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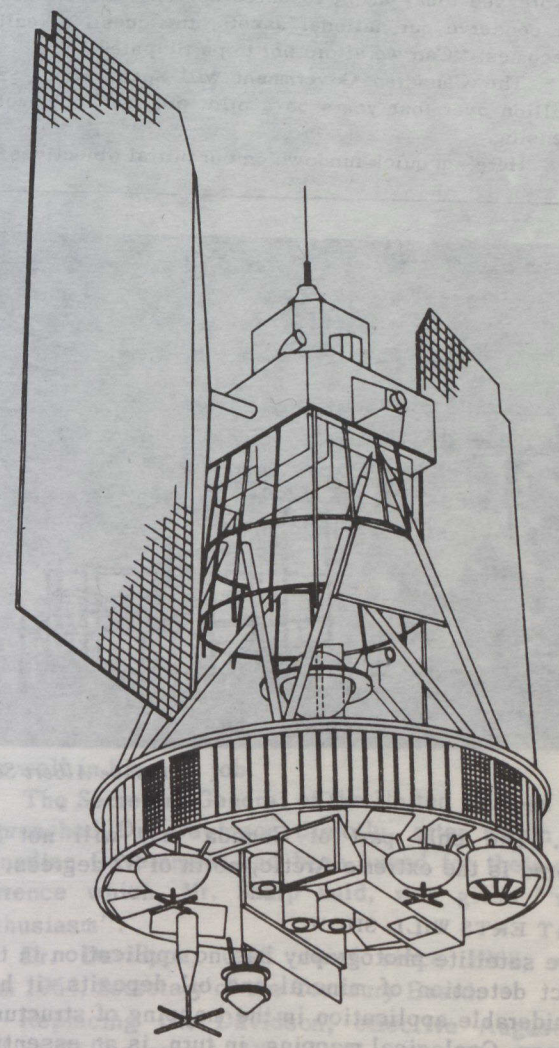
CANADA JOINS U.S. IN EARTH SCANNING

The first satellite to be designed exclusively for "remote sensing" (scanning the earth from a distance) is expected to be launched by the National Aeronautics and Space Administration (NASA) of the United States next month. This spacecraft, designated by the letters ERTS (Earth Resources Technology Satellite) will be replaced by another satellite a year later.

Canada has entered into an agreement with NASA to take part in the direct reception and analysis of data from these satellites while they are over Canadian territory; this opportunity to participate is being made available free of charge - all Canada has to contribute is its own receiving and interpreting facilities. Since Canada has neither satellite-launching facilities nor the type of equipment that will be placed on the ERTS satellites, it will gain valuable information at relatively small cost.

A receiving station at Prince Albert, Saskatchewan, will transmit data from the ERTS to a Ground Data Handling Centre (GDHC) in Ottawa. Located at approximately the geographical centre of Canada, this station will be capable of receiving

data for the whole country, with the exception of the Atlantic seaboard. For that area, data will be received by a nearby U.S. station, and the tapes containing them will be sent to Canada for proces-



The Earth Resources Technology Satellite

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CAN WE AFFORD NOT TO PARTICIPATE?

In an address to the First Canadian Symposium on Remote Sensing last February, the Minister of Energy, Mines and Resources, Mr. Donald S. Macdonald, stated that Canada would spend "about \$25 million over four years on a pilot program for remote sensing". He outlined what Canada hoped to gain from the program; part of his remarks follow:

...Let's just say for the moment that remote sensing technology will play a part in both the exploitation and conservation of our resources, depending on interpretation of the data received and how man chooses to react to his environment, whether pursuing economic growth or assessing its costs in terms of the quality of life. To reach precise judgment about our future resource management we need more precise measurement of our land mass and what it contains.

It's far too early to assess all the tangible or intangible benefits likely to accrue from the investment required to bring this technology to bear on the management of our resources, but the Canadian Government believes benefits will be well in excess of the costs involved. Given the kinds of concern expressed today about resource scarcity and the need to conserve our national assets, the question really becomes: "Can we afford *not* to participate?"

