

Services. In 1930, when a separate Marine portfolio was established, they became a Branch of that Department and then in 1936 a Division of the Air Services Branch of the newly formed Department of Transport. In 1936 an aviation radio service was organized within the Radio Division, and to it in 1948 was transferred the Government Telegraph and Telephone Service, which had been under the jurisdiction of the Department of Public Works since 1879. In 1950, the name was changed to Telecommunications Division, and later to Telecommunications Branch.

The present responsibilities of the Telecommunications Branch include the operation of radio aids to marine and air navigation, the regulation of all Canadian radio operations, the regulation of overseas cable communication services, the administration of the international telegraph regulations and operation of certain communication services for the public and for the handling of meteorological messages.

Since the end of the War in 1945 a number of radio aids to air navigation have been introduced, many of which were the result of wartime development, although much additional work was necessary to make them acceptable for service to civil aircraft. Through the medium of the International Civil Aviation Organization (ICAO), established in December 1944, it has been possible for participating administrations to reach agreement on desired systems and procedures. Probably no other single factor has contributed so much to the expansion of co-ordinated aviation telecommunications. Typical of new systems are the Instrument Landing Systems (ILS), Ground Control Approach (GCA), the Very High Frequency Omni-directional Ranges (VOR), and Surveillance Radar (see pp. 897-898). Also of importance to air navigation has been the development of integrated communication networks by landline and radio for the transmission of air traffic control and general airline operational messages. As these networks become more extensive and messages flow between a larger number of points, complicated relay stations are needed to keep message handling-time low. One of these relay stations has recently been constructed in the new signal centre at Gander, Nfld.

For all point-to-point communication systems, the trend has been toward automatic methods, as evident by the conversion of many radio circuits to radio teletype operation. In the field of international air-ground communication, the important development has been the changeover from radiotelegraph to radiotelephone. For the handling of meteorological data, facsimile has been introduced. Maps are transmitted by this means over both commercial and Department of Transport radio circuits, many of which have been especially designed for the purpose.

During the past ten years emphasis has been given to the modernizing of radio equipment used in aiding marine navigation. The development of efficient shipborne radar has minimized to some extent the need for new types of short-range navigation aid stations on shore. However, better medium-distance aid became necessary and was satisfied by the continuation and improvement of the wartime LORAN system. In ship-shore communications there has been a changeover from radiotelegraph to radiotelephone and a substantial expansion of the latter service for inland and coastal shipping. Of major significance in this connection is the Great Lakes Agreement with the United States respecting radiotelephone operation.

The number of radio stations regulated under the Radio Act and the Canada Shipping Act increased from 8,762 at Mar. 31, 1947, to 26,998 at Mar. 31, 1955. At the end of the War there was a large pent-up demand for new radio systems, both public and private. International planning, which is conducted by the International Telecommunications Union, was postponed during the war period, and at the first postwar Conference held at Atlantic City in 1947 all of the vast technological development that had taken place before and during the War had to be considered. Since the 1947 meeting there has been a series of subsidiary conferences notable among which was the Extraordinary Administrative Radio Conference in Geneva in 1951, at which a major step in international frequency planning was taken through the development of an implementation program for the allocation tables adopted at Atlantic City. Implementation of the new frequency arrangement is nearing completion.