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U.S.-CANADIAN SATELLITE TO CEASE COMMUNICATIONS EXPERIMENTS

A historic U.S.-Canadian project to advance communications via satellite will end in October when the world's most powerful communications satellite will relay video and voice signals for the last time.

The Communications Technology Satellite has demonstrated that such powerful satellite systems can bring low-cost television to remote areas anywhere on the globe.

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More than 160 United States experiments were conducted with the satellite over a three-and-a-half-year period, ranging from business teleconferences -- designed to save busy executives time and travel expenses -- to emergency use during a disastrous 1977 flood and discussions of Indian concerns involving tribal participants in Montana and New Mexico and government officials in Washington, D.C.

The highly instrumented portable ground terminal was transported some 100,000 kilometers (62,000 miles) in support operations for the satellite which is in synchronous orbit some 36,000 km (22,300 mi.) in space.

The technology satellite has been a joint project of the National Aeronautics and Space Administration and the government of Canada's Department of Communication. NASA's Lewis Research Center, Cleveland, was manager of the U.S. experiments which ceased in June of this year. Canada designed and built the satellite which for the first time operated in the 12 to 14 gigahertz frequency band. The Lewis center also furnished the solar-powered traveling-wave transmitter which has 10 to 20 times the broadcast power of current communications satellites. NASA did the pre-flight environmental testing on the spacecraft and launched it from the NASA Kennedy Space Center in Florida on Jan. 17, 1976.

Canada will continue transmissions through October when the satellite will be officially decommissioned. The satellite's performance has almost doubled its two-year design lifetime and it has met all project objectives. Recently the radio signals have weakened and engineers have had difficulty determining the status of on-board systems.

Daniel J. Shramo, director of Space Systems and Technology at Lewis, cited the satellite's accomplishments.

"It's taught us that new frequency bands can be tapped successfully and that advanced technology such as embodied by the traveling-wave transmitter can bring startling advances in broadcast communications," he said.

"We have demonstrated that low-cost Earth terminals may indeed be substituted for conventional big-dish antennas when sufficient signal-sending power is available from the spacecraft to provide clear, bright, two-way television between distant parts of the country and even between continents."

Among the satellite's more complex experiments was one in September 1978 involving transmissions between Buenos Aires, Argentina, and United Nations Headquarters in New York City.

Pictures and voices of conferees attending a Buenos Aires U.N. conference on technological cooperation among developing countries were fed via the satellite to the NASA portable ground terminal stationed just outside U.N. Headquarters. Remarks were then simultaneously translated into each of the five official U.N. languages and immediately relayed back to Buenos Aires via the satellite, to be picked up in the earphones of the conferees.

The satellite also carried high-speed transmissions of documents used to illustrate the Buenos Aires presentations. These were translated and beamed back to the Argentinian capital the following day.

The experiment, hailed as a milestone, underscored both the feasibility and desirability of holding international conferences via satellite.

More commonly, the satellite, orbiting stationary over the equator, processed "town meeting" exchanges between Congressional members and their constituents, exchanges between university lecture halls and student assemblies several states away and exchanges between teaching hospitals and medical assemblies separated by thousands of miles.

The satellite is expected to be the forerunner of commercial broadcasting satellites of the future that will beam television and data directly into homes and business offices.

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