

On its own, CN has microwave facilities linking Newfoundland to the Maritime Provinces at Sydney, NS and across the Strait of Belle Isle to Labrador and to Quebec at Blanc Sablon. In addition, CN has installed a microwave system from Grande Prairie, Alta., through the Yukon Territory to Alaska to carry telephone and data traffic; it serves both civil and military organizations. In co-operation with Alberta Government Telephones, a combination microwave and tropospheric scatterwave system has been established to connect Alberta to Yellowknife, Fort Simpson and Lady Franklin Point in the Northwest Territories. A combination microwave-scatterwave system links the Yukon Territory with the Mackenzie delta area of the Northwest Territories. Microwave is used from Whitehorse to Keno and a tropospheric scatterwave system bridges the Richardson Mountains from Keno to Arctic Red River; from there, microwave is used north to Tuktoyaktuk. A scatterwave system hurls transmission up to the troposphere where it is bounced back to the next station some 200 miles away. A microwave system is being built by CN between Fort Simpson, Norman Wells and Inuvik.

The Quebec North Shore and Labrador Railway has developed a microwave system extending into northern Quebec to provide communication for mining operations and to serve some civil communication purposes. Ontario Northland Railway operates a microwave system connecting northern Ontario and James Bay for military and civil communication. The British Columbia Railway makes extensive use of 6,000 Mc/s microwave facilities linking Vancouver with Prince George, Dawson Creek and Fort Nelson, and the company is constructing a branch of this system linking Fort St. James to Dease Lake.

Satellite communications facilities. Telesat Canada, a commercial corporation, launched the world's first geostationary communications satellite designed for domestic commercial use, ANIK I, on November 9, 1972. It maintains a stationary orbit at an altitude of 22,300 miles, rotating with the earth every 24 hours and therefore constantly maintaining the same relative position over the equator.

Initial commercial service to Telesat's customers began during January 1973 through a network of 43 earth stations located across Canada. Basically, satellite communication is one long microwave link; transmission is comparable to that of existing microwave systems but with the added advantage of providing virtually all forms of telecommunications to areas which had not previously been well serviced.

ANIK I and its in-space back-up satellite, ANIK II, launched in 1973, provide television distribution in both English and French to many parts of Canada not previously served by terrestrial facilities, improve telephone communications in northern Canada and supplement existing microwave systems servicing southern Canada. The ANIK generation of satellites has a projected minimum life cycle of seven years. Telesat Canada has signed contracts with the Canadian Broadcasting Corporation for three radio frequency (RF) channels for English- and French-language television distribution; with a consortium of telecommunications common carriers, including the members of the Trans-Canada Telephone System and CNCP Telecommunications, for two RF channels to provide voice and data communications between Toronto and Vancouver; and with Bell Canada for two RF channels to provide improved telephone communications in northern Canada. During 1973, a contract was signed between Telesat Canada and the Canadian Overseas Telecommunication Corporation for service in 1974, linking the Canadian end of a new transatlantic cable, CANTAT II, via satellite to central Canada. The company is also negotiating with a number of US telecommunications carriers for the leasing of RF channels on ANIK II to provide US service via satellite until US systems are established in space.

Because of its early entry into the field of commercial satellite communications, Telesat Canada has acquired a marketable body of managerial and technical expertise in this rapidly evolving field.

16.1.2 Telephone and telegraph statistics

Telephone statistics. In 1972 Canada had 1,201 telephone systems compared to 1,490 in 1971; of these 1,170 filed returns with Statistics Canada compared to 1,171 in 1971 (Table 16.1). Although the number of co-operative systems declined slightly from 1,074 in 1971 to 1,072 in 1972, growth in the telephone industry was particularly evident in the larger telephone companies. The largest incorporated telephone company, Bell Canada, operates in Ontario, Quebec, Newfoundland and the Northwest Territories. In 1972 it owned and operated 6.7 million of the approximately 12.0 million telephones in Canada. The BC Telephone