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Canada's telecommunications industry develops into world leader

Canada's vast distances and relatively sparse population plus large urban centres scattered across the land have meant that communications links have become extremely important to the well-being of the nation. As a result, Canada has developed technologies that have given it a reputation as a world leader in the highly sophisticated telecommunications industry.

Canada has three separate and complementary microwave systems across the country from east to west, as well as a domestic satellite communications network with more than 100 satellite earth stations. There are over 160,000 kilometres (100,000 route miles) of microwave system connecting Canadian communities.

Canada's telephone network, which connects more than 19 million telephones, is rapidly converting to the digital mode to take full advantage of the reliability and economics of this new technology. Canadian telephones in service are more than 60 *per* 100 population, making Canada number four in the world in terms of number of phones *per* 100 population.

A receiving dish at Telesat Canada's network television station in Qu'Appelle, Saskatchewan.

Two geostationary satellites provide effective and reliable communication services to the entire country, reaching the most remote areas of northern Canada. The Telesat domestic satellite system will soon be operating one of the first 12/14 gigahertz (GHz) commercial communication satellites. This will be followed by the *Anik-D*, a new design of the 4/6 GHz satellite series.

The challenge to meet the needs of the rural subscriber has been met by the employment of VHF, UHF and microwave technology where the traditional wireline telephone service cannot be extended economically. Canada operates the world's largest mobile radio system with 23,000 subscribers, primarily serving the Canadian petroleum industry in western Canada.

Telephone sector

A complete line of digital switching systems are among the most important high technology exports from Canada to the United States and abroad. Canada has earned a world reputation for excellence in the supply of telecommunications equipment such as PBX, data and voice transmission systems and custom integrated circuits for the telephone sector.

Among the most significant of these technological developments are the digital exchange switches, designed for both remote and densely-populated urban centres as well as for international gateway applications. These switches and sophisticated new transmission techniques are providing the backbone of the Canadian communication networks of the future. They have proved to be reliable, efficient and can operate in only a fraction of the space required by earlier electro-mechanical equipment.

Digital switching capability is gradually being extended into rural areas through the employment of remote line modules homing onto a parent switcher, thereby extending sophisticated urban-grade communication areas up to 80 kilometres (50 miles) away.

External Affairs Canada Affaires extérieures Canada

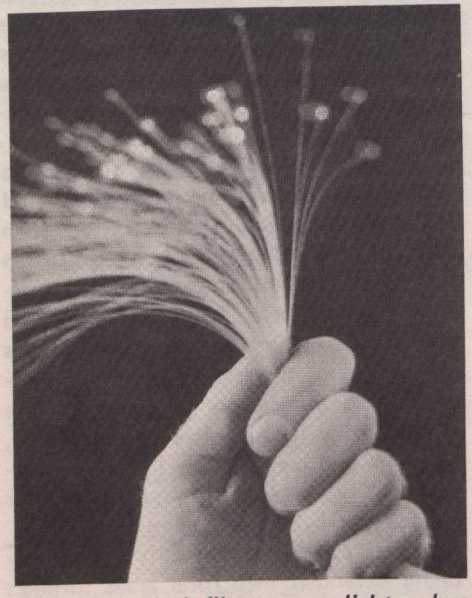
Telephone terminals have gone through a radical series of developments over the last few years and this evolution will accelerate. Increased use of electronic digital exchange switching and the addition of tone-to-pulse converters to many rotary dial phones have speeded the trend toward all-push-button telephones.

Various Canadian manufacturers offer state-of-the-art digital PBXs business communication systems and packet switching systems. Canada can provide low cost micro-processor-based units that combine data processing, word processing and communications capabilities in desk top models. A new large capacity business PBX has recently been announced for large corporations handling requirements from a few thousand to 30,000 telephone lines.

Highly professional consulting engineering firms provide a full range of services to the telephone industry. These include preliminary investigations, advisory services, design engineering, project management, traffic and rate studies, specialized design and development services.

Fibre optics systems

Fibre optics has been used in communications in Canada since 1976 and many field trials have been undertaken. As a result, Canadian industry has a leading position in this new technology. Applications include a residential area of Toronto where households are being used to show the practicability of simultaneous transmission of telephone, data and television



Because optical fibres carry light pulses rather than electricity, they are not disrupted by such things as lightning or power lines. They are made of silica, a basic constituent of ordinary sand.

in urban fibre loop facilities under working conditions. In the rural environment an extensive field trial co-sponsored by the Canadian Telecommunications Carriers Association, the Manitoba Government Telephone Company and the federal Department of Communications connects 150 rural homes with telephone, television, radio and data communications.

A major installation that is to carry more than 20,000 voice circuits in Alberta is being completed, one of many trunk systems. A project that will be one of the world's longest fibre optic broadband systems is being constructed in Saskatchewan carrying 12 video channels. The system is planned to ultimately reach most major communities in the province and will have a system length of 3,200 kilometres (1,800 miles).

Space communications

Among the member states of the International Telecommunications Satellite Consortium (INTELSAT), Canada ranks tenth in terms of its spacecraft investments.

