

Cross Canada Currents

Canada Wins Emmy for Engineering Achievement

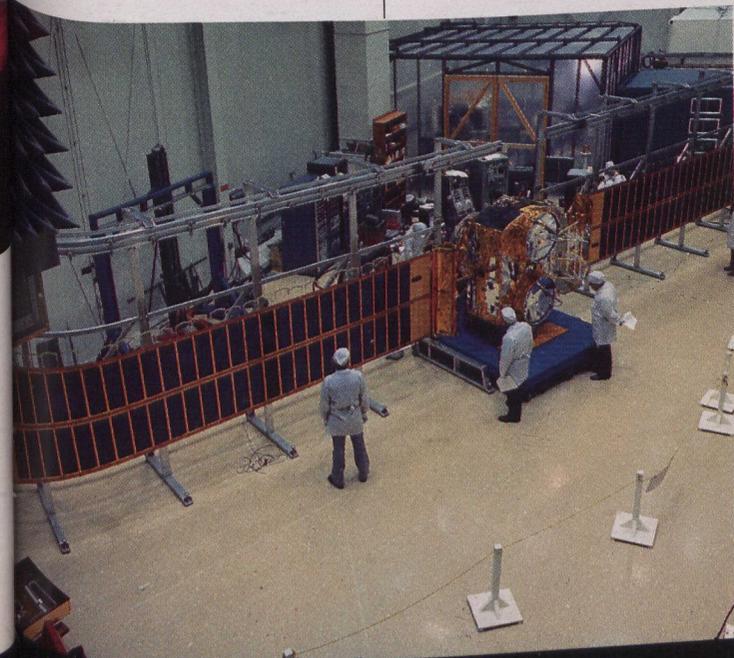
The Government of Canada, in conjunction with the U.S. National Aeronautics and Space Administration (NASA), recently received an Emmy television award in recognition of its achievements in the development and testing of a high-frequency band in satellite communications.

The experimental satellite, known as Hermes, was the first in the world to use the K-U band allowing for more powerful signals, smaller satellite dishes and broadcasting directly to the home.

While Canada designed, built and operated Hermes, NASA tested it, provided a high-powered transmitting tube and launched the satellite in 1976.

In accepting the Emmy award from the National Academy of Television Arts and Sciences for "Engineering Excellence," Canada's Communications Minister Flora MacDonald said: "Hermes was one of the most important milestones in Canadian space history. It is a particular pleasure, therefore, 25 years after the Alouette lift-off launched Canada's space program, to celebrate our achievements in space by sharing the Emmy with all Canadians."

The Hermes flight-model spacecraft during testing at the David Florida Laboratory near Ottawa. Hermes, a communications research satellite, was launched in 1976 and transmitted signals until 1979.



Muscular Dystrophy: Unlocking the Genetic Puzzle

One child in about 3 000 is born with Duchenne muscular dystrophy. The disease, the most severe form of muscular dystrophy, usually affects only boys. It has a very grim prognosis: confinement to a wheelchair by age 10; death by age 20.

Recently, researchers at Toronto's Hospital for Sick Children discovered a segment of the gene responsible for the disease. Their finding will dramatically increase the accuracy of existing tests which identify female carriers of the genetic defect and determine if fetuses have been afflicted with the deadly disease.

An individual's genetic makeup is based on 23 pairs of chromosomes — one set inherited from each parent. The chromosomes are composed of approximately 200 000 genes, each responsible for the production of a specific protein essential to human health. The muscular dystrophy gene is located on the X chromosome. Because females have two X chromo-

somes, should a girl inherit a defective muscular dystrophy gene from her mother, the paternal X chromosome will override the defective one and produce the correct protein. However, boys have only one X chromosome. Therefore, the presence of an abnormal muscular dystrophy gene results in the production of abnormal and fatal protein.

The Toronto team, led by Dr. Ronald Worton, together with researchers from Boston's Children's Hospital, have identified 25 per cent of the muscular-dystrophy-causing gene, the largest part discovered to date. Dr. Worton said both groups are working furiously to identify the rest of the gene: "We almost have it now."

Identification of the complete gene will enable scientists to manufacture and analyze the protein. Further research will then determine whether introduction of the normal protein will be effective in treating or even curing muscular dystrophy patients.

Ports Without Ships

Shipping ports were once essential to any major business city. But according to John D. Herrick, chairman of the Toronto Harbour Commission, teleports will be the new "ports" defining the key commercial centres of the future.

Instead of transporting people and products, teleports transmit information. Canada's first satellite teleport, located in Toronto's commercial centre, is now open for business. The \$5-million teleport facility was built by Telesat, a corporation 50 per cent