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 areas; these are used for both civil and military applications.

Recently the telephone companies of the three Prairie Provinces announced plans for construction of 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 B.C. 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, constructed near Liverpool, N.S. (see p. 875), with the trunk route system of Maritime Telegraph and Telephone Company.

Television.—The two main television interests in Canada—the CBC 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 rebroadcasting sites. Microwave facilities are also used in connection with portable and mobile television pick-up where program material is intended for the main studio. Recently, both network facilities and local studio transmitter links have been up-graded to enable the transmission of colour television.

Industrial.—Although many firms utilize public communication facilities on a lease basis, some organizations have installed private microwave systems to provide voice, teletype and control data for various purposes. The British Columbia Hydro and Power Authority, the Calgary Power Corporation, The Hydro-Electric Power Commission of Ontario, the Quebec Hydro-Electric Commission and Manitoba Hydro use a considerable number of microwave relay systems for important control and communication purposes. For example, Hydro-Quebec has recently greatly expanded its hydro power-generating capacity and new microwave routes have been added to permit a central control of the various generating stations. The British Columbia Hydro and Power Authority is installing facilities to link the Vancouver area with Peace River, Mica Creek and the Bonneville Power Administration, and also for system control in the Vancouver area.