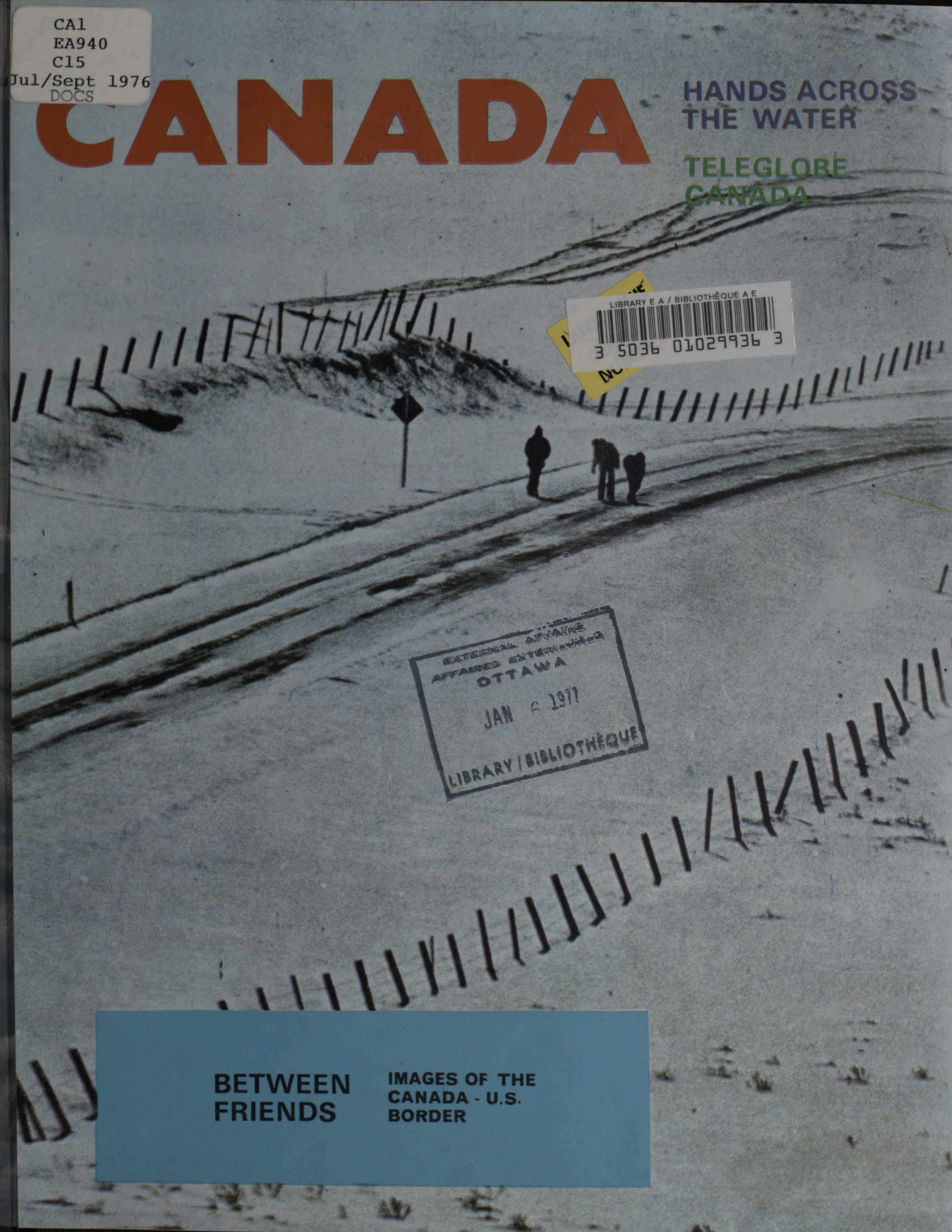
CANADA

HANDS ACROSS THE WATER

TELEGLOBE CANADA



BETWEEN FRIENDS

IMAGES OF THE CANADA - U.S. BORDER

CANADA

VOLUME I NUMBER 7

OUR COVERS : On the front and back of this Magazine are two pictures on the theme of the US-Canadian border. They are taken from the book 'BETWEEN FRIENDS' produced specially in Canada to commemorate the US bicentennary On pages 7 to 11, we present pictures and text from the book.

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Canada est publie, par Norman Macdonnell au nom du Haut Commisariat du Canada, New Delhi, et imprime par lui chez Tej Press.

Canada is published by Norman Macdonnell on behalf of the Canadian High Commission, New Delhi, and printed by him at Tej Press Pvt. Ltd. 8-b, Bahadur Shah Zafar Marg, New Delhi 110002.

TOWARDS A MORE EQUITABLE WORLD ECONOMIC ORDER

—A CANADIAN CONCERN

We present here excerpts from two speeches —the first from a report on the UNCTAD IV Conference to the House of Commons by the former Secretary of State for External Affairs, Mr. Allan J. MacEachen, now President of the Privy Council; the second from a speech on September 29 to the UN General Assembly by the new Canadian Secretary of State for External Affairs, Mr. Donald C. Jamieson.

UNCTAD IV — like all conferences where countries are required to make compromises in order to ensure argeement—did not achieve all that Canada or other developed and developing countries might have wished. But it was, without question, a most important step in the effort to reduce disparities between developed and developing countries that were initiated at the seventh special session of the United Nations.

In my statement to the conference on May 1, I touched on the four areas Canada considered would be the main issues to be dealt with: the problems of stabilization of commodity trade, the alleviation of debt-servicing difficulties of many developing countries, liberalization of trade to benefit developing countries, and transfer of technology to developing countries Of these, the commodities issue proved to be the central focus of the conference. Indeed, the adoption, by consensus, of a resolution that established an integrated programme proposes a list of 18 commodities of particular interest to the developing countries for consideration, describes the international measures to be taken in the context of the program, and establishes procedures and a timetable for pursuing it.

On the important question of common fund, the resolution provides for a negotiating conference to be held next year and for a series of preparatory meetings. As a major importer and exporter of commodities, we shall be actively involved in these international discussions and shall work with the other participants to resolve the problems of commodity trade which concern developing countries. These discussions and negotiations will provide the appropriate basis for examining the "parameters" of a common fund and for a decision regarding its establishment.

The conference also took an important decision on the subject of the financial problems of developing countries by adopting, again by consensus, a resolution on the debt problems of developing countries.

Canada supported all of these resolutions, offering explanatory statements on a number of them. We also, together with other industrialized countries, supported a proposal for further study of the concept put forward by the United States. Dr. Kissinger had proposed to the conference that early consideration be given to the establishment of an international resources bank to facilitate resource development in the poorer countries.

Despite the difficulties that arose at the conference and the problems that still need to be resolved, I believe that the outcome augurs well for the continuing dialogue between the developed and developing countries.

UNCTAD IV has now taken place. The conference on international economic cooperation, of which my predecessor, Mr MacEachen, has the honour to be co-Chairman along with Dr. Perez-Guerreo of Venezuela, has been meeting since the conclusion of last year's General Assembly. It has not been an easy year. The result of UNCTAD IV were achieved with difficulty and the Paris Conference is not assured of success.

Yet our difficulties should not obscure the fact that we have made significant progress towards agreement on the nature of our agenda and priorities, despite the lack of concrete achievement. If our preparation is thorough, and our approach to it sincere, achievement will be more likely to follow, provided that the requisite political will exists on all sides. It is now my earnest hope that the present phase of the Paris Conference will bear fruit.

The work of the Paris Conference is proceeding in parallel with work in the larger international bodies associated with the U.N. system. Its participants are aware that they must retain a global perspective on the problems before them if non-participants in the conference are to have confidence in its results, and if these are to influence the actions of governments in the longer term. The conference is part of a continuing process of negotiation aimed at narrowing the gap between the rich and the poor. The process is complex and it is permanent. Old problems will not disappear quickly and new problems will emerge. In the pursuit of a more equitable international economic system, Canada is prepared to commit its efforts and resources.

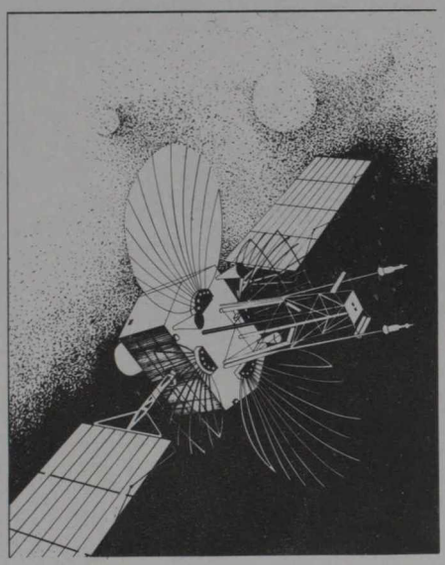
TELEGLOBE CANADA

Over 5,000 years passed from the time man learned to write until he invented the printing press. Another 400 years passed before the telegraph brought instant communication between distant points. Since the invention of the telephone a century ago, the time intervals have been shortening between major new developments in communications—phonograph records, linotype machines, high-speed rotary presses and the modern mass circulation newspaper, motion pictures, radio, television, computers, and, a little better than ten years ago, the communications satelite.