Telesat Canada was formed on September 1, 1969 by an act of the Canadian Parliament to own and operate the world's first domestic satellite system, launched in 1972. With more than 100 Canadian manufactured satellite earth stations of about 14 different types and sizes ranging from large stations with 30-metre (100-foot) antennas to small transportable stations down to 1.2-metre (4-foot) antennas, Telesat now offers a wide variety of services to the remote areas of Canada, as well as the populated areas.

Its industrial centres are linked together and to the Canadian North through the Telesat network and to the rest of the world through Teleglobe facilities including satellites. The Canadian space industry has established a high reputation for standard of excellence and is particularly respected for strengths in the innovative design and manufacture of satellite earth stations and satellite antennas, transponders, and specialized spacecraft components and control subsystems.

Internationally, Canadian industry has co-operated in joint ventures with U.S. and European industry to the extent that Canadian content in the form of mechanical and electronic subsystems is to be found in most of the world's commercial communications satellites. An example is the U.S. Tracking and Data Relay Satellite Spacecraft which carries essential electronic subsystems designed and manufactured in Canada.

In co-operation with the National Aeronautics and Space Agency of the United States, Canada designed and manufactured for NASA the critical Remote Manipulator System (RMS) for the Space Shuttle Transportation System. RMS is a remotely-controlled mechanical arm, some 15-metre (50-foot) long with six degrees of freedom, which will be used to unload the payload from the Shuttle while in weightless orbit. Three additional RMS units are currently being manufactured for NASA.

During 1976, the Canadian space industry was consolidated to create an industrial structure capable of undertaking prime contracting responsibility for complete communications satellites. In addition, SPAR Aerospace Limited is currently under contract with Telesat Canada to provide the *Anik-D* series of two satellites. Canadian government agencies and Canadian companies are active in international co-operative space projects.

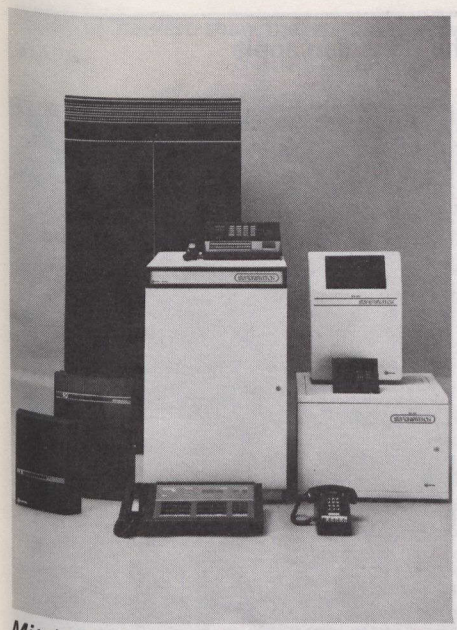
In addition to the work with NASA, Canada has a co-operative development agreement with the European Space Agency (ESA) and is strengthening its involvement in that agency's programs. Canada is currently taking part in the definition phase of ESA's L-SAT, a large communications satellite with a proposed 5.5 kilowatt power supply, intended to provide communications coverage of Europe for a range of services.

Cable television

Leaders in the cable television (CATV) industry since its inception, 526 Canadian CATV systems companies serve four million subscribers. Thirty per cent of the subscribers have access to 30 TV channels while the remainder have 12 channels available. Canadian companies design, manufacture, install and operate the Canadian CATV systems as well as providing equipment and services in Europe and the United States.

The world's largest coaxial CATV trunk system has been placed in service by the Manitoba Telephone System to link Winnipeg, Manitoba's capital city, to four rural communities. The cable system linking Manitoba's two largest cities, Winnipeg and Brandon, is 234 kilometres (146 miles) long and utilizes unique low distortion amplifiers developed in Canada to provide high quality bi-directional CATV signal transmission of up to eight channels in the forward direction and four in the reverse.

There are more than 75,000 kilometres (45,000 miles) of cable in place across



Mitel Corporation, a leader in Canadian telecommunications, produces telephone equipment such as the Superswitch Family shown here. The line runs from the SX-5, with six extensions and two trunks to the SX-2000, a digital switch with capability of over 10,000 lines.

Canada. The cablevision industry in Canada employs more than 5,000 people.

Videotex

In 1978, Canada's Department of Communications announced the development of an advanced videotex terminal called Telidon, capable of producing images with a much higher resolution than currently available equipment. Superiority is also exhibited in flexibility and compatibility of data bases with different terminals and having a designed capacity for future expansion.

Subsequently other Canadian firms, notably Norpak, Electrohome and AEL Microtel, have taken up the Telidon technology and are now manufacturing a range of Telidon hardware and equipment.

Canadian Telidon hardware and information services companies are finding early acceptance in Venezuela, Germany and the United States. The Telidon protocol has also been recommended by AT&T and should encourage its adoption as a North American standard.

