

Canadian Rail

No. 447



JULY - AUGUST 1995



1939 ... CANADA'S RAILWAYS IN WORLD WAR II ... 1945

PUBLISHED BI-MONTHLY BY THE CANADIAN RAILROAD HISTORICAL ASSOCIATION

PUBLIE TOUS LES DEUX MOIS PAR L'ASSOCIATION CANADIENNE D'HISTOIRE FERROVIAIRE



CANADIAN RAIL

ISSN 0008-4875



PUBLISHED BI-MONTHLY BY THE CANADIAN RAILROAD HISTORICAL ASSOCIATION

TABLE OF CONTENTS

THE RAILWAYS OF CANADA IN WORLD WAR II. INTRODUCTION.....	FRED F. ANGUS.....	123
1939 - CANADA'S RAILWAYS PREPARE FOR WAR.....		125
TROOPS AND SUPPLIES OFF TO WAR.....		126
RAILWAY ADVERTISING DOES ITS PART TO WIN THE WAR.....		130
CNR PROVIDES HOSPITAL CARS.....	CANADIAN TRANSPORTATION, AUGUST 1940.....	132
WAR SAVINGS CERTIFICATES AND VICTORY BONDS - HOW THE RAILWAYS HELPED.....	FRED F. ANGUS.....	134
THE IMPORTANCE OF RAILWAYS IN THE WAR EFFORT.....		139
WARTIME RAILROADING - 1918 AND 1943.....	CANADIAN TRANSPORTATION, AUGUST 1945.....	141
THE BUILDING OF TANKS AT THE CPR'S ANGUS SHOPS.....	FRED F. ANGUS.....	142
STREET CAR SYSTEMS DURING WORLD WAR II.....	FRED F. ANGUS.....	145
WOMEN REPLACING MEN IN RAILWAY SERVICE.....		152
CANADIAN RAILWAY TROOPS ON THE WESTERN FRONT.....	CANADIAN TRANSPORTATION, MARCH 1945.....	153
GETTING BAUXITE TO ARVIDA DURING WORLD WAR II.....	STEPHEN DETTMERS.....	156
PLYWOOD BOX CARS AND AN ARMOURD TRAIN.....		163
1945 - THE RETURN OF PEACE.....		165
LONGMOOR.....	BRIG. H.A. JOLY DE LOTBINIERE, M.C., R.E.....	166

*FRONT COVER: Arriving at the port of Halifax during World War II, behind locomotive 3199, a CNR troop train approaches the point where its passengers will embark on ships to take them overseas. There was a covered passageway just south of the station where the troops would walk from the train to the ship. This was the last they would see of Canada for years, and many of them would never return.
Canadian National photo No. X9661.*

For your membership in the CRHA, which includes a subscription to Canadian Rail, write to:

CRHA, 120 Rue St-Pierre, St. Constant, Que. J5A 2G9

Membership Dues for 1995:

In Canada: \$31 (including GST).

Outside Canada: \$29.50 in U.S. funds.

Canadian Rail is continually in need of news, stories, historical data, photos, maps and other material. Please send all contributions to the editor: Fred F. Angus, 3021 Trafalgar Ave. Montreal, P.Q. H3Y 1H3. No payment can be made for contributions, but the contributor will be given credit for material submitted. Material will be returned to the contributor if requested. Remember "Knowledge is of little value unless it is shared with others".

As part of its activities, the CRHA operates the Canadian Railway Museum at Delson / St. Constant, Que. which is about 14 miles (23 Km.) from downtown Montreal. It is open from late May to early October (daily until Labour Day). Members, and their immediate families, are admitted free of charge.

THE GOAL OF THE ASSOCIATION IS THE COLLECTION, PRESERVATION AND DISSEMINATION OF ITEMS RELATING TO THE HISTORY OF CANADIAN RAILWAYS

The CRHA has a number of local divisions across the country. Many hold regular meetings and issue newsletters. Further information may be obtained by writing to the division.

NEW BRUNSWICK DIVISION
P.O. Box 1162
Saint John N.B. E2L 4G7

DIVISION VALLEE-JONCTION BEAUCE
397 Blvd. Rousseau
Vallée-Jonction Qué G0S 3J0

ST LAWRENCE VALLEY DIVISION
P.O. Box 22, Station "B"
Montreal P.Q. H3B 3J5

RIDEAU VALLEY DIVISION
P.O. Box 962
Smith's Falls, Ont. K7A 5A5

KINGSTON DIVISION
P.O. Box 1714
Kingston, Ont. K7L 5V6

TORONTO & YORK DIVISION
P.O. Box 5849, Terminal "A"
Toronto, Ont. M5W 1P3

NIAGARA DIVISION
P.O. Box 20311 Grantham Postal Outlet
St. Catharines, Ont. L2M 7W7

CALGARY & SOUTH WESTERN DIVISION
c/o Iat Mackenzie, Secretary
1812 Westmount Road N.W.
Calgary, Alberta. T2N 3M7

SELKIRK DIVISION
P.O. Box 2561
Revelstoke, B.C. V0E 2S0

CROWSNEST & KEPTLE VALLEY DIVISION
P.O. Box 400
Cranbrook, B.C. V1C 4H9

NELSON ELECTRIC TRAMWAY SOCIETY
123 View Street
Nelson, B.C. V1L 2V8

PRINCE GEORGE-NECHAKO-FRASER DIVISION
P.O. Box 2608
Prince George, B.C. V2N 2S6

PACIFIC COAST DIVISION
P.O. Box 1006, Station "A"
Vancouver, B.C. V6C 2P1

ESQUIMALT AND NANAIMO DIVISION
1148 Balmoral Road
Victoria, B.C. V8T 1B1

EDITOR: Fred F. Angus

CO-EDITOR: Douglas N.W. Smith

ASSOCIATE EDITOR (Motive Power):
Hugues W. Bonin

DISTRIBUTION: Gerard Frechette

LAYOUT: Fred F. Angus

Printing: Procel Printing

DIRECTORS OF THE C.R.H.A.

PRESIDENT: Walter J. Bedbrook

VICE PRES.: David W. Johnson

TREASURER: Robert Carlson

SECRETARY: Bernard Martin

Frederick F. Angus

Doug Battrum

Alan C. Blackburn

James Bouchard

Gérard Frechette

François Gaudette

Dean Handley

J. Christopher Kyle

Robert V.V. Nicholls

Andrew W. Panko

M. Robertson

Douglas N.W. Smith

William Thomson

A. Stephen Walbridge

Michael Westren

DIVISION LIASON REPRESENTATIVES

WESTERN

D. Walter Edgar

4515 Dalhart Road N.W.

Calgary, AB T3A 1B9

Phone: (403)-286-2189

CENTRAL

Christopher Kyle

49 - 77 Wellesley St. East

Toronto, ON M4Y 1H7

Phone: (416)-962-1880

MARITIME

Richard E. Viberg

172 Main St.

Hillsborough, NB E0A 1X0

Phone: (506)-734-3467



1945 - 1995

Canada's Railways in World War II

Introduction

By Fred F. Angus

August 15 1995 marks the 50th anniversary of the end of fighting in World War II, the largest, most extensive and most disastrous of all the wars in history. Unlike some wars, this was a highly mobile conflict, with campaigns being waged simultaneously in many parts of the world. For six long years incredible numbers of personnel and vast amounts of supplies of all kinds were transported, often on very short notice, to locations many miles away from their origins. Those of us old enough to remember those days tend to date history from World War II, speaking of events as occurring "before the war" or "after the war".

To understand properly the countless news bulletins heard on the radio (television was not yet on the scene in Canada) it was necessary to consult good maps, for little-known place names would suddenly become household words as they became the site of some major battle. In studying these maps one would be impressed by the importance to the war effort of transportation. This importance was not confined to the battle zones, but was universal, covering all areas from the point of supply to countless theatres of war, often thousands of miles away.

Nowhere was transportation more important than in Canada, with its great distances between population centres, and its major ocean ports, both east and west, separated by three thousand miles. On land the major transportation links were the railways and, during those six years, they were utilized as never before or since. In fact they were strained almost to the breaking point, and today it seems a miracle that they met all challenges and carried on until victory was achieved. Looking back after fifty years, one often wonders how they did it and whether the present generation would be able to do as well if it became necessary. Let us sincerely hope that we will never have to find the answer to that question!

As a tribute to those who ran the railways and tramways in World War II, we are devoting this entire issue of Canadian Rail to stories and accounts of some of the operations in which the railways played a part during the years from 1939 to 1945. Included will be contemporary articles, comments, illustrations and some of the patriotic advertisements produced by the railway, and railway supply, industry.

The seeds of World War II had been sowed twenty years before its outbreak. Scarcely had the fighting in the "Great War", today usually known as World War I, ended on November 11, 1918, when tension began to build again. The terms of the peace treaty of 1919 imposed extremely heavy, and perhaps unjust, liabilities on the defeated powers, especially Germany. The stage was being set for the rise of a dictatorship and, during the depression which began in 1929, the National Socialist (Nazi) party, led by Adolf Hitler, came to power in 1933. From this time on it appeared that there would eventually be another world war. Meanwhile in the far east, Japan (which had been on the allied side in World War I) became more aggressive and, starting on September 18, 1931, invaded northeastern China. It is not intended here to go into details concerning the years leading up to World War II. Suffice it to say that the second half of the 1930s saw the prospects of war increase with each ominous news bulletin. Unlike 1914, the outbreak of war was not a sudden surprising event, but something that was expected; the only question was when.

On September 1, 1939 the German Army invaded Poland and within hours the long expected world war had begun. For the first three years the advantage was with the Axis powers as their armies invaded and occupied more and more territory. The scope of the war was vastly increased by two events in 1941. On June 21



LET 'EM ALL COME...!

Now that the test has come, the whole British Empire responds magnificently. Canadian industry is hitting a stride which no one could have imagined a year ago. Dofasco men are happy that their three-year expansion program (totalling over



three million dollars), is now completed in time to help Canada's war effort—supplying steel for hangars, ships, factories and other war equipment. Canadian steel for Canadian dollars helps Canada's exchange problem.

DOMINION FOUNDRIES & STEEL LIMITED

DOFASCO STEEL PRODUCTS
STEEL CASTINGS • STEEL PLATE

HAMILTON, CANADA

DOFASCOLITE TIN PLATE
BLUE PLATE • TIN MILL BLACK

Typical of the advertisements of the early years of the war is this one by Dominion Foundries and Steel which appeared in "Canadian Transportation" in January, 1941. At that time things were not going well for the Allies.

Germany invaded the Soviet Union, and on December 7 Japan attacked British and United States possessions. During these dark days the outcome truly hung in the balance as both sides used every means possible to win. The term "Total War" was continually used as every inhabitant became a fighter and those who worked on the "home front" were considered just as important as those on the fighting line. The effects of the war penetrated all aspects of society from the children who bought war savings stamps to the elderly people who tended victory gardens. Unlike in World War I, the war news came into every home thanks to radio, and the newsreels shown at the movie theatres gave vivid pictures of the fighting. There was a sense of "togetherness" as people, usually without much complaining, put up with restrictions, shortages, crowded travelling and other unpleasant conditions "for the duration". After all they owed it to those fighting overseas. This must be borne in mind to understand fully the meaning of the accounts that follow.

Towards the end of 1942 the tide began to turn and the Allies slowly pushed back the Axis forces. It was a long hard

struggle but the prospect of victory became more and more real. Finally, on May 7, 1945, Germany surrendered and the war in Europe ended. In the Pacific (a strange misnomer at that time) the war went on, but on August 6 an atomic bomb was dropped on the Japanese city of Hiroshima. Following another atomic bomb on Nagasaki three days later, Japan surrendered and on August 15, 1945 fighting stopped and the war was over. Slowly the world returned to a peacetime environment, although things would never return to the way they had been before the war. For some time the railways continued to be very busy as the troops returned from war, then they too gradually returned to peacetime. The end of rationing and other restrictions caused a great increase of automobile and truck traffic. Also the war had given a great boost to the aircraft industry, and this development continued. All this had a negative effect on the railways which has continued to the present time. Due to numerous abandonments, the railway system of Canada is considerably smaller than it was in 1939, so it is unlikely that the railway traffic could ever again achieve the levels it did during those historic years from 1939 to 1945.

1939 - Canada's Railways Prepare for War

Although some preparation had been going on previously, the outbreak of World War II on September 1, 1939 was the signal for both of Canada's major railways to swing into action to meet the emergency. Both the CNR and CPR placed immediate orders for new rolling stock. It should be remembered that the worldwide depression was just ending (in fact the war finally ended it) and the railways had not acquired a great deal of equipment since 1930; hence new motive power and rolling stock was urgently required. The following article, from "Canadian Transportation" of October 1939, gave the first details:

"The amount of \$25,000,000, which is to be spent upon the acquisition of new rolling stock for the two transcontinental railways, is being expended to enable the railways to meet anticipated traffic requirements which are expected to be unusually heavy. With heavy demand for ocean ship space, and increased ocean freight and insurance rates, it is probable that much traffic, which would ordinarily proceed from Pacific coast ports via the Panama Canal route to Europe, will be hauled across Canada and shipped from Canadian Atlantic ports. Also, it is a logical expectation that, following the close of navigation on the St. Lawrence route, there will be heavy export traffic from the central Canada provinces to the Atlantic ports.

It is reported that the Dominion authorities had in mind the introduction of a bill, at the recent special session of Parliament, to provide \$30,000,000 with which to purchase rolling stock for Canadian National Rys., with deliveries to extend to March 31, 1941. However, the plans were changed, and action was taken to provide additional rolling stock for both the Canadian National and the Canadian Pacific Rys. as quickly as possible. A reported reason for this change in plans is the government's desire to have the railways supplied with the additional equipment needed at the earliest possible date, so that the shops manufacturing the equipment will be enabled to proceed, without interruption, with the manufacture of munitions.

Enquiries put out by the Canadian Pacific are for 12 G3f and 12 P2g locomotives, 1,000 box cars, 100 automobile cars, 200 refrigerator cars and 10 mail and express cars, and the Canadian National is said to be in the market for 25 locomotives and some 3,000 box cars and 500 flat cars.

Reliable information is to hand at the time of writing, Sept. 23, that the equipment is to be ordered without delay, with the expectation that deliveries will start within three months and be completed within six months."

On November 23, 1939 the Dominion government, by order in council, took what proved to be one of the most important steps of the entire war effort. It transferred responsibility for the War Supply Board from the Minister of Finance to the Minister of Transport. The latter position was held by the Hon. C.D. Howe, who had held the portfolio since it was created in 1936, replacing the old Department of Railways and Canals and the Ministry of Marine. In 1940 Mr. Howe was also appointed Minister of Munitions and Supply and he held that vital position throughout the war. Although he officially resigned the portfolio of Minister of Transport on July 8, 1940, many of the transport department

functions were placed under the Minister of Munitions and Supply, and thus remained under Mr. Howe. He continued to serve as a Cabinet Minister until the change of government in 1957. Thus the work of coordinating the operation of all means of transport, including the railways, was ultimately the responsibility of Mr. Howe who proved to be the right person at the right time to get the job done.

Meanwhile, the government created the post of Transport Controller to coordinate transportation, *"to deal with priorities in the handling of shipments, and to so supervise land and water transportation in, to and from Canada as to secure maximum efficiency and dispatch."* This became more and more important as the war went on.

The importance of the railways was realized at once. A typical attitude was expressed in a speech by S.W. Fairweather, Chief of Research and Development, CNR, in a speech at Vancouver on November 24. Among other things, Mr. Fairweather said: *"Canada forms a splendid industrial base for the allies in the present war, and her railways form a vital link in the lines of communication. We should be thankful for our railway development, enabling the vast natural resources of Canada to be thrown into the war with a minimum of effort"*. Contrasting the Canadian railways with those of 1914, the year of the outbreak of World War I, he recalled that in that year Canada was in a period of railway expansion, with thousands of miles of line only half completed, and that the railways comprised in the present CNR system were operated by no less than 19 different independent managements. He said: *"Hard pressed financially, they were weak in equipment; they were incapable of rendering any effective transcontinental service; they had no substantial knowledge of cooperation as regards each other or as regards their common competitor, the Canadian Pacific, which was the only integrated railway system in Canada at that time."*

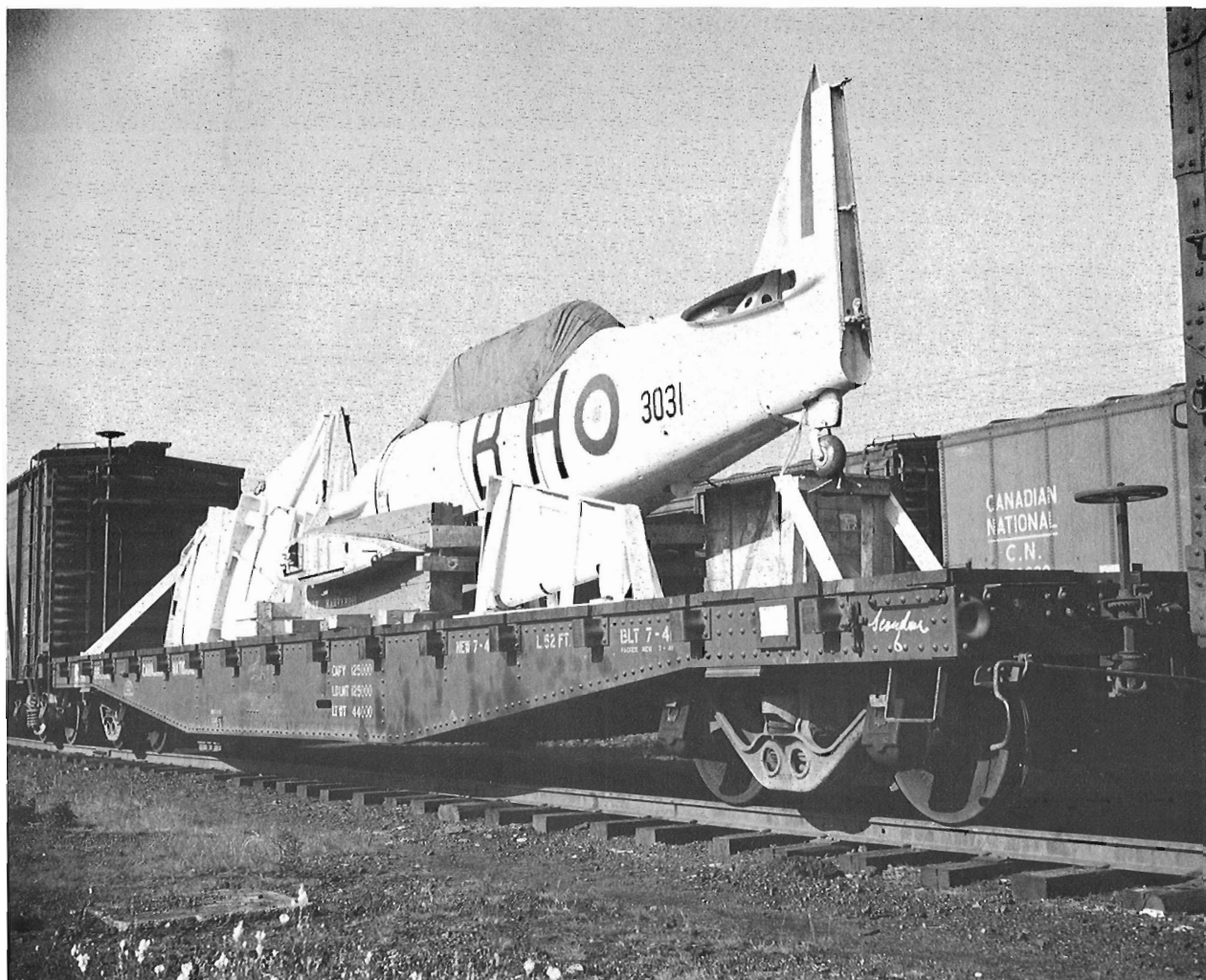
He recalled that in 1928 [the last year before the Depression] the Canadian railways handled 30% more traffic than was handled in 1917, the peak of the war period, and he expressed confidence that they could handle twice as much freight traffic as in 1917. He mentioned that 100 lb. and 130 lb. rails had replaced 80 and 85 lb. rails on main lines, that the largest freight locomotives could exert 90,000 lbs. of tractive effort compared to 52,000 lbs. in 1914, and that average freight car capacity and average speeds had increased. Also, locomotive fuel consumption efficiency had increased to the point where it only required 120 lbs. of coal per 1000 ton miles, compared to 160 lbs. in 1914. He concluded by saying: *"The railways are today getting 50% more transportation out of the same expenditure on labour and materials that they were getting a quarter of a century ago. In her two transcontinental railway systems, Canada is provided with railway costs per ton mile of service which are as low as in any other country at all comparable, and much lower than in most countries."*

By the end of December, the course for what turned out to be the next six years was set. Canada's railways were at war, and the job they would do would far exceed the expectations of anyone in 1939.

Troops and Supplies Off To War

In this section we present some photos showing how the railways moved troops and innumerable kinds of supplies during the war. Every imaginable commodity was moved, and the railway systems carried more traffic than ever before or since.





OPPOSITE, TOP: The departure point for troop trains at Point St. Charles. Notice the sign indicating that there are telephones in the old wooden car in the foreground. One last chance for a phone call before boarding. CN photo no. X20269.

OPPOSITE, BOTTOM: Ambulances and other vehicles loaded for shipment. These are U.S. vehicles, but the Canadian ones were handled the same way. CN photo no. X13655.

ABOVE: A training aircraft disassembled and loaded for shipment aboard a CN flat car. CN photo no. X14554.

LEFT: A closeup of an army tank on CN flat car 659844. CN photo no. X14527.