The telegraph did not die with the coming of the telephone, in fact it developed under new forms such as teletype, telex, and TWX. Likewise, newspapers did not wither the enormous popularity of radio. Nor did television kill radio, newspapers, magazines, or movie theatres as many had predicted. Indeed they have all changed, but they have not disappeared.

We live in an age of revolution in communication, there have been enormous changes in the first three quarters of this century and there may be as many more in the last quarter. Some people are talking about push buttons which can be used to call an enormous array of information on to a screen ; of mail and newspapers being delivered to homes on screens ; catalogues constantly on electronic call; of two-way television; of direct satellite-to-home television transmission.

It seems only yesterday but it was in 1950 that a few high frequency radio and telegraph cable circuits were the extent of Canada's overseas telecommunication facilites. It's not quite twenty years yet since the first transatlantic coaxial cable TAT I with its 36 circuits made reliable overseas



telephone service possible. Today, an, impressive array of cables, satellites, and sophisticated telecommunications equipment is conquering time and distance, creating an instant world.

Canadians telephone around the world almost as easily as they call across town. Businessmen contact overseas clients rapidly on telex. From thousands of miles away, television viewers round the world receive live satellite coverage of major sports events, such as the 1976 Olympic Games.

Behind this capability, accepted as common place today, lies a complex global communications system. Teleglobe Canada—formerly Canadian Overseas Telecommunication Corporation—which interfaces with domestic telephone companies and other telecommunications carriers, provides the link between Canada and almost every country in the world. Its mandate is to establish, maintain and operate Canada's external telecommunications services and to coordinate their use with the services of other countries.

When Teleglobe Canada was established as a Crown Corporation in 1950, it acquired existing facilities which amounted to three telephone and thirteen telegraph circuits. Today, more than twenty-five years later, the Corporation has built up a vast, modern international telecomunications system mainly through interconnections with global networks of submarine cables and communications satellite circuits, and international telecommunication agencies around the world become increasingly conscious of the crucial need for planning "ahead" to cope with the "demands of the times." The necessity for major network and facility "restructuring" becomes obvious. The widespread introduction of international direct distance dialing (DDD) also requires that the newly evolving backbone structure be designed to accommodate the increased continuity of service demands. Under IDDD, the ability of the total network to cope with failure of any one element of the system becomes much more critical since operator "management" of the customer is no longer possible. In the past, network failures resulted in waiting queues under operator control. With IDDD, such failures could result in an avalanche of repeated call attempts which, if not properly accommodated, could seriously degrade, or even freeze-out the entire network.

The main thrust of the demand for new services stems primarily from the widespread introduction of computer techniques in the business world. Over the past five years, the use of computers for commercial application has reached a state of absorption whereby their use is considered a prerequisite for effective competition. This has created a demand for transmission of computerized information between businesses both domestically and internationally, and the volume of such data flow

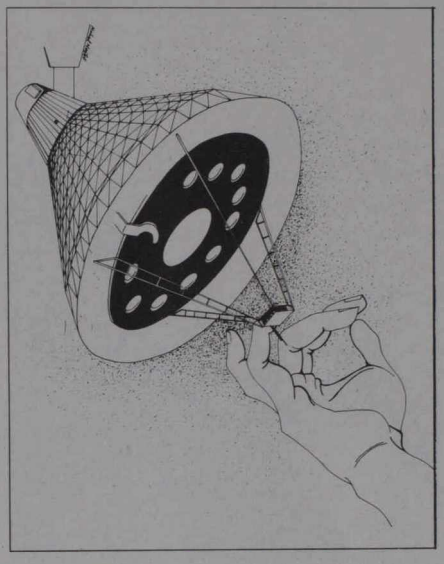
will accelerate over the coming years as the development of total integrated computerized business systems matures and expands.

Since new major facilities, on the average, require periods of up to five years between definition of requirement and full implementation, a concerted, systematic, intergrated planning and implementation process is underway at Teleglobe Canada.

Over the past ten years, there has been ample proof that the Corporation has kept ahead of the times :

- Computerized telex exchange in Montreal (COMTEX)
- Mill Village 2 Satellite Communication Earth Station
- 800-channel broadband cable system between Bermuda and Mill Village (CANBER)
- Lake Cowichan Satellite Communication Earth Station Complex.
- New Telephone Exchange in Toronto
- 1800-channel broadband cable system between Canada and the U.K. (CANTAT 2)
- Complete refurbishment of the old Mill Village 1 experimental terminal and translation in to a fully commercial system.
- A private wire message switching service.

In the months to come, a futuristic new telephone exchange is planned at Montreal which, while basically following the same crossbar network concept as the existing exchange, will employ dual computer processors and solid state memory to accomplish common-control functions currently accomplished with electro-mechanical equipment. It will incorporate such features as automatic call recording, automatic testing and



maintenance, call trace indicator, etc., and will be capable of accommodating future common channel signalling systems.

Judging from the accelerated growth of international telex services, the existing COMTEX exchange is projected to reach design life saturation as very soon a new computerized system of extended capacity, known as ELTEX, will, in addition to providing for increased capacity, include newly designed operator positions incorporating major improvements in the Operator/Computer interface.

Although of improved capacity, basically due to the use of newer, updated, faster-acting computers, to ELTEX system is limited in its ability towards linear expansion in that the centralized computer system can be projected to reach the limit of its computing speed within a five-to-ten-year period. Because of this limitation, Teleglobe has contracted with the Canadian Marconi Company for the development of a non-blocking telex exchange using mini-computer technology and a time division multiple access concept.

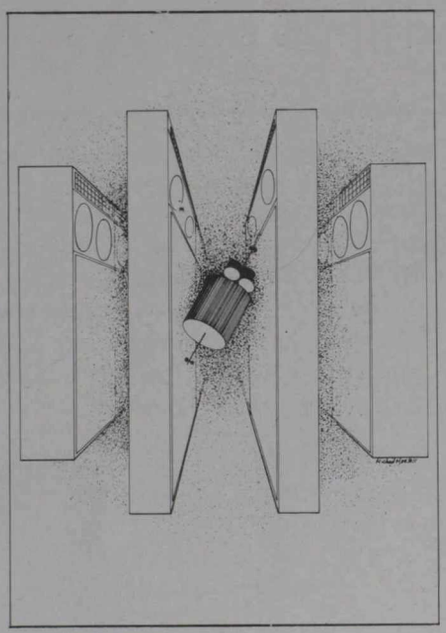
The rate of growth of the basic telephone service, when considered in light of the continuity of service objectives dictated by IDDD, indicated the necessity for a substantial increase in cable capacity and diversity over the Atlantic in the late 1970s and mid-1980s. Current corporate planning is concentrated on a comparison of alternatives which included purchase of IRUs (Indefeasible right of user circuits in cables owned by other administrations), lease of circuits and partnership participation in the construction of new cables. Although the optimum choice is dependent on many factors, iucluding plans of all administrations involved, major participation by Teleglobe Canada in one form or another in major cable facility provisioning across the Atlantic over the next decade is considered inevitable.

The construction of CANTAT 2 signaled the beginning of an era of very high capacity cable systems. Although every means possible has been taken to protect these new cables, including burial along continental shelves, it is considered a necessity to develop a capablity toward recovery and repair as an insurance policy against potential failure mechanisms. Accordingly, Teleglobe Canada, American Telephone and Telegraph, the Post Office (U.K), Cable and Wireless Limited and the Ministere des Postes, Telegraphes et Telephones de France, are currently planning development of a remote controlled submersible vehicle known as SCARAB (Submersible Craft Assist Repair and Burial) for introduction by late 1976. This craft would allow for remote controlled recovery of damaged buried cable and reburial following repair. The Corporation is also involved in the development of a magnetometer system for detection of buried cables as well as a number of other cable repair devices.

The growth of high-speed digital data transmission facilities is seen as a predecessor to development of a higher-speed digital switching service. Options include the development of a circuit switched capability, the development of a packet mode system—a network interconnected by computer linked modes interchanging data in distinct bundle arranged in agreed format—or both. The appropriate options will depend to a large extent on success and timing in the development of international data networks and the emergence of a demand sufficient to render the required terminal investments viable.

