COMMUNICATIONS

Annual Report 86/87

Communications Canada

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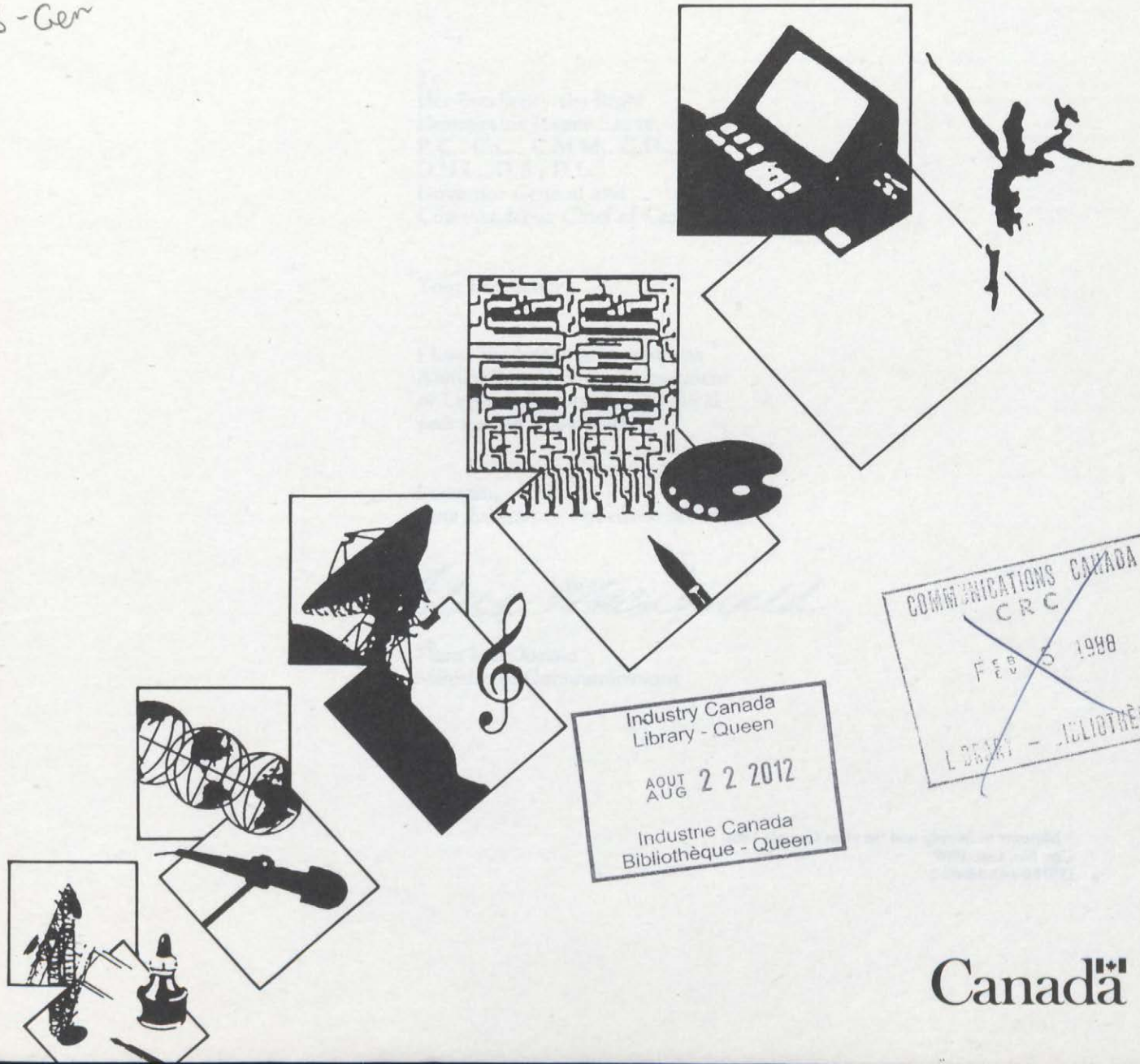

Canada

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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 honor to present the
Annual Report of the Department
of Communications for the fiscal
year ending March 1987.

I remain,
Your Excellency's obedient servant,

Flora MacDonald
Minister of Communications

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The Communications and Culture Portfolio

Managing the Department in an era of change

The word "communications" has come to have different meanings to different people. To the writer, artist or performer, it describes the act of interpreting an idea, or presenting a symbolic message to the public. To the scientist, it evokes visions of pioneering technologies for transmitting information. To the entrepreneur, it suggests equipment to make business more efficient — computers, facsimile machines, satellites and the like.

The Communications and Culture Portfolio encompasses all aspects of "communication." In accepting the Portfolio, the Minister of Communications becomes responsible for Communications Canada and nine agencies and Crown corporations — the Canada Council, the Canadian Broadcasting Corporation, Telefilm Canada, the Canadian Radio-television and Telecommunications Commission, the National Arts Centre, the National Film Board, the National Library, the National Museums and the Public Archives. Each of these deals with a different aspect of communication as it affects Canadians.

Communications Canada

By design, the Department is responsible for developing policies and programs that deal with both technological and artistic aspects of communication: the medium **and** the message. This has been the case since 1980, the year responsibility for cultural policy was transferred from the Secretary of State to Communications Canada. The move marked the government's recognition that emerging developments in communications technologies would soon result in new ways for artists to reach their audiences, thereby precipitating a convergence of cultural and technological products.

In fact, this process is already well underway. Technologies that reached maturity in the 1970s, such as satellites and video recorders, have made subscriber television services and home entertainment videos almost a routine item on Canadians' entertainment budgets. The day is near when emerging interactive home computer and compact disc systems, in conjunction with Integrated Services Digital Networks (ISDNs) and a range of other advanced transmission technologies will transfer "business" technologies such as electronic mail to the living rooms of the nation.

These fast-moving developments require a comprehensive and co-ordinated approach to the policies that will guide how Canada implements this process. The policy makers and administrators who plan Canada's long-term culture and communications goals must be aware of how their plans will affect each other's spheres.

The department's mandate is well suited to this task. Its two main objectives are:

- to develop suitable policies, programs and co-operative arrangements for achieving Canada's social and economic objectives for communications and culture; and
- to foster the orderly development and operation of communications and culture for Canada, both domestically and internationally.

The department's activities are remarkably diverse. It administers two major laboratories, the Communications Research Centre (CRC) and the Canadian Workplace Automation Research Centre (CWARC), which carry out research and development of new telecommunications, space and information technologies. The Department also develops and implements policies for Canada's telecommunications and broadcasting industries and allocates and manages the radio frequency spectrum. Through its Government Telecommunications Agency (GTA), it plans, co-ordinates and manages the federal government's shared and customized telecommunications network — the largest and most advanced dedicated telecommunications network in Canada. It supports Canada's high-technology industry with activities such as transfer of technology developed in the department's laboratories and large-scale government/industry field trials. The Department also develops national cultural policies and implements a range of support programs for Canada's artistic, heritage, film, sound recording and publishing industries.

The Canada Council

The art community's friend in government, the Canada Council is the principal agency for government support to the arts at the federal level. Operating as a completely independent agency, the Council encourages the development of the arts and fosters their enjoyment by Canadians through a variety of funding programs. The Council provides both ongoing operating support for arts organizations and project grants for organizations and individual artists. Grants are, for the most part, determined by peer juries and the administration of all programs are guided by advisory panels drawn from the professional arts community. In addition, the Council co-ordinates Canada's participation in UNESCO activities.

The Canadian Broadcasting Corporation (CBC)

Probably the most well known of the nine Crown corporations and agencies within the Communications and Culture Portfolio, the CBC links Canadians everywhere with national radio and television broadcasting services. Predominantly Canadian in content and character, the Corporation plays a significant role (while meeting a statutory requirement) in safeguarding, enriching and strengthening the cultural, political, social and economic fabric of Canada.

Telefilm Canada

Recent international acclaim for Canada's film and television productions have focussed Canadians' pride on their rapidly evolving film production industry. Telefilm Canada fosters the growth of independent film and television programming in all regions of Canada by helping to finance the development, production, promotion

and distribution of Canadian motion pictures, television productions and videotapes. It also promotes the industry at major film festivals in Canada and abroad, and administers Communications Canada's Canadian Broadcast Program Development Fund.

The Canadian Radio-television and Telecommunications Commission (CRTC)

The *Broadcasting Act* empowers the CRTC to regulate and supervise all aspects of Canada's broadcasting system including such concerns as Canadian content, extension of services, cable service, and native and ethnic programming. The CRTC also renews and imposes conditions for renewal, amendment, suspension or revocation of a broadcasting licence.

In the area of telecommunications, how much Canadians pay for telecommunications services, how good that service is and how many suppliers they may choose to purchase services from are all regulated by the CRTC. These activities ensure Canadians that they will continue to enjoy a telecommunications service admired around the world.

The Decline of the American Empire, *a film by Denys Arcand won international acclaim. (Photo courtesy of Telefilm Canada.)*

The National Arts Centre (NAC)

The best performers in the entertainment world, along with Canada's own leading entertainers, come to the nation's capital to perform on the stages that comprise the National Arts Centre's three performance halls: The Opera, The Theatre and The Studio. A typical evening's choices of entertainment may include a performance of a full-length classical ballet or a variety of modern dance theatre pieces; the National Arts Centre Orchestra playing selections from Beethoven, Gershwin and Canadian composer Istvan Anhalt; or an Anne Murray concert. However, Canadians don't have to come to the NAC to enjoy a performance; the NAC arranges for many productions to be broadcast over radio and television by the CBC. It also sponsors concerts, drama and other attractions in the National Capital Region, across Canada and abroad.

In February 1987, Gabriel Chmura was appointed Music Director of the National Arts Centre Orchestra. (Photo courtesy of the National Arts Centre.)

The National Film Board (NFB)

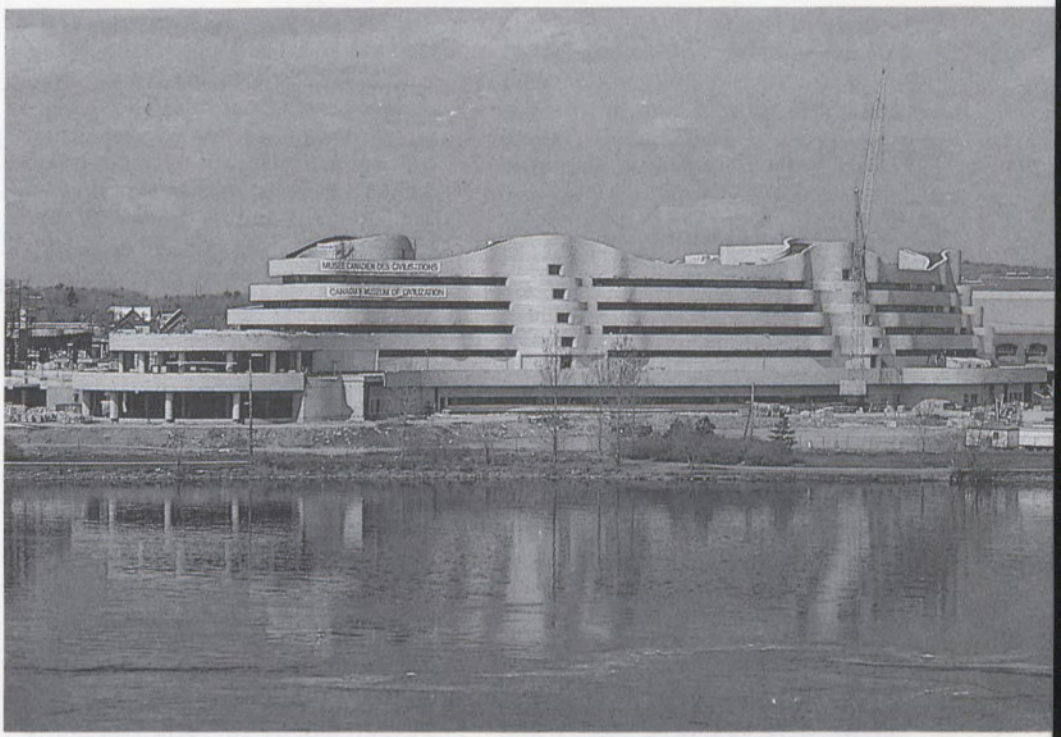
Applauded internationally for its innovative approach to filmmaking since its formation in 1939, the NFB has played a pivotal role in the development of many of Canada's most outstanding directors and producers. One of the Film Board's primary goals has been the production of films in the public interest, such as *If you love this planet*, thereby meeting needs unlikely to be served by commercial production. Another goal is to advance the art and technology of audio-visual communications by conducting technical research and development projects. The vigor and high level of Canadian expertise in today's film industry is attributable to the success of the research and development projects undertaken by the NFB over the years which in turn has encouraged the development of Canadian artistic and technical skills.

The National Library of Canada

Although its comprehensive collection of Canadiana is housed in Ottawa (a collection which comprises not only books but all other forms of publication, including sound recordings), the National Library is turning to up-to-the-minute communications technology to give Canadians in every part of Canada access to both its own and other Canadian libraries' resources. The Library has been introducing videodisc, on-line systems and other forms of microform technology to coordinate a national and international library bibliographic and interlibrary loan network that brings Canadians equitable access to the collections of Canada's provincial, municipal and university-sponsored libraries. As part of its goal of promoting awareness of Canadian literary heritage, the Library also presents exhibitions and special events designed to support Canadian studies and familiarize Canadians with the cultures of other countries.

The National Museums of Canada

Canadians of all ages and in many locations can enjoy the special exhibitions and programs arranged by the National Museum Corporation through its national museums in Ottawa (the National Gallery of Canada, the National Museum of Natural Sciences, the Canadian Museum of Civilization, the Canadian War Museum, the National Museum of Science and Technology and the National Aviation Museum) and through a network of museums and galleries across the country. The Corporation also provides technical and financial assistance to hundreds of galleries, museums and related institutions. Its Canadian Conservation Institute offers conservation and restoration services, research, training and information throughout Canada. Other services include a computerized inventory of museum objects — the Canadian Heritage Information Network available to 150 member-institutions — as well as an international exhibition exchange program.



The new Canadian Museum of Civilization under construction in Hull, Quebec. (Photo courtesy of VCI Controls Inc.)

The Public Archives of Canada

The oldest of all of Canada's cultural agencies, the Public Archives was established in 1872 to serve as the collective memory of our nation and the official respository of all records originating in the departments of the federal government. Its prodigious collection of archival material relating to Canadian life is available not only to scholars and professional researchers, but also to the general public. As another avenue for sharing this wealth of heritage material with the public, the Public Archives organizes exhibitions and displays in Ottawa and across the country.

Portfolio challenges faced by the Department in 1986-1987

Many successes marked the department's portfolio priorities for 1986-1987:

- Both the cultural and the technological interests that the Communications Portfolio seeks to promote gained tremendous national and international recognition and marketing exposure from the spectacularly successful EXPO 86, held in Vancouver from May to mid-October. As one of the two sponsoring departments sharing the EXPO theme, Transportation and Communications, the Department was able to showcase "Canada's best" in cultural products and programs as well as in the latest communications technologies. (For more details see page 52.)
- Cultural agencies such as the Canada Council and Telefilm Canada, along with a variety of cultural programs, received additional funding — the government's acknowledgement that cultural activities are a sound investment to broaden and enrich our lives as Canadians and to strengthen the social fabric of our Canadian cultural mosaic. This recognition is a view that Communications Canada has worked long and hard to promote.
- Many of the department's efforts to improve the economic prospects of Canada's artists, writers and performers came to fruition during the year. Examples include the government's new policy on payment for public use (through lending libraries) of author's works, the additional funding support built into the new sound recording and dubbing programs, and the new film distribution policy. The latter two initiatives will do much to improve the cultural marketplace by strengthening the industries that employ creators.

These achievements represent challenges well met. The Department considers them all the more successful because they were accomplished within the confines of its own particular challenge: managing its portfolio-related activities during a period of fiscal restraint. In response to the 1985 government-wide departmental fiscal reviews undertaken by the Nielsen Task Force, as well as its own task forces on a variety of communications and cultural issues, the Department has in recent years concentrated much attention to increasing the effectiveness of its operations while reducing its expenditures.

In June of 1986 the Honourable Flora MacDonald became the Minister of Communications taking over the responsibility of the Communications and Culture Portfolio from her colleague the Honourable Marcel Masse.

Communications Minister Flora MacDonald during a visit to the Communications Research Centre, Shirleys Bay.

By the end of the fiscal year under review, 1986-1987, the re-ordering of priorities that resulted from the extensive consultation and investigation of the two previous fiscal years enabled the Department to act upon new and fundamental initiatives.

In the cultural area, for example, the Department was able, through reducing costs in administration, to free additional funds for the use of cultural agencies and for culture-related initiatives.

Basic to many of the department's achievements within its own house was the major reorganization completed during the year. Its objectives were twofold: first, to consolidate and rationalize departmental programs and activities, and to clarify the responsibilities of all of the department's Assistant Deputy Ministers; second, to implement the recommendations of not only the Comptroller General's study of the Department, but also the results of several of the department's own policy reviews and assessments.

The internal issues the Department addressed included:

- the effect on the Department of the government's public-service-wide policy to reduce the size of its work force;
- the need for internal departmental reorganization;
- the need for improved management practices; and
- the need to meet quality-of-service goals.

A great deal of progress was made on these issues. For example, the government's commitment to reduction of departmental work forces without sacrificing service to the public stimulated the department's sectors to reorganize within their own boundaries as well. Thus, the new Corporate Management Sector brought together all corporate support services (Finance, Personnel, Administration, Informatics and Security). This consolidation simplified procedures and improved the level and quality of services while maintaining a sound management system.

While a significant reduction in person-years was achieved through attrition, a new program has also been instituted as a means of avoiding layoffs. Its main purpose is to provide career counselling to vulnerable employees and to relocate them to other positions where they can continue to be an asset to the Department. In doing so, the Department remained true to its commitment to minimize the effects on employees affected by work force reduction measures. A work force adjustment plan was developed that called for a reduction of 208 person-years over a five-year period. The plan represents a reduction of 8.7 percent beginning with 84 person-years in fiscal 1986-1987, followed by 23 person-years in 1987-1988; 34 in both 1988-1989 and 1989-1990, and finally 33 in 1990-1991.

This annual report makes note of a number of the department's success stories related to improved service to the public. Many of these have been achieved through implementation of computer-assisted systems that increase efficiency. In the area of satellite and microwave licensing, for example, the Department can now process twice the number of licences with no increase in staff. Many other measures, most involving streamlining of administrative policies and procedures, added to the department's total accomplishments in the area of improved service.

Viewed as a whole, fiscal 1986-1987 has been a year of challenge, of change, and of satisfaction. The challenges and changes came from many sources: from the exciting and rapidly evolving developments in communications technologies; from the issues created by the coming of age of so many of Canada's cultural industries; and from the continuing need to serve departmental clients well while reducing administrative expenses.

The satisfaction comes from knowing that the challenges and changes have been met with success.

Policy Initiatives

With the accent on progress, the Department forged strong policy initiatives in 1986-1987

Throughout the fiscal year, the federal government continued its support of the country's cultural industries and communications services by introducing new policies and fine-tuning existing programs. For example, the Department expanded its assistance to the film industry, increased the availability of French-language programming in Canada, made plans to extend the AM radio band (which will allow the establishment of hundreds of new radio stations in Canada) and responded to the many task forces reporting in 1986-1987.

One of the major accomplishments of the past year was the continued progress made towards the development of a new telecommunications policy for all Canadians. By year end, preparations were complete for the meeting of federal, provincial and territorial ministers in April 1987. At the April meeting, the Ministers were expected to outline their objectives for the new policy and to establish their respective responsibilities for its development.

