

PART V.—AIR NAVIGATION.*

The treatment of air navigation in this Part of the Year Book is confined to civil aviation; the military activities and organizations fall more properly under the subject of National Defence (see "Air Service" in the Index).

Aircraft furnish a rapid and convenient means of transportation for passengers and goods particularly in remote and unsettled areas where transportation otherwise is slow and very costly. Similarly, aircraft have provided a relatively cheap and feasible means of obtaining information for the development and conservation of natural resources in many parts of Canada where the cost by other means would be prohibitive. Air-mail and air-transportation lines and commercial services are increasing steadily in number and in the scope of their operations and usefulness.

Section 1.—History and Administration.

Subsection 1.—Development of Aviation in Canada.

Historical Sketch.—A brief historical outline of the development of aviation in Canada appears at pp. 710-712 of the 1938 Year Book.

THE TRANS-CANADA AIRWAY.

Modern Airway Facilities.—The term 'airway' may be defined as the path of flight between two terminal airports on which have been installed permanent aids to air navigation. In North America a standard system of aids to air navigation has gradually been evolved. This has been closely adhered to in the construction and equipment of the Trans-Canada Airway, and some of the most important characteristics should be mentioned. Efficient weather and radio services are essential features. Terminal airports, where regular stops are made, should be all-way and all-weather fields, with three or more hard-surfaced runways, at least 3,000 feet in length; they should be fully lighted with electric airway beacons, floodlights, boundary lighting systems to define the runways, range and approach lights to indicate the path of flight to the paved landing strips, and obstruction lights to define obstacles that might interfere with the clear approach to the airport. At a distance of about three miles there should be a radio-beam station, by means of which the pilot is guided along the airway and brought directly over the airport at the proper altitude for landing.

A meteorological service is essential to every main airport. By means of two-way radio, aeroplanes in flight are given, every thirty minutes, the latest information on the weather, are controlled during their flight, given full information as to other aeroplanes flying in their vicinity, and advised when to land.

Present practice requires radio-beam and two-way communication stations along the airway at intervals of about 100 miles between the terminal airports. Adjacent to these and directly in the path of flight secondary aerodromes are constructed. These are not necessarily stopping points but they afford safe landing in case of need. The number of additional intermediate aerodromes considered necessary for safety varies with the type of country. In open, settled, farm lands, where there are no mountains and where the weather is normally fine, they may be dispensed with altogether or spaced at intervals of about 100 miles between the

* Descriptive and administrative information has been prepared from material supplied by J. A. Wilson, Controller of Civil Aviation, Department of Transport, while statistics have been compiled by G. S. Wrong, B.Sc., Chief of the Transportation and Public Utilities Branch of the Dominion Bureau of Statistics.