Teleglobe Canada is conscious that in every growing industry, the most sensitive area of the future is new markets. Continued success depends greatly on market research and analysis. A quick review of Teleglobe would reveal that voice and message-type communications, i.e., telephone, telex and telegraph, have been, and continue to be its bread and butter, although emphasis has shifted from telegraph to telex and telephone services. In fact, in its 1974-75 fiscal year, telephone service accounted for 55.2 per cent of the revenues, telex 16.6 per cent, while telegraph services dropped to 5.7 per cent. The increased cost of parcel and mail and the time delays involved have contributed to greater use of telecommunications services. International television, teleconferences, data and facsimile transmission are already a reality. The question now is : can these services be improved and modified to suit individual needs ?

Until recently, and in keeping with its mandate, Teleglobe's objective had been to satisfy the public need first and to consider individual needs later. Now, that the



public need is being met, however, it is uncovering many individual users' needs which are so specialized that the public service capability cannot cater to them. The users are familiarizing themselves with telecommunications, finding methods of exerting pressure to force faster developments. Companies with similar communications needs are grouping together to develop sophisticated computerized switches, concentrators and processors to handle their data communication needs. A number of interdisciplinary teams have been created. Each team is made up of representatives of such departments as marketing, engineering and operation working as one to match needs with new technology and thus ensure suitable international communications services.

Teleglobe Canada's new developments will come in sueh areas as data services and computer communications, and in the ability to sell complete international telecommunication packages tailored to individual customers' needs. It foresees, for example, an international public switched data network similar to the international public switched telephone and telex networks within a few years.

A new, more economical service for sending data between Canada and the United Kingdom was introduced on January 1. Offered jointly by Teleglobe Canada and the British Post Office, the new service achieves cost cuts of approximately 25 per cent by combining data signals from different circuits on the same transatlantic link. Canadian businesses such as banks, insurance companies, airline reservations offices etc., having frequent contacts with their U.K. offices should find it attractive. For their computer communications needs, such companies until now would have had to lease a voice-grade circuit from Teleglobe Canada and convert their data signals from digital to analog themselves. Customers pay a flat rate for fulltime circuit availability in a tariff structure based on circuit speed. Such, data link will eventually be extended to countries too.

Development of optical scanning devices, digital data services, highspeed facsimile, and packet mode systems had led the Canadian Post Office to serious planning for exchange of mail volumes both domestically and internationally by electronic means between 1980 and 1985. Likewise, the development of efficient digital facsimile devices is expected to produce a new international customer-to-customer demand within the next few years.

These activities are each expected to be self-sufficient, offer real service and stimulus to Canadian industrial and social development, and as international public services, ensure further integration of each Canadian into the international community.

CANADIAN STUDENTS AS MEDIA FACILITATORS

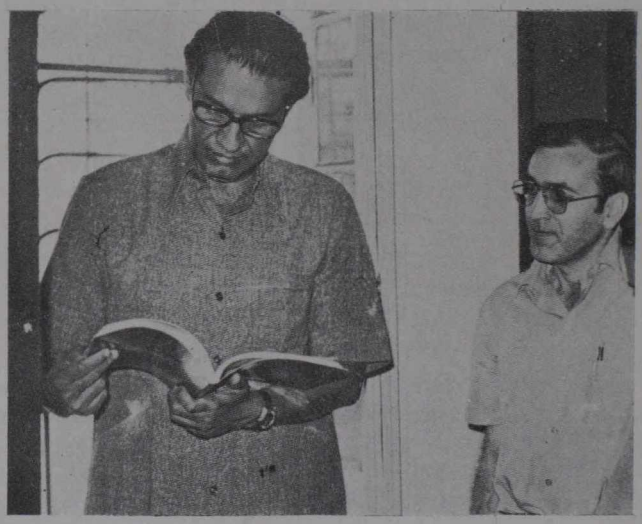
Chitra Bani—a Bengali phrase for Sight and sound—is a social communication centre started in 1970 at St. Xavier's College, Calcutta. Since then, the centre has grown and it has moved in a building of its own on Rafi Ahmed Kidwai Road in the centre of Calcutta. The director-founder of the Centre is Gaston Roberge, a Canadian Jesuit who has been in India for the last fifteen years. In 1969 Fr. Roberge took a Master's Degree from the University of California at Los Angeles (UCLA) in Theatre Arts (Film). He has now a staff of eight Indians with him.

The aim of Chitra Bani is two-fold to support development projects by providing them with audio-visual aids, like Super 8 or 16 mm films, slides, posters, photographs, video-taped presentations, etc. and to foster understanding of the media through courses, seminars and lectures.

The Department of Communication Arts of Concordia University, Montreal, took interest in Chitra Bani, and created and sponsored a facilitators programme with the view to helping Chitra Bani Staff to cope with their task. The programme also gives an opportunity to fresh graduates to come in personal contact with India. At first, Eric Durocher and Louis Plourde were sent by Loyola and they conducted a course in still photography at Chitra Bani. They then went over to Bombay and collaborated in film and Television programmes at St. Xaviers College and Sophia College.

This year, Don Crosby and Murray Unger were sponsored by Concordia with the help of a grant from the Canadian International Development Agency (CIDA). Don and Murray conducted workshops at Chitra Bani on the use of media in development projects and on the use of the 'Portapak' or video tape recorder.

Fr Roberge talking with Mr Satyajit Ray in the Chitra Bani Library (below). Mr Shyam Benegal talking to a group of Chitra Bani Students (bottom).



Canada and the United States have reached the point where we no longer think of each other as "foreign" countries. We think of each other as friends.

Harry S. Truman, President of the United States. (Ottawa, 1947)

When you look at the map and you see a great frontier line, stretching over 3,600 miles.....you scratch your head and say, "Well, what is defending it?" Nothing but the sound common sense, the sound goodwill of two practical nations.

David Beatty, British Admiral. (In an address in Toronto, 1921)

Go and stand anywhere along the Niagara—Buffalo border at holiday time—Fourth of July or First of July either one they're all one, to us. Here are the stars and stripes and the Union Jacks all mixed together and the tourists pouring back and forth over the International Bridge, immigration men trying in vain to sort them out, Niagara mingling its American and Canadian waters and its honeymoon couples.

Stephen Leacock, Canadian writer and humourist (In an address at IVY LEA Bridge dedication ceremonies, 1938)

Canada is horizontal. Only a comparatively narrow strip above the American border is populated. Like a layer of cream on a jug of milk.....a strip of earth and an expanse of sky. The sky is ever sensed above Canada untamed nature to the pole—green sky of summer and white of winter.

Andrei Voznesensky, Russian writer (North Country Passing 1971)

'Between Friends' is a book produced specially in Canada to commemorate the US bicentennary. The book was presented to President Ford of the USA by Canadian Prime Minister Trudeau in Washington as Canada's gift to the United States. The book contains 220 colour photographs by Canadian photographers who have depicted scenes along the long US-Canadian border, ranging from the shore of the Beaufort Sea to Campobello Island.

Between Friends

Prime Minister Trudeau presents the book, 'Between Friends' to President Ford in Washington.

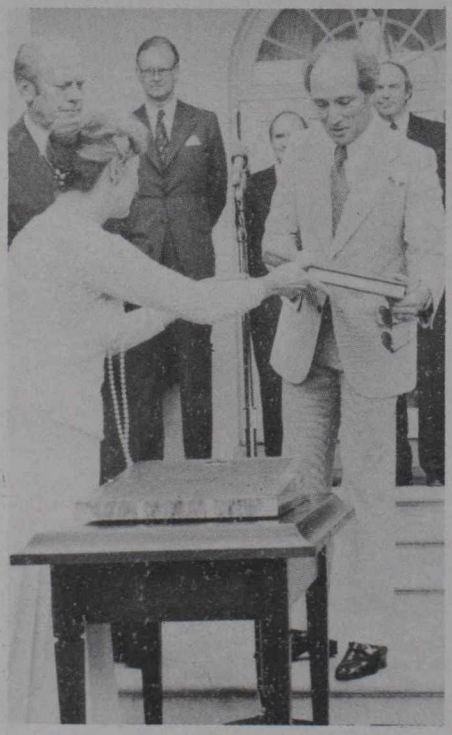


Photo by Libby Joy

PRIME MINISTER TRUDEAU ON THE BOOK 'BETWEEN FRIENDS'

This book is about people – about the Canadians and Americans who live in harmony close to that long thin line known as the International Boundary. It is about the boundary itself, which both links these people and helps to define their separate national identities.

This book is also a celebration – a joyful recognition of that striking triumph of the human spirit reflected in the atmosphere of peace and friendship which pervades the many relationships between two proud and free nations. It is a celebration, as well, of the two hundredth anniversary of the American Declaration of Independence, and of the innumerable accomplishments of a great country during two centuries of freedom.