This co-operative spirit is fundamental to the department's approach to all its areas of responsibility. Whether in telecommunications, broadcasting or the performing arts, the strongest policies are made in consultation with the groups they serve.

Broadcasting

During 1986-1987, the Department introduced new measures that reflect the continually changing economic and social characteristics of the broadcasting industry.

Caplan/Sauvageau Report

The Caplan/Sauvageau task force, co-chaired by Gerald Caplan and Florian Sauvageau, was formed in May 1985 to recommend an industrial and a cultural strategy for the Canadian broadcasting system. Their report was submitted to the Minister in September 1986.

During the 1986-1987 fiscal year the Department considered the broadcast issues raised by the Caplan/Sauvageau report — issues that will have considerable impact on the future of both cable and off-air broadcasting. Since broad public discussion and debate on the report's findings are a crucial part of the government's deliberation process, the Department began seeking public opinion through three main forums: informal public discussion; formal

A break in the action during the filming of The Campbells, *a popular CTV family series. (Photo courtesy of Settler Film Productions Inc.)*

consideration through the House of Commons Standing Committee on Communications and Culture; and bilateral discussions between the Minister, departmental officials, the provinces, industry players, interest groups and institutions. The Minister also established a working committee of officials from the Department of Finance and Communications Canada to study tax related proposals contained in the report.

Broadcast Development Fund

Funding level made permanent

The Broadcast Development Fund was first established in 1983 as a five-year program. However, recognizing the need for its continuing support of the broadcasting industry, the Government has approved the fund as a permanent ongoing program.

Changes to eligibility criteria assist specialty cable programming

In December 1986, Communications Minister MacDonald announced changes to the Broadcast Development Fund guidelines that will strengthen program production and provide viewers with a wider choice of high-quality Canadian programs. Under the expanded eligibility criteria, producers can obtain support for pay-television productions, specialty and other satellite-to-cable services. Discretionary service broadcasters (suppliers of satellite-to-cable programming at fees additional to basic cable subscription) may apply for program funding once they have reached an exhibition agreement. The CRTC agreed to delay hearings to allow applicants to adjust their submissions to take the new criteria into account.

French-language broadcasting

One of the government's continuing priorities in recent years has been to increase the availability of French-language programming in Canada. This year progress was made on several projects.

French-language speciality music video channels

In May 1986, the Minister of Communications and Quebec Communications Minister Richard French released a joint statement applauding the CRTC's decision to hold public hearings to consider applications by promoters of French-language specialized music video channels.

TV5

France, Canada and Quebec signed a declaration in January 1987 that could bring TV5 to Canadian audiences by late 1987 or early 1988 (subject to CRTC approval). TV5 is a French-language satellite-to-cable television service network that has provided programming to Europe and North Africa since January 1984. A consortium of

Canadian and Quebec broadcasters, as well as film and video companies, will contribute to TV5 programming and participate in Francophone film and video ventures. The tripartite declaration also provides for a review of co-production criteria and encourages negotiations, co-operation and cross-financing arrangements between the French and Quebec sectors involved in cable television, communications services and audio-visual industries.

Minister endorses alternative English- and French-language TV services

In response to the Caplan/Sauvageau task force report, Minister MacDonald endorsed its recommendation for alternative English- and French-language television services. The new services would offer programming for children, senior citizens, women and minority groups, as well as documentary, arts, international and low-budget original entertainment programming.

Extension of AM radio band

As a result of a Canadian proposal to a regional conference of the International Telecommunication Union (ITU), the AM radio band in the western hemisphere will be extended for the first time since 1947. Participating countries in North, Central and South America and the Caribbean agreed to a 100 kilohertz expansion by 1990. This will allow the establishment of 10 new channels and hundreds of new radio stations in Canada.

AM stereo

In March 1987, the Department announced an AM stereo broadcasting transmission standard for Canada. Based on submissions from a broad representation of the communications industry, the Department selected the Motorola C-QUAM system.

Nicole Leblanc and Jean Besré star in Le Temps d'une paix, *a popular weekly series broadcast on French-language television in Canada. (Photo courtesy of the CBC.)*

Telecommunications

Telecommunications policy for Canada

Federal, provincial and territorial communications ministers considered six principles that would form the basis of a new telecommunications policy for all Canadians. These principles include maintaining the universality of affordable telephone service and ensuring that Canada's industry remains competitive in the international marketplace. The ministers are also considering proposed agreements for a national interconnection policy and for sharing governmental responsibilities in telecommunications.

Privately owned earth stations

The earth station ownership policy, developed in 1984, was initiated with a one-year experimentation phase before becoming fully operational on April 1, 1986.

This policy enables private companies wishing to operate satellite communications systems, to own and operate transmit/receive earth stations to communicate with Canadian satellites. Previously, only recognized telecommunications carriers had authority to operate such earth stations.

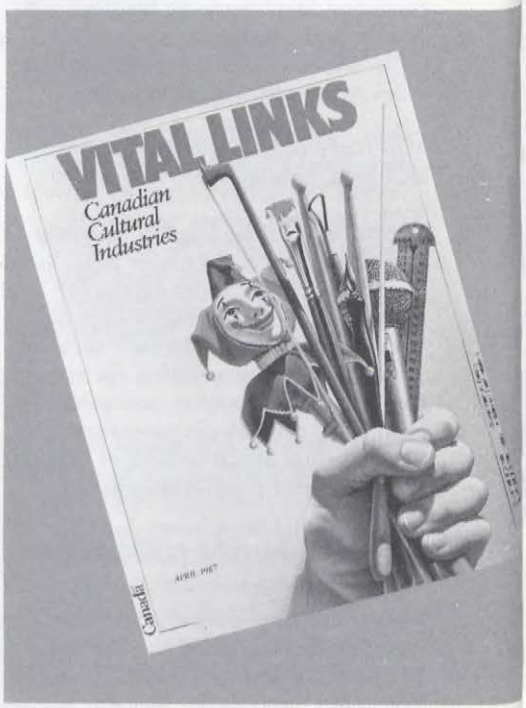
Mobile services

The Department has updated its licensing and technical requirements for certain mobile services. It also initiated public consultations on the issue of new bands for paging services. Additional frequencies have been released for use in the 800 MHz band for trunk systems (systems which use a group of channels and automatically select a free channel among a pre-determined group). Equipment specifications for mobile services were revised to include digital systems, new bands for paging and very low capacity fixed systems.

Licences no longer required for owners of cellular telephones

Individual owners of cellular telephones need no longer hold a radio licence. The licence fees included the department's costs for providing the users with spectrum management services. These costs are now covered in the fees users pay their service providers, thereby streamlining administrative procedures.

Strengthening Canada's cultural industries



Vital Links, *published by the Department in 1987, examined the role of the arts in Canada.*

"Culture is the very essence of our national identity. Nourishing that identity are the cultural industries, whose artists are more assured than ever, but whose institutions face long odds against success. We want to shorten those odds." A quote from the beginning of *Vital Links*, the department's year-end examination of the impact of the arts in Canada.

Thanks to the department's many accomplishments during 1986-1987, those odds are already shortened. Artists, authors, filmmakers, musicians and many other participants in the related artistic communities are benefiting from new policies . . . policies molded by their requirements, plus comments and suggestions made during the previous year's extensive consultations with departmental officials.

Consideration of task force reports

Throughout the year, departmental staff devoted considerable time and effort to the many task forces reporting to the Minister during the 1986-1987 fiscal year. Those task forces included:

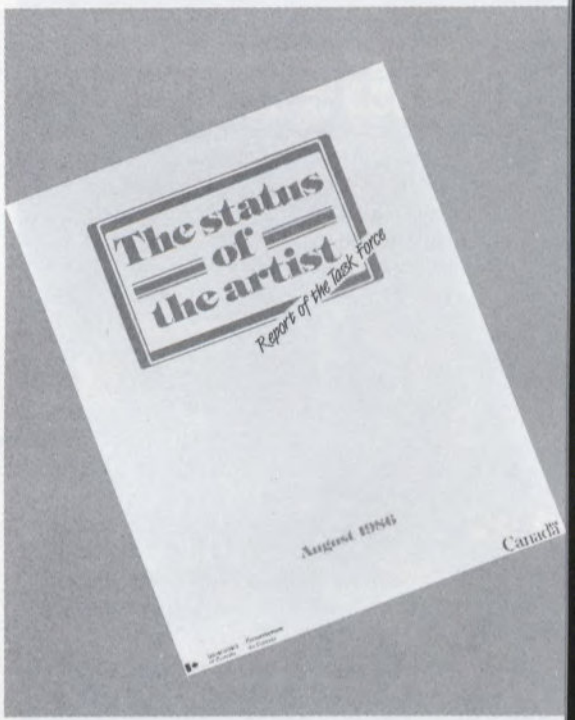
- the Raymond/Roth task force on the Canadian film industry, completed in December of the previous fiscal year;
- the Bovey task force on funding of the arts, completed in July 1986;
- the Siren/Gélinas task force to review the proposals put forward by the Canadian Conference of the Arts, completed in August 1986;
- the Caplan/Sauvageau task force on broadcasting, completed in September 1986;
- the Hendry task force on the role of the National Arts Centre, completed in September 1986;
- the Richard/Withrow task force on the role of the National Museums Corporation, completed in October 1986.

The Minister's response to these task force recommendations has been twofold. First, to ensure that they receive comprehensive consideration, both within the Department and by the concerned Standing Committee of the House of Commons; and second, where appropriate, to implement within the fiscal year any recommendations not needing further consultation. (See, for example, the section on Film.)

Focussing on the status of the artist

Report on the Status of the Artist

In May 1986, the Minister of Communications commissioned the Siren/Gélinas task force to review proposals put forward during the 1986 meeting of the Canadian Conference of the Arts.



Issues of concern to Canadian artists were addressed in the Report of the Task Force on the Status of the Artist released in August 1986.

The committee, co-chaired by Paul Siren and Gratien Gélinas, sought input from all segments of the arts community and their report was submitted to the Minister in August 1986. The report's 37 recommendations addressed such issues as taxation, copyright, working conditions, health and safety, and artists' incomes.

Canadian Advisory Committee on Status of the Artist

As a result of the Siren/Gélinas report, the Canadian Advisory Committee on the Status of the Artist was formed in January 1987. Its three-year mandate is to advise the Government on measures to improve the socio-economic status of Canada's artists. The Committee, comprised of senior representatives from the artistic profession, has identified the following five major issues of concern:

- the problems of artists and the tax system;
- revisions to the *Copyright Act*;
- legislative recognition of artistic organizations as collective bargaining agents for both employed and self-employed artists;
- increased funding support for artists.

Book publishing

Fiscal year 1986-1987 brought good news for Canadian authors and publishers. Both groups received financial recognition for their on-going contributions to the national culture.

Payment for public use

In April 1986, the Minister of Communications announced the Payment for Public Use program to compensate Canadian authors for the use of their works in Canadian libraries. Under the direction of the Canada Council, the $3-million-a-year program began payments to authors in early 1987.

New development program for book publishing industry

In June 1986, the Minister announced a new development program for Canada's book publishing industry. Designed to improve earning power and therefore the self-financing capability of Canadian publishers by funding publishing initiatives on a project basis, the program is being phased in over several years.

The development program is funded under the government's February 1986 budget pledge to allocate $13 million a year over five years for book publishing assistance. The Minister of Communications' June announcement indicated that $2 million of the $13 million would be transferred to the Canada Council in 1987-1988, with another $4.8 million to be transferred in 1988-1989. The transfer of funds to the Council was designed to help stabilize cultural support within the industry by arresting gradual erosion of the real value of Canada Council grants for publication of culturally significant books.

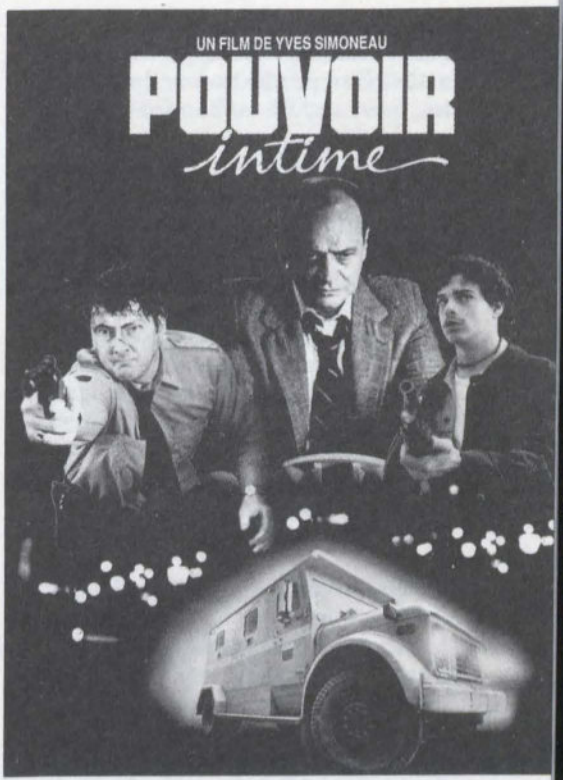
Film

Throughout the year, the Department worked to provide greater access to films and videos in both official languages by addressing major film policy issues: production, funding and distribution.

New Feature Film and Dubbing Assistance Program

In response to the 1985 task force on the film industry, Minister MacDonald announced a $33-million-a-year Feature Film and Dubbing Assistance Program in July 1986. Administered by Telefilm Canada, the five-year program is designed to stimulate investment in the production and distribution of Canadian films, and to ensure that the greatest possible number of Canadians have access to Canadian-produced films and videos.

Loyalties, *a film directed by Anne Wheeler, tenderly crafted about the friendship between two women. (Photo courtesy of Telefilm Canada.)*



Pouvoir intime, *a Montreal film production, a fast moving thriller about a bungled heist. (Photo courtesy of Telefilm Canada.)*

The Government has allocated $30 million annually for five years to the feature-film production and distribution fund and $3 million for dubbing or subtitling.

After its first nine months of operation, the feature-film fund, showed positive results. Telefilm Canada reports that from July 1986 to the end of March 1987 it invested in 22 Canadian feature films produced for screening in Canadian and foreign theatres. Also as a result of the program, Canadian productions will now be available in both official languages much sooner than before, a move which will reinforce the position of Canadian distributors within their own market.

Study of non-theatrical film industry

In May 1986, the Minister commissioned a study of Canada's non-theatrical film industry (the production and distribution of institutional, educational and industrial films and videos). Its mandate was to identify and analyse the major problems facing the industry, and recommend ways to increase Canada's share in the marketplace. The report has been completed and the Minister is studying its recommendations in depth with the provinces.

New policy to license foreign films for Canadian distribution

In February 1987, Communications Minister MacDonald announced the government's intention to table legislation establishing Canada as a separate national film distribution market. The new policy will require feature films for theatrical and home video markets to be imported into Canada under licence. The Government is proposing this step to strengthen the financial position of Canadian-owned distributors, eventually enabling them to finance, distribute and show more Canadian films to Canadian audiences.

UNESCO program transferred to Communications Canada

In April 1986, Communications Canada assumed responsibility for the UNESCO Film Certification Program. As part of an international agreement administered by UNESCO, this program determines the eligibility of Canadian film, video and other visual material for special customs treatment abroad.

Canadian Film and Video Service Organizations Program

In April 1984, Cabinet approved the National Film and Video Policy aimed at establishing a contribution program for national service organizations in the film and video area.

The objectives of this program are to provide financial assistance to organizations to support their ongoing operations and any programs and special services that they create.

The program has an annual budget of $250,000, of which half is allocated for ongoing operations, and the other half for special projects and services. For example, the contribution program has allocated ongoing operation funding to such national service organizations as the Academy of Canadian Cinema and Television to support the Genie, Gemini and Gemeaux awards presentations, for the distribution of national publications, and for offering workshops and seminars. Furthermore, associations such as the British Columbia Film and Video Association, the Canadian Film Institute and the Saskatchewan Motion Picture Industry Association have received financial assistance for special projects and services.

Sound recording

Recorded music is this country's most widely traded cultural product. In recent years, however, Canada's share of both the domestic and international markets has declined. The federal government has taken an innovative approach to this problem by joining forces with the private sector to bolster the sound recording industry.

Sound Recording Development Program (SRDP)

In 1986, after intensive consultations with all sectors of the sound recording industry, the federal government established the Sound Recording Development Program (SRDP), and has allocated $25 million over five years to this program. Designed to foster the growth and success of the sound recording industry and to give Canadians greater access to domestic music products, it is the first financial assistance program introduced by the federal government to strengthen the infrastructure of this important cultural industry.

The Government is co-operating with the private sector and the Canada Council in the administration of the program. The Foundation to Assist Canadian Talent on Records/Canadian Talent Library (FACTOR/CTL) and MUSICACTION will administer four of the program's eight components. This organization, established by Canadian broadcasters and recording companies, will manage the following components: sound recording production, music video production, syndicated radio programming and international touring. The Canada Council will administer the specialized music production component. Finally, Communications Canada will be responsible for the international marketing, business development and specialized music distribution components.

In September 1986, the Department signed an agreement with FACTOR/CTL under the Sound Recording Development Program. From left to right Communications Minister Flora MacDonald; Duff Roman, president FACTOR/CTL; and Deputy Minister Alain Gourd.

National marketing and touring strategy for the performing arts

Minister MacDonald is committed to the development of a national marketing and touring strategy for the performing arts. Throughout the year, the Government has been reviewing ways to promote the arts in Canada. In March 1987, departmental officials met with representatives of the performing arts to discuss marketing techniques, the potentials for greater revenue and ways to encourage greater contributions from the private and corporate sectors.

Tourism and culture

Communications Canada, in collaboration with the Department of Regional Industrial Expansion (Tourism Canada) and the Secretary of State, continued to examine the link between cultural attractions and the development of tourism. During the past year, five pilot projects were undertaken to determine the most effective means of promoting cultural attractions in tourism markets. The pilot projects were designed by local cultural and tourism industry marketing representatives and were funded jointly by the federal, provincial and municipal governments and the participating private sector organizations. The results of these demonstration projects were individually monitored by professional consulting firms and the practical experience gained from these initiatives will be shared with both the tourism and cultural industries at a national conference to be sponsored by the participating federal agencies in the spring of 1988.

The Cultural Infrastructure Planning Information System (CIPIS)

CIPIS is an ambitious research undertaking in the field of cultural facilities. It is intended to provide empirical data regarding the quantity and quality of existing facilities and the characteristics of the communities in which they exist.

Started by the department's Cultural Initiatives Program, which funds the construction and renovation of cultural facilities, the CIPIS project is seen as a first step in a process of enhanced long-term planning of capital investments. The data assembled within this project include an inventory of facilities for the presentation of the professional performing arts, visual arts and heritage collections; survey data regarding projected major capital repair and improvement, validated by random physical inspection of facilities; case studies of cultural organizations having completed capital expansion projects and; an extensive community attitudes survey regarding the perceived importance of cultural facilities and of government funding in this area.

Festival funding policy review

As a result of the increasing level of funding applications for cultural festivals, and the increasingly limited funding available for this purpose, the Department initiated a review of its festival funding policy. Since its inception in 1980, the Cultural Initiatives Program (formerly titled the Special Program of Cultural Initiatives) has become an important source of funding for cultural festivals. Due to the dramatic expansion of the events industry and the success of individual festivals, the program has accepted a role in ongoing funding for recurring events. This was not, however, the stated intent of the Government in establishing the program and it has been argued that events funding should be seed funding — reducing over time. A review of the program's festival funding activities has, therefore, been initiated to determine the relative importance of festivals and of federal government support to them, the dimensions of the events industry and the principles which should guide the Government in its funding decisions in this field.

Review of postal subsidies for publications

In keeping with the government's commitment to deliver books, periodicals and newspapers at affordable prices to all Canadians, Minister MacDonald announced a review of the postal subsidy program. Through consultation with the publishing industry, the Government will determine if the benefits derived from the postal subsidies correspond to the needs of those publications receiving them.

