Special

COMMUNICATIONS
EXPRESS

Contents

Over the past 20 years, the Department of Communications has been involved in nearly every facet of Canadian life — from fibre optics and satellites to museums and symphonies.

In 1969, the Department was given responsibility for keeping Canada at the forefront of telecommunication policy and research and development. Activity focused on space research and the development of satellite-based communication systems.

"In the early days, we were interested in developing technology. Now we're more concerned about the impact of technology and we're taking a hard look at the message, not just the medium," says Paul Villeneuve, an Information Officer who has been with the Department for 17 years.

A major survey of Canadian telecommunications facilities, policy, legislation and needs was initiated in 1969 to help shape the Department's mandate. The inquiry, called the Telecommission, published its report, *Instant World,* in 1971.

"The Telecommission was one of the first study programs in Canada to take a synthetic overview of the communications domain. I think the Department really began with the Telecommission, which was a policy- and research-oriented activity that established the base for a lot of work in years to follow," explains Ken Hepburn, Senior Assistant

Deputy Minister, Corporate Policy, who has been with the Department since its inception.

Instant World identified the Canadian North as a key area of concern for the Department. The Northern Pilot Project was established in 1971 to give special attention to the communications needs of Canadian natives in the North. Research focused on satellites as the most economical way to extend communications services to isolated areas.

Anik 1 was launched in 1972, the first geostationary commercial satellite in the world. It was planned by Telesat Canada, an independent corporation created by Parliament in 1969, and developed at the David Florida Laboratory.

The goal of the *Anik* program was to reach out to the North with a steady stream of information and entertainment.

"One of the major benefits of satellite technology is that it allows us to communicate from one end of the country to the other," explains Gwen Andrews, Director, Communications Policy and Liaison. "The North has been our biggest challenge in this respect, but it is also where the greatest benefit can be realized, because technology brings us closer to very remote areas."

In 1976, *Hermes,* the world's most powerful communications satellite, was launched from the Kennedy Space Centre. The Department won an Emmy Award in 1987 for *Hermes* and its pioneering use of a high-frequency band in satellite communications.

For almost four years, Canada used *Hermes* to conduct groundbreaking experiments on direct broadcasting from satellites on a super-high-frequency band. The technology is being used to transmit medical data and educational programs to remote parts of the world.

In 1979, research began into new uses of optical fibres, hair-thin strands of glass that carry information in the form of light.

Communications Canada employees have long been involved in lifting spirits (above) and satellites (Hermes, below) off the ground.

Nation-building

Bringing Canadians together through culture and communications

by Susan Hajdu-Vaughn

Artists, cultural industries and audiences are benefitting from a decade of work by the Department's Cultural Affairs and Broadcasting sector (ADMAC).

The arrival of the arts and culture program in 1980 brought a new dimension to the Department's business — from antique planes (above) to art galleries (above right).

Creative force

ADMAC shapes the Canadian arts environment

by Beth Thompson

"We've been working to foster a creative environment which is fair to artists, supportive of our cultural industries and, ultimately, of benefit to the Canadian public," says Yazmine Laroche, Executive Assistant to Assistant Deputy Minister, Cultural Affairs and Broadcasting, Richard Stursberg.

ADMAC has added a variety of programs to those it inherited from the Department of the Secretary of State in 1980; some supporting creators and others cultural industries.

Creators ranging from authors and artists to singers and sculptors have begun to reap financial benefits from the Public Lending Rights Program (1986), which provides financial compensation for literary works kept in libraries, and the long-awaited *Copyright Act* amendments (1988), which allow artists to collect royalties for public exhibition of their works.

Financial assistance, under the Cultural Initiatives Program (1980), has also been given to more than 1,500 professional, cultural, non-profit organizations such as the Montreal International Jazz Festival, the Art Gallery of Greater Victoria, the Royal Winnipeg Ballet, the Calgary Military Museum, the Toronto Symphony Orchestra and the Nova Scotia Museum of Industry and Transportation.

Canada's publishing and recording industries are profiting from the Canadian Book Publishing Industry Development Program (1979), and the Sound Recording Development Program (1980). The latter has funded more than 1,000 music projects, including two compact discs featuring Canadian musicians which were distributed at the last two New Music Seminars in New York City.

Television productions such as CBC's *Anne of Green Gables* and *Chasing Rainbows*, and internationally acclaimed films such as *Jésus de Montréal* and *My American Cousin*, were made possible by government funding from Telefilm Canada.

ADMAC's commitment to developing the Canadian film industry is reflected by the substantial increase in Telefilm Canada's budget since 1983. "Our objective is to foster the industry's growth, to make sure Canadians get to see a Canadian vision of the world. Telefilm is instrumental in helping us attain that goal," says Jean-François Bernier, Officer, Film Policy Operation and Programs.

Even Canadians flying to other countries on Air Canada can see that vision in films such as *The Revolving Door*, and *Something About Love*. Prior to June 1989, only one of the 56 films shown over a two-year period by Air Canada were Canadian. Talks are now underway between ADMAC and other airlines.

ADMAC's Museums and Heritage Policy Branch also ensures that future generations will be able to appreciate significant reminders of Canadian heritage through the Canadian Conservation Institute, the Canadian Heritage Information Network, the Museum Assistance Program, the International Program (which were transferred from the National Museums of Canada in 1987) and the Movable Cultural Properties Program. ❑

The challenge of extending communication services to communities scattered across Canada's vast northern region has inspired the development of innovative technology since the Department's early days.

"In many ways, the North has been our biggest challenge," says Gwen Andrews, former Director of Extension of Services in the Broadcasting Policy Branch. "The lack of adequate communication services in the North provided much of the rationale for satellite development in Canada."

The *Hermes* and *Anik B* satellite experiments of the early 70s paved the way for aboriginal programming. Programs are now produced and distributed by 13 native communications societies funded by the Northern Native Broadcast Access Program, set out in the Department's Northern Broadcasting Policy.

"In the mid-70s, northern communities were inundated with southern programming and were concerned about the cultural impact it would have. The Northern Broadcasting Policy addressed the need for more cultural content and native-language programming," says Andrews.

Giving northern communities better access to that programming is currently being examined. As part of the 1988 Broadcasting Policy, the Television Northern Canada Program is allocating $10 million over four years to cover the

rental of a transponder on the Anik E series of satellites to be launched in late 1990 and early 1991.

The transponder will broadcast independent native television programming, CBC Northern Service material and territorial government programming. It may also be used for telemedicine — satellite transmission of electrocardiograms, X-rays and other medical data from remote areas.

Telephone communication has also greatly improved in the North. The Northwest Territories got long-distance service as a result of nearly $6 million in funding from the Department's 1977 Northern Communications Assistance Program (NCAP). Bell Canada and NorthWest Tel Inc. invested a similar amount in local exchange equipment.

"NCAP was introduced because it was not economical for the telephone companies to serve the smaller communities in the Northwest Territories. The program reduced the cost of installing the equipment, so, although it wasn't a profitable venture, it was less of a loss," says Murray Fyfe, Manager, Satellite Network Policy, who administered the program.

