

ducible minimum. This minimum will, of course, be determined by such factors as locality and season but it is futile, it is really adding insult to injury, to teach mothers what their children must have and at the same time prove that it is impossible for them to secure these essentials. This is to say that the community as a whole must assume responsibility for making it possible for every member to get enough food of the proper kind to provide all requirements.

Finally it is up to the eater to apply himself with good appetite and appreciation to the ample provision for nutritional needs afforded by the bounties of Canada. None of the food restrictions made ad-

visable by war conditions have lessened the adequacy of the supply and some have even enhanced its value.

In general it can be said the problem of nourishing people adequately never has been and never will be a simple one. The diets of most Canadians could be improved. At all stages from production to consumption it should be recognized that the first requirement of food is to supply the essential demands of the body. Some agency for coordinating the various interests would seem a logical development in the near future. Producers must be enabled to supply essential foods and these essentials must be made available to all.

Wings for a Railway

By D. B. WALLACE

EDITOR'S NOTE: In the Spring issue an article on the progress of Trans-Canada Air Lines written by Captain J. R. K. Main was published. This is now followed by a discussion of recent developments in Canada's second air line system, Canadian Pacific Air Lines. The author, D. B. Wallace, a native of the Maritimes and graduate of Acadia and Toronto Universities, is Special Representative of the Canadian Pacific Railway Company, Montreal, and Assistant to the general manager of the air lines. He recently was on loan to the Royal Air Force Ferry Command as Administration Manager.

CANADA, long mooted as the pivotal point in the world airline map of the future, moved a step closer to this goal when the Canadian Pacific recently acquired a widespread aerial network stretching throughout Canada and particularly in the north and northwest regions.

While certain observers have referred to the recent entrance of the Canadian Pacific into large scale air operations as a new phase of the Company's transport services, it is interesting to note that the railway secured a charter from the Dominion Parliament in March 1919, giving it the right to own and operate aircraft

within and without Canada; a fact that definitely focused the public eye at that time on the future possibilities of the civilian air industry. In 1930 the Company acquired an investment interest in the Canadian Airways, and in 1940-41 secured control of the ten lines listed below which now comprise its air system:

Arrow Airways Limited
 Canadian Airways Limited
 Dominion Skyways Limited
 Ginger Coote Airways Limited
 Mackenzie Air Service Limited
 Prairie Airways Limited
 Quebec Airways Limited
 Starratt Airways & Transportation Limited.
 Wings Limited
 Yukon Southern Air Transport Limited.

These lines can be classified as north-south feeder services connecting, in many cases, with the east-west main line trans-continental publicly owned Trans-Canada Air Lines. Because of the geographical location of the routes of the two railway-controlled air lines in Canada there is no competitive mileage or overlapping ser-

vices between T.C.A. and C.P.A. (See map on page 7).

The ten constituent companies now in the process of being organized into Canadian Pacific Air Lines Limited own and operate approximately 100 planes, fly about 5,000,000 plane miles annually and are capitalized at approximately \$3.5 millions. In normal years the value of air traffic in Northern Canada amounts to about \$3 millions.

The breakdown of revenues on these northern lines is the key to the trend of their growth. At first about 75% came from freight, the balance from passengers and mail. Now that the mining areas are largely established the ratio have been almost reversed and about 65% of the traffic dollars come from passengers and the balance is chalked up to express and mail. The mining traffic has recently declined but this loss has been more than offset by the great increase in defence business and now more than 90% of all traffic carried is connected with war work.

Northern air business is now a real industry standing on its own feet and accounted for about 20 million pounds of freight last year. The amount of air freight has grown rapidly, soaring from 2.3 million pounds in 1931 to a record figure of 26.2 million pounds in 1939. Much of Canada's half billion dollar mineral output owes its existence to the air services operating through northern mid-western areas.

These aerial supply lines to the North Country are forever rolling back the map of Canada. Most Canadians, accustomed to peering East-West, are usually amazed to learn the distances separating many northern points covered solely by air travel. For instance, from Vancouver to Whitehorse, via Fort St. John, a heavy traffic leg now that defence supplies and military personnel are being rushed north to defend Alaska, is about 1,400 miles. Likewise it is roughly 1,500 miles as the plane flies from Edmonton to the air terminus on the rim of the Arctic circle at Aklavik from which it is a relatively short distance to the oilfield development at

Fort Norman. The following are a few approximate distances between main points served by Canadian Pacific air routes:

	Miles
Whitehorse-Edmonton	1,000
Edmonton-Aklavik.....	1,570
Vancouver-Fort St. John.....	1,400
Edmonton-Coppermine.....	1,225
Prince Albert-Goldfields.....	485
Winnipeg-God's Lake	425
Winnipeg-Pickle Crow.....	285
Montreal-Quebec.....	150
Rimouski-Harrington Harbour.....	700

Operations of the different lines taken over by the C.P.R. fall into five main divisions.

On the west coast there are the operations of Ginger Coote and Yukon Southern connecting Vancouver and Victoria and running northward through British Columbia to Whitehorse and Dawson in the Yukon.