Heritage

Review of archaeological resources management

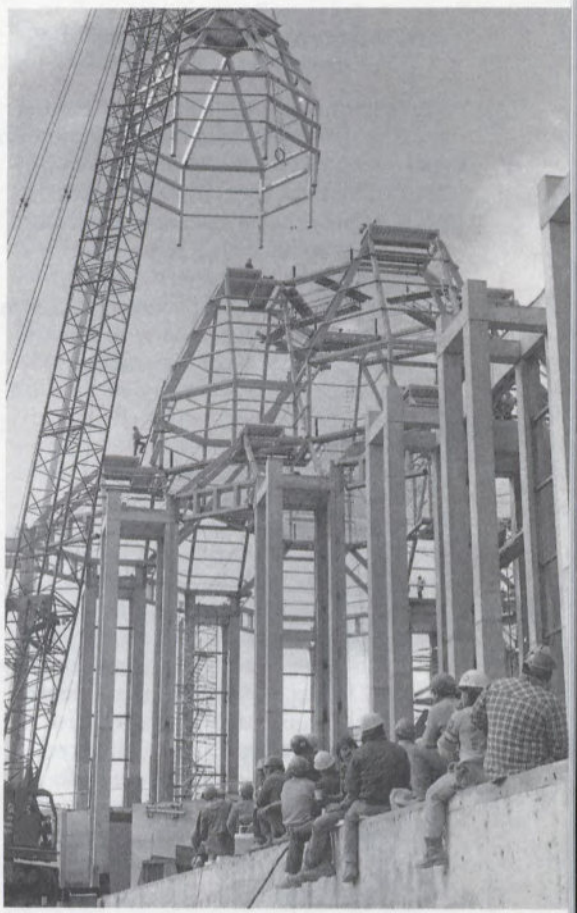
In response to the cultural community's concerns about Canada's archaeological heritage, departmental staff sought the views of interested associations, federal and provincial departments and native groups. Their findings prompted the Minister of Communications to announce a review of the management of archaeological resources, and the development of a policy and legislation to protect our archaeological heritage.

Legislative progress

As part of its policy to strengthen the cultural industries and communications services in Canada, the Government has been involved for some time in preparatory work leading to new legislation.

Archives of Canada Act

The *Archives of Canada Act* received Royal Assent on March 25, 1987. In recognition of the archival, social and cultural changes that have taken place since the *Public Archives Act* of 1912, the new legislation will take into account such factors as privacy and access-to-information legislation.



Workers watch as the last section of steel roof is hoisted 35 metres into place on the Great Hall of the National Gallery of Canada. (Photo courtesy of the National Gallery of Canada.)

Amendments to the *Radio Act*

To correct inequities in the fee-paying practises, the Minister tabled legislation that received Royal Assent March 25, 1987. The new legislation requires public and private users of the radio frequency spectrum to pay radio licence fees starting April 1, 1987. This amendment, which repeals Crown exemptions, will increase revenue and release some dormant frequencies.

Copyright

After studying the report of the Parliamentary Sub-committee on the Revision of Copyright, Communications Canada and the Department of Consumer and Corporate Affairs endorsed the need to protect the interest of the creative and cultural communities. During 1986-1987, the Government continued its preparations for new copyright legislation. Minister MacDonald met with representatives of the music industry in February 1987 and reiterated the government's plans to introduce copyright legislation on a priority basis.

Bell Canada bill tabled

The *Bell Canada Act*, tabled by Minister MacDonald in October 1986, clarifies the CRTC's relationship with Bell Canada following its 1983 reorganization under Bell Canada Enterprises. The legislation contains provisions designed to maintain a clear separation between competitive and monopoly activities within the Bell group of companies, and ensures that the reorganization does not adversely affect Bell subscribers. As the 1986-1987 fiscal year closed, the bill was still awaiting Royal Assent.

Bill C-4 enables CRTC to recover costs

Bill C-4, which received Royal Assent on December 19, 1986, empowers the CRTC to make regulations imposing fees on telecommunications carriers under federal jurisdiction. The fees, in total, will recover costs incurred by the CRTC in the course of regulating these companies, as well as the costs of services provided through Communications Canada's Spectrum Management branch.

International Activities

Canadian expertise enhanced international co-operation in communications technologies

Canada continues to be a key player in international communications, breaking new ground in bilateral relationships, participating creatively and serving with distinction in the most important multilateral conferences and meetings. During 1986-1987, the Department took part in several International Telecommunication Union (ITU) conferences, sharing Canada's telecommunications expertise, and providing innovative solutions to worldwide communications problems. Throughout the year, Canada hosted communications representatives from around the world, as well as sending Canadian delegations to other countries.

Accent on new partnerships

Communications Minister MacDonald visited the People's Republic of China and Japan during late February and early March 1987, to promote Canadian cultural and telecommunications interests.

Canada-China film co-production agreement

On February 23, 1987, Minister MacDonald signed a film co-production agreement with China. It is the first co-production agreement of this scope that China has ever signed with another country. The first film being produced under this agreement is *Bethune: The Making of a Hero*, a $12-$16 million feature film and four-hour television mini-series based on the life of Dr. Norman Bethune, the Canadian doctor who became a Chinese national hero in the late 1930s. This project is a co-production between Canada, China and France. Film co-production agreements are designed to share the cost and risk of film production between the co-producers while allowing each country greater access to international markets.

Canada-Czechoslovakia co-production agreement

A film and video co-production agreement was signed with Czechoslovakia in March 1987. It is expected that the first co-production under the agreement will be *Butterfly Time* produced by the well-known Quebec producer, Roch Demers, as part of a children's series, together with world-famous Czech Director Bretislov Pojar who worked in close collaboration with the National Film Board on several films including *Balablok* which won the Palme d'Or in Cannes in 1973.

On March 25, 1987, Communications Minister Flora MacDonald signed a co-production agreement with Jiri Purs, president of Czechoslovak Film.

France-Canada film and video award

In January 1987, Minister of Communications Flora MacDonald, with French Minister of Culture and Communication, François Léotard and Chairman of Telefilm Canada, Jean Sirois, officiated in Ottawa at the first award ceremony of the France-Canada Film and Video Award. The France-Canada Award is presented every two years to two creators selected among scriptwriters, directors, composers and directors of photography who have distinguished themselves through their collaboration on an official Franco-Canadian co-production. Each award winner, one Canadian — Daniel Petrie, and one French — Claude Agostini, received the emblematic statuette "Emerillon" and a $10,000 grant.

Joint cultural commissions

Canada has signed a number of cultural agreements with other nations under which the participants have agreed to set up bilaterial commissions to establish an ongoing official program of cultural and academic exchanges. The meetings are chaired by the Department of External Affairs. Communications Canada contributes to the discussions on culture and heritage issues as well as providing general direction on Canadian cultural policy and interests. During the year, the Department attended meetings of joint commissions with France, the Netherlands, Japan and the Soviet Union.

Telecommunications policy discussions with Japan

Annual telecommunications policy meetings with the Japanese Ministry of Posts and Telecommunications (MPT), have provided an excellent opportunity to discuss and exchange ideas on national and international issues resulting from technological developments and user needs. These discussions have already led to a bilateral agreement on standards and certification and two successful Canada-Japan communications industry technical seminars.

Marketing support to Canadian telecommunications companies

The Department continued to provide technical marketing support to the Department of External Affairs and to a wide variety of Canadian telecommunications companies. This support varied from Ministerial involvement, such as the opening of technical seminars in China to conducting technical marketing assignments with companies. The Department organized and conducted Communications Canada/ industry seminars in Algeria, Argentina, China and Japan. Technologies supported ranged from Community Antenna TV (CATV) to Multi-channel Microwave Distribution Systems (MMDS) through satellite communications, telecommunications, rural communications, telex switching, broadcasting and informatics. In conjunction with the private sector, the Department also developed and began implementing a plan to market its unique, automated spectrum management technology and expertise.

ITU activities

During 1986-1987, Communications Canada continued to take an active role in the activities of the International Telecommunication Union (ITU). The ITU, with its membership of 160 administrations, co-ordinates international regulation of telecommunications services around the world. Canada is a major presence within the ITU, providing leadership in many areas and pioneering technology for spectrum management. For example, delegates at future conferences will use the department's new computer programs to analyze proposals, such as spectrum management, on the spot.

ITU conferences

This past year the Department represented Canadian interests at several ITU conferences and meetings.

- Based on extensive analysis and flight tests carried out in co-operation with Transport Canada, Canada presented 10 papers on FM NAV/COM compatibility at the International Radio Consultative Committee (CCIR) meeting held March 1987 in Brazil.
- In April 1986, the Regional Administrative Radio Conference (RARC), held to extend the AM broadcasting band to 1705 kilohertz in the western hemisphere, adopted an allotment plan proposed by Canada. (see the Policy and Initiatives section of this report.)
- At this year's World Administrative Radio Conference (WARC) meeting, which was charged with introducing more orderly planning into high frequency (HF) or short-wave broadcasting, the Canadian delegation was one of the key delegations that ensured the conference's success in dealing with these sensitive issues.
- The Canadian Table of Frequency Allocations, which provides the telecommunications community with guidelines essential to managing the radio frequency spectrum, was revised

this year. The changes took into account decisions made at recent ITU conferences and changes in the domestic spectrum which have occurred since its last revision in 1982.

- Preparations continued for the 1987 WARC on mobile radio, the 1988 World Administrative Conference on Telegraph and Telephone (WATTC), and the 1988 second session of the World Administrative Conference for Space Services.

Follow-up to first Francophone Summit commitments

France-Canada-Quebec tripartite declaration

As a direct result of last year's highly successful first Francophone Summit, France, Canada and Quebec signed an agreement in January 1987 to distribute the French-language programming network, TV5, in North America (see the Policy and Initiatives section of this report). Reaffirming their commitment to expand the Francophone audio-visual field, the three governments plan to increase the exchange of products, expertise and funds between France, Canada and Quebec.

International symposium on software applications for Francophone countries

In May 1986, Canada and Quebec hosted an international symposium in Montreal for senior officials from Francophone countries. Organized in conjunction with the Agency for Cultural and Technical Co-operation, the delegates discussed the need for a Francophone informatics environment and made recommendations for the production, publishing and distribution of French-language software.

Preparations for Francophone and Commonwealth summits

Francophone Summit

At the first Francophone Summit in Paris in January 1986, the heads of state and government emphasized that it was important for the Francophone community to confidently and vigorously establish and maintain a common audio-visual presence, to develop programs based upon state-of-the-art communications technologies and to affirm the essential role of the cultural industries in the growth of the Francophonie.

In this context, Communications Canada, in conjunction with the Quebec departments of Communications and Cultural Affairs, developed a number of projects to be presented by Canada at the September 1987 Francophone Summit in Quebec City. These

initiatives included the creation of an international French-language centre for distance education, the introduction of TV5 in North America, the creation of an international radio network, the holding in Montreal of a second symposium of Francophone experts in informatics and software, the publication of an international paperback book collection and the establishment of an exchange program for Francophone journalists.

Commonwealth Heads of Government Meeting

The Canadian government will host the Commonwealth Heads of Government Meeting from October 15 to 17, 1987 in Vancouver, where 49 countries will be represented. In anticipation of this event, during the 1986-1987 fiscal year Communications Canada developed, in collaboration with the Commonwealth Secretariat, two substantial technical co-operation initiatives.

Commonwealth Centre for Distance Learning (CCDL)

The Department was approached by the Commonwealth Secretariat for advice on how communications technologies could be used to extend learning opportunities for students and to promote international information exchanges between learning institutions. Communications Canada developed a concept paper which explores the various potential models of multilateral institutions. The Department also awarded a contract for a feasibility study to consider the financial, technical and organizational implications of each of these models.

Commonwealth Television Program Service (CTPS)

Inspired by the TV5 experience (see page 10 of this report), the Minister of Communications indicated to the Commonwealth Secretary General willingness to initiate studies on the feasibility of establishing a Commonwealth Television Program Service that would enable Commonwealth broadcasters to receive high-quality Commonwealth programming and to contribute their own programs for viewing in other member countries. This service would provide an alternative source of English-language programming to member countries and an opportunity to showcase their own programs to a Commonwealth audience, thereby eventually enhancing the sales potential of their programming on the international market. The proposal was received with such interest that the CBC and Communications Canada have jointly awarded a feasibility study to examine the financial, organizational, technical and programming implications of such a service.

International symposium of communications ministers at EXPO 86

Delegates from more than 20 nations and international organizations attended an international symposium hosted by the Minister of Communications in June 1986. "Communications: the Challenge of Change" examined ways to close the technological gap that exists between industrialized and developing nations. In a final communique, the Vancouver Declaration, participants in the two-day symposium expressed their commitment to using communications technologies to foster world peace and understanding.

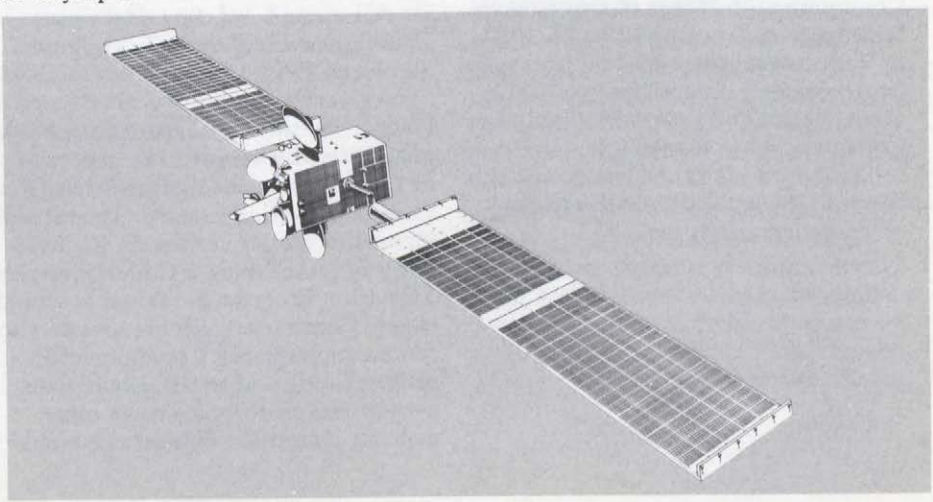
International co-operation in R&D

Preparatory work for participation in European Space Agency's Olympus satellite project

Work continues on Olympus, a joint satellite communications project with the European Space Agency. The January 1989 launching will provide an opportunity for Canada to explore the potential of the 30/20 GHz frequency band for satellite communication. Three 20/30 GHz earth stations will be set up at the Communications Research Centre using Canadian-developed components and subsystems.

DOC-DFVLR co-operation in structural dynamics R&D

Canada and the West German research centre, Deutsche forschungs-and Versuchsansalt fur Luft-and Raumfahrt, are working on new techniques for testing complex flexible spacecraft. The project involves modal testing of a research structural model similar to Olympus.



An artist's conception of the Olympus satellite.

Regional Dimensions

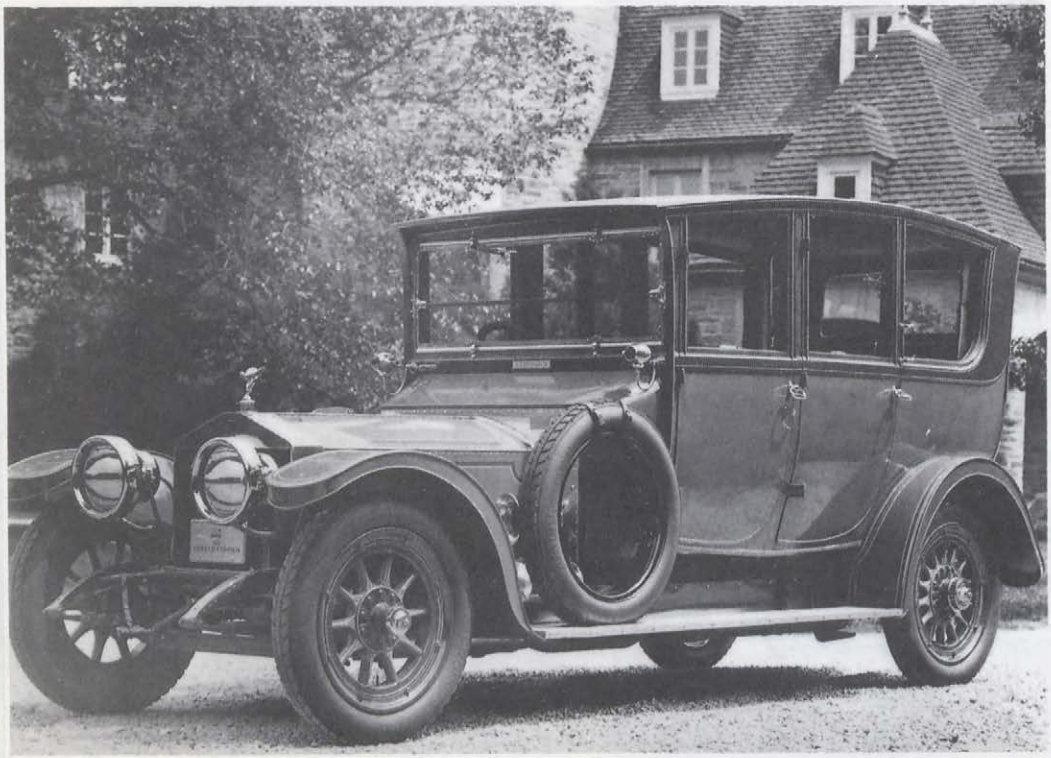
Interaction with the regions aimed at equitable policies and programs for all Canadians

Ongoing dialogue between the federal and provincial governments is the key to cultural and communications policies that consider the needs of the entire country. During 1986-1987, the various levels of government met many times to discuss issues ranging from funding the arts to managing the airwaves. As a follow-up to their successful 1985 conference, federal, provincial and territorial ministers responsible for communications met June 9, 1986 in Vancouver to review the roles and responsibilities of governments in telecommunications and on policies to standardize interconnection systems for communications technologies.

An example of the department's cooperative approach is the financial and technical support it provides for the development of a strong software industry in Canada. During the past year, the Department participated in the Canada-Quebec Committee on French-language software, the national task force on software hosted by the Department of Regional Industrial Expansion, preparations for "Le Carrefour," and the preparation for a software symposium jointly sponsored with the Government of Ontario.

The department's five regional and 45 district and sub-offices provide valuable on-site information on many telecommunications issues. From a new knowledge-based system for ship inspections to the study of non-ionizing radiation from broadcast stations, work done in the field has resulted in Canadian equipment and telecommunications systems which have earned worldwide respect.

Consultative and co-operative mechanisms



"Ladybird," Rolls Royce Silver Ghost built in 1912. Donated to the Canadian Automotive Museum by the Craven Foundation. (Photo courtesy of the Canadian Automotive Museum.)

Federal-provincial-territorial conference of ministers responsible for culture and historical resources

At a September conference in Calgary, co-chaired by Minister MacDonald and Alberta's Minister of Culture, Dennis Anderson, the ministers reviewed the initiatives and reports undertaken by various levels of government during the past year. Discussions ranged from the economic impact of culture in Canada to preservation of heritage sites and artifacts of national and regional importance. The conference concluded with a resolution to explore funding alternatives and opportunities for Canadian artists.

Subsidiary Agreements to ERDAs

Economic and Regional Development Agreements (ERDAs) were established in 1984 for federal and provincial governments to co-operatively fund, among others, cultural and communications projects.

Canada-Ontario Subsidiary Agreement for Cultural Development

On September 25, 1986, Minister MacDonald and Ontario's Minister of Citizenship and Culture, Dr. Lily Munro, signed a joint $50-million agreement to support cultural development in Ontario over the next four years.