The introduction of telephone service opened the

Canada's vast northern region has been opened by television and film (above), satellite communications (below), and radio-telephone systems (below left).

Northward bound

Extending service to Canada's North inspires technological development

by Beth Thompson

C reated 25 years ago to take advantage of bulk buying and standardization of telecommunications services, the Government Telecommunications Agency (GTA) now plans, manages and co-ordinates telecommunications for the federal government in an environment of increased information systems integration.

From all the Department's regional and district offices, the GTA provides client departments with expertise in telecommunications technology, development of new telecommunications systems and applications, and acquisition and management of telecommunications services. The Agency's current yearly business volume is approximately $200 million per year.

In 1989, the GTA became a Special Operating Agency. A formal agreement, currently being negotiated between the Department and Treasury Board, will allow the Agency to act more like a private sector business, and give it more authority and responsibility.

"Two of our main functions — consolidation of services and volume purchasing — enable the Agency to save substantial amounts of money for the government," says Al Keddy, Director of Telecommunications Systems Management. The savings are estimated to be $40 to $80 million annually.

For example, the Government Packet Network, created in 1987 through an agreement with CNCP Telecommunications, provides shared data communication services, previously only available at a higher cost.

In 1982, the Agency signed an agreement with Bell Canada to introduce digital switching in the Ottawa area, says Roger Beauparlant, Director of Tele-
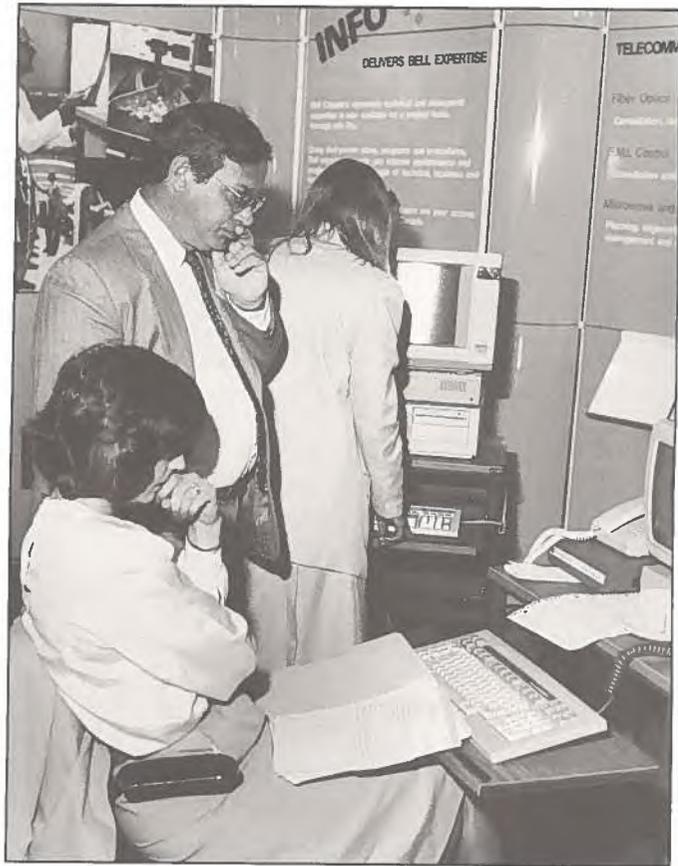
The GTA leads the way for developments in telecommunication services integrating computer, modem and facsimile technology.

communications Planning and Co-ordination. "The change brought the region from antiquated telephony to state-of-the-art technology, paving the way for future developments," says Beauparlant.

Digital switching is the first step toward a digital backbone network, capable of carrying voice, data and images from coast to coast. Currently the government uses a number of networks, such as telephone, teletype, facsimile and satellite, to carry information. The Agency is developing the architecture for an integrated intelligent telecommunications network.

An immediate benefit of digital switching was Automatic Route Selection, a system that picks the most efficient route for long distance calls. Beauparlant says that the system has saved millions of dollars since it was introduced in 1984.

Digital switching also provided the latest features in telephone technology such as call-forwarding, consultation hold and three-party conference at no additional cost. ❑

Telecom experts

GTA aims for increased efficiency

by Michel Vachon

The Communications Research Centre (CRC) is conducting research with more practical applications for government and the general public and development opportunities for industry than ever before, says Dr. John Belrose, Director, Radio Propagation.

"We do less research to understand the causes of disturbances, such as auroras, which disrupt radio transmissions," says Belrose, who began work at the Radio Propagation Laboratory in 1951. "Our research is directed at getting around those disturbances."

The CRC began as the Defense Research Telecommunications Establishment (DRTE) in 1953, itself an amalgamation of the Defence Research Board's Radio Propagation Laboratory and Electronics Laboratory. With the formation of its Communications Laboratory in the late 50s, DRTE was recognized as one of the leading telecommunications research establishments in the world.

DRTE's mandate to improve military communications led to the launching of Canada's *Alouette* and *ISIS* satellites in the 60s and early 70s to study the ionosphere. Once DRTE joined the

Department in 1969, its research activities changed.

The CRC became highly successful at developing communications satellites. *Anik A1* (1972) was the first domestic communications satellite in geosynchronous orbit, allowing it to remain in the same position over the Earth.

Many of Canada's subsequent achievements in space had their beginnings at the David Florida Laboratory, now part of the Canadian Space Agency, a world-class spacecraft assembly and test facility built at CRC, initially to support the development of *Hermes* (1970-76). The Department won an Emmy award for technology used on *Hermes*, once the world's most powerful communications satellite.

"There has been a lot of progress in space technology since 1969," says Dr. Jack Chambers, Director General, Space Technologies Research and Applications, now part of the Canadian Space Agency, "and the Department of Communications has played a key role in developing our space industry."

As a result of pilot projects carried out on *Hermes* and *Anik B*, tele-medicine allows doctors to diagnose patients thousands of kilometres away using televised X-rays and electrocardiograms, and tele-education is used for teaching in remote areas.

The CRC is now reaching beyond satellite technology to develop a system of pilotless, microwave-powered aircraft called the Stationary High-Altitude Relay Platform (SHARP), which could perform many of the functions of present-day communications satellites.

The CRC is also a leader in the area of fibre optics. A pilot fibre optics network conceived by CRC was successfully tested in Elie and St. Eustache, Manitoba

The CRC has always been on the leading edge of technological developments such as SHARP (top) and research and testing facilities such as the thermal vacuum chamber at the David Florida Laboratory (left).

Out of the lab

Practical applications of CRC research seen across Canada

by Beth Thompson

T he Department's commitment to ensuring all Canadians have access to communications services has led to innovations which have removed many of the barriers faced by disabled persons.

"The inability to follow different media restricts the ability of a disabled person to interact with society, often in ways even those directly concerned with the problems fail to appreciate," says Mark Curfoot-Mollington, a Senior Policy Analyst with the Broadcast Policy Branch, who has been involved in the development of many of these programs.

