

chiatrist's care and an extensive system of psychiatric consultation should help in reducing the waste in medical care resulting from the misdiagnosis of physical for spiritual ills. At first afraid that the psychiatrists would eliminate too many men from the army, medical officers have found that their psychiatric colleagues are often of greater help in re-establishing men whose usefulness had been doubted. In the same way, civilian doctors may well find that with psychiatric help many of the patients who might otherwise have become chronic nuisances will be rehabilitated and no longer a drain on medical care.

We are realizing more and more in medicine how many actual physical ills have their roots in emotional conflicts. We have mentioned peptic ulcer as one condition in which the psyche plays a part in many cases. One of the leading causes of death, now that tuberculosis and pneumonia are well under control,

is heart disease. Many cases of heart disease are secondary to high blood pressure, a condition about which we are gaining increasing knowledge, a knowledge that points to the probability that many, although not by any means all, cases of high blood pressure have arisen from chronic emotional stress. The problem of preventive medicine in these cases, then, is a problem in mental hygiene.

Provide a nation-wide mental hygiene service to do these jobs of rehabilitation and reconstruction both in relation to industry and in relation to health insurance, and it will be able to carry on afterwards in the wider tasks which we have indicated as necessary for a healthy and sane world. Then will the prophecy be realized:

These things shall be,—a loftier race  
Than e'er the world hath known shall rise  
With flame of freedom in their souls,  
And light of knowledge in their eyes.<sup>4</sup>

(4) John Addington Symonds, *The Days That Are To Be*.

## Aeroplanes as Freight Carriers

By D. B. WALLACE

THE greatest single factor in the large scale development of Canada's far northern regions has been the airplane. In fact, Canada's northern air operators pioneered commercial air cargo commencing in 1926, and, at the outbreak of war, the Dominion's flyers carried the world's record tonnage of air freight.

It was back in 1924 that the first regular commercial air freight and passenger business in Canada was commenced by the Laurentide Air Services in Quebec. This initial service was followed by similar developments through the West and on the Pacific Coast, but it was not until 1926 that the plane came into its own as an essential means of transport to outlying Canadian communities and for assistance in opening up mining areas.

In that year a considerable mining development took place in the Red Lake district of Northern Ontario. Prospectors and supplies were flown into the area and the mining-by-air period was born. In fact, in 1926 the only two self-sustaining air transport routes operating in the British Empire were in this Ontario mining field and in Northern Quebec.

These services were on an essentially commercial basis as northern air routes in Canada have never received any form of Government subsidy. Also it is interesting to note that in Canada, unlike the majority of countries, the plane was first used to service outlying points rather than to connect inter-city population centers. As these services were without public aid, it is obvious that only by making them commercially successful could air freight and passenger companies stay in business.

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The mining air freight services commenced on a major scale in 1926 had expanded to the point where, in 1928, commercial aviation in Canada was taking to its wings and several companies were extending activities from coast to coast and planning an attack on the far north. In that year C. H. Dickins piloted the first plane over the "barren lands" of Canada's Northwest Territories. In the following year he crossed the Arctic Circle and brought his Fokker monoplane down at Aklavik. This trip to the shores of the Arctic Ocean revolutionized the fur delivery system and overnight the airplane became the transport medium, replacing the dog sled and canoe of former years.

The aerial pioneering done by C. H. Dickins, now Vice-President and General Manager of Canadian Pacific Air Lines, was followed by others in opening up many new routes. In 1930 what is now the United Nations' sole source of radium was discovered in the far north at Great Bear Lake by plane. The richest mercury deposit in the British Empire was also located by the use of the airplane. Another air jaunt by Canada's northern fliers resulted in the location of the North Magnetic Pole. In 1931 the early possibilities of Northern Canada were given world attention by the Lindbergh flight to the Orient. In 1931-32 the airplane developed many new northern mining fields and, by 1933, while flying was still not fully accepted in the more populated southern districts of Canada, the airplane had become a commonplace factor in the North Country where it was, in many cases, the sole means of transport.

As a result of these developments the airplane to-day is the spearhead of advance in Canada's north country as it moves vital supplies and personnel in connection with the war programme. Already the plane is the prime factor in moving survey parties and equipment for the Alaska Highway, the oil pipeline developments along the Mackenzie River basin, and the proposed Alaska Railway. The cargo plane is not something new in this northern country, but rather

a part of its very existence and is, therefore, essentially a transport vehicle and not a competitive means of transport.