The first project to receive funds under the new agreement was the International Telecommunications Discovery Centre in Brantford. In December 1986, the Minister announced a $1 million contribution to the first phase in the centre's development. When completed, the Centre will house the internationally acclaimed Bell Canada Collection, and feature telecommunications technology and applications for the future.

Other projects that have received financial assistance under the federal/provincial agreement include: $10 million for the expansion of the Royal Ontario Museum, $11 million for the renovation of Elgin Wintergarden Theatre Complex in Toronto, and $1.5 million to launch La Chaine Française at TVOntario.

Canada-Manitoba Communications and Cultural Enterprises Subsidiary Agreement

During 1986-1987, approximately $850,000 of the technological applications component of this agreement was spent on such projects as: Infomart Grassroots, farm management electronic information services; Homestead Computer Services Ltd., laser videodisc computer-assisted training courseware; MTS-Rescom Ventures Inc., production of a voice-synthesized stock and commodity quotations telephone service; and Cybershare Info-claim, an on-line electronic record of mineral and mining claims in Manitoba for investors, geologists and mining exploration companies.

The creation of the Canada-Manitoba Cultural Industries Development Office (CIDO) was announced on March 30, 1987 to support Manitoba's cultural industries and to create new opportunities for the province's film and audio community. Funding for the project is allocated under the Cultural Enterprises Infrastructure Development Component of the five-year ERDA Subsidiary Agreement of June 11, 1984.

Canada-Quebec ERDA on Development of Communications Enterprises

During the fiscal year, joint funding of approximately $12 million was spent on 22 projects, mainly in the Montreal region, the centre of Quebec's communications industry. It is estimated that this funding will generate global investments of approximately $24 million and create nearly 300 specialized jobs.

The Canada-Quebec committee on French-language software reported in March 1987 with recommendations to create and market French-language software that is multilingual in scope. L'Association canadienne de la radio et de la television de langue française Inc. (ACRFT) received funds to hold the first Semaine de la chanson francaise. The May 1986 Montreal International Software Market (MIM 86) also received funds.

Canada-Quebec ERDA on Cultural Infrastructure

The federal Communications Minister, Flora MacDonald, and the Quebec ministers of Communications, Richard French, and Cultural Affairs, Lise Bacon, have agreed to evaluate the establishment of a world-class audio-visual production centre in Montreal.

Memorandum of Understanding (MOU)

In January 1987, Canada and Ontario signed an MOU to co-sponsor a software symposium in Toronto in February 1988. Each government will contribute $50,000 towards this event.

Consultative committees on communications and culture

Over the years, Communications Canada has set up a number of consultative committees with representatives from provincial and territorial departments and agencies responsible for communications or culture. These discussions help co-ordinate policy and activities, and provide a forum for review. During this past year initial meetings were held with a committee from the Yukon; in October, the British Columbia biannual meeting dealt with the Caplan/Sauvageau recommendations, Cancom, multipoint distribution systems and radio licensing. The Prairies Committee met in February 1987 to discuss microwave licensing, the role of Telesat Canada and revisions to the *Radio Act*, and the Atlantic Committee met in June and December 1986, and again in March 1987, to discuss provincial reactions to the Caplan/Sauvageau report.

As part of its consideration of the task forces, which reported during the last fiscal year, the Department established provincial review committees. A federal-provincial committee met twice during the past year to examine the recommendations of the Bovey and Siren/Gélinas reports, and will submit its findings to the ministers responsible for culture at their September 1987 conference. Discussions are continuing on the National Museum Corporation and National Arts Centre task force reports, with particular attention being paid to the development of a national museums policy and support programs, and a national touring strategy for the performing arts.

The Department also held bilateral consultations on the Caplan/Sauvageau report which will help shape the broadcasting legislation the Government plans to table in the next fiscal year. In addition, the Federal-Provincial Steering Committee, Economic Dimensions of Culture, as well as the Intergovernmental Steering Committee on Film and Book Publishing (whose mandates were extended at the Calgary Conference of Ministers in September 1986) continued to pursue their activities.

Cultural Initiatives Program

One of the many talented Canadian groups to benefit from the support of the Cultural Initiatives Program was Montreal's famous Cirque du Soleil, also featured at EXPO 86. (Photo courtesy of Le Cirque du Soleil.)

There was a tremendous response to this program last year from cultural institutions and performing arts groups across the country. With an annual budget of $16 million, the program provides capital assistance, support for cultural activities of national significance, and funds for the development of managerial capabilities and modern communications technologies. Since its creation in 1980, the Cultural Initiatives Program has made contributions to over 1,000 cultural organizations in Canada.

Movable Cultural Property

The Movable Cultural Property program monitors the export of Canadian items of historical and cultural significance, and administers the export control system. In addition, the program offers tax incentives for the sale or donation of artifacts to Canadian cultural institutions. Cultural property worth $41 million was either donated or sold to such institutions during the 1986-1987 fiscal year. The department's Movable Cultural Property Secretariat, which provides administrative services for the Cultural Property Export Review Board, processed 1,089 applications related to such donations. The Board also approved 21 applications totalling $800,615 for the repatriation of cultural property and for objects which have been denied export permits.

Thunderbird Woman, *c. 1985 by Norval Morrisseau (Canadian of Ogibwa Origin, born in 1932). Donated to the Royal Ontario Museum by Mr. Peter S. Sindell. (Photo courtesy of the Royal Ontario Museum.)*

Insurance program for travelling exhibitions

In 1985, the Minister announced an insurance program to provide coverage for travelling exhibitions valued at more than $1 million. The program pays the full insurance cost, both in transit and on location, for exhibitions organized or hosted by Canadian museums, art galleries, libraries and archives. Exhibitions originating with Canadian institutions must be displayed in at least one other institution to be eligible for this program. Major international exhibits are also eligible. Insurance was provided for nine exhibitions with a total value of $165,975,356 during the 1986-1987 fiscal year.

Managing the airwaves: Spectrum management

In response to complaints of radio interference, radio inspectors use vehicles specially equipped to carry out on-site investigations to locate and eliminate potential causes of interference.

Managing the airwaves is essential to the effective functioning of the entire national telecommunications system. The uses of the radio spectrum are diverse and rapidly expanding — from radio and television broadcasting and microcomputers to heart pacemakers, cellular and cordless telephones, paging services, garage-door openers and other remote-control devices, and microcomputers. Many of Communications Canada's spectrum management activities are handled by its regional offices, such as comparative studies on non-ionizing radiation from broadcast stations being carried out in Ontario, and "Project Interact," a program originating in the Atlantic region to monitor channel misuse on marine radio.

Day-to-day activities of spectrum management include certification of both radio equipment and operators to ensure acceptable standards are maintained, licensing of stations, enforcing regulations, and investigating interference occurrences. Minimizing the potential for interference between electronic devices is crucial to the health and well-being of all Canadians. In the past fiscal year, the department's Spectrum Management Sector dealt with 17,500 interference reports, 5,100 of which were interferences to communications systems such as police, fire, ambulance, air navigation and commercial dispatchers.

During 1986-1987, the sector issued 273,500 new and amended radio station licences (including cellular telephone licences), and processed 655,000 renewals. As of March 31, 1987, Canada's radio station population, excluding General Radio Service (GRS), was 766,000. The GRS population was 319,000.

Preparations completed by year-end for April '87 Federal-Provincial-Territorial Telecommunications Conference

As a follow-up to the February 1986 Montreal conference of communications ministers and the June 1986 meeting of the committee of communications ministers, preparations were underway at year-end for the April 2 and 3 Federal-Provincial-Territorial Telecommunications Conference. To be co-chaired by Minister MacDonald and Alberta Minister of Technology, Research and Telecommunications,

Les Young, the Conference will focus on the co-operative development of a national telecommunications policy. Particular attention will be paid to the need for a regionally sensitive national interconnection policy, and for effective mechanisms for sharing governmental responsibilities in telecommunications.

'87 Spectrum 20/20 Symposium plans completed

Faced with the ever-increasing challenge of effective spectrum management, Communications Canada and the Radio Advisory Board of Canada announced plans to co-sponsor a national symposium on spectrum use. The two-day meeting will address the growing incidence of radio interference and possible amendments to the *Radio Act*.

Non-ionizing radiation from broadcast stations

More and more attention is being paid to the environmental impact and potential health hazards from the non-ionizing radiation emitted by broadcasting stations. A comparative study of two methods for predicting the levels of non-ionizing radiation has been done with measured data obtained from the regions. The results of this study are under review, and additional field tests are being carried out at two broadcasting sites in Ontario to compare field strength measurements to power density measurements. This data will be used to develop a final field test measurement method.

Technical innovations cut costs of providing spectrum management services

New expert system facilitates ship inspections

A computer system designed to increase the efficiency of ship inspections by regional personnel is now in effect. Operational at the beginning of this year's shipping season, the new system provides inspectors with a ship's previous record and current data. Marine safety rules have been converted into 125 inter-related rules which cover any ship needing inspection.

New microwave and satellite licensing system

Spectrum management staff can now process twice the number of licences with no increase in staff thanks to a new streamlined licensing system.

Training program for regional broadcasting staff

The department's Broadcasting Branch conducted a course for its regional staff members in February 1987. The course was designed to assist broadcast engineering and technical staff with AM broadcasting proofs of performance and broadcasting applications.

A Communications Canada ship inspector (left) and the system developer, Glen Lockwood, discuss a test run of the Ship Advisor.

Cellular telephone service is now operational in 14 metropolitan centres, and is rapidly becoming available along geographical corridors as well. For example, subscribers can now use their cellular telephone without interruption throughout the corridors between Windsor, Ontario and Quebec City, Quebec. (Photo courtesy of Cantel Inc.)

IONOSONDE program for the Department of National Defence (DND)

The high-frequency radio communications that DND uses for its security and communications needs, require hour-by-hour knowledge of the ionospheric variations which are most severe in the Arctic and subarctic regions. The data gathered by the program enables DND to select the most suitable frequencies, in spite of the variations, to meet its needs. The Department administers the operation of three ionosonde stations and supplies the required real-time data to DND and long-time scaled data to national and international users.

Funding for electronic library

On April 23, 1986, the Minister of Communications announced a $20-million, five-year program for electronic library and information networking based on the international standard, the Open Systems Interconnection reference model. This system will allow libraries in Canada to exchange resources and information using their particular hardware and software systems. The networking service will be available to libraries on a volunteer basis, and libraries will pay for their own networking activities.

Canadian Interest Group on Open Systems

Open Systems Interconnection (OSI) standards allow the exchange of information between computer systems regardless of manufacturer or telecommunications network arrangements. OSI will benefit both Canadian suppliers by allowing them to manufacture components that are compatible with all the major vendors' systems and Canadian users by allowing them to purchase parts of their systems from the most competitive supplier. OSI is

expected to have a fundamental impact on the competitiveness of information systems into the twenty-first century. There are now major government supported, or funded, OSI activities in the United States, United Kingdom, the European Common Market and Japan.

In late October 1986, the Minister invited senior level executives from industry, governments and users, to discuss and recommend Canadian initiatives on Open Systems Interconnection standards.

The meeting concluded with agreement that a Canadian Interest Group on Open Systems (CIGOS) should be established to promote the development and implementation of Open Systems for the benefit of Canadian users and suppliers. A private-sector led Canadian Interest Group on Open Systems was subsequently formed and its first meeting was planned for the spring of 1987.

Government Telecommunications Agency (GTA)

GTA is responsible for the planning and co-ordination of telecommunications services for the Government of Canada.

Thin-route satellite services

The Government Telecommunications Agency will introduce a thin-route satellite service in 1987-1988 to extend telecommunications services to federal government employees in remote and underserved areas of Canada. A thin-route satellite service has only a few circuits and is designed for use in low-traffic areas.

Shared packet network

This year, GTA signed a cost-saving agreement with CNCP Telecommunications to provide packet switching services for the federal government. Packet switching technology allows networks to offer data communications services on a common service basis rather than on a customized basis.

Cost reductions

During the 1986-1987 fiscal year, GTA continued to provide cost-effective telecommunications services to government users at rates considerably lower than the private sector. For example, intercity long-distance rates were almost half the commercial rate, and the co-ordination of bulk service purchases on behalf of major government users saved another $2.5 million during the year.

Enhancement of government telecommunications network

GTA began a program in 1982 to modernize the federal government telecommunications network. By the end of this fiscal year, 97 percent of all government subscribers were being served from software-driven digital telephone switches. Expenditures for intercity voice services dropped by $2.4 million in 1986-1987 despite a 4 percent increase in calls.

Research, Development and Technology Transfer

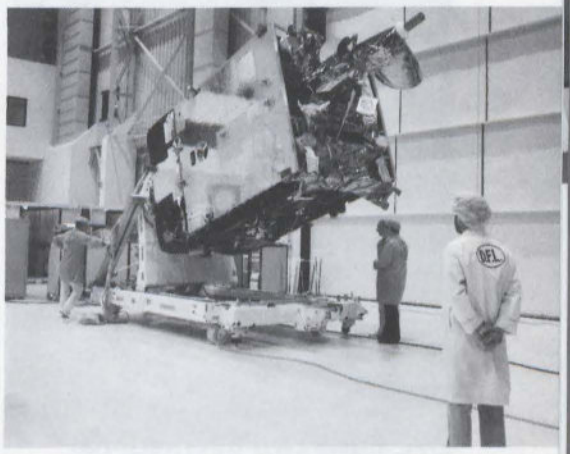
The fiscal year encompassed the determination of a new mission and structure for the department's R&D activities

The department's research activities take place at two major sites: the Communications Research Centre (CRC) at Shirleys Bay, near Ottawa, Ontario, and the Canadian Workplace Automation Research Centre (CWARC) in Laval, Quebec.

New mission and structure for R&D

During the past three years, Communications Canada has conducted an exhaustive examination of its research policies and programs to ensure their continued relevance in today's fast-changing telecommunications environment. During 1986-1987, the Department completed plans for the reorganization of its research structure to take into account the technological priorities and the relationship between its research projects and the needs of the department's clients and partners.

David Florida Laboratory (DFL)



DFL has conducted environmental tests for Canada's Hermes, ANIK-C and D, Brazilsat and CANADARM programs. During 1986-1987, it completed tests on the thermal and structural models of the European Space Agency's Olympus satellite, one of the world's largest communications satellites.

Opened in the early 1970s to assist in the development of the Hermes satellite, today the David Florida Laboratory plays a major role in the development of Canada's communications and space industries.

To meet the requirements of the laboratory's growing list of domestic and international clients, the Department has authorized a number of structural modifications to the facility in recent years. The second phase of construction of a new wing was completed in 1986-1987.

DFL scientists made considerable progress on new test technologies for use with current and planned programs such as the Olympus, Anik-E, MSAT and Radarsat satellites and the proposed Space Station project.

DFL hosts two international symposia

The DFL played host to the 33rd meeting of the American Institute of Aeronautics and Astronautics Working Group on Space Simulation, which attracted representatives from American aerospace manufacturers and operators of national and multinational environmental testing facilities.

In addition, DFL and the National Research Council co-hosted the eighth annual meeting of the Antenna Measurement Techniques Association. Fifty-seven papers were presented at this symposium.

Development and testing services for clients

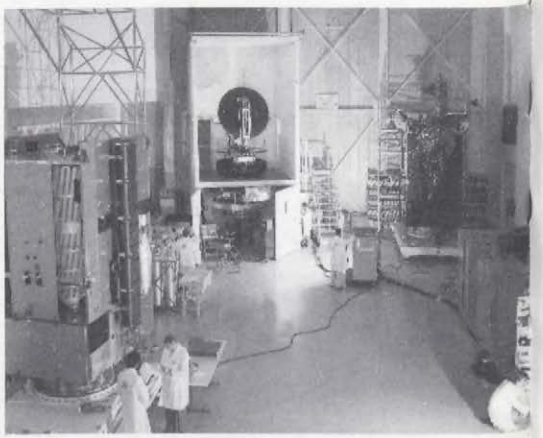
Over the 1986-1987 fiscal year, the DFL developed a number of new test services for clients.

New Microwave Landing System (MLS) antenna test range developed for Transport Canada

As part of a national program to extend Microwave Landing Systems (MLS) at Canadian airports, the DFL has been working closely with Transport Canada and industry to set up MLS test facilities including a new rooftop antenna range. The first test on the new system was successfully completed in March 1987.

New infra-red testing method reduces costs of thermal tests for spacecraft models

Verification of the thermal design of a spacecraft requires the performance of a thermal balance test which, in the past, has been conducted using a facility that simulates the sun's rays. The DFL has undertaken, together with a subcontractor, Spar Aerospace, to prove an alternative, less costly technology — the infra-red test method. By year-end, and in concert with staff of British Aerospace and Aeritalia, scientists had successfully completed the first spacecraft-level test on the thermal model of Olympus.



The David Florida Laboratory's High Bay with the Olympus structural model in the left foreground, the Olympus thermal model in the right background and Brazilsat (flight model S2) in the left background.

New Passive Intermodulation Measurement (PIM) test developed for satellite reflectors

Another new antenna test facility, designed to measure unwanted emissions with a high degree of sensitivity and accuracy, was transported to France to support Aerospatiale's testing of a candidate spacecraft antenna for MSAT, the satellite Telesat Canada will launch in the early 1990s to serve mobile users.

Informatics research

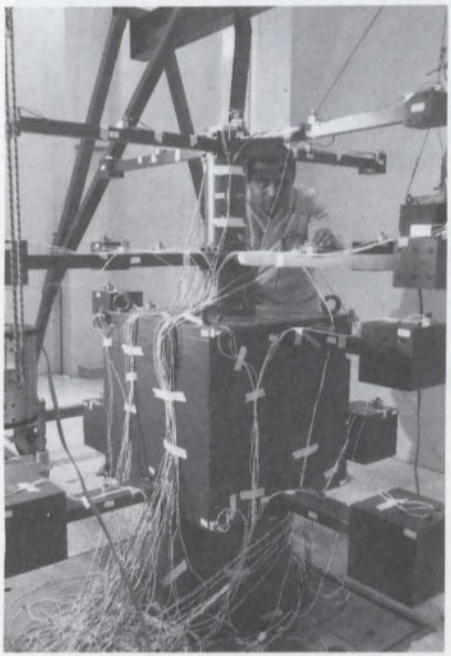
The convergence of computer and communications technology has generated a new research discipline known as "informatics."

Informatics standards development

The development of informatics standards is a worldwide activity carried out by the many nations that belong to the International Telegraph and Telephone Consultative Committee (CCITT) and the International Organization for Standardization (ISO). Canada makes significant contributions to these efforts. During the 1986-1987 fiscal year, the department's researchers developed test methodologies and approaches relating to Open Systems Interconnection protocols, and developed protocol standards in support of videotex services, and office systems standards. Their submissions have been largely accepted by CCITT and ISO as part of international standards in these fields. A number of these activities were carried out in conjunction with research organizations in the United Kingdom, France, Japan, Sweden and Australia.

Improving knowledge acquisition for expert systems

Acquiring knowledge from human specialists as a base for a computer's expert system is a long and complicated process. CRC researchers have been testing computer programs for machine learning using artificial neural network technology. If the system can "learn" from work completed by the specialist, much knowledge acquisition time would be saved. The scientists discovered that, once the system they were testing learned the relationship between different patterns of symptoms and a human specialist's diagnosis, it has a greater significant rate in diagnosing new cases. Creating computer programs to assist people is an area the Department plans to continue researching in the coming year.



The European Space Agency's FLECS structure being tested at the David Florida Laboratory. The structure has dynamic characteristics that are representative of the Olympus satellite.