As an example, he cited the low turnout of visually impaired people to a committee studying the problems of disabled persons. "Nobody raised the matter that a blind person can't read the newspaper and see the notice that the committee is meeting."

A broadcast reading service, which gives visually impaired persons access to the newsstand, is one example of the sort of program the Department has helped develop to overcome these obstacles. Communications Canada provided funds for a Canadian National Institute for the Blind feasibility study of a nation-wide service.

The service will consist of volunteers reading excerpts from newspapers and magazines on the radio. Its schedule will be published in Braille and in large print. One such service, La Magnétothèque, has operated in Quebec since 1976.

Curfoot-Mollington says the Canadian Captioning Agency is one of Communications Canada's great successes. The Department provided the seed money and a portion of the funding to develop the unit for closed-captioning of television programs, which displays the words of a show's dialogue on the screen.

The Department also supports the closed-captioning of programs through Telefilm Canada, the Crown corporation that provides funding for Canadian film productions.

In 1977, Communications Canada was involved in the development of the Visual Ear, a keyboard and display screen that enables the hearing impaired to use the telephone. It also helped develop IRIS, a voice synthesizer that gives visually impaired persons access to computer databases, which became available to the public in April 1989.

Curfoot-Mollington says he is excited about the possibilities presented by

Broadcast reading services for the blind (top), Blissymbol phones (above) and the Visual Ear (bottom) are helping to expand the "communications reach" of many handicapped Canadians.

Expanded senses

New technology extends media to disabled

by Michel Vachon

The complexity of co-ordinating frequencies for international events and establishing reliable, secure communications links is an ongoing challenge for the Department's Spectrum Management and Regional Operations Sector (ADMSR).

As the sector responsible for the management of the radio frequency spectrum, ADMSR ensures interference-free frequencies are available to support security and logistics for special events, such as Pope John Paul II's 1984 tour of Canada.

The Department was involved in the design of a communications system to keep track of people and events during the Pope's cross-country tour, which encompassed 11 cities in 10 days.

ADMSR staff were represented on each of the three communications teams, which leapfrogged from city to city, transporting a sophisticated communications system by airplane to keep 10-12 hours ahead of the papal entourage.

"The teams travelled by plane with antennas and the rest of our equipment. We would be the first people off the plane. Army vehicles would then transport the equipment to the site," says Victor Decloux, now retired, who was a member of one of the teams.

It was difficult to find suitable radio-antenna sites in each city that would ensure clear frequencies were available to tour co-ordinators, police and the media, says Decloux.

"All of us needed to be in contact with each other. The logistics of communicating and co-ordinating an event are a big challenge," says Decloux.

At the 1988 Calgary Winter Olympics, planning of communications requirements for the organizing committee, media, security and transportation started two years ahead of time, says Paul Neufeld, Director of the Calgary District Office.

In addition to processing land mobile licences and broadcast support licences, the Department had to link 29 different locations separated by up to 120 kilometres. More than 800 requests to co-ordinate frequencies were received from foreign countries and 4,100 radios were licensed for the 16-day event.

The Department provided spectrum to be licensed for voice, data and paging services, which were used by organizers throughout the Calgary region. Microwave and satellite systems were also used extensively for broadcast signals. An electronic mail messaging system sent weather updates, game results, schedules, security and other information between Olympic sites.

The Calgary District Office team (top) worked for two years on spectrum requirements for the 1988 Olympics, while every day Department staff respond to interference complaints (above and below).

"We ended up working on the tops of mountains in 100 km/hr winds, dealing with interference from defective security alarms and conveying licensing information to people from all over the world," says Myles Mainland, a radio inspector with the Calgary District Office.

Mike Power, Toronto District Director, worked with organizers of the 1988 Economic Summit for over a year to plan for the three-day event, which was held in Toronto. A large part of his

*See page 23: **Clearing the air***

Clearing the air

Spectrum management is a complex task at international events

by Susan Hajdu-Vaughn

Breaking ground at CWARC — on the site of the centre in Laval, Quebec (above) and in the lab, where office automation technology such as computer software and hardware is developed (left).

User friendly

CWARC responds to needs of industry

by Susan Hajdu-Vaughn

Industry representatives are playing a key role in determining the research priorities of the Canadian Workplace Automation Research Centre (CWARC).

CWARC, established in Laval, Quebec in 1985, is dedicated to users of workplace automation technologies and works in close collaboration with an advisory committee of industry and university representatives.

"The result is a user-driven centre for research into all aspects of workplace automation," says Jacques Marcotte, Director of Administration Services and Special Programs Management at CWARC. "Very few of our projects are undertaken without industry support."

A 15-member advisory committee approves the centre's business plan, suggests various programs and offers advice about the relevance of scientific projects.

CWARC's Scientific Exchange Program recruits approximately 50 to 60 members of the Centre's scientific staff each year. Experts from public and private sectors may be seconded for up to three years to research technological applications of office automation.

"The program was developed to facilitate the transfer of technology from the lab to industry, and ensure the ongoing relevancy of a program developed in a government lab," says Marcotte.

For example, a computerized reading station for the blind (IRIS), was successfully developed by CWARC with the co-operation of the Canadian National Institute for the Blind. IRIS is now being marketed in the U. S. and Canada.

"Since we started the exchange program, industry has contributed just as much as CWARC," says Marcotte. "It means we're doing work relevant to industry and that they're willing to pay for a good portion of it."

CWARC, which has an annual operating budget of $8 million, is composed of four research directorates: the Organizational Research Directorate, the Integrated Systems Directorate, the Advanced Technology Directorate, and the External Co-operation Directorate.

The directorates provide leadership in applied research for 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.

In the field of computer-assisted translation, CWARC is working with Secretary of State, which is currently participating in field trials using first generation workstations, to develop a more advanced system.

CWARC is also very active in the development of Open Systems Interconnection (OSI), an international standard for computers that makes interconnection among computers possible world-wide. CWARC and the Canadian Interest Group on Open Systems are working closely to create conformance test centres for OSI products in Canada. ❑

The Canadian Conservation Institute (CCI) is using sophisticated conservation techniques to help Canadian museums and art galleries provide special care for collections.

"Our original purpose was to provide conservation treatment, research and training to museums and art galleries across Canada. We still do that, but our emphasis is on working with objects requiring more complex treatment that only CCI can offer because of the level of expertise and the nature of the equipment here," says Joe Dorning, Chief of Extension Services.

Many new conservation techniques have been developed during specific projects undertaken by the Institute since its inception in 1972.

For more than a decade, CCI conservators have assisted archaeologists, who are excavating a 16th-century Basque whaling village at Red Bay, Labrador, by developing new methods for removing fragile objects from the ground, mounting delicate fabrics found at the site, and packing artifacts for transportation.

CCI is participating in a study of Parylene, which strengthens fragile materials. It was used to reinforce 40 million-year-old leaf, cone and wood specimens discovered in the Arctic Fossil Forest on Axel Heiberg Island, Northwest Territories. After treatment with Parylene, fossils which had been so fragile some had crumbled under their own weight, were strong enough to survive being handled.

