Communications Annual Report 1985-86

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Department of Communications

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Ministère des Communications

Communications Annual Report 1985-86

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To:
Her Excellency the Right
Honourable Jeanne Sauvé,
P.C., C.C., C.M.M., C.D.,
D.H.L., D.S., D.L.,
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 March 1986.

I remain,
Your Excellency's obedient servant,

Flora MacDonald
Minister of Communications

Contents

Introduction

Exchanges, consultations and interchanges characterized the 1985-1986 fiscal year at the Department of Communications.

The year included three major federal-provincial-territorial conferences on culture, telecommunications, and film and book publishing as well as the appointment of five task forces on broadcasting, arts funding, the film industry, the role of Canada's national museums, and the role of the National Arts Centre. These formal consultations were supplemented by numerous meetings between the Minister of Communications, departmental officials, and representatives of provincial governments, business groups, professional organizations and consumers of arts and telecommunications products and services (see pages 15 and 24 to 28). Consequently, one of the year's most outstanding achievements was its contribution to a new understanding between the department and many of its publics with regards to the requirements and constraints shaping each other's points of view.

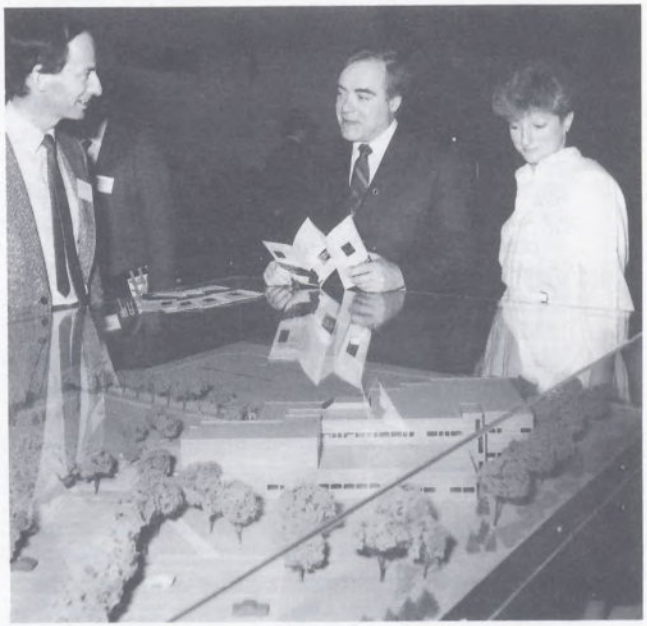
The exchange of viewpoints was productive in more specific terms as well, and will ultimately affect a number of the department's policy directions. The area of broadcasting policy serves as an example. In view of its overall mandate to meet Canada's social, economic and cultural objectives while also fostering orderly development of cultural and communications services, the department has felt for some time that Canadians would eventually require more French-language television programming. The year's consultations with a variety of Francophone groups representing television viewers, educators, broadcast industry representatives and the governments of Quebec and Ontario confirmed that the time was right for moving forward with projects that would lead to increased availability of French-language television programming in Canada (and as a corollary, more opportunities for Canadian suppliers to produce and market French-language programming). Subsequently, during the year the Minister made two announcements related to the realization of this goal. The first concerned the agreement reached by the governments of Canada and Quebec to work with European interests involved in TV5, a European satellite television network that distributes French-language programs to French-speaking nations in Europe and Africa. The second announcement concerned the government's contribution to the start-up funding to enable TVOntario, Ontario's educational television network, to begin developing a French-language television network in Ontario. (For details, see pages 16 and 17.)

Federal Communications Minister Marcel Masse and Quebec Communications Minister Richard French, co-chairpersons of the conference of federal, provincial and territorial ministers responsible for communications held in February 1986 in Montreal.

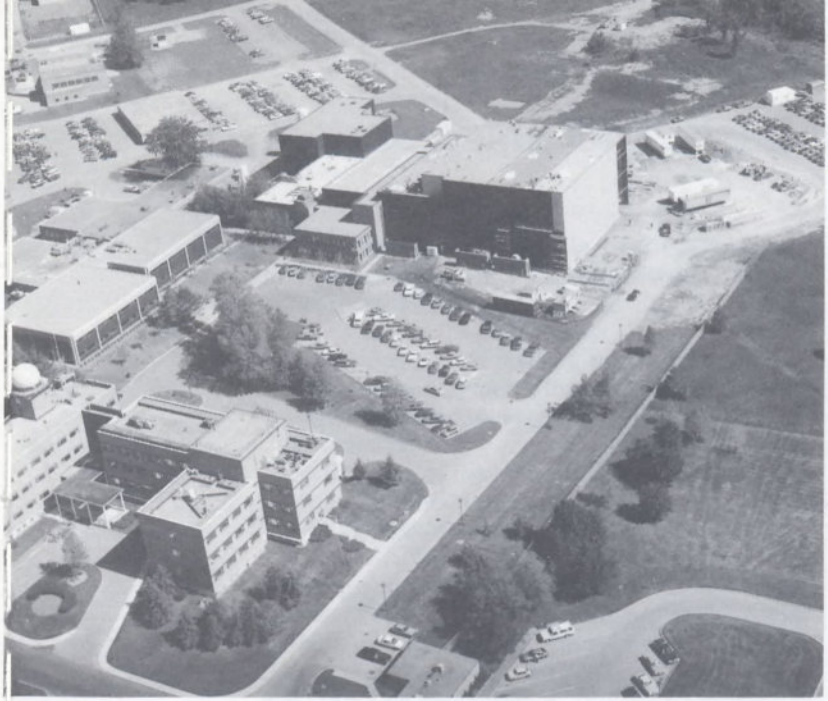
Similarly, consultations with the many publics that comprise Canada's arts communities were of great assistance in establishing policy direction. This was perhaps most striking regarding the issues related to the development of Canada's cultural industries. In the areas of book publishing, and film production and distribution, for example, the industries involved confirmed their approval, and subsequently reiterated at two federal-provincial-territorial conferences, that Canada's cultural industries must be able to operate freely in their own markets to ensure the presence of a reasonable choice of Canadian cultural products. (See pages 18 to 21 and 25.)

Turning to the role the department played on the international scene during 1985-1986, the International Activities section of this report reveals that Canada, as befits a nation that has pioneered development and operation of many new telecommunications technologies, contributed its fair share to international telecommunications endeavors. The department continued its role as a fully contributing member to many of the aspects of work conducted under the auspices of the International Telecommunication Union (ITU), a specialized UN agency. Of particular interest was the establishment, under the aegis of the ITU, of a Centre for Telecommunications Development. (See page 34). This initiative has been supported by government and industry representatives from around the world. Canada has already provided financial assistance which contributed to the centre becoming operational. The purpose of the centre is to bring together the telecommunications needs of the developing world with the supply of industrialized countries. Assistance of this nature promotes Canada's activities in the economic and social development of lesser developed countries while demonstrating our expertise in telecommunications technology and policy.

Canada's cultural experience in the film and video industry is also of interest to other countries. This is demonstrated by the success which the department has had in arranging a number of co-production agreements with other countries.



The department's newest facility is the Canadian Workplace Automation Research Centre, in Laval, Quebec. Here, Minister Masse inspects a model of the centre.



The Communications Research Centre, located at Shirleys Bay, just outside of Ottawa, Ontario.

In terms of research and development, fiscal 1985-1986 represented a major milestone, because it was the year in which the department took the first steps towards implementing the recommendations resulting from an intensive review of its research activities. These steps included integrating formerly separate departmental sectors under a single administrative unit that rationalized activities which had become separated (see page 43) and announcing that a new mission and structure of the department's research and development function would be decided upon during 1986-1987. Meanwhile, as departmental officials concentrated on arrangements to implement the research review's recommendations, the department's scientists at the Communications Research Centre and the Canadian Workplace Automation Research Centre produced a year's worth of solid R & D achievements, many of which were transferred to the private sector for industrial production. (See pages 48 and 49.)

Thus, fiscal 1985-1986 can be summarized as a year in which initiatives begun in the previous year continued well along their appointed paths, new initiatives made significant progress towards practical realization, and ongoing work resulted in concrete achievements. Together, all three elements ensured that the department would continue to meet its fundamental objectives: the fostering and orderly development of world-class telecommunications and cultural services for Canadians.

Mandate and Organizational Structure

All activities undertaken by the Department of Communications, which was established in 1969, relate to the following objectives:

- the development of policies, programs, and co-operative arrangements that achieve Canada's social and economic objectives for communications and culture;
- the fostering of the orderly development and operation of communications and culture for Canada in both the domestic and international spheres.

The Department of Communications is divided into five sectors: Telecommunications and Technology; Corporate Policy; Cultural Affairs and Broadcasting; Spectrum Management and Regional Operations; and Corporate Management.

The department's total parliamentary appropriation for fiscal 1985-1986 was $302.3 million.

Overview of the department's activities

The department's work encompasses activities that range from the development and regulation of the modern communications technologies that carry or store information, to assisting the artistic and cultural communities that ultimately produce the cultural content carried by many of these new technologies.

These activities fall into six broad categories:

- developing national cultural policies, and developing, managing and delivering a range of support programs to benefit Canada's artistic, heritage, film, publishing and sound-recording communities;
- developing new telecommunications, space and information technologies through research and development work carried out in the laboratories of the department's Communications Research Centre, and Canadian Workplace Automation Research Centre;
- supporting Canadian high-technology and industries;
- developing and implementing policies for Canada's telecommunications and broadcasting systems;
- allocating and managing the use of the radio frequency spectrum; and
- through the Government Telecommunications Agency, providing common telecommunications services to the federal government.

Telecommunications and Technology formulates policies and regulations, and fosters the development of standards that promote the orderly development and efficient operation of Canada's telecommunications services and facilities. It identifies and assesses potential applications of new technologies and assists industry in the development, manufacture and marketing of new communications and information technologies and services. In addition, the sector, through the Government Telecommunications Agency, plans, co-ordinates and manages telecommunications networks and services to meet the common needs of the federal government, which is the largest single user of telecommunications in Canada.

Research and development programs in advanced telecommunications and informatics technologies, services and systems are major areas of its responsibility, which include related support to Canadian high-technology industries and other federal departments. These programs are intended to enhance understanding of telecommunications and informatics, and to ensure that Canada maintains a strong presence in high-technology development and markets, both at home and abroad.

Corporate Policy is responsible for the articulation and co-ordination of the corporate policy and strategic planning process for the department, both nationally and internationally. This involves providing strategic focus and direction, including a framework of priorities for the communications and culture portfolio as a whole. The sector is responsible for managing departmental relationships with other levels of government within Canada and with foreign governments, for co-ordinating parliamentary business and legislative development, and for reviewing the effectiveness of existing programs, policies and operations of all sectors of the department through planned program evaluations and internal audits. It is also responsible for ensuring public awareness of the Department of Communications' policies and programs and for the provision of legal services to portfolio activities.

Cultural Affairs and Broadcasting formulates policies and designs programs in the fields of broadcasting and cable, film, video, sound recording, publishing, copyright, cultural heritage, and the performing, literary and visual arts. The sector advises the Minister on policies and programs across the federal cultural portfolio, administers programs and regulations assigned to the department, and provides support to cultural industries and organizations.

Spectrum Management and Regional Operations has the overall responsibility for the management of the radio frequency spectrum in Canada. Its objective is to provide a stable and accessible environment for the orderly development of communications. This involves the development and implementation of radio frequency allocation plans and frequency assignment criteria, as well as technical standards for all types of radio services.

The sector also participates in the deliberations of the International Telecommunication Union which sets the international framework for spectrum use.

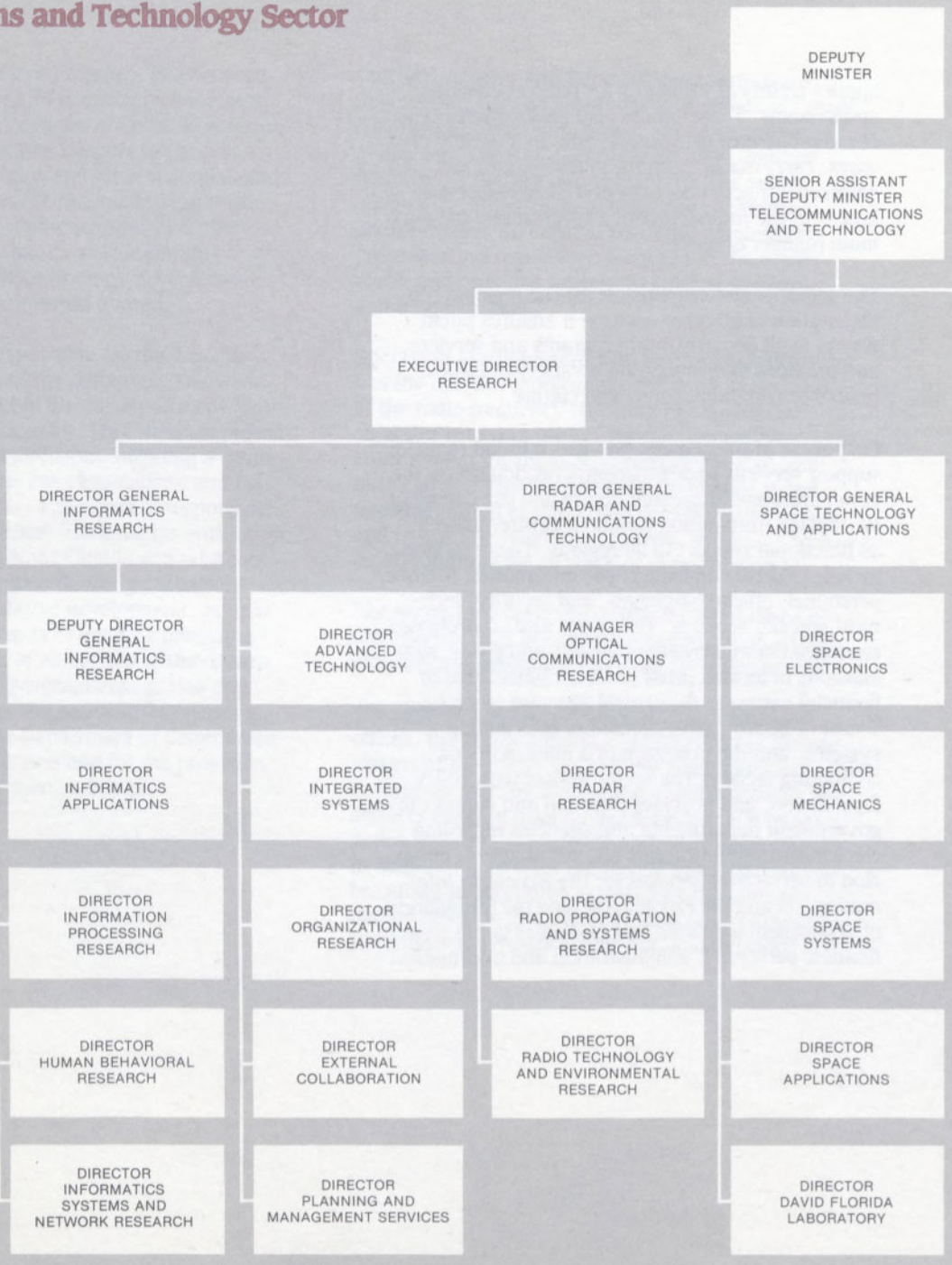
Through its network of regional, district and sub-offices, the sector administers and enforces the provisions of the *Radio Act* and the *Telegraphs Act*. This is done, in part, by the issuing of radio licences for services ranging from mobile services such as taxis, police, fire, etc., to satellite and microwave stations. In addition, it certifies the technical acceptability of broadcast undertakings licensed by the Canadian Radio-television and Telecommunications Commission under the *Broadcasting Act*, and develops and

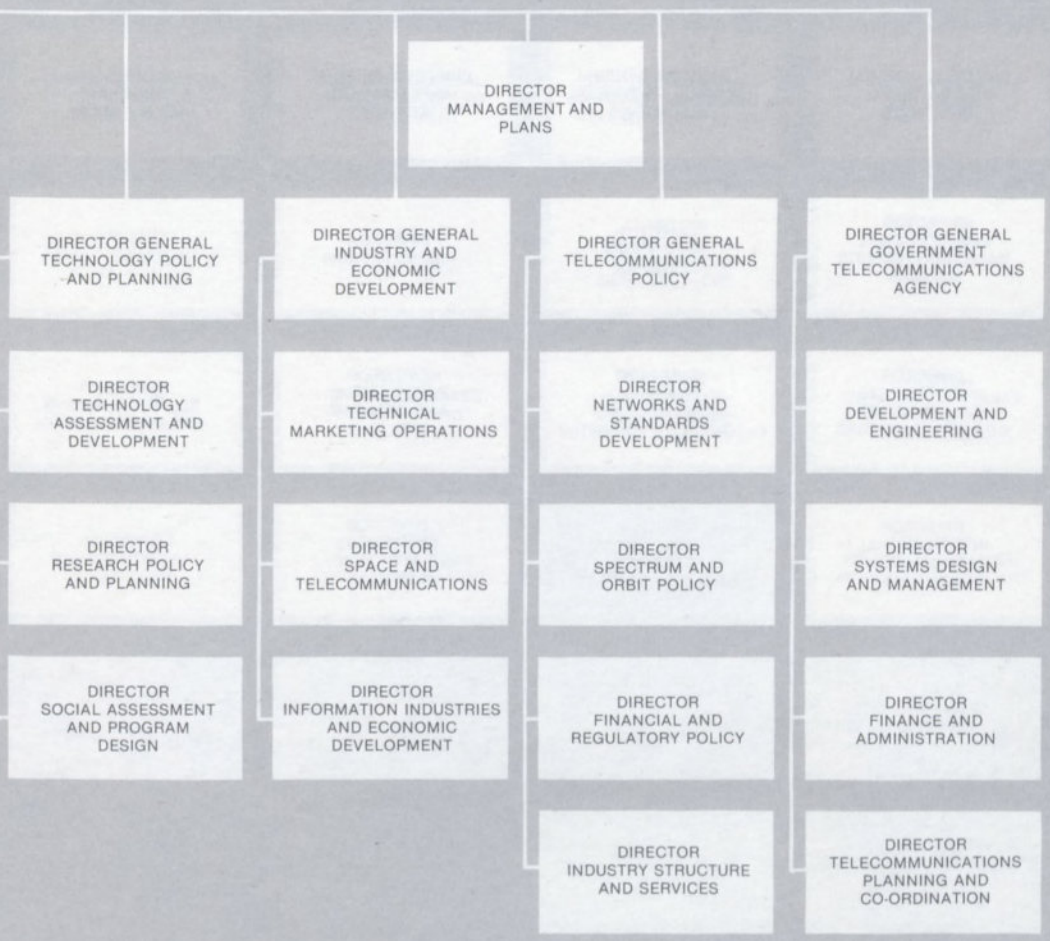
applies technical standards for radio equipment and systems. These offices also issue various types of radio operator certificates, and, in a variety of ways, carry out inspection, investigation, and enforcement activities to permit interference-free access to the radio frequency spectrum by the maximum number of users.

