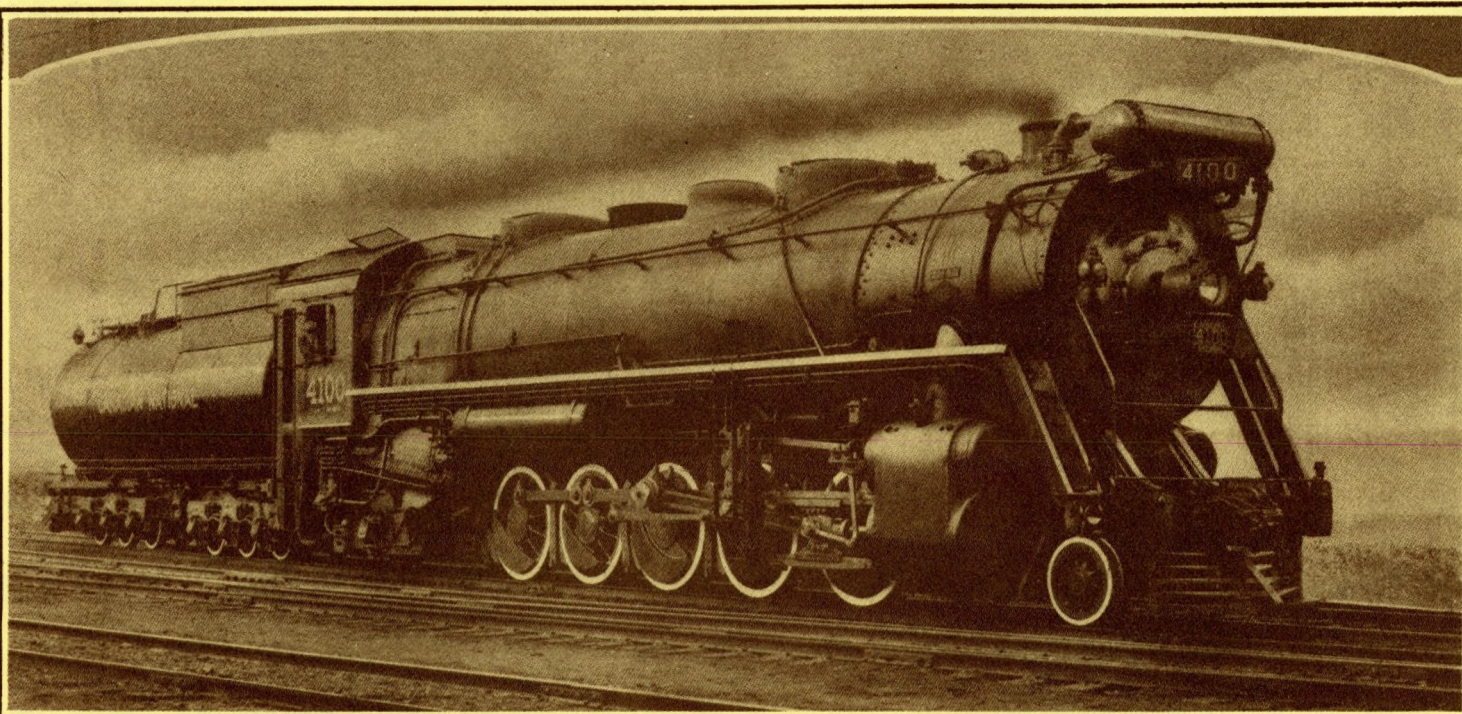
# Canadian National Railways

*A Complete Transcontinental System*

*Total Mileage 22,681*



## *Handling Canada's Commerce*



THE largest "Santa Fe" type locomotive in Canada, the 4100 class of the Canadian National Railways, is daily performing tasks in heavy freight haulage which a few years

ago would have been considered impossible. These monster freight engines are used in transfer service between heavy traffic terminals. It is an everyday task for one of these

great engines to move a train of 150 loaded freight cars.

In the 4100 class locomotive, the same stream-line effect is maintained as in the 6000 and 6100 types of fast passenger and freight engines. The 4100 is 92 feet in length and weighs 328 tons. Its height is 15 feet 3 inches and its width 10 feet 8 inches. The boiler of 4100 is 104 inches in diameter, which means that a six-foot man could sit another man on his shoulders without touching the top. This great locomotive can develop 3200 horse-power, which is in excess of the amount of energy distributed from the power plants of many cities of 25,000 people.