Artifacts may also be recorded using three-dimensional laser imaging. A laser scanner records the surface of the artifact so that its shape can be reproduced using a numerically controlled milling machine. The technique is being used to reproduce valuable finds, such as a lead plaque from the grave of Father Jean de Brébeuf at Sainte Marie among the Hurons, an early 17th-century Jesuit settlement.

Current projects include an 18th-century bracket clock attributed to Boulle; a late-16th century ceramic tile Kachelofen stove; a doll which belonged to Ruby Scott, one of the last proprietors of a brothel in Dawson City; wooden altar pieces from the oldest chapel in Halifax; and *Les Filles de Jethro*, a 17th-century Romanelli painting.

As well as treatments, CCI specialists offer conservation workshops, training seminars to the provinces and territories, research assistance to the museum and archive communities, and scientific examination to support authentication studies. CCI also has a major publications program, which distributes literature on CCI projects to a world-wide audience. ❑

Delicate artifacts require a delicate touch. Fragile relics from across Canada are restored under the expert care of CCI conservators.

Past preserved

CCI strengthens fragile relics of the past

by Beth Thompson

"The Communications Research Centre (CRC) recognized that fibre optics would, in all likelihood, be hooked directly into people's homes and businesses. It had the potential to be a very inexpensive, high-performing technology," says Ken Hill, Director, Optical Communications Technologies at the CRC.

Telidon, a sophisticated way of storing and processing pictures and words, was developed in 1978 at the CRC by a team of government researchers working closely with private industry.

Telidon converts a television set into an information tool, allowing people to shop, pay bills, play games, take courses or conduct business transactions. The Department contributed to the Telidon Program by providing money and expertise in research and development, marketing and applications development.

In 1983, Telidon was ratified as the North American Standard for videotex and teletext. In Montreal, videotex technology is currently being tested to provide consumers with home shopping, home banking, community bulletin boards and other news and information services.

"Some people characterize Telidon as a failure because the vision of all these services in the home has not been realized. It was a learning experience. Telidon has given us valuable research that applies to many technological fields," says Hepburn.

In the midst of Telidon, the Department inherited the arts and culture program from the Department of the Secretary of State. This significant change to the Department's mandate, which occured in 1980, established a new direction in both communications and cultural policies.

"The Department didn't change overnight. It has been a fundamental and significant change over a period of time. Cohabitation over the years has produced a synergy that makes the Department much stronger," observes Hepburn. "Adding the cultural activities and

Communications Canada is known around the world as a pioneer in communications technology — an Emmy for Hermes in 1987 (top), Canadian satellites in Africa (above left) and Telidon, the North American standard for videotex and teletext (left).

museums program to the Department has enriched our client base enormously."

Charles McGee, Executive Director of Museums and Heritage Policy and Programs, agrees. "When the arts and culture program came we began to deal with new clients who were both vibrant and critical. Now they know they can rely on the Department to set policies, and keep their interests at heart."

A special program of cultural initiatives was immediately launched to aid arts and culture organizations and activities across Canada, and a range of cultural studies and projects took place over the next 10 years, including the Applebaum-Hébert Committee, the Bovey Task Force on Funding of the Arts, the Caplan-Sauvageau Task Force on Broadcasting and the Siren-Gélinas Task Force on the Status of the Artist. *Vital Links,* an analysis of the challenges facing Canada's cultural industries, was released in 1987.

Although arts and culture programs and services were initially administered at Headquarters, they have become increasingly decentralized to regional and district offices over the past decade.

In addition, the Spectrum Management and Regional Operations sector was praised by the Auditor General in 1988 as one of the most efficient organizations in government.
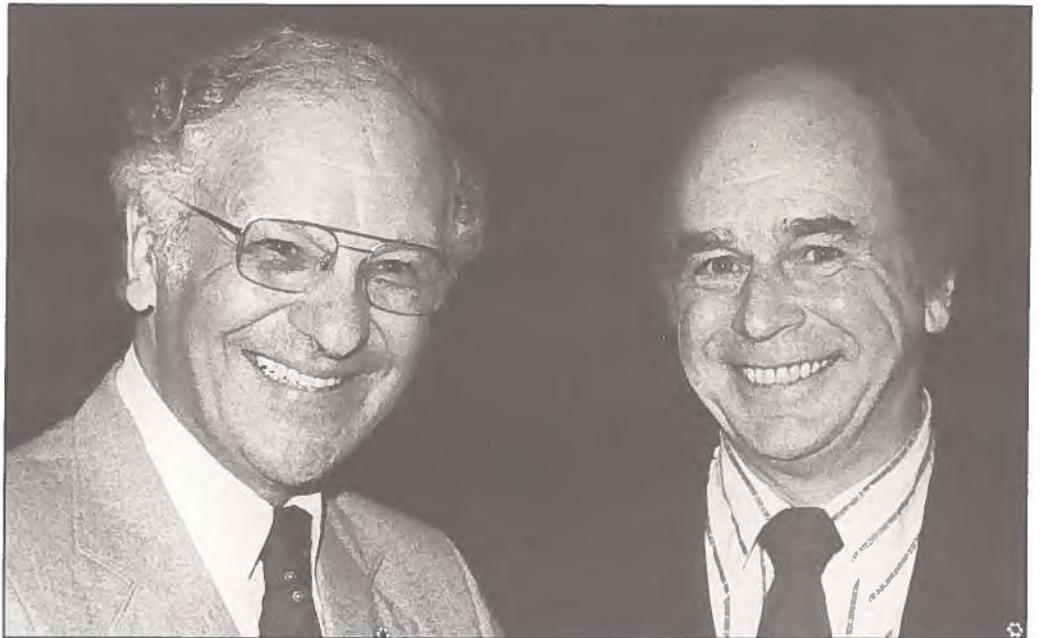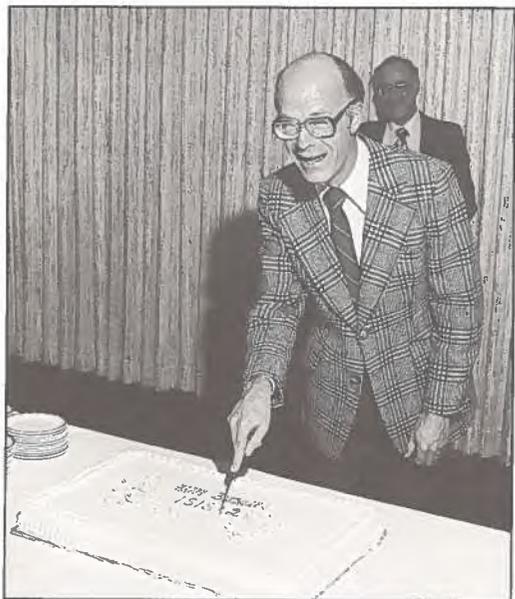
During this time, the Department maintained its reputation as a pioneer in communications technology. SHARP (Stationary High Altitude Relay Platform) made aviation history in 1987 by becoming the first microwave-powered airplane ever to fly. Research has also continued on the development of a Mobile Communications Satellite (MSAT), which will serve mobile terminals in cars, airplanes and ships anywhere in Canada.