The sector is also responsible for the regional representation of all other sectors; it ensures public access to all departmental programs and services, and provides information on a variety of issues related to communications and culture.

Corporate Management provides a broad range of support services to departmental headquarters, the Communications Research Centre and the Canadian Workplace Automation Research Centre, as well as functional support to all regions. These services include general administration, informatics, finance, personnel, official languages, and security, technical and site services. The sector also co-ordinates management improvement studies and plans, submissions of annual plans of an administrative or financial nature to the central agencies (such as Treasury Board), development of information systems, and the provision of a multi-purpose computing facility. The sector assists with policy formulation, and provides direction and support to government departments and agencies regarding electronic communications security matters; provision of secretariat services for the *Access to Information Act* and the *Privacy Act*, and the formulation of departmental policies and guidelines in the areas of finance, personnel, administration and informatics.

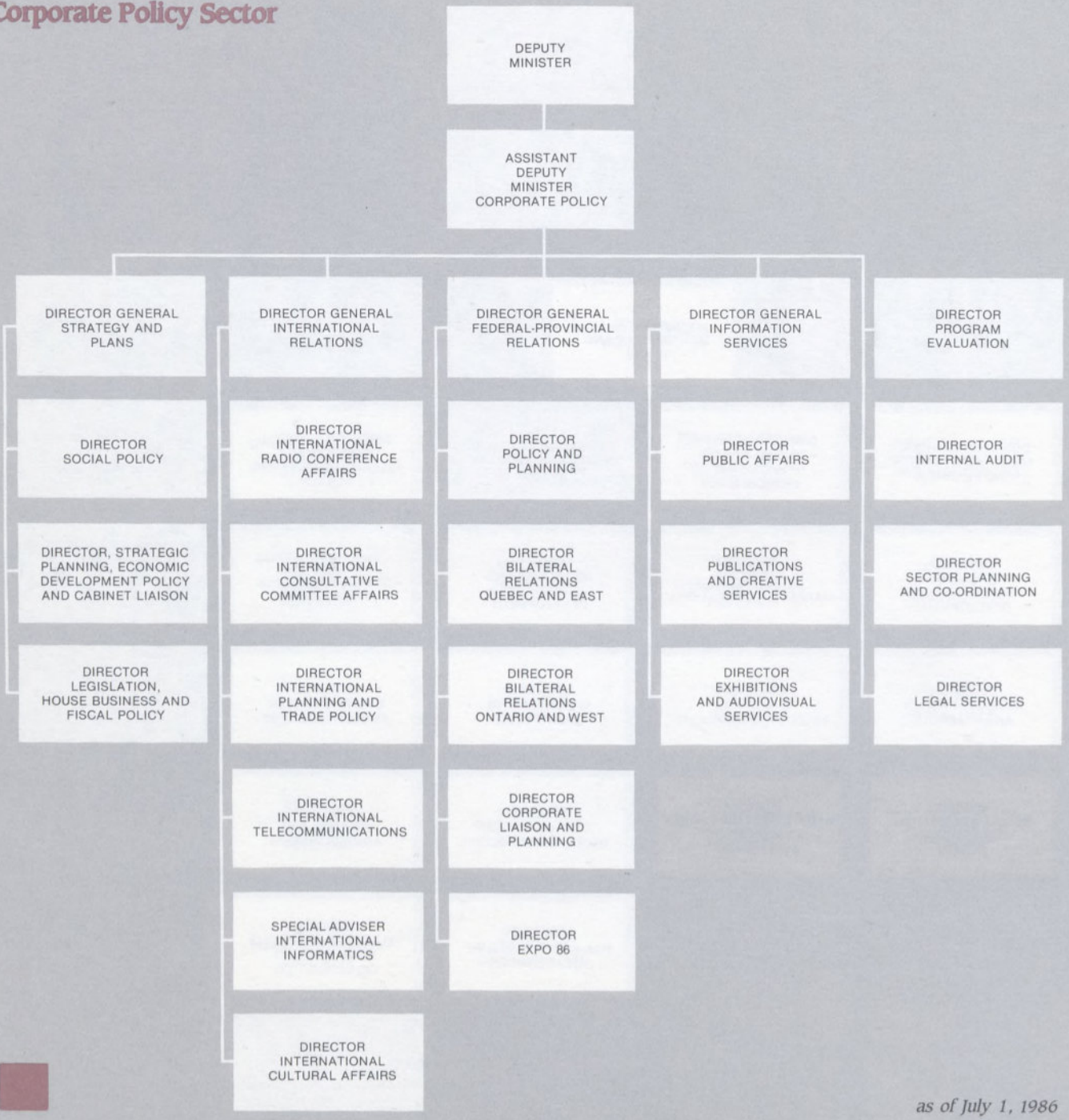
Telecommunications and Technology Sector





as of July 1, 1986

Corporate Policy Sector



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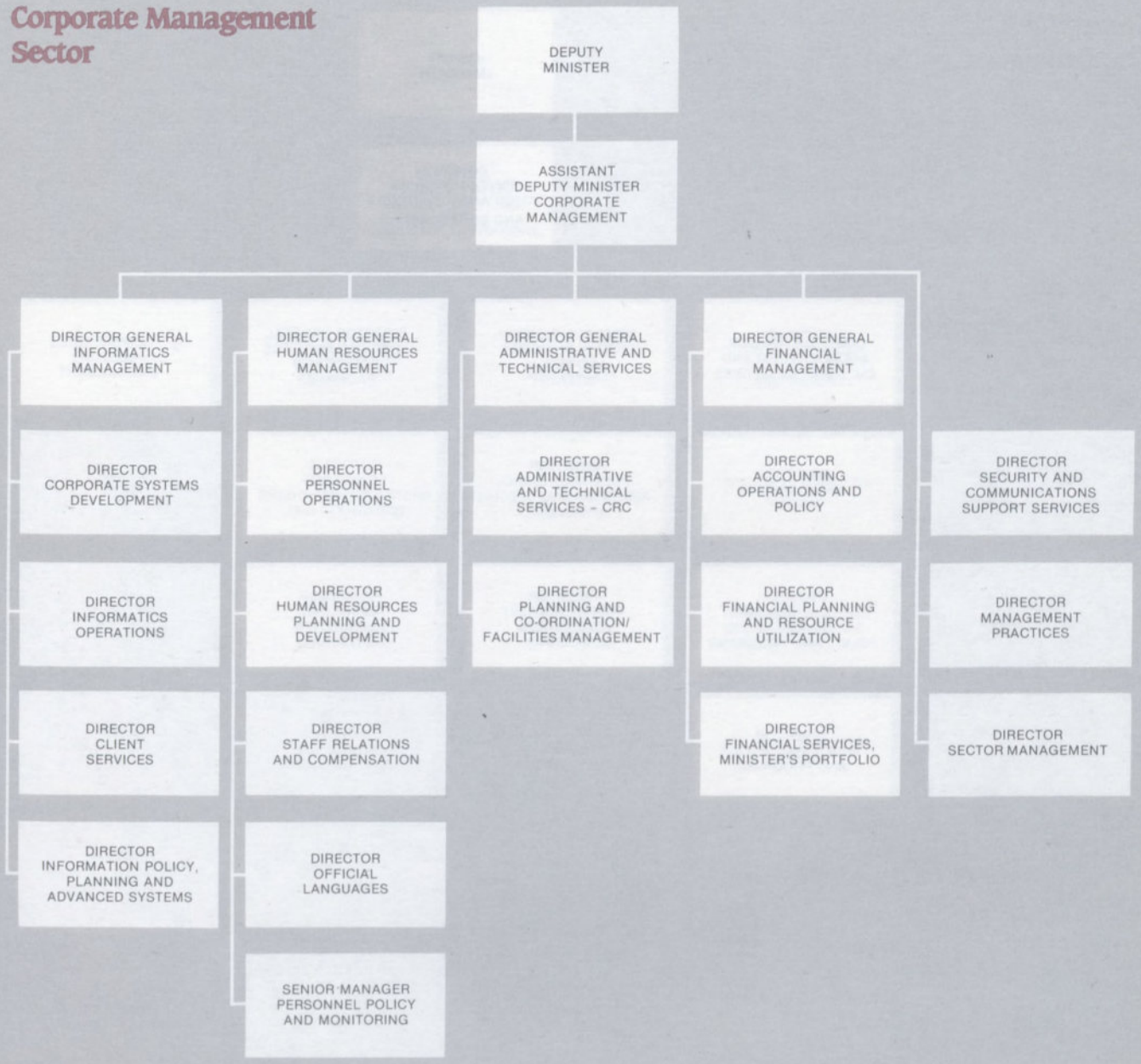
Corporate Management Sector



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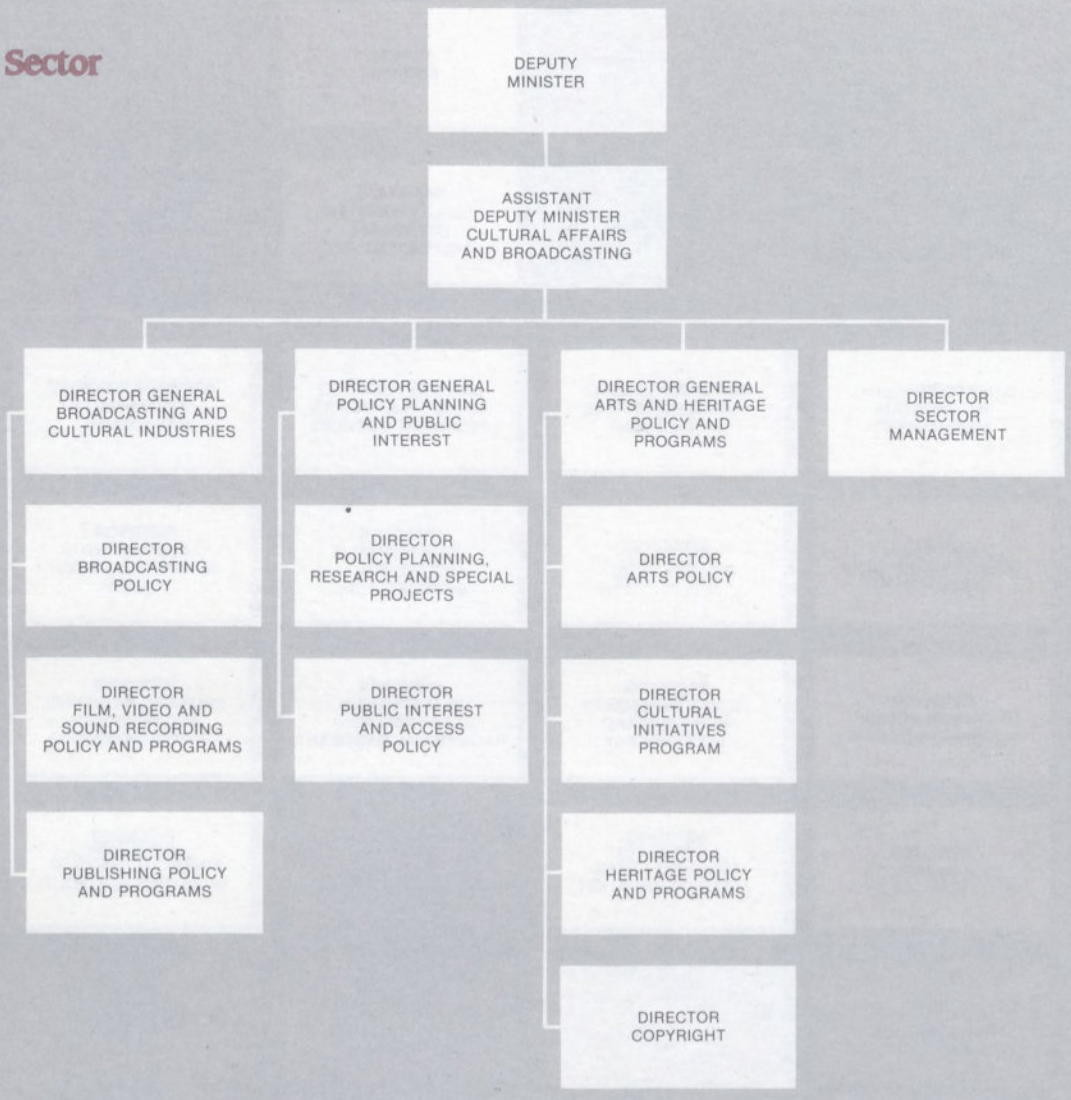
Cultural Affairs and Broadcasting Sector



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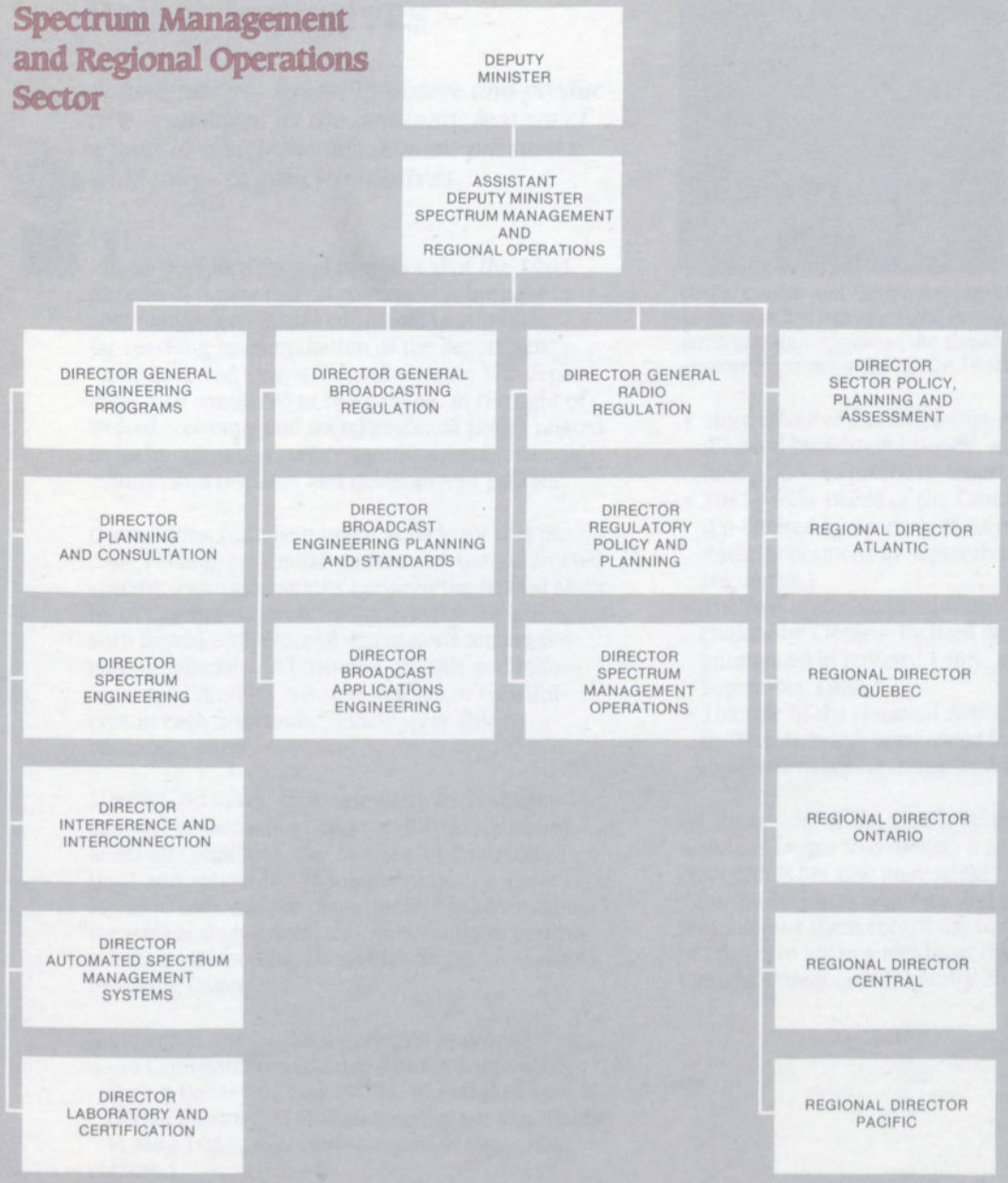
Spectrum Management and Regional Operations Sector



as of July 1, 1986

Policy Initiatives

Consultation – lively, intensive and productive – emerged as the dominant feature of a year in which the department pursued a wide range of policy initiatives.

The perspectives and priorities that the 1984 election of a new federal government brought to communications issues continued to stimulate far-reaching re-examination of the department's immediate and long-term policy plans. The department also continued to re-examine, in the light of altered economic and social goals, all issues related to its broadcasting, telecommunications, arts and culture, and research and development policies.