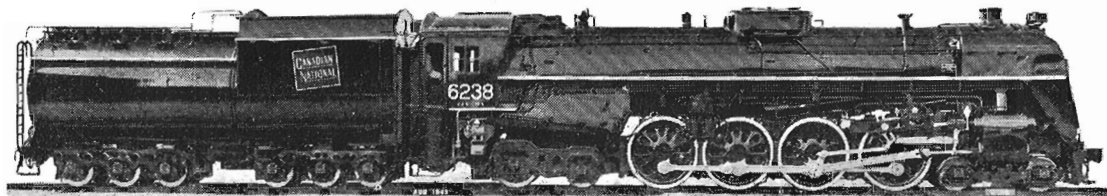
*OPPOSITE, TOP AND BOTTOM: Two views of soldiers by troop trains, the first at Debert, Nova Scotia, the other at an unknown location.
CN photos X14532 and 41993.*

*ABOVE: Meals aboard the troop trains were sparten but adequate, eaten off sturdy enameled ware.
CN photo no. X9752.*

*LEFT: An army nurse boards the train as a CNR porter watches.
CN photo no. X15705.*

Railway Advertising Does its Part to Win the War

Railroads back up the *battlefronts* with fast Shipments



4-8-4 Type Locomotive Built for Canadian National Railways

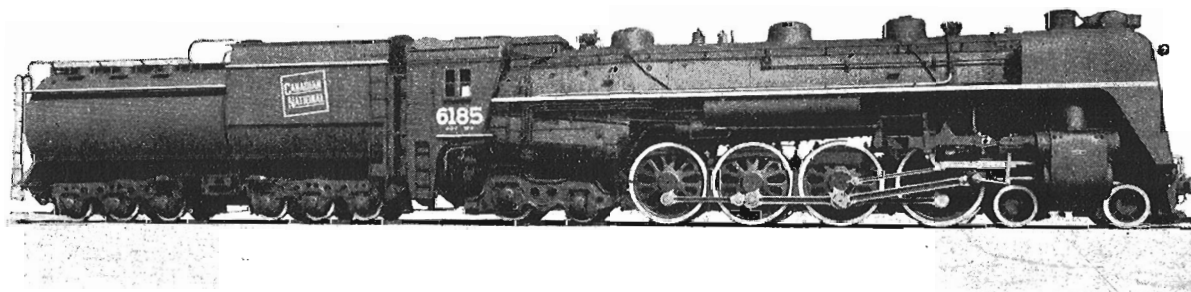
Cylinders, 25½" x 30"	Weight of Engine	400,300 lbs.
Driving Wheel Dia., 73"	Maximum Tractive Effort	56,800 lbs.

MONTREAL LOCOMOTIVE WORKS, LIMITED

Montreal **Quebec**

During World War II, many firms, of all types, modified or replaced their peacetime advertisements to reflect a "Win The War" theme. The railways, and the railway supply industry, were no exceptions. In the early days of the war, the changes and messages were rather subtle, but as time went on they became more pointed. Some of these ads were real classics, both in design and presentation. In this issue of Canadian Rail we are reproducing a selection of these advertisements. All are taken from the trade

magazine "Canadian Transportation" of the dates indicated. Rather than group them all together as one section, we are interspersing them throughout the magazine, in between articles, much as they would have appeared at the time. To heighten the impact we are not printing any comment with each one, only the date, since they speak for themselves. Of special note is the joint advertisement from the CPR and CNR on page 155; the two traditional rivals, here united in the common cause.



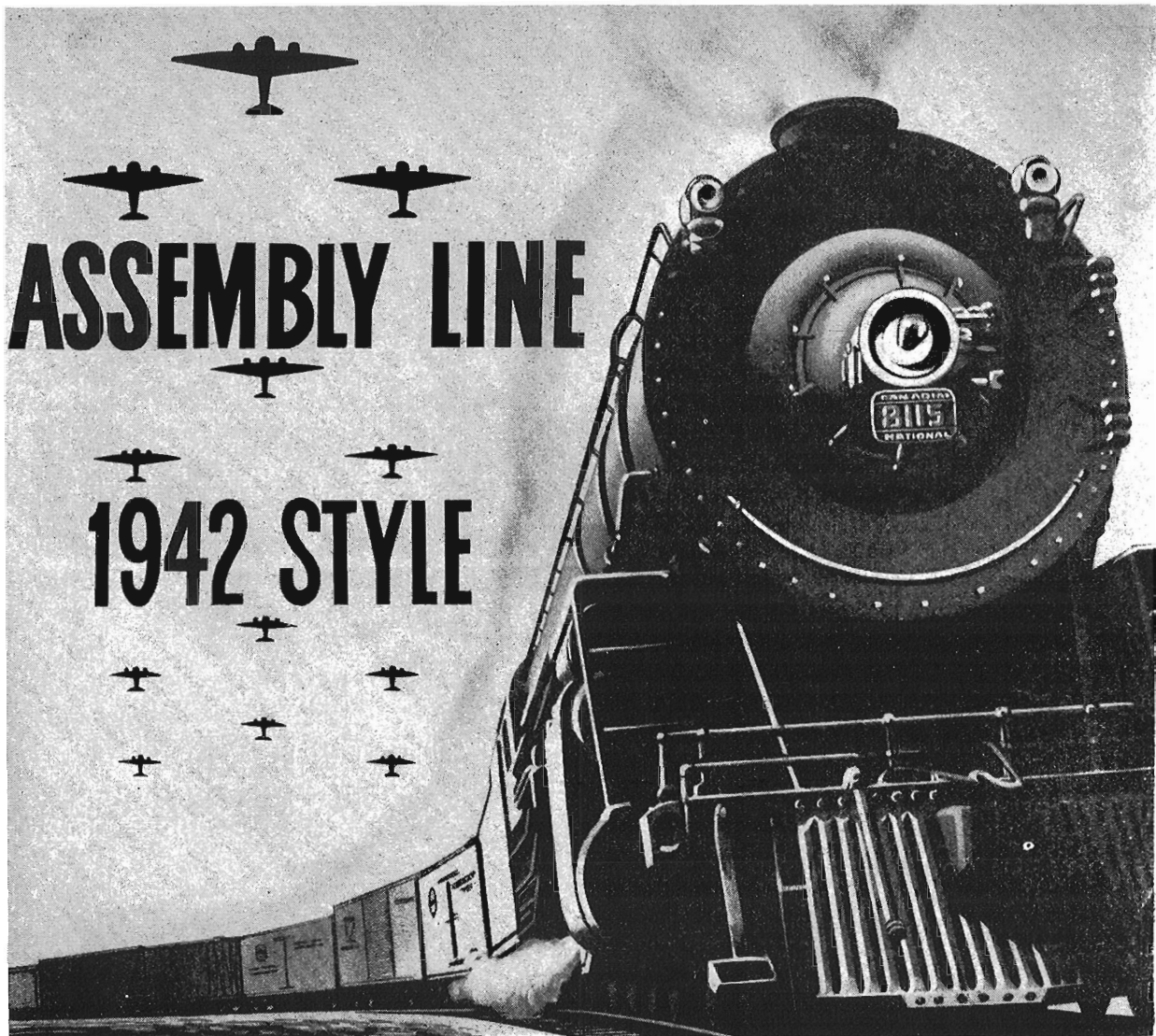
4-8-4 Type Locomotive Built for Canadian National Railways

Cylinders 25½" x 30"	Maximum Tractive Power	56,800 lbs.
Driving Wheel Dia. 73"	Total Weight of Engine	389,000 lbs.
Boiler Pressure 250 lbs.	Weight on Driving Wheels	237,000 lbs.

Canadian Locomotive Company

LIMITED

Kingston **Ontario**



PICTURE an assembly line stretching across Canada from coast to coast! In this town, they're making engines . . . over there, tail assemblies . . . hundreds of miles away, radio equipment . . . other places, propellers or landing gear. Canada's widely-scattered production plants are working in high gear on planes, Bren guns, tanks, technical equipment, A.A. guns and munitions to mention but a few of our war needs!

Yet all of the parts needed, the raw materials required, are flowing smoothly together, thanks to Canadian National Railways.

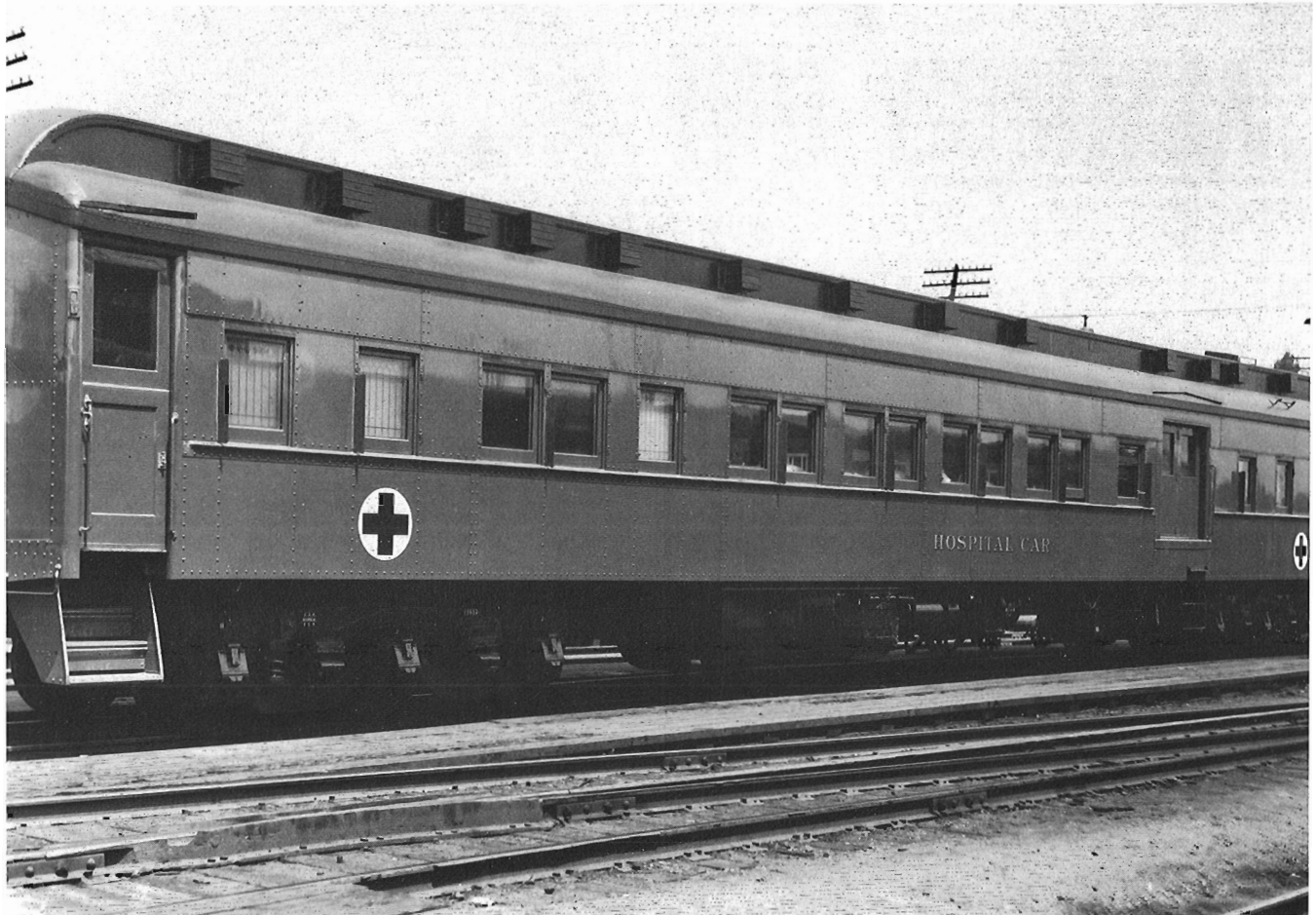
Canada's development of industry in peacetime, plus precision in transportation, are to-day applied to war needs. Canadian National Railways are a striking example of the manner in which modern industry is geared to wartime needs . . . by fast dependable transportation service dedicated to an all-out effort!

CANADIAN NATIONAL

February, 1942.

CNR Provides Hospital Cars

From "Canadian Transportation" August 1940



*The first CNR hospital car of World War II, photographed in 1940.
CN photo No. 42212.*

During the 1914 - 18 war, several cars for handling wounded and sick soldiers were built at the Moncton shops of the Canadian Government Rys., now a part of the Canadian National system, but these cars lacked many of the improvements which are now evident in cars now being built by the CNR at Point St. Charles Shops, in Montreal. The first of the new hospital cars, which, following completion, was taken to Ottawa for inspection by members of the RCAMC [Royal Canadian Army Medical Corps], is illustrated herewith. The car is the first of its kind to be fitted up in Canada, and as others become necessary they will be provided. This hospital car is what the name signifies; it is quite different from the type of railway unit designated as an ambulance car.

After consultation between officers of the RCAMC, the railway medical services and the motive power and car equipment department, it was left to Dr. John McCombe, Chief Medical Officer of the CNR, to prepare plans for a car capable of taking care of wounded and convalescent soldiers returned to Canada for

transfer to hospitals in various parts of the country. The suggestions agreed upon were given to John Roberts, Chief of Motive Power and Car Equipment, and from designs prepared under his direction the work was carried out at the Point St. Charles Shops.

The new units are equipped with eight hospital cots, eight upper berths for accommodation of less serious cases, a room capable of accommodating three nurses, a doctor's office, a generous linen cupboard, as well as a kitchenette complete with gas ranges to refrigerator, a dispensary and an ante-room for surgical dressings. The exterior of the car is painted Canadian National green with the designation "Hospital Car" and the emblem of the International Red Cross. It will be used in trains transporting wounded and convalescent members of the armed forces returning to Canada.

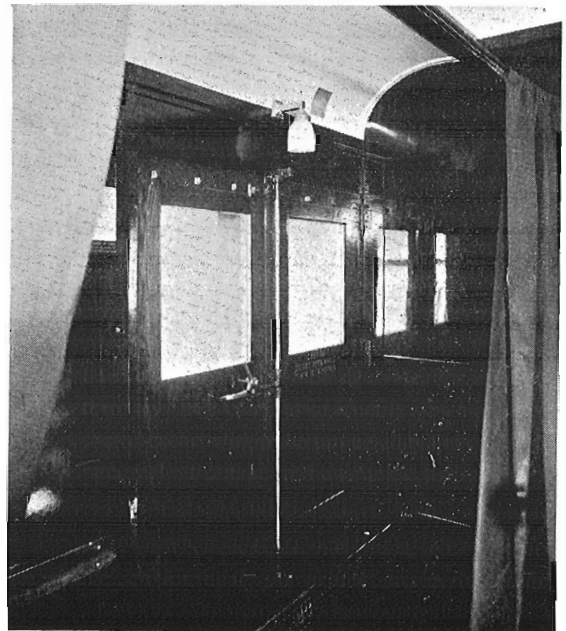


ABOVE: Inside the Hospital car. CN photo No. 42213.

RIGHT, BOTTOM: Interior view showing wide doors to permit easy stretcher entrance. Canadian Transportation, August 1940.

In its original railway service, this particular unit was a sleeping car. In the remodelling process, all of the lower berths were removed, as were four of the upper berths. The eight hospital cots were installed in the space which had been occupied by the lower berths; the eight upper berths were left in place for the accommodation of less serious cases. The room for the use of the three nurses was the drawing room. A complete transformation was made at the other end of the car, where the room for the doctor was fitted up, a linen cupboard was installed, and a complete kitchenette was arranged; the dispensary and ante-room for surgical dressings are at this end also. A feature of the ante-room layout is that at each side there are wide doors to allow stretchers to be taken in and out with facility.

The usefulness of a car of this type is that it can be added to any train carrying wounded or convalescent and become the active and effective centre of medical and surgical care for all patients on board.



War Savings Certificates and Victory Bonds

How the Railways Helped

By Fred F. Angus

It has often been said that money provides the sinews of war, and never was this more true than in the years from 1939 to 1945. From the very first, all Canadians were encouraged to save and to lend money to the government for the purpose of fighting the war. Although income taxes were raised to unprecedented heights, it was generally realized that the amount raised from taxes would fall far short of the huge amounts of money required; thus it was necessary to rely on the voluntary loans from the general population. Since the railway workers made up a large part of the workforce, it is not surprising that they contributed large sums of money to the war effort.

Three kinds of loan instruments were made available to facilitate raising money. These were War Savings Stamps, War Savings Certificates and Victory Bonds. The War Savings Stamps were the lowest value and the easiest to buy. They were available only in the 25 cent denomination, and thus were in the financial range of everyone from the youngest children on up. They were sold at post offices, schools, stores, offices and other places, so could be purchased easily and quickly. They did not bear interest, but could be saved and stuck on a special sheet or into a booklet provided for the purpose. When enough stamps had been accumulated they could be used for the purchase of War Savings Certificates. These certificates were available in denominations ranging from \$5 to \$500. They could be purchased either for cash or with War Savings Stamps, and were registered in the name of the purchaser. They were sold for 80% of their face value (thus a \$5 certificate

sold for \$4) and were redeemable after 7 1/2 years for the full face value, equivalent to 3% interest compounded semi annually. Interestingly enough, this interest was not taxable since there was a limit of \$600 per year in War Savings Certificates that could be purchased by any one person. For the larger investors there were the Victory Bonds. These were available in denominations ranging upwards from \$50 and bore 3% interest payable by coupon every six months. They were the forerunners of today's Canada Savings Bonds which were first issued in 1946, immediately after the last issue of Victory Bonds. Bonds could be purchased at banks, other financial institutions or on the payroll savings program. Altogether there were nine Victory Loans during which time bonds were actively promoted.

In addition to the regular war loans there were special funds for special purposes. Some involved outright donations rather than loans. An example is the CPR's "Golden Bomber" fund which was reported in the December 1940 issue of "Canadian Transportation":

"A Canadian Pacific employee effort, conducted with the approval of Sir Edward Beatty, G.B.E., K.C., LL.D., Chairman and President, and with the hearty cooperation of H.J. Humphrey, Vice President and General Manager, Eastern Lines, and W.M. Neal, Vice President, Western Lines, has as its objective the providing of \$100,000 with which to purchase a bomber for the Royal Canadian Air Force; the basis of the fund creation is the donation of articles of gold or with gold content, although cash contributions



Floats, prepared by CPR and CNR, promoting the sale of War Savings Certificates. Notice the large reproduction of a certificate on the CPR float. *Canadian Transportation*, April, 1941.



The conductor of a CNR train signs up a colleague to buy \$250 in Victory Bonds. The date was March 5, 1942, and it was the Second Victory Loan.
CN photo no. 43007-1.

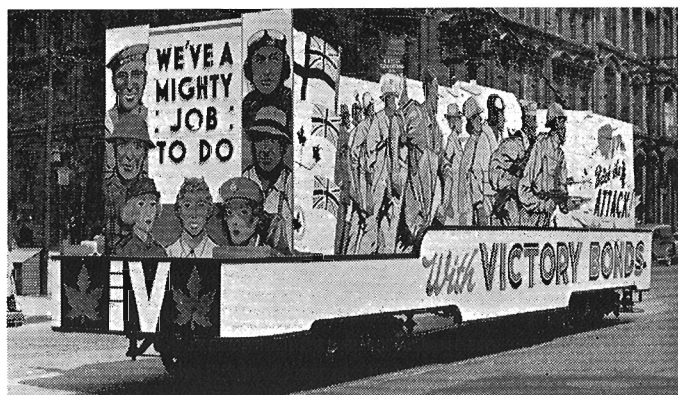
are being accepted from those who have no gold articles to offer. The contributions are being received at the Treasury Department office in Montreal, and expressions of deepest loyalty and devotion to King and Empire have accompanied the employees' contributions; unusually unique gifts reveal unsuspected depths of sentiment and patriotism. Among the contributions received were two old style Canadian \$5 bills, the donor of which wrote that they were the last birthday gift of her husband, a former prominent CPR official, ten days before he was stricken by a fatal illness. The lady said she

never had the courage to spend the money, and she was sending it as a direct contribution from her husband to the golden bomber fund. A company official has donated some fine pieces of jewellery, including some which were in his grandmother's jewel case and which were more than 100 years old when he was a boy. Among other contributions received were heavy wedding rings, large watch chains and "turnip" cases, brooches, pen nibs, broken dentures, parts of discarded spectacle frames, a gold nugget and a bottle of dental fillings.



One of CPR's "Cape" class cars at Field B.C. painted specially to advertise the Eighth victory loan in the spring of 1945. *Canadian Transportation*, June 1945.

Because of the obvious sentimental value of many of these gifts, entirely apart from their high intrinsic value, the committee is issuing attractive Golden Bomber receipts to all donors. These receipts are in great demand, and one young donor, six years old, is using hers to prove to her school friends that she is buying a bomber for the Royal Canadian Air Force."



A work car of the Toronto Transportation Commission advertising the Fourth Victory Loan in 1943. This car operated over the entire TTC system. *Canadian Transportation*, July 1943.

S.J. Hungerford, Chairman and President of the CNR, in a message sent in January 1941, urged employees to invest in War Savings Certificates. He said "Our nation needs money to win the war. Every income can provide something for this common cause which is really the cause of all humanity. Finance Minister Ilesley has said that the rich, the well-to-do, the financial and other corporations, and the middle class bond buyers cannot provide all

the large sum needed in 1941 no matter how hard they try. Wage earners and salaried men are, therefore, asked to make systematic investments in War Savings Certificates."

As time went on, and the situation on the war front became ever darker, the appeals grew stronger and more pointed. "Canadian Transportation", in its issue for June 1941, had this to say to urge on investors:

"There comes a time in the lives of most men when they come face to face with reality and cannot dodge it. Such a time has arrived for every man and woman in Canada who has a sum of money over and above that needed for ordinary expenditures. There are few Canadians who do not treasure money, either for the protection it affords against unforeseen calamity or for the value it represents in terms of goods which it will buy. Some treasure money because it is the concrete result of years of hard work. Others are reluctant to part with money because to them it is a sheltering arm around the family.