"I think there are some concerns that the Department isn't involved enough in research and development right now. I think we need to be more focused in research, and this is why the Vision 2000 exercise is an excellent one," says Hepburn.

Vision 2000 is a strategy for research and development aimed at building a strong, world-class and globally competitive communications industry in Canada. The systems, technologies, and tools involved in the initiative are designed to enhance the productivity of Canadians at work and at leisure, and allow them to communicate with anyone, anywhere, at any time.

"In the coming years, I think Vision 2000 will allow us to continue to perform well in the research and development field," adds Hepburn. ❑

During its 20-year history, Communications Canada has sponsored several cultural studies including Applebaum-Hébert (top), developed technology for tele-medicine (above) and (left) celebrated the anniversaries of many satellite launchings (ISIS-2, 1981).

Celebration Scrapbook
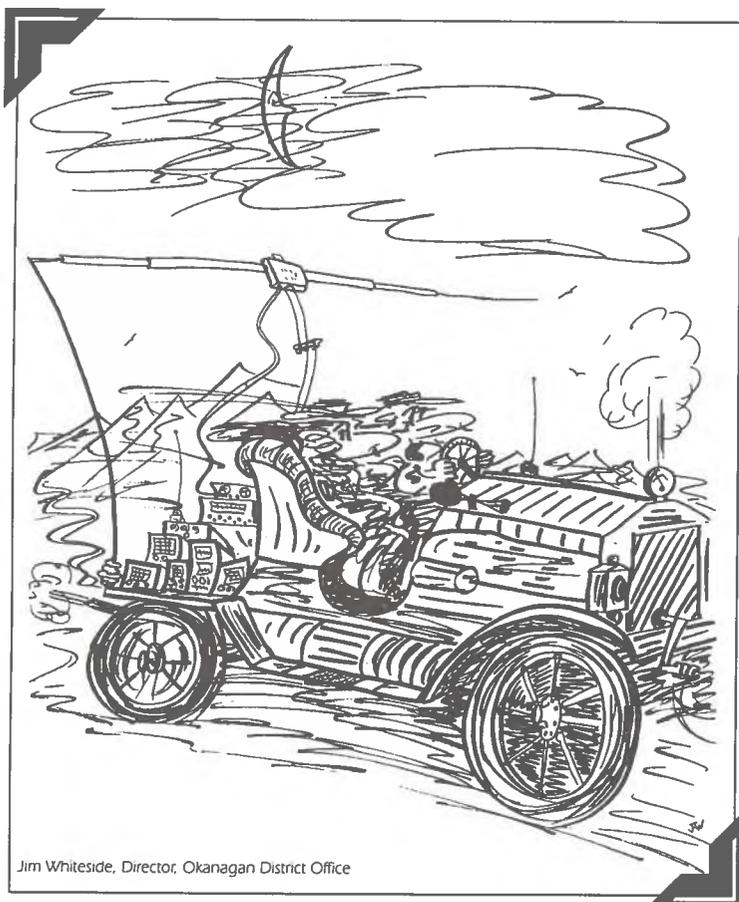
Jim Whiteside, Director, Okanagan District Office

"Region wants us to keep it running another year."

Mr. Communications Canada takes a much needed break at the St. John's District Office.

"They were exciting times — starting something new, being 20 years younger. But it was not just that. One has to realize that two major new communication technologies, fibre optics and satellite communications, were in their infancies, and we were there at the beginning."

Jack Chambers, Director General, Space Technologies Research and Applications, now part of the Canadian Space Agency

"In the early days, staff weren't caught up in as many social and economic pressures and radio systems were simpler. The telecommunications industry is very new and complex. Twenty years ago, we had lots of spectrum available for frequencies and today we're congested. Because of this, the policies within the Department were much more stable. We didn't have to cope with a society that was changing so quickly."

Ray Flatt, Director, Edmonton District Office

Employees of the Central Regional Office and Manitoba District Office cut a cake at ceremonies last spring to celebrate the 20th anniversary. Pictured above, from left to right, are: Alfie Northam, Standards Officer, Spectrum Control, Central Regional Office; Howard Smith, Director, Government Telecommunications, Central Regional Office; Roger Collet, Director General, Central Region; Al Wastle, Standards Officer, Spectrum Control, Central Regional Office; John Gilbert, Director General, Government Telecommunications Agency, Headquarters; Geoff Barham, Supervisor, Spectrum Control, Manitoba District Office; Brian Johnstone, Authorization Supervisor, Manitoba District Office; and Jim Rohatensky and Wayne Hay, Radio Inspectors, Manitoba District Office. All except Collet and Gilbert received awards for 20 years of service in the Department.

Alain Desfossés, Director General, Strategy and Plans, hands out 20th anniversary buttons to employees in the lobby of Headquarters at the kick-off of celebrations last April.

Rob Gordon, Assistant Deputy Minister, Spectrum Management and Regional Operations, visited Milton, Ontario in July to present 20-year service awards to a variety of Ontario Region employees. Front row, from left to right: Vesper White of the Hamilton District Office; Dave Lyon, Director General, Ontario Region; Rob Gordon; Betty Drake, now retired from the London District Office; and Gerry Brushett, Deputy Director General, Ontario Region. Back row, from left to right: Mike Power, Director, Toronto District Office; Dan O'Connell, Engineering Technologist, Ontario Regional Office; John Nosotti, Toronto District Office; Bill Fedorak, Radio Inspector, Engineering, Ontario Regional Office; Ron Taggart, Authorization Supervisor, London District Office; Stan Ribee, Director, Hamilton District Office; Don Edwards, Toronto District Office; Jenne Looper, Director, London District Office; Walter Dueck, Hamilton District Office; and Vern Stroud, Kitchener District Office.

"Twenty years at the Department has passed quickly, and I'm well on the way to 30.

At the beginning of my career, some of the radio equipment we used was army surplus. Words cannot express our joy when we finally got a modern receiver.

It's much the same today, only the tools have changed. Technicians want to get all the bugs out of their computers and are always creating new software to make the job easier. Support staff are eager to try new programs to handle the mailing lists and other tasks.

Twenty years has certainly passed quickly."

Laval Desbiens, Director, Chicoutimi District Office

Department employees fall all over themselves trying to be the first to the finish in the "Skis from Hell" race at the Corn Roast last August.

Headquarters employees enjoyed a display of works by Ottawa-area artists last November.

Ross Wickware, Receptionist in Information Services, won a "champagne" balloon ride, which was raffled as part of the Department's 20th anniversary celebrations last summer. Wickware, who took his ride January 14, says he enjoyed every second as the hot air balloon drifted over downtown Ottawa and Hull. Wickware, whose background is in aviation, says, "I was delighted, because it was the only type of aircraft I'd never flown in."