Locomotive 4100 has five pairs of driving wheels, and is

equipped with the "Booster" which gives it additional power. The drivers are 57 inches in diameter. In Canadian National ratings it is known as an 80 per cent engine, and with the "Booster" in operation it becomes a 90 per cent engine.

The locomotive is equipped with every modern appliance to increase its efficiency and to secure economy of operation.

The Canadian National enjoys a continent-wide reputation for the excellence of its fast freight service. Manifest freight trains are operated daily between Chicago and the Atlantic seaboard on close schedules. The revenues of the System from freight service exceeded \$207,000,000 last year.



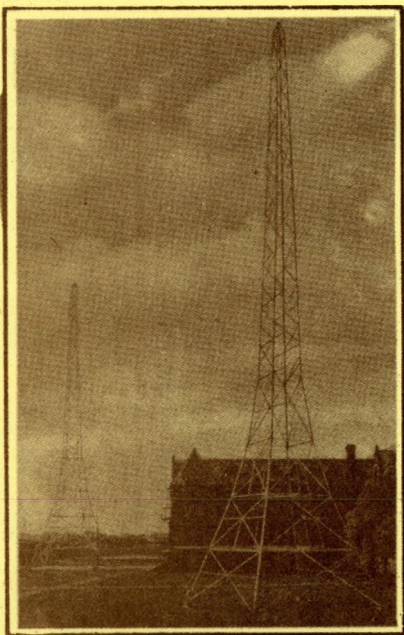
## Radio Equipped Trains

**T**HE Canadian National possesses the distinction of being the first rail transportation system in the world to apply radio to the daily service offered its patrons.

In order to provide entertainment for passengers on long trips the Canadian National four years ago equipped its long-distance trains with radio. The plan proved so popular, that radio equipment was installed in practically all of the company's through trains. Today some fifty Canadian National trains have receiving sets as part of the regular equipment and an expert radio operator rides with each of them to handle the dial.

In order to be assured of suitable programs for C.N.R. trains the railway went into broadcasting as well. Eleven broadcasting stations are now operated by the Radio Department of the Company. The call letters and location of these stations are:

CNRA, Moncton,



CNRA, the broadcasting station of the Canadian National Railways at Moncton, New Brunswick, one of chain of radio stations operated by the system



Passengers on a Canadian National Transcontinental train follow the moves of a bridge game transmitted by Radio from a New York broadcasting station



*The interior of one of the C.N.R. radio-equipped observation cars*

New Brunswick; CNRM, Montreal, Quebec; CNRO, Ottawa, Ontario; CNRT, Toronto, Ontario; CNRW, Winnipeg, Manitoba; CNRR, Regina, Saskatchewan; CNRE, Edmonton, Alberta; CNRS, Saskatoon, Saskatchewan; CNRC, Calgary, Alberta; CNRV, Vancouver, British Columbia; and CNRQ, Quebec, Que.

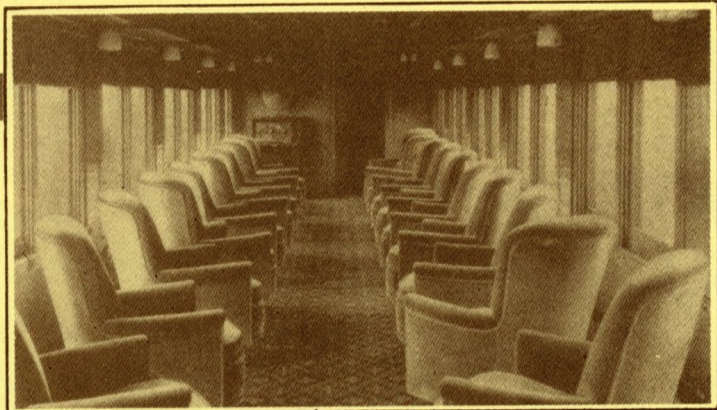
The train receiving sets are placed in the library-observation cars and in some parlor cars. Both loud speakers and head sets are used and in one type of car 42 headphones have been installed.

The trained operator manipulates the dial so as to pick up the best available music from the air for the passengers who sit in the comfortable arm chairs of the trains.

While the primary object of the establishment of broadcasting stations by the Canadian National was to ensure good programs for its trains, this branch of the Company's radio activities has been extended and the idea now is service to the radio fans generally.