Now, however, Canadians are faced with the realization that no matter how highly they regard their personal cash reserves, they must loan it in order to keep it. The battle against Germany can be viewed in part as a battle on behalf of Canadian cash in hand. Let Germany win, and the assets of Canadians will dry up almost to the vanishing point.

Great Britain, Australia, New Zealand, South Africa, India and Canada have been left alone to fight the Nazi monster. The challenge, undoubtedly the most stupendous in world history, demands the active help of every Canadian. Those with money, be it fifty dollars or two hundred and fifty thousand dollars, must loan their cash to the government if Canada is to carry on with her present share in the big battle. The man or woman who shrugs his or her shoulder and deliberately attempts to duck from under the responsibility of each individual in this time of national crisis will earn the contempt of his fellow citizens."



One of 52 specially decorated CPR cabooses operated during the Eighth Victory Loan. *Canadian Transportation*, June 1945.



Four Montreal street cars specially painted for the Eighth Victory Loan in April 1945. The top two cars are 2118 and 2201, while the bottom two are 2212 and 2102. These cars were used in regular service as they advertised Victory Bonds.

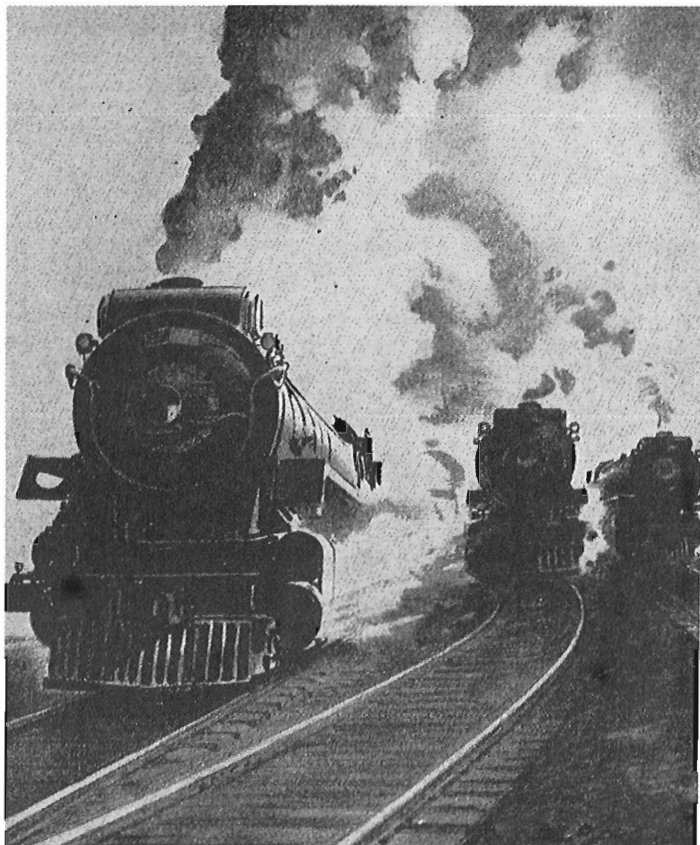
CRHA Archives, Binns collection.

Later, the presidents of both the CPR and CNR renewed the appeal. In November 1941 Sir Edward Beatty of the CPR said: *"It cannot be emphasized too strongly that to purchase War Savings Certificates is to serve by saving. Immediate and essential assistance is given to the country now, while the saving, represented by the amount so invested, with accrued interest, will be available later for your personal benefit. I earnestly desire to commend the objects of this campaign to every officer and employee of the company, and to urge that it be given the fullest possible support."*

At the same time, R.C. Vaughan of the CNR stated: *"Idle dollars are a liability at this time. They should be set to work, and one excellent way of doing so is to use your dollars for the purchase of War Savings Certificates. Your dollars, when joined with those of your tens of thousands of fellow workers, possess great power. No matter how small your own subscription may be it helps to swell the main stream needed to increase Canada's contribution in the defence of the world's liberties. By the purchase of War Savings Certificates every individual can take a direct and important share in the battle."*

The efforts of the railways in promoting the war loans were not confined to their own companies. Special advertising, sometimes on the sides of rolling stock, carried the message to most of the population. The city transit systems were also involved. Notable were the street cars in Toronto and Montreal which were fitted out to carry messages. In the case of Montreal, four cars went into service on October 24, 1944 carrying messages advertising the Victory Loan. These differed from those in some cities in that the cars were still in regular passenger-carrying service at the time.

The great work by the railways to raise money for the war effort was successful, and many of the campaigns went "over the top". The huge fund raising campaigns continued unabated as victory drew near; in fact the last Victory Loan took place after the war had ended. Eventually the certificates and bonds matured and the money borrowed from the people of Canada was repaid. The results of all the money invested by railway employees, amounts ranging from a few cents to hundreds of dollars, expressed the patriotism of the railroaders and played a significant part in the final victory.



SALUTE TO THE RAILWAYS

. . . Vital Arteries in Canada's War Programme

OVER the great network of tracks which spreads across the Dominion, trains are thundering night and day providing that prime essential of modern warfare — fast, efficient and dependable transportation.

At no time in their history have Canadian Railways been called on to handle as much traffic as is the case today—activity which calls for heavily increased effort on the part of operating employees and maintenance of way departments.

Wartime needs also make extraordinary demands on mechanical and

motive power staffs, but despite this, railway shops are also producing large quantities of shells, tanks, field and naval guns and other materials of war.

Compressed air speeds up many operations in locomotive and car shops, and also plays an important part in the maintenance of bridges, buildings and roadways.

It is a source of pride to us to know that Canadian Ingersoll-Rand air compressors, air tools, tie tampers and other equipment are helping Canadian Railways in their outstanding contribution to the war effort.

Canadian Ingersoll-Rand Co. Limited
head office - MONTREAL QUE. — works - SHERBROOKE QUE.
branches - SYDNEY - SHERBROOKE - MONTREAL - TORONTO - KIRKLAND LAKE - TIMMINS - WINNIPEG - NELSON - VANCOUVER

The Importance of the Railways in the War Effort

Early in 1943, both the Canadian National and Canadian Pacific Railways produced interesting and attractive booklets describing their work in the war effort. These booklets had wide distribution among the general public and helped to create national realization of the importance of the railways to the job of winning the war.

Canadian National pointed out that it was America's largest transportation system, international in scope, and every bit of its equipment and every man and woman in its employ were dedicated to winning the war. Its 23,600 miles of road formed a steel network touching virtually every city and town of importance throughout Canada, with the sinews of war and the commerce of the nation passing over it day and night. Also, it pointed out, the system served many large centres of industry in the United States. When war came, the CNR was prepared for immediate transition to war operations. Many old locomotives which ordinarily had been considered beyond further usefulness, were reconditioned for service and a number of them were turned over to the United States government for war purposes. More than 5000 box cars and hundreds of passenger cars were rebuilt and reconditioned. Approximately 100,000 freight cars per day were handled by the CNR and, during 1942, the system required 7,000,000 tons of coal.

A unique division of railway activity was the construction of cargo ships and minesweepers in the CN shipyards, and naval guns and other armament was being manufactured in the Munitions Department of the company. Finally, it was reported that 10,000 CNR employees had joined the fighting forces, and all the company's 100,000 employees must be considered as servicemen; in the fighting services and on the home front all were performing meritorious service.

The Canadian Pacific publication emphasized that CP was at war on land, sea and air; in its machine shops, freight yards and offices, wherever its more than 20,000 miles of railway went. As of November 30, 1942, a total of 13,597 CP employees had enlisted in the armed services. This was made up of 7510 from the railway, 5580 from CP Steamships, 484 from the Express company and 23 from the airline. The book also described CP's production of Valentine tanks [see pages 142 and 143 of this issue], naval gun production, munitions work and how the railway moved the personnel in the services. In 1941, CP handled 51,105,656 tons of freight - almost double the volume carried during the last year of the First World War, with 587 fewer locomotives and 13,464 fewer freight cars than were employed in 1918.

The activities of the CPR steamships were described and it was pointed out that the ships became engaged, under Admiralty charter, in moving men and war supplies over the world's treacherous sea lanes. The company lost the largest ship in its fleet, the "Empress of Britain", to enemy action in 1940. In addition, the "Empress of Asia", the "Montrose", the "Niagara" and four of the five "Beaver" class ships were all lost, but they perished with the highest traditions of the sea and of the country they served.

In August, 1942, the CNR produced a very interesting and informative booklet entitled "The Railway and the War". This book contained a series of drawings by Thurstan Topham, a very talented artist from Derbyshire England who came to Canada in 1912. These drawings were published in Canadian Rail between July, 1992 and June, 1993. The book stated that the war was one of transport, and the railways were the arteries through which flowed the natural products of forest and mine to Canada's great war plants, and carried the products of these plants to the seaboard.

It was noted that, since 1939, the CNR had reconditioned 83 freight locomotives which ordinarily would have been retired. Some of them had served Canada in four wars: that in the Sudan (1896-1898), the Boer War (1899-1902), World War I (1914-1918) and World War II (starting in 1939). The loss of CN's steamships "Lady Somers" and "Lady Hawkins" was noted, and recognition was made of the heroism of the crews of these ships.

In June 1944, a report on the CPR's war work in its various shops was prepared by Mr. H.B. Bowen, Chief of Motive Power and Rolling Stock. A search of the blueprint and photographic records up to May of 1944 showed that close to two million square feet of linen and paper had been used in making tracings, blueprints and other drawings. Back of all this were over 10,000 original tracings prepared on linen in Montreal and Calgary. From these more than 350,000 blueprints had been made and 22,000 vandykes issued, from which prints can be made. In addition to blueprints from original tracings, many had been made from forms such as requisition and data sheets, with 1,600,000 square feet of paper used for the work. Mr. Bowen also reported that Angus Shops production reached a peak total of 78 Valentine tanks in one month, each tank weighing 18 1/2 tons. More recently, the shops had turned out six of the main marine engines with condensers, each unit weighing 89 tons with bed plates. Meanwhile Ogden Shops in Calgary had delivered as many as 140 twelve-pounder guns and 79 mounts for them in a month.

While all this was going on, the railways were giving full cooperation to the authorities regarding air raid drills and other preparations for emergency. To take one representative example; in the blackout at Montreal in June 1941, both railways worked out a plan to stop trains during the 15 minutes of the blackout and extinguish all lights except switch lamps and automatic signals. This included the lights in all stations and offices. CP train 424 from Ottawa was held between Park Avenue and Montreal West, while the departure of the 10:30 D&H train was delayed. Passengers were not allowed to board the transcontinental train, nor the overnight train to Quebec City, until the blackout was over.

These few examples give a very small idea of the great contribution of the railways during the war. Other features appear in other articles in this issue, but to tell anything like the complete story would require far more space than is available. All that can be done is to tell some representative stories, and it is hoped that this article will be read in conjunction with the others in this issue to get a slightly better picture of this contribution.

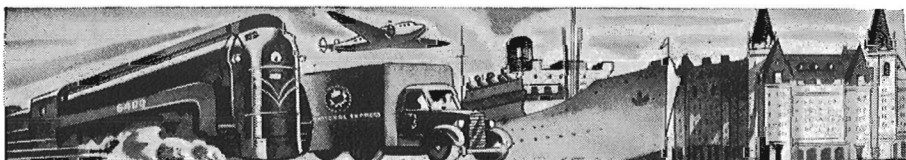
CANADA'S WAR INDUSTRIES



FIND THE RAILWAYS *Ready!*

When you see a long train of Canadian National freight cars rolling along, you can say "That's another load to speed Canada's war effort" — and ten to one you'll be right. We're busy today . . . busier than ever before, helping to deliver the goods to Canada's Allies!

Today, Canada's war industries are depending on the railways for a mighty job of transportation. Raw materials for our aircraft and munition plants are being rushed by rail. Finished products . . . tanks, guns, aircraft parts, shells and supplies . . . are being transported to seaports and to depots scattered everywhere across this wide Dominion. Regardless of the weather, Canadian National plays its part!



**CANADIAN
NATIONAL
RAILWAYS**

PASSENGER FREIGHT
EXPRESS SERVICES -
TELEGRAPHS - HOTELS -
AIR LINES - STEAMSHIPS

September, 1942.

Wartime Railroading, 1918 and 1943

From Canadian Transportation, August 1945

ITEM	YEAR 1918	YEAR 1943	% CHANGE
Number of Locomotives	5,756	4,364	-24.2
Mileage of Locomotives	146,753,205	173,937,940	+18.5
Average Mileage per locomotive	25,496	39,857	+56.3
Number of Freight Cars	209,026	158,390	-24.2
Mileage of Freight Cars	1,902,124,905	3,145,920,808	+65.4
Average Mileage per Freight Car	9,100	19,860	+118.2
Average Capacity of Freight Car (tons)	34.3	43.4	+26.5
Tons of Freight carried one Mile	31,029,072,279	68,294,344,176	+120.1
Tons of Freight carried	127,543,687	195,843,288	+53.5
Average Train Load (tons)	475	785	+71.8
Number of Passenger Cars	6,376	6,319	-0.9
Mileage of Passenger Cars	290,147,934	433,828,200	+49.5
Average Mileage per Passenger Car	45,506	68,655	+50.9
Passengers carried	50,737,294	57,175,840	+12.7
Passengers carried one Mile	3,190,025,682	6,525,064,366	+104.5
Average Passenger Journey (miles)	63	114	+81.0
Average Passenger Cars per Train	5.8	9.2	+58.6
Passengers Killed	32	9	-71.9
Passengers Killed, one in every	1,585,340	6,352,871	+300.7

In his recent address, Mr. J.V. Dillabough, Transportation Engineer, Western Region, CNR, after reviewing the activities of the Canadian railways since the outbreak of war in 1939, stated: "Vision, enterprise, ingenuity, scientific study, steadfast confidence, both in the future of our country and the final victory of the United Nations, and wise investment by the railway companies during the last twenty odd years have all combined to produce the railroad facility as it exists at the present time."

After outlining in great detail the nature of the task which faced the railways following the outbreak of war, the facilities provided for railway performance and the use made of such facilities, he dealt specifically with locomotive performance and then with freight traffic and passenger traffic in turn, and presented comparative figures which are reproduced in the accompanying table.

Dealing with the locomotive situation, he said: "It will be noted that there are 1392 fewer locomotives (24.2%) in use in 1943 than in 1918, although there was an increase of 18.5% in total locomotive mileage, which means that the average annual mileage per locomotive was 56.3% greater in 1943 than in 1918. A feature of this increase in annual mileage per locomotive, that will appeal to mechanical engineers, is that with the annual mileage of about 25,000 in 1918, a locomotive would run about four years before being sent through the shops for a general overhaul, whereas with the annual mileage of about 40,000 in 1943 this period would be reduced to about two and one-half years. The effect of this feature is, of course, to increase the load on shops which are already overburdened. This may sound somewhat similar to the story of the farmer who, when congratulated on having a magnificent crop of grain said that it took an awful lot out of the land."

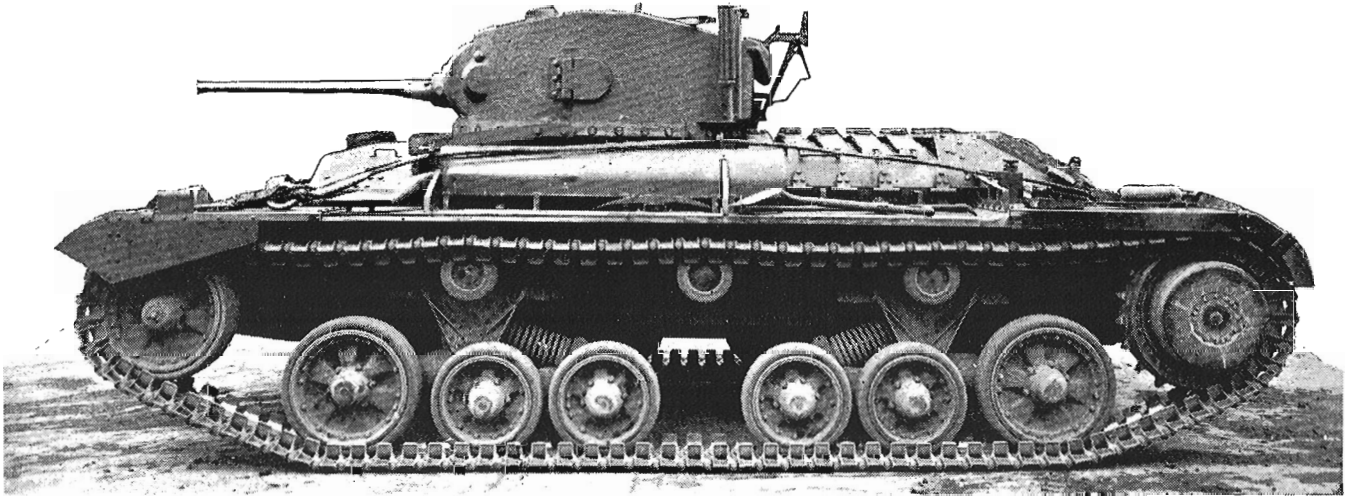
There were 50,636 fewer freight cars (24.2%) in use in 1943 than in 1918, whereas freight car mileage increased 65.4% and the average freight car travelled 10,760 miles (118.2%) farther in 1943 than in 1918. This is the result of a policy which may be expressed in railroad talk as "Get 'em loaded, Get 'em there, Get 'em back and keep 'em rolling". Not only did the average freight car travel more than twice as far than in 1918, but its carrying capacity was increased by 9.1 tons or 26.5%. Nearly 68 million (53.5%) more tons of freight were carried, but this figure in itself is of limited significance. The truth regarding the work done in handling tonnage can only be determined by considering the distance it is hauled (ton miles), and you will note that over 37 billion (120.1%) more ton miles were produced in 1943 than in 1918. The average train load was 71.8% heavier than in 1918.

It will be noted that while the number of passenger cars in use was practically the same, the total car mileage was 49.5% more and the average mileage per car was 50.9% more in 1943 than in 1918; also, while over six million (12.7%) more passengers were carried, over three billion (104.5%) more passenger miles were accumulated in 1943 than in 1918. The average passenger journey was 81.0% longer and the number of cars per train 58.6% more in 1943 than in 1918. It may be of interest to point out that whereas in 1918 there were 32 fatal accidents to passengers, or one in 1,585,340, in 1943 only nine fatal accidents occurred, or one every 6,352,871 passengers carried, an improvement of 300.7%.

Such, in tabloid form, is what our railroads have accomplished under conditions of total war, and can be explained as the result of sustained and co-ordinated efforts of a loyal and efficient staff of men and women together with the co-operation of an understanding public, all of whom, employees and public alike, are imbued with but one idea - **Win The War.**

The Building of Tanks at the CPR's Angus Shops

By Fred F. Angus



A Valentine tank produced by the CPR in the Angus Shops.

Canadian Transportation, July 1942, from a CPR photo.

During World War II the CPR, at its Angus Shops in Montreal, produced a large number of Valentine tanks. Production began in 1940 and ended in 1943. The first consideration of using the shop facilities of the CPR to build tanks came on February 6, 1940 when a number of representatives of the British Supply Board and the Canadian government inspected CP's shop facilities and decided that the Angus Shops were particularly well adapted for tank construction. Negotiations with CP resulted in an agreement for CP to undertake the tank building project under the direction of H.B. Bowen, Chief of Motive Power and Rolling Stock.

It was decided to produce the Valentine tank, which was a British design, and for which 4000 drawings, covering more than 15,000 parts, were available. Two tanks were sent from Britain as samples, the first, equipped with a gasoline engine, arrived on August 29, 1940, while the second, diesel powered, came on November 27 of the same year. During the time before the drawings and the sample tanks arrived, Mr. Bowen ordered the construction of a full-size wooden "mock up" of a tank, as well as actual size replicas of many of the parts. This foresight familiarized the workers with the parts they would have to make, and eliminated many "bugs" before they could crop up in actual production. Thus it was that by the time the drawings (many of which had to be redrawn) and the sample tanks were available, the project was already well under way.

To appreciate the work involved in converting portions of the shops from locomotive work to tank production, it should be realized that almost 8000 jigs, dies, fixtures and special tools were required to produce a Valentine tank. Studies of machining

processes were done to determine the best utilization of existing tools and to develop the most satisfactory arrangement of equipment and shop space required for the project. The manufacture of some of the components for the tanks were sub-contracted to other manufacturers such as American Car & Foundry, York Safe & Lock Company, Buckeye Traction Ditcher Company, General Motors Corporation, and McGill Manufacturing Company. The heavy armour plate required was machined at Angus Shops, and also at the Canadian Locomotive Company's plant at Kingston.

Actual production of the tanks began late in 1940, and on May 22, 1941 the first one was delivered. A brief ceremony was held at which 2000 workers at Angus, together with various dignitaries and 50 reporters and newsmen, watched as Mr. D.C. Coleman, Vice President of the CPR, officially handed over the first tank to the Hon. C.D. Howe, Dominion Minister of Munitions and Supply. Among other things, Mr. Coleman said: "*I am very proud to represent the builders on this happy occasion. Months ago the Heaven-sent leader of the British race invited us down an avenue where, he said, we would find only blood sweat and tears. Well, this machine before us is the child of sweat and tears. It is the first of its type produced on the continent, and it will be followed by hundreds and thousands of its brothers who, in the aggregate, will help the British Empire to crash through to Victory.*"

In reply, Mr. Howe made a speech from which the following is taken: "*The building of this tank has been, I think, one of the greatest problems that Canadian industry has had to face. We started in June last with very sketchy plans, with no production of armour plate in this country, and with a good many components*

that had not previously been produced here. Since then Canadian industry has produced an armour plate that is equal to armour plate used anywhere, and has solved numerous problems incidental to building this tank, and have delivered here this morning the finished article. I want to mention particularly the work of Mr. Coleman in directing this production, and the work of Mr. H.B. Bowen, Chief of Motive Power, who has had direct charge of this construction; and particularly the work of the foremen and men of the Angus Shops, who have been working night and day for many months to make this event possible."