"Looking back, I think of all the different people I've met and worked with; friends and acquaintances I've acquired as a result of spending more than half my life with the government. I think it's the people — the wild, the wicked, the weird and the wonderful — who have been the common denominator here."

Margaret Evanoff, Project Co-ordination and System User Requirements Officer, Engineering Programs, ADMSR

"When I arrived at the Communications Research Centre (formerly the Defense Research Telecommunications Establishment) in 1958 after graduation, at the very young age of 16, my first impression was that everyone seemed so "old". Well, here I am nearly 32 years later at that same "old" age and, believe it or not, people 45 and 50 seem quite youthful!"

Pat Major, Administrative Assistant, Communications Devices and Components Research, ADMTR

"I feel fortunate to have been able to work with very interesting people and projects during my 20 years with the Department of Communications. This has been the source of my motivation."

Pierre Boudreau, Director General, Atlantic Region

Matching wardrobes? Deputy Minister Alain Gourd and Minister Marcel Masse compare 20th anniversary sweatshirts T-shirts, sweatshirts and buttons were designed by Information Services and sold throughout the Department. The money raised helped pay for 20th anniversary employee activities.

Employees at the London District Office celebrated the Department's 20th anniversary with a special cake decorated with radio towers, satellites and home receiver dishes. "Happy Birthday" was written in Morse code. From left to right: Betty Drake, retired May 1989; John Ohnmacht, retired September 1989; and Ron Taggart, Authorization Supervisor.

Ten 20-year service awards and two 25-year plaques were presented by Rob Gordon, Assistant Deputy Minister, Spectrum Management and Regional Operations, to Atlantic Region employees during a visit last summer. Front row, from left to right: Pierre Boudreau, Director General, Atlantic Region; Rob Gordon; and John Palmer, retired Director, Halifax District Office. Back row, from left to right: Edwin Power, Authorization Supervisor, Halifax District Office; Al Dionne, Records Supervisor, Atlantic Regional Office (25-year plaque); Alfred Grezel, Acting Manager, Spectrum Control, Atlantic Regional Office; Dale Snowdon, Superintendent, Spectrum Engineering, Atlantic Regional Office (25-year plaque); Malcolm Chafe, Authorization Supervisor, St. John's District Office; Keith Prescott, Broadcasting Systems Technologist, Atlantic Regional Office; Victor Smith, Spectrum Control Supervisor, Saint John District Office; and Ron Wilcox, Director, Halifax District Office. Missing: Martin MacLellan, Technology Development Officer, Atlantic Regional Office and Roger Squires, Director, St. John's District Office, both 20-year award recipients.

The Vancouver Regional Office celebrated the Department's 20th anniversary with an open house on October 18, 1989. Guests toured the facilities, where there were displays and demonstrations of programs and technology. In the Spectrum Observation Centre are: (from left to right) Mayur Kothary, Radio Inspector; Grant Stevens, Radio Inspector; and Hal Hickey, Supervising Inspector, Operations, all of the Lower Mainland District Office.

"I've enjoyed my experiences with the Department, from working as an invoice payment clerk to being a Property and Project Officer in Planning and Co-ordination/Facilities Management. My more recent involvement with computers and automation in Administrative and Technical Services has been both enlightening and fulfilling."

David Majaury, Property and Project Officer, Planning and Co-ordination/ Facilities Management, ADMCM

"Over the past 20 years, we've seen the Department's mandate grow from one basically concerned with spectrum licensing and regulation to include the entire arts and culture industry. The growing mandate has made for a larger Department, so where I knew just about everyone at Headquarters in the early years, now I'd be lucky if I knew half the people."

Janet Horton, Statistical Analyst, Regulatory Policy and Extension of Service, ADMAC

"I was the first one to send a telex from the new Department of Communications. Although I was a little nervous, it was a lot of fun. I was also the first person to install a wordprocessing centre in the Department in 1969 and to start a bilingual *Communigram* a year later."

Pierrette Sarazin, Word Processing Operator, Strategy and Plans Branch, SADM

"Back in the late 60s, when inspectors used to go out and inspect hydro lines, I was looking for the source of some radio interference in Port Hope, Ontario. We had traced the problem to a hydro pole with a big light at the top in a local schoolyard. We used to test a pole by tapping it with a mallet to see if that affected the interference. As I was tapping this pole, I heard a loud noise, and jumped out of harm's way, figuring something was going to fall on me. When I looked up, the lamp bowl had come out of its socket and was swinging on a chain.

That was at around 11:45 a.m. I called the hydro office to say we'd traced some interference to one of their poles and they should come and fix it. I didn't mention my mishap, but added that the light on the pole needed repair. The inspectors were in the schoolyard when a wee fellow, who hadn't gone back to class yet after lunch, tugged at a hydro worker's sleeve, and said, "Hey, Mister, see that lamp up there swinging?". Then he pointed to me and said, "That man hit this pole and that's when the lamp fell out." So I told the kid he should've been listening to his teacher instead of window-gazing. The moral being, tell it up front or don't hit the hydro pole with such exuberance."

Stan Ribee, Director, Hamilton District Office

"There's been a lot of changes in the way we have done things over the years. We're doing a lot more with less and our

Twenty-eight district directors gathered in Ottawa from October 29 to November 3, on the occasion of the Department's 20th anniversary, for the Second National Meeting of District Directors. First row (from left to right): Terry Keim (Yellowknife); Roger Squires (St. John's); Mike Power (Toronto); Bernard Boily (Sherbrooke); Alain Gourd, Deputy Minister; Rob Gordon, Assistant Deputy Minister, Spectrum Management and Regional Operations; René Guerrette (Charlottetown); Bud Bate (Grande Prairie); Clint Landry (Saint John) and Ray Flatt (Edmonton). Second row (from left to right): Art Solomon (Kitchener); Ian Rutherford (B.C. Lower Mainland); Doug Prentice (Belleville); Laval Desbiens (Chicoutimi); Yvon Trudel (Ste Foy); Gerry Jorgenson, (Kootenays); Ron Wilcox, (Halifax); Ivan Cartwright (North Central B.C.) and Art Edge (Regina). Third row (from left to right): Paul Neufeld (Calgary); Bob Lukie (Skeena); Dan Kerr (Manitoba); Maurice Nunas, Director of Spectrum Management Operations; Doug Shorter (Yukon); Hubert Pambrum (Ottawa); Alain Robillard (Montreal); Jenne Looper (London); Ray Morin (Saskatoon); Jack Anderson (Vancouver Island) and Bud Campbell (Ontario North). Missing: Dave Thomas, Senior Analyst, Management Programs; Stan Ribee (Hamilton) and Jim Whiteside (Okanagan).

offices are a lot smaller. The equipment we had back then was relatively primitive but we seemed to do just fine. Things we don't even consider doing now, we did as routine in the old days. For example, we used to do inspections of all amateur radio stations and aircraft radio installations. We would sit down with a homemade amateur unit and write down all the different tubes and different stages. Looking back on it we wonder why we did it, but that was the way it was done in those earlier days."

