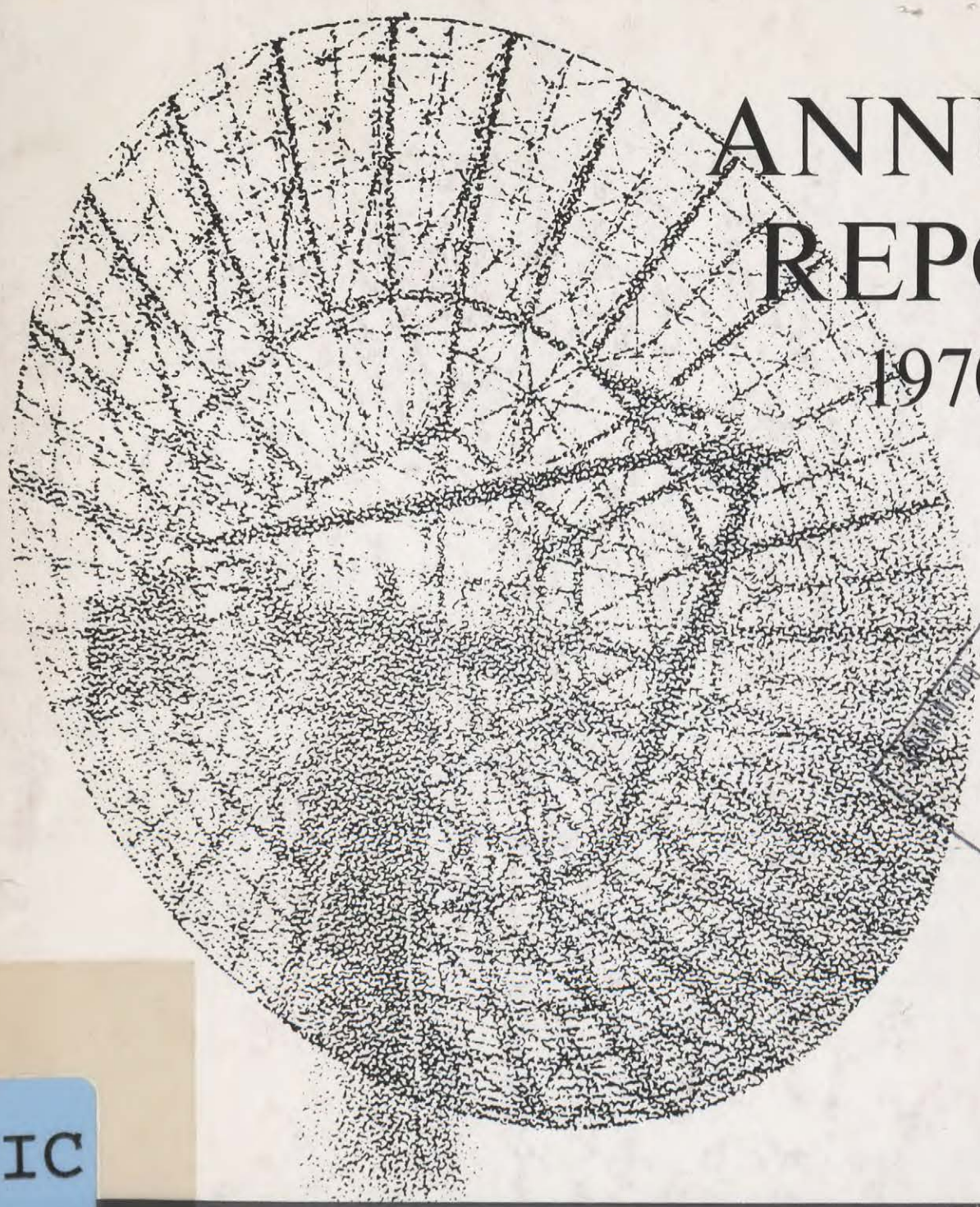

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Department of Communications

Annual Report for the Fiscal Year ended 31 March, 1971

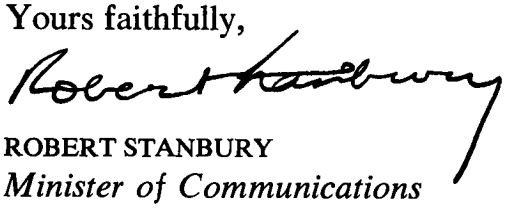
Submitted under the provisions of the Communications Department Act

TO HIS EXCELLENCY THE RIGHT HONOURABLE
ROLAND MICHENER, P.C., Q.C.,
GOVERNOR GENERAL AND
COMMANDER-IN-CHIEF OF CANADA

Your Excellency,

I have the honour to present the Annual Report of the Department of Communications for the fiscal year ending 31 March, 1971.

Yours faithfully,



ROBERT STANBURY
Minister of Communications

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INFORMATION CANADA
OTTAWA, 1972

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Introduction

This annual report of the Department of Communications covers the second fiscal year since its creation. The Department came into legal existence on April 1, 1969; it represents a fusion of administrative and research units drawn mainly from the Department of Transport and the Department of National Defence. The purpose of this consolidation in the field of communications was to provide a more coherent view of the needs of the Canadian public on a national basis. A first step toward achieving this purpose was taken in the autumn of 1969 with the launching of a major survey of Canadian telecommunications facilities, policy, legislation and needs. This inquiry, called the Telecommission, was completed during the year under review and its report, *Instant World,* was published in the first week of April, 1971.

The investigations of the Telecommission into the fast-developing field of communications did not, of course, deter the normal activities of the Department. Various policies and programs were pursued with vigour both at home and abroad, to ensure that Canada remain in the forefront of telecommunications research and development.

One of the areas of most intense activity for the Department was that of space research and development of communications systems based on satellites. Perhaps the event that will have the most significant impact on Canadian telecommunications capacity was the Government's decision to approve the Canadian content aspects of a proposal by Telesat Canada, an independent company in which the Government is a shareholder, for the purchase of a space satellite segment of the Canadian communication system. It is expected that with the launching of ANIK I and II in late 1972 and early 1973 Canada will have the first domestic communications system in the world which incorporates a satellite in geostationary orbit.