Research and development

Canadian telecommunications equipment manufacturers maintain their own research and development and test facilities for all types of telecom systems. These include areas such as satellites, satellite earth stations, digital switching and transmission, fibre optic systems, CATV, microwave and coaxial transmission, mobile radio, etc. The Canadian telecom research annual investment is approximately $250 million a year.

Electronic components

The Canadian electronic/telecommunication industry is supported by an active group of components manufacturers who tend to specialize in excellently engineered, high-technology components for specific applications. Included in such applications are space, nuclear and the higher technology communications and industrial equipment. The military market is a major user and many Canadian component manufacturers are qualified under the well-known MIL Standards, thus ensuring the utmost degree of reliability and quality.

The majority of the microelectronics research and development and manufacturing capability is located in the Ottawa region. This activity includes the private sector, government and university laboratories. The technologies found in this area are silicon, compound semi-conductors, for example, gallium arsenide, thick film and thin film.

(Excerpts from an article in Canada Commerce, *Special Supplement 1982.)*

Petroleum industry revenues rise

Petroleum industry revenues on total operations increased by 22 per cent to nearly $24 billion in the first half of 1981, according to a survey of the industry released by the federal Petroleum Monitoring Agency.

The report is based on data provided by 75 per cent of the largest oil and gas companies in Canada. While total revenues increased, the survey found that profits (net income after tax) declined by 21 per cent to $1.8 billion. This was due to a drop in profits in the upstream sector (exploration, production and development), which was partially offset by profit increases in the other major industry sectors – downstream (refining, marketing and petrochemicals), other Canadian operations and foreign activities.

Profits from downstream operations rose by 18 per cent to more than $800 million. About $340 million of the total downstream profits resulted from gains realized by companies following increases in the petroleum compensation charge.

Total sources of funds available to the industry rose by 56 per cent to $11.9 billion. Funds from internal cash flow (cash generated by operations) decreased slightly to $4.3 billion. External sources of funds more than doubled to $7.6 billion, including approximately $4 billion raised for acquisition and takeover purposes.

The acquisitions and takeovers effected by Canadian-controlled companies during the first six months of 1981 amounted to $6.5 billion, according to the report. The estimated effect of the acquisitions was to reduce the level of foreign ownership (measured on petroleum-related revenues) by 4.5 percentage points to 69.5 per cent and foreign control by 7.2 percentage points to 74.3 per cent.

Development corporation creates high-technology fund

Canada Development Corporation (CDC) has set up a new investment fund to encourage the growth of high technology companies in Canada.

The Vancouver-based holding company has invested $10 million through CDC Ventures Incorporated, its wholly-owned subsidiary to promote ventures in applied science and engineering.

John Shortly, president of CDC Ventures, told a news conference that VASE Fund Incorporated – VASE stands for Ventures in Applied Science and Engineering – is a means through which private interests can invest in potentially-lucrative high technology firms.

Shortly said VASE's first major project is a $6-million investment in HSA Reactors Limited of Toronto, a private high technology anti-pollution and resource-recovery company currently developing practical applications of electrochemical technology. Such technology, whose commercial prospects appear limitless, involves the transfer of electrons in chemical processes to produce new chemicals.

Ian Kennedy, president of both HSA and VASE, said the fund will also look at new proposals in robotics, process control, management information systems and related software and bio-electrochemical innovations.

The fund will be typical of the seven other funds administered by the organization, with a target of six to eight enterprises for each fund. The aim is to increase the VASE Fund's capital (excluding HSA) to between $20 million and $25 million.

Fund aids local projects in Thailand

A special fund provided by the Canadian International Development Agency is available in Thailand for small, local projects generally overlooked by large-scale development schemes.

The mission-administered fund (MAF) now totals $350,000 (Cdn.) a year and is designed to help people develop their own projects.

In describing the aims of the fund, Canadian Ambassador to Thailand Fred Bild explained, "We're looking for self-help projects that arise from the local community. It's supposed to be a one-shot effort on our part. The people have to be able to continue the project themselves."

Varied projects

The five-year-old MAF program has been used to stock fish ponds, buy milk cows, breed hogs, dig irrigation ditches, install septic tanks, train hill-tribe people, build libraries and teach women to knit rugged sweaters for a Canadian market. The projects range in cost from $1,000 to as much as $50,000.

The Canadian embassy started the fund in 1976 by buying a well-digging rig for Project Raindrop in an arid province in the northeast. In return for the rig, local authorities agreed to drill wells for public and private schools in the region. Since its installation, local residents have provided operating costs and have been responsible for the upkeep. The rig is still in good shape and brings drinking water to remote village schools.

Jerusalem Village in Bangkok is another area which has benefited from a grant. The residents there used $4,500 to improve walkways, put in water hydrants and buy a fire engine to protect their wooden shacks. The equipment is also used for flood control.

More recently, Mr. Praiyat, a blind teacher in northeastern Thailand, has established a school for impoverished blind children with the aid of a $21,000 (Cdn.) grant. Mr. Praiyat takes them in and teaches them basic skills, including reading and writing.