Jack Anderson, Director, Vancouver Island District Office

"The process of change has been amazing. In the early days it was Marconi and spark transmitters. In my day it was the tube and transistors. Computers back then took up a whole room, compared to the micro computer system today. There's been a tremendous growth in telecommunications with the Department of Communications. The Department, no matter how involved we are in arts and culture, will never ignore telecommunications."

Roger Squires, Director St. John's District Office

"From my experience in the Department, I have gained the wisdom to see life with rare objectivity and handle life with rare stability."

Austin King, Authorization Supervisor, Saskatoon District Office □

Doors open on CWARC and new technology

The Canadian Workplace Automation Research Centre (CWARC) celebrated the Department's 20th anniversary with the people of Laval, Quebec, at an open house September 28.

The exhibits focused on the leading edge in information technology, with applications in research, management, translation, and training, says CWARC Director General, René Guindon.

The event began with two seminars conducted by teleconference between CWARC and "Vision technologique '89", the Laval Chamber of Commerce's sixth annual information-technology trade show. Both seminars were related to the show's free trade theme. Yves Rabeau of the University of Quebec at Montreal spoke about how information technology can help Canadian business face the challenges of free trade, and Jean-Marie Fahmy of FGT Consultants Inc. presented an analysis of organizational problems experienced by companies dealing with new information technology.

Following the teleconference, "Vision technologique '89" participants were invited to an exhibition of information technology at CWARC. Hands-on exhibits featured an animated graphics presentation prepared by André Lemay, Research Engineer with the Advanced Technology Directorate. Others included: CD-ROM workstations; an interactive video-disk for training; the Executive Information System; and two computers that respond to vocal commands — IRMA, which translates agricultural reports, and SECSI, which provides information and counselling on AIDS.

"The open house was a great success, well beyond our expectations," says Jocelyne Picot, Director of Organizational Research. Many of the visitors remained at CWARC all afternoon to try out the equipment, she adds. ❑

The organizing team (from left to right): René Guindon, Director General; Jacques Marcotte, Director of Administrative Services and Special Projects; Jocelyne Picot, Director, Organizational Research; Michel Hall, Chief, Administrative Services; Dominique Laurence, Clerk, Audio-Visual; André Lemay, Research Engineer, Executive Information Systems; and Thérèse Baribeau, Researcher.

Twisting the night away. Employees gathered at an Ottawa hotel October 13 for skits, dinner and dancing to celebrate the 20th Anniversary. Some even "came as they were" in 1969.

District celebrations a community affair

The Ontario North District's 20th anniversary celebrations involved the entire local community.

In July, employees decorated Department vehicles and participated in Sault Ste Marie's "Community Day" parade.

Midway through August, District Director Bud Campbell was interviewed on a local television talk show. He discussed the highlights of the Department's involvement in the community and invited the public to a dinner-dance at the month's end. Sault Ste Marie Mayor Joseph Fratesi, responded by declaring the last week of August "Department of Communications Week."

The end of August was also the occasion of the 9th annual Ontario North Operational Meeting in Sault Ste Marie. District staff and guests from the Ontario Region were treated to a boat tour, barbecue and banquet. ❑

Edmonton District Office holds open house

The Edmonton District Office held a 20th Anniversary Open House celebration at its new location December 1 to acquaint visitors with Department activities there.

Guests had the opportunity to view the office's monitoring and technical analysis facilities, meet with office employees and discuss current communications and cultural issues.

Representatives from a variety of organizations the office works with, including Trans-Alta Utilities, Imperial Oil, Théâtre Français d'Edmonton, and the Vancouver International Jazz Festival, attended the event.

Central Region Director General Roger Collet and Regional Cultural Development Officer Belaineh Deguefé, and former employees who were with the Department when it was inaugurated — Murray Watson, George Kaye and Harry Bucknell — were also among the guests. ❑

Pin money supports worthy cause

The Calgary District Office raised $500 for the United Way by selling lapel pins made to commemorate the Department's 20th anniversary.

After challenging Central Region employees to enter designs for the lapel pin in a contest last summer, organizers Erich Kunzel and Myles Mainland had the winning design reproduced on pins.

From approximately 15 people who submitted designs, Radio Inspector Diane Hotra of Calgary was chosen as the winner and received a number of free pins for her efforts. Hotra's design featured the 20th anniversary logo in black and grey on a red maple leaf background with gold trim.

There are still a few pins left. Anyone wishing to purchase one (for $3.50) can contact Kunzel at (403) 292-4205. ❑

Amateur radio operators using the Department's station *VY9CC* have spoken to ham radio enthusiasts from around the world since signing on the air.

On October 2, 1989 the station was used for "Development Day" — a project co-sponsored by the Canadian Amateur Radio Federation (CARF) and the Canadian International Development Agency (CIDA). The purpose of the day was to make Canadians more aware of their relationships with the world's developing countries.

During the day, the station reached countries such as England and Holland. Children from the Ottawa Montessori School came for the afternoon to watch and participate in the proceedings.

VY9CC also participated in the international amateur radio contest "WPX" October 28-29, when operators had to contact as many stations as possible over the two days. During 30 hours at the controls, an exhausted Andy Cobham of Spectrum Management Operations, reached more than 870 stations. He spoke to operators in such locations as Tonga, the Galapagos Islands and Iceland.

The station will continue to operate daily from 7:15 and 8:30 a.m. and during the noon hour. ❑

VY9CC radio operators speak to the world

Children from the Ottawa Montessori School try out the equipment at VY9CC on Development Day, while Dan Holmes of the Canadian Amateur Radio Federation looks on.

His Majesty King Hussein I of the Hashemite Kingdom of Jordan is now known as VE JY1 to his amateur radio friends in Canada.

Andy Cobham, Jim Cummings and Gary Steckly of Spectrum Operations and Dave Thomas of Sector Policy and Planning in ADMSR produced an honourary amateur radio operator certificate and assigned him call letters for his recent visit to Alberta.

The King stopped in Calgary during an official visit to Canada in October and was the guest of honour at a reception held by the Amateur Radio League of Alberta. Paul Neufeld, Director of the Calgary District Office, presented the honourary amateur radio operator's certificate to him. ❑

Jordanian king amateur radio operator in Canada

Paul Neufeld, Director of the Calgary District Office, presents Jordan's King Hussein with an honourary amateur radio operator's certificate at a reception in Calgary last October.
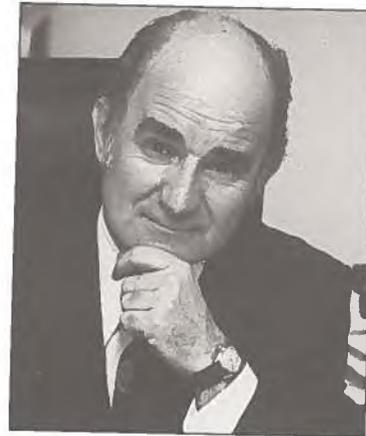
Ministers
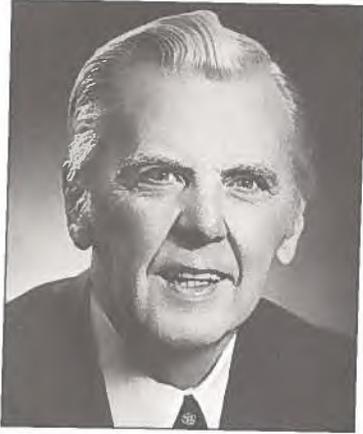
Eric Kierans
1968-1971