Consultation became a major vehicle for this process. Federal-provincial conferences that addressed specific sectors, meetings between the federal Minister of Communications and provincial ministers, and both formal and informal discussions among federal, provincial and territorial officials and industry representatives ensured that major constituents in each area under review were able to contribute input.

Mindful, however, that ultimately telecommunications, broadcasting, and cultural policy issues affect all Canadians, the Minister of Communications announced the appointment of five major task forces to seek out the department's broader constituencies and give them the opportunity to contribute their viewpoints. These task forces covered the following issues:

- Industrial and cultural strategies appropriate to the Canadian broadcasting system's operation during the 1980s and 1990s. (Co-chaired by Gerald Caplan and Florian Sauvageau, announced in May 1985, expected to report in September 1986.)

Gerald Caplan and Florian Sauvageau, co-chairpersons of the task force to study the industrial and cultural strategies appropriate to the Canadian broadcasting system's operation during the 1980s and 1990s.

- More effective funding of the arts in Canada. (Chaired by Edmund Bovey, announced in June 1985, expected to report in August 1986.)
- The specific needs of the Canadian film industry. (Co-chaired by Marie-José Raymond and Stephen Roth, announced in September 1985, reported in December.)
- The role of the National Museums in Canada. (Co-chaired by Clément Richard and William Withrow, announced in January 1985, expected to report in September 1986.)
- The role of the National Arts Centre. (Chaired by Tom Hendry, announced in January 1986, expected to report in September 1986.)

As the results of the year's various policy review activities began to coalesce, a common theme emerged: it became increasingly clear that all major Canadian cultural activities and the institutions that support them contribute to the distinctiveness of Canadian society and must operate to reflect Canada's uniqueness, history and development.

Telecommunications

The federal government has identified the telecommunications and information sectors as among the most important elements in its strategy for economic growth in Canada. This emphasis was reflected in the department's continued interest in maximizing efficient, cost-effective user access to the radio frequency spectrum. During 1985-1986, the department implemented several policies designed to meet this goal.

Radio licence fees

In conformance with recent modifications to the *General Radio Regulations, Part I*, in January, the department announced a revised schedule of non-broadcast radio station licence fees, effective April 1, 1986. Undertaken to make the licence fee structure more equitable and responsive to the needs of radio spectrum users, the modifications did not involve fee increases for the majority of current licensees. The department introduced changes in the way the fees are calculated, which, for the first time, include a system of prorated licence fees for new stations. Consequently, they must pay only for those months of the licensing year in which they receive authorization to operate. Another innovation allows users with one-time or short-time needs to obtain a licence for a specified 30-day period. Other changes include lower renewal fees, elimination of the licence amendment fee, and introduction of a $5 fee for each part of the amateur radio examination.

Equipment testing and certification fees

As part of the federal government's overall cost-recovery policy, the department announced a number of revisions to its fee structure for testing and certifying both radio communications equipment and equipment to be attached to the public telecommunications network. The changes, which came into effect in July 1985, follow modification of the *Telecommunications Apparatus Assessment and Testing Fees Regulations*.

Broadcasting

Canada last reviewed its broadcasting policies in 1968. For this reason, the department has for some time been preparing for a new review. The Caplan-Sauvageau task force, announced in May 1985, is one step of this process. Its mandate was to make recommendations to the Minister regarding an industrial and cultural strategy for the Canadian broadcasting system in the 1980s and 1990s, taking into account the government's cultural and economic priorities. During 1985-1986, the department also considered other issues such as extending broadcast services to underserved areas and increasing French-language broadcasting services.

Re-broadcasting privileges for municipal governments

Commercial television broadcasters may be reluctant to undertake the redistribution of broadcast signals in small communities in remote areas because they may feel the potential viewing audience does not constitute an adequate market. Consequently, these communities have been chronically underserved. To alleviate this situation, in July 1985 the Minister announced that the CRTC would be allowed to issue television broadcast licences to municipal governments that wish to retransmit authorized broadcast

signals to underserved communities. The department developed the new policy with full consultation and consideration of provincial legislation and regulations.

French-language broadcasting network

Throughout 1985-1986, the Minister and departmental officials continued to seek the views of Francophone groups, the Quebec and Ontario governments, educators, and broadcasting industry representatives regarding possible initiatives to improve French-language broadcasting services in all parts of the country. During the year, a number of initiatives marked significant progress towards this goal.

With 2.4 million television viewers – or three quarters of the Francophone audience – the weekly series Le Temps d'une paix *enjoys first place among all the regular programs broadcast on French-language television in Canada. Photo courtesy of CBC.*

Report on French-language TV

In May 1985, Communications Minister Marcel Masse and Quebec Communications Minister Jean-François Bertrand released a joint *Report on the Future of French-language Television*. The report contains recommendations from officials based on consultations with specialists in the television industry and groups of television viewers. Taking into account the linguistic and cultural characteristics, specific requirements and size of Canada's Francophone market, the report recommends that government policies and regulations be adapted to the special nature of the French-language television system within the larger Canadian broadcasting system.

New French-language TVOntario service

In September 1985, Minister Masse and the Ontario Minister of Citizenship and Culture, Lily Munro, agreed to allocate funds for a new French-language TVOntario educational television service. This funding will cover programming, capital and operating costs for the next five years. The federal contribution will be made available through Telefilm Canada's Broadcast Development Fund and the Secretary of State. Once fully operational, the service will offer five hours daily of original French-language programming, repeated the following day for a daily total of at least 10 hours. This represents a considerable extension of service over the 19 hours per week, concentrated mainly on Sunday, available from TVOntario at the time of the announcement.

TV5

Early in 1985-1986, Minister Masse announced that Canada and Quebec had reached an agreement with the European interests involved in TV5, a European satellite television network that has been distributing French-language programming to cable television operators in Europe and North Africa since 1984. A consortium of Canadian and Quebec broadcasters, and film and video companies will contribute to TV5 programming and participate in developing co-operation in Francophone film and video endeavors. A feasibility study is expected to be completed in June 1986 to determine the possibility of bringing TV5 service to Canada and the United States.

Funding the arts

Canadians who work in the arts and the cultural industries frequently voice their concerns about the vitality of Canadian cultural enterprises and the economic status of the nation's artists. The Minister's announcement of the task force chaired by Edmund Bovey to explore more effective methods for funding the arts (see page 15) was only one of several responses initiated during fiscal 1985-1986 to address these concerns.

Co-operative study on economic impact of arts and culture in Canada

Throughout the year, the department continued its participation in a comprehensive, two- to three-year study undertaken jointly with the provinces and territories to examine all aspects of the economic impact of arts activities in Canada. The study will provide fundamental information for governments and the private sector regarding statistics and trends related to public- and private-sector arts expenditures, public participation in cultural activities, arts-related jobs and job training, and national and international marketing of cultural products. Initiated by the participants during the 1984 Federal-Provincial-Territorial Conference for Ministers Responsible for Cultural and Historical Resources, the study will result in a series of reports. The first of these, expected in September 1986, will spotlight the performing arts.

Federal budget increases arts funding

The year's intensive examination of funding issues culminated in good news for the arts community: the February budget reaffirmed the federal government's commitment to the encouragement of cultural activities as important determinants for the health of Canada's economy and identity. The Finance Minister announced an additional $75 million a year for assistance and enhancement of Canadian cultural enterprises.

Book publishing

Canada's book publishing industry was the focus of much attention during 1985-1986. Several benchmarks were established as the year progressed: a new approach to foreign investment in publishing; discussions with provincial and industry representatives on a new and expanded federal program to assist the Canadian publishing industry; and a federal-provincial-territorial conference to explore methods for increasing Canadian publishers' access to domestic markets. (For details about this conference, see the Regional Dimensions section of this report.)

New policy on foreign investment in Canadian publishing industry

In July 1985, the Minister of Communications announced Canada's new policy on foreign investment in the book publishing industry. In a prefatory statement, the Minister described the government's conviction that, if Canada's book publishing industry was to effectively perform its major role in defining the nation's cultural identity, a greater part of the publishing and distribution sectors must be owned and controlled by Canadians.

The new policy provides for government review, in accordance with the provisions of the *Investment Canada Act*, of all proposed foreign investment, both direct and indirect, in book publishing. The government will look favorably on proposals to establish new (or to acquire existing) businesses, whether Canadian or foreign-controlled, provided the investment is through a joint venture with Canadian control. The government will also allow direct and indirect acquisition of foreign-controlled businesses, if divestiture to Canadians occurs within two years at fair market price.

Discussions in support of new policy

Throughout the year, the Minister and departmental officials held in-depth discussions with members of the publishing industry and representatives of other levels of government, both within Canada and abroad, to clarify the implications of the new policy and to examine other policy-related matters. (See both the Regional Dimensions and International Activities sections of this report for further details.)

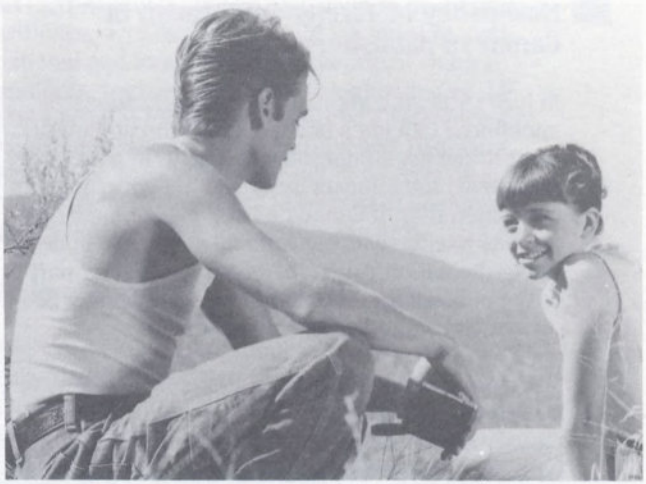
Film

Mick Mancuso and Carole Laure in a scene from Gilles Carle's Maria Chapdelaine. *Photo courtesy of Telefilm Canada.*

A decade of federal encouragement and incentives for establishing a Canadian feature film industry is beginning to pay off. Canadian films such as Gilles Carle's *Maria Chapdelaine*, Anthony Bedrich's and Harry Gulkin's *Lies My Father Told Me*, Sandra Wilson's *My American Cousin*, and Denys Arcand's *Le Déclin de l'Empire Américain* (*The Decline of the American Empire*) are winning acclaim at international film festivals, and international markets are emerging. The industry is now at a critical point in its development. During fiscal 1985-1986, the department initiated several activities to support the industry. This support included establishment of and a report from a task force; discussions with provincial, territorial and industry representatives; changes to the Capital Cost Allowance Program; and a year-end conference that focussed on increasing the film industry's access to domestic markets. (For details on this conference, see the Regional Dimensions section of this report.)

Pierre Curzi in a scene from Gilles Carle's Maria Chapdelaine. *Photo courtesy of Telefilm Canada.*

Sandra Wilson (right), writer and director of My American Cousin, *with members of the cast. Photo courtesy of Telefilm Canada.*



John Wildman and Margaret Langrick in a scene from My American Cousin, *a film written and directed by Sandra Wilson. Photo courtesy of Telefilm Canada.*

Denys Arcand (left), directing Gabriel Arcand in Le Déclin de l'Empire Américain. *Photo courtesy of Telefilm Canada.*

In television also, Canadian productions gained international acclaim. Aired in December 1985, Anne of Green Gables *attracted an unprecedented 4.9 million viewers for the first episode and 5.8 million for the second – a 47 percent and 56 percent share respectively of all Canadian English-station viewing. Photo courtesy of CBC.*

Task force on the Canadian film industry

In September 1985, the Minister announced the formation of a task force to look at the problems now facing Canadian feature film production, distribution and exhibition. Co-chaired by Marie-José Raymond and Stephen Roth, the task force released its final report in December of the same year. It included recommendations related to distribution of film and video productions; establishment of clear policy concerning Canadian ownership and control over film distribution in Canada; creation of tax incentives and mechanisms to encourage investment in the film industry; establishment of a $60 million Canadian Feature Film Fund; and development of legislation to prevent monopolization of the film distribution and exhibition market.

Changes to Capital Cost Allowance Program for Canadian film and video productions

Effective January 1, 1986, the department announced a number of changes to the regulations governing the Capital Cost Allowance Program for Canadian film and videotape productions. One of the most significant changes concerned a major revision to the existing Revenue Guarantee provision of the *Income Tax Regulations*, a section of which had been discouraging investment by inhibiting producers from entering into pre-sale arrangements with broadcasters and distributors. There was also a significant change to the existing Canadian citizenship definition, to remove from the legislation inadvertent discrimination against landed immigrants who have lived in Canada longer than four years.

Heritage

Federal archaeological policy development

After receiving representations from, and holding discussions with the Canadian Archaeological Association, other concerned federal departments, and various interest groups, the Minister made a commitment to co-ordinate the development of a policy for the improved preservation and management of archaeological sites and resources within federal jurisdiction. The first step was a study to examine the underlying needs, issues and current status of preservation of Canada's archaeological heritage on federal lands. Work on this policy review during the 1986-1987 fiscal year will include consultation with all the concerned federal, provincial and private-sector groups to assure a firm foundation for a comprehensive federal policy to protect Canada's archaeological heritage.

Legislative amendments

New Copyright Act

The departments of Communications and Consumer and Corporate Affairs have been involved for some time in preparatory work leading to new copyright legislation, culminating in the tabling of a White Paper on Copyright during 1984. The government referred copyright revision to the Standing Committee on Communications and Culture. The committee consulted with over 100 groups and examined over 300 briefs, after which it released the report, *A Charter of Rights for Creators*, in October 1985. In early February 1986, the ministers of Communications and Consumer and Corporate Affairs issued the government's response, which generally endorsed the committee's report. Included in the report is an acknowledgement of the need to grant creators new rights enabling them to exploit their works; rights to exhibit artistic works in public; rights to compensation for the retransmission by cable systems and broadcast programming; and "moral rights" such as the right to seek effective remedies with respect to unwarranted and unauthorized changes in works of art.

Preliminary work towards new Radio Act

During 1985-1986, departmental officials addressed issues related to the existing *Radio Act*. This legislation, which was first published in 1938 and which has not been revised in a significant way with regard to the management of the radio frequency spectrum since 1968, requires streamlining and revision to take into account recent technological and market developments. Further attention will be given these matters during the 1986-1987 fiscal year.

Archives of Canada Act

In February 1986, the Minister introduced a bill to replace the *Public Archives Act* of 1912 with a new *Archives of Canada Act*. The proposed legislation takes into account the archival, social and cultural changes that have occurred since 1912, and makes specific provisions for such factors as privacy and access-to-information legislation. The bill contains a provision to enable the Archives to support the Canadian archival community. It also provides for the extension of records management services to a greater number of institutions of the Government of Canada.

Bell Canada Act

This Act is designed to strengthen the powers of the Canadian Radio-television and Telecommunications Commission (CRTC) to regulate the operations of Bell Canada, which was re-organized in 1983 under Bell Enterprises. During 1985-1986, the Act was examined by the Standing Committee on Communications and Culture who returned it to the House of Commons for minor modifications on March 26, 1986.

CRTC and broadcasting legislation

This legislation was designed to amend the *CRTC Act*, the *Broadcasting Act*, and the *Radio Act*. It contains an important clause giving the Governor-in-Council the power to issue policy directives to the CRTC; amends Section 3 of the Broadcasting Act to establish the objectives that broadcast programming promotes and respects the dignity of all persons regardless of sex; and would clarify the CRTC's power to regulate the distribution of satellite-delivered programming. The legislation was examined by the Standing Committee on Communications and Culture and returned to the House of Commons on November 18, 1985 with a few minor amendments.

Review of experience with access to information and privacy legislation

As the press makes greater use of Canada's new access to information and privacy legislation, there has been a steady increase in the number and complexity of access-to-information requests. The resulting publicity has increased the public's awareness of these new rights, and many more individuals are using this method to obtain information from the government.

The government passed its access to information and privacy legislation in 1982, attaching a provision for mandatory parliamentary review after three years of operation. It also set up a parliamentary committee for this purpose, and the two responsible ministries, Justice and Treasury Board, co-ordinated the preparation of reports summarizing the experiences of all agencies covered by the legislation. The committee also invited independent reports from a number of departments, including the Department of Communications. The committee requested information regarding how the department has responded to the legislation, what types of inquiries it has received, and the exemptions the department has cited to protect certain classifications of information from disclosure. The department responded with a detailed report, and, during the final months of 1985-1986, the Minister began preparations for his appearance before the committee in May and June of 1986.

Regional Dimensions

Co-operation established between the federal government and the provinces and territories translated into significant progress on issues and projects of mutual interest and concern.

Throughout 1985-1986, the Minister and departmental staff travelled to all regions of the country to ascertain the views of, and exchange perspectives with, representatives of provincial and local governments, the communications industry and the arts community. Many of these meetings took place officially: at the ministerial level, at special events and through the regular, formalized meetings of provincial consultative committees. Others were organized informally to discuss topics of specialized or particularly urgent interest. This active interchange of ideas and viewpoints laid invaluable foundations for the major policy decisions that resulted from the more structured environments of the year's three highly successful federal-provincial conferences: the Conference of Ministers Responsible for Culture and Historical Resources, held in Halifax in September 1985; its offspring, the Federal-Provincial Conference on Film and Book Publishing, held the following March in Montreal; and the February Federal-Provincial Conference on Telecommunications, also held in Montreal.

The heightened interactions with its regional constituencies meant that the department's five regional and 45 district and sub-offices played essential roles in facilitating communication – in all senses of the word. In addition to their on-site provision of service related to every area of the department's jurisdiction, regional personnel were called upon throughout the year to assist with the special conferences, meetings and other projects related to the events outlined in this section.