On August 12, 1941 the tank-building facilities at Angus Shops were inspected by the Earl of Athlone, Governor General of Canada, and later, on August 29, by the Duke of Kent, brother of King George VI, during his North American visit. Then, on



A new tank rumbles past as the Earl of Athlone, Governor General of Canada, watches, at the Angus Shops on August 12, 1941. Note the "V for Victory" sign in the background. *Canadian Transportation, October 1941.*



Some of the new tanks awaiting shipment on CPR flat cars. *Canadian Transportation, February 1942.*

November 6, 1941, the 100th tank rolled off the assembly line. Once again there was a commemoration of the event as the tank, bedecked with flags and signs, moved on its own power to join others awaiting shipment. A brass band, composed of shop employees,

furnished appropriate music for the occasion. The new tanks, together with a large number produced by the Montreal Locomotive works, had been shipped overseas by early December.

The building of Valentine tanks continued at the Angus Shops until early May 1943 when "The needs of a global war having dictated a change to other weapons", the last of more than 1400 tanks came off the production line. Many of these tanks were for the Russians who used them with great effect in their campaigns. By 1943 Canada had sent more than \$100,000,000 worth of war supplies to the Soviet Union, more than half the value of which was made up of tanks. Major-General Elyaeve of the Soviet Army had these words of praise: "I am glad to inform you that the Canadian tanks, Valentines VII, have shown good results in combat action on our front, and have proved themselves the best of all our imported tanks."

The end of tank production did not end the war work done by CPR shop facilities. Many other items of war supplies, such as equipment for the navy and air force, as well as various types of munitions and other equipment continued until the end of

the war. All this, together with the greatly increased maintenance work required on railway equipment because of increased wartime traffic, was a major example of the contribution of the railways to the huge job of winning the war.



● The hands that once built street cars and buses are otherwise engaged . . . on vital war work. Cancar's output of Hawker Hurricanes stands as a great achievement. Avro-Ansons continue to roll off production lines. Curtiss Dive Bombers are well on the way.

Crack stream-lined car building and repair

crews continue however to meet the need for essential rolling stock . . . building and repairing tank cars, box cars and other freight carriers to haul the raw materials and tools of Victory. Meanwhile, we can only ask you to wait for that glorious day when peace comes and we can once more turn to peacetime production.

CANADIAN CAR & FOUNDRY CO. LIMITED



June, 1943.

Street Car Systems During World War II

By Fred F. Angus



This photo, taken at the corner of Craig and Bleury in Montreal late in 1941, gives a good view of wartime operation of street cars. Ten trams are visible, many of them being the old "Montreal roof" 1200 class of 1911 to 1913. Note the sign on the back of 1277 saying "Come on Canada, buy the new Victory Bonds". The only bus visible is a long distance one from Sorel. CRHA Archives, Binns collection.

During the 1930s most of Canada's transit systems had been operating below their full capacity. The Depression that had begun in 1929 had reduced ridership so much that some equipment had been placed in storage and lightly used lines had been abandoned or converted to bus operation. Although economic conditions had improved somewhat in the later 1930s, conditions were nowhere back to 1929 levels at the time war broke out in September 1939. Immediately upon the outbreak of war it was realized that all of Canada's transit systems would be called on to carry much greater loads than they had been doing. But no one could have predicted that the growth would set new records year

after year and that the number of passengers would also set records that have never been broken. Many systems were strained almost to the breaking point, but they carried on and got the job done.

Although some tramway systems in Canada had been abandoned, and others cut back, the majority of transit lines in Canada in 1939 were still operated by street cars, especially the most heavily travelled routes. Since very few new cars had been bought in the 1930s, most of the cars in use were at least ten years old, and some dated back almost to the turn of the century. Some older cars had been retired, but were still in dead storage awaiting a possible upturn in traffic. Well this upturn came with a vengeance



A long line of old Montreal streetcars waits on Ontario Street East, in the summer of 1943, as workers from the war plants prepare to board. All these large cars were built between 1906 and 1908, and some had been retired, and slated for the scrap pile, in the 1930s. Reconditioned and returned to service, they did great work during the war. CRHA Archives, Binns collection.

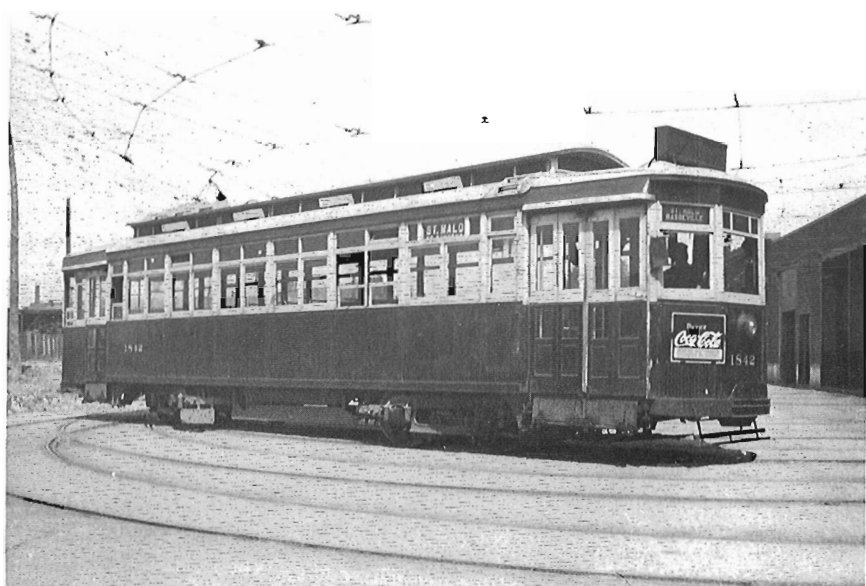
and within a year or two most of this old equipment had been reconditioned and was back in service carrying record numbers of passengers. Even some routes that had lost passenger service were restored. The prime example of this was the main line of the Niagara St. Catharines & Toronto interurban line. Even as late as June 10, 1941 it had not been realized how much the wartime traffic would grow and passenger service had been completely discontinued on that date. However as traffic did continue to grow, and gasoline and rubber tires were needed for military use, the Transit Controller ordered its reinstatement. Thus passenger service on the NS&T main line returned, partially on April 27, 1942, and completely by November 15 of the same year.

Despite making use of every car that could operate, the transit companies were in dire need of even more equipment. Several systems acquired second hand street cars while the few new cars that were being built were distributed to places where they could do the most good. By this time all the transit systems in Canada were under the authority of the Transit Controller, and his office decided which cities were assigned which new or second hand cars. As an example, a group of 50 new PCC cars, delivered in 1944 and originally intended

for Toronto, was split three ways, some going to Toronto as planned, but others going to Montreal and Vancouver. Many of the second hand cars were from systems in the United States that had recently been abandoned, and many were of quite modern construction. Notable were the fifty cars that came to Montreal from such widely spaced places as Springfield Massachusetts, Schenectady New York, and Tuscaloosa Alabama. The record for long distance travelled by second hand street cars was that of the five Birney cars that came right across the continent, from Bakersfield California to Halifax Nova Scotia! Oldest of the "boomer" trams were seven old cars, built in 1908, of the Third Avenue Railway System in New York City that came to Quebec City in 1942. There were also moves of second hand cars within Canada as exemplified by the Birneys that went from Toronto to Halifax, and the old wooden cars from Toronto that were sent to Ottawa and Quebec City.

The problems were getting worse. In March, 1941 the management of

the Winnipeg Electric Railway said: "*Out here in the west the mere ripples of last year are beginning to swell and the tidal wave may yet reach us. Montreal had to go out and buy street cars in order to meet the demand. Halifax is taxed beyond capacity. Toronto is*

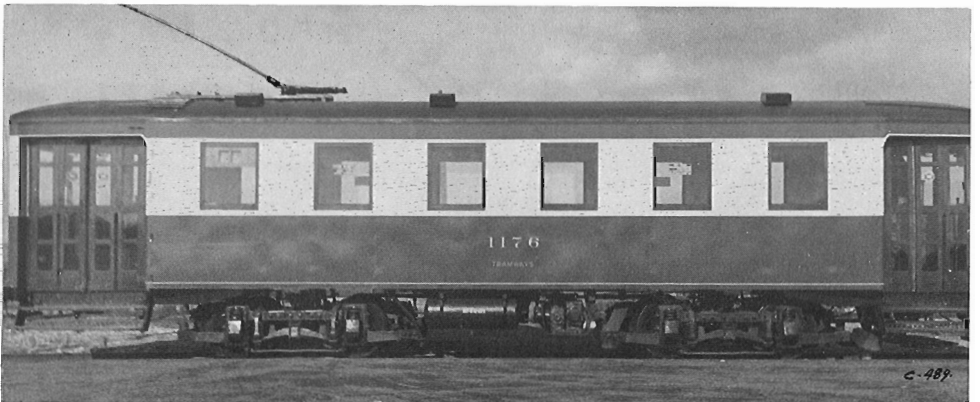
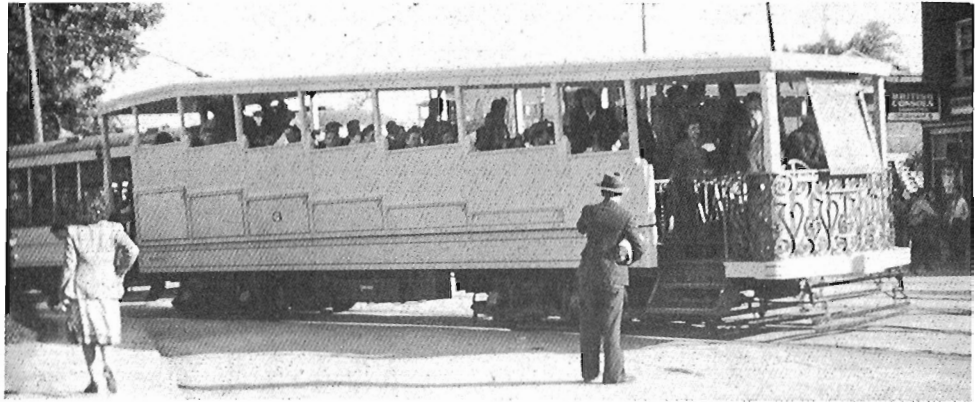


Toronto Railway Co. number 1842 was built in 1912, and was sold to Quebec City in 1943. It is seen here in Quebec in July 1944. CRHA Archives.

experiencing similar tribulations, as are Ottawa and Hamilton. Fort William was so badly swamped that their transit management purchased two older type street cars from Winnipeg Electric Company. The cars were running on Fort William streets on the afternoon of the day they arrived by railway flat car."

By the end of 1942 the supply of second hand cars had dried up, yet the demands on the street car systems got ever greater. Various expedients were tried to make better use of the existing rolling stock. Perhaps the most bizarre was the attempt, in 1943, by the Montreal Tramways Company, to build a roof on one of its observation cars (No. 3) and use it in passenger service. This was not successful so four wooden car bodies (1175 to 1177) were built new to use the trucks and electrical equipment from the observation cars which were retired for the duration. A more significant improvement was the implementation of staggered working hours by major industries. This spread the "rush hour" through the entire day and made for more efficient utilization of transit equipment. Those systems that did not get more equipment tried other means to cope. For instance, Saint John New Brunswick, which had only 34 trams, confined them to the most used routes and, in 1942, "temporarily" replaced the cars on the other routes with some of the busses that were available. Needless to say routine maintenance on all the systems suffered since most of the fleet was in continuous use, but smaller systems, like Saint John, suffered worse, and by the end of the war were worn out. This may account for the early abandonment of some of the smaller lines soon after the war was over.

While all transit systems faced similar problems, we will take as an example one of the lesser known smaller systems, the Levis Tramways Company, across the river from Quebec City. An excellent account of the wartime traffic on this system appeared in the September, 1942 issue of "Canadian Transportation". The following is from that account: "*The Levis Tramways Co., serving the city of Levis, Que., and environs, where industrial production is now at a high level, is one of the many transit properties in Canada which has found itself called upon to provide a greatly increased transportation service because of war conditions; like many other properties, it has done everything possible, and employed every facility, to meet the war emergency conditions; that the management has been successful in filling all demands for service is indicated by the fact that the company is handling more than twice as much industrial traffic as in 1939, and it is operating more cars, morning and night, for war industrial workers than it does in its regularly scheduled service.*"



A strange experiment was the fitting of a roof to Montreal's observation car No. 3, seen here on the Cartierville line in 1943. When this proved impractical, four new car bodies of completely wooden construction, like 1176 shown here, were built, and these served until the end of the war. They were then converted to work equipment. CRHA Archives, Binns collection.

The manager of the company has had to exercise every ingenuity in order to make this possible. They have even salvaged, repaired and remodelled electric railway cars abandoned many years ago, some of these having been built when the electric railway industry was in its comparatively early stages. Not only have they reclaimed all available old equipment and materials on their own property; they have even obtained several old cars by purchase from other transit properties, some of these having been badly damaged in collisions and having been considered by their former owners as not worth salvaging. Readers will recall that in 1940 the government requested the transit industry to salvage and reclaim from scrap all old material and equipment which could be rendered serviceable, and it is evident that the Levis Tramways Co. management has been in the forefront as concerns co-operation with the government in this programme.

The reason that the Levis Tramways Co. has been called up to furnish such a large amount of transportation for war workers is that the property serves an area where there is not only a great deal of munitions manufacture, but also one in which shipbuilding is carried on. There are two arsenals in the area, and ship construction plants on both sides of the St. Lawrence River, in addition to government war and semi-war industries. To add to the burden upon the transportation system, there is a pronounced shortage of housing accommodation, not only in Levis, but in

They Also Serve HITLER who only Park and Wait

YES, it's a long way from a "No Parking" sign in Montreal to Berlin, but what happens here can be felt there! Workmen pour into a factory on time, a bomber rolls off the line to try its wings—and there's a cargo of bombs that much closer to its target in Germany.

Or a car is parked, traffic is tied up, deliveries are delayed—and an aerial message of high explosives is late for its appointment with the enemy.

Free-flowing traffic makes the difference! And you, everyone in Montreal—motorists, pedestrians, drivers of public conveyances and all other vehicles—can contribute to the free flow of armaments to our fighting forces by contributing to the free flow of traffic in our city.

Montreal's traffic situation must be remedied. The police have power to enforce the Seven-Point regulations shown here—but they prefer that the problem be solved through your cooperation, not by exercising their power. That puts it up to us all, so read the Seven Points—comply with them—and take the brakes off our war production!

— Sponsored by —

Canadian Progress Club	Optimist Club
Gyru Club	Rotary Club of Montreal
Kinsmen Club	Rotary Club of Montreal-Westward
Kiwanis Club of Montreal	Rotary Club of Westmount
Lions Club of Montreal	St. Lawrence Kiwanis Club
Lions Club of Verdun	Zonta Club

and General Council of Service Clubs

**YOUR 7-POINT
TRAFFIC REGULATIONS**

1. "No Parking" signs mean no parking, and no one, even a sign is erected, any vehicle is forbidden to park under any circumstances.
2. Double parking is absolutely forbidden.
3. No stopping of vehicles on arterial streets or through streets, on which parking is prohibited, is permitted at peak hours (5:00 to 9:30 a.m. and 4:00 to 6:00 p.m.).
4. No delivery or pick-up of merchandise, no mail, no through traffic, which parking is prohibited, is permitted at peak hours.
5. The police have recurring powers, but motorists and drivers can assist by avoiding streets, lanes and congested areas during peak hours.
6. No motor traffic is permitted to use transitway streets in congested areas, where traffic lines to indicate.
7. Standard signalling is required of all traffic officers and all drivers of all vehicles. Traffic regulations apply equally to motorists, horse-drawn vehicles and bicyclists. The cooperation of all is essential.

BLOCKED TRAFFIC CAN BE TRAGIC

A constant thorn in the side of the street car companies was the motorist who parked and blocked the flow of traffic. This pointed advertisement, which appeared in Montreal on April 29, 1942, showed who really benefited from such selfishness!

Lauzon and in Quebec City itself, with the result that large numbers of war industrial workers are compelled to reside in small outlying municipalities and to travel to work in the morning and home in the evening, relying upon the Levis Tramways Co. to furnish transportation service.

That the government is now recognizing the importance of the transit industry in the war effort, and that such recognition has been more evident in recent months than throughout the first two years of the war, is apparent. That the importance of transportation, in locating new war industries, was not recognized in the early stages of the war, is demonstrated by the fact that great efforts had to be made to provide transportation after some plants had been built and were ready to begin operation. Recent months have demonstrated that the vital nature and important functions of the local transportation systems have been realized, with appropriate action taken. There are those in the industry who feel that its importance could be further recognized, such as by the granting of higher priority ratings, and by recognition that it is an essential war industry. At all events, those within the industry itself are striving to make the industry's contribution to the war effort as effective as possible, and the activities of the Levis system furnish a good sample of the manner in which transit is contributing to the war effort."

In spite of all the demands of providing service, some of the transit companies found time to do war production of their own, much as the main line railways were doing. For example, starting in 1940, both Youville Shops in Montreal and Hillcrest Shops in Toronto manufactured such items as gun carriage parts, components for anti-aircraft equipment and parts for large marine engines. One casting, made in Hillcrest Shops for an air hammer for a war plant, was the largest casting that had ever been made in the shop. Work was done in shifts to keep the machines in operation; all this over and above the work being done to keep the street cars running.

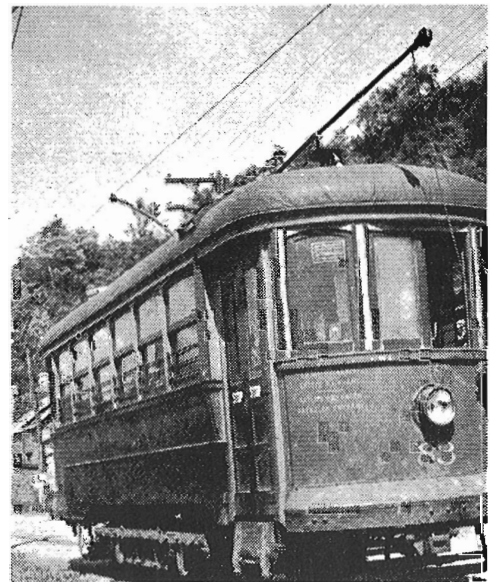
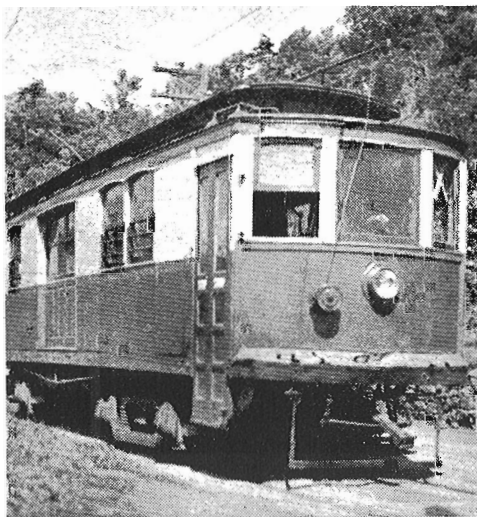
Even the transit systems had to stop during blackouts or other emergencies. In the early years of the war, the possibility that Canada would be attacked directly by the enemy, either by air raid or invasion, was very real indeed. The danger was even greater in seaports such as Halifax or Saint John where enemy submarines or other vessels could shell the city at any time. Frequent air raid drills were held, and emergency fire and

rescue brigades were ready all the time to try to cope with damage. During the air raid drills there was usually a "blackout" when the sirens would sound and all lights would be turned off until the "all clear" was given. Fortunately the real thing never took place in Canada, but in 1941 there was a very good chance that it would. An account of a blackout appeared in "Canadian Transportation" in August, 1941 as follows: "In both Montreal and Toronto, transit service was suspended for short periods during June, on account of blackout practice. In Montreal, the blackout period was from 10:20 p.m. to 10:45 p.m. on Monday, June 9; electric railway cars stopped on their routes and buses stopped at the curb at 10:20 p.m., and all lights were extinguished, and the vehicles remained in complete darkness until completion of the blackout at 10:45 p.m. Similar procedure was the rule in Toronto on the evening of Wednesday, June 18."

In spite of all the trials and tribulations, the street railways of Canada carried on. Even as victory appeared to be in sight the number of passengers continued to increase. For example, during the last year of the war the Montreal system was carrying an average of a million passengers a day. When the war ended, and traffic gradually began to return to normal, the street car systems of Canada could certainly point to a job well done.

