

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 Far North areas. 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 has completed a microwave installation connecting northern Ontario and James Bay 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. The Northern Telephone Company is expanding its microwave facilities in northwestern Ontario for carrying television program material and civil communications.

Television.—The two main television interests in Canada—the CBC and CTV—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.

There has been a great increase in television coverage areas during the past year and the ensuing need for English and French program feeds via microwave relay has resulted in an expansion in the number of leased microwave circuits and new communication routes.

Industrial.—Many firms utilize existing public communication facilities on a lease basis; however, 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. The Quebec Hydro-Electric Commission has greatly expanded its power generating plants and new microwave routes have been added to permit a central control of the various power generating stations through the use of microwave communication.

Subsection 7.—Miscellaneous Radio Communication Services

In addition to radio communication services provided by the Federal Government, extensive radio communication systems have been established in the provinces, mainly for police, highway and forestry protection purposes. Municipal government departments have steadily increased their use of radio to facilitate operations, particularly as a medium of communication with vehicles—police, fire, engineering, hydro, etc. Such services as taxi, heavy construction, ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medical also make extensive use of radio for communication purposes.

Public utilities, power companies, provincial power commissions, oil exploration and mineral development organizations have expanded considerably their use of radio in both mobile and point-to-point radio fields.