No one should think it strange that Canadians should involve themselves in the observance of an American anniversary. Over hundreds of years we have worked and played together, laughed and mourned together, fought side by side against common enemies. Our two peoples have helped each other repair the havoc of natural disasters, inspired and applauded each other, opened our hearts and our homes to each other as to valued and welcome friends.

Let no one seek to devalue the achievements of our friendship by glossing over its occasional difficulties. It is true that, as is not uncommon among lifelong friends, we have sometimes had serious differences of opinion, misunderstood each other, struggled against each other's competing ambitions. Long ago we even fought each other, usually in relation to the very boundary which this book illuminates.

The true nature of our international relationship, however, is revealed by the fact that it is defined not by our differences, but by our capacity and eagerness to resolve them.

Our International Boundary, and the men and women who view it from opposite sides, have a vitally important lesson to teach other members of the community of nations. It is well expressed on a plaque marking the border line between Alaska and the Yukon Territory – a plaque which proclaims that the friendship between Canada and the United States is "a lesson of peace to all nations".

PIERRE ELLIOTT TRUDEAU
PRIME MINISTER OF CANADA

The chain marks the border at Point Roberts, USA, a community cut off from the rest of the United States by water or by Canadian territory. School-children commute 50 miles through Canada to go to school in Blaine, Washington.

Railway passengers near White Rock, British Columbia, find only this sign at the border.

The border between the the United States and Canada..... is the most friendly and least visible line of international power in the world. It is crossed daily by thousands of travellers who hardly notice it in their passage. It is washed by a Niagara of genial oratory and illuminated, or sometimes obscured, by a perpetual diplomatic dialogue. On both sides, the border is taken as a fact of nature, almost as an act of God, which no man thinks of changing.

Bruce Hutchison, writer and editor (The Long Border, 1966)

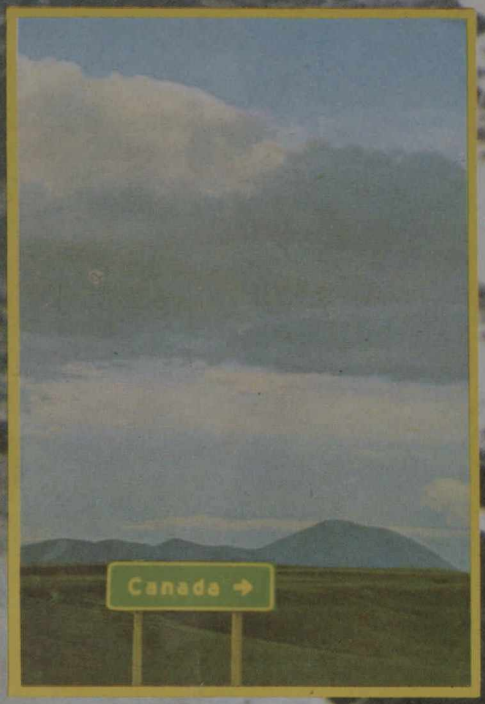
The Trailcreek border crossing in Northwestern Montana is on a road used only during the summer -- there is no Canadian custom Station at this lonely point on the border

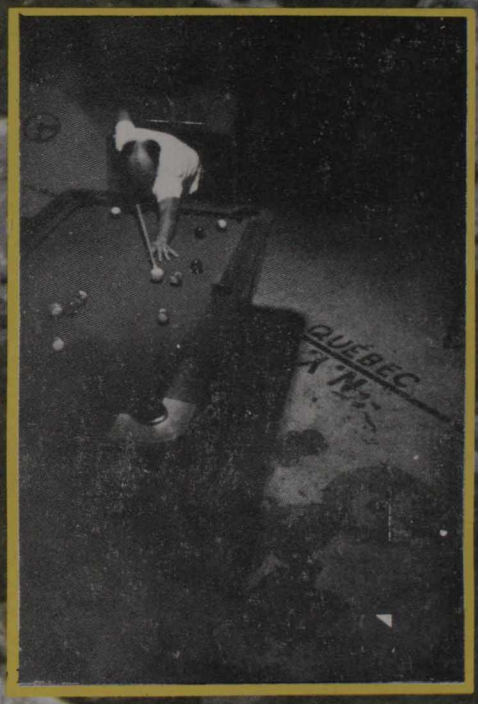
The struggle that has formed our national character has not been a contest against other people but against the elements, against the cold and the wind and the stubborn rock. This is a clean battle, but it yields no victories, only the postponement of defeats.

Peter C. Newman, Canadian writer and editor (The Testament of A Canadian, 1968)

Geography has made us neighbours. History has made us friends.

John F. Kennedy, former U.S. President (Ottawa 1961).



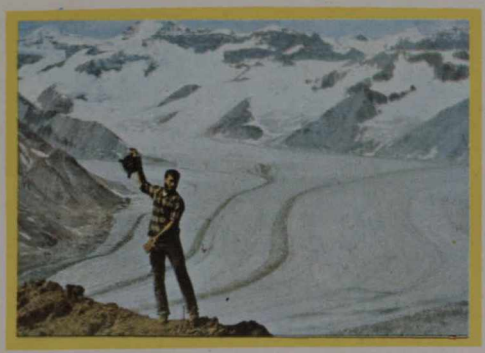


Canada is clean, healthy, young, polite, unspoiled, and, as I say, just, upstairs.

— Horace Sutton, U.S. writer (Footloose In Canada, 1950).

That long frontier from the Atlantic to the Pacific oceans, guarded only by neighbourly respect and honourable obligations, is an example to every country and a pattern for the future of the world

Winston S. Churchil, Prime Minister of Great Britain (Speech at Canada Club. London, 39)



Pic 1: On the ferry between Anacortes, Washington, and Sidney, British Columbia, a sailor changes the flag whenever the ship crosses the border.

Pic 2: Survey work on the boundary for the International Boundary Commission.

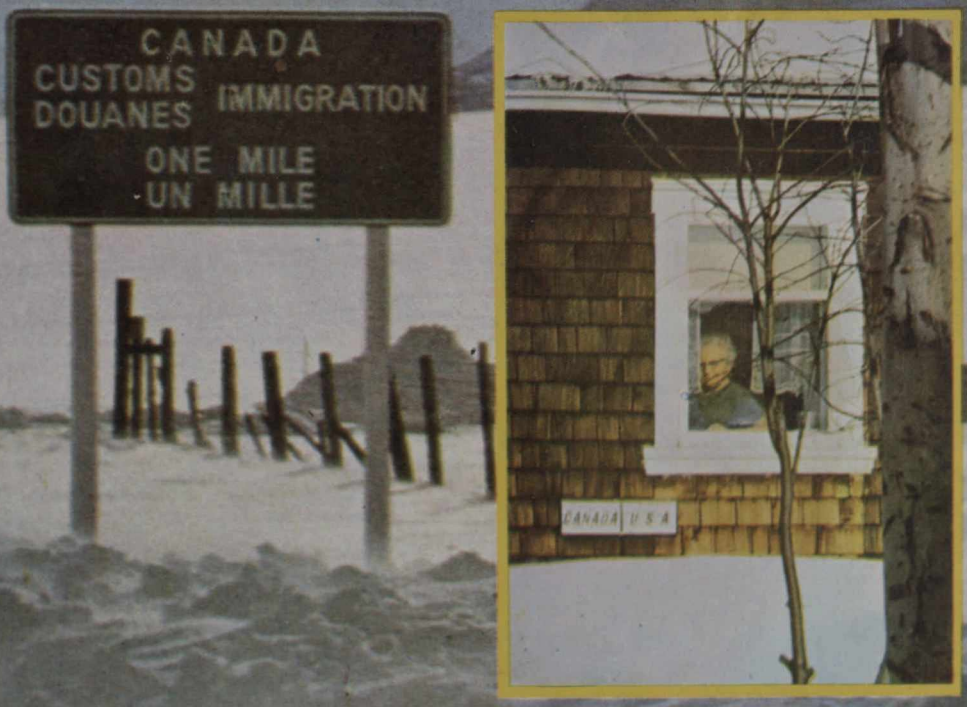
Pic 3: This sign points the way to Canada at Sweetgrass, Montana.

Pic 4: The international pool table at the Dundee Line Hotel is in a room crossed by the border.

Pic 5 : The house of the Bechards is divided by the Quebec-maine boundary line.