Three major conferences

Federal-provincial-territorial conference on culture

One of the most significant and successful conferences ever held by the ministers responsible for cultural and historical resources took place in Halifax in September of 1985. At this conference, governments agreed on a cultural agenda for the future. The ministers' discussions during the two-day conference covered a wide range of topics related to the social and economic impact of cultural matters. Foremost on the ministers' minds was the challenge of strengthening Canadian culture. Other discussions undertaken with a view to developing new policy initiatives included financing of culture and the arts, payment to Canadian authors for public use of their works in libraries; distribution and exhibition of Canadian films and videos; the Canadian book publishing and distribution industry; and policy directions concerning museums and regional assistance programs.

Year-end conference on book publishing and film

The federal, provincial and territorial ministers responsible for cultural and historical resources met again in Montreal in early March 1986. At this conference, the ministers centred their attention on ways in which their governments could assist the Canadian film and book publishing industries to increase their access to domestic markets, which are currently heavily dominated by foreign publishers and film distributors. Unanimously acknowledging that the future of film and book publishing now

depends on ensuring that these industries have normal access to the Canadian market, the ministers reached consensus on a number of issues upon which to base government policies. They also agreed on the need to take steps to reinforce the Canadian presence in the production, distribution and marketing sectors of cultural industries.

Telecommunications conference

In June 1985, the Minister announced the government's plans for a comprehensive review of Canadian telecommunications policy. Following preparatory work carried out during the department's own assessment (during 1984-1985) of federal telecommunications policy, the 1985-1986 review was undertaken specifically to enable representatives from the provinces, territories, labor unions, consumer associations, voluntary organizations and interested members of the public to make their views known.

In addition, the first telecommunications conference of federal, provincial and territorial ministers responsible for communications to be held in four years took place in Montreal in February 1986. Co-chaired by the federal Minister of Communications and the Quebec Communications Minister, the conference dealt with the challenges that have arisen from advances in communications technology and international competition, and that have necessitated a redefinition of Canada's telecommunications policy framework.

Ongoing consultative and co-operative mechanisms

Consultative committees

Among the department's most valuable ongoing vehicles for regular consultations with the provincial and territorial departments and agencies responsible for communications and culture have been the consultative committees that the department and a number of the provinces have established over the years. Supplementing other, ongoing consultative mechanisms such as tri-level meetings and the Committee of Deputy Ministers, these committees meet two or three times a year to review new and existing programs and developments in the cultural and communications communities. They also serve to co-ordinate the policy and program activities of departments and agencies alike. The Atlantic Provinces, Quebec and British Columbia have had formally established communications committees for some years; in fact, the Atlantic Consultative Committee on Communications held its twenty-third meeting in 1985. More recently, Consultative Committees on Culture have been established in other provinces.

Economic and Regional Development Agreements (ERDAs)

Subsidiary agreements to ERDAs are becoming a major avenue for establishing co-operatively funded cultural and communications projects that have potential for diversifying provincial economies.

Canada/Manitoba Communications and Cultural Enterprises ERDA Subsidiary Agreement

This five-year agreement, signed in 1984, was the first subsidiary agreement to be negotiated between the department and a provincial government. It provides for $21 million ($13 million in federal contributions) to strengthen development of Manitoba's communications and cultural enterprises.

The technological applications component of the agreement, funded entirely by the federal government, has a budget of $5.95 million. The Manitoba Computer-assisted Learning Consortium, a non-profit organization that develops and distributes educational software, with emphasis on Canadian studies, is receiving $720,000 of this amount over three years to develop courseware. The province's Electronic Publishing Program gained $900,000 for six proposals varying from an on-line database for mineral exploration to a computer-based training program on farm financial management. Two other projects received conditional approval during 1985-1986: a program related to artificial intelligence, expected to receive $.5 million, and an automated metre-reading program, expected to receive $2.4 million in assistance.

Advisory Committee on Film, Video and Audio Production

In January 1985, consistent with Component 2 of the subsidiary agreement, the two governments appointed an advisory committee to examine and make recommendations on Manitoba's potential to develop film, audio and video production and skills-development capabilities. The committee issued its report in early March of 1986, recommending a series of programs and delivery options to respond to the needs of these industries in the province. Public consultation regarding the report and implementation of the film, video and audio components of the agreement are expected to take place during 1986-1987.

Canada-Quebec ERDA Subsidiary Agreement on Communications

Fiscal 1985-1986 was the first full year of operation under this five-year, $40 million agreement, which comprises component programs designed to promote such projects as the conception and development of software, databanks, and broadcast programs for domestic and international markets; automation of communications enterprises; and economic viability studies for projects with potential to advance communications technologies. The department reviewed approximately 75 proposals during the year, accepting 17 for funding support. Among those accepted were three projects totalling close to $1 million to help la Corporation pour l'infographie immobilière, to develop a Telidon/Videotex based facility for displaying properties for sale; Rose Film, to develop an integrated software package for managing the creative and business sides of film production; and P.U.C.E., to increase its development and marketing of educational software.

Ottawa/Quebec committee studies development of French-language software sector

Subsidiary agreement funds also supported initiation of a federal-provincial committee to study development of a French-language software sector in Quebec. In February 1986, the federal Minister of Communications and the Quebec Communications Minister announced the formation of a study group to analyze the policies, programs and activities of their departments in light of recent studies in Quebec, Canada and the United States. The group's report is expected in 1986-1987.

International software market

In June 1985, the department, through the Canadian Workplace Automation Research Centre, announced a $500,000 contribution to the Montreal International Software Market (MIM 85), held the same month. The contribution enabled organizers to cover some of the participation costs incurred by invited speakers and Canadian firms. It also enabled the industry to establish contact with businesses representing potential international markets.

Canada-Quebec Memorandum of Understanding

Acting on the recommendations of the *Report on the future of French-language television*, in February 1986 Communications Minister Marcel Masse and Quebec Communications Minister Richard French signed a Memorandum of Understanding to direct and co-ordinate, over four years, the joint development of French-language television. A joint committee will priorize the numerous matters relating to this goal, including assistance for production and export of television programs, provision of specialty television services, and a detailed study of the upcoming recommendations from the Caplan-Sauvageau task force on broadcasting policy.

Cultural Initiatives Program

Created in 1980, the program (originally known as the Special Program of Cultural Initiatives) has helped more than 800 cultural institutions and performing arts groups of local, regional and national significance, to develop their management capabilities, improve their efficiency through modern communications technologies, and increase public access to performing and visual arts, museums, and heritage collections.

In May 1985, the Minister of Communications announced the permanent establishment of this program, one of the department's most successful funding-assistance vehicles, under the new title of the Cultural Initiatives Program (CIP).

With an annual budget of $16 million, the program's funds are distributed under three components:

Component I: development of managerial capabilities and innovative application of new communications technologies in culture and arts;
Component II: capital assistance;
Component III: support for cultural activities of national significance.

Movable cultural property

The Movable Cultural Property Program was created to monitor and control the export of items such as antiques and artifacts related to Canada's historical or cultural heritage. The program reviews the cultural significance to Canada of items that are being considered for export, and issues permits where appropriate. In addition, the program offers tax incentives for the sale or donation of cultural artifacts to Canadian curatorial institutions. For these institutions, such donations or purchases are an invaluable source for strengthening their collections. During 1985-1986, donors and vendors, encouraged by these tax incentives, donated or sold cultural property worth $19 million to designated institutions. The department's Movable Cultural Property Secretariat, which performs administrative services for the Cultural Property Export Review Board, processed 479 applications related to such donations. As a result, institutions in every province were able to enrich their collections, greatly increasing Canadians' access to their cultural heritage.

A stonecut print on paper, entitled Canada Geese, *by Mungitok, 1959. Donated to the Agnes Etherington Art Centre under the terms of the Cultural Property Export and Import Act. Photo courtesy of the Agnes Etherington Art Centre, Queen's University, Ontario.*

The secretariat also administers a program of grants and loans for the repatriation of cultural property and for objects for which export permits have been denied. During 1985-1986, the board approved 15 applications totalling $451,516.

In October, a request was presented by the Government of Canada to the Director of the United States Information Agency for an agreement with the United States to prevent the illicit and illegal trade of archaeological and ethnographic artifacts between the two countries. The United States has been the traditional market for these Canadian artifacts and the illicit trade continues despite regulations controlling their export from Canada.

Insurance program for travelling exhibitions

Insurance premiums for major exhibitions add substantially to the overall cost of these displays, and are sometimes prohibitive. In response to requests for assistance from the museum community, the Minister of Communications announced in June 1985 the inauguration of an insurance program that would provide insurance coverage for travelling exhibitions valued at more than $1 million. The full cost of the insurance, both in transit and on location, is paid by the program for exhibitions organized or hosted by Canadian museums, art galleries, libraries and archives. To be eligible, exhibitions originating with Canadian institutions must be displayed in at least one eligible institution in Canada other than the one which organized it. Major international exhibitions that are displayed in one location only are also eligible. During 1985-1986, 14 institutions benefitted from the program, as insurance was provided for 11 travelling exhibitions with a total value of over $122 million.

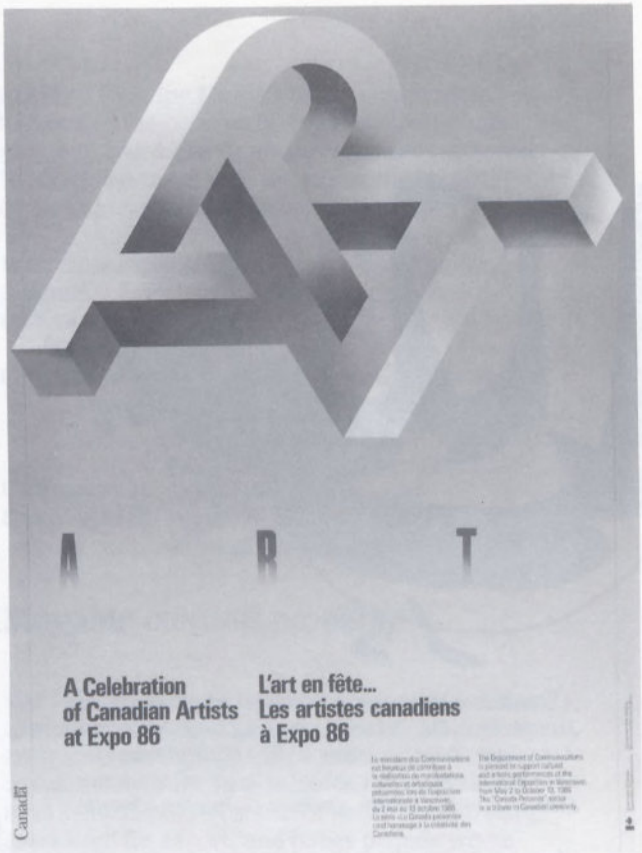
EXPO 86: World Exposition on Transportation and Communications

As one of the two federal departments most directly responsible for the Government of Canada's participation in EXPO 86, the department dedicated substantial resources over the last three years towards this major opportunity to display Canada's cultural and communications expertise to the world. Working closely with Canada Harbour Place Corporation (a federal Crown corporation) and Transport Canada's Federal Co-ordination Secretariat for EXPO 86, the department's contribution involved participation in several major areas.

Canada's Royal Winnipeg Ballet was one of the groups that received assistance to perform at EXPO's World Festival of the Performing Arts. Pictured here, from left to right, are Evelyn Hart, Patti Caplette and Elizabeth Olds, members of Canada's Royal Winnipeg Ballet. Photo courtesy of the Royal Winnipeg Ballet.

For the Canada Pavilion, the department assisted in the development of a cultural and entertainment program to feature Canadian artists from all regions and disciplines, obtaining $5.8 million from the Federal EXPO 86 Allocation for this purpose. The department also developed theme concepts and exhibit designs illustrating Canadian achievements and innovations in communications technologies. Finally, the department was responsible for developing the information and communications system used in the Pavilion, the World Business Showcase and the Business Opportunities Centre.

For its contribution to the arts, the department obtained $1.5 million from the Federal EXPO 86 Allocation to assist 20 major Canadian companies to take part in EXPO's World Festival of the Performing Arts, and $.5 million to encourage 29 of



A poster created by the department to promote Canadian artists at EXPO 86.

Vancouver's cultural groups to participate in 31 projects related to their city's centennial celebrations. The department also alloted $2 million from its Cultural Initiatives Program to enable 46 Canadian cultural groups to tour major centres of the country before or following their EXPO appearance.

The department contributed infrastructure support to the Vancouver area through its Pacific Regional Office, which co-ordinated the requirements for extra radio frequencies and planned emergency communications services.

Spectrum management

During 1985-1986, the department's Spectrum Management Sector issued 224,500 new and amended radio station licences, and processed a total of 523,400 radio station licence renewals. In addition, the sector dealt with approximately 18,000 interference reports, including some 5,000 cases of interference to radio communications systems such as those used by police, fire, ambulance, air navigation and commercial dispatchers. As of March 31, 1986, Canada's radio station population, excluding General Radio Service (GRS) stood at some 734,500; an increase of 50,000 over 1984-1985. At the same date, the GRS station population stood at 355,320.

Cellular radio

In the years preceding 1985-1986, the department carried out extensive planning, both domestically and internationally, to ensure cellular radio would be introduced in a manner that would enable Canadians to have the best possible service at the most cost-effective price. The service has grown rapidly. In 1985-1986 alone, with service available in areas with high population densities, the department authorized 17,000 licences for mobile stations. It is expected that the service will grow at an even faster rate in the next few years.

Spacetel field trial

The department encourages new technologies that could bring communications services to users in remote locations. In April 1985, the Minister announced a six-month field trial of Spacetel, a satellite communications system developed by Microtel Limited of Burnaby, B.C., with the help of federal funding. The system uses a portable earth terminal to send signals to the Anik C satellite. Within a fraction of a second, the satellite relays the signals to the national telephone system. Consequently, a user in a remote area can connect with the telephone network in the nearest city. The field trial tested Spacetel's delivery of a voice and data telecommunications service to government installations ranging from lighthouses and remote weather monitoring stations to air traffic control centres. Trials took place in Eastern Canada and on the West Coast.

Co-operation with Canadian universities

In 1985-1986, the department issued contracts valued in excess of $2 million to Canadian universities through a variety of research programs designed to develop, in Canadian universities, expertise in areas of interest to the department and also to obtain services and products for the conduct of departmental activities. Two programs aimed specifically at universities, the University Research Program and the French-language Centres of Excellence Program, account for slightly more than half of the expended funds. The total funds in new contracts to universities during the year were distributed as follows: $152,415 in the Atlantic Region; $583,038 in the Quebec Region; $895,550 in the Ontario Region; $171,783 in the Central Region; and $241,608 in the Pacific Region.

In addition to contracting with universities, the department frequently enters into co-operative programs with them. For example, under an agreement signed in 1984, the department and the University of Toronto's Institute for Aerospace Studies (UTIAS) this year completed a joint project to develop a Control Systems Facility located at UTIAS. Available to government, industry and the university, this facility will assist scientists in the design and verification of control-system concepts for the upcoming generation of large, flexible spacecraft such as MSAT and space-based radar. The department's Communications Research Centre provided the structure and control system hardware (known as DAISY), while UTIAS provided laboratory space, peripheral control computers, and support equipment and instrumentation. The DAISY structure is capable of representing dynamically the behavioral properties of large communications and surveillance antennas.

Native communications in Labrador – Trail Radio

Since 1980, the department has been assisting the Labrador Inuit Association (LIA) to establish a communications system that would enable them to keep in touch with their home bases or other communities during travel to temporary or remote locations. For maximum effectiveness, the Inuit require two systems: a very high frequency (VHF) system, which is reliable but covers only short distances, and a high frequency (HF) system which, though not as reliable, covers long distances without requiring numerous signal repeaters.

During the summer of 1984, the department, in collaboration with the Okâlakatigêt Society, communications affiliate of the LIA, carried out a VHF path test survey, employing a transportable repeater temporarily installed on several mountains along the

An Inuit couple using Trail Radio communications are calling relatives in Nain, Labrador from South Aulatsivik Island, north of Nain.

Labrador north coast. This was Phase 1 of a pilot communications project, funded by the federal and Newfoundland governments, to evaluate VHF as a means of trail radio communications. Phase 2 was to be the installation of a VHF repeater system, which was intended to be operational in conjunction with an HF radio-to-telephone system installed by the department during the summer and fall of 1985, so that the two technologies could be evaluated "side-by-side." Technical holdups prevented installation of the VHF system (now planned for the summer of 1987), but the HF system is operating successfully. The limited field trial has already proven the general usefulness of Trail Radio, allowing fishermen in remote camps to call for supplies, learn of collector boat schedules, and most importantly, relay messages regarding emergency situations.

International Activities

Active participation in the major international communications organizations, and an increase in co-operative agreements ensured a productive year in international matters.

Canada's prominent role in a wide variety of communications-related organizations and international telecommunications activities has done much to raise our profile in the international telecommunications community. During 1985-1986, the department was particularly supportive of the activities of the International Telecommunication Union (ITU). On the cultural side, the department's international activities included initiatives in bilateral relationships, such as film and video co-production agreements. In addition, the year was highlighted with visits by the Minister to other countries as well as visits by foreign dignitaries and officials to Canada.

ITU activities

One of Canada's most important international connections is its relationship with the ITU, a specialized agency of the United Nations. Through its membership of 160 administrations, the ITU co-ordinates the international regulation of telecommunications services throughout the world.

The Department of Communications co-ordinates national positions and represents Canadian interests on two ITU consultative committees, the International Radio Consultative Committee (CCIR) and the International Telegraph and Telephone Consultative Committee (CCITT). As Canada's representatives on these committees, departmental officials play very active roles in contributing expertise, ideas, and development plans to the various sub-committees that carry out the year-to-year work of both the CCITT and the CCIR.

The International Radio Consultative Committee

The CCIR studies technical and operational questions related to specific radiocommunication services. During the year, the CCIR finalized the work of a four-year study cycle. Many new, important recommendations have been developed which will be submitted to its XVIth Plenary Assembly (May 1986) for approval. The implementation of digital technology in radiocommunication services has been of prime importance during this period, in particular, digital radio relay, digital television, digital satellite, digital mobile, etc. In addition, Canada has been actively involved in the studies covering all aspects of high-definition television in an attempt to achieve, at an early date, world standards for this new field.

