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New northern radio system for remote Canadian communities

A research program involving participation by members of an Inuit community and aimed at development of a novel trail radio system is under way in the Department of Communications. The system, which may have considerable potential for Inuit, Indian and other remote Canadian communities, is now being field-tested by DOC's Communications Research Centre (CRC).

The system is aimed at keeping hunting and fishing parties in reliable radio contact with settlements — whether they are a few hundred metres or several hundred kilometres from home. A prototype has been assembled in CRC's radio communications laboratory and flown to Koartac, a Quebec Inuit community of 125 persons, about 485 kilometres north of Fort Chimo, where it is now at the disposal of the inhabitants.

The region is economically dependent on hunting, fishing and other traditional activities requiring settlement members to be away from home, out on the trail, or in temporary camps for extended periods. Communities like Koartac can talk to the South by telephone, or to the next community by traditional high frequency (HF) short-wave radio. But they have no means of maintaining reliable safety communications within their own areas, especially

when the community extends to those in pursuit of fish and game as well as those in the settlement.

HF radio inadequate

HF radios have been tried for such purposes but they have drawbacks such as the need for larger, inefficient antennas; coverage gaps; and propagational disturbances in the ionosphere — which can be most unpredictable in northern Canada.

The CRC system receives HF for longer-range coverage, but introduces lightweight, power-efficient VHF (very high frequency) FM transceivers which can provide almost 100 per cent reliable communications within line-of-sight distances (40 to 120 kilometres, depending on local topography and elevation of the community base station repeater) between settlements and trail parties.

About the size of a small cigar box, these radios can be scattered throughout a community — in the school, community hall, co-op store and homes, for example — the way phone booths are in southern communities. An automatic repeater station situated at the highest point in or overlooking the settlement picks up signals from radio transmitters on the trail or in the community and retransmits them at greater power on an adjacent frequency.