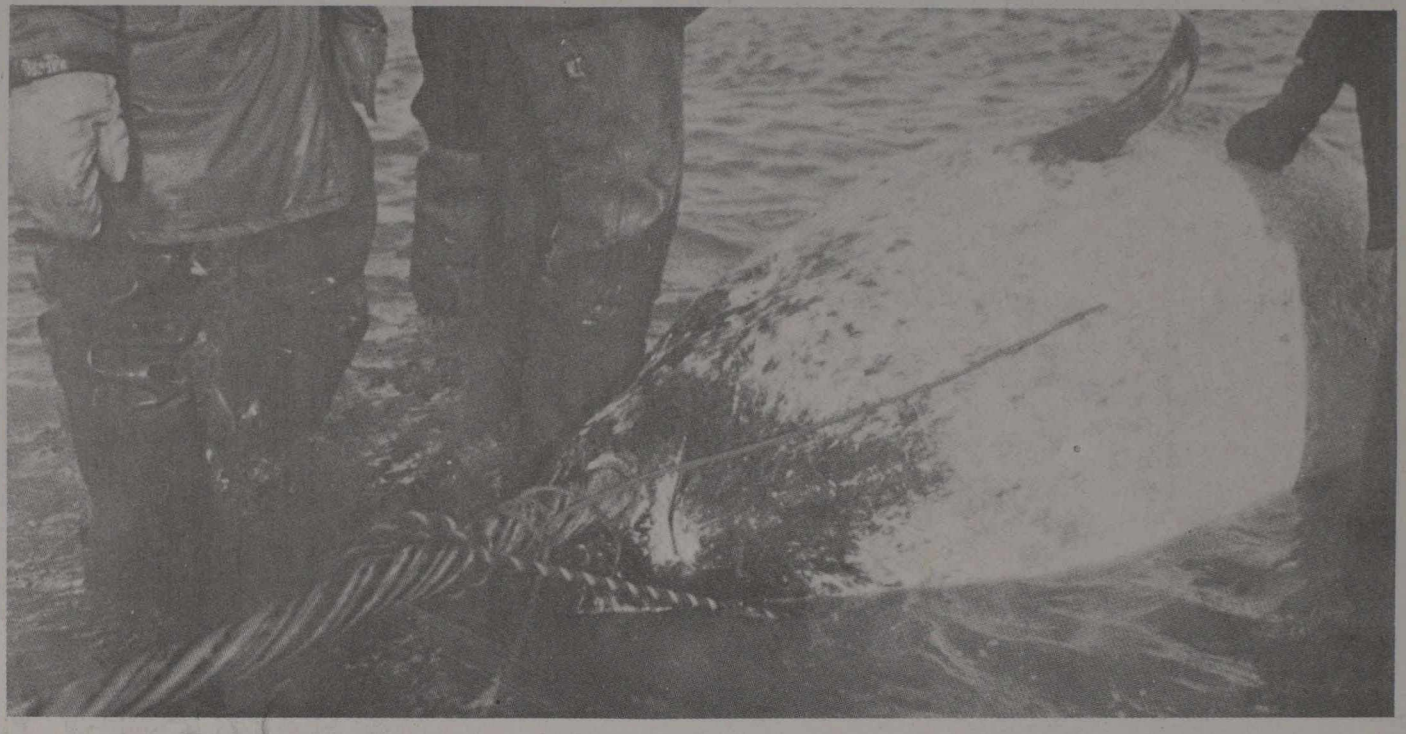
We are fortunate, both in our neighbours and in our lack of neighbours.

— W. L. Mackenzie, Prime Minister of Canada. (1930)



THE NARWHAL

Saving this mystery animal of the Sea



NARWHAL. The sound brings magic to the ear. It is a word of mystery, hinting of earlier times and suggesting something unknown in the sea.

On one of his -voyages, Martin Frobisher, the first European to make significant entry into Canada's Arctic, discovered a long pole of white ivory with a beautifully curved spiral running its entire length.

In his journal, published in 1578, Frobisher wrote:

"Upon a small island was found a great dead fish which, so it seemed, had been emblamed with ice. It was round like a propoise, being about twelve foot long and having a horn of two yards length growing out of the snout or nostrils. This horn is wreathed and straight, like in fashion to a taper made of wax, and may truly be thought to be the Sea Unicorn. This horn is to be reserved as a jewel by the Queen Majesty's Commandment, in her wardrobe of robes."

The four centuries since Frobisher wrote those words have done little to diminish the mystery surrounding the narwhal. Our lack of knowledge is not surprising, for the narwhal is an animal that spends its life submerged and comes to the water's surface only briefly. What information we do have comes from studying the carcasses of dead animals and from observations made as the whales ascend briefly into the air to breathe. Most of the narwhal's behaviour, how it eats, sleeps and relates to its natural world, remains hidden to our landbound eyes.

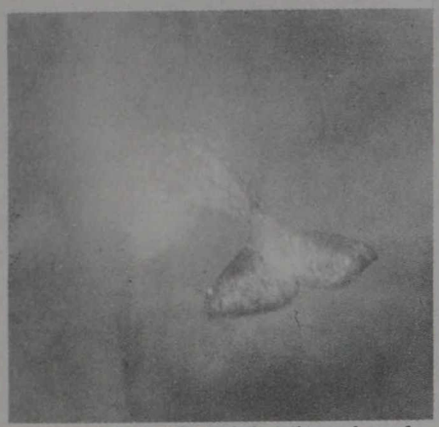
For centuries the narwhal has been sought for its bounty of protein and ivory. European and American whalers took it whenever possible to supplement their kill of the larger and slower Greenland whales and, in recent decades, it has been pursued by scientists who have studied it from research vessels or shore stations. But, to all eyes, be they hunters' or scientists', the live, free-swimming narwhal has remained hidden behind an impenetrable barrier of cold water and hostile ice.

The best and most experienced observers of the narwhal have always been Eskimos. They possessed the patience and the intimacy needed to watch these animals swimming along the coast during their annual migrations. In times past, they knew narwhals because they had to hunt them and their intense rapport is reflected in their art: stone and ivory radiates the lithe magic of this special animal of the sea.

In Canada most narwhals are found in the high eastern Arctic. For years, scientists like Dr. Arthur Mansfield have studied the narwhal migrations as they swam along the coasts of northern Baffin Island. Dr. Mansfield and other scientists have spent hundreds of hours observing the surface activity of these magnificent creatures. watching them from the harsh shorelines of this remote part of the world.

Narwhal literature has been preoccupied with the long, spiralled tooth that extends from the male narwhal's upper jaw, some times for a length of eight feet. The rich and entertaining history of "unicorn horns" has been well documented: their roles as aphrodisiacs (when ground to a fine powder), poison testers (lethal drinks supposedly frothed when poured into a goblet made of the substance), and courtly status symbols (fashioned into eating utensils, thrones, or even elegant bedsteads). And of course many an authority on whales has scratched his head and wondered how these unlikely beasts might themselves employ this curious implement of theirs.

Do they repel enemies, impale fish, fight for a mate, poke breathing holes in the ice, or even transmit noise with their



A female narwhal 25 ft. below the surface of Koluktoo Bay.

When the narwhal hunt is on, the entire community takes part. Here, a recently killed whale is butchered on the beach. Valued mainly for its ivory tusk, the narwhal also provides muktuk, a vitamin C laden delicacy.

tusks? As humans have pondered these relatively frivolous matters, one significant question about the narwhal has been sorely ignored. To wit, how many of these little (15-to-16-ft.) Arctic whales are there, and how are they holding up?

In 1974 a Canadian fisheries officer, Hugh Trudeau, released some distressing catch statistics on the Eskimo narwhal hunt, and in so doing he sounded an alarm for narwhal preservation. He said that 400 narwhals were killed during the summer of 1974 near the little settlement of Arctic Bay, on the west shore of Baffin Island's Borden Peninsula, and that, given our ignorance of their abundance and replacement rate, this could be an unacceptably high level of exploitation.

The ivory trade, which then offered $ 25 per lb. of tusk to the hunter (it is now up to $35), was seen by Trudeau as the main incentive for the hunt. It is incredible to consider that in 1965 the going rate for tusks was $ 1.25 per lb.; the profitability of narwhal hunting has soared.

Canadian scientists who have given thought to narwhal numbers in the past have had to rely on catch figures provided by the Royal Canadian Mounted Police. These records indicate wide fluctuations from year to year, but reporting has been uneven and undependable. According to the RCMP, the largest harvest for a single wear before 1974 was 442 animals taken in the entire Canadian Arctic in 1957. It is standard practice to double the catch figure to account animals lost by sinking, and so about 900 narwhals are thought to have been killed in the Canadian Arctic that year.

From several admittedly unsystematic censuses of narwhals off west Greenland and the Canadian Archipelago, Dr. Arthur Mansfield of the Canadian Fisheries Research Board arrived at a "conservative estimate" of 10,000 animals for Canada and northwestern Greenland. Their reproductive rate, age and sex distribution, natural mortality, migratory behavior, and other important population parameters are still unknown. Even ly Dr. Mansfield's "bailpark estimate" no one can say with certainty whether or not narwhals are being overhunted.