This position of world leadership will have an important effect on the Canadian telecommunications industry and on the manufacturing and research facilities that supply it with sophisticated hardware to keep the system among the most efficient and well-developed in the world.

Following the decision to introduce satellites as an element of the domestic communications system of Canada, the Government moved to emphasize applied rather than pure research in its satellite research program. The Department negotiated a Memorandum of Understanding with the National Aeronautics and Space Agency of the United States for the launching of a new type of communications research satellite. This program, known as the Communications Technology Satellite (CTS) project, succeeds the ALOUETTE and ISIS satellite series, Canada's earlier contri-

butions to space research and satellite development. The CTS project is expected to provide opportunities for experiments in telecommunications, including broadcasting, by the middle of this decade and to help develop in Canadian industry the competence to design and build subsystems for future generations of satellites. Through the program, scientists and technicians at the Department's Communications Research Centre also hope to find answers to the problems of the development of high-powered satellite communications systems. In addition, social scientists and experts in other fields will have an opportunity to participate in operational experiments to determine the social and economic value of such a system to Canada.

While Canada was entering into agreements for new joint ventures with the U.S., the highly successful ionosonde program which involved the launch of two ALOUETTE and one ISIS spacecraft was moving to its fourth and final stage. The successful launching of ISIS-II from Vandenberg, California, on March 31, 1971, maintained a flawless record which began on September 28, 1962, with the orbiting of ALOUETTE I. This first Canadian satellite, still functioning when ISIS-II went aloft, holds a world record for endurance and amounts of data supplied on the upper atmosphere to the scientific community.

Canada also undertook important initiatives last year in the field of international satellite communications systems.

One of the more noteworthy instances of Canadian participation on the international scene was the joint Canada-Sweden study on direct broadcasting from satellites. The Deputy Minister of Communications, Allan Gotlieb, led a Canadian delegation which presented this study to a United Nations working group on direct-broadcast satellites. The working group, part of the United Nations Committee on the Peaceful Uses of Outer Space, met in New York in the spring of 1970.

Other aspects of international telecommunications were also actively promoted by Canada during the past year. At the end of the fiscal year, on March 29, 1971, the Minister of Communications announced that the Canadian Overseas Telecommunications Corporation, a Crown corporation, had completed arrangements with the British Post Office for the construction of a new high-capacity transatlantic cable between Nova Scotia and Cornwall, England. This cable, CANTAT-II, with its 1,840 new voice circuits, will more than double the present transatlantic cable capacity. The use of cable for transatlantic traffic is especially attractive because it is technically compatible with the Telesat domestic satellite system which is expected to have been operating for a year by the time CANTAT-II comes into service early in 1974. COTC also assures Canadian participation in transatlantic satellite systems by its share ownership in Intelsat, the international consortium which owns and operates satellite systems serv-

ing transoceanic traffic around the globe.

At home, the Department of Communications contributed to the development of policy in two leading areas of communications: cable television systems and computer/communications.

The Minister of Communications, who is responsible for the issuing of technical certificates for the construction and operation of all broadcasting systems, including CATV systems, made two important announcements concerning the commercial applications of coaxial-cable technology. In January 1971, it was announced that the Department would be prepared to deal with requests for technical approval of cable systems offering as many as 20 TV channels to their subscribers. Previously, systems offering only 12 channels or less had been approved, but the commercial development of small conversion units made it possible to offer a larger number of channels. In March the Minister tabled new technical standards governing CATV systems. These standards, called *Broadcast Procedure 23*, are designed to assure CATV system subscribers of a higher quality signal and increased reliability. The timing on the application of these new technical standards is a result of ongoing cooperation between the Department and the federal broadcasting authority, the Canadian Radio-Television Commission.

A new emphasis on computer/communications clearly emerged in a series of meetings, seminars and conferences sponsored by the Department. A conference organized jointly by the Department of Communications, the Department of Justice and Queen's University in May 1970 provided one of the most urgent expressions of this concern. This four-day conference, held at Queen's University, revealed that much of the public was convinced that new automated information systems, especially remote-access data banks, would create problems in the fields of privacy and freedom of information. Other policy problems related to matters such as sovereignty, economic development and ownership were soon perceived to be equally important. Accordingly, in November 1970, a Task Force on Computer/Communications was established by the Department under the leadership of Dr. Hans Jacob von Baeyer. It was given the mandate of developing and recommending policies to ensure orderly, rational and efficient growth of combined computer/communications systems in the public interest. Another Task Force, directed jointly by the Departments of Communications and Justice, was established to deal with the particular problem of privacy in an age of increasingly comprehensive data retrieval systems. The work of these Task Forces quickly received support from important elements of the communications and data-processing industries, and such representatives of the consumer interest as the Consumers' Association of Canada.

The administrative structure of the Department also underwent several changes during the fiscal year, including

the appointment of five regional directors, for the Atlantic area, Quebec, Ontario, the prairie provinces and British Columbia. The creation of these regional posts is part of a policy of decentralization within the Department, the aim of which is to assure better contact with citizens, governments, industries, universities and professional groups. In the past the regional offices were mainly concerned with the application of regulations regarding the use of the radio-frequency spectrum. Under the new organization regional offices will also represent the planning and research activities of the Department.

Finance and Personnel Management

Total expenditures for the Department of Communications for the fiscal year ending March 31, 1971, amounted to $22.5 million divided as follows: administration, operation and maintenance 75.6 per cent; capital expenditures 21.8 per cent; grants and contributions 2.6 per cent. Salaries paid to employees, including scientific staff involved in telecommunications research, represents 55.3 per cent of the budget. Total of receipts and revenue reached $8.6 million. Accordingly, net expenditures amounted to $13.9 million.