Robert Stanbury
1971-1972

Gérard Pelletier
1972-1975

Pierre Juneau
1975, also Deputy Minister
1980-82

Jeanne Sauvé
1975-1979
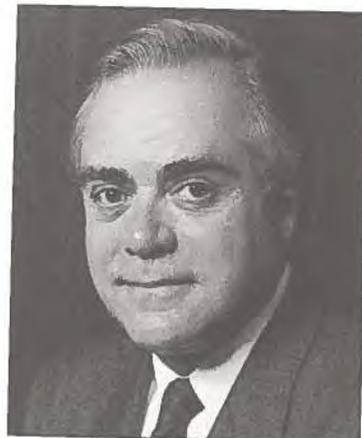

David McDonald
1979-1980

Francis Fox
1980-1984

Ed Lumley
1984

Flora MacDonald
1986-1988

Marcel Masse
1984-1985, 1985-86
and 1989 to present

Deputies

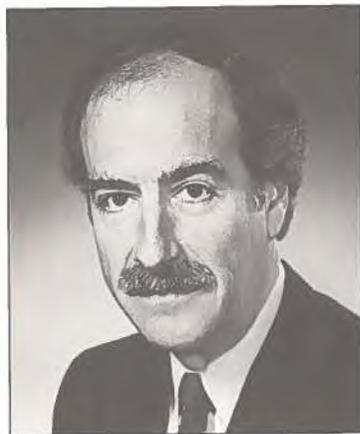Allan Gotlieb
1969-1973

Maxwell Yalden
1973-1977

Deputies

Bernard Ostry
1978-1979

Robert Rabinovitch
1982-1985

de Montigny Marchand
1985

Alain Gourd
1985 to present

Northward bound

door to new possibilities for trail radio. The Communications Research Centre (CRC) researched a high-frequency (HF) trail radio-to-telephone system for emergency communications.

"Once telephone was introduced, and satellites started serving the North in the late 1970s, the next step was to develop an HF radio-to-tele-phone system," says the CRC's Dr. John Belrose, who has been instrumental in developing trail radio.

A radio-to-telephone system installed for field trial in 1985 by the Department in collaboration with the Newfoundland Telephone Corporation now serves Labrador's north coast. ❑

Out of the lab...

and transferred to the Manitoba Telephone System in 1984.

Telidon, an advanced teletext and videotex technology ratified in 1984 as the North American standard, was developed by the CRC with the help of its Behavioural Research psychologists, who study how people use and react to communications technology. Teletext allows users to retrieve and display data on a TV screen, while videotex users can exchange data and graphics. ❑

Expanded senses

Descriptive Video, a new technology that allows people with impaired vision to follow television programs. "The dialogue alone gives a good idea about most of what happens on television," he says. "With Descriptive Video, a low voice gives more information about the action."

The Department is also currently studying a telephone system using Blissymbols, a symbolic language used by motor-handicapped individuals.

The Department intends to continue to play a leading role in providing solutions for people with disabilities, says Curfoot-Mollington. "We are determined to introduce the technology in Canada first, not to wait until it's available in the U.S. and people start asking for it." ❑

Clearing the air

staff's work involved evaluating requests for frequencies from visiting delegations, the security task force and the media.

"We had to try and fit them into a radio spectrum that was already the most crowded in Canada. When conflicts did occur, they needed to be resolved quickly," says Power.

Special arrangements were made with regular users of the spectrum, such as courier companies and paging systems, to free some bands for summit use. The Department also had to ensure that communications equipment brought by foreign delegations was compatible with the frequencies selected.

Communications services for other events such as Expo'86, the 1976 Summer Olympics and numerous Royal tours have also been handled by departmental staff. ❑

Pioneers honoured

More than 200 employees were honoured for 20 years of service with the Department. Deputy Minister Alain Gourd and Assistant Deputy Minister, Spectrum Management and Regional Operations, Robert Gordon presented the awards at ceremonies held across the country last summer and fall. The award, a plexiglass pyramid, contains a hologram of the 20th anniversary logo. Below is a list of award recipients. ❑

Miss Fire Prevention 1969 at the CRC.

Mlle Prévention des incendies 1969, au CRC.

SADM
Ken Hepburn

DGSP
Pierrette Sarazin

ADMAC
DGBP
Janet Horton

CCI
Charles Gruchy
Jacques Richer
Peter Vogel

ADMCM
DGIM
Eric Rolfe

DGHR
Elizabeth Tracy

DGAT
Paul Beaudry
Hilliard Billings
Ken Billings
Reg Bilodeau
Gerry Bolton
John Borutski
Hellmut Bucholtz

Jeff Reijnen
Marc St. Germain
Gary Shaver
Ron Smith
Orville Stanley
William Townson
Gerald Trick
Clifford Williams
David Willoughby

ADMSR
DAP
Gilles Rouleau

DGEP
Gordon Bird
Jean-Pierre Bisson
Ted Devey
Claude Dostaler

Robert Couture
Bob Curry
Andrew Dickie
Edward DuCharme
John Fraser
Colleen Kenny
Maurice Nunas
Rita Oakley
Ronald Powers
Lorraine Van Dusen
Alex Winsor

Atlantic/Atlantique
Pierre Boudreau
Malcolm Chafe
Fred Grezel
Martin MacLellan
John Palmer
Ed Power
Keith Prescott
Victor Smith
Roger Squires
Ron Wilcox

Ontario
Gerry Brushett
Robert Coxe
Suzanne Dinelle
Betty Drake
Walter Dueck
Don Edwards
William Fedorak
Jenne Looper
Gerald Lyngstad
Mike Nawrocki
John Nosotti
Dan O'Connell

Jack Prodanuk
Jim Rohatensky
Howard Smith
Al Wastle

Pacific/Pacifique
Jack Anderson
Ron Brown
Ivan Cartwright
Robert Catherall
Richard Chan
Jim Dean
Bob Fedoruk
Lorne Furnell
Len Johnston
Gerry Jorgenson
Ron Renneberg
Ian Rutherford
Russell Stelmack
Merle Styles
Tony Tamayose
Hans Treffers
Jim Whiteside
Keith Yule

DGSTA
Gerry Bower
Pat Braun
Jack Chambers
Karl Grosskleg
Howard Reynaud
Frank Vigneron

DGTP
Robert Bowen
Maurice Estabrooks
Murray Hunt
Sam Wilson

DGRC
David Barlow
John Belrose
D.R. Bradley
Robert Breithaupt
Fred Daniels
Robert Deguire
Barry Felstead
Robert Hahn
Brian Lisson