

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. The equipment consists of a localizer that provides a beam along the centre of the runway, a glide path transmitter which provides an inclined beam which meets the runway at the approach end, and three markers at four miles, 3,500 ft. and 200 ft. from the approach end of the runway that indicate to the pilot by means of lights on his instrument panel the exact distance he is from the runway.

VHF Program.—Due to the overcrowded condition of the high-frequency band and the fact that communication in the very-high-frequency spectrum is relatively free from static interference, progress is rapidly being made in providing communication between the ground and aircraft on the latter frequencies. The greatest drawback to the very-high-frequency spectrum is that communication is restricted to line of sight, thus making necessary more closely spaced installations than are required in the high-frequency band.

Meteorological Communications Stations.—Weather reporting stations are distributed at strategic points throughout the uninhabited areas of the country as well as throughout the populated areas. Reports from these stations enable the weather forecasters to make more accurate forecasts of great importance to both domestic and transatlantic flying operations. The only change in this regard during 1948-49 was the closing of the Sandgirt Lake station located in the far northern Quebec area. Reports required from this area are now being supplied by the staff of a mining company located at Knob Lake.

The four meteorological radio stations located at Fort MacKenzie, Que., Nitchequon, Que., Dore Lake, Que. and Dease Lake, B.C. were maintained and operated throughout the year. The purpose of these stations is to forward to the meteorological office the weather observations taken at the above points. The Meteorological Stations at Port Harrison, Que., and Coppermine, N.W.T., perform similar functions and, in addition, provide restricted coast station service during the season of navigation.

Ionosphere Measurement Stations.—The purpose of ionosphere measurements is to determine virtual height of the ionized layer in the earth's upper atmosphere and to determine the amount of absorption which radio waves experience in passing through and in being reflected by this layer. The information gained is of great importance in predicting short-wave communication coverage and for determining the reliability and deviation of bearings from short-wave direction finders. There are 65 ionosphere measurement stations located in different parts of the world. Three new ionosphere measurement stations at Resolute Bay, Baker Lake, N.W.T. and Fort Chimo, Que., were established and placed in operation during 1948-49. In addition, stations are maintained at Clyde River, Baffin Island; and at St. John's, Nfld.

Other Federal Government Radio Stations

Department of National Defence.—In addition to stations established for military purposes, Militia Services (Royal Canadian Corps of Signals) operates 11 permanent stations and two summer stations situated along the Mackenzie River and in Yukon on behalf of the Department of Mines and Resources, Bureau of Northwest Territories and Yukon Affairs.