The Canadian Government will spend about \$25 million over four years on a pilot program for remote sensing.

Here's a quick rundown on our initial objectives:

- (1) to satisfy the growing information needs of Canadian resource management and environmental-control agencies by producing and distributing remotely sensed data, derived information and related consultant services in a centrally organized, timely and economical fashion;
- (2) to provide technology, methods and organization to maintain a full inventory of remote sensing data gathered over Canada;
- (3) to promote research and development and the diffusion of a new remote sensing technology into Canada, so that the nation will not become dependent on other countries for this new technology so vital to effective resource-management and environmental control;
- (4) in co-operation with other agencies to develop high reliability and continuity in the acquisition, processing and interpretation of remotely sensed data so that the national program of remote sensing will not fail to meet the needs of user agencies.

The Government of Canada regards remote sensing of terrain as an extension of its mapping function — complementary to its topographical mapping. A host of geographical maps on various themes will be derived from remote sensing data. All the data will be stored at a central repository and made available on request to meet the needs of government, industry and the public at large. Canada's National Air Photo Library is currently being expanded and equipped for this task....



Prince Albert Satellite Receiving Station

sing. The only part of Canada that will not be covered is the extreme Arctic, north of 82 degrees.

WHAT ERTS WILL SHOW

While satellite photography has no application in the direct detection of mineral and oil deposits, it has considerable application in the mapping of structural geology. Geological mapping, in turn, is an essential base for mineral prospecting.

The pictures will produce a great deal of new information about Canada's water resources. The advance and retreat of winter conditions as represented by snow and ice cover, the freeze-up and break-up of lakes, water levels in lakes and reservoirs, shore erosion, the formation and movement of sea ice can all be detected by satellite imagery. Infrared imaging can detect temperature changes of a fraction of a degree centigrade. Warm or cold ocean

CALF BORN OF EMBRYO TRANSPLANT

A calf born nine months after its embryo had been transplanted into the womb of a "foster mother", is believed to be the first birth in Canada resulting from the transfer of a fertilized egg from one cow to another.

A surgical team headed by Drs. Keith Betteridge and Douglas Mitchell, veterinary-research scientists at the Animal Diseases Research Institute, performed the transplant last August. A 16-cell fertilized egg was removed surgically from the donor cow - a Holstein - and placed in the uterus of the foster mother, also a Holstein. The sire is an Aberdeen-Angus bull.

The birth, which took place on a Department of Agriculture farm near Ottawa, marked a successful step in the development of a research tool that could be used in several phases of cattle breeding.

Although the ovaries of a cow contain 50,000 to 100,000 eggs, she normally produces only about ten calves in her lifetime. By using transfers, genetically superior cows could produce many more calves, which would be carried through pregnancy by substitute mothers. Such calves would not be affected by the inferior genetic make-up of "host" mothers.

The scientists cautioned however, that a number of problems still remained before the procedure became routine.

"At least three main hurdles exist," they stated: "First, hormonal methods of superovulating donor cows can still produce unpredictable results. A more consistent method must be found to produce about ten eggs at one time. "Secondly, we need to have the estrous cycles of the donor and recipients synchronized so that all ovulate at the same time. This is essential to the continuing development of the fertilized egg in the host cows. "Improvements in methods of storing fertilized eggs after collection until they are transplanted might eventually overcome this difficulty."



Agriculture Minister H.A. Olson greets Tulip, the embryo-transplant calf, while the proud "foster mother" looks on.

"Finally," the scientists state, "the methods of embryo-transfer must be refined. Although, under ideal conditions, up to 90 percent success in establishing pregnancy in hosts may be achieved using present surgical techniques, such results require sophisticated facilities."