In the middle 1960s the Fisheries Research Board undertook a three-year narwhal project in Koluktoo Bay near Pond Inlet at the northern tip of Baffin Island. By netting, measuring, and dissecting 63 narwhals, Dr. Mansfield and his technicians began to unravel the mysteries of narwhal physiology and behaviour. However, significant gaps remain. For instance, the all-important replacement rate of the narwhal is assumed to be 9 in 100 (that is, 900 new narwhals would be produced annually by a population of 10,000), but that assumption is based largely on inferences for what is known about the narwhal's closest relative, the beluga or white whale, rather than on concrete information about narwhals themselves.

A second phase of narwhal research began last summer. Dr. David Sergeant, a Fisheries Research Board cetologist (cetology is the study of whales) who is an expert on belugas, sent a team of technicians to two Eskimo settlements in the high Arctic. Pond Inlet, several miles northeast of Koluktoo Bay, has long been regarded as the centre of narwhal-hunting activity in the Canadian Arctic. Arctic Bay, the other settlement, is a smaller and relatively obscure community of slightly more than 300 Eskimos, situated just inside Adams Sound on Admiralty Inlet, one of the world's longest fjords. While the Arctic Bay Eskimos have long been known to hunt narwhals, they have been primarily considered to be seal hunters and trappers. Trudeau's' announcement, however, suggested that the people of Arctic Bay were getting their share, if not more, of narwhals each summer.

Rick Mason and Stanton Waterman filming approximately 70 ft. below the surface of Koluktoo Bay.

A unique international complex is taking shape on the campus of the University of British Columbia in Vancouver, Canada. It was only an idea in 1970, but by the spring of 1977, the idea will have been transformed into a solid and permanent reality attesting to the good will and good sense which characterize relations between Canada and Asia. Now partially constructed, the ASIAN CENTRE will play an important role in deepening and broadening existing bonds.

An Unusual Gift

The founding spirit of the ASIAN CENTRE was Dr. Shotaro Iida, a faculty member at U. B. C. who, during a visit to the 1970 World Exposition at Osaka, Japan, persuaded the directors of the Sanyo Corporation to make an unusual gift to Canada. The gift was the roof structure of the Sanyo pavilion which was dismantled at the conclusion of Expo '70, and shipped to Canada to be re-assembled as the roof of the ASIAN CENTRE which Dr. Iida had proposed.

The Sanyo gift was accompanied by pledges of support from the Keidanren (Japan's Federation of Economic Organizations) and the Commemorative Association for the Japan World Expo (1970), which have contributed $ 550,000 and $ 250,000 respectively. In response, the Government of Canada and the Government of British Columbia each granted $ 400,000 toward the project. The Federal Government again through the Department of External Affairs has since granted an additional $ 50,000.

A committee of important Canadian businessmen chaired by Joseph Whitehead, President of Vancouver's *Journal of Commerce*, has been formed to raise the $ 3.5 million which is required to finish the building.

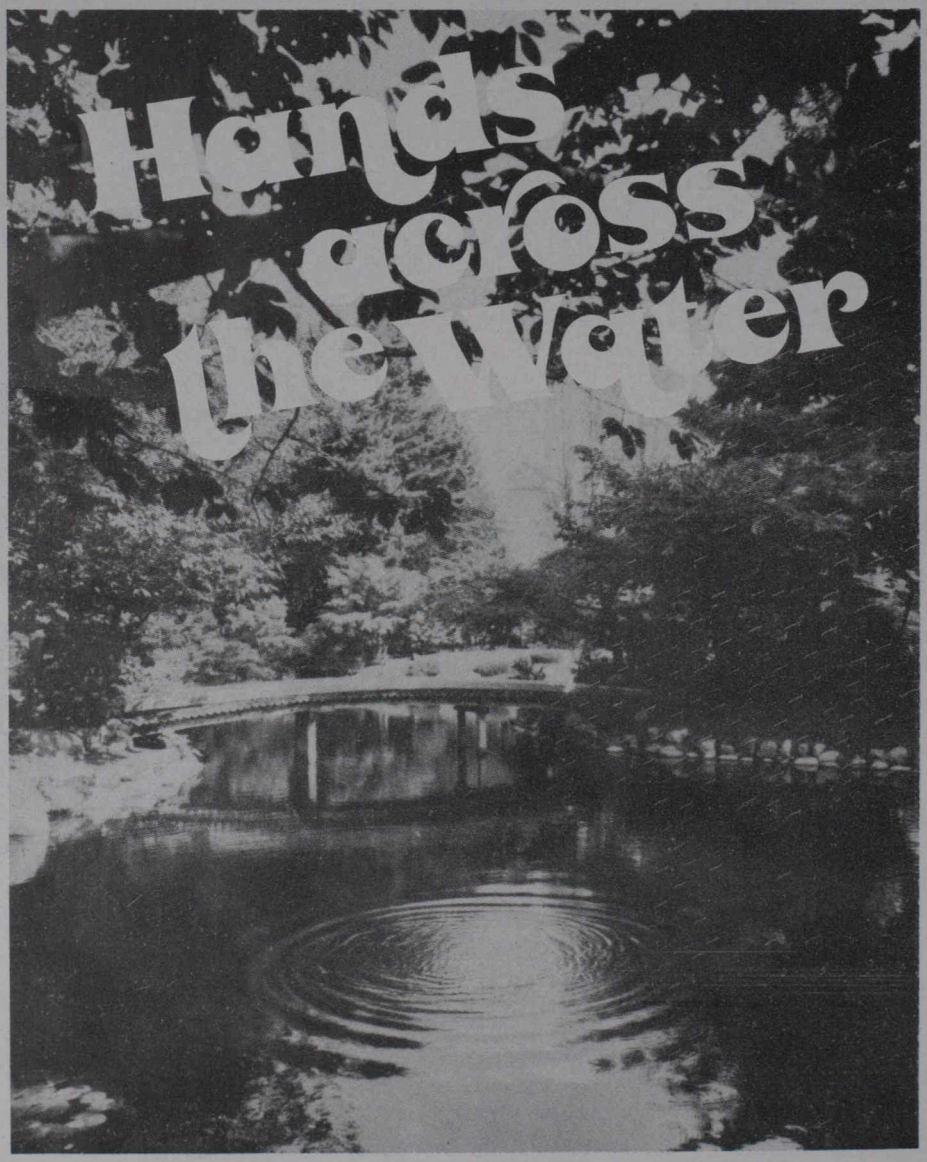
Whitehead's committee, however, will not be restricting its fund-raising activities merely to Canada. In the fall of 1976 the Committee will be launching a $ 1 million fund-raising drive in Asia. Questioned about the fund-raising effort, Whitehead recently stated that "the future success of the ASIAN CENTRE relies upon the commitment and involvement of governments and businesses on both sides of the Pacific Ocean. The building isn't just for Canadians. It will be a valuable and practical centre for Asians too."

Whitehead has already made one six-week tour of Asia in early 1975 to explain the nature of the ASIAN CENTRE project, and to lay the groundwork for the 1976 fund drive. He has reported strong interest in Korea, Singapore, the Philippines, Indonesia, Malaysia, Thailand and Hong Kong.

Beneath the Roof

The ASIAN CENTRE, although similar in outward appearance to the original Sanyo pavilion, differs markedly in interior design and function. Vancouver architect Donald Matsuba has created an entirely new building which, apart from symbolizing the positive nature of Asia-Canada relations, will house facilities and activities of a decidedly practical sort.

Perhaps the most important feature of the building is the Asian Studies Library which will be housed within. Consisting of over 180,000 volumes in various Asian languages, the library is the largest of its kind in Canada. UBC maintains the library as the result of special agreements which exist between the Canadian government's National Library and certain Asian countries. These agreements make U.B.C. a National Exchange Centre and Depository for important Asian library



material.

The library facility is complemented by reading lounges and study areas, offices for Asian researchers and scholars, seminar and meeting rooms exhibition areas for the arts, and a two-hundred seat theatre. The theatre is adaptable not only to drama, dance and music productions but also to mini-conferences, colloquia and lectures.

The ASIAN CENTRE's activities will ultimately include executive study programmes for Canadian business persons needing training in cultures, languages, arts, histories, politics and economics of Asian countries. Such backgrounding will aid them as they develop or expand their commercial interests with Asia. A similar programme for Asian business persons coming to Canada will also be developed.

The facilities of the Centre will also be used for Continuing Education classes on Asian subjects which are now sponsored at various campus locations. Researchers doing work on contemporary Asia-Canada relations will also have a home in the Centre and their research, which is in high demand, will be made available to business and government. U.B.C.'s Department of Asian Studies, perhaps the pre-eminent one of its kind in Canada, will not be located within the Centre, but it will be a permanent resource for those doing work there. There are over 1,500 students of Asia at U.B.C., and these students will become major users of the facilities.