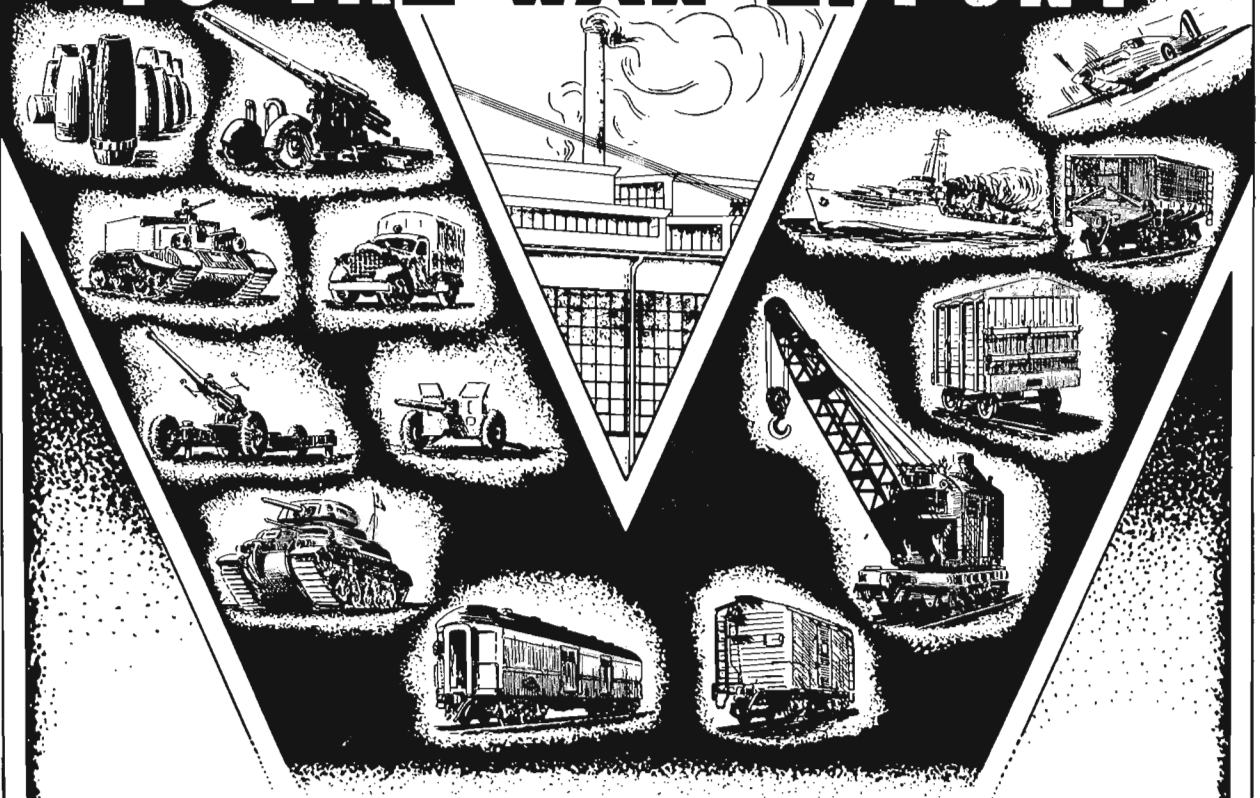


Even the most serious subjects have their light side. An amusing incident from the dark days of World War II concerns the above photo. During the war it was forbidden to photograph any means of transportation in port cities. Mr. Robert R. Brown, a long time CRHA member, was in Saint John N.B. during the war and wanted to take photos of Saint John's quaint street cars. Fearful of being arrested as a spy, Mr. Brown sneaked a few clandestine "cloak and dagger" photos from between the slats of the venetian blind of his room in the Royal Hotel on King Street. This view shows N.B. Power car No. 86 going up King about 1942. The shadow of the blinds shows clearly. No 86, built in 1912 and rebuilt in 1924, has long gone, but an identical car, No. 82, has been preserved at the Canadian Railway Museum. Collection of Fred Angus.



LEFT: A Levis street car of 1902, formerly used in express service, that was salvaged from the scrap pile and used to carry war workers. RIGHT: Another Levis street car, built in 1904, that was pressed into passenger service. Canadian Transportation, September 1942.

OUR CONTRIBUTION TO THE WAR EFFORT



1. Shells of various sizes for the British Empire and U.S.A. Forces.
2. Anti-Aircraft Gun Mount Platforms and Legs and Miscellaneous Pressings.
3. Heavy Alloy Steel Drop Forgings for Guns.
4. Steel Stampings and Pressings for Army Universal Carrier.
5. Steel Cargo Bodies for Army Trucks.
6. Miscellaneous Pressings for Bofors Gun.
7. Miscellaneous Pressings for 6 Pdr. Guns.

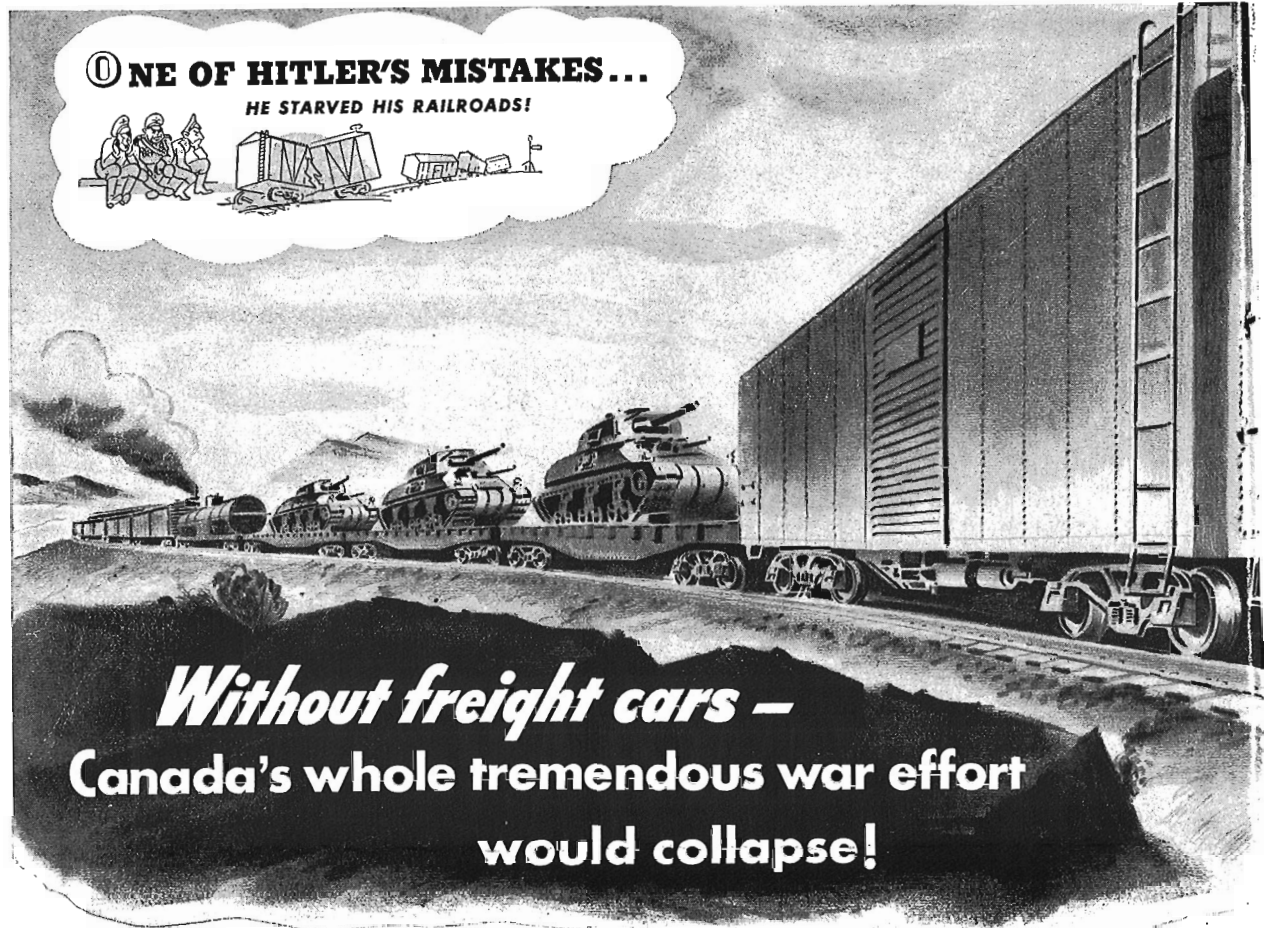
8. Armour Plate Pressings and Forgings for Tanks.
9. Light Alloy Pressings for Aircraft.
10. Light Alloy and Steel Drop Forgings for Aircraft.
11. Alloy Steel Forgings for the Navy.
12. Ore Cars for important Mining Industry.
13. Gun Cotton Cars.
14. Cordite Cars.
15. Locomotive Cranes for Steel Mills, Harbours and Railways.
16. Miscellaneous Freight and Baggage Cars.

NATIONAL STEEL CAR CORPORATION LIMITED

Head Office and Works
HAMILTON, ONTARIO

Sales Office
MONTREAL, QUEBEC

J. KIRKHAM



How does the steel ore from the mines reach the steel foundries? How does the steel for tanks, guns, shells, planes, warships, trucks reach the manufacturers who make them? How do all the finished tools of war reach the ports where ships will take them to eager hands?

How is Canada's wheat and other farm

produce moved to its markets? How do we get our food and clothing, coal and oil for heating? The answer is always the same —almost entirely by freight car—a sturdy, seemingly unromantic but exceedingly essential base for our whole tremendous war effort!

The war is placing an immense strain on these freight cars. We have only 171,420. In 1928, when a peace time traffic peak of 41 billion ton miles was reached, there were 217,028 cars available. It is estimated that our 1943 traffic mounted to the all time high of 60 billion ton miles. So now, with 45,608 less freight cars, Canada's railroads—and the men who operate them—are doing magnificent work in coping with 45% increased traffic!

The production of freight cars is an important activity of National Steel Car. Our workmen know that freight cars are essential, in peace as in war, to Canada's well-being. They take pride in the expert, skilled workmanship they bring to the job—as National Steel Car management take pride in developing improved methods of manufacture which result in the lowest possible cost.

Freight cars are not the only contribution that National Steel Car are making for Victory. Millions of the finest shell and a long list of other war material also flow out in a steady stream. National Steel Car labor, capital and management are all working as a balanced team in the fight to beat the enemy!

NATIONAL STEEL CAR
products serving Canada

- Shell of various sizes for the British Empire and U.S.A. Forces.
- Anti-Aircraft Gun Mount Platforms and Legs and Miscellaneous Pressings.
- Steel Cargo Bodies for Army Trucks.
- Steel Stampings and Pressings for Army Universal Carriers.
- Miscellaneous Pressings for 6 Pdr. Guns.
- Miscellaneous Pressings for Bolers Gun.
- Armour Plate Pressings and Forgings for Tanks.
- Light Alloy Pressings for Aircraft.
- Light Alloy and Steel Drop Forgings for Aircraft.
- Heavy Alloy Steel Drop Forgings for Guns.
- Alloy Steel Forgings for the Navy.
- Ore Cars for important Mining industry.
- Gun Colton Cars.
- Cordite Cars.
- Locomotive Cranes for Steel Mills, Harbours and Railways.
- Railway Passenger and Freight Equipment.

NATIONAL STEEL CAR

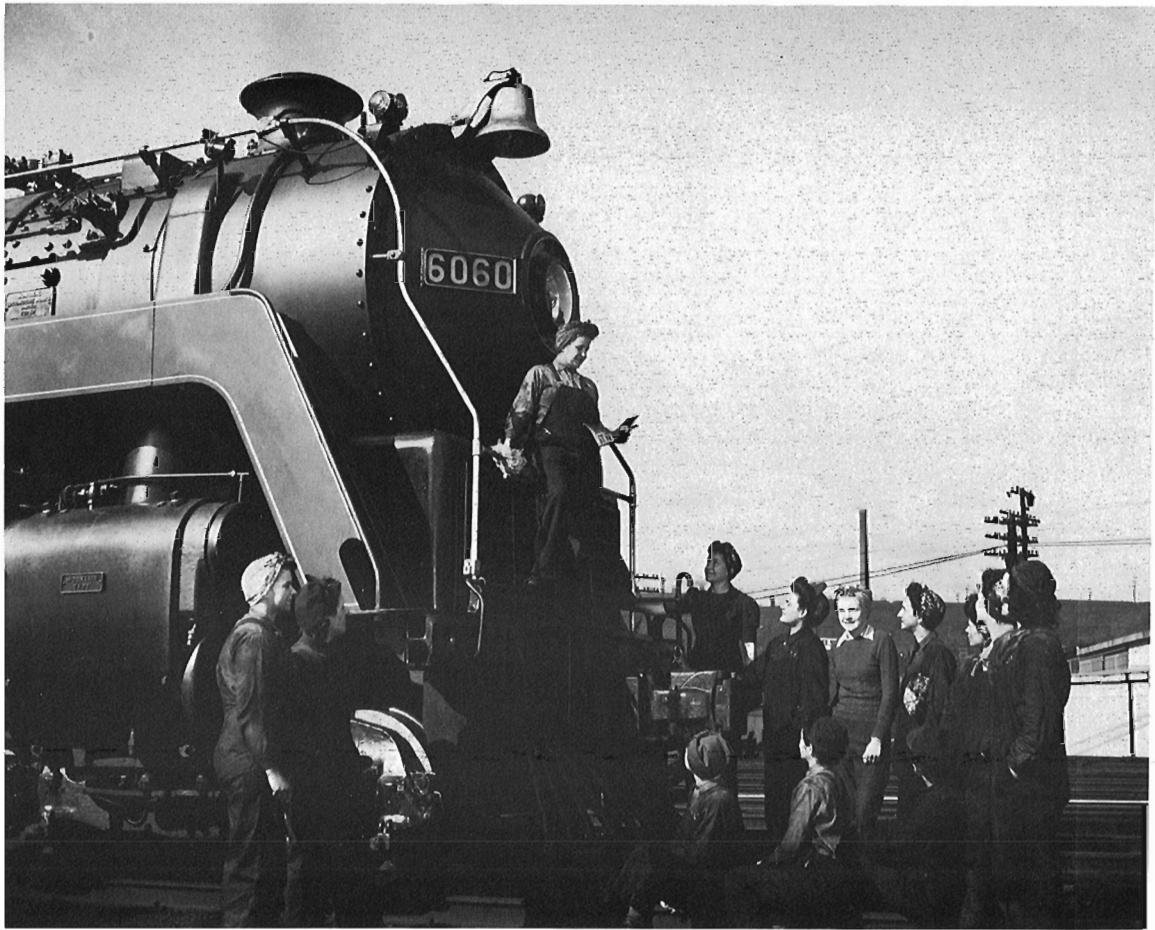
Corporation Limited

HEAD OFFICE: HAMILTON • SALES OFFICE: MONTREAL

BUILDERS OF TRANSPORT FOR CANADA

May, 1944.

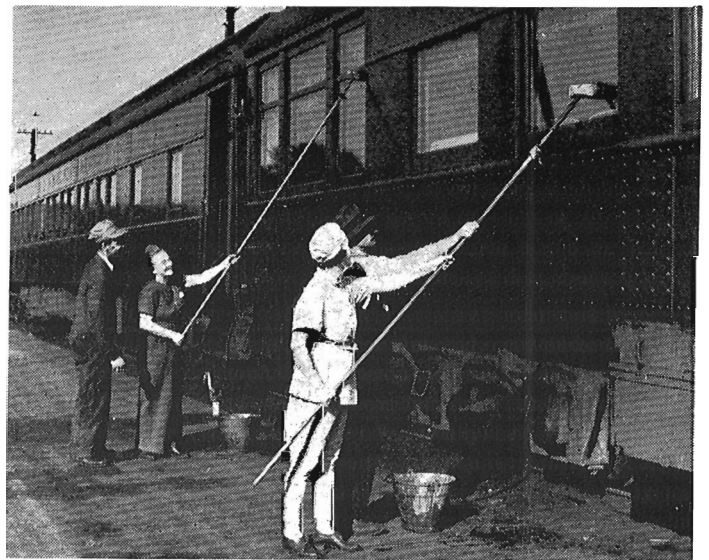
Women Replacing Men in Railway Service



A group of women employees at CNR's Point St. Charles Shops, pose by one of the railway's newest locomotives, Mountain type No. 6060. This engine is familiar to a later generation for its excursion service, and it has been preserved. CN photo No. X18790.

During the war, a great many railway employees, most of them men, left their jobs and enlisted in the fighting services. To fill these vacant positions, the railways hired large numbers of women, not only in positions traditionally occupied by women, but also in what had formerly been considered men's jobs. This included work in the shops both in the maintenance of railway equipment as well as in the manufacture of munitions and other war supplies. It soon became apparent that these women were highly efficient workers, and stories of such legendary persons as "Rosie the Riveter" or "Winnie the Welder" are part of the story of World War II. A number of transit companies hired women as conductors on the street cars, and some were even employed as "motormen". In a few cases, some women railway employees had experience, having done much the same work in World War I, a quarter of a century before.

Sadly, when the war was over, and the men returned, most of the women were laid off and went back to private life. However, the experience of working in industry was a great spur to the woman's quest for full employment opportunities, a quest that is rapidly being fulfilled today.



Car cleaners at work in CPR coach yard, autumn of 1942.

Canadian Railway Troops on the Western Front

From "Canadian Transportation" March 1945

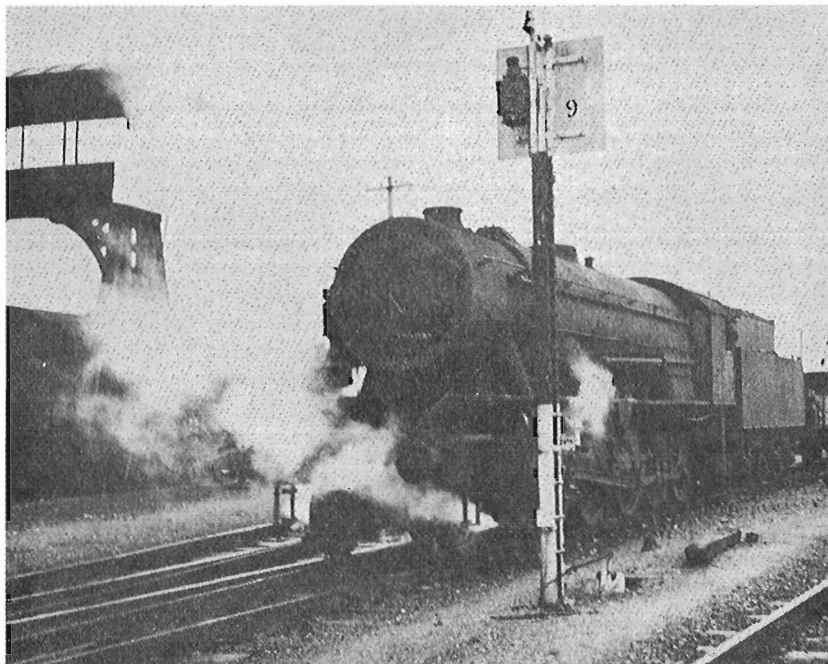
Khaki clad railwaymen, key to the military problem of supply lines that overnight expanded from thirty to two hundred miles after the Normandy breakthrough, are writing a chapter in modern rail transportation which reflects the sound and efficient training of Canadian railways and the army. But it hasn't been only a problem of expanding supply lines. Between Allied bombings and German demolition, French railways, especially main lines, were little more than a twisted, tangled mass of rails, wires and shattered stations. However, the operating, signals, construction and clerical groups have patched and rebuilt French railways in record time, to keep rapidly advancing fighting men supplied. Pressure of operating a railway in a war zone inevitably has broadened the experience of these soldiers, and they will be a valuable asset to the industry on their return to Canada.

ARMY RAILWAY OPERATING COMPANY

With communications and rails rehabilitated, army trains began to roll from rear areas to the front, saving thousands of gallons of precious gasoline and clearing the overburdened highways of hundreds of supply convoys. Putting French and Belgian railways back into operation was as much a problem of rolling stock as of communication, marshalling yards and rails. In the initial stages of operation, captured enemy rolling stock was pressed into service. Even today a train made up of French, Belgian and German freight cars may be seen rolling through the countryside. Captured German locomotives ranged from engines which had been produced in 1944 to an Austrian small 0-6-0 switcher turned out in 1865.

But captured equipment was only a stop gap, for thousands of British and Americans were ferried across the channel after the fall of Cherbourg. The diversity of engines and rolling stock hasn't fazed Canadian army railwaymen. An army engineer will climb into the cab of a captured locomotive, study its layout for a short time and learn where the steam, throttle and brake are located. Within a short time he'll have that engine rolling up and down a siding until he's discovered every trick. This ready adaptability to strange equipment is one of the soldier railroader's outstanding characteristics. Most of the locomotives used by the two companies are British 2-8-0s, 2-10-0s and 0-8-0s. Besides a strange cab, army engineers from Canada have had to accustom themselves to driving from the left side.

Some indication of the tension under which army engineers work may be understood when it is realized that frequently they are travelling over new roads. Night work, the men say, is the worst. Trains operate without lights, due to blackout regulations, and the number of highways crossing the right-of-way on every trip



A heavily loaded supply train, manned by Canadian Army Engineers, pulling out of the yards. Canadian Transportation, March 1945.

provides mental agony for the man at the throttle. Then, too, those cars they're hauling aren't loaded with wheat, but generally with high explosives in one form or another. Add to this the fact that, because of mixed rolling stock, only 60% of the cars being hauled may have steam [sic]. So few of the cars may have brakes that the brakeman must assist the engineer each time it is necessary to stop or slow down. Despite the fact that many of the army engineers have never smelled "main line smoke" in civilian life, they've done a job worthy of veterans who pull the transcontinentals.

The firemen have their own difficulties. All the locomotives in use are hand fired, there being no automatic stokers. In the early days in Normandy, more than one fireman kept his fuel box filled with smashed cross ties when coal was short. Often water was taken from lakes by bucket brigades, and even a water-filled shell hole sometimes was looked upon as a legitimate water tower. When French coal became available, firemen found it satisfactory. However Belgian coal has not won the same praise. Fine and damp coal sometimes forced the firemen in Belgium to clean out their fires a couple of times en route to their destination.

Canadian Army yardmen are convinced that the European coupling system was devised to keep them thin. Switching operations are a headache to these men, because each coupling must be linked and then screwed by hand. But speak to army railwaymen about the European track system, and their eyes shine with enthusiasm. And with good reason, for double track is standard throughout.

Service hours are non-existent for train crews in the army. When the pressure is on, crews will alight from one train and, without a layover, be sent out on another run. They are ingenious at preparing their meals while on the road, with the firebox providing the required heat. And when they get a chance to sleep, it's in box cars fitted by themselves.