Naturally the demands of war with regard to important defence developments in the northwestern Pacific area have greatly emphasized the vital nature of air transport in the Northwest Territories, Yukon and Alaska. Already all previous concepts of the development of air routes and facilities in this region have been completely shattered and what is now one of the world's greatest air defence and military supply routes may well develop into a post-war top of the world air service. Obviously the expansion taking place throughout these northern areas of Canada has had a profound effect on social and economic developments, and there has come into being a new type of continental economy north of Edmonton which bears little resemblance to the pioneer features of the old north.

Despite the intense interest in northern aerial developments at the present time it is well to remember that the aerial possibilities of this segment of North America have been known for a few decades. As early as 1915 the present Deputy Minister of Mines and Resources, Dr. Charles Camsell, made enquiries about obtaining flying boats for the exploration of the sub-Arctic. As far back as 1917 a letter written to Sir Robert Borden by the famous Arctic explorer, Vilhjalmur Stefansson, urged the government to institute an official examination of trans-Polar air routes, and one of the staunchest supporters of this development was J. A. Wilson, now the Dominion's Director of Air Services.

In 1922 the Canadian Government recognized the fact that the shortest routes between North America and Europe and Asia all passed through northern Canada and had an aerial survey made of the islands of the eastern Arctic.

The North, largely developed by the airplane, is now in a stage of rapid transition and it would seem that even greater changes are ahead in the post-war era as it becomes a vital point on the world's

air map. Already there is a study of the economic possibilities being made by the North Pacific Planning Project through the co-operation of the joint Economic Committees of Canada and the United States.

Some conception of the importance of air freight movement in Canada is indicated by the fact that Canadian Airways, the nation's pioneer and largest private air operator and now one of the component companies of the ten north-south airlines merged into Canadian Pacific Air Lines in 1942, carried the record load in the 15 year 1927-1941 period of 60 million pounds of air cargo, 8 million pounds of air mail and 250,000 passengers. These facts have long been hidden by the remoteness of the area in which air carriers operated, but to-day they are coming into their own as a result of the intensive studies being made in commercial air cargo possibilities and Canada's long experience in this type of transport.

The pioneer work done in air cargo growth in Canada goes back to 1920 when the rather insignificant total of 6,740 pounds was moved. This is in distinct contrast to the 1937 record total of 25 millions and even the 1939 figure of 19 million, which compares to 6 million pounds in the United States during the same year.

In this review of northern air operations in Canada, it might be noted that originally 75% of revenue came from air freight, about 20% from passenger traffic, and the balance from air mail. Now that the majority of mining communities have been established, together with the fact that there has been some decline in mining development due to war-time restrictions with a resultant increase in defence cargo and traffic, the ratios have been reversed and about 60% of revenue represents passenger traffic, and the balance comes from mail and freight. In connection with air traffic from mining areas, it is a fact that a very substantial expansion took place as a result of the revaluation of the price of gold by President Roosevelt and the 4.2 million pounds of freight

carried by air in 1933 skyrocketed to 14.4 million in 1934 largely as a result of the upward price in gold.

What the post-war period holds for commercial air travel development is largely an unknown quantity as yet because the great volume of world air freight now moving is not determined by the economics of air transport but rather by military necessity. At the same time all students of transportation agree that post-war air carriers will not only absorb a certain volume of express traffic from the railways, but also develop an entirely new type of cargo. Also it is well to remember that cost and continuity of flow are two extremely important factors in any form of transportation and the air carriers must meet these items as well as that of speed.

In connection with the study of possible air cargo developments in the Dominion it is suggested that consideration might be given to the following research topics:

1. Air cargo where no surface transportation exists.
2. Air cargo in competition with surface transport.
3. Air cargo in competition with ocean transport.
4. Factors tending to segregate air cargo systems from present combination aircraft and systems.
5. Classification of goods and industries likely to become air cargo shippers as air cargo rates are progressively reduced—in other words, marginal users under successively lower tariffs.
6. Air cargo tariff structures and adjustment to increased load factors.

Canada, like South America, is ideally suited for certain types of air cargo operation. Physical obstacles to surface transport are roughly similar in the two countries. At the same time both Canada and Brazil have followed a similar trend with respect to air cargo developments to date. The post-war period will undoubtedly bring many more radical changes in air transport arrangements and it is conceivable to expect Canada will emerge as one of the world's greatest per capita users of air transport services.