*The kiddies are not deprived of their radio bedtime story when traveling over the Canadian National. The radio reception on C.N.R. trains has proved particularly popular with the young folk*



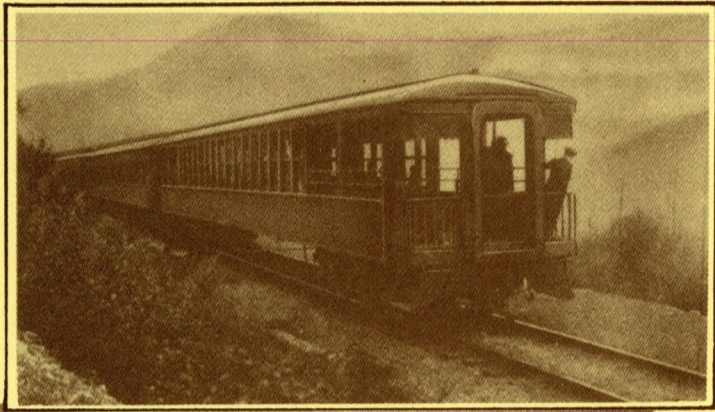
*Luxurious Parlor Cars make travel enjoyable*



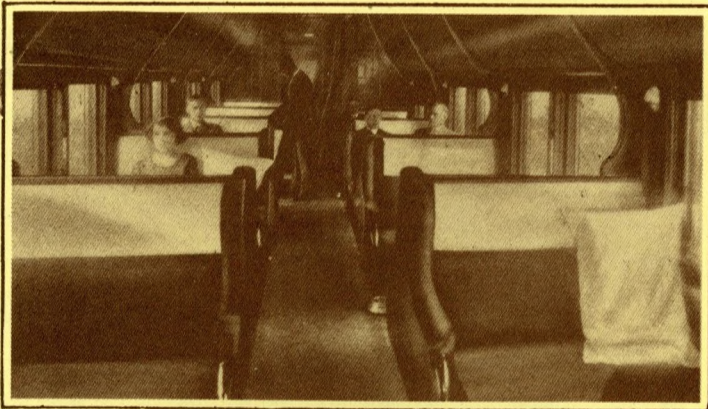
*Observation-Library Cars are carried on principal long distance trains*



*Open Type Observation Cars*



*Open Observation Cars are used through the mountains*



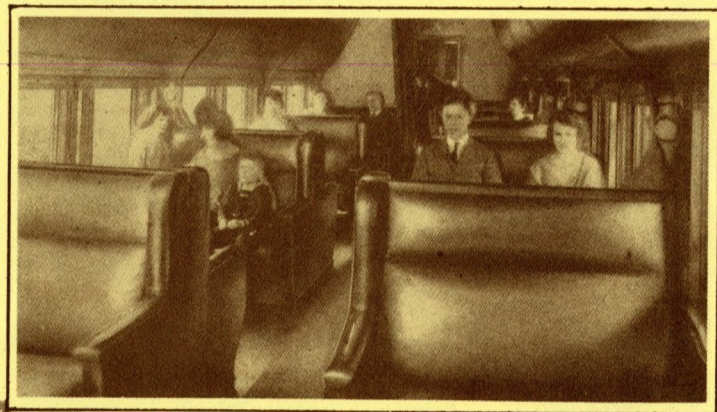
*In the C.N.R. Standard Sleeping Cars every modern idea is embraced*



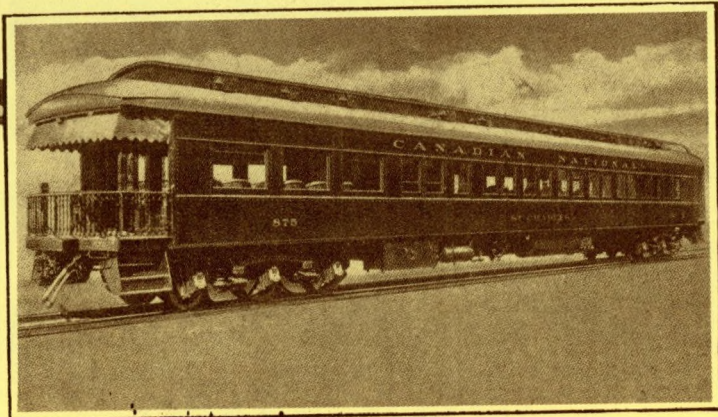
*Comfortable rooms for the smoker*



*Dining cars, with special menus for the children, give service that is unexcelled*