Major H.T. Alcorn (CNR), Melville, Sask., is in command of one stretch. Captain George Young (CPR), London, Ont., is Locomotive Superintendent, and Capt. G.K. Brown is in charge of traffic control. Lieut. Tom Huntingdon (CPR), Cowley Alta., is Assistant Superintendent.

ARMY RAILWAY SIGNALS

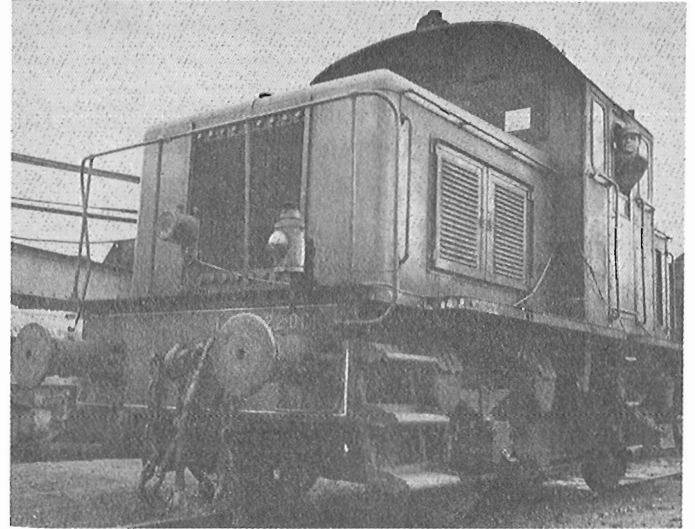
Long before army trains began "highballing" through the French countryside, Canadian Army Railway Signals companies were unscrambling the remains of the communications system. To accomplish this, linemen, instrument men and construction gangs spent their days and nights working directly in back of our leading troops. Not infrequently linemen found themselves "skinning" down a pole to the accompanying whistle of German 88 mm. shells. No. 1 Company Railway Signals is a typical example of an army railway outfit. Commanded by Major R.H. Jenner of Saskatoon, the unit includes men from both civilian railways and telephone companies. This unit has worked on everything from permanent overhead routes and underground cables to the smallest type of field cable. However, the greater portion of their work has been the installation of permanent lines.

But the job in which the unit takes the greatest pride was the stringing of a circuit many hundreds of miles. Laid in pairs, the circuits were completed in six weeks. All this work was accomplished under operational conditions. Construction gangs bucked roads jammed with military traffic to get to their work. But on reaching the right-of-way it was impossible to get down to the job of stringing wire immediately. First there was a soldier's job to be done. Mines and booby traps had to be removed from the area, and a liberal number had been left behind by the retreating Germans. Once the area was "deloused", rehabilitation of the line commenced.

"Improvisation and scrounging is the answer to the speed with which the lines are constructed" said Lieut. William Wormwood, of Charny, Que., with the Canadian National Railways Signal and Maintenance Department from 1926 until his enlistment. "In a war zone, what might have been a branch line in peacetime suddenly becomes a main line. We provide our own copper wire, instruments and tools, but things like poles must come from the country in which we're working. A non-operative branch line may have to provide us with things like poles and three-bolt clamps, while we're not adverse to installing a few captured Jerry instruments if they're suitable to our requirements."

A Normandy episode, illustrating the hazards faced by a soldier-lineman, occurred when tanks moved into a field where a gang was repairing a line. German air reconnaissance spotted the tanks and artillery fire was brought down on the area. The tanks, of course, moved on, but the signalmen waited the barrage out and finished the job.

European climbing spurs have been hastily rejected by our men as being much too awkward. They are similar to a sickle with



A French diesel locomotive captured from the Germans. Canadian Transportation, March 1945.

small teeth. European railwaymen argue that our spurs ruin the poles, by leaving large openings, into which water seeps, causing rot. Again it is all a question of wood shortage, for the average life expectancy of a European pole is 50 years. When in England, Canadian linemen removed poles that were planted in 1882.

RAILWAY CLERKS

Behind these operating groups are hard working clerical staffs, handling the paper work of operating army railroads. While a substantial portion of these men are former railway employees, many come from other civilian occupations, and were trained specifically for their task by the army.

Swiftly changing priorities, brought on by sudden demands from the front, require painstaking accuracy on the part of these clerks. And the varied type of freight cars does not simplify the ease with which a train may be made up on paper. As in civilian life, they must ensure that the proper freight is shipped on time to the correct destination. In their case, the company is not likely to become involved in a lawsuit over an error. But something far more serious might result from slipshod work - lives might be lost because fighting men did not have what they needed when they needed it.

Just as in Canada, army railway clerks compile operating statistics for each day, covering the number of trains moved, tonnage, fuel consumption, engine mileages and breakdowns. Complete statistics are kept on all repair jobs, including the installation of new parts. Technical storemen are kept busy working on indents for the railway shops doing these repairs.

In addition to the regular clerical work of operating the military line, there is the matter of feeding, clothing and housing of all the employees. Clerical work on this aspect alone is not inconsiderable. Because it makes for mobility, the office generally is found in a box car, although on rare occasions a slightly damaged railroad station has provided the men with a feeling of magnificence.



150,000 RAILWAY WORKERS

REPORT

TO CANADA AT WAR!

Last year, we hauled 150 million tons of materials, foods and munitions . . . double the pre-war traffic.

We carried Twenty Million NEW passengers . . . fighting men and war workers.

We built tanks, guns, shells, ships.

Twenty-two thousand of us were with the armed forces of our country.

Now, we are busier than ever providing the mass transportation that only the railways can furnish.

The country depends upon us to do this job. We must move the troops. We must handle freight. And, with your cooperation, it will be done.

**CANADIAN
PACIFIC**

**CANADIAN
NATIONAL**

CARRYING THE LOAD IN WAR AND PEACE

April, 1943.

IF POSSIBLE
AVOID TRAVEL
OVER WEEK-ENDS
AND HOLIDAYS

Getting Bauxite to Arvida During World War II

By Stephen Dettmers

Because bauxite is an important raw material in the production of aluminum, it was an essential war material. However during World War Two there was one problem that almost defeated the Allies, bauxite supply. Not that there was a shortage of bauxite in British Guiana (now Guyana) for the Aluminum Company of Canada (Alcan), or in Dutch Guiana (now Surinam) for the Aluminum Company of America (Alcoa). The problem was the supply line, because as the war intensified with the Battle of the Atlantic, the shipping lanes used by the ships transporting the bauxite to North America were ravaged by the German submarines. Also Alcan's harbour, Saguenay Terminals Limited in Port Alfred near Arvida, was difficult to reach because the upper Saguenay River was blocked solid by ice for nearly five months every winter.

To move the bauxite, Alcan purchased three ore carrying ships named or renamed "Peribonca", "Corabella" and "Newton Moore", of British registry, each of 9000 tons deadweight, operated by the Saguenay Terminals Limited. All were sunk by German U-boats during World War II.

Besides the German U-boats, another problem which limited bauxite deliveries was the Demerara River, on which the bauxite mines were located in British Guiana. It was shallow and filled with silt that created sand bars, limiting passage in the river to shallow draft or half filled larger ships. This created a need for a bauxite storage area at a deep water harbour near Guyana, where large ships could top up with bauxite for the journey north. In 1938-39, a private coaling station near Saint Thomas in the Virgin Islands was leased, and a small fleet of shallow draft Canadian lake vessels was acquired to shuttle bauxite the 800 miles between the Virgin Islands and Guyana. However the Virgin Islands were considered too far away from Guyana to operate small fully loaded great lakes ships in the open ocean. In 1940 some German U-boats started operating in the vicinity of the Virgin Islands, and it became impossible to build a large stockpile of bauxite near Arvida. Up to 1944-45 it was a hand to mouth situation, that is there was just enough bauxite near Arvida to cover production needs.

In 1940 a better location was leased at Chaguaramas Bay, near Port of Spain in Trinidad only 400 miles from Guyana. The Americans were not too happy that Alcan had leased a bauxite transfer station inside their new naval base. However the ability to form up small convoys of bauxite ships, and provide them with an armed escort within the protected waters of a naval station would be a real advantage in the struggle with the German U-boats.

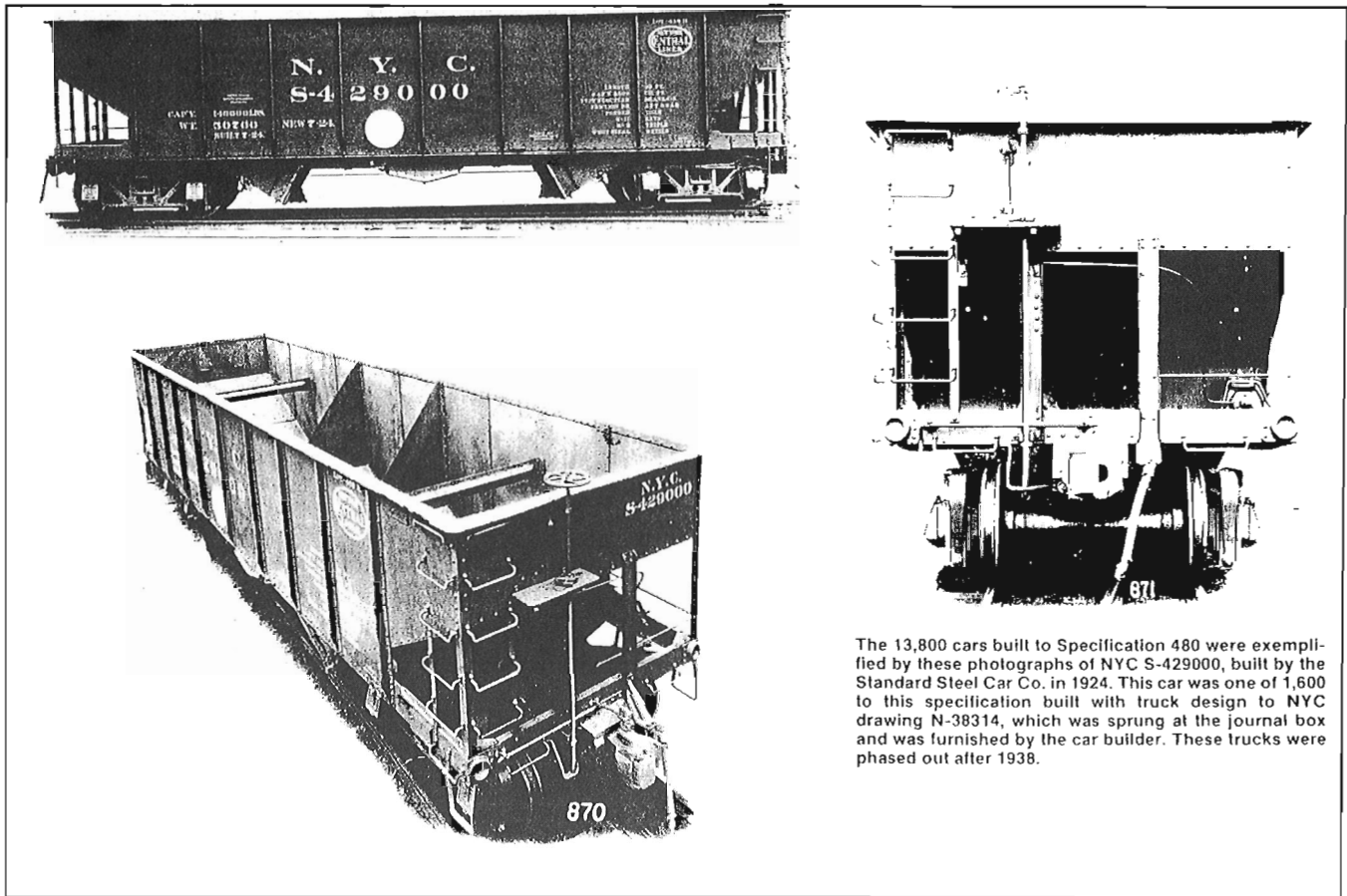
The bauxite ships were largely unmolested until the summer of 1941, when the German Naval High Command decided to attack the bauxite supply line near its origin. This lasted until mid 1942 when the American war machine was at full production, after which they could now provide more naval ships to escort the

bauxite ships, and at least one escorted convoy per week was dispatched from Chaguaramas Bay to New York City.

The submarine danger to the bauxite ships was at its worst in the spring and summer of 1942. During 1942, of Alcan's 233 loaded bauxite ships dispatched from Trinidad, Saint Thomas, or Guyana, 25 loaded bauxite ships and 117 crewmen were lost. In early 1942 because of the limited availability of armed escort vessels, ships dispatched to North America, were just that, dispatched to anywhere on the North American Atlantic Seaboard. If the ship's Captain perceived the ship as being in danger, he had naval command's permission to run to the nearest safe port on the North American Atlantic Seaboard. Then Alcan, hearing that the ship had landed somewhere on the Atlantic Seaboard such as New Orleans, Miami, Norfolk, Newport News, New York, or Portland had to send personnel to the port to arrange the unloading of the ships, and rail transportation to Arvida.

At first the Royal Canadian Navy was only able to provide very limited protection for the bauxite ships because of the U-boat threat around Nova Scotia, the Gaspé Peninsula, and in the Gulf of St. Lawrence. The bauxite ships were dispatched to Portland, Maine all year round, not just in the winters as before the war. Then the bauxite was transported from Portland, Maine to Arvida, Quebec by the Canadian National Railway. The route followed was the Grand Trunk and CN line from Portland, Maine to Montreal. Then the ex Canadian Northern line to the former Quebec and Lake Saint John Railway which then went to Arvida located in the Saguenay Lake Saint John Area. The 300 miles of track from Montreal to Arvida was a single track line built at the turn of the century. All the bauxite, plus the construction materials for the expansion of the Shipshaw hydro-electrical plant, over three million tons a year, had to move over this line.

Canadian National used their largest and most powerful freight locomotives for this service, the 2-10-2 Santa Fe type which had a tractive effort of 65000 lbs. There were the T-1-a class built in 1916 by the American Locomotive Works Brooks Locomotive Factory located in Dunkirk, New York, with boilers built by the Montreal Locomotive Works in Montreal. They were numbered 4000 to 4009. There was also the T-1-b class, numbered 4010 to 4019, built by the Montreal Locomotive Works in 1918, and the T-1-c type, also built by the Montreal Locomotive Works, but in 1920, numbered 4020 to 4044. The next class, the T-3-a type, were ex New York Central Railroad Z-1a locomotives numbered 1100 to 1109. They were purchased from the N.Y.C.'s Boston and Albany Railroad in August 1928. They were USRA 2-10-2s built by the American Locomotive Works's Brooks Locomotive Factory in Dunkirk, N.Y. and had a tractive effort of 69900 lbs. The T-4-a class were built by the Canadian Locomotive Works in Kingston,



The 13,800 cars built to Specification 480 were exemplified by these photographs of NYC S-429000, built by the Standard Steel Car Co. in 1924. This car was one of 1,600 to this specification built with truck design to NYC drawing N-38314, which was sprung at the journal box and was furnished by the car builder. These trucks were phased out after 1938.

Ontario in 1929 and numbered 4300 to 4314. These booster equipped locomotives had a tractive effort of 60100 lbs. and 70500 lbs. when the booster was used. The T-4-b class were also built by the CLC but in 1930 and were numbered 4315 to 4332. However they were not equipped with a booster so had a tractive effort of 66000 lbs. Also very occasionally a Central Vermont Railroad T-3-a, 2-10-4 Berkshire Locomotive of the type numbered 700-709, with a tractive force of 76800 lbs. plus a 10100 lb. booster, would be used between Portland, Maine and Montreal. Each of the above locomotives could haul sixty 52 ton open hopper coal cars loaded with bauxite but at a speed of only twenty miles per hour because of the poor condition of the railroad's road bed.

In the winter of 1940-41 there was a great deal of snow between Christmas and New Year's; very large blizzards blocked the tracks and completely buried trains with snow. The bauxite reserves got so low the aluminum smelter might have had to close down, thus shutting off half the aluminum supply to the Allied Aircraft Industry which built aircraft needed to win the war. It took about a week to remove the snow from the tracks and the first bauxite trains pulled into the Alcan refinery behind a vanguard of snowploughs. Even though the bauxite was frozen solid in the open hoppers it did arrive in time to keep the plant open.

With the coming of spring, because of the large winter snowfalls there were now problems with flooding. The overloaded

soggy roadbed began to collapse in many places causing serious derailments which closed the line for days at a time. Trains were backed up for days while track engineers tried to shore up the roadbed threatened by spring flooding. This massive railroad traffic jam caused two ore trains to collide killing four trainmen. Passenger service was discontinued on alternate nights to keep the line open for the eighteen bauxite ore trains required every day on what was called the most congested railroad line in Canada.

After the United States of America entered the War on December 7th. 1941, a new Washington Agency was created called The War Shipping Administration (W.S.A.) which took control of, and responsibility for, all bauxite shipments. The result was that Surinam bauxite occasionally wound up at Arvida and British Guiana bauxite ended up at the Alcoa smelter in Massena, N.Y. The strain on the transportation system was immense. This was because, in mid 1942, the U-boats started to move north to get the convoys of ships leaving Halifax, Nova Scotia for England. The ships were limited to carrying 500 tons of Aluminum in case they were sunk. The theory was that they would put a small amount of aluminum in each ship so most of it would reach its destination, as it would be extremely difficult for the submarines to sink a majority of ships in a convoy with an armed escort. The German submarines were operating off the coast of Nova Scotia, the Gaspé, and in the Gulf of Saint Lawrence (U-boat Alley). The W.S.A.

decreed that no ships transporting bauxite would be permitted in the Atlantic ocean north and east of the City of New York. So Alcan leased ore handling facilities in Hoboken, New Jersey, near Weekawken, where the New York Central Railroad had its southernmost freight terminal in New Jersey.

This ore handling facility had railroad sidings with a capacity of up to 600 seventy ton New York Central open top Bauxite hoppers. The New York Central would transport these hoppers to Huntingdon Quebec, located on the New York Central's Canadian branch, the Saint Lawrence and Adirondack Railroad, where it crossed the Canadian National. The NYC would haul the bauxite from Weehawken, up the west shore line to the Selkirk freight yards located near Albany, N.Y. They would then use the New York Central four track mainline to the Dewitt freight yards located near Syracuse, N.Y. Then north on the St. Lawrence Division through Watertown to Norwood, N.Y. At Norwood, the trains with bauxite for Alcoa, located in Massena, N.Y., would continue north on the St. Lawrence Division to Massena Springs. The bauxite trains for Huntingdon, Quebec would take the Rutland Railroad line to Malone, N.Y. then the St. Lawrence and Adirondack north to Huntingdon. They did the interchange of cars at Huntingdon instead of the New York Central's Massena Springs, N.Y. freight yards because the latter freight yards were overflowing with bauxite trains for the Alcoa Aluminum Smelter in Massena. The CNR would haul these cars towards Montreal on the Massena Subdivision across the Victoria Bridge to the Turcot Yards, then to Western Junction then onto the Canadian Pacific Railway's tracks, through the Outremont Yards, then onto the CNR again at the Moreau Street Station. The trains then went east on the ex Canadian Northern line through Maisonneuve, Longue Pointe and Montreal East to Point aux Trembles and across the Bout De L'île Bridge to Joliette, then from Joliette to Garneau Junction where they went on to the ex Canadian Northern tracks. At Garneau Junction they would start to use the tracks of the former Quebec and Lake St. John Railway to Riviere a Pierre, where the line met the Q&LSJ line from Quebec City to Lake St. John. Then the trains went to Chambord Junction on Lake St. John, then to Arvida and the Alcan smelter.

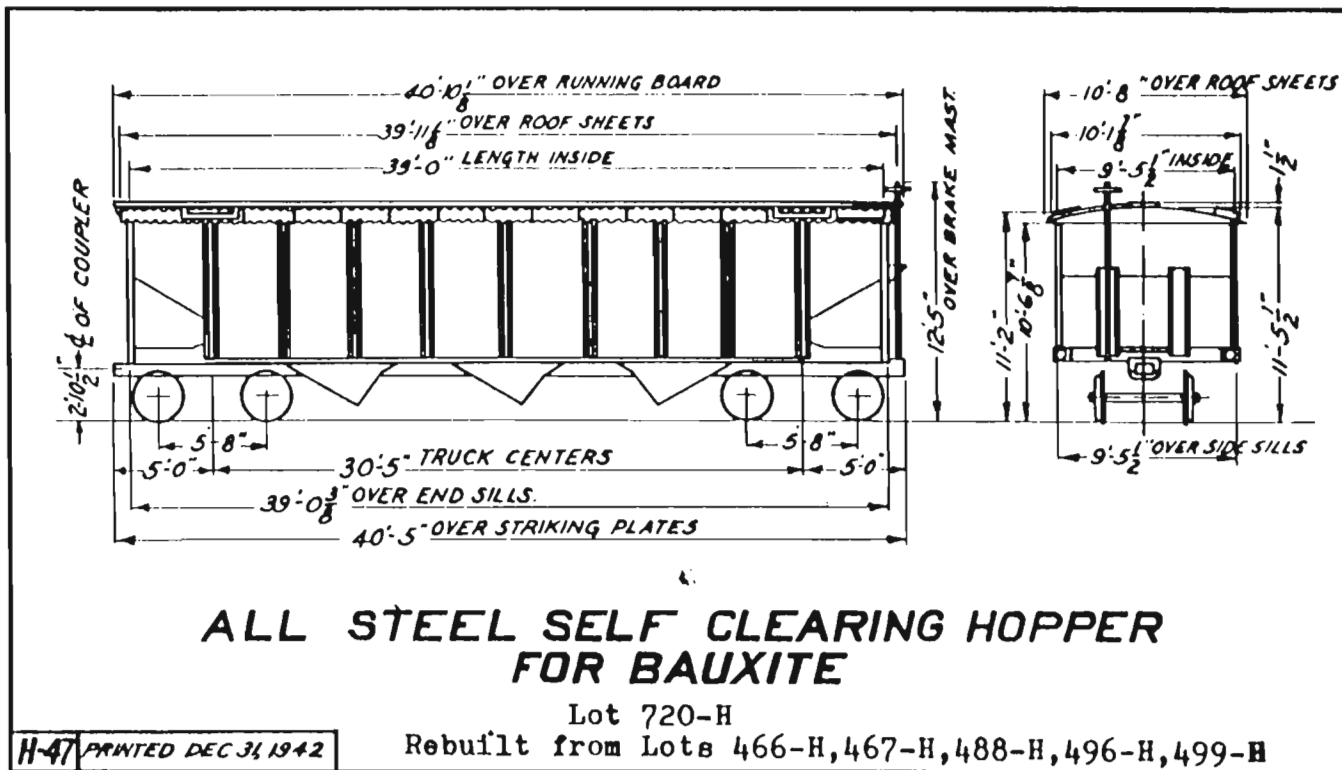
Starting in the summer of 1942, a way, other than by railroads, was found to move bauxite from New York City. An ingenious barge route was developed by the transportation department of the Chicago Tribune Newspaper. This large American Newspaper owned the Quebec North Shore Paper Company located on the Lower St. Lawrence River to produce newsprint to supply its large printing presses. It also owned a steamship line that had a fleet of small ships that could fit into the locks on the Soulanges Canal which were 270 feet long by 44 feet wide and 14 feet deep, The canal could handle ships not longer than 257 feet, nor wider than 43 feet, with a shallow draft of not more than 14 feet if they did not want to drag the bottom. Compare this to the present day St. Lawrence Seaway Locks which are 800 feet long by 80 feet wide by 30 feet deep; however the St. Lawrence Seaway was not completed until 1959, so was not available during World War II.