Characterization of TV channel for teletext transmission

In teletext, graphic and textual information is transmitted in digital form during unused portions of a television signal. As most television systems are not designed to carry digital information, the performance and characteristics of these teletext transmissions needed to be studied. The Department carried out a series of measurements in various cities across the country, and compiled the results in an analytical form that is available to industry, called CRC Report #1420 *Digital transmission over video channels: Teletext field measurements.*

Natural language interactions with computer databases

The department's researchers have developed a computer program which allows users to type English or French questions into the database. In tests, the database correctly responded to people's queries 60 percent of the time. However, questions must be restricted to a specific topic so that the program can recognize cues and bring up the correct information. Work is continuing to increase the accuracy rate.

New publication: *Guidelines for the Creation of Electronic Databases*

Based on recent work by departmental researchers and reports in scientific literature, this publication recommends what types of information should be included in a database, and how to select the most effective index system. The Department plans to publish the report in the 1987-1988 fiscal year.

Radio technology

A particular highlight of 1986-1987 concerned research on narrow band technologies. CRC researchers combined single-sideband (SSB) modulation (by far the most efficient modulation scheme) with another method, amplitude compandoring, which compresses a voice signal before transmission, then expands it again at the receiver end to restore it to its initial form before it reaches the listener. Amplitude compandoring provides signals that are easier to hear than those sent by single-sideband. When the two techniques are combined, they provide many of the attributes of frequency modulation (FM) conventionally used for radio mobile communications but with markedly better spectrum efficiency.

Two groups at the CRC have implemented amplitude companded single-sideband (ACSSB) generation and reception by means of digital signal processing, a technology that is radically changing the engineering approach to designing communication systems.

Optical communications

Deeper understanding of photosensitivity opens way for improved communications fibres

Recent international attention by the scientific community to the possibility of a photosensitive fibre resulted in new collaborative research between the optical communications group at CRC and other researchers worldwide. The phenomenon of photosensitivity in optical fibres, discovered in 1978 by CRC researchers, opens the way for the fabrication of very narrow bandwidth optical fibre reflection filters thus allowing a single optical fibre to carry

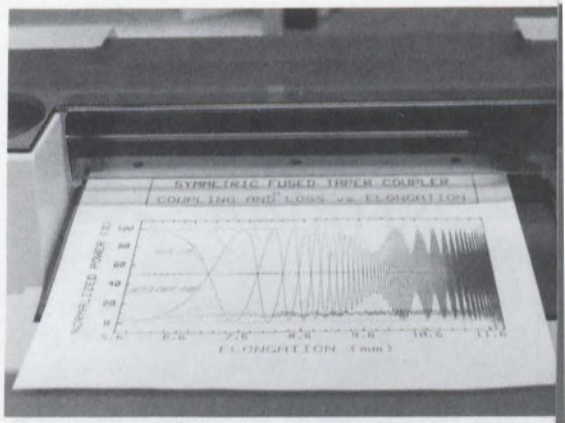
thousands of information channels each having a bandwidth of one gigahertz (1 GHz). Until recently, the application of this technology was hindered by the lack of understanding of the origin of photosensitivity and the limitation of this phenomenon to certain types of optical fibres.

During 1986-1987 the scientific community made considerable progress towards understanding the origin of this phenomenon that could lead to an improved photosensitive fibre. The optical communications group contributed by designing two new devices that use the fibre reflection filters in photosensitive fibre. These devices — a narrow bandwidth transmission filter and a narrow bandwidth wavelength selective tap — have potential application in fibre distribution systems for the delivery of many communications services to the home and in the implementation of optical fibre sensors for mensuration and robotics.

New fibre-optic network links with cities in Ontario and Quebec

On April 11, 1986, the Minister of Communications inaugurated the first link in a CNCP transcontinental fibre-optic network which will provide users with simultaneous voice, data and video transmission services. Montreal, Cornwall, Kingston, Belleville, Oshawa and Toronto were the first centres linked by the high-capacity, long-distance communications network, with Ottawa and London, Ontario to follow.

The Minister also announced plans for a Windsor link to provide users with access to U.S. markets by the end of 1987. The western part of the network, linking Vancouver and Edmonton, is slated for completion in 1987.



Printout from computer-controlled coupler fabrication jig showing loss and coupling ratio during coupler formation.

Stationary High Altitude Relay Platform (SHARP)

The SHARP concept proposes the use of a microwave-powered aircraft to offer the possibility of greater communications coverage to countries or businesses that find large communications satellites too expensive. The SHARP system uses a large ground antenna to transmit microwave energy to an unmanned airplane circling at an altitude of 20 km. Specialized antennas (rectennas) located on the lower surfaces of the plane convert the microwave energy to direct current (DC) power, which is stored in on-board batteries and drives the electric motor and the communications payload.

Preparing for a test flight of the SHARP microwave-powered aircraft on the grounds of the Communications Research Centre.

During 1986-1987, CRC researchers developed a new, high-power, more efficient SHARP rectenna system that significantly advanced the technology of the microwave-powered platforms. In addition, they flight tested a one-eighth scale model constructed by the University of Toronto Institute for Aerospace Studies.

Satellite communications

The MSAT project

MSAT, which Canada will launch in the early 1990s, will bring mobile satellite communications to users of two-way radio and telephone equipment regardless of the remoteness of their location. The federal government is committed to ensuring that commercial mobile satellite services (to be owned and operated by Canadians) will be available, hence implementation of MSAT is the major space communications activity in Canada's Long-term Space Plan. The MSAT program calls for 100 percent capitalization by the private sector, government allocation of funds for user trials and applications of mobile services, as well as government leasing of communications services for its own use.

Final approval of MSAT funding package

In May 1986, Cabinet gave its approval of up to $176 million in funding for the MSAT program. The federal contribution will pay the lease of MSAT capacity from Telesat, Canada's private, domestic satellite communications company; will assist in the development of earth stations, spacecraft technology and products, and communications trials.

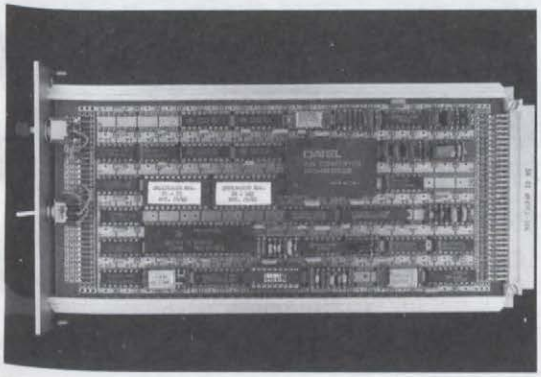
Communications Canada and Telesat Canada sign joint endeavor agreement

On March 9, 1987, Communications Canada and Telesat Canada signed a joint endeavor agreement for the implementation of a commercial MSAT service. Telesat will provide commercial mobile satellite services, and the

Government will establish policy guidelines and assist Canadian industry in developing technology and manufacturing capability for MSAT products.

Mobile satellite radio technology

CRC researchers have applied recent developments in microprocessors to realize modulation schemes such as amplitude companded single-sideband (ACSSB), greatly improving the efficiency of spectrum utilization. The techniques employed reduce not only the required bandwidth, but also the required signal power, both very important factors for communications satellites such as MSAT. The Department has transferred several of these innovations to industry through Canadian Patents and Development Ltd., where they have been developed further for a variety of applications.



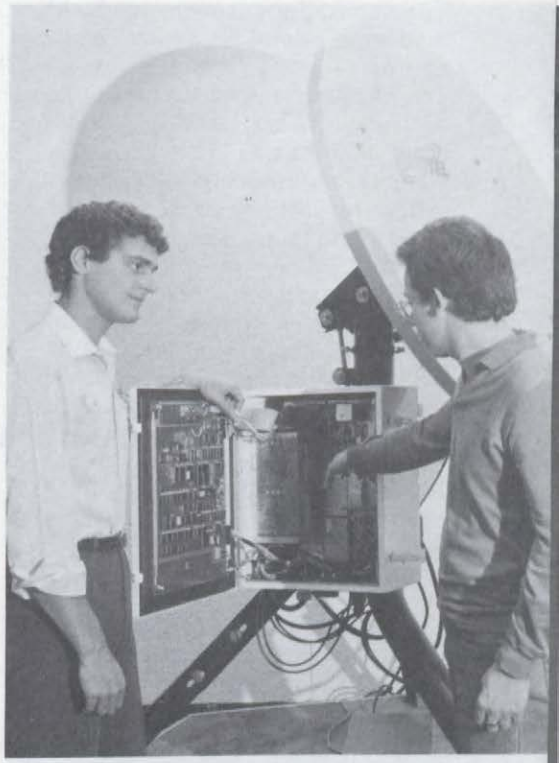
CRC researchers' incorporation of microprocessor technology into devices such as the DMSK/ACSSB modem shown above will greatly increase the MSAT system's capacity and economic viability.

Microtel Pacific Research produces VSAT

The Department took delivery of a Very Small Aperture Terminal (VSAT) for two-way data communications. The VSAT was produced by Microtel Pacific Research Inc., a British Columbia firm, under a contract awarded jointly with the Department of Supply and Services under its Unsolicited Proposals Program.

Joint field trial with Ontario ministries

During the year, the Department and the Government of Ontario co-sponsored a major field trial that involved eight experimental earth stations throughout Ontario. The Department gave the provincial departments access to the ANIK-C satellite for a series of projects in voice and data communications. The Ministry of Transportation and

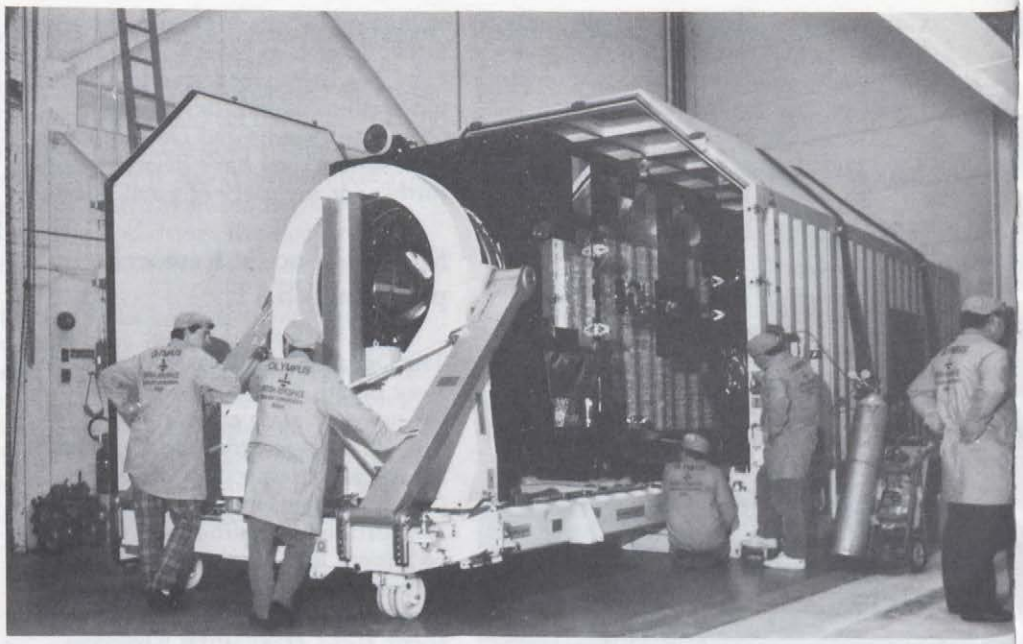


Very Small Aperture Terminals like this one are greatly extending the capabilities of satellite communications for such uses as two-way, low-speed data communications. The Department expects domestic and international markets for VSAT technology to grow rapidly. (Photo courtesy Microtel Pacific Research Limited.)

Communications experimented with road weather and air weather communications using Telidon technology. The Ministry of Agriculture and Food conducted trials related to agricultural radio broadcasting. The Ministry of Natural Resources investigated applications for inter-office data links and forest firefighting. The Ministry of Government Services pursued inter-office data and telephone links. Ontario Hydro explored the feasibility of satellite communications for powerhouse power links. Many of the projects were considered so successful that the Government of Ontario is planning to transfer these operations to Telesat Canada during 1987-1988.

Preparation for Olympus trials

The Department worked with two Canadian manufacturers to develop Extra High Frequency (EHF) earth station equipment to be used in conjunction with the European Space Agency's Olympus satellite when it is launched in 1989. The terminals will be used to carry out experiments in Canada, using Olympus.



The arrival and unloading of the Olympus satellite at the David Florida Laboratory.

The Department awarded a $1 million contract to Varian Canada Inc. of Georgetown, Ontario, to develop and manufacture high-power earth station amplifiers. These amplifiers will boost the signals beamed from earth stations to Olympus to the levels necessary for carrying out experiments in the EHF bands the satellite requires.

CRC researchers provided SED Systems Inc. of Saskatoon, Saskatchewan, with test facilities for both space segment and earth station hardware.

RADARSAT work for the Department of Energy, Mines and Resources (EMR)

Through an interdepartmental agreement, the Communications Research Centre has undertaken the definition and implementation of the space segment of the RADARSAT Earth Resources Satellite Program of the Department of Energy, Mines and Resources. The primary instrument to be carried by this satellite will be a Synthetic Aperture Radar (SAR) which will employ a large (15 m by 1.5 m) slotted waveguide planar array antenna. As part of the Phase B activity of this program, a developmental (breadboard) unit of the SAR antenna was developed, fabricated and tested by the CRC RADARSAT Technical Office in conjunction with three Canadian Industrial Partners (Spar, Canadian Astronautics and ComDev). This large test article (see photo) which represented approximately one eighth of the actual structure (1.75 m by 1.5 m) was successfully tested to verify the design concepts and software for the flight antenna which encompasses several major unique concepts including the ability to electronically steer the radar beam in flight to selectively choose the area on the ground to be monitored.

Projects for the Department of National Defence (DND)

Satellite communications R&D

Communications Canada continues to provide major support to DND in the area of military applications of satellite communications. A major new technical project was initiated this year, to develop technology for satellite networks utilizing the Extremely High Frequency (EHF) band of frequencies. Another area under investigation is the development of techniques to minimize

A section of the SAR antenna, parts of which were manufactured by Spar Aerospace Ltd., Canadian Astronautics Ltd. and ComDev Ltd. The complete antenna measures 15 m × 1.5 m. The Department provides technical support to the Department of Energy, Mines and Resources for the first phase of the RADARSAT Earth Resources Satellite Program.

the effects of jamming on communications. A contract was awarded to Queen's University for a theoretical study of this problem.

Radar research

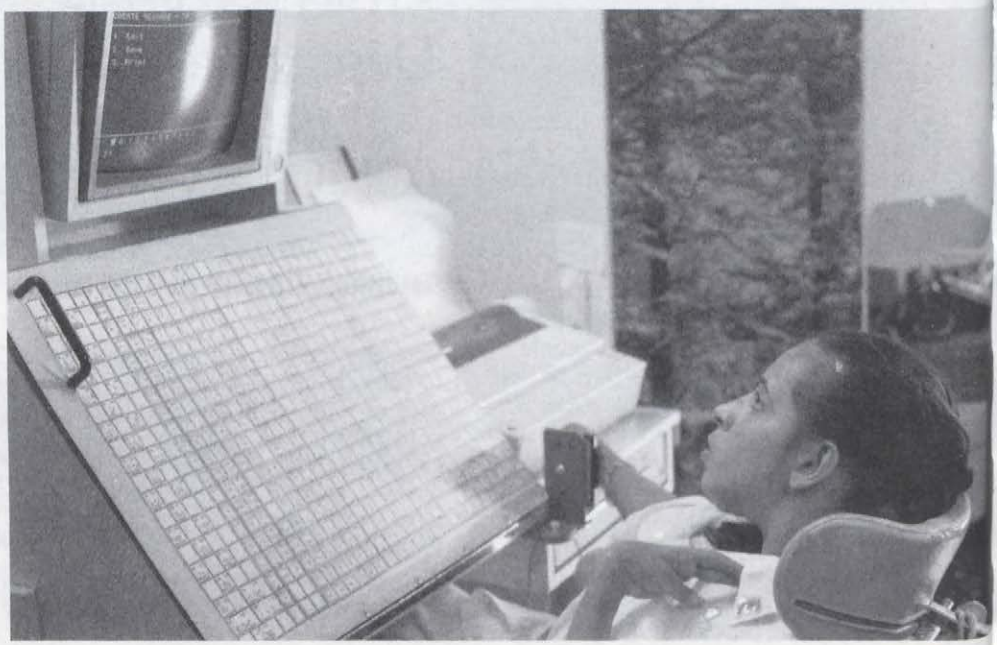
The Department of National Defence fully funds the radar research work carried out by CRC researchers. During 1986-1987, the Department carried out projects related to phased-array radar, detection and tracking of air targets, and multipath, clutter and radar systems that apply to maritime, land-based, airborne and satellite-borne radar systems. The Department also provides DND with substantial technical support for procurement projects involving radars. These currently include the Canadian Patrol Frigate, the New Shipborne Aircraft and the Low Level Air Defence Project.

One of the department's major achievements during 1986-1987 was its demonstration of high-quality synthetic aperture radar images of terrain and ships from an airborne radar. The images were produced using newly developed techniques that compensated for the effects of the aircraft's and targets' motion. Many countries, including the United States, the United Kingdom, West Germany and Australia have expressed interest in this work.

Technology transfer

Telidon technology adopts Bliss symbols to help speech-impaired

In an 18-month co-operative project that the Department shared with the Secretary of State department, industry, and the non-profit sector, an international language of symbols used by the speech-impaired around the world (Bliss), has been adapted into a coding scheme that can be used with a terminal incorporating a telephone for the speech-impaired. Plans are now underway to refine the telephone software and coding scheme in line with international standards.



The BLISSCOM telephone was successfully demonstrated in Montreal during 1986-1987. (Photo courtesy of IDON Corp.)

$89 million Memorandum of Agreement with Spar Aerospace

In August, the Minister signed a Memorandum of Agreement with Spar Aerospace that provides up to $89 million over the next five years to assist Spar's development as Canada's prime satellite contractor and to aid its Canadian suppliers. Under the agreement's terms, Spar must create at least 280 permanent, high-technology jobs at its Montreal plant as the result of new business developed through this program. The Department provides $53 million to support engineering development at Spar, and a further $9 million to assist Canadian sub-contractors to develop the satellite components that Spar presently imports. Spar's satellite division is to invest over $27 million in product development and capital equipment by 1991 and, beginning in that year, a further $41 million in R&D over a six-year period.

Technology transfer through IRAP and UP programs

- Two of the main vehicles through which the Department sponsors and manages transfer of communications and informatics technologies from its research laboratories to Canadian companies are the Industrial Research Assistance Program (IRAP) and the Unsolicited Proposals (UP) Program.
- IRAP, which is administered by the National Research Council of Canada, is managed by an interdepartmental committee of which Communications Canada is a prominent member. This program supports the transfer of technologies from federal government and university labora tories to industry through contributior arrangements requiring no deliverables other than reports. Any resulting technology is owned by the company. During 1986-1987, the Department managed 15 such projects, including six newly approved ones, totalling approximately $5.6 million.
- Two of the above IRAP contributions involved the transfer of the department's Common Visual Space Network (CVSNET) to Canadian firms. One project, valued at $169,000, will enable IDON Corp. of Ottawa to integrate CVSNET into an active videotex/videodisc training system. The other project, valued at $992,000, will help Crawley Recherche et Developpement of Hull, Quebec, integrate CVSNET technology into a two-dimensional computer-assisted animation system which is currently under development. (CVSNET enables a number of users at separate computer workstations to work together towards a common objective by viewing and manipulating identical visual representations on their individual monitor screens.)
- Another example of technology collaboration through IRAP is the transfer of CRC's HF maxi-terminal technology to RACE Technologies Inc. of Vancouver, British Colombia. Through this project, valued at $78,000, the company will acquire the know-how from CRC scientists and develop a commercial model of the low-cost high-speed HF digital radio and message terminal. The product will be used on remote drilling rigs, fishing vessels, in mining operations, and in diplomatic communications. The terminal will transmit digital facsimile images and messages, as well as collect data from other sources.
- Other active IRAP projects involved the transfer of microwave technologies from CRC's Communications Devices laboratories to MA Electronics Corp. and B.E.L. Tronics Inc. of Mississauga, Ontario; MITEC Ltd. of Pointe Claire, Quebec; Bolriet Technologies Inc. of Carleton Place, Ontario; and Nexus Engineering Inc. of Burnaby, British Columbia. Finally, from CRC's military communication laboratory, advanced data encryption technology was transferred to Intellitech Canada Ltd. of Ottawa and, from the satellite

communication laboratory, a prototype Ku-band transportable satellite communications earth terminal was transferred to Skywave Electronics Ltd. of Kanata for commercial exploitation.