During the fiscal year the Department completed the transfer of support services to the regional offices from the Ministry of Transport, although the latter continues to provide some of the computer services required for the management of the radio frequency spectrum.

Personnel Management

The Personnel Branch was involved in the implementation of several new programs. The Department accepted delegated authority to classify and hire personnel in some groups and categories. This necessitated extensive training of managers in preparation for acceptance of delegation. The administrative restructuring of the Department regional offices also requiring a special training program.

In addition, the Branch participated in multidisciplinary manpower study to forecast manpower needs in communications. It also initiated a program to allow the exchange of personnel between the communications industry and the Department; established a new classification charting system; introduced a departmental employee evaluation program; launched a personnel management information system and a program to improve staff relations through a structured employee-employer consultation process.

During the same period more than 34 different collective bargaining agreements ranging from those with trade groups and support staff to those involving the highly specialized groups of space research professionals were handled by the Personnel Branch.

Bilingualism

The Department of Communications has continued the program of classifying positions taking into account language requirements and has recognized 16 French-language units located in the Province of Quebec and in Ottawa.

The Department has also started a bicultural exchange program in which four employees, two francophones and two anglophones, will have the advantage of spending two years in a region where the language and culture differ from their own. Some 300 Departmental staff have taken the second-language test and nearly 200 have taken language courses.

FINANCIAL SUMMARY

SUMMARY OF THE INCOME AND EXPENDITURES FOR THE FISCAL YEAR ENDING MARCH 31, 1971

	millions of dollars 1970-71
Administration, operation and maintenance expenditures	17.0
Capital expenditures	4.9
Grants and contributions	0.6
TOTAL EXPENDITURES OF THE DEPARTMENT	22.5
Less:	
Receipts and Revenues on account of credit	8.6
NET EXPENDITURES OF THE DEPARTMENT	13.9

Research

The Communications Research Centre (CRC), with a staff of about 500, carries out research and development on terrestrial and space communications systems, radio propagation, domestic and research satellites, electronics, space mechanics and information sciences related to communications systems. The main research site is at Shirley Bay, Ontario, just west of Ottawa. CRC also operates a number of experimental sites, chiefly in the Ottawa area and at remote northern locations.

The research program of the Communications Research Centre is mission-oriented with respect to the Department's objectives and is organized into four main fields: communications research, information sciences, the radio environment and spacecraft technology. The research resources are employed either in direct support of departmental programs, in support of other Government agencies or in the development of knowledge and national capabilities in communications processes and technology. Close association with industry and with universities is developed through a wide variety of contractual arrangements and informal liaison.

Communications Systems Research

Work in this field constitutes a major element of the CRC research program in support of the Department's mission to foster, develop and introduce new communications systems, facilities and resources for Canada in domestic and international spheres. In addition to internal research and development in this area the CRC provides both design authority and project management capability on related contracts with industry. Research has continued on designated projects for other departments on a cost-recovery basis and about a quarter of the CRC manpower is devoted to such research on behalf of the Defence Research Board.

Satellite communications experiments have been drawn up to test and demonstrate the applications of a high-power satellite-borne transponder working into small low-cost earth terminals. These studies take into account the communications requirements to provide for colour television and wide-band data transmission together with two-way voice and audio broadcast, utilizing large numbers of low cost terminals in remote regions. The economic aspects of the systems designs will also be probed. In support of the Department of National Defence in this field, investigation has continued into advanced terminal development in the land, air and sea environments, and evaluation of system performance at very high latitudes is being pursued.

Research has continued in support of Canadian participation in international studies, shared between the Department of Communications and the Ministry of Transport, of proposed communications and navigation satellites for aero-

nautical applications. To date, the CRC research program has emphasized investigation of the high-latitude environment. Research and development in the radar field is directed to both long-term and short-term problems in the military and civil spheres. Present activity includes assistance to the Departments of National Defence and Energy, Mines and Resources on working groups developing remote sensing programs.

Information Sciences

The Department recently established research and development projects in the field of information sciences as a priority activity. The existing body of work is to be co-ordinated functionally, changes of orientation or emphasis are to be made and new projects, including extra-mural research by universities and industry, will be initiated to round out the program.

The Radio Environment

CRC is the Canadian national centre for propagation research into the entire electromagnetic spectrum, including the laser region. The research program concentrates on propagation problems peculiar to Canadian latitudes, with a view to applying the results to current and future communications systems. The VLF and topside sounder experiments in the ALOUETTE/ISIS satellites are part of this program.

ISIS II, the fourth Canadian-built satellite in the international cooperative ALOUETTE/ISIS program, was placed in orbit by a U.S. launch vehicle on March 31, 1971. This satellite was built by Canadian industry with the CRC as the design authority. ALOUETTE I, ALOUETTE II, ISIS-I and ISIS-II are all operating under CRC contract from Shirley Bay through remote stations on a worldwide basis, and together they constitute a successful series of scientific experiments.

CRC provides a radio prediction, forecasting and consulting service to Canadian users of radio communications systems. The reliability of communications can often be considerably improved through the use of this service.

Spacecraft Techniques

The CRC laboratory has carried out a continuous program of satellite research and development since 1960. This scientific series ended with the launch of ISIS-II and a new program to develop experimental communications satellites has begun. The spacecraft development work is backed by a program of related applied research.

In cooperation with NASA, the Department of Communications is planning to build and launch a Communications Technology Satellite in late 1974 or early in 1975. The objective of the project is to test new concepts of communications particularly relevant to Canada, and to space-quality items of advanced design suitable for communications spacecraft. Such designs may be incorporated into future spacecraft to provide domestic community broadcast

television, FM broadcast, telephony and data relay transmission coverage in the 1980's, particularly to remote areas of Canada.

The project will be carried out under the direction of the CRC, with major industrial assistance for project management and spacecraft design. Contracts for manufacture of the subsystems will be let to industry, and industrial participation will also be required in the assembly and testing of the spacecraft. The spacecraft will be integrated and tested at the CRC and a building with special facilities for this purpose is being constructed at Shirley Bay.