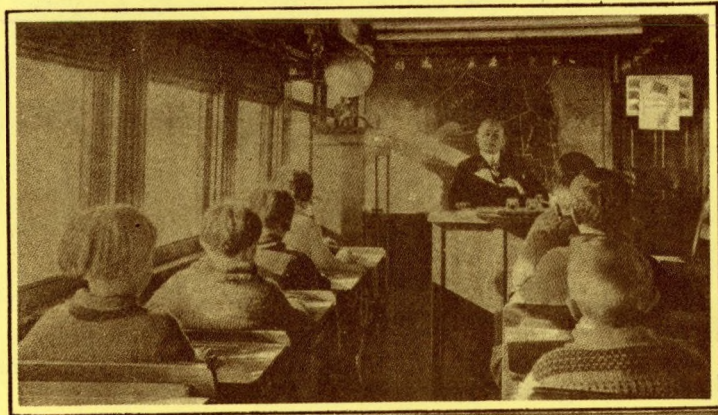
*In addition to standard sleeping cars, tourist sleepers are provided at reduced rates*



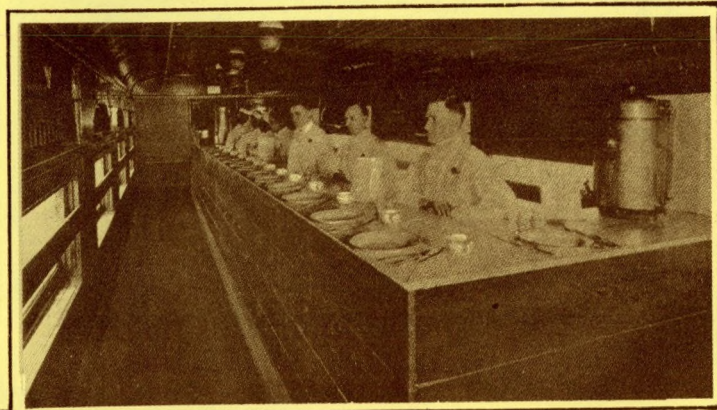
*Observation-Parlor Buffet Cars of latest type*



*Heavy, as well as light baggage, is handled expeditiously at terminals*

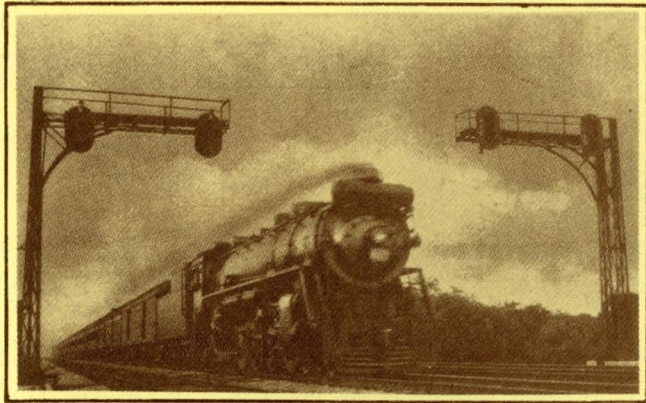


*To carry education to the scholars in sparsely settled districts of Northern Ontario, school cars were built and operated by the C. N. R.*



*Colonist Cars, with lunch counters, are provided for incoming settlers and harvest workers*





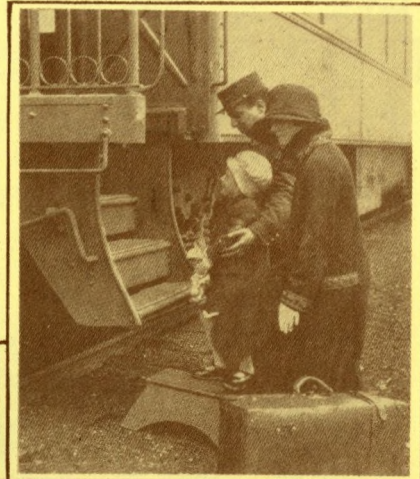
*The safety of the passenger is the first consideration*