The second division lies in the area north of Edmonton, to Aklavik, covering northern Alberta and the North West Territories.

In the central area are the operations of Prairie Airways, which links up the northern prairie towns with T.C.A.

To the East, in Manitoba and around the Great Lakes, are the operations of Starratt, Wings and Canadian Airways.

Still further east in Quebec are the operations of Quebec Airways and Dominion Skyways.

On the main routes twin engine planes are the rule although single engine planes are largely used for certain types of flights, especially spot charter services to outlying points. The majority of northern planes are convertible three ways—skiis, wheels, and floats. Passenger equipment varies widely in size from planes carrying fourteen passengers to small units holding four people. In the freight field the Junkers 52—flying box car—has handled the amazing record load on one trip of 6,700 pounds of freight.

The planes on these northern feeder lines fly a mileage of about 15,000 miles per day. Many of these services, particularly those out of Edmonton and Van-

couver to the Yukon, a route pioneered by the Yukon Southern Air Transport, are now vital links in the defence chain on the Pacific Coast. The companies controlled by the Canadian Pacific own large repair shops, hangars, ground radio facilities and the like, and included in the operating personnel are many of the most famous flying names in Canadian air history. At a critical time like the present the knowledge of these experienced air operators is of decided value in connection with the country's air defence.

While the air companies controlled by the Canadian Pacific have interesting possibilities in the light of the expected post-war boom in air transport, the major stress in present operations is being directed almost solely to the enlargement of the Company's training and repair facilities for the British Commonwealth Air Training Scheme. Already the company is the largest single trainer of observer-navigators in the Dominion operating six out of the total of nine Air Observer Schools, all on a non-profit basis, and there are more than five times as many employees in the training and repair branch as in the transport section of Canadian Pacific Air Lines.

In addition to the six Air Observer Schools the company also operates one Elementary Flying and Training School, five aircraft and engine repair plants making it by far the largest civilian organization engaged in the Empire Air Training Scheme.

Another aspect of the Canadian Pacific's war air services was the formation in August, 1940 of the Canadian Pacific Air Services, a special department organized to assist in the delivery of bombers to Britain. From a modest start, the Atlantic ferry service, which was pioneered through the experimental stage by the Canadian Pacific, and later greatly expanded by the Ministry of Aircraft Production, was finally turned over as a going concern to the R.A.F. Ferry Command a year later in August, 1941. It has now grown into one of the most amazing air delivery systems in the history of aviation. Canada has played a vital role in

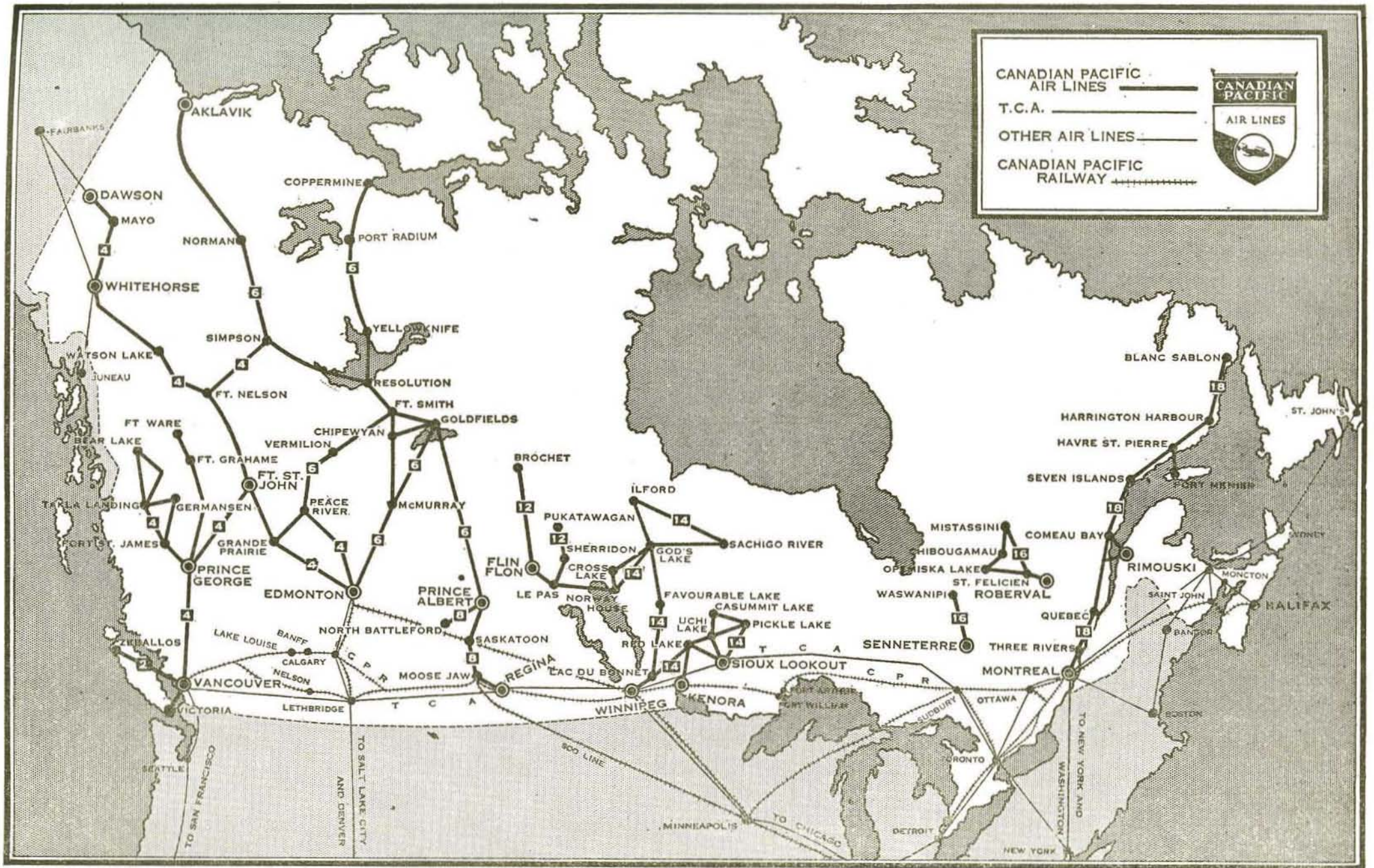
this air transport saga and the Dominion may well be proud, as Sir Frederick Bowhill has so often mentioned, of the civilian air operators and Canadian business leaders who laid the groundwork of the Atlantic ferry service.