Exhibitions and productions of various Asian art forms, including theatre, dance, music, painting, sculpture, weaving and pottery can be developed in the Centre. Participants in these cultural programmes will include the Departments of Fine Arts, Theatre and Music at U.B.C., the Vancouver Society for Asian Arts, and visiting producers and artists from Asia touring Canada.

STAMPS HONOURING IROQUOIAN INDIANS

OTTAWA -- Postmaster General Bryce Mackasey has announced the issue of four 10-cent stamps featuring the Iroquoian Indians. These are the last stamps in a series on Canadian Indian culture depicting artifacts, way of life, dress, and symbolism. The new stamps were launched officially on September 17 at Brantford, Ontario.

The artifacts stamp includes photographs by Ray Webber of a corn husk mask, a turtle shell rattle, a false face mask, an earthenware vessel, and a ball club, which were provided by the Royal Ontario Museum and the National Museums of Canada.

The way of life stamp is from a painting of an Iroquoian encampment by George Heriot. The dress and symbolism stamps depict a ceremonial costume from a drawing by Lewis Parker, and an Iroquoian thunderbird interpreted by Georges Beaupre.

In making his announcement, Mr. Mackasey said, "The Post Office is very proud of this service and we hope it will provide non-native Canadians and people throughout the world with a better understanding of the great contributions Canadian Indians have made to the mosaic of Canadian culture."

Sharing what we know

TIS HELPS DEVELOPING COUNTRIES

THE staff of the National Research Council's Technical Information Service, a pioneer technology transfer organization, has been giving some part of its time to help developing countries help themselves. Provided under the sponsorship of various external aid organizations, their know-how has assisted many countries and regions to set up services geared to their industrial development.

Finding out about new knowledge and putting it to work has become a real problem in recent years for small and medium - scale companies that lack the technical personnel to keep abreast of promising innovations and help to implement them. Roughly half the manufacturing firms in Canada fall into these categories: those with fewer than 200 employees is the general rule of thumb. Yet they account for half the country's total employment. Despite the potential advantages new technology may offer, such companies tend to lag in assimilating it.

The National Research Council's Technical Information Service (TIS) was formed in 1945 for the express purpose of delivering technical information to such firms and assisting them in its application. Its services are free of charge and confidential, and are provided by a staff of engineers who draw on their own experience in industry, their contacts with other engineers and scientists at NRC, elsewhere in government, and in industry, and on the vast information resources of the Canada Institute for Scientific and Technical Information (CISTI). CISTI was founded in 1974 with the combined resources of NRC's two major information delivery services—TIS and the former National Science Library.

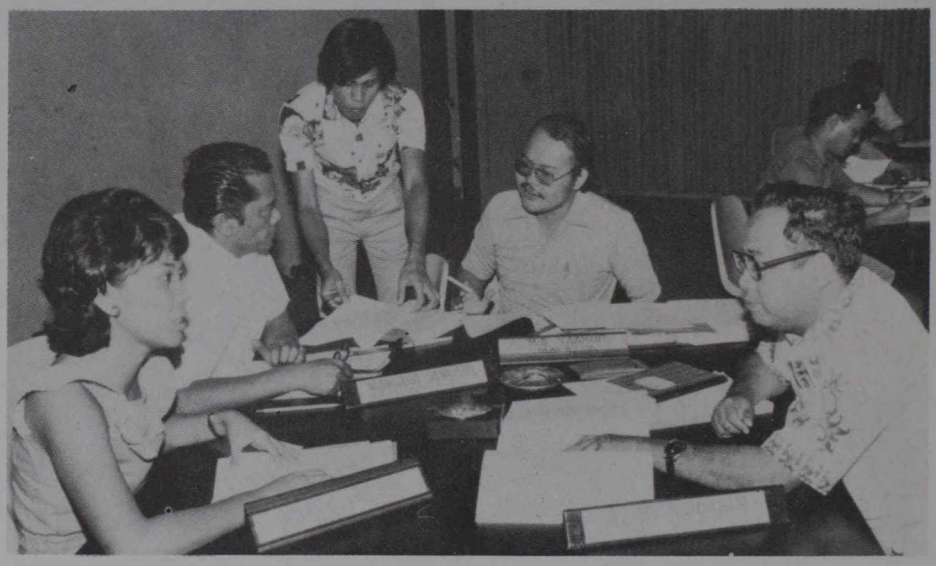
The activities of the Technical Information Service have evolved along three main lines. The Technical Inquiries Section answers questions on a wide range of matters related to industrial processes and engineering which are sent in directly by companies or through the TIS field offices. Industrial Engineering provides information on management and production to companies which are not fully aware of industrial engineering techniques or cannot afford consultants. The Technological Developments operation regularly keeps companies aware of advances in research and development applicable to their requirements.

"Our general philosophy," explains Gerard Kirouac, Assistant Director of CISTI, "is to develop a rapport with companies that do not have technical personnel and to help them identify and solve operational and management problems on a self-help basis with the general aim of bringing Canadian industry up to the current state of technology, whatever the field may be."

TIS is a notably sucessful information delivery service, and it therefore has caught the attention of organizations outside this country. Over the years, technical inquiries from foreign countries have been referred to TIS as part of an informal international agreement on the exchange of technical information. About 3.5% of the 25,000 requests for technical information handled by TIS personnel each year emanate from outside Canada. This exchange also works to the benefit of Canadians because organizations in other countries are encouraged to share their information and expertise with us and goodwill is engendered toward Canada.

Computer facilities (used by Technonet Asia) at the Singapore Institute of Standards and Industrial Research.

Participants at Indextrack '76 IDRC sponsored seminar at the Institute for Small Scale Industry, Quezon City, Philippines.



Through these contacts, TIS has come to be recognized as a pace-setting organization in the field of technology transfer. A number of countries have successfully modelled similar services on TIS' organization and others consult regularly with TIS. Australia and South Africa have sent observers regarding development of similar services. Informal agreements on an exchange of information have been made with, and technical assistance given to Mexico, Bolivia, Brazil, Colombia, Venezuela, Peru, Greece, Turkey, Lebanon, Egypt and India, among others. These international activities have taken place in co-operation with, or under the sponsorship of, such organizations as the International Development Research Centre (IDRC), the Canadian International Development Agency (CIDA), the United Nations Industrial Development Organization (UNIDO), the UN Development Program, and the Organization of American States (OAS).

Of particular interest is the assistance

being provided by TIS to IDRC in establishing TECHNONET ASIA, a technical information network serving southeast Asia. The development strategies of many Asian countries have emphasized the growth of small-and medium-scale industries in order to increase employment and economic development. Many manufacturers need advice on improvement of efficiency and product quality and on reduction of waste. The industrial extension services in Asian countries seek to provide engineering and management advice at the factory-floor level, but their own resources have been limited.

It was to provide back-up support for these national extension services that TECHNONET ASIA was launched in 1973. It consists of a co-ordination and liaison center in Singapore which handles inquiries and promotes co-operation between the national organisations participating in the network and which offers training to their managers and technical advisors. In addition, it provides a link with TIS in Ottawa for technical information and advice unavailable in Asia.

In its first year of operation, TECHNONET ASIA has helped to draw together participating organizations in Hong Kong, Indonesia, Malaysia, the Philippines, Singapore and Thailand. Staff members of the Singapore Institute of Standards and Industrial Research have come on training visits to TIS headquarters in Ottawa, and on their return the Institute set up its own Industrial Technical Information Service modelled largely on TIS and headed by one of the members on staff who visited TIS in Ottawa for further training. A member of one of the two Malaysian organizations participating in the program has also had a short period with TIS in Ottawa to study technical information-handline procedures and Mr. Kirouac travelled to Malaysia in 1974 to train some 20 technical advisors. Mr. J. E. Cunningham of TIS trained a group of 14 engineers from southeast Asia in Ottawa in the fall of 1975.

The volume of requests for technical information that has been funnelled back to TIS has been large and diversified. Many of the Asian needs can be met by the standard selections of already-prepared technical material on various industries, such as textiles and rubber, or on a range of problems from automation to corrosion. Food processing has been a major subject of many of the inquiries: TIS engineers have handled queries ranging from the manufacture of garlic powder to cane and bamboo processing. They were only temporarily set back by a letter from Mindanao in the Philippines seeking information on the scientific breeding of crocodiles in ponds and on the technical procedure for tanning crocodile skins. They replied to the effect that crocodile farming "is unfortunately not a common industrial concern in Canada due to reasons too long to explain..." and then listed nine institutions from Belgium to Guatemala which might provide useful advice. Contact was arranged between the Philippine group and a highly successful crocodile farm in Thailand.

