Beacons, Markers, etc.—Aeronautical radiobeacon stations provide radio signals with which pilots may use their direction finding equipment to obtain relative directional bearings. Fan markers, operating on very high frequencies, are usually placed on an airway so as to inform the pilot when he may safely lose altitude after passing high terrain or to indicate accurately the distance from an airport. Station location markers are similar to fan markers except that the signal radiated is such that aircraft may receive the same indication irrespective of the direction of flight. They are installed at the same location as a radio range to enable a pilot to determine when he is exactly over the station, thus obtaining definite indication of position. Station location markers are installed at most radio range sites.

Radar.—Long-range (150 nautical-mile) surveillance radars are being installed at 15 major airports from Halifax to Vancouver for air traffic control purposes. Short-range (40 nautical-mile) radars will also be installed at Montreal, Toronto, Winnipeg and Vancouver airports. A 50-mile range surveillance radar at Gander forms part of a complete ground controlled approach radar facility.

Instrument Landing Systems.—Instrument landing systems provide radio signals which, when received by special radio equipment aboard aircraft, permit pilots to approach airports for landing during periods of very low visibility. An installation normally consists of a localizer transmitter providing lateral guidance to the runway, a glide path transmitter for slope guidance to the approach end of the runway, two marker transmitters giving distance indications from the runway and a low-power radiobeacon (compass locator) to assist in holding procedures and lining up on the localizer course. The localizer and marker transmitters operate on very high frequencies, the glide path on ultra high frequencies and the compass locators on low and medium frequencies. Twenty-six instrument landing systems are in operation.

Aeronautical Communications Stations.—To assist in providing communication between aircraft and ground, radio stations are located at strategic points across the country, including the Arctic. These stations, operating for the most part on high frequencies, provide communication to both domestic and international air carriers. The international communications stations form a major contribution on the part of Canada to international aviation. They may be grouped as follows: (1) communication for meteorological services; (2) communication for the air traffic control services; and (3) communication for the benefit of the airline operating agencies, with their aircraft and between their despatch offices.

Meteorological Communications Stations.—Six stations whose primary function is weather reporting are located at strategic points throughout the country from coast to coast and into the Far North; some are located in remote areas where radio is the only means of communication.

Supplementing the facsimile wire-line services, the transmission of weather maps is extended by radio to points in northern Canada that cannot be served by wire lines.

Subsection 2.—External Telecommunication Services

The Canadian Overseas Telecommunication Corporation was established in 1950 to maintain and operate, in Canada and elsewhere, external telecommunication services for the conduct of public communications by cable, radiotelegraph and radiotelephone, and any other means of telecommunication between Canada and any other place, and between Newfoundland and any other part of Canada; to make use of all developments in cable and radio transmission and reception for external telecommunication services; to conduct investigations and research with the object of improving the telecommunication service generally and to co-ordinate Canada's external telecommunication services with the telecommunication services of other parts of the Commonwealth.