- The UP Program, which is administered by the Department of Supply and Services (SSC), supports industrial R&D through contracts for industry-proposed projects. The program requires deliverables, with resulting technology owned by the government. The Department has supported a wide variety of UP projects related to communications technologies. Its very successful UP contracts for a number of satellite communications technologies were highlighted in a two-part article in the February and March 1987 issues of SSC's monthly publication, the *R&D Bulletin*.
- A collaborative project between several government departments, the University of British Columbia, the Law Foundation of British Columbia and IBM Canada Ltd., Project UBC is introducing the application of computer and communications technology to the legal profession. Its goals are to develop new ways to learn the law and acquire legal skills, ways to improve public understanding and access to the legal system, and to provide support to the preparation of legal cases and the decisions of judges.

Canadian Workplace Automation Research Centre (CWARC)

Opened by the Government in 1985 in Laval, Quebec, in response to needs identified by users of workplace automation technologies, CWARC is an integral part of the department's research program. CWARC's priorities are established in close co-operation with the universities, industry and the public through an advisory committee consisting of 15 members representing these sectors. The centre's four research directorates provide leadership in applied research related to office automation systems, help users resolve automation problems, serve as a centre for the exchange of information and encourage co-operation between CWARC specialists and client groups.

A view of the video conferencing room at the Canadian Workplace Automation Research Centre.

National Exchange Program

In 1986-1987, CWARC established a national exchange program for specialized personnel to facilitate ongoing, effective transfers of technology. Under this innovative program, experts from public, private and university agencies or institutions may be seconded to the Centre for up to three years.

Centre des femmes de Montréal office automation project

In January, the Minister of Communications announced a $23,000 contribution for the implementation of an integrated office system at the Centre des femmes de Montréal. This centre is a non-profit organization that provides information and reference services, legal advice, counselling, employment searches, and assistance to immigrants to more than 30,000 clients annually. The Department also contributed expertise for the first phase of the office automation project through advice provided by CWARC personnel.

New Automation Research Centre for Laval University

Under the Canada-Quebec Subsidiary Agreement on Communications Enterprises Development, the two governments announced a contribution of $852,000 towards establishment of a new research centre at Laval University that will work in close co-operation with businesses, governments and the universities to promote R&D in the automation of organizations in a Francophone environment.

Looking Ahead

Departmental policies and programs, unlike annual reports, do not begin and end neatly to coincide with the beginning and ending of fiscal years

Most policies are developed with long-term goals in mind, and it often takes several years to prepare for changes that will affect programs for many more years to come. The extensive studies, consultations and public hearings that have characterized preparation of the new copyright legislation is just one example of the continuing process.

The 1986 Speech from the Throne announced three major priorities for the telecommunications portion of the Communications and Culture Portfolio. All three are essential to the government's long-term agenda for expanding Canadian economic opportunities through greater utilization of information and knowledge.

The first priority is to build a telecommunications policy framework that will encourage the economic expansion of Canada's information and knowledge sector. To meet this goal, the Minister will seek a consensus with the provinces on issues affecting the national telecommunications system, including agreements on interconnection and sharing governmental responsibilities — essential forerunners to the development of innovative telecommunications.

The second priority is to stimulate creation of software and database services and new communications technologies, and to improve Canadians' access to them in all sectors of the economy.

The third priority is to enhance Canadians' sense of national pride. The Department will concentrate on two avenues: revitalization of the broadcasting system and strengthening of the status of individual artists, for it is their work that so often helps Canadians to understand themselves and how others see them.

The broadcasting system is central to Canadians' concept of themselves, their country, and their country's position in the world community. Its programs serve as a mirror for the Canadian way of life. The new broadcasting policy will be based on consultations with the provinces and industry, as well as on many of the recommendations of both the Caplan/Sauvageau Task Force on Broadcasting and the House of Commons Standing Committee on Communications and Culture. The resulting structure will form the basis of the new *Broadcasting Act* and revised *Radio Act* that will guide Canada's broadcasting system into the twenty-first century.

Departmental measures for improving the status of individual artists and creators will also be pursued within the context of wide-ranging consultation. The Bovey task force on Funding of the Arts and the Siren/Gélinas task force on the Status of the Artist have already contributed much to this process. Meanwhile, the Department intends to press for enhanced access to Canadian art in all its forms, and to develop the role of the artist in this country. The department's consideration of the role of culture in tourism (see page 18 of this report), of a national touring strategy (page 17), a festival funding policy (page 18), and a marketing strategy (page 17), will hasten attainment of this goal. In addition, the Department will stress rapid resolution of copyright issues that have been delaying the passage of a new *Copyright Act*. This act will go far to strengthen creators' rights to fair recompense for their efforts, recompense they have had difficulty with partly because the existing Act could not take account of the copyright issues raised by rapid technological changes in copying techniques.

The Department will also proceed with a group of heritage policies designed to encourage more frequent showings of artistic works. The imminent opening of Canada's two new world-class museums, the Canadian Museum of Civilization in Hull, Quebec, and the National Gallery in Ottawa will serve as fitting symbols of this new priority.

Feature Article — EXPO 86

The World Exposition on Transportation and Communications EXPO 86 as a microcosm of the department's mandate

It was a wonderland of communications. It showed how Canadians have become world experts at overcoming the barriers of distance, time, language and culture to speak to one another. It displayed the innovative technology, from satellite systems to fibre optics, that has made Canada a world leader in telecommunciations. And it was a stage for the Canadian artists and performers who use images, movements, words or gestures to prod our hearts and minds.

Furthermore, in presenting all these wonders to the world, EXPO served also as a demonstration model of Communications Canada's role in Canadian life.

The Department, together with Transport Canada, organized the federal participation in EXPO 86, bedazzling Canadians and visitors from more than 50 countries with Canada's achievements. The Department developed many of the Canadian Pavilion's theme concepts and designs for the exhibits of communications technology. Communications Canada installed Telidon, the interactive videotex system born in the department's Communications Research Centre, at 21 locations in the Canadian Pavilion, including the media centre. Visitors tapped into the Telidon terminals for over 3,000 pages of information a day. And in the pavilion's specially designed indoor and outdoor theatres, 2,000 of Canada's most talented entertainers put on a cultural extravaganza financed with $5.8 million.

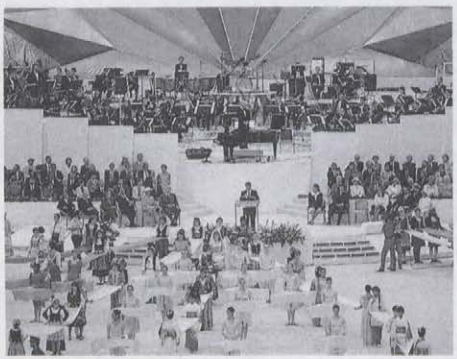
Visitors to EXPO 86 milling about the western promenade. (Photo courtesy of Natalie MacFarlane.)

An aerial view of the Canada Pavilion stretching the length of three city blocks into Vancouver's vibrant downtown harbor. (Photo courtesy of Natalie MacFarlane.)

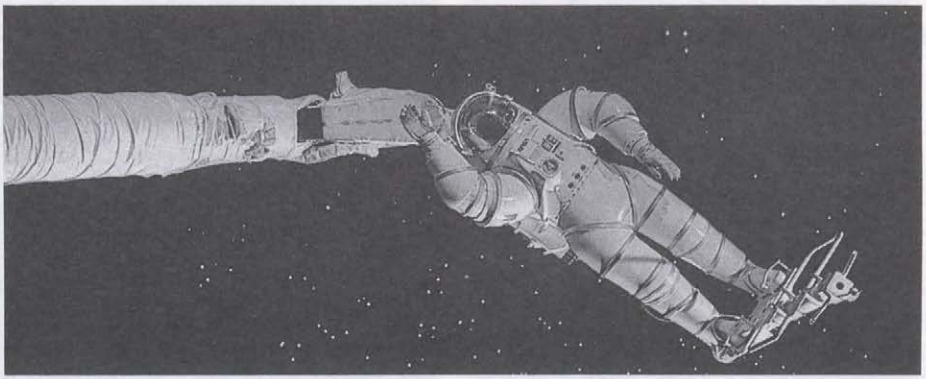
Telidon terminals were installed at 21 locations in the Canada Pavilion for visitors to tap into. (Photo courtesy of Natalie MacFarlane.)

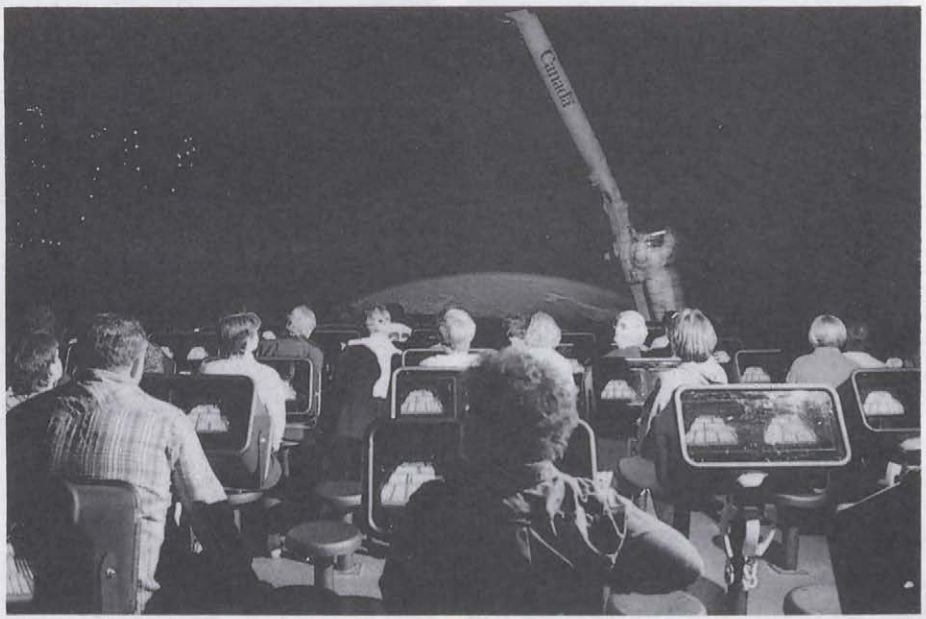
The thunderbird of west-coast Indian legend rose over the outdoor amphitheatre on the western promenade near the prow of the pavilion.

Rosemarie Kuptana was one of seven Canadians honored during Communications Week at EXPO 86 for distinguished contributions in the field of communications.



EXPO welcoming the world on opening day. (Photo courtesy of Image Finders Photo Agency.)





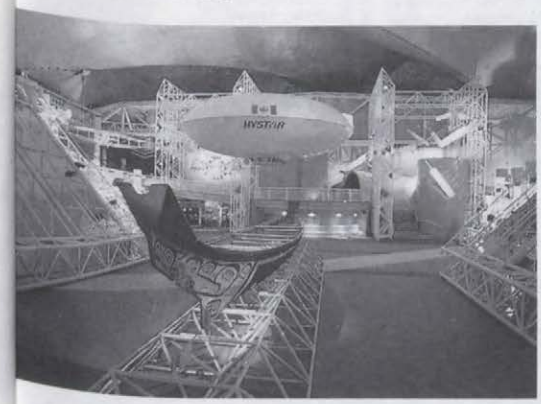
The Canadarm display at the New Frontiers Theatre.

The MSAT model exhibit in the Canada Pavilion. (Photo courtesy of Natalie MacFarlane.)

The Department brought 20 major cultural performing companies from across Canada to EXPO's World Festival for the Performing Arts, and used $2 million from its Cultural Initiatives Program to help 46 other groups — ranging from jazz musicians to children's theatre troups — tour several major centres after their EXPO appearance. The Department also gave a boost to 29 Vancouver groups, underwriting their participation in local Vancouver Centennial celebrations.

To ensure the extensive participation of industry, the Department prepared and distributed kits on marketing opportunities at EXPO, to which some 300 communications companies responded. A bridge to international co-operation was built through a symposium with Ministers and delegates from 20 participating countries and international organizations. The theme was Communications: the Challenge of Change, and discussion focussed on the need to close the gap in communications technology between industrialized and developing countries.

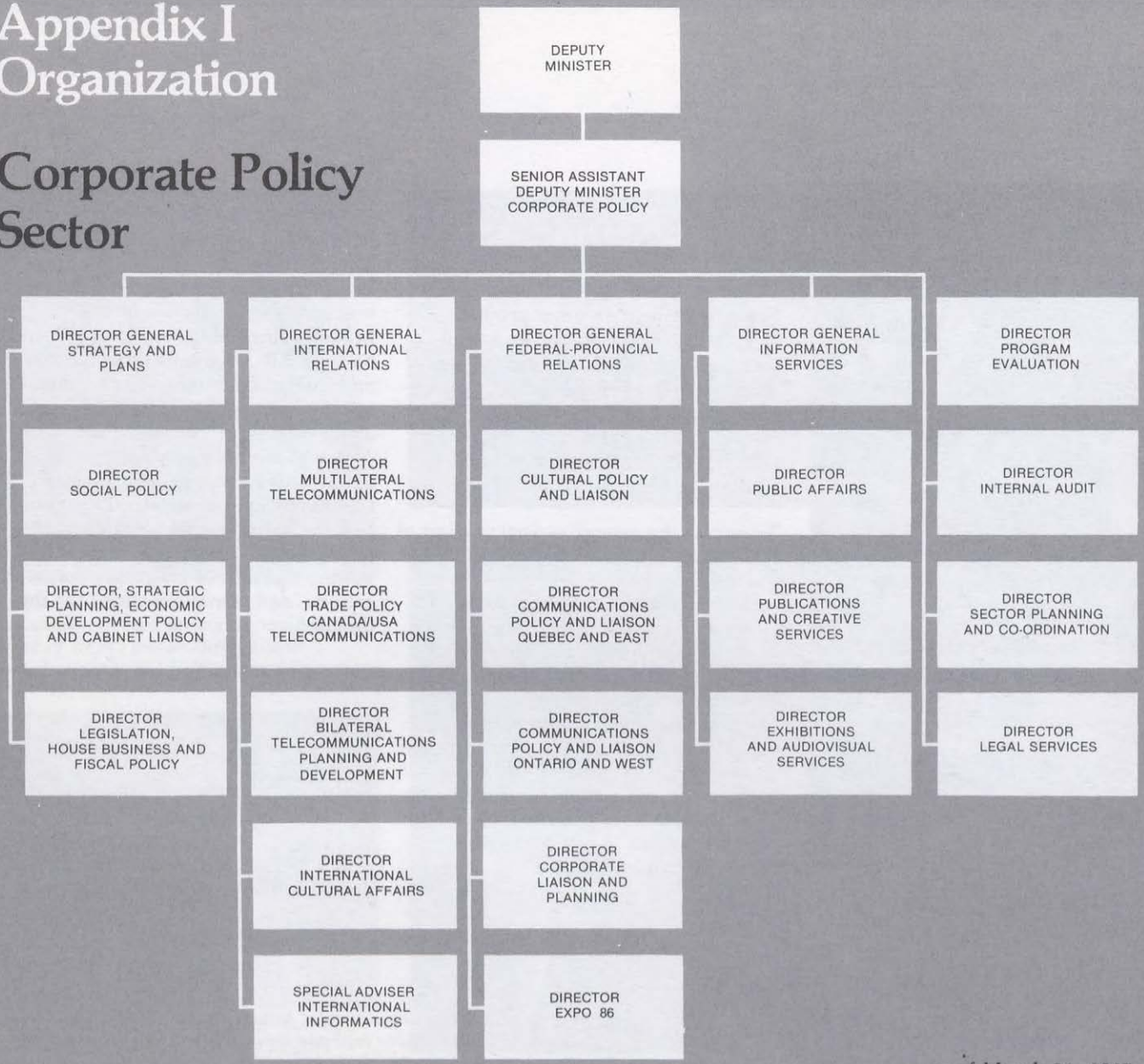
As part of Communications Week at EXPO, the Department sponsored Fibersat, an international conference on fibre optics and satellite communications. The opening night of Fibersat was an awards banquet hosted by Minister Flora MacDonald and attended by over 330 presidents of Canadian and foreign communications companies participating in the conference, along with other company executives. This was the backdrop for presenting awards to seven distinguished Canadians who made significant contributions in the special areas of: native, multicultural, women's, community, youth, and official languages communications, and communications for the disabled.



A view of the Pavilion's Great Hall featuring a circular helium airship, the Hystar, that looks and performs like a flying saucer (photo top) and a magnificent 78-year-old Haida Indian war canoe, largest existing in Canada (photo bottom).

