

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

**Radio Assistance rendered to Vessels in Emergency.**—Federal Government radio stations rendered assistance to 90 ships and aircraft reported in danger or distress during the year ended Mar. 31, 1950.

**Marine Casualty Reporting Stations.**—To assist in promoting the safety of life at sea, 7 marine casualty reporting stations on the Atlantic coast and 9 on the Pacific coast are fitted with radiotelephony.

### **Radiocommunication Stations and Aids to Air Navigation**

Radio aids to air navigation are provided from coast to coast along the airways used by the many Canadian airlines, United States airlines flying over Canadian territory, and many Canadian and United States military aircraft. In order 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 are under the administration of the Moncton office.

**Radio Ranges.**—The principal aid to air navigation is the radio range. Such stations are located at approximately every 100 miles and provide radio beams which guide aircraft in flight. In addition to the course, pilots can be advised by radiotelephone from the ground station of weather conditions and other matters of interest to the pilot. There are now 91 such stations distributed from Vancouver Island, B.C., to Newfoundland: 51 are on simultaneous operation, a feature which enables voice communication between the ground station and the pilot without shutting off the beams.

**Fan Markers.**—This type of equipment is installed at various points along the airway to identify a particular spot on the ground to pilots. For instance, the Maple Ridge Fan Marker, 30 miles east of the Vancouver airport, informs the pilot on a west-bound flight when he may safely lose altitude without risk of striking mountain tops.

**Station Location Markers.**—Each radio range station is provided with a station location marker, the purpose of which is to inform a pilot flying overhead when he is directly above the station. This is accomplished by directing energy vertically from the ground in the form of an inverted cone which is received on the aircraft and causes a light on the instrument panel to be turned on. Only the ranges at Killaloe, Ont., and Mecatina, Que., remain to be equipped.

**Instrument Landing Systems.**—Instrument landing equipment provides radio beams, by means of which pilots are able to land aircraft during periods of very low visibility. An installation consists of a localizer which provides a beam down the centre of the runway, a glide path transmitter which provides an inclined beam which meets the runway at the approach end, two markers at four miles and 3,500 ft., respectively, from the approach end of the runway which indicate to the pilot, by means of lights on his instrument panel, the exact distance he is from the runway and a compass locator station to assist in holding procedures and in tracking the localizer course. This latter equipment operates on medium frequencies and provides a signal which operates the airborne automatic direction finders.