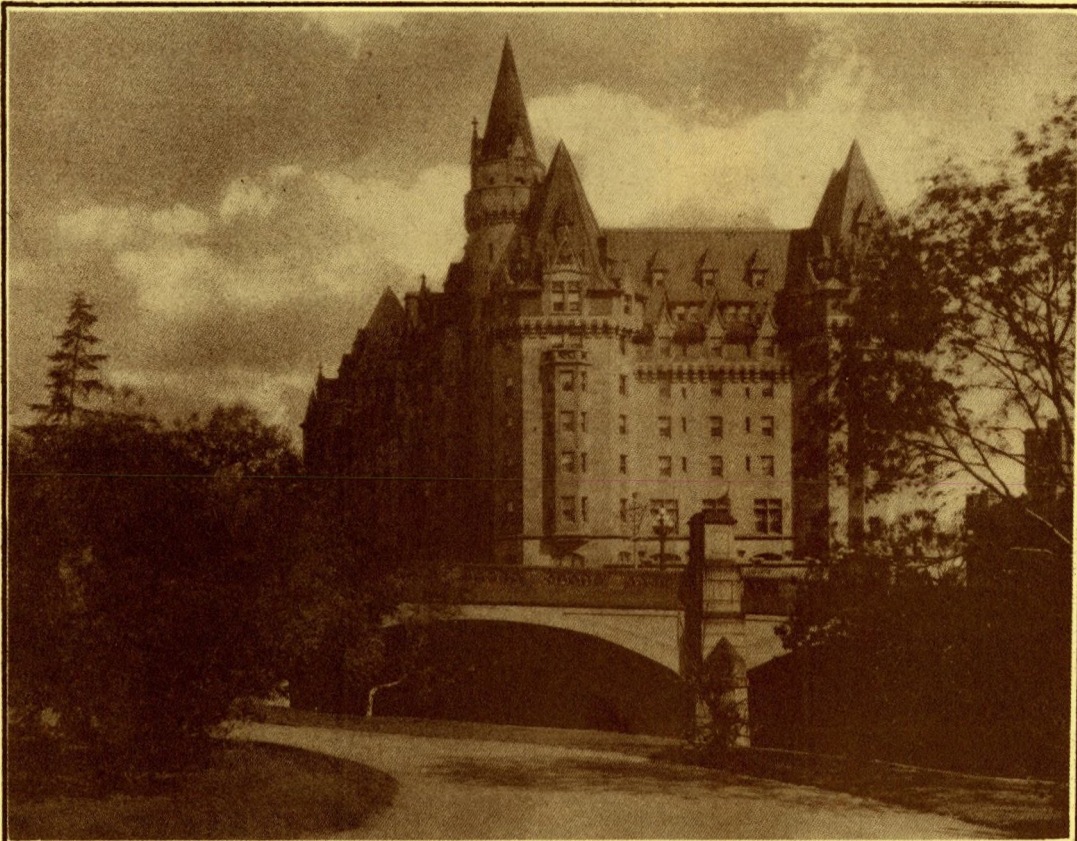


*Night travel  
possesses no  
fears on the  
National System*

*Nurses at ter-  
minals care for  
children of new  
settlers*

*"The passenger must be  
treated with the same con-  
sideration as the guest in your  
own home," is the law on the  
National System*





*The Chateau Laurier, Ottawa*

## CANADIAN NATIONAL RAILWAYS HOTELS

CHATEAU LAURIER  
Ottawa, Ont.

PRINCE ARTHUR HOTEL  
Port Arthur, Ont.

THE FORT GARRY  
Winnipeg, Man.

PRINCE EDWARD HOTEL  
Brandon, Man.

THE MACDONALD  
Edmonton, Alta.

HIGHLAND INN AND  
CAMPS  
Algonquin Park, Ont.

MINAKI LODGE  
Minaki, Ont.

NIPIGON LODGE  
Orient Bay, Ont.