The CCIR has also been very active in preparing for several ITU World and Regional Administrative Radio Conferences. In particular the CCIR has established a Joint Interim Working Party of Study Groups to prepare for the second session of the Space WARC-ORB(2) which will, among other endeavors, plan the use of national fixed satellite systems in accordance with decisions taken by the first session of the conference in 1985. The CCIR input should be finalized by December 1986.

CCITT activities including preparations for the World Administrative Telegraph and Telephone Conference (WATTC-88)

The CCITT studies technical, operating and tariff issues relating to telegraphy, telephony, data and telematic services. A four-year CCITT study cycle began in 1985. During this period a number of important international telecommunication standards will be developed. The CCITT work program for

this study cycle will affect virtually every aspect of Canadian telecommunications. Thus, Canada will take a leading role in many of these activities. For example, we have assumed the leadership in the development of an international subscriber numbering system applicable to the emerging integrated service digital network (ISDN), as well as the development of a new regulatory framework to cater to the newly evolving telecommunication services.

A special organization has been established nationally to prepare for the WATTC, namely the Canadian Committee/World Administrative Telegraph and Telephone Conference (CC/WATTC). The role of this organization is to recommend to the department positions to be taken at the WATTC in 1988 to protect Canadian interests in international telecommunications.

The Canadian National Organization/CCITT will continue to prepare Canadian positions for the CCITT normal work program.

ITU Administrative Council activities

The Department of Communications is the Canadian representative on the ITU Administrative Council, which meets annually to discuss budgetary, conference, technical co-operation and personnel matters. The major decisions of the 40th session of the Administrative Council (held in Geneva from July 1 to 17, 1985) were the preparation of an agenda for the 1987 World Administrative Radio Conference on mobile radio; the adoption of a "zero real-growth" budget for 1986; the establishment of an International Centre for Telecommunications Development; and the council's endorsement of the general aims of the report of the Independent Commission for Worldwide Telecommunications Development (the Maitland Commission).

Centre for Telecommunications Development

This organization was established during 1985-1986 in response to the recommendations of the ITU's Independent Commission for Worldwide Telecommunications Development. The centre's role is to stimulate the growth of telecommunications in the developing world. Many governments and industries worldwide have actively supported the establishment of the centre by agreeing to contribute to its initial expenses. During 1985-1986, the department contributed $100,000 to the ITU to aid in the implementation of the independent commission's recommendations, particularly the establishment of the centre.

World and Regional Administrative Radio Conference (WARC) activities

To develop administrative regulations that ensure internationally co-ordinated use of the radio frequency spectrum, the ITU convenes administrative radio conferences that focus on specific aspects of spectrum management. In general, on a world or regional basis, these conferences establish mutually acceptable radio regulations and standardized use of certain frequency bands for specific purposes (such as the frequencies to be reserved for distress calls). In addition they deal with issues arising from new technologies, such as orbit locations for satellites.

In August 1985, the ITU convened the first session of a two-session World Administrative Radio Conference to plan the future use of the geostationary-satellite orbit by communications satellites. After lengthy discussions, the conference adopted a dual

planning approach featuring a guaranteed multilateral co-ordination method for the currently used parts of the C (6/4 GHz) and Ku (11-12/14 GHz) frequency bands and an *a priori* frequency/orbit allotment plan for "extension" parts of the C and Ku bands. The detailed procedures for the dual planning method will be developed at the second session of the conference in mid-1988.

Participation in UNESCO

The department formed part of the Canadian delegation to the January 1985 meetings of the Intergovernmental Council for UNESCO's International Program for the Development of Communications. The program provides concrete assistance to developing countries wishing to solve communications problems.

Inter-American Telecommunications Conference (CITEL)

CITEL is the specialized conference of the Organization of American States (OAS) responsible for dealing with telecommunications issues of interest in the western hemisphere.

Although Canada is not a member of the OAS, since 1982 the department has participated as a full member of CITEL. The organization works through three Permanent Technical Committees that meet periodically, mainly to reach common regional positions on matters under consideration in the ITU. Currently, for example, the department is making extensive use of CITEL to gain regional support for the positions Canada is developing for various ITU conferences.

A principal activity to which the department contributed during 1985-1986 was the preparatory work for the regional AM broadcasting conference to be held in April 1986. Consequently, departmental officials participated in a February 1986 meeting in Brazil to co-ordinate preparations for two upcoming MF (medium frequency) and HF (high frequency) broadcasting conferences.

International Telecommunications Satellite (INTELSAT) Organization

The Department of Communications is party to the INTELSAT Convention, and therefore represents Canadian interests at the INTELSAT Assembly of Parties meetings. The Tenth Assembly met in Washington in October 1985 to consider, among other matters, the co-ordination of other space segments within the INTELSAT system, and to prepare INTELSAT's response to the emergence of American satellite networks separate from those of INTELSAT. Three of the assembly's decisions were particularly significant for Canada: to add four United States satellites to the previously co-ordinated use of Canada-United States satellites for transborder services; to adopt a policy on the provision by INTELSAT of "planned domestic services"; and to revise consultation procedures in the assessment of separate satellite systems.

International Marine Satellite (INMARSAT) Organization

As party to the INMARSAT Convention, in October 1985 the department attended the Fourth Session of the INMARSAT Assembly of Parties in London, England. The assembly's two most important decisions were the adoption of amendments to the INMARSAT Convention and Operating Agreement, which will enable INMARSAT to extend its mandate to the provision of aeronautical services, and the development of an international agreement on the use of ship earth-stations in harbors and territorial waters.

Organization for Economic Co-operation and Development (OECD) activities

Follow-up to OECD declaration on transborder data flow

Canadian influence on the OECD work relating to transborder data flow has continued after the department's leadership in drafting and achieving international agreement on the OECD declaration. During 1985-1986, the department's contribution focussed on assessing whether existing trade principles (developed for goods) apply to trade in data-related services. Canada is also continuing to press for the development of "rules of the road" for access to data, information and related services.

The department co-ordinates Canadian input into the broad range of work covered by the Committee for Information, Computer and Communications Policy and its Working Party on Transborder Data Flow. One Canadian initiative led to an OECD report on computer-related crime, to be published during 1986-1987.

Francophone Summit

A highlight in Franco/Canadian relations during 1985-1986 was the Francophone Summit held in Paris during February. The department was one of three Canadian federal departments to take part. The first such meeting of Francophone countries, the summit's interest in communications concentrated on the use of today's communications technologies to extend French language and culture throughout the French-speaking countries of the world.

The departments of communications of Canada and Quebec played a very active role in the summit discussions and initiatives. For example, both governments re-confirmed their interest in taking part in TV5, the French-language programming network that may be expanded to North America. (See the Policy Initiatives section of this report.) A feasibility study is planned to confirm the viability of such an initiative. Among other projects that Canada and Quebec agreed to undertake was the preparation and financing of an international symposium on French-language software that will be held in Montreal in May 1986 (see the Regional Dimensions section of this report). Another initiative was the development of a pilot project in distance learning in many educational fields.

Bilateral activities

Canada/U.S. consultations

In recent years, senior officials representing the telecommunications interests of the Canadian and American governments have been meeting periodically to review outstanding questions and compare notes on multilateral issues affecting both countries. The purpose is to explain policies, positions and background, thus enabling later meetings, at more specific working levels, to concentrate on details requiring further attention. The fourth such conference, which took place in Washington in March 1986, addressed two main issues. The first was Canada's concern about obtaining U.S. agreement on a proposed spectrum allocation for MSAT, Canada's mobile service satellite to be launched in the early 1990s. The second issue was the United States' concern about copyright protection for U.S. broadcasting signals transmitted to Canada. The next consultation is not yet scheduled, but may take place in late 1987.

Preparations for talks on enhanced trade

Throughout 1985, departmental officials prepared analyses on the many complex issues related to culture and communications that might arise from negotiations between Canada and the United States regarding enhanced trade arrangements. Among the areas the department analyzed was the possible impact of negotiations on the development of different Canadian cultural policy objectives, including how enhanced trade agreements would affect the domestic and international markets for Canadian books, records, films, broadcast programming and other cultural products and services. In the broad area of telecommunications, the department studied the potential effects of enhanced trade on Canada's major telecommunications services, telecommunications and informatics equipment manufacturers and services, and software industries.

Telecommunications policy discussions with Japan

In May 1985, the department's deputy minister headed a Canadian delegation to Japan for telecommunications policy discussions on issues of mutual interest. The meetings concluded with an agreement to establish a forum for working-level officials to exchange views on telecommunications policies in general as well as in specific areas such as standards definition, certification procedures and provision of new services. In addition, it was agreed that these meetings should be used to enhance telecommunications trade opportunities and industry development in both countries.

International visits

During the year, the Minister of Communications carried out a number of international visits. Mr. Masse visited the United States a number of times in support of publishing, art and film policy initiatives. In April, the Minister carried out an official visit to Algeria, where he discussed Canada-Algeria co-operation in communications and culture, and to Saudi Arabia where he held talks with his counterpart, the Minister of Posts and Telecommunications, and inaugurated the new Canadian Embassy in Riyadh. In July, Mr. Masse visited the United Kingdom where he signed a film co-production agreement, and France where he held discussions on Canada-France co-operation in communications and cultural matters.

Each year the department receives approximately 40 incoming international delegations seeking to benefit from Canada's vast experience in areas such as telephony, satellite communications, broadcasting, spectrum management and communications research. Some of the most significant visits over the past year were from the United States, Brazil, the 74th Inter-Parliamentary Union, China, Ireland, New Zealand, Western European Union, Finland and Japan.

Cultural initiatives

The department supported or co-sponsored a number of displays of Canadian exhibitions and cultural events in the United States during the year. These included presentation of a complete archival collection of film animator Norman McLaren's works to the Academy of Motion Picture Arts and Sciences in Los Angeles; the exhibition *Canada Collects: Contemporary Sculpture from the Art Bank*, displayed in Washington from October 1985 to January 1986; and Canada Book Week, a conference organized by the Canadian Consulate General that showcased Canadian talent to the U.S. book industry. As part of the support for Book Week, the department underwrote the Canadian advertising for a special issue of *Publishers Weekly* (the major publishing periodical of the North American publishing industry). Because the issue was dedicated to Canadian publishing, the department subsequently provided funding for the repackaging of the issue for use as a marketing tool by Canadian publishers abroad.

Joint cultural commissions

Canada has signed a number of cultural agreements with other nations, under which the participants have agreed to set up bilateral commissions to establish an ongoing official program of cultural and academic exchanges. The meetings are chaired by the Department of External Affairs and include federal departments and agencies and provincial governments with related interests. The Department of Communications contributes to the discussions on culture and heritage issues, as well as providing general direction on Canadian cultural policy interests.

During the year, the department attended meetings of the joint commissions with the Federal Republic of Germany, Italy, the United Kingdom and Belgium.

Co-production agreement with the United Kingdom

During the summer the Minister of Communications travelled to the United Kingdom to sign an exchange of letters with the British Minister of Trade and Industry to expand and amend the Canada/United Kingdom 1975 Feature Film Co-production Agreement to include all forms of co-productions. While in London, the Minister also met with a number of his counterparts and with representatives from the private sector in British communications, the cultural and arts industries to share and exchange views on how similar issues challenging each of the two countries are being met.

Co-production agreements with countries of eastern Europe

Over the years, Canada has entered into a number of bilateral film and video co-production agreements that have led to new production and distribution opportunities for Canada's film and video industry.

These agreements extend to internationally co-produced projects, with the full range of government benefits available to films and videos of each country. During the year, the department finalized co-production agreements with Yugoslavia and Hungary, representing Canada's first such agreements with countries of eastern Europe. China, Ireland and Australia have also indicated interest in negotiating similar agreements.

Co-operation in R & D

The department has negotiated a number of joint research programs with other countries, many of which involve several years in succession of co-operative efforts.

Computer communications standards

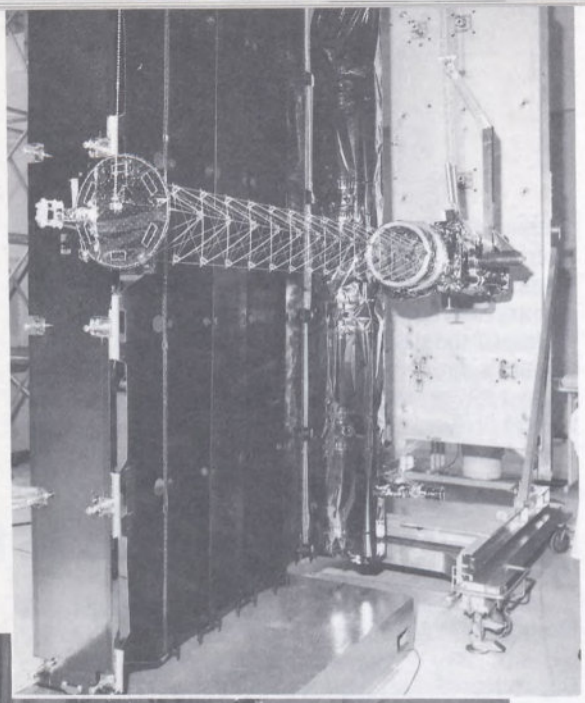
An interconnection of dissimilar computers using OSI (Open Systems Interconnection) protocols in laboratories in Japan, Sweden, the United Kingdom and Canada was successfully demonstrated for the first time during an international workshop at Cambridge University in England, in September 1985.

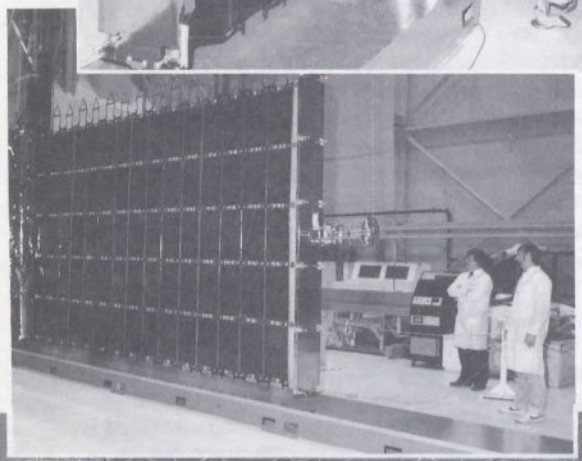
Application of new technologies to education and vocational training and culture

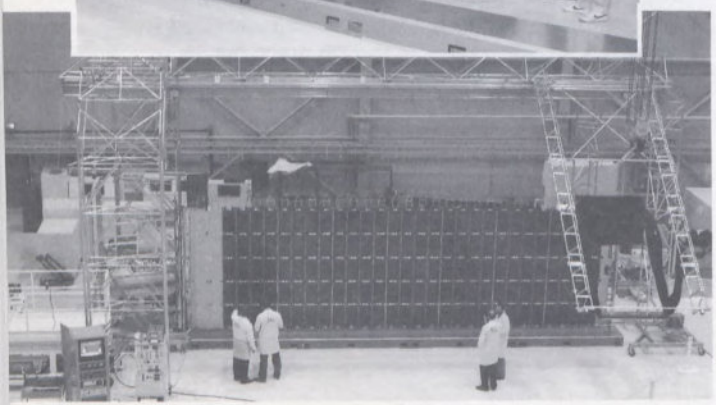
Canada co-leads this project with France; Britain and Italy are also participants. As one of 18 projects that evolved from the Versailles Economic Summit of 1982, this particular project has resulted in several additional ventures. There were significant developments in two of these during 1985-1986. The first, the International Network of Instructional Technology Databases, involves assembling an international database, within each participating country, of all information technologies used in that country. During the year, departmental officials co-ordinated the gathering of material to be included in Canada's database, which will be constituted during 1986-1987 by the National Research Council. The second project, also initiated during 1985-1986, involved familiarizing a community of 1,200 primary- and secondary-level teachers and students in Canada, Great Britain, France and Italy with the possibilities inherent in computer conferencing technologies.

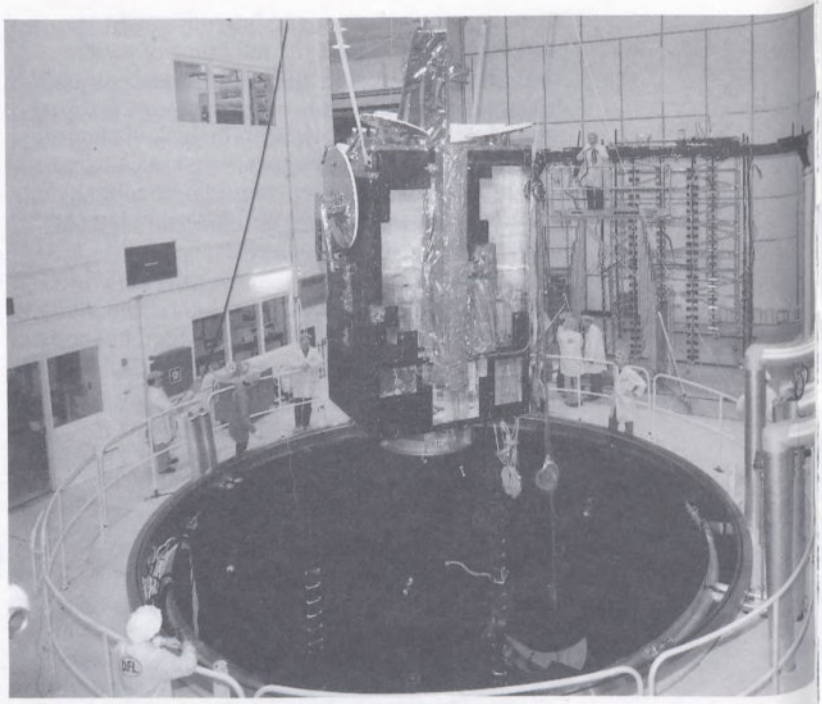
Co-operative satellite projects

Departmental staff participated in five major projects involving international co-operation. Work on Olympus, a joint satellite communications project with the European Space Agency, involved a significant level of environmental testing at the David Florida Laboratory on the solar arrays and on thermal and structural models of the spacecraft. Work on MSAT, a mobile communications satellite project, continued to address the sharing of scarce frequency and orbit resources with the United States. Work on behalf of the Department of Energy, Mines and Resources on Radarsat, a radar remote sensing satellite project, included liaison with the United States and the United Kingdom on various payload items and on modifications to the Olympus bus to satisfy the operational low-earth orbit requirements of the mission.