CBC CHIEF TO UN

Congratulating Dr. George Davidson, President of the Canadian Broadcasting Corporation, on his recent appointment to the United Nations as Under Secretary-General for Administration and Management, the Secretary of State for External Affairs, Mr. Mitchell Sharp, noted that this post was one of the highest in the UN Secretariat ever occupied by a Canadian. Dr. Davidson's "distinguished career" in the Public Service would, Mr. Sharp stated, serve

him well in his new job.

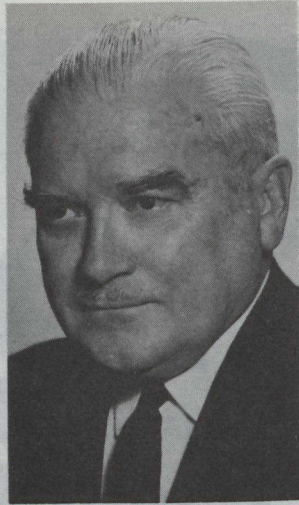
The Secretary-General of the United Nations had approached Dr. Davidson directly, after which the Canadian Government had been asked for their concurrence which, Mr. Sharp said, was given "with enthusiasm".

Dr. Davidson, CBC chief since 1968, was, from 1964, Secretary of the Treasury Board.

Replacing Dr. Davidson, effective August 1, will be Mr. Laurent A. Picard, 44 years old, who has been Vice-President of the CBC since 1968.

WORLD HEALTH PRESIDENT

Dr. Basil D.B. Layton, Principal Medical Officer of the International Health Branch, Department of National Health and Welfare, was elected president of the World Health Assembly in Geneva on May 9. Prime Minister Trudeau cabled the Government's thanks to the Assembly for "the great honour it has bestowed on our country by electing Dr. Layton".



Dr. Basil Layton

Dr. Layton, who is also medical adviser to the Canadian International Development Agency has served on various committees of the World Health Assembly, and represented WHA at the UN Joint Staff Pension Board in 1966, 1968 and 1969.

More than 1,000 representatives of 131 member and associate states, including ten Canadian delegates, were present at the twenty-fifth annual assembly of the World Health Organization in Geneva, when Dr. Layton's presidency was announced.

DIPLOMATIC POSTS

A number of diplomatic appointments to take effect during the next few months, have been announced by the Secretary of State for External Affairs, Mr. Mitchell Sharp:

Mr. Ernest Adolphe Côté of Ottawa, Deputy Solicitor-General, as Ambassador to Finland. He succeeds Mr. F.G. Hooton who returns to Canada.

Mr. Jean Martial Côté of Ottawa, Chief of Protocol, Department of External Affairs, will become Ambassador to Switzerland. He replaces James Alan Roberts, who is retiring.

Mr. John Maurice Harrington, Director, Pacific Division, Department of External Affairs, will become High Commissioner to Jamaica, succeeding Mr. V.C. Moore, who is returning to Canada.

Mr. Thomas Paul Malone of Edmonton, Deputy Commandant and External Affairs member of the directing staff, National Defence College, Kingston, has been appointed Ambassador to Israel. He replaces Mr. C.E. McGaughey, who is to succeed Mr. Malone at the National Defence College.

Mr. James Joachim McCardle of Ottawa, Ambassador to Ireland, becomes High Commissioner to Australia and Fiji, to succeed Mr. A.R. Menzies, whose appointment to the North Atlantic Council has already been announced.

Mr. Kenneth Douglas McIlwraith of Ottawa, Director of the Security Services Division, Department of External Affairs, is appointed Ambassador to Norway, succeeding Mr. G.K. Grande, who returns to Canada.

Mr. David Chalmer Reece of Winnipeg, now participating in the Public Service Bilingual Development Program in Quebec City, is the new High Commissioner to Trinidad and Tobago, also accredited to Barbados, to succeed Mr. G.A. Rau who returns to Canada.