Government Telecommunications

The Government Telecommunications Agency (GTA) plans and administers the federal Government intercity and local telecommunications networks. These networks carry voice, message and data traffic throughout Canada and into the U.S. In carrying out this responsibility, the Agency contracts for bulk purchases of facilities from the carriers and allocates the costs to user departments. As part of its administrative responsibilities, the GTA develops standards for performance and guidelines for use of telecommunications services. Traffic patterns are monitored constantly to ensure that standards are maintained and the optimum mix of services is available to satisfy user needs at the minimum total cost. In addition, a capability is being developed through which the identification and measurement of network usage can be more accurately achieved.

Consultation

Consulting services are provided by the Agency to user departments on such items as modems, data transmission systems, radio and intercom systems, teletype/telex systems and other specialized telecommunications services. The need for a consulting service is particularly notable in the data transmission and terminal field. Also, during the past year, departments have asked the GTA to perform special studies of their operations and to recommend the mix of communications facilities required to best support them in fulfilling their responsibilities both efficiently and economically. The Agency plans to increase its consulting service in 1972 and is undertaking a comprehensive training program for its personnel to ensure that they are up-to-date in a rapidly changing telecommunications environment.

Telephone Systems

During the year, consolidated telephone systems were expanded in Quebec City and Hamilton. Planning was completed for consolidation in Sherbrooke, Regina, Calgary and Edmonton. These consolidations are to take place during 1972 and will add approximately 4,800 main telephones to those already serviced in 14 locations, bringing the total in the system to approximately 34,800 main stations. The intercity network also continued to expand with Sydney, Saint John, Port Robinson, Sherbrooke, St. Jérôme, Lacolle, Joliette, St. Scholastique, St. Jean, Valleyfield, Oshawa, Saskatoon and Kamloops being added to the network. These additions have increased the intercity network to a total of 298,000 circuit miles, which has served to integrate the requirements of user departments and promoted substantial economies of scale when contracting for services from carriers. This improved negotiating position has re-

sulted in reducing the cost of a circuit mile to $1.23 including overhead, and approximately $10,000,000 recurring annual savings in the total cost of telecommunications services for the federal Government.

Data Transmission

Expanding data transmission needs were satisfied either through the use of the network or by the provision of dedicated private lines where this was necessary due to the speed of the operation. Experimentation with various types of low-cost fascimile terminal units proved that their transmissions could be handled via the network. Subsequent requests by departments for this service indicate that its use will expand rapidly. Negotiations were completed with the supplier of the record message service for the introduction of a new and simpler multiple-address service in 1972. This process will save considerable time and effort for users who must now laboriously transmit a multiple-address message separately to each address.

Growth of voice traffic in 1970-71 to 7,000,000 calls per month represents an increase of approximately 20 per cent over traffic in 1969-70. Message traffic also showed a substantial increase and it is anticipated that this growth rate will continue and perhaps increase during the next fiscal year.

During the year, the Agency began a comprehensive study of current usage of telecommunications services throughout the Government plus a forecast of anticipated usage during the next five years. This study, to be completed early in the 1971-72 fiscal year, will provide a firm basis for long-term planning to meet future needs.

National Telecommunications

The National Telecommunications Branch is concerned with the development and effectiveness of Canada's communications systems, with the ability of the Canadian telecommunications industry to serve public and private needs in the country and with the elaboration of policies to strengthen and extend Canada's communications systems.

Studies

During the year a major priority of the Branch was the preparation and coordination of the individual Telecommission studies. The Branch, in cooperation with Memorial University of Newfoundland and the Bell Telephone Company of Canada, carried out a survey of the Labrador coast. The survey examined availability of voice message communications facilities and other forms of communications media stretching along the coast from Cape St. Charles in the south to Nain in the north. A report entitled *Communications Needs on the East Coast of Labrador* was prepared on the results of the survey, and a video and spoken presentation was provided to Members of the Senate and the House of Commons.

Toward the end of the year preliminary arrangements were concluded with the 12 major common carriers and relevant provincial administrations for creation of a working group to assure optimum utilization of resources in national telecommunications.

Operations

During the latter part of the year the Branch was restructured along lines which in the future will reflect more specifically operational issues arising in national telecommunications. These changes arose from new insights gained in part through participation in the Telecommission studies and partly through direct operating experiences. The operational issues involved relate to ensuring adequate capabilities and Canadian strength in the inter-regional telecommunications carrier systems, the orderly development of terminal or subscriber systems, and Canadian manufacturing capabilities to satisfy domestic telecommunications plant requirements and development needs. In addition, organizational changes were made in order to carry out a continuing assessment of the economic and financial viability of firms operating within the sector so as to ensure the over-all competitive strength of Canadian telecommunications. In support of these activities the Branch provided for the development of comprehensive statistical information services with their own statistical sources. The data will be retained in computerized files available to the Department and to industry.

Regulations and Licensing

The Telecommunications Regulation Branch manages the radio-frequency spectrum in Canada. This function involves the development of regulations, technical standards, radio-frequency plans and assignment criteria; it also involves participation in international conferences; it includes the technical evaluation of applications to use radio, the licensing of radio stations and the technical certification of broadcasting undertakings. Other functions of the Branch are the inspection and monitoring of radio stations to ensure adherence to regulations and standards and the provision of information for spectrum planning purposes.

Licensing

The number of radio station licences in force in Canada during the year, excluding commercial broadcasting stations but including registrations issued to mobile United States licensees temporarily in Canada, was 256,327, an increase of 4.2 per cent. Revenue from licence and amendment fees was up 4.4 per cent.

Satellite-Related Operations

Nine earth stations of the domestic satellite system of Telesat Canada have been co-ordinated domestically as well as with the United States. Approximately 25 northern communication and remote television sites are at present under study. Orbital co-ordination of the positions for Canada's domestic satellites ANIK I and ANIK II was initiated with the United States. Frequencies employed by the Canadian ISIS II satellite and proposed frequency usage with respect to ANIK I and ANIK II were notified internationally.