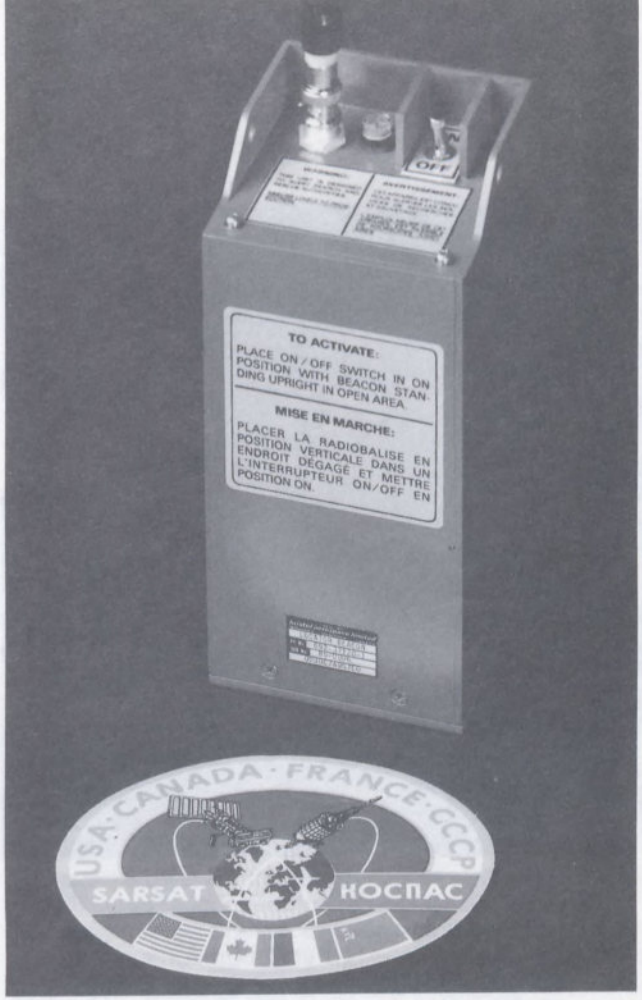




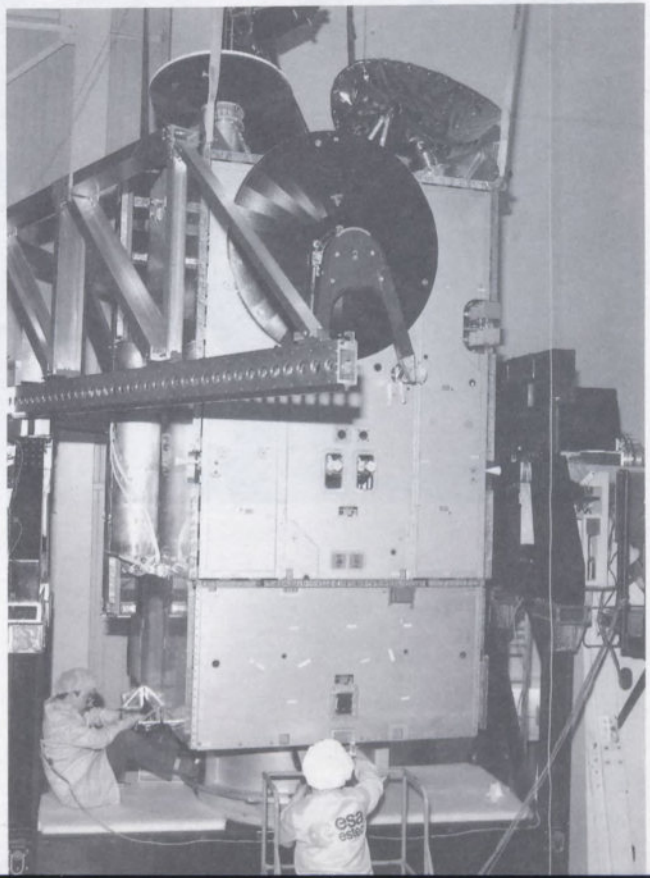
The Olympus spacecraft thermal model entering the 7× 10 metre thermal vacuum chamber for testing.

Testing of the Olympus satellite's huge solar arrays at the Communications Research Centre. Olympus is the largest experimental satellite ever tested in Canada.

Discussions were undertaken with selected member countries of the INMARSAT Organization such as the United States and the Federal Republic of Germany to carry out various mobile technical trials using an INMARSAT satellite. Finally, co-operative activities with Brazil, with funding support from the Canadian International Development Agency (CIDA), included contracts with Canadian industry for a Search and Rescue Satellite (SARSAT) earth terminal and a 12 GHz propagation measurement system for Brazil and various training activities at the Communications Research Centre for Brazilian scientists and engineers.



An emergency locator transmitter (ELT) used with Search and Rescue Satellite (SARSAT) operations.

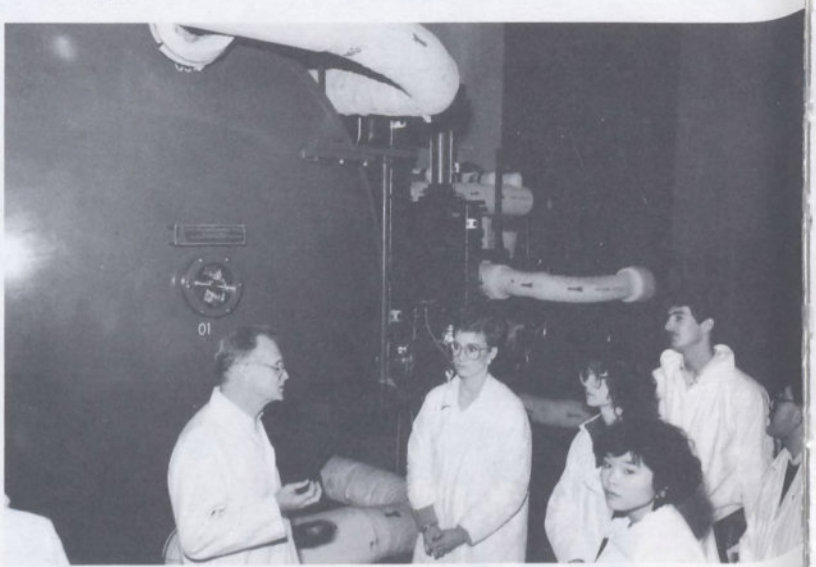


The European Space Agency's Olympus satellite undergoing tests in the David Florida Laboratory at the Communications Research Centre.

In October 1985, the department welcomed a delegation of some 50 young participants taking part in the Youth and Communications Research for Peace project. They are shown here in the department's David Florida Laboratory at the Communications Research Centre.

International Youth Year

In October, the department welcomed a delegation of some 50 young participants taking part in the Youth and Communications Research for Peace project. The visitors, half of whom were from Canada and half from developing or newly industrialized countries, were invited to various events and demonstrations highlighting Canadian communications technology and culture. The department's goal was to increase young people's awareness of communications research and to promote international co-operation in the peaceful use of communications technology.



Research and Development

The year's most significant events related to the implementation of recommendations resulting from the department's 1985 strategic review of its research activities.

The Department of Communications maintains two major research sites: the Communications Research Centre (CRC) at Shirleys Bay, near Ottawa, Ontario, and the Canadian Workplace Automation Research Centre in Laval, Quebec.

Strategic review sets R & D program's role for foreseeable future

During 1985-1986, two significant events took place. The department implemented Phase I of its internal reorganization, integrating the Technology and Industry Sector and the Research Sector, along with the Telecommunications Policy branch of the former Policy Sector, into a new Telecommunications and Technology Sector. Simultaneously, the department announced the goal of the second phase of the reorganization – the determination of a new mission and structure for the department's research and development activities. These changes resulted from the department's strategic review of its past, current and future roles in telecommunications research activities.

From left to right, Rolf Mamen, Director, David Florida Laboratory (DFL); Minister Marcel Masse; and Alain Gourd, Deputy Minister of Communications; at the opening ceremony of the new wing of the DFL which was constructed to accommodate testing of the European Space Agency's Olympus satellite.

David Florida Laboratory

The David Florida Laboratory (DFL), which opened in the early 1970s as part of the CRC to support development of Canada's Hermes satellite, has since played a key role in Canada's space program. During 1985, the department began construction of a new wing to accommodate testing of the European Space Agency's Olympus satellite – the largest experimental satellite ever tested in Canada.

Integration and test activity on the Brasilsat 2 satellite was completed during the year. In December 1985, Spar Aerospace Ltd. shipped Brasilsat 2 from DFL and supported its successful launch on the European Ariane rocket a few months later.

The Olympus spacecraft structural model being tested on the CRC-developed Horizontal Axis Measuring System (HAMS).

Another major achievement in development of testing equipment was the laboratory's successful demonstration of the Horizontal Axis Measurement System (HAMS), equipment developed and built for the DFL at the CRC to determine the mass properties of large spacecraft. HAMS will carry out mass property tests on Olympus during 1987.

Reliable radio communications possible in the High Arctic

Many areas of the North still lack reliable radio communications. Satellite transmissions are available only as far north as Eureka, and ships in the Northwest Passage are still dependent on the intermittent availability of high-frequency shortwave radio transmissions. However, the results of a two-year data collection project completed by the CRC in March 1986 indicate that this may soon change. The $.5 million study was based on the CRC's earlier findings that the drier Arctic atmosphere actually enables the building of longer, more reliable and less expensive radio relay systems than can be built in southern Canada. The Canadian Coast Guard Service, which assisted with the project, has already indicated interest in setting up experimental systems geared to their needs, as has the Department of National Defence. Their involvement could lead to commercial development that can provide the widely scattered native, defence, mining and other High Arctic communities with communications services as reliable, versatile and inexpensive as those in southern Canada.

New developments in Stationary High Altitude Relay Platform (SHARP)

CRC researchers achieved major advances with respect to designs for power efficiency and a rectenna in the project to develop a Stationary High Altitude Relay Platform (SHARP) as an inexpensive alternative to a satellite. The small, pilot-less, microwave-powered aircraft would receive and retransmit radio signals over large areas and could

bring greater communications coverage to countries or businesses unable to afford access to satellites. The National Aeronautics and Space Administration (NASA) has indicated strong interest in a joint program to continue development of the SHARP technology.

Optical communications

The technology of optical communications – which uses delicate filaments of glass (optical fibres) to transmit voice or data information that has been codified into minute pulses of light – has already revolutionized telecommunications around the world. The work of the CRC's researchers in optical communications is driven by three major objectives: applying optics technology to communications and informatics; fostering the growth of optical communications technology in industry and the universities; and contributing to the development of optical communications standards. During 1985-1986, the CRC modelled a new device that features built-in capability for wavelength division multiplexing – that is, providing multiple transmission channels, each on a different wavelength or color of light, over a single fibre strand. Wavelength multiplexing is an economical way to increase the transmission capacity of transmission cables that have already been installed. The new device can be fabricated on a unique computer-controlled jig whose development represents another major accomplishment for the year. The jig will enable industry to produce low-cost, high-performance branching devices for use now and in future subscriber distribution systems. The CRC has made the new multiplexing device and the jig available to Canadian industry through Canadian Patents and Development Limited.

CRC scientist designing high-speed logic circuits for applications in satellite systems.

Mobile satellite communications

The Mobile Satellite (MSAT) Program is designed to use satellite communications technology to bring two-way mobile radio and telephone service to Canadians across the country. During the fiscal year 1985-1986, Cabinet approval was sought as part of the Long Term Space Plan for the implementation of MSAT. The submission was based on a system implementation plan calling for 100 percent capitalization by the private sector. At the same time, the government would allocate funds for user trials and would lease communications services for federal government users. The planned introduction of MSAT services to North America will contribute major social and economic benefits to Canada and Canadian industry.

Microelectronics in communications

The CRC's major advance this year in the methodology of designing monolithic microwave integrated circuits (MMICs), will eventually provide Canada's private-sector suppliers of these essential electronics components with a capability previously unavailable to customers of the Canadian electronics industry. MMICs are much in demand for satellite, fibre optic, microwave and other telecommunications equipment. Through the use of gallium arsenide, they incorporate on a single semiconductor many of the previously separate components essential to the reliable, efficient processing of microwave signals and effective functioning of equipment used in satellite transponders and earth terminal equipment. In addition, many semiconductor processing and circuit design techniques developed by the researchers have great potential for meeting the requirements of military communications systems.

CRC technician aligning photo masks for microwave integrated circuit (MMIC) fabrication.

Assembling microwave integrated circuits (MMICs) at the Communications Research Centre.

This year's most outstanding contribution involved the implementation of a complete design cycle incorporating processes from the initial electrical designs calling for specific circuitry patterns. These patterns are mapped out on the gallium arsenide, resulting in the fabrication of the actual chip, which is then incorporated into test fixtures whose microwave performance is subsequently evaluated. Mastery of these techniques is providing improved insight into MMIC fabrication processes and will help Canadian industry to overcome current problems in working with gallium arsenide foundries.

Research carried out for the Department of National Defence

Throughout 1985-1986, CRC scientists continued working on Department of National Defence (DND) sponsored communications and radar research and development activities on a cost recovery basis. Knowledge gained while supporting DND research is often beneficial to other departmental applications. For example, synthetic aperture radar knowledge gained while performing DND research contributed to the development of the radar satellite and the SHARP projects. (See page 47 and 44.)

Military satellite communications

The objective of this program is the development and maintenance of a technical and scientific capability within Canada to support the Canadian Forces with satellite communications.

CRC scientists developed a breadboard communications signal processing unit for a possible military communications satellite payload. Researchers completed the concept for a basic EHF military satellite communications system and a draft of a Canadian military data link standard. These now form the basis of in-depth studies by Canadian industry.

CRC researchers also completed a study on low elevation-angle signal fading at extremely high frequency (EHF) along a satellite-earth path in the Canadian Arctic. The experimental results confirmed the technical feasibility of EHF satellite communications (SATCOM) in the Canadian Arctic even at elevation angles of less than five degrees. In addition, the scientists undertook the study of the effectiveness of using site diversity to reduce rain outage at EHF. Collection of site diversity data is an ongoing activity.

In addition, the CRC is developing two experimental Anik C 14/12 GHz earth stations, to be evaluated over the next five years for possible military applications.

Military communications technology

CRC researchers provided consultation services and assistance on several specific tasks to various elements of DND on propagation studies, communications systems and technologies studies from extremely low frequency (ELF) to VHF, data networks and optical fibre technology.

Some of the researchers' major accomplishments this year were:

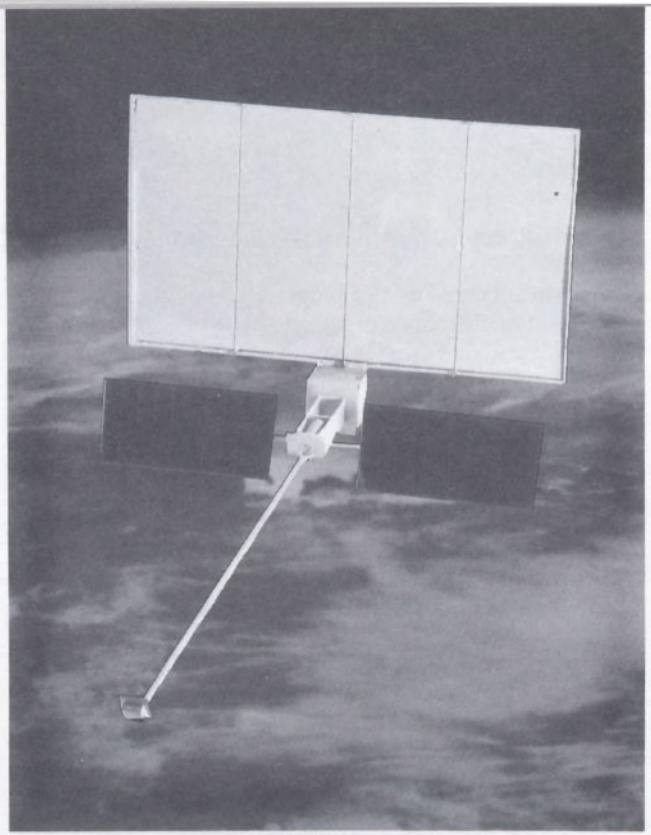
- development of a wideband HF simulator;
- optimization and upgrading of a 4-element-antenna-array interference canceller;
- provision of technical support to the Tactical Command Control and Communications System Program;
- letting out of contracts in support of research on Defence Data Networks;
- successful demonstration to DND of an experimental HF data network link between Carp, Ontario and Penhold, Alberta;
- successful transfer to industry of digital signal processing technology developed under DND.

Radar technology

The objective of the radar technology sub-program is to carry out research and exploratory development to further the technology in areas of interest in DND and to develop a competence in advanced radar techniques. The program emphasizes the use of an advanced antenna array to conduct a long-term research program to investigate operational control, data handling, displays and the design and optimization of programmable electronically scanned array radars. During the year, CRC researchers provided significant contributions to the study of advanced techniques of signal processing applicable to synthetic aperture, phase array and other types of radar systems.