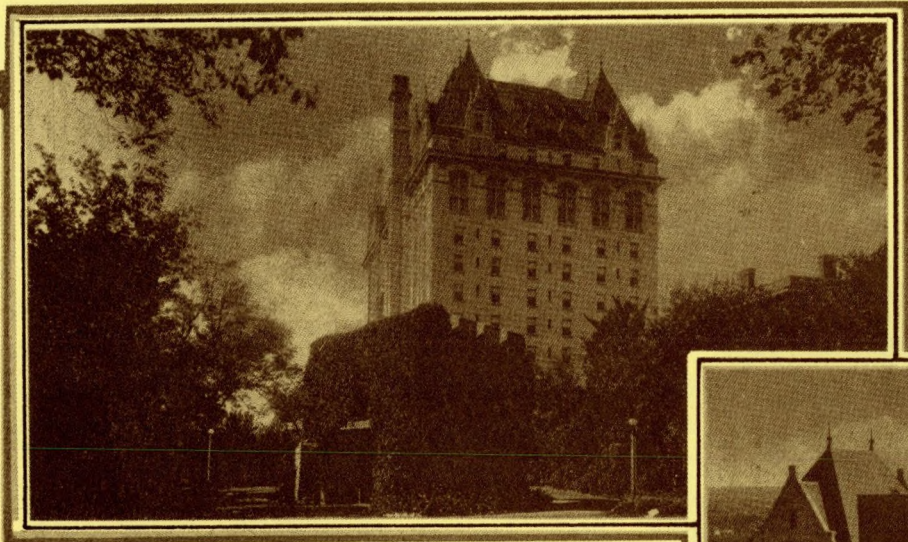
GRAND BEACH HOTEL  
Grand Beach, Man.

JASPER PARK LODGE  
Jasper, Alta.

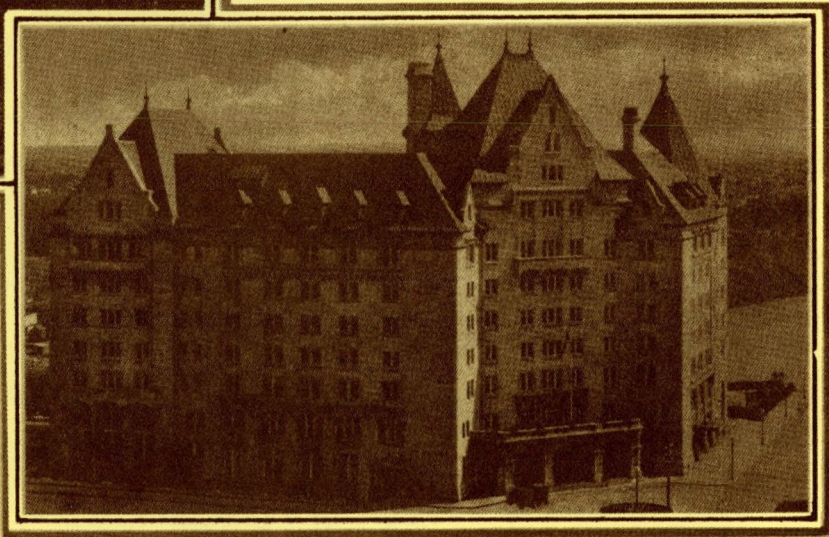
PICTOU LODGE  
Pictou, N. S.



*Jasper Park Lodge, in Jasper National Park, Alberta, the world's largest game reserve and Alpine playground, has a wonderful 18-hole golf course and is one of the most favored summer resorts on the American continent*



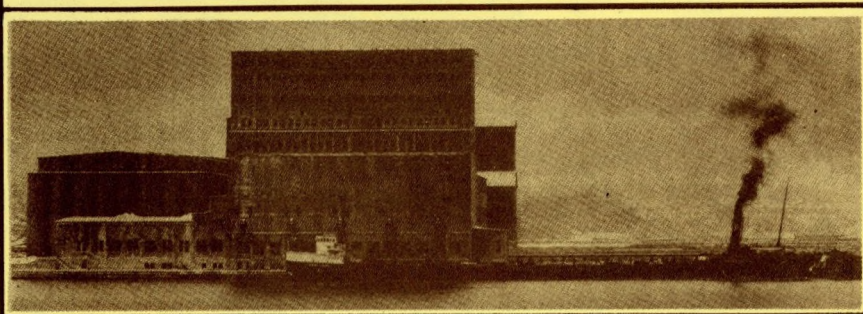
*The Fort Garry, Winnipeg*



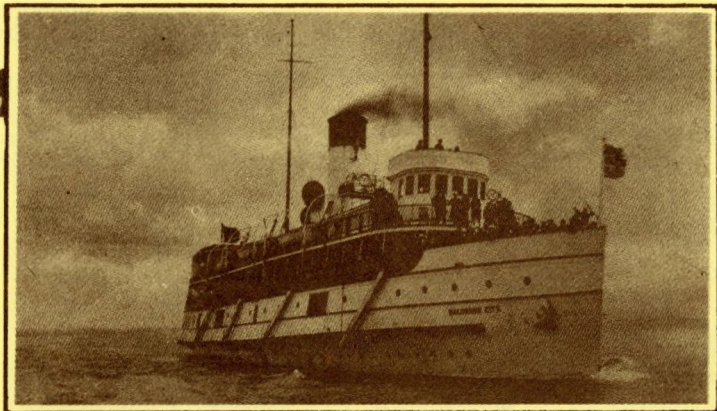
*The Canadian National Express carries a diversity of valuable products. Here is a shipment of black foxes*