Broadcasting Regulation

In broadcasting, 483 applications for Technical Construction and Operating Certificates were processed and co-ordinated with the Canadian Radio-Television Commission. A total of 117 private commercial broadcasting stations (sound and television) either commenced operation or modified their facilities pursuant to the Minister's certification authority. To ensure protection to Canadian channels, 883 notifications of allotment changes from countries which have signed broadcasting agreements were scrutinized. Some 83 engineering briefs for unattended operation of transmitters and automatic programming methods, stereophonic and subsidiary communications operations of FM stations, and proofs of performance, were analyzed and authorized.

Plans and Standards

On March 29, 1971, the Department set out the standards to be met by community antenna television systems in

Canada when it issued the *Notes on Department of Communications Program for Implementation of Technical Standards and Procedures for Cable Television* (CATV) *Systems.* A related document, *Proof of Performance Procedure for Cable Television Systems,* is being prepared.

Electrical noise generated by electrical appliances has been increasing very rapidly and such noise can be considered spectrum pollution. To control the extent of this pollution steps have been taken in conjunction with industry and with the Canadian Standards Association to further the design of electrical appliances which suppress certain types of interference.

The first Canadian medium high frequency direction finding system is currently being installed. The system will improve surveillance of the spectrum, assist in the resolution of problems of interference to Canadian medium and high frequency radio communications and enable greater fulfilment of Canada's international monitoring commitments.

A study of the effects upon Canada of the plans of the U.S. Federal Communications Commission for land mobile UHF-TV frequency sharing is in progress.

A design for an automated Spectrum Occupancy Surveillance System is being prepared. The system will assist in the evaluation of spectrum utilization.

A *Radio Standards Procedure* (RSP *113*) outlining the requirements for the preparation of briefs in support of applications for microwave systems has been published. It departs from previous plans in that economic, social and commercial data are required in addition to the technical data. The procedure is currently being implemented on a provisional basis and is under review by the Canadian Radio Technical Planning Board (CRTPB).

All Divisions of the Branch were active in the preparatory work of the World Administrative Radio Conference on space telecommunications of the ITU which took place in Geneva in June and July 1971.

International Activities

Canada has continued its participation and involvement in the work of a number of international communications organizations.

The framework of these organizations provides Canada with the means of pursuing national objectives having international ramifications, and generates knowledge of the views and interests of other countries.

International Telecommunications Union (ITU)

Canada continued to be active in the International Telecommunications Union, to which it contributed its annual membership allotment of 18 contributory units ($245,000) out of a total of 474. The annual budget is established by the ITU's 29-member Administrative Council, of which Canada is a member. As such, Canada participated in the Council's 25th session, at which many of its suggestions to reduce the ITU budget and improve financial procedures were adopted.

Other Canadian activities in the ITU included regular participation at the study meetings of the International Telegraph and Telephone Consultative Committee (CCITT) and the International Radio Consultative Committee (CCIR).

Canada is particularly involved in the new Data Network Study Group and in the redrafting of the International Telephone and Telegraph Regulations. Department of Communications personnel serve as vice-chairmen of the study groups.

In February 1971, a special joint meeting of CCIR Study Groups was convened under Canadian chairmanship to prepare the technical basis for the World Administrative Radio Conference on Space Telecommunications (WARC-ST). Its report will be utilized by the WARC-ST in its assessment of the radio-frequency requirements for the various services using satellites, and in its development of new technical regulations governing the establishment and coordination of such systems.

International Telecommunications Satellite Consortium (Intelsat)

Several meetings have been held to elaborate definitive agreements governing the future of the International Telecommunications Satellite Consortium. Canada's investment share, which is based on actual usage, is expected to remain sufficient to ensure a seat on the new board of governors.

Canada, with a 3¼ per cent investment share in Intelsat, participates in the Interim Communications Satellite Committee (ICSC) which directs the affairs of the Consortium and meets approximately every two months. A representative of the Canadian Overseas Telecommunications Corporation (COTC), Canada's designated entity in Intelsat, has been elected vice-president of the ICSC for one year.

Commonwealth Telecommunications Organization

Cooperation amongst Commonwealth countries in the field of international telecommunications is continuing at an energetic pace. The COTC, which represents Canada in the Commonwealth Telecommunications Organization, has begun construction of its second satellite earth station at Lake Cowichan, B.C., the first having been constructed at Mill Village, N.S. COTC has also undertaken, in cooperation with the United Kingdom, to lay a second transatlantic high-capacity telephone cable (CANTAT-II).

The United Nations

The Department continued to participate in Canada's delegation to the United Nations Committee on the Peaceful Uses of Outer Space. Canada, in cooperation with Sweden, submitted a further study of various implications of satellite broadcasting.

Unesco

In the fall of 1970 officials of the Department were included in the Canadian delegation to the 16th Session of the General Conference of the United Nations Educational, Scientific, and Cultural Organization. The delegation expressed Canada's views on the prospective uses of satellite communications systems and proprietary rights relating to program material transmitted over such systems.

Inter-Governmental Maritime Consultative Organ (IMCO)

The Department prepared for and participated with the Department of Transport in the work of the IMCO Sub-Committee on Radio Communications at its seventh (July 1970) and eighth (January 1971) sessions in London, England.

International Civil Aviation Organization (ICAO)

Canada, with the Department of Communications and the Ministry of Transport participating, was host to the ICAO Astra Panel (Application to Space Techniques Relating to Aviation) at its fourth meeting in Montreal in January 1971.

Canada-U.S. Cooperation: Satellite Telecommunications

Throughout 1970 the Department negotiated an agreement with the U.S. National Aeronautics and Space Administration (NASA) for cooperation in the manufacture and launching of a new Communications Technology Satellite (CTS). The Minister of Communications authorized Telesat Canada to negotiate an agreement with NASA that will provide for the launching of Canada's two domestic telecommunications satellites, ANIK I and II, in 1972/73.