Most Canadian embassies in developing countries have a mission-administered fund at their disposal. "It's much more cost effective," explained an aid official. "All the money goes to the project because there are no administrative costs and the projects are usually self-regenerating," he said.

February is the month for celebrating the Canadian apple

February has been selected as apple month in Canada and plans have been made to promote Canadian apples across the country.

Agriculture Canada and Canadian apple growers and processors will finance the promotional program.

In addition to in-store displays, newspaper and radio advertisements will invite consumers to "Enjoy the great taste of Canadian apples". Also, a number of the apple-producing provinces will be promoting apples sales through their own programs during the month.

Canadian apple production and processing is estimated to be a $350-million industry and this mid-winter promotion should help strengthen apple sales. It should also make consumers more aware of the good food value of apple products, such as vitaminized apple juice, which is an excellent source of vitamin C.

February was chosen as Canadian apple month because this is when top quality controlled atmosphere apples start coming on stream. There is also a ready supply of processed apple products, such as apple pie filling and apple juice.

Most important fruit crop

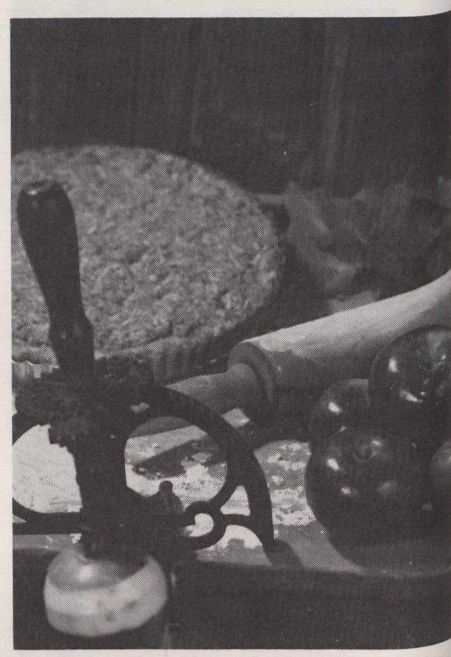
Apples are Canada's most important fruit crop. Five times more apples are produced than grapes, the second largest fruit crop, and ten times more apples than peaches or pears.

The provinces producing apples on a commercial scale are: British Columbia (38 per cent), Ontario (31 per cent), Quebec (21 per cent), Nova Scotia (9 per cent) and New Brunswick (1 per cent).

The McIntosh apple, which is grown in all five apple-producing areas, accounts for about 42 per cent of total production. It was first discovered at Dundela, Ontario in 1811, and is still the favourite variety of Canadians.

In addition to McIntosh, the Canadian apple crop consists mainly of Red and Golden Delicious (27 per cent), Spy (7 per cent), Spartan (6 per cent), Cortland (3 per cent), Gravenstein (1 per cent) and Lobo (1 per cent). Other apple varieties produced in smaller quantities include Melba, Ida Red, Empire, Winesap, Newtown, King, Tydeman's Red, Greening and Wealthy.

In 1980, about 43 per cent of the total Canadian apple crop was processed. Of this, 80 per cent was used to produce pure apple juice and concentrate. *Per capita* consumption of apple juice in Canada has doubled since 1965, getting an extra boost from the boom in consumer demand for natural products.



Apples are Canada's biggest fruit seller.

Over the last decade, the production of frozen apple products has increased, while supplies of apple sauce have been constant and production of canned apples and apple pie-filling has decreased. Other Canadian apple products include apple cider, apple-based liquors, apple vinegar, and dried and evaporated apples.

Production growth

Since 1974, the annual yield of Canadian apples has increased steadily, reaching a peak in 1980 at 550,000 metric tons. Owing to the extremes of temperature in central Canada over the winter of 1980-81, the 1981 apple crop was reduced to slightly more than 400,000 metric tons. However, production on the west coast was almost equal to the record 1980 crop level and well above the previous five-year average. Nova Scotia and New Brunswick apple crops fell slightly from the 1980 level because of late frosts which damaged blooms.

High density tree planting contributes to the production growth of the Canadian apple industry. Also, apple growers are making extensive use of new dwarf types of trees. Producers can plant 500 dwarf trees *per* hectare, compared to 100 of the standard rootstock. These trees yield more *per* hectare, mature faster and are

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easier to harvest than the standard type of tree.

Markets

Distribution patterns are specific to each area of the country.

In British Columbia, only 15 to 20 per cent of the crop is consumed locally. Because of their distance from key markets, British Columbia fruit growers have designated an agency, British Columbia Tree Fruits Limited, to market their crop.

Ontario and Quebec have their markets closer to home. The apples have traditionally passed directly from packing houses to retail outlets. However, the recent introduction of central warehousing has added a further step in the chain.

Nova Scotia has developed markets in the other Atlantic provinces, none of which produce enough to meet their own demand. About 99 per cent of New Brunswick's production is sold within the province on the fresh market.