The flying equipment and ground facilities, together with qualified personnel in these acquired air companies, give the Canadian Pacific a most valuable backlog of aviation experience to draw upon for the future. Already the controlled transport companies have around 1,000 employees and another 2,500 in the aircraft repair plants and air observer schools connected with the B.C.A.T.P.

Another interesting feature of the new organization is the stabilizing effect which rationalized schedules will have on northern mail routes and general services to these off-line points. It is no secret that cut-throat competition has been the order of the day for many of these air companies in the north. In fact, rivalry has been so keen that small profit margins have been largely wiped out. As a result re-organizations have been a popular pastime for certain operators struggling against heavy financial odds to keep their ships in the air. With the entry of the railway into the picture it is planned to eliminate uneconomic and duplicate services, stabilize the rate structure, and generally place the industry on a sound financial basis, a condition of real importance when present military freighting duties of these northern air lines are considered.

The lines acquired are those pioneered by northern pilots who have brought fame to Canada for unheralded Arctic flying feats and general colonization work. They are the men who laid the groundwork for Canadian northern aerial development which has made the Dominion the world's greatest carrier of commercial air freight and helped so greatly to make possible expansion of the mining business and now to aid in northern defence flying.

Already these air operators are taking their place in the new set-up. C. H. "Punch" Dickins, O.B.E., D.F.C., long one of the north's greatest flyers, and highly successful operating manager in 1941



of the R.A.F. Ferry Command in Montreal, is now Vice-President and General Manager of Canadian Pacific Air Lines. In the West he is assisted by Grant McConnachie, pioneering President of Yukon Southern and one of Canada's most popular and progressive airline administrators, who is in charge of the Company's air services north and west of the Great Lakes in his capacity as General Manager of Western lines at Edmonton.

It is of particular interest to note that one of the major companies controlled by the Canadian Pacific is the Yukon Southern Air Transport operating from Edmonton and Vancouver via Fort St. John to Whitehorse and Dawson. This company pioneered the Yukon route which was later laid out with airports by the Canadian Department of Transport and is to-day the aerial artery to Alaska and other vital Pacific defence routes.

In fact, in the case of the area north of Edmonton which is served by the Company's lines radiating to the Yukon and the North West Territories, its planes are now performing one of the most vital war area transport jobs in the world. Planes are flying a record number of hours freighting men and materials for the Alaska highway, the surveying parties locating the route for the proposed pipe line, and in connection with the surveys of the new railway line which is to run northward from Prince George to Alaska.

Looking to the future, air freight will likely become much larger when the war

is over as it has been hampered by certain restrictions in the past, and the experience being gained by military freight ferrying services now will stand us in good stead in the future. At this point it is interesting to note that air freight now represents less than 3% of the gross earnings of United States air lines while cargo has always accounted for around 80% of the other transportations systems. Admittedly the air carrier has a relatively small carrying capacity but its speed spells the answer to volume in frequency of service. In other words, what counts is not how much freight is delivered in a trip, but in a year.

Thus we find Canada occupying a key position in the world air map of the future and a vital link in Empire and world air routes. It is well to remember that immediately after the last war the major over-water commercial air development was the establishment of the English Channel air ferry route by disbanded R.A.F. flyers and converted military machines. Now, almost a quarter of a century later the Atlantic has become a mere routine hop, and air transport has come of age. The ground facilities and experienced personnel will be available for commercial transport once the war ends. Planes will certainly be no problem except perhaps for a short period while the plants re-tool from military to commercial types. In the last analysis the payload—which is simply profit—will be the deciding factor in the growth of tomorrow's airlines.

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