Latin America, Mexico, Brazil and Colombia have operating industrial information systems modelled on Canada's TIA. They were started with TIS help in providing systems design, training and back-up assistance.

Under the sponsorship of OAS and IDRC, help is currently being extended to a number of other countries. In 1974, some 15 Latin American technical advisors came to Ottawa to learn how to set up similar services in their own countries. TIS engineers have also gone to various countries for first-hand familiarization with the state of their information resources to enable them to recommend the best approach to the development of further services. Mr. Cyrille Brousseau, who is with TIS' Montreal Office, was loaned to UNIDO for a month in Tunisia and Algeria to help those countries set up information services.

The basic thrust of the advice provided by TIS is aimed at encouraging the growth of integrated information and technical assistance systems that ensure swift access to information directly relevant to the countries' current and planned industrial activities and promote its application on the widest possible scale. It is thus a question not only of developing collections and having access to comprehensive, up-to-date information, but also of assuring its optimal utilization by having technical specialists actively help entrepreneurs identify problems and use information resources to find and implement solutions.

The people responsible for the creation of facilities to upgrade technological input are advised to work from present strengths. Existing collections of documentation and expertise are seen as one strong point, and another is immediate, pressing requirements—the information and technical needs of native industries. "Every effort," states a TIS report on Bolivia, "should be made (1) to make use of all information resources now existing in the country; and (2) to select carefully and obtain the additional resources absolutely needed to fill the gaps."

A good example is pointed out in a report regarding information services to industry in Guatemala, El Salvador, Honduras and Costa Rica. TIS engineer Mr. Jack Chander was invited to conduct the survey by officials of "ICAITI"—an acronym for the name in Spainsh of the IDRC—and OAS—sponsored Central American Center for Documentation and Agricultural Information in Turrialba, Costa Rica, and to study its modus operandi. This Center is part of the Inter-American Institute of Agricultural Sciences (IICA), an OAS-sponsored organization with the aim of up-grading agricultural practice in Central America. "The Center," remarks Mr. Chander's report, "has excellent facilities and provides assistance to other documentation centers in the field of agriculture throughout Latin America. In order to facilitate co-operation among agricultural libraries, it has become the headquarters for the Inter-American Association of Agricultural Librarians and Documentalists. It also provides short courses to train agricultural librarians and has a long list of publications. The structure of the documentation center of ICAITI should be similar to the IICA documentation center."

This Center and other existing facilities are perceived as nodes in a potential network, so the next buzz word is "integrate." The assessment of present resources and needs is step one of a planned long-term effort by each country to create a co-ordinated system with a single primary national focus and close link with similar services in neighbouring countries and in the developed countries. The synergistic benefits of co-ordination range from savings on acquisition through bulk buying and avoiding duplication of infrequently used material, to heightened opportunities for tapping world information resources and promoting their use within the country.

The establishment within the network of technical assistance centers with the specific mission of discharging the interface responsibility is also recommended. Staffed by engineers and other technical specialists and backed up by documentation facilities, these centers are the focus of contact between the user and the technical advisor. As TIS people do in Canada, their personnel should be prepared to advise on new equipment and methods, to do feasibility studies, to provide management advice for specific situations—in general, to foster the optimal utilization of human and material resources available in the country.

"There's a further side benefit of this to Canada," adds Gerard Kirouac. "Many requests about the availability of equipment come to us from foreign contacts and we have been able to recommend Canadian suppliers, with the result that there have been some substantial orders for our products."

Break Through In Wheat Self - Fertilization

A major discovery at the Agriculture Canada Research Station in Lethbridge, Alberta, brings world food production a step closer to a type of self-fertilizing spring wheat.

Two scientists at the station – Ruby Larson, a wheat geneticist, and John Neal Jr., a soil microbiologist – have genetically altered a type of spring wheat so that it supports soil bacteria which convert nitrogen from the air into a form the plant can use as nutrient.

The bacterial process, called nitrogen fixation, usually involves bacteria that must live and work in harmony with small root nodules on legume plants such as alfalfa to convert nitrogen from the air into a natural fertilizer.

The scientists found for the first time in significant quantities free-living bacteria capable of nitrogen fixation in soil surrounding the roots of spring wheat.

If lines of wheat could be developed that encourage growth of such bacteria in the surrounding soil, it would have far-reaching implications for nitrogen-hungry cereal crops that depend on chemical fertilizers to meet their needs.

The Lethbridge scientists, who reported their findings in the current issue of the British scientific journal, *Soil Biology and Biochemistry,* stated that they substituted chromosomes from Cadet wheat with a pair of chromosomes from Rescue wheat. Next, they isolated bacteria from soil surrounding the roots of the altered line of spring wheat, grew the bacteria in the laboratory, and tested them for nitrogen-fixing ability.

"We found the substitution line supported nitrogen-fixing bacteria in the soil environment around its roots. The parental varieties, Cadet and Rescue, did not," the researchers say.

"As far as we know, this is the first time free-living nitrogen-fixing bacteria have been found in substantial quantities in the root environments of spring wheat."

The scientific and agricultural excitement comes from the fact that the scientists genetically manipulated their wheat plants to support nitrogen-fixing bacteria. The findings they say, represent "a significant breakthrough".

Whether the bacteria convert enough nitrogen from the air to provide natural fertilizer for the wheat plants is still not known. Drs. Larson and Neal will try to determine if the soil bacteria around their substitution line of spring wheat can supply significant quantities of nitrogen to the plants.

If they can, the next question could be: is enough natural fertilizer being supplied by nitrogen-fixation to boost the nitrogen-dependent protein level in the plant?

Whatever the outcome, the door has finally opened a crack toward long dreamed-of cereal crops that can draw on nitrogen in the air to meet an essential part of their fertilizer diets.

FERTILITY REGULATION STUDIES IN CANADA, EGYPT AND INDIA

Three studies of the acceptability, effectiveness and possible side-effects of various forms of fertility regulation are being supported with grants totaling $620,255 from the International Development Research Centre (IDRC), President W. David Hopper announced recently. The studies, which will take place in Canada, Egypt and India, will involve the co-operation of about 15,000 women.

A $259,000-grant to the Canadian Committee for Fertility Research will enable this co-ordinating body to set up a scientific advisory committee, hold training seminars and implement several research studies, possibly including a survey of infertility.

A grant of $273,285 to the Indian Council of Medical Research will cover the costs of ten teams studying the effects, both medical and psychological, of various methods of tubal ligation. The third grant, of $87,970 to the International Islamic Centre for Population Studies and Research at Al-Azhar University in Cairo, will allow Egyptian gynaecologists to carry out clinical trials with Medroxy Progesterone Acetate (MPA) as a post-partum contraceptive.

Marie-Claire Blais

CANADA/BELGIUM LITERARY AWARD

Canadian novelist Marie-Claire Blais is the winner of the Canada/Belgium Literary Prize for 1976.

The $2,000-prize is given annually to French-language writers with the award going in alternate years to authors in Canada and in Belgium. It is given on the basis on an author's total literary work rather than for one publication and is co-sponsored by the Governments of Canada and Belgium. The Canadian portion of the prize is financed by the Cultural Affairs Division of the Department of External Affairs, and administered by the Canada Council.

PREPARATIONS FOR 200-MILE FISHING ZONE

Fisheries patrols are being doubled this year to control fishing activity throughout Canada's new 200-mile fishing zone, which will be extended by January 1, 1977.

Fisheries Minister Roméo LeBlanc said recently that the Fisheries and Marine Service of Environment Canada, now carrying out 90 per cent of Canada's fisheries patrol work in offshore waters, would call more extensively on ships and aircraft from the Department of National Defence, which already provides substantial support. In addition, vessels from the Ministry of Transport fleet would become available regularly for this purpose.

During 1976 the number of patrol days by vessels on both coasts will roughly double to about 2,000. Offshore patrols will be at sea about 500 days on the Pacific coast, and will double to about 1,500 days on the Atlantic coast. The number of boardings of fishing vessels at sea by Canadian inspectors will increase to between 1,200 and 1,400 a year permitting at-sea inspection of at least one-third of the foreign fleet and one-sixth of the Canadian fleet every month.

SHASTRI INSTITUTE STUDENTS IN INDIA

Students of the Shastri Indo-Canadian Institute visited India recently and are seen in pics. 1, 2 and 3 with Prime Minister Indira Gandhi in New Delhi. Pic. 4 was taken on the occasion of the visit of the Shastri Indo-Canadian Institute—Summer Programme participants to Madras where they saw a Bharata Natyam performance by Miss Kausalya Ramani and Miss Vidya Ramani organised by the Indo-Canada Association, Mädras.

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