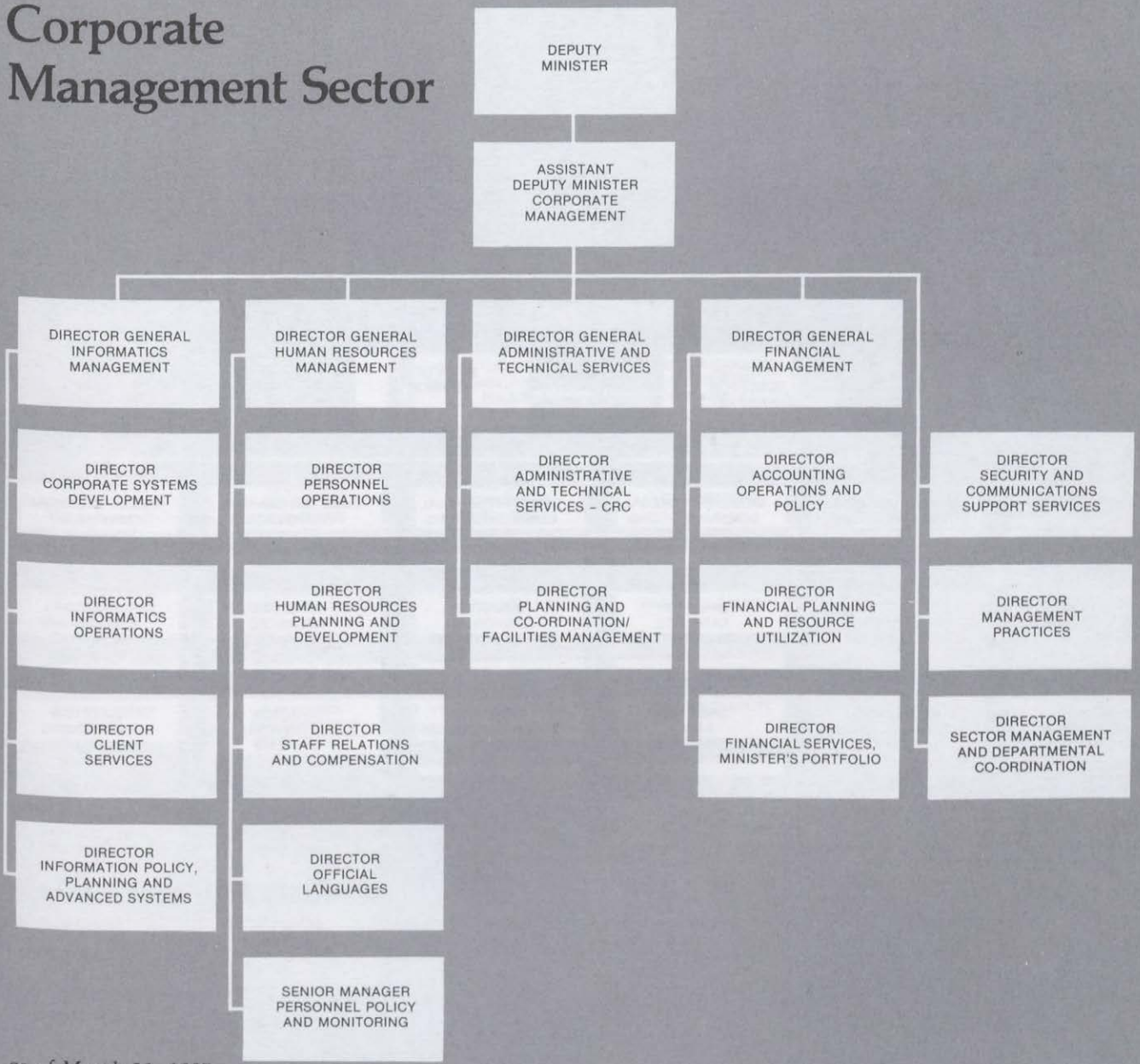
Appendix I
Organization

Corporate Policy Sector



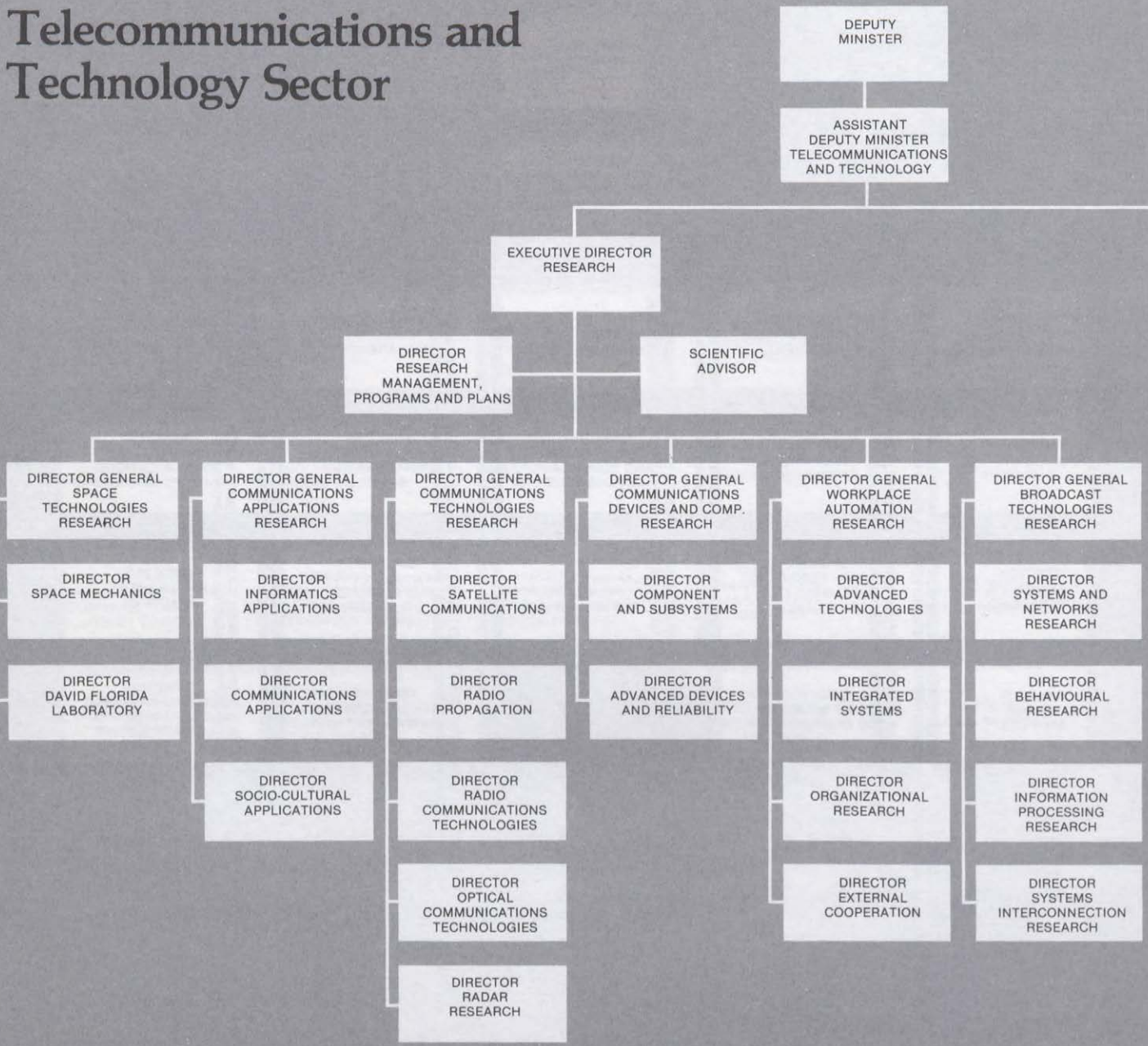
as of March 31, 1987

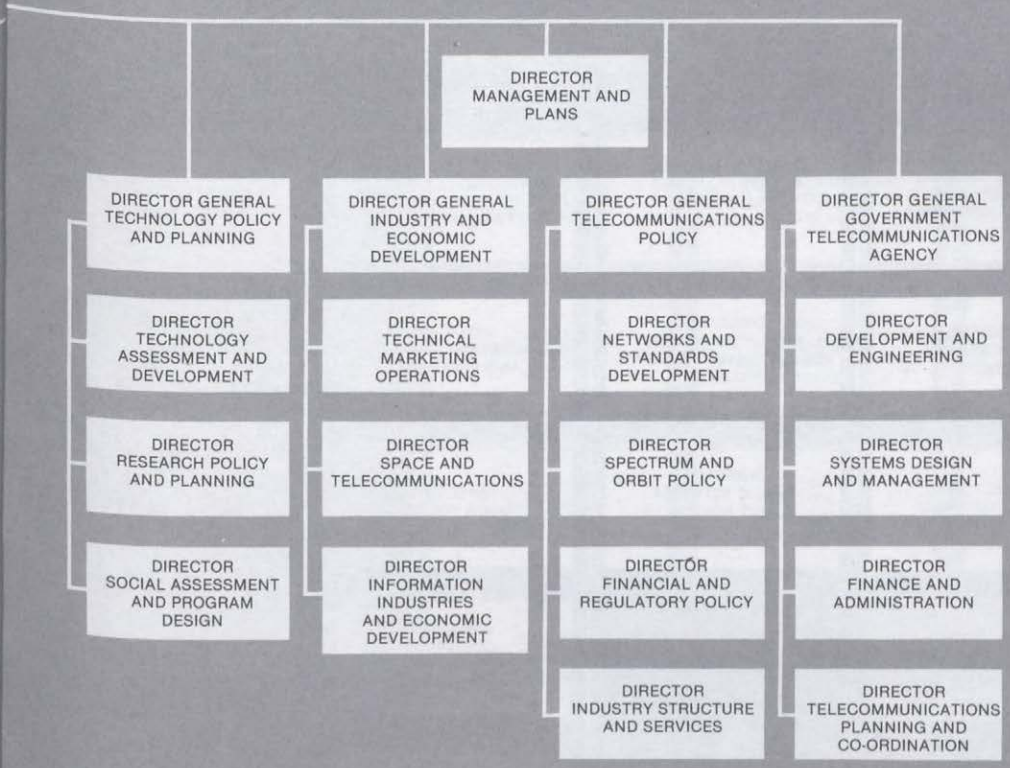
Corporate Management Sector



as of March 31, 1987

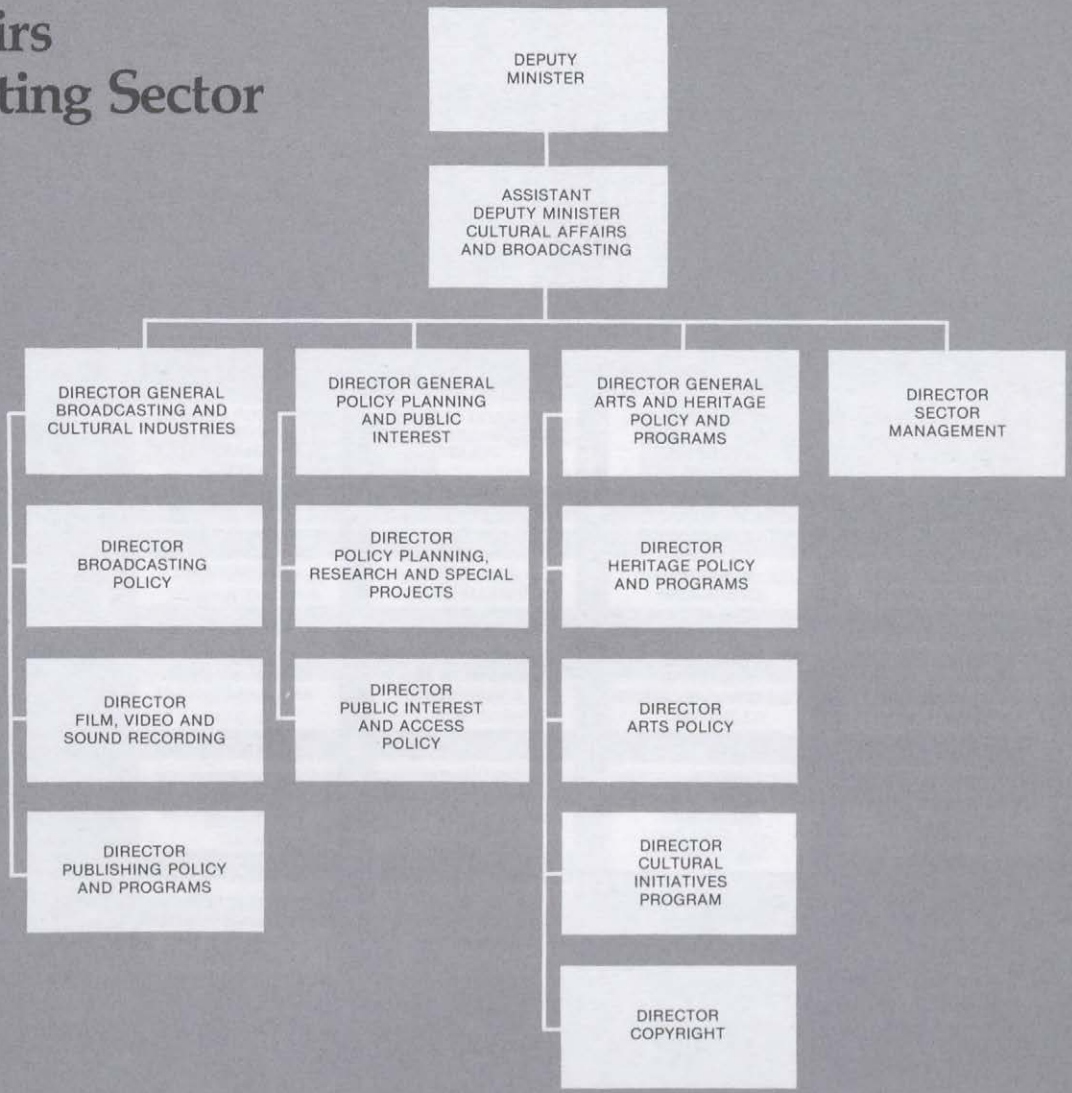
Telecommunications and Technology Sector





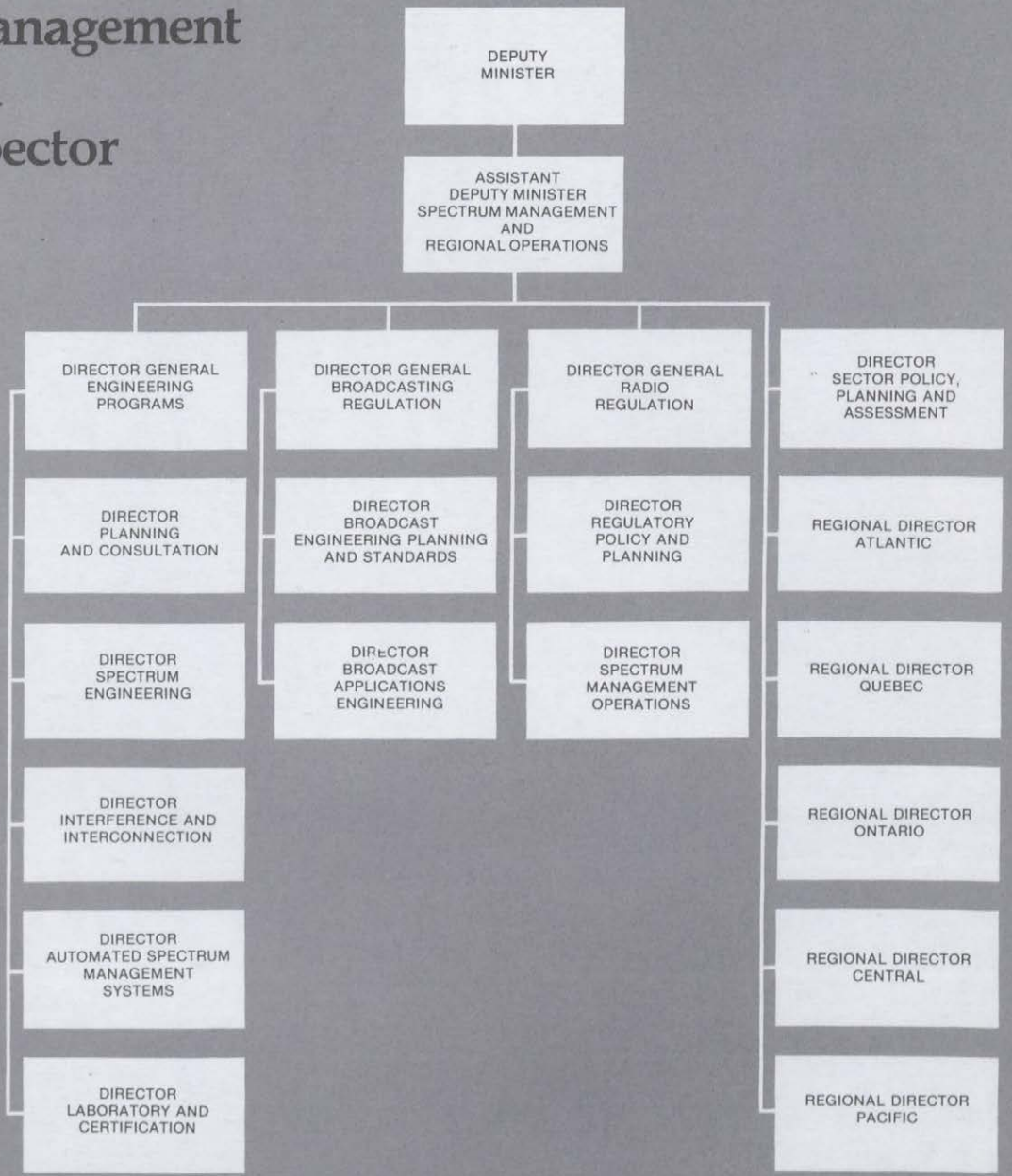
as of March 31, 1987

Cultural Affairs and Broadcasting Sector



as of March 31, 1987

Spectrum Management and Regional Operations Sector



as of March 31, 1987

Appendix II

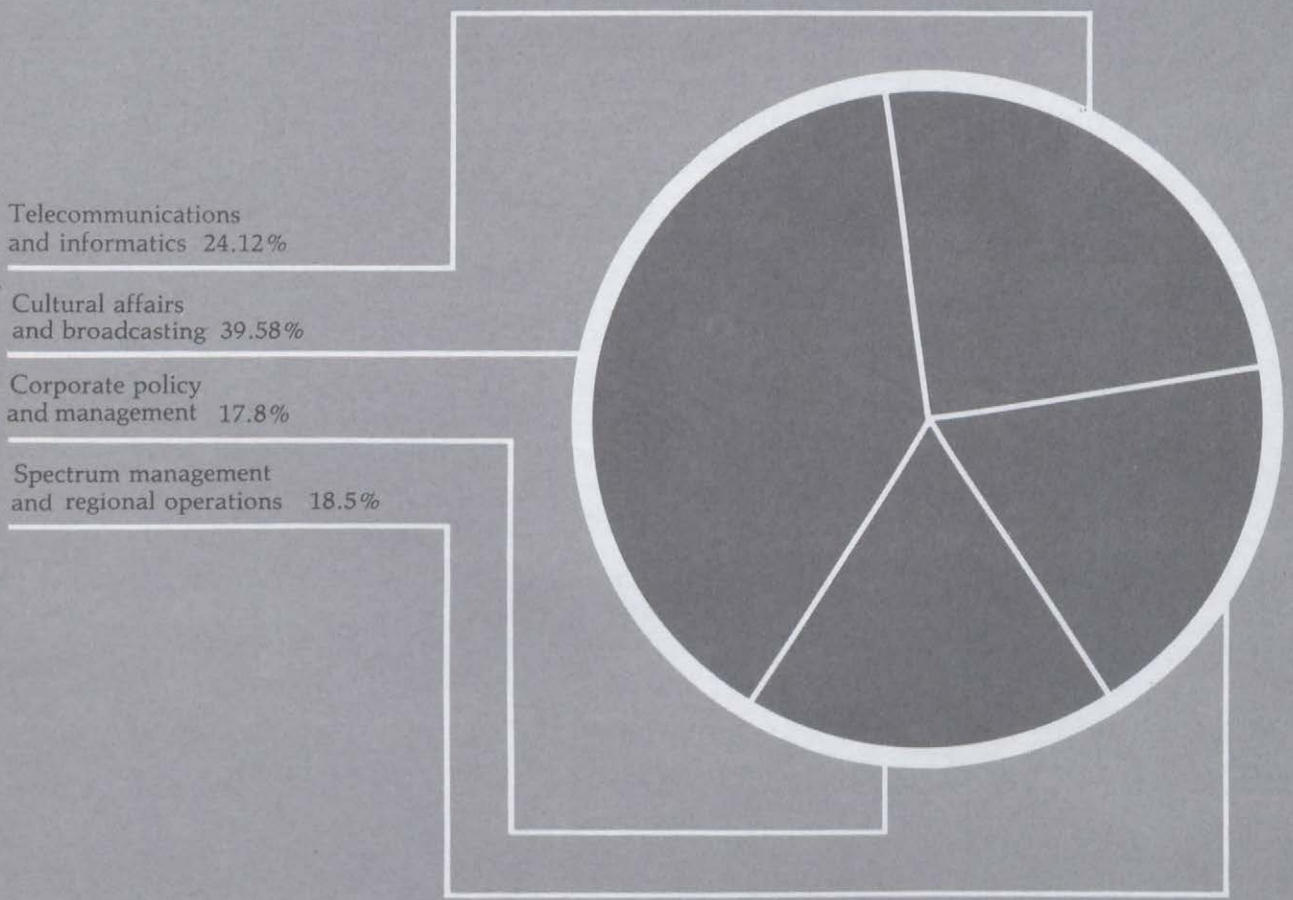
Expenditures by activity 1986-1987 (in thousands of dollars)