Apple consumption has climbed steadily over the past decade. The average Canadian now consumes about 21 kilograms of apples a year, compared to 13 kilograms *per capita* in the U.S., 15 in France and seven in Japan.

Fresh apples account for just over half of the apple consumption in Canada, apple juice makes up about one-third, and the balance includes a variety of other apple products.

Storage

Traditionally, apples have been stored in refrigerated rooms with a humidity of 85 per cent or higher. The low temperature slows respiration and the high humidity prevents moisture evaporation. Cold storage apples are on the market in the fall and early winter months.

Controlled atmosphere storage is a more expensive, but superior, method as the apples maintain the crispness and flavour they had when harvested. Harvested apples are stored in airtight refrigerated areas at 0 degrees Celsius with a controlled atmosphere. The oxygen supply is reduced and the carbon dioxide level increased to retard ripening. Controlled atmosphere apples are available from late January into the summer months. About 40 per cent of apples in storage are now kept in controlled atmosphere facilities.

Canadian corporation promotes exporting opportunities

There is a Canadian Crown corporation that helps foreign customers find Canadian sources of goods and services and obtains bid opportunities for Canadian suppliers.

The Canadian Commercial Corporation, as it is called, has been in existence since 1946 and during that time has provided in excess of $10 billion in goods and services to more than 50 countries and international agencies.

Acts as prime contractor

The corporation's main activities involve tying together the requirements of foreign governments and international agencies with the supply capabilities of Canadian producers of goods and services. The corporation acts as principal or prime contractor in all transactions.

The services of the corporation are generally used when a foreign government or international agency requires or prefers to contract on a government-to-government basis, or when a Canadian supplier believes this arrangement can help him obtain a contract.

The corporation, in its contracts with foreign governments and international agencies on behalf of Canadian suppliers, follows through on all aspects of the sale, including: inspection and acceptance; shipping services, including packaging; transportation; documentation and insurance; and paying suppliers and collecting from customers.

High technology contracts

The main focus of the corporation's business has, over the years, consisted of contracts for high technology, defence and defence-related equipment, primarily to the United States. From 1976 to 1980, sales to the United States amounted to about 60 per cent of the total value of contracts.

The corporation has taken a number of steps to increase business with several foreign governments. It now receives some 10,000 enquiries each year from more than 90 foreign governments and international agencies.

At any one time the corporation has 2,500 to 3,000 active contracts with more than 400 Canadian suppliers. These include trading houses as well as manufacturers and suppliers of engineering and construction services.

The corporation's contracts cover a broad spectrum of Canadian goods and services, from relatively small individual items to major capital projects ranging in value from a few thousand dollars to $50 million. Many involve high-technology equipment and systems recently developed by Canadian firms. Total annual export sales are expected to exceed $400 million this year.

Canadian opens U.S. gold office

Canadian Consul General in New York Ken Taylor officiated at the opening ceremonies of the new American Gold Coin Exchange. Canadian Mint officials also attended the opening.

Mr. Taylor was given a large replica of a maple leaf gold coin at the ceremony. Limited trading and operations testing of the exchange had been started with a Canadian maple leaf gold coin.

Walter Liebman, chairman of the new exchange, a subsidiary of the American Stock Exchange, said the Canadian coin was chosen to begin trading because of the long association between the two countries and between Canadian companies and the American exchange.

The exchange, which will allow gold coins to be traded like common stock, will add other popular gold coins later.

Exchange officials predicted gold coin prices on the exchange would be slightly less than those at coin dealers and the fluidity of the market would attract investors.

CP Laserphoto

Consul General Ken Taylor holds large coin presented to him at the opening of the American gold exchange.

Terry Fox dream fulfilled

Terry Fox's hope of raising $24 million for cancer research — $1 for every Canadian — has been fulfilled.

The Marathon of Hope compaign started by Terry Fox has raised $24.7 million and the latest figures given by Statistics Canada's list Canada's population at 24.1 million.

Fox, who had lost his right leg to cancer, died last June after winning the hearts of Canadians by running 5,342 kilometres the year before. He had to abandon his cross-country marathon at Thunder Bay, Ontario when cancer developed in his lungs.

Dr. Peter Schofield of the National Cancer Institute told a recent Cancer Society meeting that the Terry Fox Run by volunteers last fall brought in $3.1 million by January 8 of this year.

The run is to be an annual event held in his memory.

First Canadian heat pump goes on sale

The first Canadian built heat pump was produced this month by York, a division of Borg-Warner Canada Limited, in St. Jerome, Quebec, north of Montreal.

The heat-pump units are a form of reversible air-conditioner which extracts energy from the air and uses it for heating.

York officials say their heat pumps can reduce average home heating costs by up to a third. By either installing a complete pump system or an addition to an existing system, fuel-oil consumption which averages 1,000 gallons a winter for most homes in Ottawa, can be cut to 200 gallons a season.

Air conditioners in summer

The pumps, which double as air-conditioners in the summer, come on automatically when the temperature hits freezing.

The reason for the popularity of the pumps is their heating and cooling efficiency, York officials said.