In addition, preparations for the March 31 launching of the fourth International Satellite for Ionospheric Studies (ISIS-2) were completed.

Planning

The primary responsibilities of the Planning Services organization involve the provision of technological and socio-economic forecasts, definitions of needs and descriptions of problem areas within a logical framework that can be utilized by all branches of the Department, and the development, analysis and recommendation of communications policies. This is achieved through the following activities:

Technology Analysis and Forecasting

The relevant technologies of computers and communications are continuously reviewed with the objective of providing a basic technological framework for long-term planning. In particular, efforts are made to identify, in the light of Canada's long-range socio-economic objectives, areas in which planning for the introduction of new systems should be encouraged or research and development concentrated. The relevance of new developments in components theory and systems is examined, technology trends analyzed and probable future developments predicted.

Identification and Analysis of Strategic Needs

This deals with the definition and analysis of needs for new or improved communications services or systems.

Conceptual Systems Planning

This involves broadly based feasibility studies of new major systems, including possible systems configuration, their economic, political and technical aspects, possible institutional arrangements, needed research and development, etc. Such studies are the necessary precursors to implementation planning by the Operations Services organization.

Identification of Needed Research Programs

Based upon the evaluation of future needs, and on technological analysis and conceptual systems planning, the Branch identifies areas for new research or development by the Communications Research Centre and industry.

Humanistic Studies

These entail a continuing series of studies and critical analyses of the possible impact on society and the individual of different communications developments and policies, both actual and predicted.

Economic and Regulatory Studies

This activity includes: analysis of the economic aspects of possible new services, policies and systems; the examination of different approaches to regulation in alternative futures; long-term market studies and projections; evaluation of the economics of increasingly automated societies.

Departmental Programs

This task involves the implementation and operation of the Planning, Programming and Budgeting system; the coordination of the Department's current and long-range programs; the coordination, articulation and review of objectives and project activity structures; the preparation of annual operational plans; the development, implementation and monitoring of project controls and a project reporting system; and the carrying out of cost-effectiveness analyses. The Program Office is the focal point for the creation of a national telecommunications planning framework and for the use of this framework in program evaluation.

Following are some of the activities of the Planning Services organization during fiscal year 1970-71:

Report Entitled:
Participation By Telecommunication Carriers in Public Data Processing

A special report on the subject of telecommunications carrier participation in public data-processing was prepared and tabled in Parliament by the Minister of Communications in June 1970. This report continued an analysis of the entire subject and included detailed examination of a number of policy options. The intent of the document was to provide a basis for a public discussion of this important issue. The document resulted in a large number of comments and detailed submissions from the majority of interested parties in Canada.

The Canadian Computer/Communications Task Force

As a result of the Telecommission studies in the area of computer utilities, in particular those reported in the document entitled *Participation by Telecommunications Carriers in Public Data Processing* and the Telecommission study entitled *Policy Considerations with Respect to Computer Utilities*, a more widespread awareness developed concerning the importance of the computer utility field to Canada. Accordingly, by a decision of the Government in December 1970, the Canadian Computer/Communications Task Force was established to review the entire field of computer/communications in Canada and to develop and recommend specific policies and institutions that will ensure the orderly, rational and efficient growth of combined computer/communications systems in the public interest. The Task Force is expected to produce recommendations and plans—technical, financial and institutional—relating to an integrated network of Canadian computer utilities.

The realization of the Task Force objectives will require cooperation with industry, users and governments. Some of the steps in the task are: an analysis of national needs; technological forecasting; a study of social and economic impact and a definition of possible institutional arrangements. The group will bring to bear cost-benefit analysis on particular networks that might be able to provide such services as legal, finan-

cial, medical and consumer information as well as raw computer power.

The objective of the Task Force is to present, by the end of 1971 recommendations to the Government in the field of computer/communications in Canada, and to issue a final report by April, 1972.

The Privacy and Computer Task Force

The Privacy and Computers Task Force is a joint undertaking of this Department and the Department of Justice.

Its purpose is to investigate and report on how and to what extent the collection, storage and dissemination of personalized information, both in government and in the private sector, reacts upon the privacy of the individual and thereby affects the quality of life in our society. It has four main areas under investigation:

a) a study of privacy as a value in our society;
b) empirical studies of collection, storage and dissemination of data by governments, semi-public and commercial institutions;
c) technical studies on computerized systems and security techniques;
d) a series of studies dealing with legal remedies and regulation in all its forms, taking into account constitutional and international constraints.

The final general report is scheduled for June, 1972.

The Wired City

Following the Telecommission Study entitled *Multiservice Cable Telecommunication Systems—The Wired City,* a study contract was awarded to Carleton University. This study is concerned with the concept of a broadband communication network for teaching/research resource sharing which would link the two main universities and a number of government and scientific establishments in the Ottawa area. The purpose of the study is to define the objectives and characteristics of such a network, investigate its feasibility and propose a conceptual design.

The study is being managed by a Project Advisory Committee set up by the Department and containing representatives of Carleton and Ottawa Universities, as well as representatives from Bell-Northern Research Laboratories and the Communications Research Centre.

Data Tariff Study Project

This is a major on-going project of the Economic Planning unit. It has five objectives:

1) to summarize existing common carrier services and tariffs;
2) to review existing information sources with respect to economic theory and aspects of the regulation of telecommunications carriers;
3) to examine the economic factors of data transmission;

4) to determine the role of costs and cost allocation in telecommunications pricing;
5) to examine telecommunications demand forecasting and alternative methods in current use.

The study is expected to assist in understanding regulatory problems in Canada, to provide an easily accessible and current data base with respect to carrier services and tariffs, as well as alternative approaches to telecommunications regulation, and to facilitate an assessment of future needs for departmental action.