GOVERNMENT-INDUSTRY OIL HUNT

The oil industry and the Federal Government are undertaking a unique co-operative program this spring in the Canadian Arctic. A \$400,000-agreement signed by the Department of Energy, Mines and Resources and six oil companies allows the Geological Survey of Canada, a branch of the Department of Energy, Mines and Resources, to conduct a geophysical survey in the Sverdrup Basin and share the results with the subscribing companies.

EMR Minister Donald S. Macdonald, who announced the agreement, said: "Industry and government are contributing directly to the cost of obtaining information needed for exploration guidance and resource-potential assessment. This is a survey which the Department could not have undertaken at this early date without financial support from industry."

The survey extends along a line from Sabine Peninsula on Melville Island, to Lougheed Island, to King Christian Island, where Panarctic Oils brought in a huge gas well last year, and on to the west coast of Axel Heiberg Island. Most of the work will be done on the ice-covered waters between the islands.

The scientists, headed by George D. Hobson of Ottawa, have already begun field operations. The main group will gather seismic refraction data to define more precisely the rock structure and geological history of the Sverdrup Basin, while teams of scientists from the Earth Physics Branch of EMR will simultaneously obtain gravity and deep crustal seismic information. The whole operation is a means of determining the oil potential of the Basin.

The Geological Survey is providing \$100,000 in scientific and technical services, the six companies \$50,000 each. A four-year confidential period for the data gathered has been agreed upon, following which the information will go on open file. In the interim, any oil company or individual may buy the data for \$75,000 from the Geological Survey of Canada.

An invitation was extended for members of the oil industry to participate in the survey; the following six accepted: Canada Southern Petroleum Limited; Canadian Reserve Oil & Gas Limited, Deminex (Canada) Limited; Dome Petroleum Limited; Mobil Oil Canada Limited; and Panarctic Oils Limited.

JAPAN-CANADA HOUSING PLANT

A \$1-million joint Japanese-Canadian prefabricated-housing plant is to be established in Gimli, Manitoba. Mr. Jean-Luc Pepin, Minister of Industry, Trade and Commerce, who announced the venture, stated that it combined the technology and production developments of Misawa Homes Company Limited of Tokyo, with the wood-producing capabilities and Canadian marketing experience of Greenwood Forest Products (1969) Limited of Penticton, British Columbia.

The new company, called Misawa Greenwood Homes Ltd., plans a production schedule of one-and-a-half houses every eight hours. Homes can be completely finished and ready to live in seven days after the components arrive on the job-site.

Although Japanese capital is backing the project, control of the company will remain completely Canadian.

WOOD TO JAPAN

It was also announced by Greenwood Forest Products' president J.L. Dobi, that an agreement had been reached with Misawa Homes for the export to Japan of 12 million board-feet of western white spruce, lodgepole pine and aspen, valued at over \$1.5 million. The lumber will be shipped over a five-year period.

It was through the efforts of the Department that the principals of the two companies involved - Chiyoji Misawa, president, and Yusuke Katoaka, chief research executive, Misawa Homes, and Mr. Dobi - were brought together.

Mr. Misawa and Mr. Katoaka met in Ottawa recently with Bruce Howard, Parliamentary Secretary to the Minister of Industry, Trade and Commerce, and officials of the Department to complete the agreement.

The use of specially-designed equipment, patented adhesives and highly automated mass-production methods for construction of wall, floor and roof panels are some of the manufacturing methods used to build the houses.

COMMUNITY IN ARCTIC COMMUNICATIONS

A new communication technique designed to encourage community involvement and development through the combined use of telephone and radio has recently been inaugurated in the Canadian Arctic. Called Comminterphone (for Community Interaction Telephone), this unique social experiment is a joint undertaking of the Canadian Broadcasting Corporation, Bell Canada, the federal Department of Communications and Bell-Northern Research. The sponsors hope that the data gathered from the one-year experiment will affect an improvement in the technique of communications.