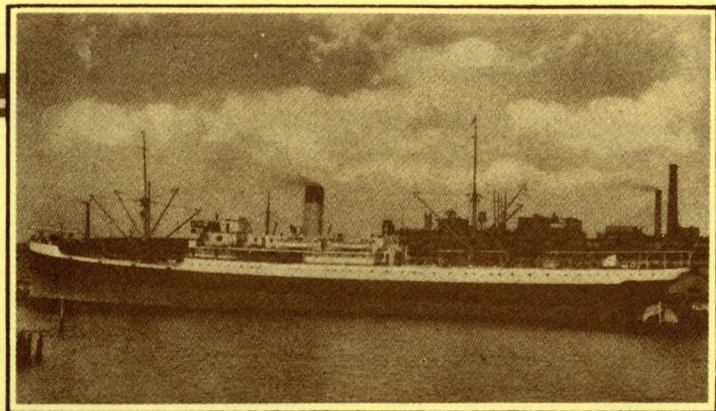
*Through Canadian National Telegraphs, people in all Canadian communities are able to get prompt and efficient service in sending telegraphic messages*



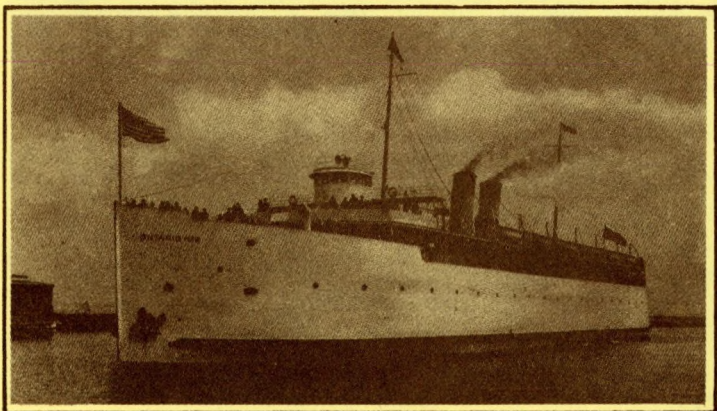
*C. N. R. Grain Elevator at Port Arthur, Ontario, is the largest grain elevator in the world*



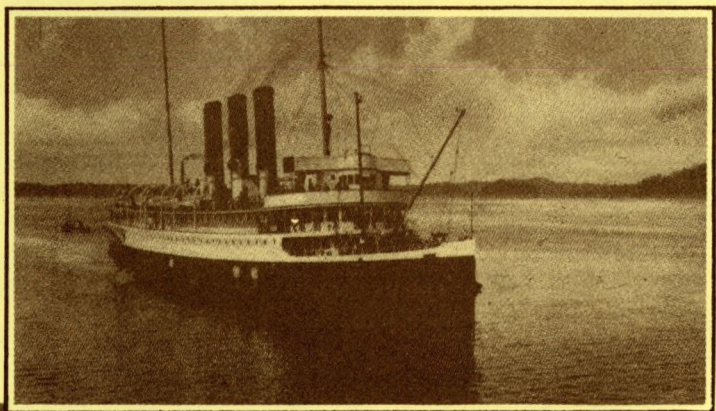
*Canadian National fast passenger ships on the Great Lakes*



*More than fifty ocean going vessels operated by the Canadian National Railways (The Canadian Government Merchant Marine)*



*Modern car ferries, with passenger accommodation, on the Great Lakes*



*Canadian National oil burning steamships from Vancouver to Prince Rupert and Alaskan ports*



*The Quebec Bridge of the Canadian National System. Its main span, 1800 feet, is the longest in the world, being 90 feet greater than that of the famous Forth Bridge in Scotland*

# 1837-1927 *Transportation Contrasts.*



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