Some of the significant contributions were:

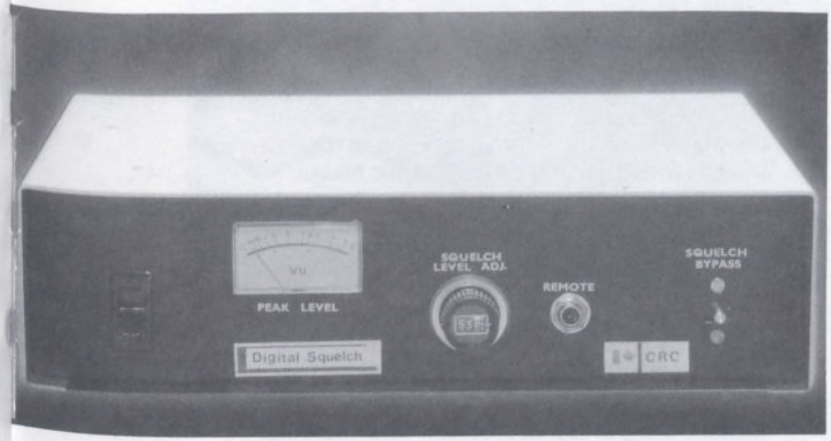
- development of an artificial intelligence-based scheme for ship classification through a contract with London Research and Development;
- development of enhanced wake visibility and detection techniques;
- production of several search and rescue images using the Spotlight Mode radar and confirmation of the feasibility of the Spotlight concept;
- substantial industrial activity resulting from the support provided to the sea skimming missiles tracking project;
- approval from DND for an international project on shuttle imaging radar experiments;
- development of a parametric cost model for space-based radar system;
- completion of preliminary inverse synthetic aperture radar (ISAR) experiments using the adaptive radar;
- completion of an investigation on the displaced phase centre technique;
- provision of technical support to the Space-based Radar Project on a number of contracts including system concept studies, antenna feed studies, a clutter survey, a fault tolerant processor, and mechanical stability of large antennas;
- assistance in the evaluation of several contracts with Marconi on naval radar technologies;
- technical support on a number of DND procurement projects.



Artist's conception of space-based radar.

Technical co-operation and technology transfer

Each year, the department conducts some of its research on a co-operative basis with the universities (see, for example, the description of the DAISY project in the Regional Activities section), and licenses to industry the rights to use processes or adapt and manufacture technologies conceived and developed in CRC laboratories. The following list represents highlights of the co-operative research projects and technologies that the department shared with the private sector during 1985-1986.



In October 1985, the department transferred technology for an electronic squelch circuit for HF radio systems to Skywave Electronics Ltd.

Radio systems: squelch circuits

In October 1985, the CRC transferred technology for an electronic squelch circuit for high-frequency radio systems to the Ontario firm of Skywave Electronics Ltd. The squelch circuit uses inexpensive microprocessor technology to suppress noise accompanying transmissions during periods when no voice is heard. Skywave modified the squelch circuits to suit the specialized needs of DND, and at year-end expected to fill orders from DND for up to 170 units.

Expert systems

The transfer of artificial intelligence technology – a prototype expert system shell, a software knowledge acquisition aid and a knowledge base relating to neuropsychological assessment – has taken place successfully to Interact of Victoria, British Columbia under a National Research Council (NRC) Industrial Research Assistance Program (IRAP) arrangement. The company is carrying out further development which should lead to commercial exploitation of technology for this specialty area.

Linear Predictive Voice Coder

Another highly successful transfer of technology was the Linear Predictive Voice Coder developed at CRC for mobile communications purposes during 1984-1985 and transferred to Skywave in 1985. By February 1986, the company was able to report sales in Canada, the United States and Singapore, and predicted a multi-million dollar market for the coder by the 1990s.

Earth stations

The department works closely with satellite carriers, earth station manufacturers, and potential users, such as other government departments and search-and-rescue agencies, to develop earth station terminals that will meet the specific needs of users. During 1985, for example, the department organized a briefing at which potential users were invited to explain their needs to manufacturers. The CRC develops prototypes of the equipment, loans them to users who identify desirable modifications, then transfers the technology to industry for commercial exploitation. The CRC's co-operative program with British Columbia's Microtel Pacific Research to develop Very Small Aperture Terminals (VSAT) is typical: both Microtel and the federal government are providing some of the development funds for this technology, which will enable two-way data flow on terminals with very small diameter antennas.

This computer program, developed under contract from the CRC, graphically displays in color, temperature profiles enabling scientists to predict the thermal condition of various interior and exterior components of satellites and space structures.

Satellite thermal control

The CRC led the successful development of a comprehensive computer program for the thermal modelling and analysis of large satellites and space structures, enabling scientists to predict the thermal condition of various interior and exterior components of a spacecraft by graphically displaying, in color, their temperature profiles. The computer program, which provides in minutes information that previously took months to analyse, was developed under contract from the CRC by the Quebec firm of Maya Heat Transfer Technologies Ltd. Maya is now successfully marketing the program to several Canadian and American aerospace companies.

Microelectronics

The CRC has been working with Canadian industry to establish a gallium arsenide foundry capability in Canada. This year marked the completion of the first all-Canadian industrial MMICs (monolithic microwave integrated circuits – see page 46), fabricated by Optotek Limited of Ottawa, Ontario, on material provided by British Columbia's Cominco Limited, using a design generated by the CRC.

A second initiative in process during 1985-1986 will assist Canadian industry to establish expertise in working with foundries. Under this program, which received support from DND, researchers and designers from industry will travel to the CRC to take training in MMIC design techniques.

Canadian Workplace Automation Research Centre (CWARC)

The department's newest research facility, the Canadian Workplace Automation Research Centre in Laval, Quebec, opened on November 5, 1985, in the presence of over 300 guests representing Canadian universities, industry and governments.

The establishment of the centre represents a significant step by the department to respond to the needs of users of new workplace automation applications. Its objectives are:

- to provide leadership in applied research into computerized office systems and to foster the development of enhanced productivity in the public and private sectors;
- to identify user needs and contribute to satisfying them;
- to become the focal point of information exchange in the field of workplace automation;
- to foster co-operation between experts and different client groups.

Officials from federal and municipal governments assembled in the video conference room at the opening of the Canadian Workplace Automation Research Centre, Laval, Quebec. Completely designed by employees of the centre, the video conference room is one of the most modern of its kind in North America, offering fully computerized facilities.

The Minister of Communications has formed an Advisory Board to set the centre's priorities. Composed of 15 members from universities, industry and the public sector, the board advises the Senior Assistant Deputy Minister on workplace automation research programs.

One of CWARC's first projects during the year was the setting up of a group of computerized office-systems users from organizations representative of the Canadian economy. At its initial January 1986 meeting, the group discussed issues related to the theme ''Office Automation, Productivity and Standards of Excellence.''

International symposium on workplace automation

The International Symposium on the Impact of New Information Technologies on the Workplace served as a springboard to the opening of the centre. This event, designed to highlight the key contribution that workplace automation makes in the economy and in Canadian society, was co-ordinated by a departmental group that included CWARC in conjunction with the Institute for Research on Public Policy. The symposium brought together about 100 specialists involved in the design, production and management of computerized office systems.

Integrated System for Information Resources

The centre established an Integrated System for Information Resources. The project incorporates two components: a resource centre offering documental, archival and on-line research services, and data banks containing information on a wide variety of topics, including up-to-date listings of experts in the field of workplace automation, of national research projects related to telematics and office automation, and of institutions and organizations involved with workplace automation research.

Computer-assisted translation

Under its advanced-telematics research program, the centre proposed an R & D project for computer-assisted translation. Eventually, this research could provide translators with a set of tools such as automated translation systems based on artificial intelligence techniques and specialized translation systems for particular fields.

Conclusion

The trend towards increased co-operation between the department and its constituents in other levels of government, in the universities, in the arts communities, and in the industrial sector will continue to affect the department's policy development. From the vantage point of 1985-1986, it seems that these constituents will assume increasing responsibility for realizing their goals, through dialogue with the department, and through more active participation in the vehicles that lead to the government's policy development.

In view of this changing environment, it is also reasonable to assume that the department will continue to re-examine its own role in relation to its mandate. Within the next few years, not only will the department's redefinition of its research activities become finalized, but it will undoubtedly carefully reconsider its approach to all other areas under its purvue: telecommunications and spectrum management, international relations, and arts and culture.

While these trends pose many questions that may take considerable time to answer, one aspect of the department's future is certain: the challenges will be as exciting as at any other time in the department's past, and the rewards of meeting them will be even greater than before.

Feature Article

The radio frequency spectrum – a priceless resource

An emergency locator transmitter aboard a jetliner downed at sea directs a search and rescue team to the crash site. A two-way radio enables a crane operator 10 stories above a construction site, to manoeuvre a ton of steel beam with safety and precision. A satellite and microwave network brings big-city television choice to a remote community of 300 homes. Amateur radio operators re-establish contact with the world as a village emerges from an earthquake that has destroyed its communication system. A paging system signals the availability of a kidney to a patient who awaits a lifesaving operation. A cellular telephone enables a salesman to satisfy one customer while driving across town to serve another. Police cruisers are diverted by a radio message from their routine to respond to the report of a highway accident. They radio back for additional ambulance support.

The use and value of radio communication, in both economic and social terms, is manifest daily, contributing to the defence of our borders, protecting and enriching our lives, saving us time and energy, expanding our community and increasing our effectiveness. Close to 1.1 million licensed radio stations now operate in Canada in a virtually interference-free environment alongside some 2,800 TV and radio stations.

Use of the radio frequency spectrum has made ours a truly mobile and interconnected society. Across oceans, over mountains, throughout the hearts of our cities and into our northern frontier, radio allows immediate, two-way communication carrying voice, data and video signals across Canada and around the world.

Spectrum management

The radio spectrum is a truly international resource, for its waves respect no national boundaries. It is also a finite resource that must be managed carefully to meet both the current and future needs of all Canadians. This is the job of the Department of Communications. Respecting both domestic and international radio regulations, the department manages access to and use of the spectrum with the aim of accommodating as many users and encouraging as many uses as possible with a minimum of interference.

The spectrum management effort serves the public interest and consists of many elements – international negotiation to secure adequate and appropriate spectrum for Canadian use, planning the availability and effective use of frequencies through engineering studies and research, certification of both radio equipment and operators to ensure acceptable standards, co-ordinating and assigning frequencies, licensing users, enforcing provisions that protect those licensed users and investigating and resolving interference. Our proximity to the United States demands a particular effort of co-ordination between the two countries to ensure interference-free operation along and across our border.

Absence of the planning, rules, and procedures that make up this co-ordinated effort would bring chaos to the airwaves just as surely as bedlam would visit the airways in the absence of air-traffic controls.

Computers have been essential to the enhanced productivity necessary to deal with greater workloads and increased complexity as the spectrum becomes more crowded. Successful application of computer technology is evidenced by the fact that, while the number of licensed stations has more than doubled in the past 10 years, the number of departmental staff who manage these frequencies has remained constant.

As a result of a recent restructuring of radio station licence fees, the cost of this effort is now fully supported by fees paid by the owners and operators of the close to 1.1 million stations in all parts of Canada.

The department will be faced with even greater challenges in the future in its response to pressures from the communications community to expand the uses made of the radio frequency spectrum, uses that will allow the convergence of a multitude of technologies, a goal towards which our scientists and entrepreneurs continually strive. Such a convergence will further break down the economic, technological and cultural barriers, thus greatly enhancing the accessibility to the radio frequency spectrum by all Canadians.

It is with pride in our accomplishments and confidence in our abilities that we prepare to meet these challenges and others as yet unimagined.

Appendix I

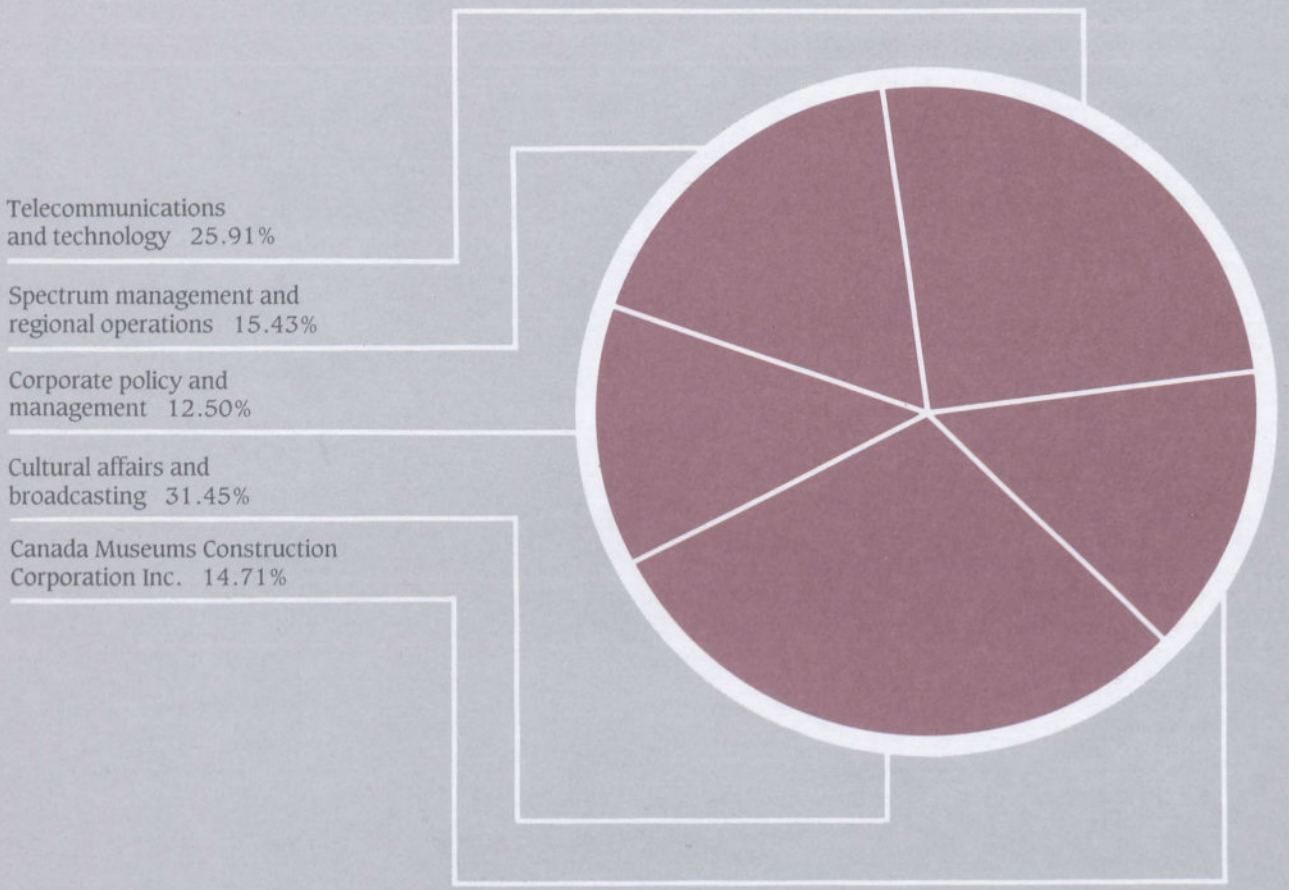
Expenditures by activity 1985-1986 (in thousands of dollars)

	Operating	Capital	Transfer payments	Total
Communications and Culture Program				
Telecommunications and technology	47,639	18,786	15,471	81,896
Spectrum management and regional operations	46,847	1,894	25	48,766
Corporate policy and management	35,470	1,186	2,840	39,496
Cultural affairs and broadcasting	65,906	10	33,487	99,403
Canada Museums Construction Corporation Inc.	46,500			46,500
	242,362	21,876	51,823	316,061
Less: Revenues credited to vote	6,310			6,310
	236,052	21,876	51,823	309,751
Add: Accommodation provided without charge by this department	3,915			3,915
Accommodation provided without charge by Public Works Canada	7,990			7,990
Other services provided without charge by other departments	1,890			1,890
Total cost of program	249,847	21,876	51,823	323,546
Communications Program – Government Telecommunications Agency Revolving Fund				
Planning and co-ordination	1,598			1,598
Management and administration	9,439	155		9,594
Operating	128,379	722		129,101
	139,416	877		140,293
Less: Receipts credited to the fund	140,521			140,521
	(1,105)	877		(228)
Total cost of program	248,742	22,753	51,823	323,318

Source: Public Accounts of Canada, 1985-1986

Appendix II

Total expenditures by activity 1985-1986 (excluding the Government Telecommunications Agency)



Source: Department of Communications

Appendix III

Government Telecommunications Agency Revolving Fund – Statement of operations for the year ended March 31, 1986

	1986 $	1985 $
Revenue		
Telecommunications services		
Intercity	66,250,766	64,392,273
Customized	63,278,529	58,751,025
Data	6,055,111	5,116,881
Local	4,566,582	5,795,363
Directory	728,419	776,506
Other network services	24,829	122,962
Other revenues	2,704	2,922
Total	**140,906,940**	**134,957,932**
Expenses		
Operating		
Customized	62,157,461	58,238,221
Intercity	56,952,286	55,911,262
Data	4,928,680	4,969,435
Local	3,683,437	3,457,873
Directory	484,322	503,034
Other network services	14,528	51,713
	128,220,714	**123,131,538**
Planning and co-ordination		
Salaries	1,438,056	1,250,862
Termination benefits	6,509	17,169
Professional services	70,396	81,741
Rental building and equipment	59,025	38,325
Travel	15,083	19,679
Other	9,992	
Repairs	9,772	15,655
Telephone and freight	7,103	2,070
Information	4,658	11,097
Office materials and supplies	815	4,579
	1,621,409	**1,441,177**

(cont'd)

Appendix III (cont'd)