These bulk cargo canal boats were used to transport this newsprint to Chicago. This 350 mile barge route used tug boats hauling two wooden scows each, loaded with bauxite and they went from the New York City area up the Hudson River then along the New York State Barge Canal to Oswego, N.Y., on Lake Ontario, where dock and storage facilities were leased. Then the bauxite was transported to Massena, N.Y. and Port Alfred, Quebec by bulk cargo small shallow draft Soulanges Canal boats. This all water route was a great help in the summer and fall of 1942 until the winter of 1942-43 when the Saint Lawrence River froze and the real crisis started.

A retired Alcan employee, Percy Radley, was the Aluminum Company of Canada Arvida smelter works manager. His personal recollections of working in the Alcan smelter during World War II state: *"The winter of 1942-43 was the worst time, at one time we were down to about a three days supply of bauxite. Then to make matters worse the open hoppers of bauxite would get rained on en route and would arrive at Arvida frozen like concrete. As we were required to unload an average of 100 hopper cars per day, we were faced with an almost impossible task. Everything was tried, jack hammers, heating the railroads, finally we built a huge trestle. At one time 1100 men were working on the unloading of bauxite then at another time there were 2700 cars of frozen bauxite filling every siding in Arvida and back as far as Quebec City and the City of Montreal waiting to be unloaded. It was the coldest winter on record"*.

During the war, the customs regulations then in force regarding American built railroad locomotives entering Canada were lifted. These regulations had said that any American built locomotive entering Canada to visit a terminal without carrying freight and/or passengers from one Canadian station to another Canadian station, providing it would leave Canada within twenty four hours, could enter Canada duty free if the Railroad took out a refundable bond equal to twice the duty payable based on the locomotive's value. This bond was transferable from one locomotive to another, but each bond could be used for only one locomotive at a time. However the bond was only good for up to a maximum of three years. If an American built locomotive remained in Canada longer than twenty four hours at a given time, and/or was carrying freight and/or passengers from one Canadian Station to another Canadian station, full taxes and duties would have to be paid on it. The regulations concerning equipment required for running in Canada were also lifted; the main one was that locomotives running on railroad main lines between stations required a pilot or cowcatcher; they could not have just foot boards.

The New York Central assigned the 2700 class L-2a 4-8-2 Mohawk steam locomotives to haul the Bauxite trains between Weehawken, New Jersey and Massena, N.Y. or Huntingdon, Quebec. They were numbered 2700 to 2799 and were built in 1925-26 by the Schenectady/American Locomotives Works located in Schenectady, New York. They had a tractive effort of 60620 lbs. and a booster with a tractive effort of 12400 lbs. The main distinguishing feature of the L-2-a engine was the presence of a large Elesco feedwater heater on their fronts making their fronts



look like the Canadian National's 4-8-4 Northern type steam locomotives like 6218. Also the occasional L-2-d, 4-8-2 Mohawk built in 1930 also by Schenectady and with the same tractive force as the L-2-a Mohawks but with no front mounted Elesco feedwater heater. These looked like large versions of the famous New York Central 4-6-4 Hudson type steam locomotives.

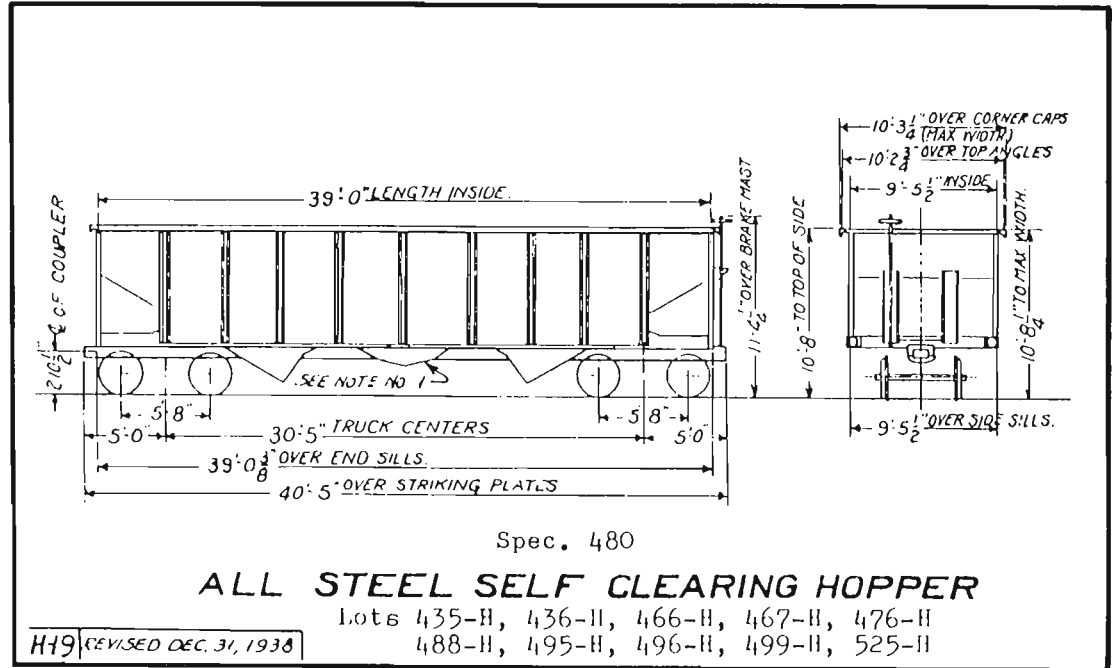
The New York Central Railroad would also use it's latest freight locomotives, the L-3-b or L-3-c Mohawks numbered 3025 to 3064. L-3-a Mohawks numbered 3000 to 3024 were dual purpose freight/passenger locomotives and spent the war hauling overloaded main line passenger limiteds. The new Mohawk freight locomotives would haul bauxite, when not hauling other more essential wartime cargo trains on the main lines, however at that time there was not much that was more essential then bauxite. They were used to haul the bauxite from Wehawken, N.J. to the N.Y.C's Dewitt freight yards in Syracuse, N.Y. This modern super steam power was built by the American Locomotive Company and the Lima Locomotive Works. Such a new freight locomotive would normally never have left the NYC's four track main lines to go to places like Massena or Huntingdon, even in wartime, as their job was to help keep the mainlines clear for trains like the Twentieth Century Limited and not clogged with things like bauxite trains. They had about the same tractive force as the L-2 Mohawks, 60100 lbs. and a booster of 14000 lbs. To get that bauxite from Dewitt to Massena, N.Y. or Huntingdon, Quebec the NYC would use an A-1 Berkshire, L-1 Mohawk or doublehead a pair of H-6-a Mikados. Every now and then an A-1, 2-8-4 Berkshire steam locomotive would be used. They were built from 1926 to 1930 by the Lima

Locomotive Works located in Lima, Ohio. These large New York Central locomotives had a very large Elesco feedwater heater mounted on their front and they had a tractive force of 69800 lbs. and a booster with a tractive force of 11000 lbs.; this made them look like what they were, New York Central super steam power. They were normally used on the NYC's Boston and Albany division to haul freight between the Dewitt and Selkirk freight yards and Boston, Massachusetts over the Berkshire Mountains. They were occasionally drafted into bauxite service when needed. Similarly the 4-8-2 L-1 class of Mohawks were used; they had a tractive force of 11000 lbs. They looked like large K-11 4-6-2 pacifies but with an extra set of driving wheels which is exactly what they were. The K-11 pacifies built from 1910 to 1913 were the assigned passenger locomotive on the Saint Lawrence and Adirondack Railroad from 1917 to 1952 after their stint 1910 to 1915 as a mainline freight locomotive. The L-1 Mohawk steam locomotives numbered roughly from 2500 to 2700 with gaps as some were scrapped before the war. The L-1-a and 1-1-b locomotives were built by the Schenectady Locomotive Works from 1916 to 1918, the L-1-c and L-1-d locomotives by the Lima Locomotive Works in 1918 in the days before such refinements as feedwater heaters and such. Similarly some H-6-a Mikado 2-8-2 were double headed to move the bauxite from Dewitt north, these were built in 1918 by both the Schenectady and Lima with a tractive effort of 54720 lbs. These light USRA Mikados were the mainstay freight locomotive on the NYC's Saint Lawrence and Adirondack Railroad from 1930 to about 1948. This NYC controlled railroad ran from Malone, New York to Montreal, via Huntingdon, Valleyfield, Beauharnois, Chateauguay, to Adirondack Junction, then the

Canadian Pacific tracks to the CPR's Outremont freight yards. There were others also used but not mentioned because any large New York Central Railroad freight locomotive running between Weehawken, New Jersey, Albany, New York (NYC Selkirk Freight Yards), Syracuse, New York (NYC Dewitt Freight Yards) and Huntingdon could have been drafted into bauxite service if needed. All the locomotives used in the New York Central Railroad's Bauxite service were serviced, repaired and overhauled at the NYC's West Albany Shops.

In the spring of 1943 the bauxite crises started to subside because of the establishment of a ring of American Naval and Air bases in the Caribbean which permitted more numerous surface and air patrols against German U-boats. Elsewhere, the Allies were starting to win the battle of the Atlantic although attacks on bauxite ships continued to some extent for the rest of the war. Bauxite ships started going to Port Alfred from Guyana in the summer of 1944. Then to Portland, Maine in the winter of 1944-45, relieving some of the pressure on the bauxite supply line. After the war, the NYC only brought bauxite to Montreal in the winter when the shipments from Portland, Maine were not sufficient for production demands. However in the early 1960s, the CNR and the St. Lawrence and Adirondack Railroad was the location of one of the first CNR unit trains carrying Alumina and Aluminum between Valleyfield, Quebec and Massena Springs, N.Y. using the St.L&A between Valleyfield and Huntingdon and the CNR between Huntingdon and Massena Springs.

Following is a description of the cars used in bauxite service. Cars to specification 480 were originally built with a shallow centre hopper, then when they had their first general repairs a saw-tooth centre hopper replaced the shallow centre hopper, increasing their carrying capacity to 2518 Cu. Ft. 240 cars from the above lots were converted in 1942 to have removable sectional roofs applied and were assigned exclusively to bauxite hauling service as lot 720-H; they were numbered 882000-882239 after being outshopped at East Rochester, NY. The rest of the above open hopper cars were assigned to bauxite service when



70 ton hopper car with saw-tooth outside hoppers and shallow centre hoppers.

needed without a roof, but were also used when and where needed to transport coal and iron ore.

In 1923 the NYC acquired additional new 70 Ton open hopper cars. These 5,300 cars lots 435-H, 436-H, 466-H, 467-H and 476-H were built to the NYC specification 480-b. This specification closely followed the 70 ton open hopper car design developed by, but not built by, the United States Railroad Administration. As built, these cars had saw-tooth outside hoppers and a shallow centre hopper, see diagram H-19. As these cars received general repairs, the shallow centre hopper was replaced with one of the saw tooth type.

The year 1924 saw the delivery of an additional 8,000 cars to the specification 480-C, lots 488-H, 495-H, 496-H and 499-H. All of the above mentioned open hopper cars were built and maintained with sides of riveted construction and with outside pressed stakes.

All New York Central 70 ton open hopper cars were equipped with friction bearing trucks having 6" X 11" journals and 33" wheels. Because of in-service replacement and substitution of interchangeable components, it is difficult to do more than describe them as built condition of the cars.

Except for a total of 1,600 cars in lots 466-H, 488-H and 524-H, all cars from lots 435-H to 597-H inclusive were equipped with trucks to the USRA standard, 5 feet 8 inches wheelbase. Lots 435-H to 525-H were equipped with trucks having the Keystone side frames with separable journal boxes. The exceptions, 100 cars

in lot 466-H, 1,000 cars in lot 488-H, and 500 cars in lot 524-H had trucks to NYC drawing N-38314. This truck was sprung between the journal box and the side frame, rather than between the side frame and the bolster. This truck was phased out after 1938, but some were still in service during World War II. As the years passed, the side frames with separable journal boxes were renewed with integral journal box side frames.

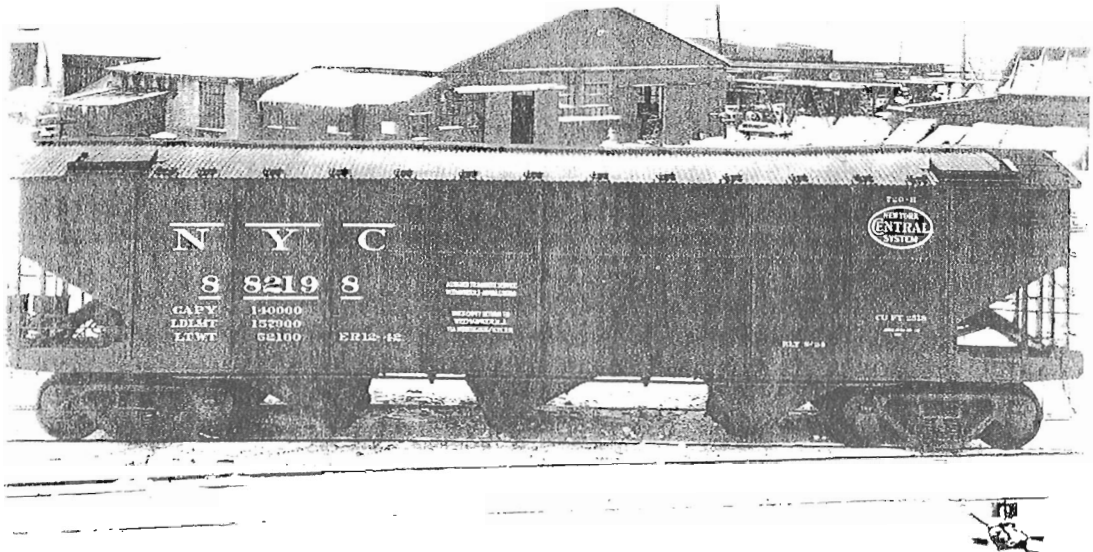
All open hopper cars built prior to lot 770-H were originally equipped with KD-1012 brake equipment, when the AB brake was made the standard brake system those cars remaining in service were retrofitted with AB equipment. Open hopper cars built prior to lot 597-H were equipped with vertical staff handbrakes, Lot 597-H and subsequent open hopper cars were equipped with geared handbrakes.

The underframe construction on open hopper cars built prior to lot 770-H had built-up centre sills consisting of two rolled channels and a top cover plate. Lot 770-H and subsequent open hopper cars had the current standard AAR Z-section centre sill.

All cars prior to lot 770-H were delivered painted black. Lots 770-H to 824-H inclusive were delivered painted red oxide. Lots 865-H and subsequent open hopper cars were delivered painted black.

In late 1942 the demand increased for aluminum and therefore the need for larger amounts of dry unfrozen bauxite to manufacture it. The open hoppers proved inadequate to keep the bauxite dry and unfrozen so removable roofs were applied to 240 open hopper cars from lots 466-H, 467-H 488-H, 496-H and 499-H. These 240 cars were then assigned to lot 720-H and were renumbered 882000 to 882239. This work was done at East Rochester, N.Y. and after their wartime stint these cars were reconverted to their original configuration and reverted to their original numbers. See diagram H-47.

It is sad that none of these 70 ton open hopper cars was saved, even though they remained in service until the 1980's. They were highly important in the war effort in that they helped the Allies by delivering massive amounts of bauxite to the Aluminum



In 1942 240 cars from Lots 466-H, 467-H, 488-H, 496-H and 499-H (Specification 480) had removable sectional roofs applied and were assigned to bauxite service as Lot 720-H, cars 882000-882239. Car 882198 is shown as outshopped at East Rochester.

Company of Canada's Arvida smelter. This aluminum was used to build the aircraft that helped the Allies to win the war. So these cars were probably among the most historically significant pieces of railway rolling stock of the twentieth century.

BIBLIOGRAPHY

Global Mission, The Story of Alcan Volumes 1 to 1950, by Duncan C. Campbell, Ontario Publishing Company Limited.

Canadian National Steam Power, by Anthony Clegg and Ray Corley. Copyright 1969 by Railfare Enterprise Limited. Published by Fitzhenry & Whiteside Limited 150 Lesmill Road, Don Mills, Ontario.

70-Ton Hopper Cars of the New York Central, by Charles M. Smith, New York Central Headlight 3/83 Page 8. Published by the New York Central Historical Society.

Locomotives of The New York Central Lines, by William D. Edson and Edward L. May, Irvington-on-Hudson, New York, Edson-May Publications. 1966.

The People's Railway, A History of Canadian National, by Donald MacKay, Published by Douglas & McIntyre. 1992.



Built to carry the
GOODS of VICTORY!

**Proudly wearing the
 C.N.R. Maple Leaf . . .**

. . . first cars of their type to bear this famous emblem, these steel box cars are part of a Canadian National Railways order and a unit in Canada's victory drive.

Authorized to meet a vital need, they take the rails on their victory mission, ready to speed the movement of war goods wherever the pressure is tightest, a typical application of the Canadian Car & Foundry Company's plant and personnel to the common cause.

CANADIAN CAR & FOUNDRY COMPANY LIMITED



MONTREAL • FORT WILLIAM • BRANTFORD • AMHERS

June, 1944.

Plywood Box Cars and an Armoured Train

The Canadian Pacific Railway has begun to receive delivery of 750 box cars from the builders, and close to 700 tons of steel is being conserved in the construction of these cars, to go into the pool of essential metals currently employed in the national war effort. An illustration of one of these cars appears herewith. These "Victory" cars, soon to be in operation throughout company lines, follow the design for victory prominent in other Canadian Pacific activities.

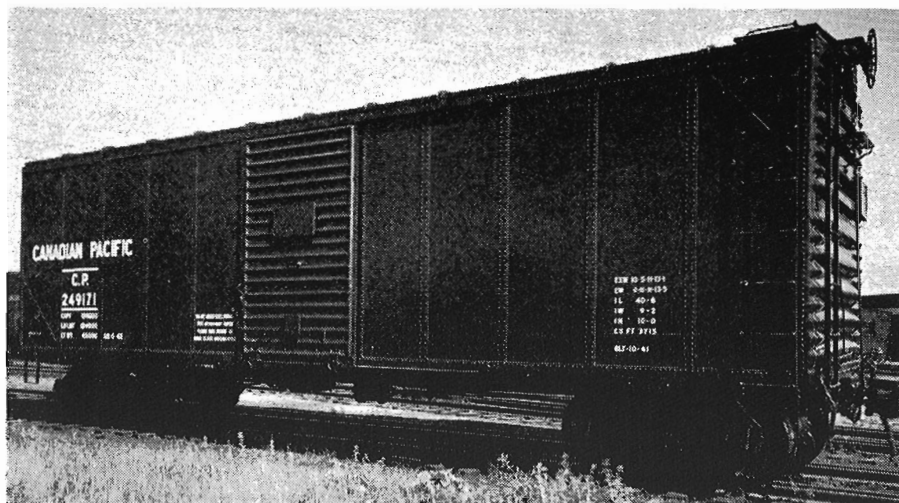
The experiment by the CPR to replace much-needed metal, heretofore used to provide outside panels for box cars, has resulted in the successful substitution of Canadian wood, which, according to H.B. Bowen, Chief of Motive Power and Rolling stock, CPR, has withstood toughest tests, and has proved highly satisfactory.

Five-ply British Columbia fir, 5/8 inch thick, has been employed by company designers to replace the 1/10 inch thick steel sheathing formerly used, and the intentional, experimental hard-handling of a sample car in CPR freight yards has proved the new victory motif ample as well as advantageous.