With a normal electric heater you get as many units of energy out of it as you put into it. That ratio lessens when you heat with oil or gas which produce only two units of heating energy for every four units used to operate them.

Heat pumps, however, produce eight units of energy for every four put into them — in effect giving you more than 100 per cent back from the unit.

York plans to build 8,000 heat pumps a year and is currently expanding its two production facilities in St. Jerome to meet this objective. The expansion and modernization program is being carried out with the help of federal economic expansion grants.

Until last year only the more serious energy savers could afford to harness Canada's frigid winter air to cut down on their heating bills, but the federal government's growing interest in energy self-sufficiency, backed by off-oil subsidies, has turned the heat-pump business into a sellers' market.

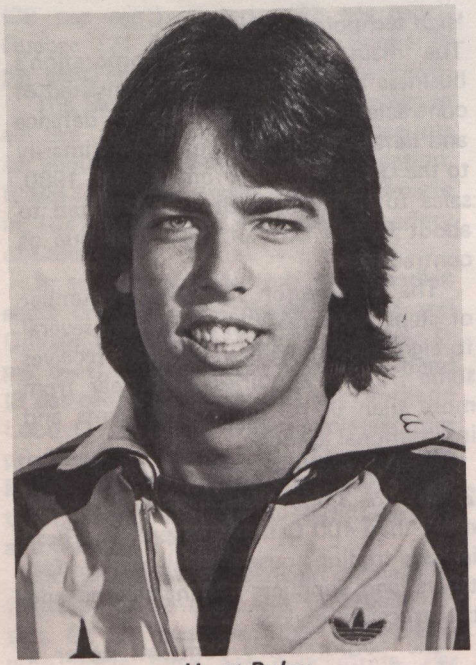
Ski jumper injured in fall

Canadian ski jumper Horst Bulau is expected to be able to complete World Cup competition despite a fractured collarbone sustained in a fall during a competition in St. Moritz, Switzerland.

Before the Swiss meet, Bulau, 19, had captured both the 70- and 90-metre events at the Molson's World Cup Event held in Thunder Bay, Ontario. The wins combined with earlier first and second places finishes respectively on the 90- and 70-metre hills in Sapporo, Japan had Bulau leading in the World Cup standings.

The ski jumper from Ottawa fell head-first after he had landed a record jump of 96.5 metres on the 75-metre Olympic hill in St. Moritz. The jump would have surpassed the previous mark by 1.5 metres.

The record jump, which did not count because of the fall, was Bulau's second leap of the day. In his first jump he covered 94 metres, six more than World Cup defender Armin Kogler who ended up winning the competition. Kogler has moved into the lead in the World Cup standings with 101 points. For his jumps, Bulau was awarded two points, raising his season's total to 97.



Horst Bulau

Canadian makes three-month canoe trip along Danube

Kevin Darroch, a 29-year-old man from Brockville, Ontario became the first person to canoe the length of the Danube last August.

Darroch began his trip on May 18, 1981 in Regensburg, Bavaria and completed the excursion in three months. He used a medium-priced Canadian fiberglass canoe.

Darroch first became interested in canoeing the 2,800-kilometre river in 1976 while on a visit to Germany. This was the first major canoe excursion for Darroch and cost him $9,000.

Storm at Linz

Darroch encountered few problems on the trip and the canoe never tipped over. One one occasion however, on the tenth day as he paddled out of Linz, Austria, he did have a very difficult experience. The skies had been only slightly overcast when he had launched the canoe earlier in the day, but the winds picked up reaching gale force and so did the waves. The huge ships in the harbour made it very difficult to get out.

After a frantic two-hour effort he arrived at a lock ten miles up the river where he was able to pull his light craft from the water.

Passed through eight countries

The major problem Darroch had in travelling the Danube was not in negotiating tricky currents or dodging ocean liners. It was getting permission to try canoeing the length, as the river runs through eight European countries — West Germany, Austria, Czechoslovakia, Hungary, Yugoslavia, Bulgaria, Romania and the Soviet Union. It took four years before Darroch could begin his journey.

Darroch said he was well received by the countries he visited and used the various ceremonies thrown for him to promote the trip's objectives — world peace, friendship and to draw attention to the International Year of Disabled Persons.