	Operating	Capital	Transfer payments	Total
Communications and Culture Program				
Telecommunications and informatics	35,014	7,368	22,717	65,099
Spectrum management and regional operations	48,135	1,784	25	49,944
Corporate policy and management	38,763	4,308	4,961	48,032
Cultural affairs and broadcasting	65,926	10	40,912	106,848
	187,838	**13,470**	**68,615**	**269,923**
Add: Accommodation provided without charge by this department	10,040			10,040
Accommodation provided without charge by Public Works	9,524			9,524
Other services provided without charge by other departments	2,130			2,130
Total cost of program	**209,532**	**13,470**	**68,615**	**291,617**
Communications Program — Government Telecommunications Agency Revolving Fund				
Planning and co-ordination	1,560			1,560
Management and administration	10,873	263		11,136
Operating	129,454	33		129,487
	141,887	296		142,183
Less: Receipts credited to the fund	(142,045)			(142,045)
	(158)	296		138
Total cost of program	**209,374**	**13,766**	**68,615**	**291,755**

Source: Public Accounts of Canada, 1986-1987

Appendix III

Total expenditures by activity 1986-1987
(excluding the Government Telecommunications Agency)



Source: Communications Canada

Appendix IV

Government Telecommunications Agency Revolving Fund
Statement of operations for the year ended March 31, 1987

	1987 $	1986 $
Revenues		
Telecommunications Services:		
Customized	65,834,614	63,278,529
Intercity	64,469,515	66,250,766
Local	6,699,008	4,566,582
Data	4,909,068	6,055,111
Directory	904,608	728,419
Other Network Services	15,414	24,829
Other Revenues:	2,206	2,704
Total Revenues	**142,834,433**	**140,906,940**
Expenses		
Operating:		
Customized	64,616,065	62,157,461
Intercity	54,630,857	56,952,286
Local	4,575,212	3,683,437
Data	4,196,075	4,928,680
Directory	677,300	484,322
Other Network Services	6,325	14,528
	128,701,834	**128,220,714**
Planning and Co-ordination:		
Salaries	1,456,217	1,438,056
Termination Benefits	25,894	6,509
Rental Building and Equipment	36,633	59,025
Professional Services	21,284	70,396
Travel	14,968	15,083
Telephone and Freight	13,581	7,103

(cont'd)

	1987 $	1986 $
Repairs	8,116	9,772
Office Materials and Supplies	5,208	815
Information	4,278	4,658
Other	70	9,992
	1,586,249	**1,621,409**
Management and Administration:		
Salaries	7,312,371	7,021,840
Termination Benefits	130,025	167,635
Rental Building and Equipment	1,729,632	1,000,724
Professional Services	1,123,510	828,702
Telephone and Freight	356,053	237,043
Repairs	173,924	70,080
Travel	165,085	144,997
Depreciation	142,020	108,638
Office Materials and Supplies	139,690	99,292
Information	89,472	154,685
Other	6,663	7,928
Loss on Disposal of Fixed Assets	5,645	172
	11,374,090	**9,841,736**
Interest charges on the Revolving Fund	**624,916**	**429,437**
Total Expenses	**142,287,089**	**140,113,296**
Net Profit	**547,344**	**793,644**

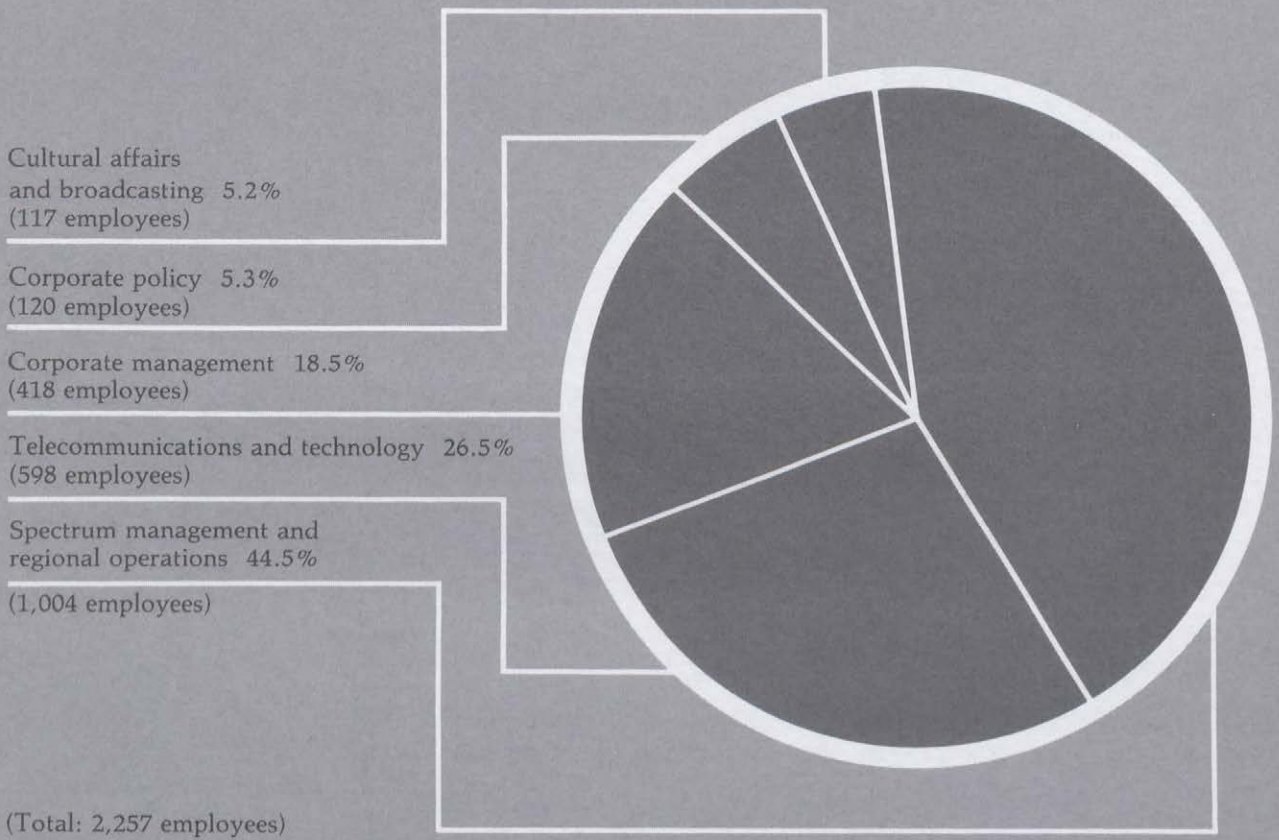
Purpose and authority

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, 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 of the accumulated deficit caused by the payment to Bell Canada for a terminated contract has been written off to the authority. An amount of $784,781 representing net assets assumed by the Fund and assets contributed to the Fund was charged against this authority when the fund became budgetary.

Source: Public Accounts of Canada, 1986-1987

Appendix V

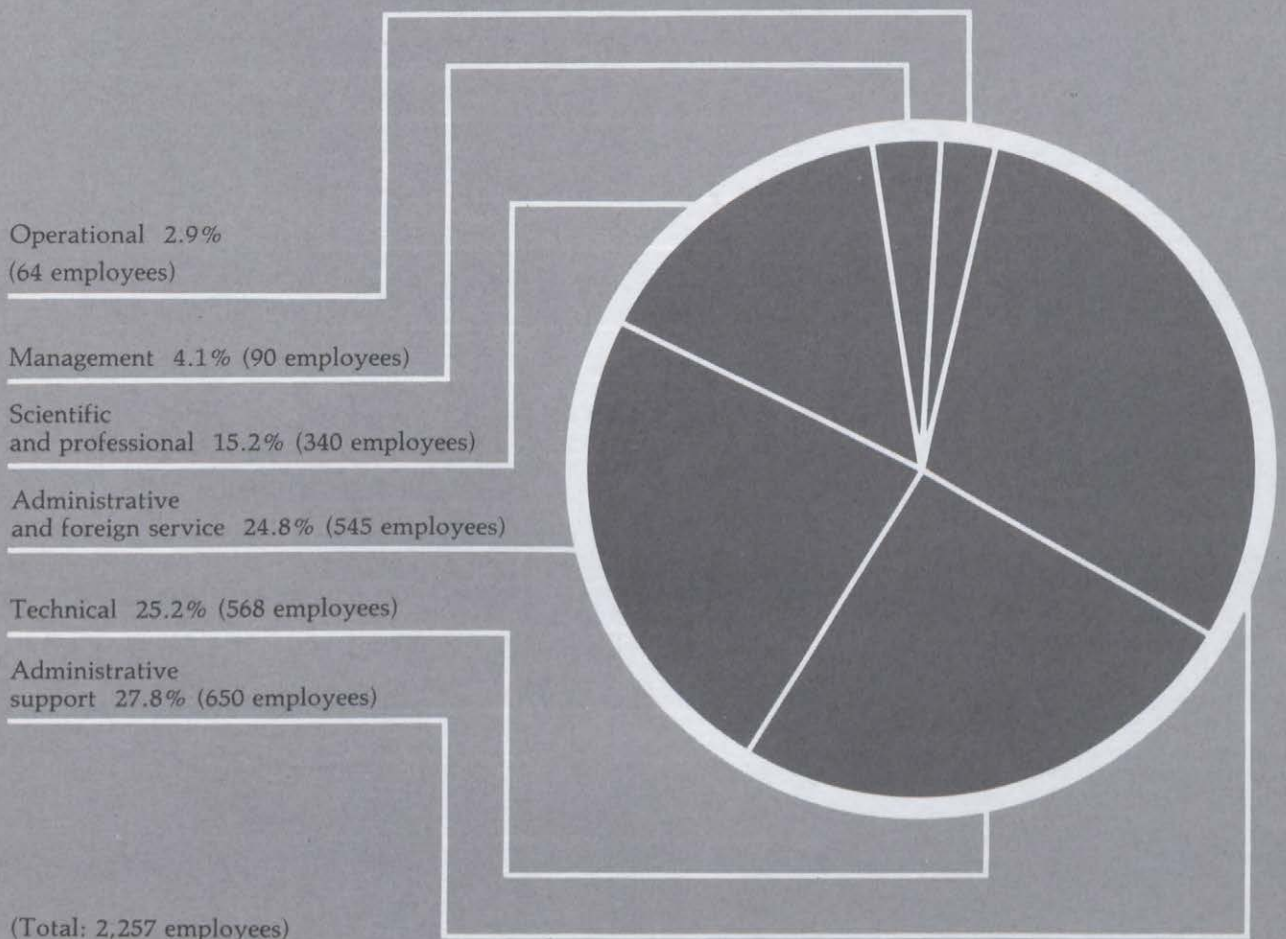
Departmental employees by activity, 1986-1987
(as of March 31, 1987)



Source: Communications Canada

Appendix VI

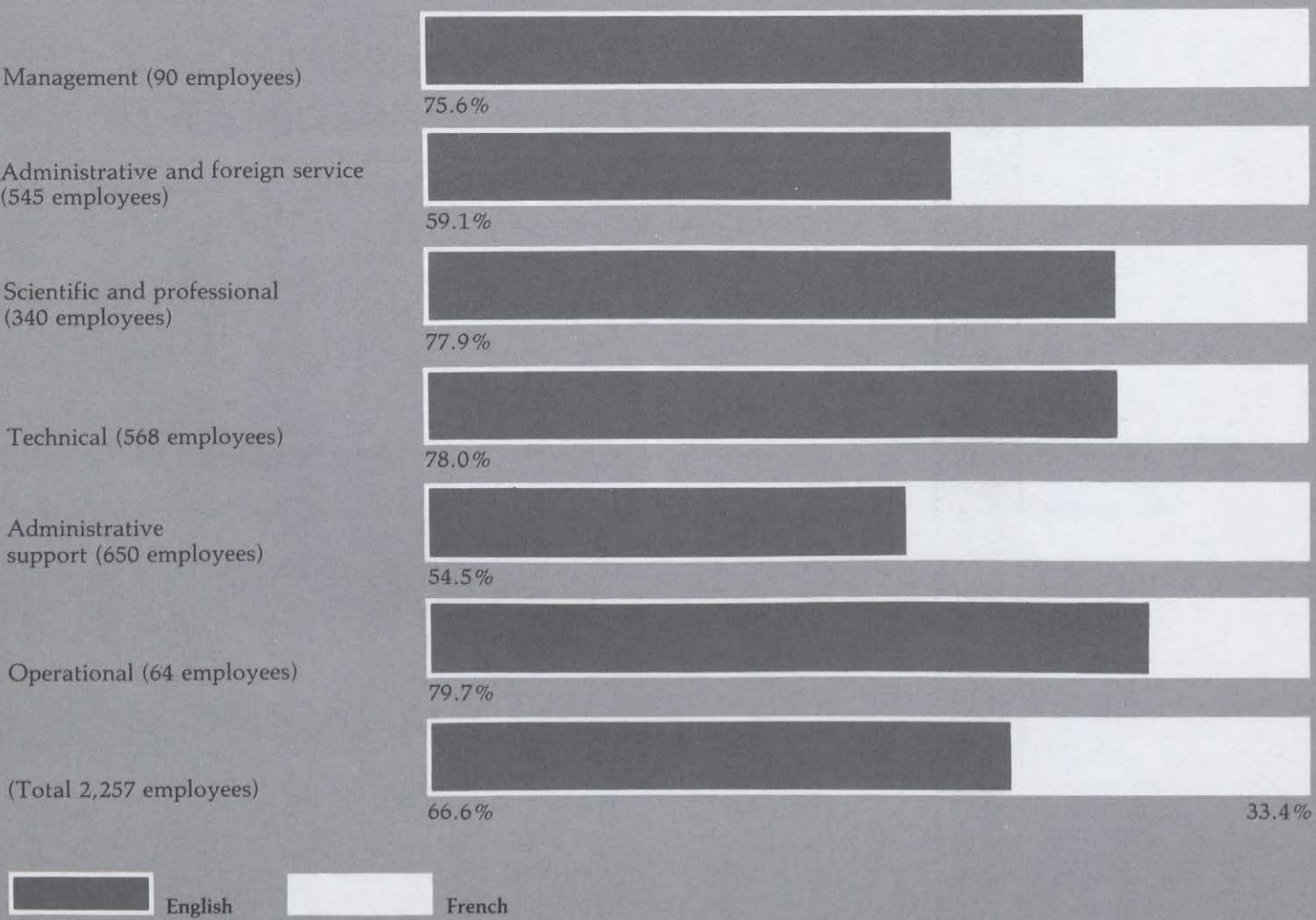
Distribution of employees by employment category (as of March 31, 1987)



Source: Communications Canada

Appendix VII

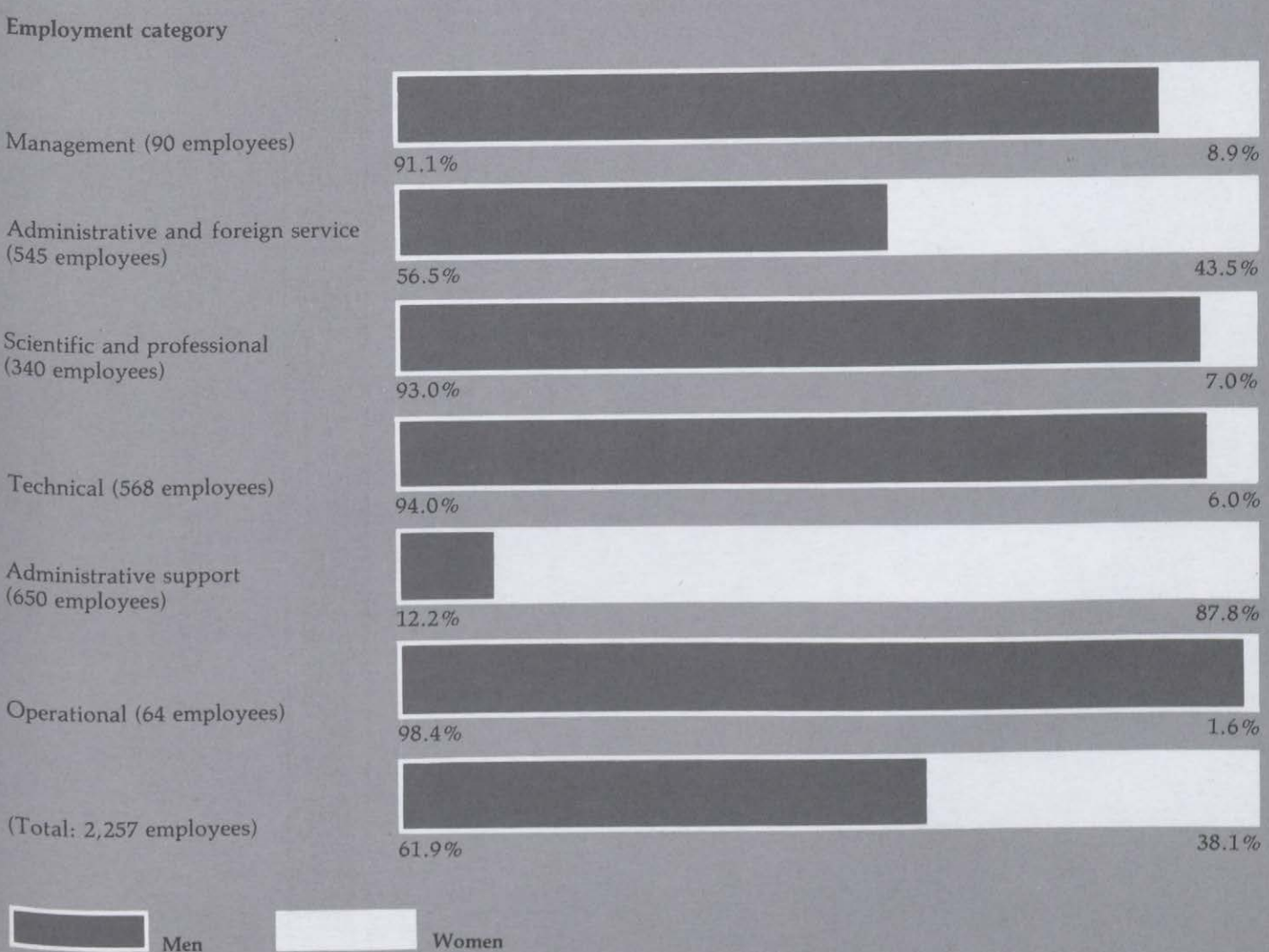
Distribution of employees by employment and first official language (as of March 31, 1987)



Source: Communications Canada

Appendix VIII

Distribution of employees by employment category and sex (as of March 31, 1987)



Source: Communications Canada

Appendix IX

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 Museums Act
The National Archives of Canada Act

Appendix X

Communications Canada Headquarters

300 Slater Street
OTTAWA, Ontario
K1A 0C8

Research Facilities

Communications Research Centre
3701 Carling Avenue
P.O. Box 11490
Station H
OTTAWA, Ontario
K1N 8T5

Canadian Workplace Automation Research Centre
1575 Chomedey Blvd.
LAVAL, Quebec
H7V 2X2

Addresses of regional and district offices of Communications Canada

Atlantic Region

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

District Offices

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

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

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

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

Quebec Region

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

District Offices

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

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

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

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

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

Ontario Region

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

District Offices

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

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

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

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

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

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

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

Central Region

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

District Offices

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

Saskatchewan
Communications Canada
Room 1220
606 Spadina Crescent East
SASKATOON, Sask.
S7K 3H1

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

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

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

Communications Canada
8th Floor
9909 - 102nd Street
GRANDE PRAIRIE, Alta.
T8V 2V4

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

Pacific Region

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

District Offices

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

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

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

Communications Canada
Suite 1700
800 Burrard Street
VANCOUVER, B.C.
V6Z 2J7

Communications Canada
707 - 299 Victoria Street
PRINCE GEORGE, B.C.
V2L 5B8

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

Yukon District
Communications Canada
Polaris Building
Room 201
4133 4th Avenue
WHITEHORSE, Y.T.
Y1A 1H8