Management and administration		
Salaries	7,021,840	6,432,723
Termination benefits	167,635	182,703
Rental building and equipment	1,000,724	956,241
Professional services	828,702	452,763
Telephone and freight	237,043	246,938
Information	154,685	103,713
Travel	144,997	166,987
Depreciation	108,638	94,760
Office materials and supplies	99,292	73,896
Repairs	70,080	61,902
Other	7,928	15,988
Loss on disposal of fixed assets	172	1,251
	9,841,736	8,789,865
Interest charges on the Revolving Fund	429,437	925,707
Total Expenses	140,113,296	134,288,287
Net profit (loss)	793,644	669,645

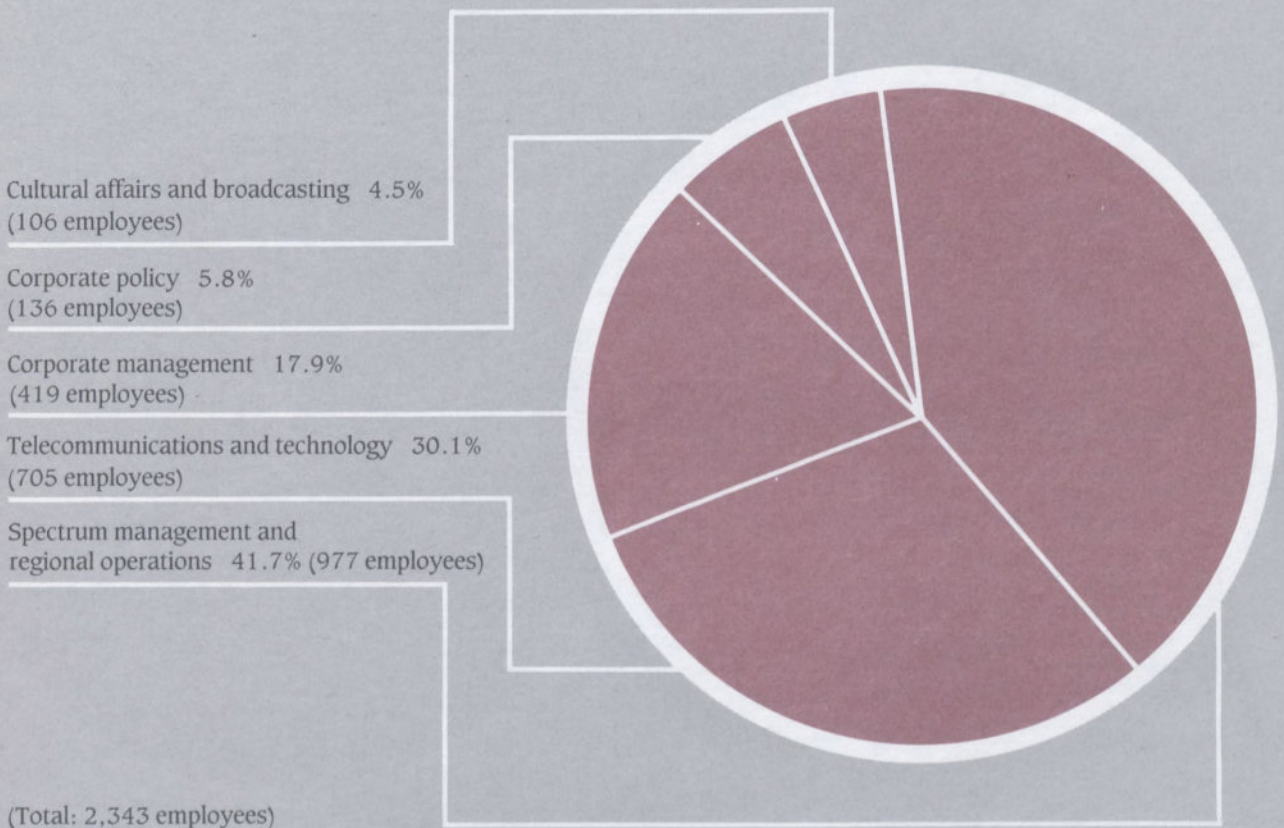
Purpose and authority

The Government Telecommunications Agency Revolving Fund was originally established in 1963 to plan and provide telecommunications facilities and services at the request of federal departments and agencies. Section 23 of the Adjustment of Accounts Act authorized the Minister to make payments out of the Consolidated Revenue Fund for working capital, capital equipment and temporary financing of operating requirements, the total of which was not to exceed $8,000,000 at any time. This authority was increased to $12,000,000 by Appropriation Act No. 4, 1981-1982 and to $15,000,000 by Appropriation Act No. 4, 1983-1984 and to $19,000,000 by Appropriation Act No. 4, 1984-1985. In accordance with Vote 2c, Appropriation Act No. 4, 1982-1983, an amount of $1,485,822 was credited to the Fund for a payment to Bell Canada for a terminated contract. An amount of $741,781 representing net assets assumed by the Fund and assets contributed to the Fund was charged against this authority when the Fund became Budgetary in 1981.

Source: Public Accounts of Canada, 1985-1986

Appendix IV

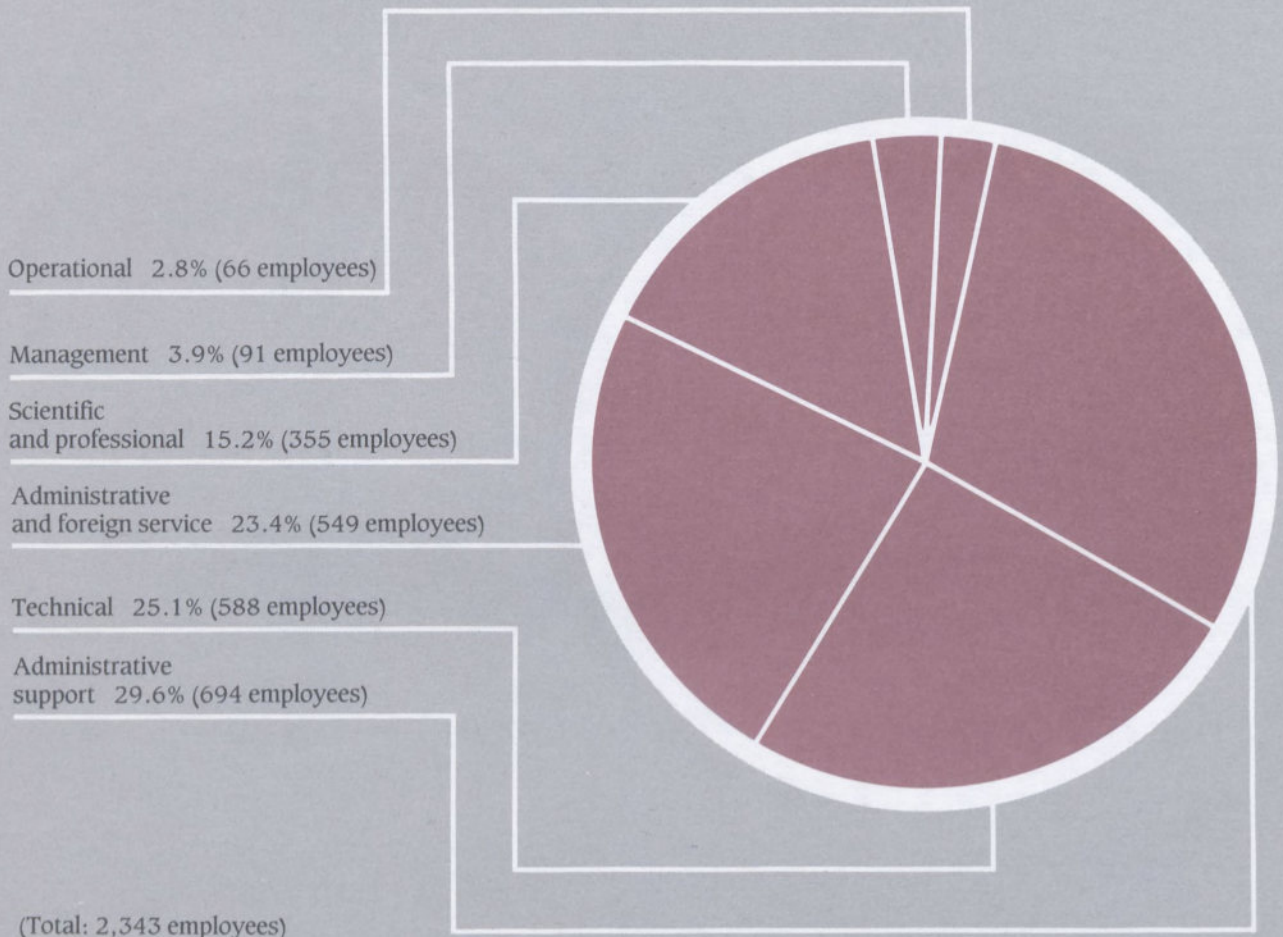
Departmental employees by activity, 1985-1986 (as of March 31, 1986)



Source: Department of Communications

Appendix V

Distribution of employees by employment category (as of March 31, 1986)



Source: Department of Communications

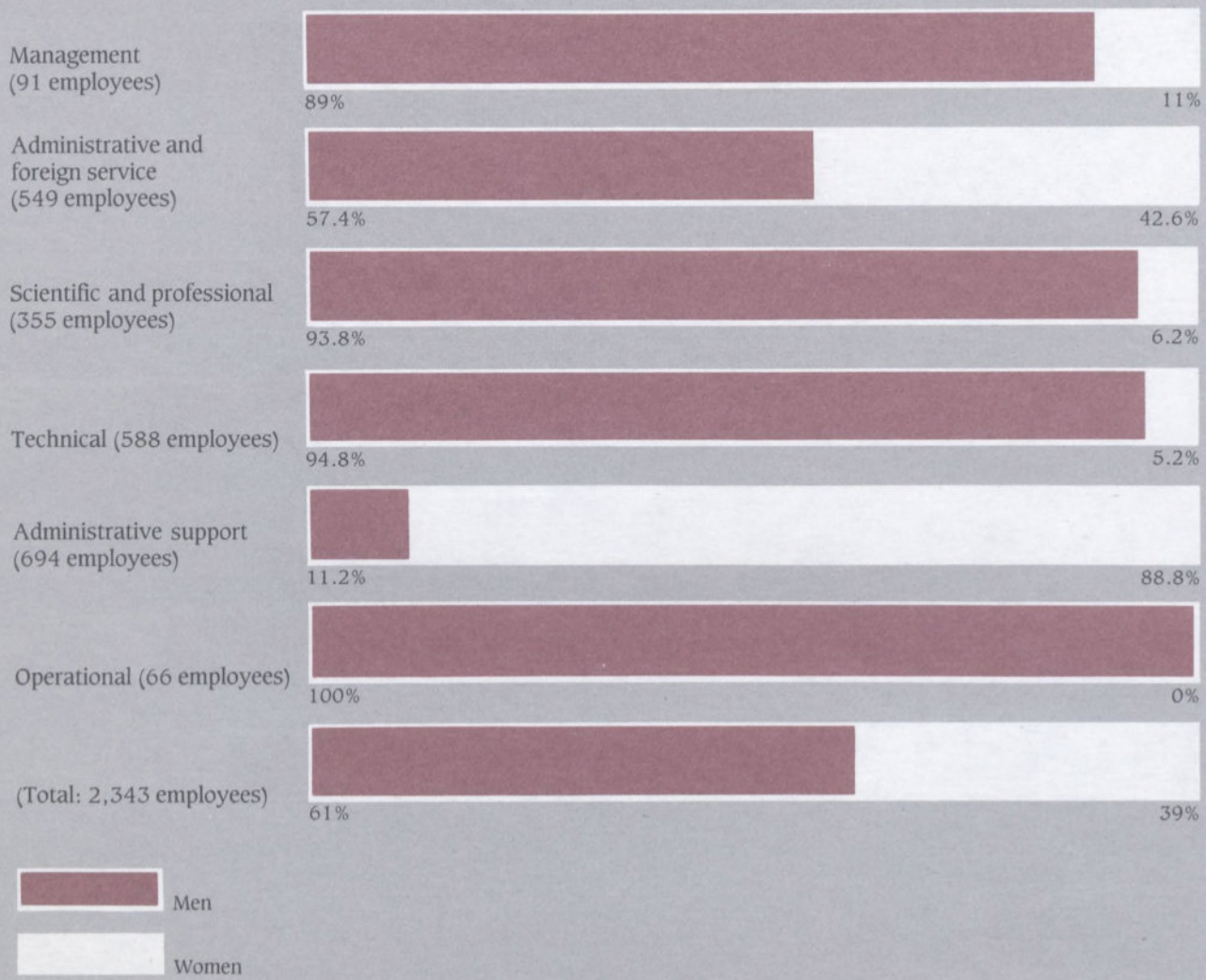
Appendix VI

Distribution of employees by employment and first official language (as of March 31, 1986)

Source: Department of Communications

Appendix VII

Distribution of employees by employment category and sex (as of March 31, 1986)



Source: Department of Communications

Appendix VIII

Acts under which the Minister of Communications has responsibility

The Department of Communications Act
The Telegraphs Act
The Canadian Radio-television and Telecommunications Commission Act
The National Transportation Act
The Telesat Canada Act
The Radio Act
The Railway Act
The Broadcasting Act
The Canada Council Act
The Canadian Film Development Corporation Act
The Cultural Property Export and Import Act
The National Arts Centre Act
The National Film Act
The National Library Act
The National Library Act
The National Museums Act
The Public Archives Act

Appendix IX

Addresses of regional and district offices of the Department of Communications

Atlantic Region

Regional Office
Department of Communications
Terminal Plaza Building
7th Floor
1222 Main Street
P.O. Box 5090
MONCTON, N.B.
E1C 8R2

District Offices

New Brunswick
Department of Communications
Customs Building
Room 337
189 Prince William Street
P.O. Box 7285, Stn. A
SAINT JOHN, N.B.
E2L 4S6

Nova Scotia
Department of Communications
9th Floor
6009 Quinpool Road
HALIFAX, N.S.
B3K 5J7

Prince Edward Island
Department of Communications
Dominion Building
3rd Floor
97 Queen Street
CHARLOTTETOWN, P.E.I.
C1A 4A9

Newfoundland
Department of Communications
Sir Humphrey Gilbert Building
Room 612
Duckworth Street
P.O. Box 5277
ST. JOHN'S, Nfld.
A1C 5W1

Quebec Region

Regional Office
Department of Communications
295 St. Paul Street East
MONTREAL, Que.
H2Y 1H1

District Offices

Department of Communications
Suite 436
2 Place Québec
QUEBEC, Que.
G1R 2B5

Department of Communications
Room 401
1650 King Street West
SHERBROOKE, Que.
J1J 2C3

Department of Communications
Guy Favreau Complex
Room 1214
200 Dorchester Blvd. West
East Tower
MONTREAL, Que.
H2Z 1X4

Department of Communications
2nd Floor
942 Chabanel Street
CHICOUTIMI, Que.
G7H 5W2

Department of Communications
Room 206
140 St. Germain Street West
RIMOUSKI, Que.
G5L 4B5

Ontario Region

Regional Office
Department of Communications
9th Floor
55 St. Clair Avenue East
TORONTO, Ont.
M4T 1M2

District Offices

Department of Communications
5th Floor
30 Duke Street West
KITCHENER, Ont.
N2H 3W5

Department of Communications
9th Floor
55 St. Clair Avenue East
TORONTO, Ont.
M4T 1M2

Department of Communications
Trebla Building
Room 100B
473 Albert Street
OTTAWA, Ont.
K1R 5B4

Department of Communications
Room 210
135 James Street South
HAMILTON, Ont.
L8P 2Z6

Department of Communications
Room 1112
451 Talbot Street
LONDON, Ont.
N6A 5C9

Department of Communications
3rd Floor, Suite 2
280 Pinnacle Street
P.O. Box 380
BELLEVILLE, Ont.
K8N 5A5

Department of Communications
Station Tower
2nd Floor
421 Bay Street
P.O. Box 727
SAULT STE. MARIE, Ont.
P6A 5N3

Central Region

Regional Office
Department of Communications
Room 200
386 Broadway Avenue
WINNIPEG, Man.
R3C 3Y9

District Offices

Manitoba
Department of Communications
Room 200
386 Broadway Avenue
WINNIPEG, Man.
R3C 3Y9

Saskatchewan
Department of Communications
206 Circle Drive East
SASKATOON, Sask.
S7K 0T5

Department of Communications
Room 101
2101 Scarth Street
REGINA, Sask.
S4P 2H9

Alberta
Department of Communications
Liberty Building
10th Floor
10506 Jasper Avenue
EDMONTON, Alta.
T5J 2W9

Department of Communications
Room 820
220 4th Avenue S.E.
P.O. Box 2905, Station M
CALGARY, Alta.
T2P 2M7

Department of Communications
8th Floor
9909 – 102nd Street
GRANDE PRAIRIE, Alta.
T8V 2V4

Northwest Territories
Department of Communications
Precambrian Building
10th Floor
P.O. Box 2700
YELLOWKNIFE, N.W.T.
X1A 2R1

Pacific Region

Regional Office
Department of Communications
Suite 1700
800 Burrard Street
VANCOUVER, B.C.
V6Z 2J7

District Offices

British Columbia
Department of Communications
Room 224
816 Government Street
VICTORIA, B.C.
V8W 1W9

Department of Communications
Federal Building
Room 304
471 Queensway Avenue
KELOWNA, B.C.
V1Y 6S5

Department of Communications
Room 583
309 2nd Avenue West
PRINCE RUPERT, B.C.
V8J 3T1

Department of Communications
Suite 1700
800 Burrard Street
P.O. Box 1700
VANCOUVER, B.C.
V6Z 2J7

Department of Communications
Vancouver District Office
Surrey Site
P.O. Box 3396
LANGLEY, B.C.
V3A 4R7

Department of Communications
707 – 299 Victoria Street
PRINCE GEORGE, B.C.
V2L 5B8

Department of Communications
Room 101
125 10th Avenue South
CRANBROOK, B.C.
V1C 2N1

Yukon District
Department of Communications
Polaris Bulding
Room 201
4133 4th Avenue
WHITEHORSE, Y.T.
Y1A 1H8