

not immediately of service on the battlefield or on the sea. While these restrictions were administered wisely and leniently in so far as railway needs were concerned, the volume of such material was of necessity limited.

Early in the War it was realized by the Dominion Government that existing railway equipment, while adequate for peacetime requirements, would be insufficient to provide facilities for movement of the abnormal traffic arising out of war conditions. It was also appreciated that the financing of the necessary expenditures by the railways without the aid of the Government would be costly and difficult. Arrangements were therefore made through the Department of Transport for the acquisition by the Government of required quantities of rolling-stock and equipment as needed from time to time and these were made available to the railways on a hire-purchase basis. Up to the end of 1944, 139 locomotives and 14,215 cars were provided at a cost of \$82,026,454.

The railway companies themselves have carried out programs of rehabilitation and rebuilding of existing rolling-stock, including much equipment that had been discarded. For instance, old switching-engines which were considered obsolete for several years prior to the outbreak of war have been overhauled and brought back into operation to give veteran service wherever needed. Freight cars that were awaiting the scrap heap have been repaired, strengthened, painted and placed into operation. Passenger cars, coaches and sleeping cars have been converted to meet the requirements for the handling of thousands of troops, and new-type restaurant cars have been placed into operation to accommodate maximum numbers of patrons with a minimum of staff. All such repair, conversion or new construction had to be undertaken in the workshops of the Canadian railroads inasmuch as outside industries were themselves engaged in war-production activities.

In meeting wartime transportation requirements, Canadian railways have been operating with fewer but more powerful locomotives than in 1917 and more capacious but fewer freight cars. The Canadian National Railways reported that the vastly increased war traffic handled by them in 1943 was moved with 16.6 p.c. fewer locomotives and 15.4 p.c. fewer freight cars than in 1917. The Canadian Pacific Railway reported that 26.8 p.c. fewer locomotives and 16.6 p.c. fewer freight cars were required to handle the 1944 traffic of that Company than in 1917.

The average tractive power of modern Canadian locomotives is 32 p.c. higher than that used in 1920 and the average carrying capacity of freight cars has been increased from 35.141 to 43.419 tons per car with corresponding improvements in loading methods. The speed of freight trains between terminals has been increased by 60 p.c. as compared with 1917, thus making possible a quicker turn-around of freight trains. These combined factors have increased the utilization of freight cars by 70 p.c.

Many highly intricate problems have arisen in respect to the transportation of war equipment as much of this is bulky and exceptionally heavy. In order to move landing barges it has been necessary in some places to depress the railway tracks to permit the loads to pass under the bridges. Some pieces of machinery, boilers and towers have been so large that they have required two and sometimes three freight cars to accommodate them and have necessitated careful re-scheduling of trains on the lines over which they were being moved. Freight cars have had to be remodelled to permit the carriage of the unusual implements of war and special gondola-type flat cars have been designed and constructed to meet special needs.