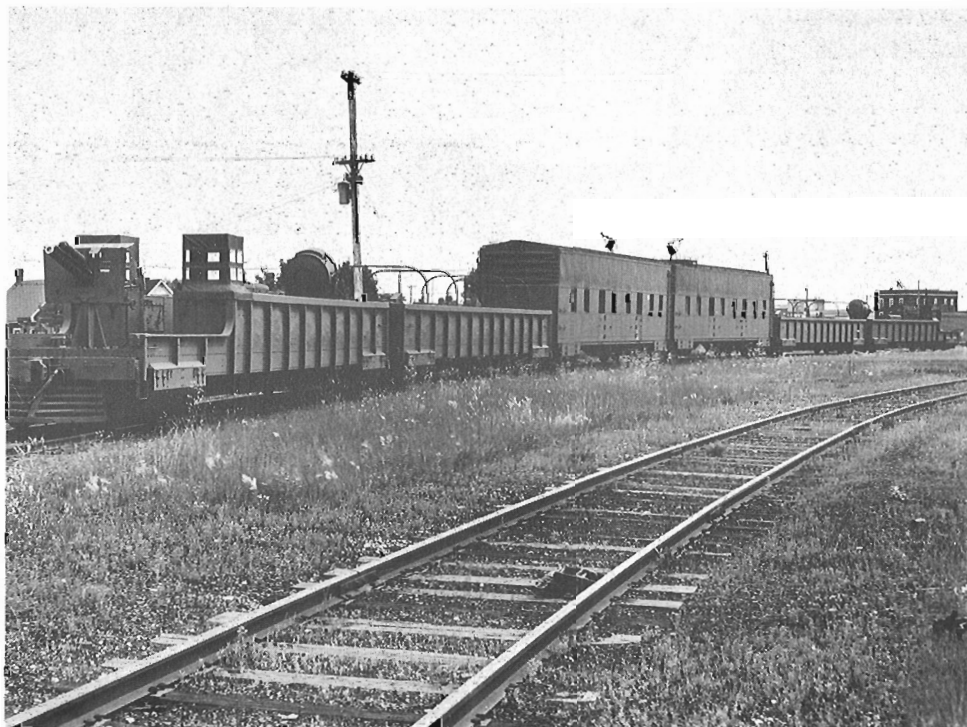
Substitution of wood for metal has reduced the net weight of steel required for each freight box car by approximately 1800 pounds. By this token, the car is capable of transporting additional weight in freight. It is estimated, therefore, that the 750 cars now being built for the CPR, and employing Canadian plywood instead of steel, will be able to distribute 700 extra tons of freight weight per trip, including the delivery of vital war orders.

On Canadian Pacific Railway lines, of 75,119 railway-owned and 2,105 privately owned freight cars, 1,887 of the company-owned cars (2.5% of total) and 7 of the privately owned cars (0.3% of total) are awaiting or undergoing repairs. This compares to 5.9% of railway-owned and 0.4% of the privately owned cars on May 1, 1941.

Work for the construction of naval guns at the Ogden Shops in Calgary is well under way. The entire locomotive shop at Ogden is being devoted to this purpose, and it has been necessary



One of the "Victory Freight Cars" on the Canadian Pacific. In 750 of these cars, nearly 700 tons of steel, vital in the war effort, were saved.

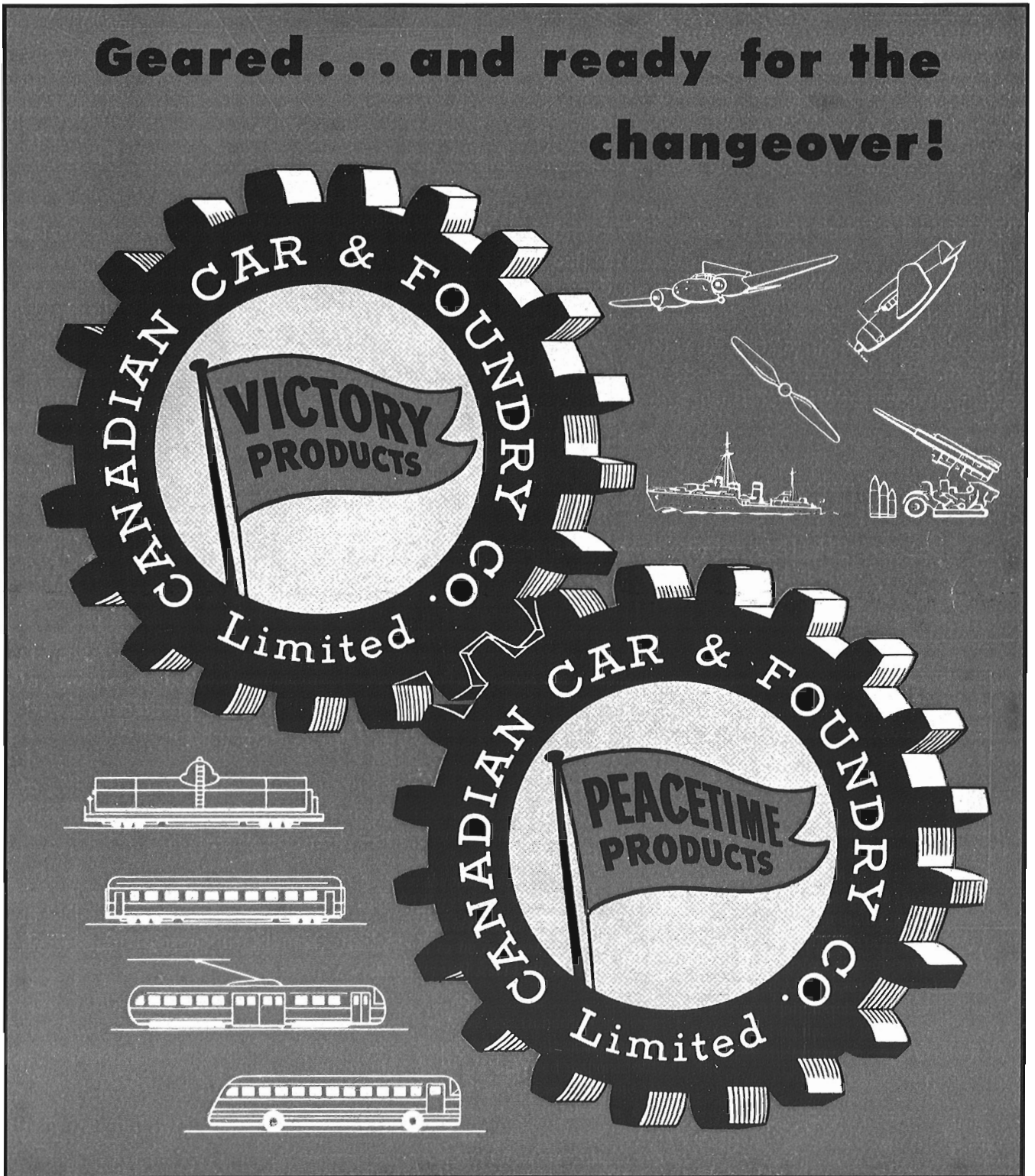


One of the strangest stories of Canadian railroading in World War II concerns the armoured train which was designed to defend the Pacific coastal area in the event of attack by the Japanese. Motive power was to have been rebuilt diesel locomotive 9000. Fortunately it was never used.

CN photo No. X19434.

to make certain additions to facilities elsewhere to take care of heavy repair work previously done at Ogden. From "Canadian Transportation" July, 1942.

**Geared... and ready for the
changeover!**



May, 1945.

1945 - The Return of Peace

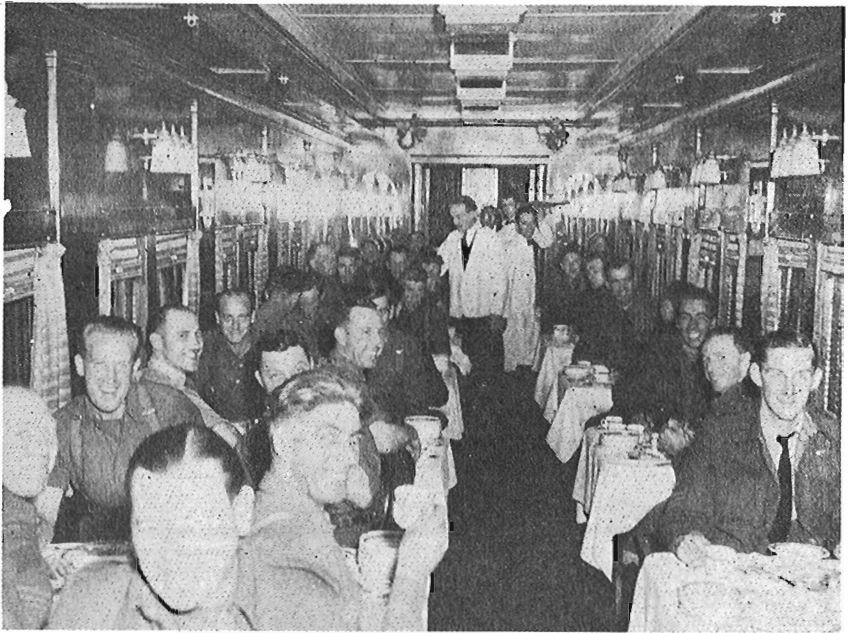
As 1944 gave way to 1945, it appeared that Victory was in sight. After well over five years of war, the Allied armies were advancing on all fronts and the territory occupied by the Axis forces was getting smaller every day, as more of the occupied countries were liberated. In Europe, the armies on both eastern and western fronts were poised to invade Germany itself, while in the Pacific heavy fighting was bringing the Allies closer to the main Islands of Japan. Certainly the general mood was one of optimism; a far cry from the dark days of three years before. The railways were still carrying record amounts of both passengers and freight, but they realized that soon they would be transporting the returning troops.

On May 7, 1945 the German armies surrendered and the war in Europe was over. The next day, the day of the formal surrender, was declared to be VE Day, for Victory in Europe. Not long after this, the troops began returning to Canada, and by July 16, the CNR had transported 65,985 soldiers while the CPR had transported 33,100. For five and a half years the signal lights on CN and CP lines had been showing green for speeding eastbound trains; now they were showing green for the westbound specials!

The first notification the CNR Passenger Traffic department would receive of a forthcoming special move would be a long distance call from National Defence in Ottawa in this way: "Six thousand two hundred and fifty Canadian soldiers will arrive in New York on S.S. *Queen Mary* due to dock on July 11.", or "The S.S. *Ile de France* is expected in Halifax on July 14 with 9700 servicemen." During the week of July 9, four such calls were received. Usually about ten days notice was given, but sometimes it was considerably less. For these two troop ships, about ten specials had to be at dockside in New York on July 11, and twenty more in Halifax on July 14 to take these members of the armed forces to their homes in all parts of the Dominion as far distant as Vancouver, more than 3000 miles away.

The railways would have to work out all the details connected with these moves, including such considerations as to which civilian trains would be the least affected by the removal of sleeping and dining cars. The magnitude of this work is exemplified by the fact that, on a trip from Halifax to Vancouver, 8400 meals had to be served on each troop train, requiring a total of eight tons of supplies. In Montreal, old Bonaventure station, which had been superseded by Central station two years before, was named the official reception depot for the returning soldiers. It was fitting that, after having seen them off to war, it would finish its century of service by welcoming the victorious troops back again.

There was no herding in or "jam packedness" about the troop trains, for the work of repatriation was not haphazard. On the contrary, it was a well thought out plan which sought to give the returned men the maximum of comfort and consideration. Walking wounded and ex prisoners of war were accommodated one to a



Veterans of the war, among the first to return, enjoying one of their first Canadian meals in more than five years, aboard a CPR dining car. Canadian Transportation, August 1945

berth, while in other cases two were assigned to a lower berth. In no case were two placed in an upper berth.

The situation on the CPR trains was much the same as on CN. By July 16, almost 100 troop specials had been operated by CP, using 160 dining cars, 924 sleeping cars and 92 baggage cars plus an undetermined number of coaches.

The specials were not only running from the storied "Eastern Canadian Ports", but were operating wherever required in the country. Headaches and sleepless nights were frequent, but the job was being done quietly, efficiently and with a minimum of interference with other wartime traffic, for the war in the Pacific still raged on and was expected to continue well into 1946.

The end was sudden. On August 6, the announcement was made that an atomic bomb had been dropped on the Japanese city of Hiroshima. Three days later another atomic bomb devastated Nagasaki, and soon thereafter Japan surrendered. On August 15, hostilities officially ended. The war had lasted almost six years, had cost untold millions of lives and untold billions of dollars.

The special trains continued to bring the troops home, but there were so very many of them that would never be coming home. The shipment of war supplies wound down and the munitions plants were closed. Gradually the railways got back to peacetime operation and prepared for the postwar era. There were celebrations, commemorations, and services of thanksgiving, but one emotion was predominant; relief and relaxation from the tension of six long years. THE WAR WAS OVER!

Today, after fifty years, it is our duty to remember all that was done by the railways to contribute to what was certainly the greatest project in the history of the world.

Longmoor

By Brigadier H.A. Joly De Lotbiniere, M.C., R.E.

Reprinted from Canadian National Magazine, June 1948.

A memorial window for the Canadian railway troops, who did their overseas training on the Longmoor Military Railway, was unveiled, April 25, 1948 at the Garrison Church at Longmoor, Hants, England. The window bears the following inscription:-

“To the Glory of God and in grateful Remembrance of the Staff of the Canadian National and Canadian Pacific Railways, who fell in the war of 1939-1945”

In writing of this stained glass window, I would like to explain the association Longmoor has for railwaymen in general and Canadian engineers in particular, so many of whom have worshipped in the small yet beautiful church standing in its military setting of barracks and parade grounds in a rural corner of Hampshire, England.

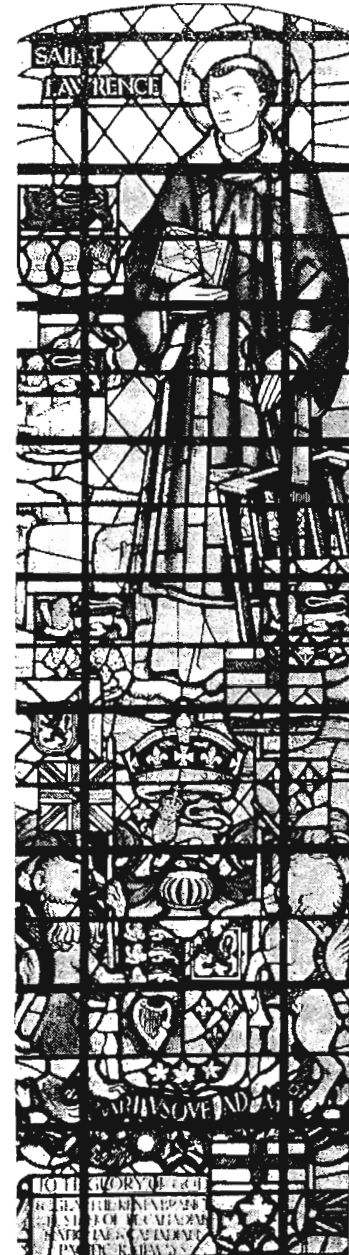
The present Transportation Training Centre of the Corps of Royal Engineers originated in 1904, on the return of the Regular forces from South Africa. In 1902 a camp for a brigade had been commenced at Longmoor. Subsequently it was found that during wet weather in winter the ground became flooded, rendering the camp uninhabitable.

It was then decided, since the huts were fully erected, to move them bodily to Borden Camp lying four miles to the north of Longmoor. To effect this, narrow gauge lines were built parallel to each other, and on each line was placed a bogie truck. By means of jacks, each hut, after it had been suitably strutted to prevent distortion, was lifted onto the bogies. Cables were then attached to the trucks; and motive power, provided by a donkey-engine, was employed to move them across to Borden Camp -- the temporary home of so many Canadian troops -- where they were erected, and are still standing.

To carry out this work, the 10th Railway Company was sent from Chatham and so became the nucleus of the present Transportation Training Centre. Subsequently the 10th Company was joined by the 8th Railway Company from Woolwich, and later by the 53rd Company, which latter company was disbanded shortly before the 1914-1918 war.

With a view to providing railway training in peacetime to these three regular Railway Companies R.E., and two Militia Companies of railway troops, a broad gauge line was commenced in 1906 from Longmoor Camp, which at that time was the Mounted Infantry Training Centre, to Borden Camp. This line was completed round about 1909, and consisted of some six miles of broad gauge railway. During the First World War, it was enormously expanded and became the training centre of the Railway Operating Department (known as the R.O.D.), where railway units were trained and sent out of France.

On the termination of hostilities and the consequent reduction of the army, Longmoor shrunk to a Headquarters known as the Railway Training Centre, R.E., consisting of two companies, the



The stained glass window at Longmoor, in memory of the Canadian railwaymen who fell in the war. Dedicated Sunday, April 25, 1948

8th and 10th (Railway) Companies, R.E. -- a total of some 500, all ranks.

In 1925 it was decided that some organization was essential by which a trained body of professional railwaymen could be made immediately available on mobilization and, in consequence, seven units were raised from among the four main British Railway Companies. These were known as Supplementary Reserve Railway Units, R.E., and totalled some 2,000, all ranks. These units, like the Territorials, carried out a fortnight's training each year at Longmoor and, in this way, a highly efficient reserve was created -- and one which was immediately available on the outbreak of hostilities in 1939. In September, 1939, all Supplementary Reserve Units were mobilized and sent overseas together with the 8th (Railway) Company R.E. The 10th Company was retained at Longmoor, and in due course became the Transportation Training Centre R.E., embracing all forms of transportation training, viz: - railway, port operating, port construction and inland water transport.

Late in 1942 the Director of Transportation, Major General, now Sir Donald McMullen, K.B.E., C.B., D.S.O., foresaw the necessity for more Railway troops and, in consequence, representations were made to the Canadian Government with a view to furnishing some railway troops. This request was acceded to and orders were issued early in 1943 for the formation of a Railway Operating and Workshops Group, R.C.E.

No. 2 (Railway Operating) Company, R.C.E., the first unit to be raised, was formed from railwaymen drawn from the various units of the Canadian Expeditionary Force located in Britain. A second company, later known as No. 1 (Railway Operating) Company, R.C.E. together with No. 3 (Railway Workshops) Company, R.C.E., was raised in Canada by Lt. Col. F.E. Wootton, R.C.E., who had returned to Canada from England for that specific purpose.

While No. 1 Company, together with the Railway Workshops Company was being raised in Canada, No. 2 Company was formed at Longmoor and a course of training in British Railway methods was undertaken under the aegis of the Commandant Transportation Training Centre, R.E. This course proved most successful. After a period of individual training, the unit proceeded to Weston Camp near Derby where they undertook collective training in the form of operating the twelve miles of railway known as the Melbourne Military Railway, between Chellaston and Ashby-de-la-Zouche (not by the sea!)

The training facilities afforded by this line were admirable in that some 8,000 wagons of coal had to be cleared every week from the New Lount Colliery, apart from very heavy traffic in Transportation and Ordnance stores.

On "D-Day" No. 1 Railway Operating Group, R.C.E. formed part of the army troops under General Montgomery, and operated with considerable distinction in the advance from Normandy to the Rhine and beyond.

The Garrison Church

Prior to 1935, Divine Service for the Church of England and Free Churches was held in the Soldiers', Sailors' and Airmen's

Institute at Longmoor known as the Seymour Hall. This arrangement proved most unsatisfactory and, it was decided, on the mechanization of the horsed Artillery units stationed at Longmoor, to convert the forage barn into a Church. Dedication was in 1935, and a steeple was added. In 1936 Major (now Brigadier) C.A. Langley, C.B.E., M.C., as second in command of the R.T.C., R.E., initiated the idea of utilizing a wind-fall of canteen rebate from the last war for the installation of a War Memorial in the Church. This took the form of a very handsome Reredos and Crucifix. At the same time, Major Langley prevailed upon each of the four main Railway Companies in the United Kingdom, and the London Passenger Transport Board, to supply a stained glass window in commemoration of the men of their Companies killed during the 1914-1918 war. These windows were unveiled in 1938 and, on the outbreak of hostilities in 1939, to prevent possible damage, the five memorials were taken out and buried on Weavers Down under one of the signal cabins. These were disinterred at the close of hostilities in 1945 and were reinstalled by the Commandant of the Centre.

When visiting Colonel F.E. Wootton at Rheine at Westphalia in May 1945, I suggested it would be appropriate to have two memorial windows in the Church to commemorate the training of the Canadian Troops at Longmoor. This idea was developed by Colonel Wootton on his return to Canada, and arrangements for the provision of the window were made by him. The work was commissioned from Mr. Martin Travers, A.R.C.A. (Arch, London), who had designed and erected the original five memorial windows. A graduate of the Royal College of Art in Architecture, he gained the Grand Prix de Paris for stained glass in 1925, and has installed windows in New Zealand, South Africa and India, in addition to many others in Britain.

It may also interest ex-Service readers to know that on June 6th, 1947, two brass memorial tablets erected on the walls of the Church were unveiled by Major General Edmond H. Leary, Chief of Transportation, U.S. Army. These tablets were erected by the Officers Commanding the 755 and 763 Railway Shops Battalions, U.S. Army, both of which units had, for a period of the war, formed an administrative part of the Transportation Training Centre, R.E.

Memorial Window Dedicated

The memorial window was dedicated April 25 by Dr. W.L. Anderson, Bishop of Portsmouth, in the Service Garrison Church at Longmoor.

Draped with a Union Jack, the window was unveiled by Normal Robertson, Canadian High Commissioner. The window portrays St. Lawrence dressed in a deacon's dalmatic and carrying a Book of the Gospel in one hand and a gridiron in the other, showing that he was martyred. Standing on the bank of a large waterfall, he is surrounded by the arms of Canada and the nine provinces.

Among Canadians at the ceremony were R.A. McMullen, Agent-Director for Alberta; Lt.-Col. W. Rae of the Canadian Legion; J.C. Patteson and J.B. Thom, respective European managers of the C.P.R. and C.N.R., and Brig. Howard Graham, head of the Canadian Joint Liaison Staff in England.

Canadian Rail

120, rue St-Pierre, St. Constant, Québec
Canada J5A 2G9

Postmaster: if undelivered within
10 days return to sender, postage guaranteed.

