

Subsection 5.—Public and Private Commercial Microwave Facilities

Canada, because of its population distribution and the vast areas served by microwave communication links, ranks second highest among the world's users of microwave communications systems on a per capita/per mile basis. Increasing demand for television outlets necessitated the extension of microwave routes to provide interconnections for the CBC English and French and private networks and recently these routes have been upgraded to enable the transmission of colour television which started in the autumn of 1966. With the use of more automated equipment by industry and various services, associated data and control information must be transmitted at rapid speeds over microwave radio-relay to widespread areas throughout the country. This Subsection gives a summary of the facilities existing or under construction at the end of March 1967.

Railways.—The Telecommunications Departments of the Canadian National and Canadian Pacific Railway Companies have placed in operation a microwave system extending from Montreal to the Pacific Coast, which is used for television, telephone and data relay purposes. They also operate microwave facilities linking the Province of Quebec with the Maritime Provinces and Newfoundland and a major expansion of microwave facilities in Newfoundland has been undertaken by Canadian National Telecommunications (CNT). In addition, CNT has installed a microwave system between Alberta and the Yukon Territory which carries telephone and data traffic and serves both civil and military organizations in the area. In co-operation with Alberta Government Telephones, a combination microwave and tropospheric scatter system connects Alberta and the Northwest Territories. This system is also intended to provide communication for civil and military use in the Far North. The Quebec North Shore Labrador Railways has developed a microwave system extending into northern Quebec to provide communication for mining operations and to serve some civil communication purposes. Ontario Northland Railways operates a microwave installation connecting northern Ontario and James Bay, also for purposes of military and civil communication. The Pacific and Great Eastern Railway makes extensive use of 6,000 Mc/s microwave facilities linking Vancouver with Prince George and Dawson Creek, B.C.

Telephones.—The Trans-Canada Telephone System consists of eight provincial and private systems collectively providing a transcontinental microwave system for the purpose of carrying telephone, television, data and other types of communication services. Extensive microwave systems are utilized within the respective provinces for civil and military communications or television relay purposes. Major expansion has taken place in each province, greatly increasing the number of areas served and system capacity for all types of communication requirements. Tropospheric scatter systems are employed to provide beyond line-of-sight transmissions especially to the Far North; these are used for both civil and military applications.

The telephone companies of the three Prairie Provinces plan to construct a major microwave system extending from Winnipeg to Edmonton, to form part of a projected second transcontinental microwave system operated by the telephone companies. The British Columbia Telephone Company has installed a major trunk system from Prince Rupert to Prince George, which is linked through Prince George with the transcontinental system in the southern part of the province. A microwave system has been built linking Mill Village communication satellite earth station, near Liverpool, N.S. (see p. 872), with the trunk route system of Maritime Telegraph and Telephone Company.

Television.—The two main television interests in Canada—the CBC (now CRTC) and the CTV Television Network Limited—lease private microwave facilities for the relay of television programs from coast to coast. In addition, studio transmitter links are used by various television stations where the television transmitter is situated some distance from the studio and interconnection is required. In sparsely populated areas, off-the-air pick-up signals from primary television stations are sometimes relayed via microwave to rebroad-