

# Communications in Canada

## From dots and dashes to digital data

A century ago, railways and telegraph wires linked Canada from east to west. Today, a variety of modern technologies provide the country's vital links, serving the communication needs of business and industry, delivering radio and television programs, helping to protect life and property, and keeping friends and families in touch across the second largest country in the world.

Imagine a float plane touching down on a lonely lake in Northern Canada. It taxis to shore, two geologists climb out and unload their gear. The plane takes off, leaving the geologists for a month of exploration work. As they make camp, one of their first activities is to set up a satellite dish and establish voice contact with their oil company's head office. Soon they will start sending back information on their findings in the form of digital computer data.

A farmer on the western prairies dials a telephone number and checks out the latest prices on crops and livestock displayed on his video terminal. This is Telidon, Canadian videotex, bringing interactive television to thousands of users.

From Toronto, a major Canadian daily newspaper sends its text by satellite to printing plants in five other cities, instead of printing hundreds and thousands of copies and shipping them across the country. Telecommunications substitutes for transportation.

In Ottawa, the nation's capital, a taxi driver nearing the passenger's destination quietly pushes a button on a small mobile data terminal. It automatically notifies the dispatch office of the taxi's location, then displays the address of the next fare. This fast and efficient Canadian mobile data system was originally developed for use by police forces.

A small plane crashes in a mountain forest far from the nearest town. Jolted into action by the impact, the plane's emergency locator transmitter automatically starts sending a distress signal. Picked up by satellite in minutes, it pinpoints the location of the downed plane to within a radius of 10 kilometres. As search and rescue operations begin, the Canadian-developed concept of satellite-assisted search and rescue has once again proved its worth.



*Messages received via satellite at a control station can be relayed directly to a Coast Guard vessel on the ocean.*

North of the Arctic circle, an Inuit production crew starts videotaping a new Inuktitut-language television program. Later it will be distributed by satellite to more than 30 communities in Northern Quebec, Labrador and the Northwest Territories by the Inuit Broadcasting Corporation.

These examples illustrate a few of the ways Canada uses advanced communications to overcome the problems of vast size and a small, scattered population of some 25 million people. The task is formidable. Eighty per cent of Canadians live within 200 kilometres of the Canada-US border. Beyond this narrow corridor stretch rural areas where there are four people per square kilometre, and beyond this again lie the remote areas — more than 80 per cent of the land mass — where only one per cent of Canadians live.

To meet the challenge, Canada has developed one of the most advanced communications systems in the world today. Service is almost universally available: 99 per cent of households have telephones and radios and 98 per cent have television sets. The average Canadian makes more than two dozen phone calls a week and, during the fall and winter months, listens to 17 hours of radio and watches 24 hours of television every week.

Services are provided by a mixture of private enterprise and government

agencies operated as commercial corporations. On the broadcasting side, programming is originated by 670 radio stations and 121 television stations, including educational broadcasters. More than 2 000 rebroadcasting stations extend the range of radio and television coverage. Cable television is available to 84 per cent of Canadian households through a total of 827 systems. Eighteen major companies and numerous small enterprises offer telecommunications services, from traditional telephone to the latest high-speed digital data transmission. In addition, some 200 companies provide public mobile radio service.

But statistics do not tell the whole story. Canada's goal is to make communications available to 100 per cent of the population. The difficulty and cost of reaching that last one per cent of the population is enormous.

In Canada's North, for example, microwave has extended basic service throughout the Yukon and the Mackenzie Valley. In the eastern Arctic, where distance is measured not in kilometres but by the frequency of plane service, satellites have brought a dramatic improvement in communications over the past decade and a half. In the Yukon and the Northwest Territories, telephone service and radio and television reception are now available in all but a handful of tiny settlements with fewer than a hundred people.