Northern Communications Strategic Planning

The vital importance of adequate communications services in providing for the full development of the North and for meeting the aspirations of the northern population was underscored by the Telecommission studies. This has been recognized in planning activities, and a strategic plan for northern communications is in preparation. The plan will set goals and objectives, recommend policies and evaluate alternative strategies for northern communications development.

United Nations Information System in Science and Technology

A feasibility study of a world science information system was approved in 1966 at a joint meeting of the General Assembly of the International Council of Scientific Unions and the General Conference of the United Nations Educational, Scientific and Cultural Organization. The study was completed in October 1970 and the results published in March 1971. The report contains 22 recommendations. The recommendations will be submitted to an intergovernmental conference to be held in Paris, October 4-9, 1971. The Department of Communications participates in the Interdepartmental Task Group established to analyze and develop the Canadian position with respect to such a system.

Management Information Systems

A departmental committee has been established with a view to the development of a management information system for the Department and to coordinate the various existing information systems. The initial phase comprises a definition of information requirements in support of decision-making at all levels, to be completed in 1971.

Telecommission

The Telecommission studies launched in September 1969 provided a major preoccupation for the Department, representatives of other federal departments and agencies, the governments of the provinces, industries and other interests concerned. In addition to the studies entrusted to project teams or consultants, five widely attended seminars and conferences were held to consider the social and environmental aspects of rapidly developing communications and computer technology. In all, 43 individual study reports were prepared, most of which have been published by the Department and are available through Information Canada. Together these studies represent a comprehensive look at the present and future state of telecommunications in Canada, identifying the many problems confronting the federal and provincial governments and making a wide variety of proposals for their resolution.

The Telecommission studies also provided the background for a general report, *Instant World* published on April 7, 1971. This report sets out, as objectively as possible, various opinions and suggestions put forward by participants in the Telecommission studies, but contains no recommendations endorsed by departments or agencies of the Government of Canada. It provides concisely informative background information, a stimulus for public discussion of the complex issues involved, and a basis for consideration of policies aimed at achieving orderly development of communications in Canada.

