

Generally speaking, in clear weather each station, at advertised hours, transmits its characteristic for three periods of one minute separated by silent intervals of two minutes. In foggy weather all stations operate continuously, maintaining a uniform time cycle of 3 minutes, each station transmitting in its proper sequence for one minute separated by silent intervals of 2 minutes.

At Flat Point, N.S., Partridge Island, N.B., Red Islet, Que., Caribou Island, Gros Cap Lightship, Hope Island, Main Duck, Southeast Shoal, Cove Island, Burlington Bay, Michipicoten Harbour, Long Point, Port Weller, Ont., Amphitrite Point and Point Atkinson, B.C., the radiobeacon signals are synchronized with the emissions of the fog alarms for distance finding at those point during foggy weather.

In addition to the above radiobeacon facilities, ships equipped with direction finding apparatus may, upon request, obtain signals for the purpose of taking bearings from any of the coast stations. During the year ended Mar. 31, 1951, 161 such requests for signals were handled.

*Loran Stations.*—Loran (long range aid to navigation) is a system of position finding based on the difference in the time arrival of pulse type radio signals transmitted from a pair of stations. This time difference is measured on a Loran receiver and is used in conjunction with specially prepared charts or tables to establish a line of position. The intersection of two or more lines of position determined from two or more pairs of stations provides the required position.

*Medical Advice to Ships at Sea.*—Ships at sea may obtain medical advice through any of the Department of Transport's coast stations. Messages from ships in this connection are forwarded to the nearest medical officer of the Department of National Health and Welfare and the reply is transmitted to the ship.

*Assistance Rendered by Radio to Vessels in Emergency.*—Government radio stations rendered assistance to 113 ships and aircraft reported in danger or distress, during the fiscal year ended Mar. 31, 1951.

*Aids to Air Navigation.*—Radio aids to air navigation are provided from coast to coast and from the United States border to the Arctic along the airways used by the many Canadian airlines, United States airlines flying over Canadian territory, and many Canadian and United States military aircraft. To construct and maintain these many facilities, trained engineers and technicians are located at 6 district offices: Moncton, N.B.; Montreal, Que.; Toronto, Ont.; Winnipeg, Man.; Edmonton, Alta.; and Vancouver, B.C. The large communication stations at Gander, Nfld., are under the administration of the Moncton office.

*Radio Ranges.*—The principal radio aid to air navigation provided by the Department of Transport is the radio range. These stations, located approximately every 100 miles along airways, provide specific track guidance to pilots by means of audible signals. The signals may also be used for the purpose of obtaining direction finding bearings from the aircraft. In addition, radiotelephone communications are provided between the ground and aircraft by means of which pilots may obtain weather and other information concerning the safety of flight. There are now 93 stations in operation. Two stations at Frobisher, N.W.T., and Cape Harrison, Nfld., were taken over from the United States military authorities, during 1951.

*Radio Beacons.*—These stations provide radio signals with which pilots may use their direction finding equipment in order to obtain relative directional bearings to assist in the navigation of their aircraft. Eight of these stations are now in