News of the arts

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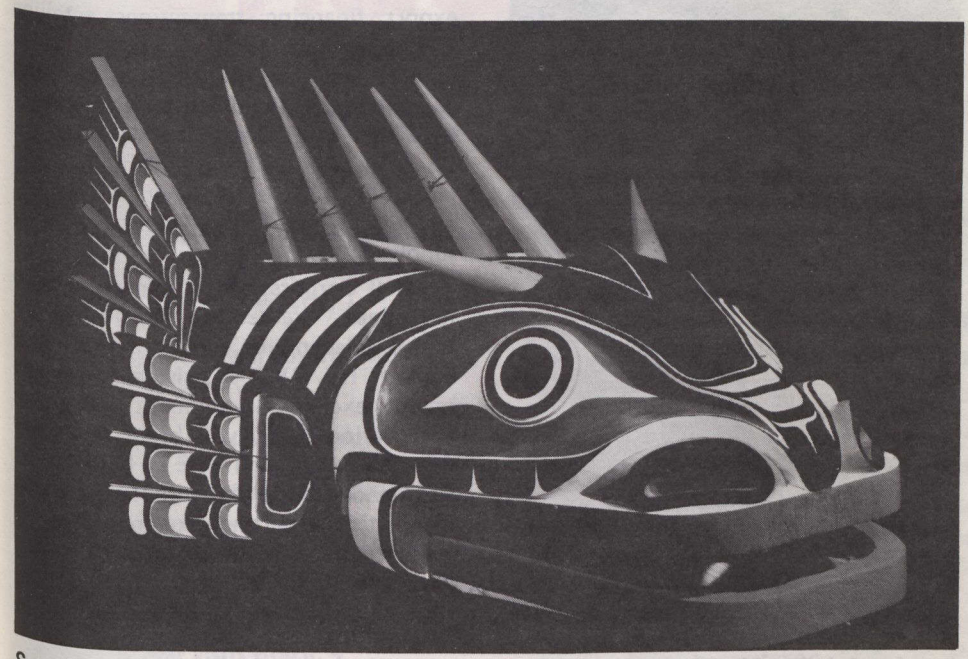
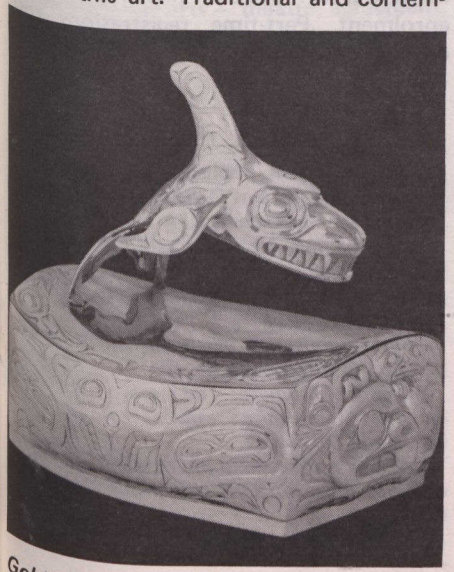
The legacy of northwest coast Indian art displayed



Southern Kwakiutl (Sculpin Mask) by Richard Hunt, 1980.

The Legacy, Continuing Traditions of Canadian Northwest Coast Indian Art, an exhibition currently on display at the University of British Columbia's Museum of Anthropology, features more than 100 of the finest northwest coast Indian masks and headdresses, engraved silver and gold boxes, painted screens and other art works.

The Legacy is one of the most comprehensive exhibitions of northwest coast Indian art in British Columbia to focus on northwest coast contemporary art and the traditional background which shaped this art. Traditional and contemporary works from all eight major coast tribal groups — Haida, Tlingit, Tsimshian, Northern and Southern Kwakiutl, Bella Coola, Westcoast and Coast Salish, are displayed and contrasted to show the evolution of styles and traditions.



Gold bowl with killer whale on the lid by Bill Reid, 1971.

A silver Haida bracelet by Charles Edenshaw, before 1908.

The "traditional" pieces were objects produced before the time of European contact in the late eighteenth century for use by the Indian peoples themselves. The production of curio art — works made for sale to the European and North American collector and curio markets — was initially an incidental activity for most professional artists, but later became an important source of income as economic and social conditions changed. Therefore, these transitional works often served as the link between the traditional art of the past and the contemporary artist.

Contemporary art

The show celebrates the renewed vigor of northwest coast Indian art in the past 20 years by presenting a large group of specially commissioned contemporary pieces. Drawing upon the bold colour, elegant form and dynamic expression of the rich cultural heritage, each artist re-interprets the myths and symbols of the Northwest Coast legacy.

The Legacy was the first large-scale exhibition of the northwest coast Indian art to be organized in British Columbia for display overseas. It was on display at the 1980 Edinburgh Festival, and was later shown in Yorkshire, England. The showing at the Museum of Anthropology is the opening in North America for the exhibition.

The Legacy exhibition was produced from works in collections of the British Columbia Provincial Museum. The main funding for the exhibit was provided by the British Columbia government, National Museums of Canada and the University of British Columbia's Museum of Anthropology.

A richly illustrated catalogue containing colour reproductions and informative essays on the art and artists has also been produced for the exhibition.

Lightning snake and sun transformation headdress by Tim Paul, 1980.

British Columbia Provincial Museum photos

News briefs

Canada will double its annual contribution to $100,000 to the International Program on Chemical Safety of the World Health Organization. Health and Welfare Minister Monique Bégin announced that the funding would be made through a joint Health and Welfare Canada-Environment Canada program which is attempting to better understand the hazards of toxic chemicals.

Health and Welfare Canada has announced that projects involving 19,400 participants in 142 senior citizens groups across Canada will receive federal contributions totalling $1 million. The funds are made available through the department's New Horizons program.