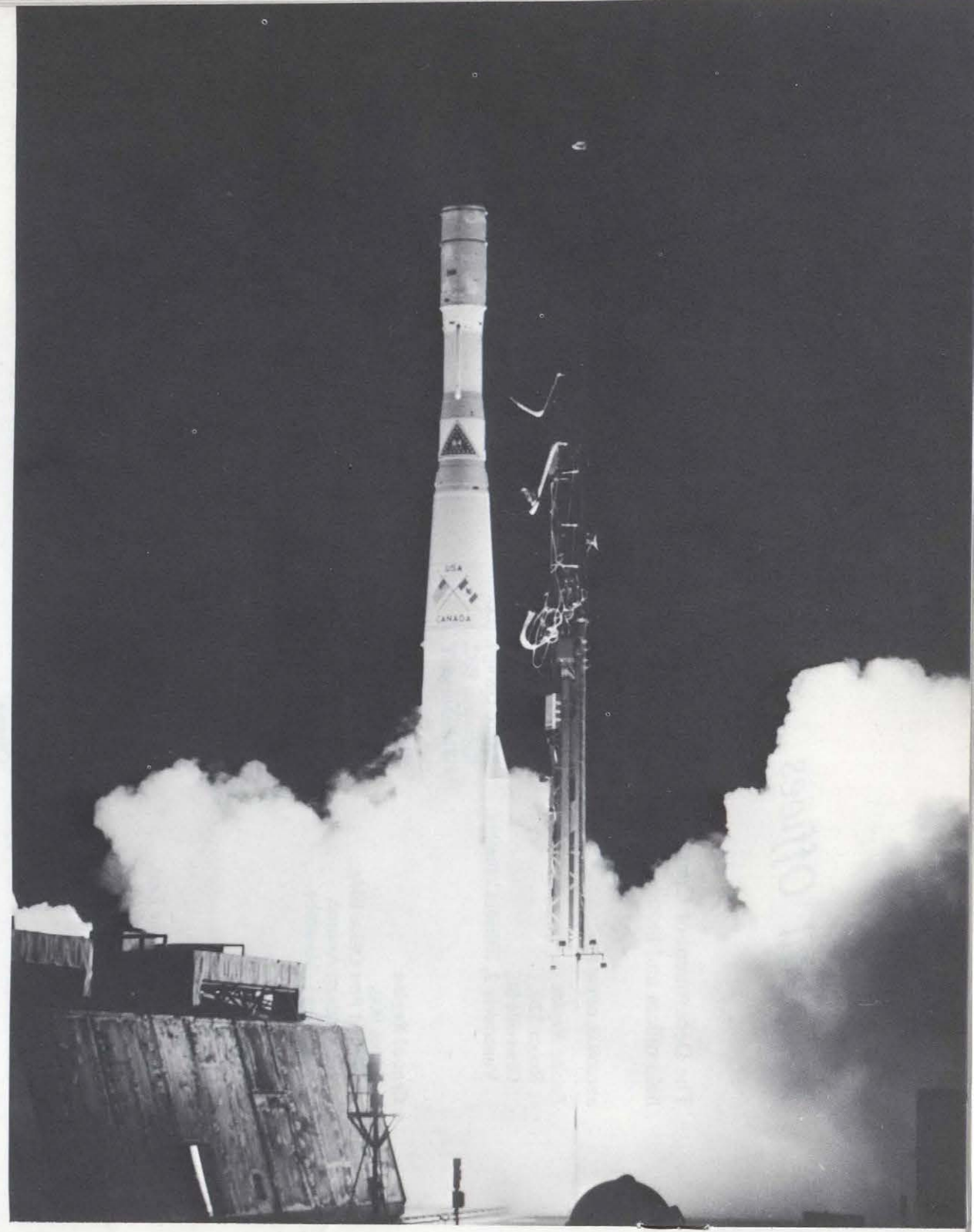
Regional Offices

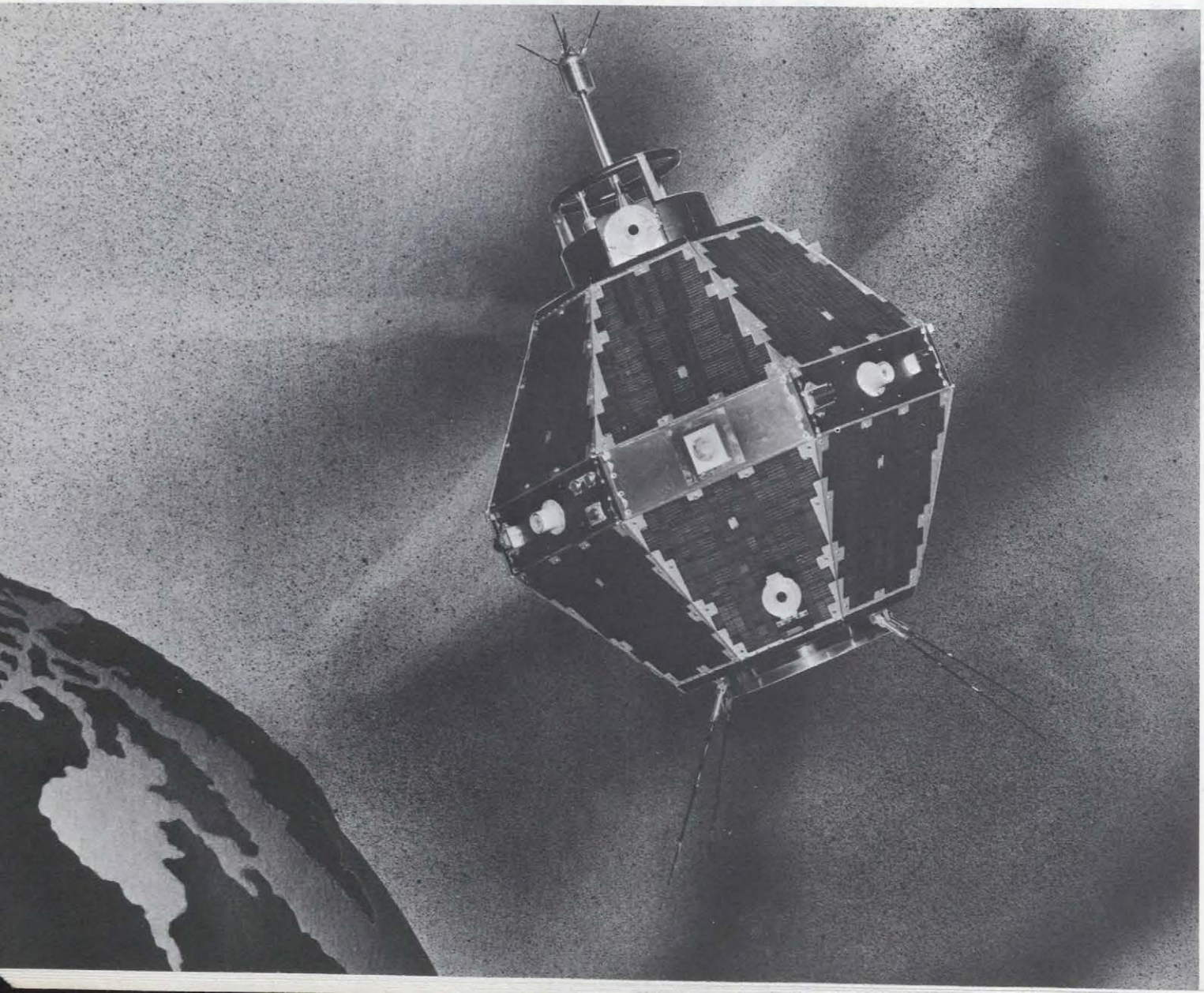
The Department of Communications has a total of five regional offices as well as 47 field offices and monitoring stations throughout Canada.

REGIONAL OFFICES	FIELD OFFICES	MONITORING STATIONS
Pacific Region Room 320, Granville St., Vancouver 2, British Columbia.	Vancouver, B.C. Victoria, B.C. Prince Rupert, B.C. Prince George, B.C. Kelowna, B.C. Whitehorse, Y.T.	Ladner, B.C.
Central Region Room 600, General Post Office Bldg., 266 Graham Avenue, Winnipeg 1, Manitoba.	Winnipeg, Man. Grande Prairie, Alta. Yellowknife, N.W.T. Edmonton, Alta. Calgary, Alta. Saskatoon, Sask. Regina, Sask. Thompson, Man.	Fort Smith, N.W.T. Wetaskiwin, Alta. Melville, Sask.
Ontario Region 4th Floor, 55 St. Clair Avenue East, P.O. Box 1, Toronto 7, Ontario.	Toronto Kenora Thunder Bay Sault Ste. Marie North Bay London Hamilton Kitchener Kingston Ottawa	Thunder Bay Acton Almonte
Quebec Region Port of Montreal Bldg., Wing #2, Cité du Havre, Montréal, P.Q.	Montréal Québec Trois-Rivières Rouyn Port Alfred Sept-Isles Sherbrooke	Senneterre Saint-Lambert de Lévis Saint-Rémi
Atlantic Region Terminal Centre Building, 1234 Main Street, Moncton, N.B.	Moncton, N.B. Saint John, N.B. Halifax, N.S. Saint John's, Nfld. Sydney, N.S.	Montague, P.E.I.

The launching of ISIS II from the Western Test Range, Vandenberg Air Force Base, California, 31st March, 1971. It is the fourth spacecraft in a series designed to explore the ionosphere.

Lancement d'ISIS II de la base d'essai de l'Ouest de la NASA, à Vandenberg, Californie, le 31 mars 1971. ISIS II est le quatrième satellite canadien de la série Alouette-ISIS, consacrée à l'étude de l'ionosphère.





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