

## First satellite-to-home rural television service



The King family of Macdiarmid, Ontario, 170 km northeast of Thunder Bay on the shores of Lake Nipigon, was the first family to receive colour TV directly from Anik B. Mike Nawrocki (right), of the Department of Communications, points out a feature of the 1.2-metre earth station.

Canada, it is believed, is the first country to install earth stations or dish-shaped antennas, in private homes, to test a direct-to-home satellite broadcasting service.

Anik B, Canada's latest domestic com-

munications satellite, recently began transmitting TV programming directly to houses, community centres and cable television systems, which are being loaned the small earth stations for receiving the

programs.

The Department of Communications, in co-operation with Ontario and British Columbia, plans to set up 100 earth stations in rural communities to test satellite broadcasting. The test will run until next spring.

Although there have been other direct broadcast satellite experiments in Canada and other countries, this is the first trial involving extended transmission of regular programming through a "substantial number of home receivers".

More than 12 hours a day of TV programming will be available over Anik B. The Federal Government is leasing up to four channels on the satellite for the life of its Anik B program, at a cost of \$34 million.

The frequency bands being used differ from those used to carry CBC programming on the Anik A series of satellites, the chief advantage being that smaller and lower cost earth stations can be used. The project is testing 1.2-metre and 1.8-metre dish antennas. The earth stations cost the Department of Communications \$3,600 each although, the Government hopes the price will drop eventually to less than \$500 through mass production.

If the project is successful and is expanded, Canadians in remote and rural areas would benefit, Federal Communications Minister David MacDonald said.

## Study reveals brain abnormalities

A study in Alberta of juvenile offenders found that the majority had previously undiagnosed brain impairments.

The unpublished, provincially-funded study, the only such Canadian one the authors are aware of, challenges the belief that social and economic background are the sole determinants of delinquency.

The results "have significant implications for treatment", one of the authors, neuropsychologist Lorne Yeudall said.

### First link

While similar studies have been done in the United States, Mr. Yeudall, who works at the department of neuropsychology and research at the Alberta Hospital in Edmonton, said this was the first to link the impairment to a specific part of the brain.

Along with a control group of Edmonton high school students, 101 teenagers between 13 and 17 from the youth

detention centre in Edmonton were given a battery of tests. The delinquents had committed previous offences, the majority of which were non-violent.

A series of neuropsychological tests — which measures sensory, motor and perceptual functions, memory and ability for abstract thinking — revealed that 86 per cent of the delinquents had abnormal profiles, compared to 14 per cent of the control group.

Different independent tests — including neuropsychological tests, EEGs (electroencephalograms), and spectral EEGs (done while the patient is working at problems) — revealed that abnormalities were typically found in the non-dominant hemisphere (the right side of the brain in a right-handed person) of the front brain or frontal temporal lobe.

Mr. Yeudall said the front brain controlled motivation, hindsight and foresight, impulsive behaviour and inhibitions.

The report stated that differences in intelligence quotients would not account

for the disparity, since for normal subjects few correlations have been found between intelligence scores and a battery of neuropsychological tests.

Mr. Yeudall said the most likely interpretation of the test results was brain dysfunction as a result of brain damage, biochemical abnormalities or genetic factors. The report also states that the results suggest that the teen-agers in the detention centres have long-standing brain dysfunctions.

Another, less popular, interpretation of the results could be that some people's "brain styles are related to life styles... that certain life experiences lead the brain to organize itself in a different way".

But Mr. Yeudall said other studies, such as ones he has done on prison populations, had shown a high incidence of medical complications such as head injuries in connection with such impairment. U.S. studies have revealed that juvenile delinquents have a recidivism (repeated incarceration) rate of about 85 per cent.