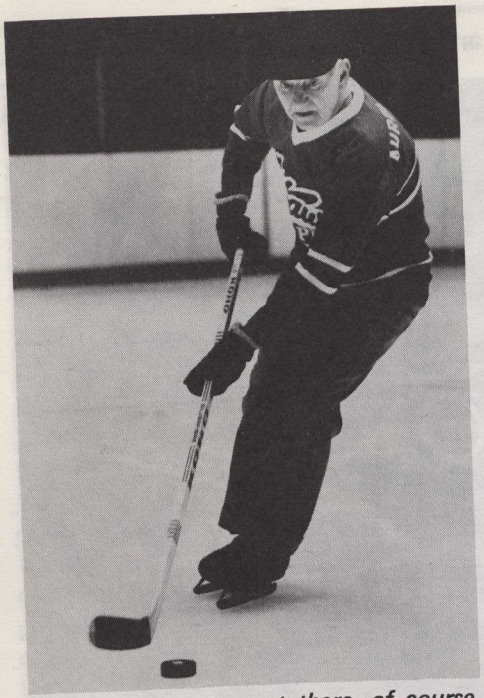
Petro-Canada will spend $97 million on an addition to its research and development operations in Calgary. The 284,000-square-foot addition will provide a centralized facility for Petro-Canada's four current research and technical service operations while allowing room for the development of two new research groups — conventional production and offshore production.

Northern Telecom Limited of Montreal, the largest Canadian manufacturer of telecommunications equipment, has set records in consolidated revenues, net earnings and earnings *per* share during 1981. Unaudited consolidated revenues were $2.571 billion, up 25.1 per cent from 1980 revenues of $2.055 billion. Net earnings were $136.7 million or $3.95 *per* share. This includes an extraordinary gain of $16 million (46 cents *per* share) realized from the first-quarter sales of shares of Intersil Incorporated.

The federal and Alberta governments have announced that special tax assistance will be introduced to provide direct benefit to operators of low-productivity oil wells. The special tax measure is being implemented, under a federal-Alberta energy agreement, to encourage operators to continue aggressive production on these wells.

Eldorado Nuclear Limited has signed a loan agreement for 5 billion Japanese yen or $26 million with a syndicate of Japanese financial institutions. The ten-year loan will be used to expand Eldorado's uranium processing plants at Port Hope, Ontario.

Wabi Iron Works unit at New Liskeard, Ontario, a subsidiary of Canron Incorporated of Toronto, has been awarded two



All the moves are not there, of course, but Aurel Joliat, 80, is still fit enough to lace on the blades and play in a hockey game. The former Montreal Canadiens hockey player, who went by the nickname, the Mighty Atom, recently played for the Ottawa Old Timers against the National Hockey League Old Timers in a benefit game for the Parkinson's Disease Society in Ottawa.

contracts valued at more than $1 million by Dominion Engineering Works Limited of Montreal to supply castings for two mining projects in Mexico. The castings are for two metallic ore grinding ball mills being built by Dominion Engineering.

The Royal Bank of Canada has purchased Banque Occidentale pour l'Industrie et le Commerce (Suisse) of Switzerland, which it has incorporated into a wholly-owned subsidiary, the Royal Bank of Canada (Suisse). This is the first time that a Canadian bank has acquired a major presence in the Swiss market.

Atomic Energy of Canada Limited has won a contract for $1.16 million from the Electric Power Research Institute of Palo Alto, California. The Chalk River laboratory will conduct research that aims at greater understanding of corrosion product release from corroding surfaces and will measure its rate under different conditions.

The Natural Sciences and Engineering Research Council has announced $21.7 million in funding for university researchers for 1981-82. The council is providing 204 new grants and reviewing another 240.

The board of directors of the Export Development Corporation has approved export financing transactions totalling $177.5 million involving loans of $74.6 million, insurance of $77.9 million and guarantees of $25 million to 18 countries. Export sales that will result if sales are finalized will create or maintain 8,930 person-years of employment in Canada and will involve 120 exporters and major suppliers.

Mitel Corporation of Kanata, Ontario has been granted approval by the Italian telecommunications authority to market its *SX-200* private automatic branch exchange equipment for a ten-year period. Mitel will begin to market the systems through ETE of Milan. Mitel also announced that British Telecom and the British Department of Industry have accepted the *SX-200* digital communications system for installation in field trial sites to be selected in Britain during the fall of 1982.

The federal government has announced that Sulterm British Columbia Limited will acquire control of a shipping terminal at Port Moody in the Vancouver area, from Pacific Coast Terminals Company. Sulterm has undertaken to spend $10 million on the terminal, including $6 million in the next three years for maintenance and $4 million over the next five years for improvements to the terminal. In addition Sulterm has agreed to study a possible $10-million to $15-million expansion of the terminal.

A record 103,806 students enrolled in full-time programs at Ontario's 22 community colleges in 1981. The 1981 enrolment was 3.1 per cent higher than 1980 enrolment. Part-time registrations rose 4.5 per cent to 600,122 during the last year.

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