Comminterphone was first demonstrated at a two-day symposium entitled "Communications into the

Home" held at the Canadian Natural Science Library, Ottawa, by the Royal Society of Canada.

It combines the availability of residential telephone sets with the coverage capability of radio. By dialing a designated telephone number, the conversations of as many as four individuals can be aired at once over a low-power radio-transmitter and broadcast within a five-mile radius. This broadcast can be received by anyone listening with an AM domestic radio-receiver within the immediate area. Listeners wishing to add spontaneous comments or announcements over the system would simply dial the number to get on the air.



Willie Adams, a resident of Rankin Inlet, adjusts the Comminterphone conference unit in the telephone exchange building of a small northern community.

TYPES OF TRANSMISSION

The experiment, which began in November 1971, is centred in Rankin Inlet, Northwest Territories, a community of 500 people located 1,300 miles north of Ottawa on the western shore of Hudson Bay. Preliminary evaluation of Comminterphone over a two-month period indicates that three types of transmission were aired over the system: community announcements, notices of public events and information, such as weather reports, spontaneous conversations, discussion and expression of opinion at the discretion of the sender, and home programming, self-created entertainment, such as singing. The spontaneous conversations were almost 92 percent dominated by the Eskimo language.

Rankin Inlet, a relatively isolated region of the NWT, was chosen for the experiment because of its predominantly Eskimo population and its dearth of communications media. It has no newspaper, no wire service or radio station in the normal sense, but it does have a dial telephone system within the community itself. The only external communications link is by high-frequency radio telephone. In addition, printed notices are posted in local stores or delivered by hand to homes.

The experiment will continue until November,

with emphasis on additional evaluation over the summer months. To assess the performance and usage of the system, and document changes in the social information network of the community, the Department of Communications has retained the services of the Institute of Northern Studies of the University of Saskatchewan. The transmitter installation and the licence for its operation is owned by the Canadian Broadcasting Corporation. Bell Canada installed and operates the telephone exchange and equipment.

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currents show up clearly, as do effluents from power and manufacturing plants, river water entering the ocean, soil moisture, groundwater discharge into lakes and rivers, and so on.

Remote sensing is also useful for mapping vegetation changes and is therefore extremely useful in agricultural and forestry planning. It can detect forest and crop stress, show forest cover, and the types of crop planted. Crop inventory and surveys on crop diseases and drought are usually done by direct questionnaires to farmers rather than by air-photo interpretation.

The areas of greatest interest as far as remote sensing is concerned are the Beaufort Sea (ice-cover), the Mackenzie River delta (permafrost, possible damage to the environment from mineral exploration), the Mackenzie River valley (in expectation of the proposed pipe-line), the Rocky Mountains (geological structure), the Prairies (crops), the Great

Lakes (pollution), Hudson Bay (ice), the Gulf of St. Lawrence (oceanography), the continental shelf on the Atlantic coast (ocean pollution).

The Air Photo Production Unit and the National Air Photo Library, now part of the Surveys and Mapping Branch of the Department of Energy, Mines and Resources, will be responsible for reproducing and distributing the data to the public.

It is expected that up to 1,000 users will regularly purchase these photographs, among them probably those companies and institutions that now make up a steady clientele of the National Air Photo Library, such as government agencies, universities, resource-development companies, etc.

WANTED MORE MALES

The male population edged down to 50.1 per cent in 1971 from 50.2 per cent five years earlier. The change was evident in all provinces and territories except Nova Scotia and New Brunswick, which each had 50.3 percent male populations in both the 1971 and 1966 censuses.

The Yukon had the largest male proportion - 53.9 per cent - in 1971, but that had slipped from 54.3 per cent in 1966. The Northwest Territories came next with 52.5 per cent, a decrease from 54.2 per cent.

Quebec had the smallest proportion of males in 1971 - 49.7 per cent - down from 49.9 per cent; Ontario's males decreased to 49.9 per cent from 50.0 per cent. These were the only provinces with predominantly female populations.

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