

Coast stations CFH Halifax and CKN Vancouver, operated jointly by the Department of Transport and the Royal Canadian Navy, participate in the British Commonwealth scheme for providing long-range communication with ships.

*Coast Radio Direction Finding Service.*—A direction finding service is established to enable ships to obtain—without charge—a line of bearing from the Direction Finding station.

*Radio-beacon Service.*—Radio beacons are established for the purpose of enabling any ship or aircraft equipped with a direction finder to determine its bearing or direction in relation to the radio-beacon station.

Generally speaking, in clear weather, each station transmits, at advertised hours, its characteristic signal for three periods of one minute separated by silent intervals of two minutes. In fog, all stations operate continuously, maintaining a uniform time cycle of three minutes, each station transmitting in its proper sequence for one minute separated by silent intervals of two minutes. At certain stations the radio-beacon signals are synchronized with the emissions of the fog alarms to permit distance finding during foggy weather.

In addition to the above radio-beacon facilities, ships equipped with direction finding apparatus may, upon request, obtain signals for the purpose of taking bearings from any of the coast stations.

*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 from any coast station. The messages are delivered to the port medical officer of the Department of National Health and Welfare and replies are transmitted to the ship free of charge.

*Assistance Rendered by Radio to Vessels in Emergency.*—Coast stations have many times, given valuable assistance to vessels in danger and a great many of the smaller ships are being fitted with radio to avail themselves of this service.

*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 Canadian and United States military aircraft. To construct and maintain these many facilities, specially trained engineers and technicians are located at six district offices: Moncton, N.B.; Montreal, Que.; Toronto, Ont.; Winnipeg, Man. Edmonton, Alta.; and Vancouver, B.C.

*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