

Canada Weekly

Ottawa
Canada

Volume 12, No. 34
September 26, 1984

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Underwater exploration of Lake Erie produces pumped-up profits

Resting on the bottom at the eastern end of Lake Erie on the Canadian side, is a vast network of natural gas well-heads and connecting pipe, silently draining the only tapped gas field in a North American inland waterway. On the surface, a drilling barge and an operations (or frac) barge belonging to Pembina Resources Limited of Calgary, constantly shift around, drilling, testing, connecting and capping wells in a search for more gas.

Working in the five-month summer season that Lake Erie permits, about 40 holes a year have been drilled since the company started underwater exploration in 1980. While several companies are draining gas from well-heads already in place, Pembina Resources is the only one drilling for new gas.

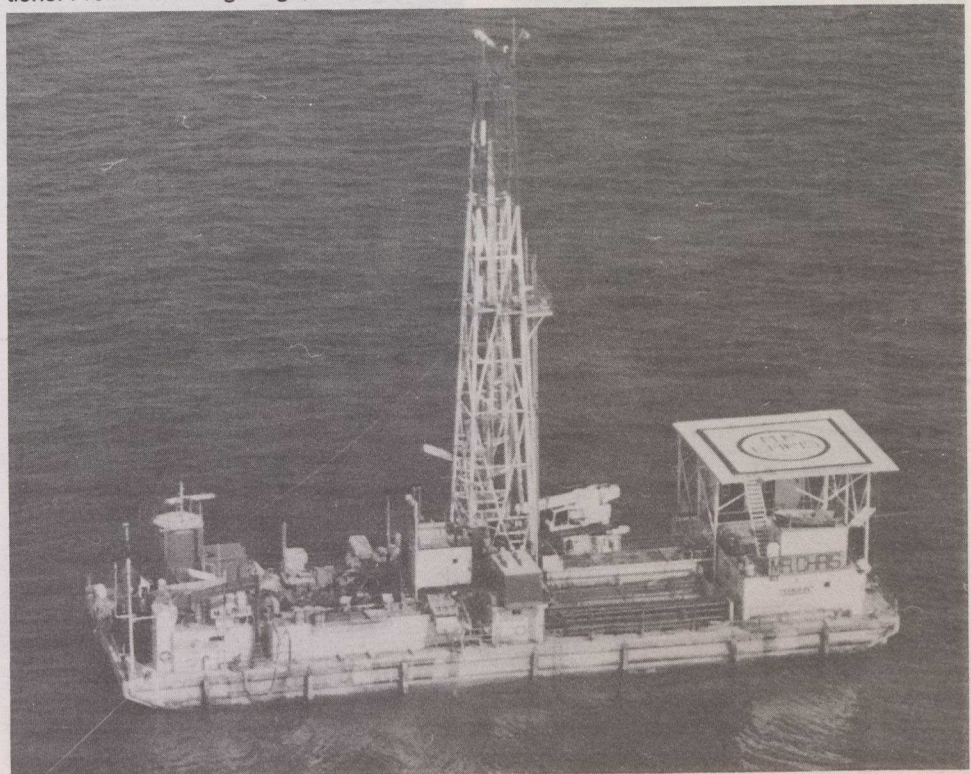
Geologists in the company have had a great deal of success in their drilling operations. From the drilling barge, the *Mr. Chris*,

a profitable gas reservoir has been hit with one of every two holes. The huge semi-submersible rigs working the continental shelf in the Gulf of Mexico, the North Sea and Sable Island score with about one of every three holes drilled, says Pembina's Ontario operations manager, Louis Goulet.

Each of the 166 well-heads now being drained by Pembina costs about \$300 000 to drill, test and connect with the lake-bottom pipe network. The 400 kilometres of pipe drain into two shore compressor stations, one near Port Maitland, Ontario, where the gas is sold to Consumers Gas Ltd. and Port Dover, Ontario, where it is sold to Union Gas Ltd.

Drilling process

The offshore exploration process first involves drilling down to the gas reservoir identified by geologists. If gas is located, the size of the "pay zone" and gas pressure

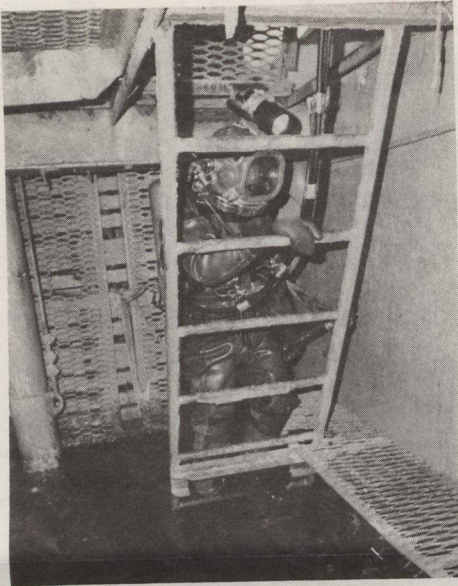


Pembina Resources Ltd.'s drilling rig, Mr. Chris, on Lake Erie.



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Diver prepares to service well-head valves 32 metres deep.

are measured with instruments sent down a pipe (called a conductor barrel) cemented into the drill hole. If the reservoir is large enough to profitably drain, a high-voltage probe is sent down that makes dozens of small perforations around the circumference of the drill hole.

The drilling barge then moves off the pipe, and the frac barge moves onto it, pumping high-pressure nitrogen and sand into the perforations, cracking the rock and propping it open to the width of the sand grains, allowing the gas to escape more freely than it otherwise would.

Finally the well-head is closed, pipe is

laid, divers hook up the well-head to the pipe, and the gas starts flowing.

Safety important

According to Louis Goulet, safety is the first concern on the drilling rig. The company has never had a fatality on their Lake Erie operations. Most injuries are "weasel bites" minor nips of fingers or hands caught by a whipping chain or squeezed between a pipe and a shaft.

Louis Goulet said that the greatest danger was the drill bit hitting a small pocket of high-pressure gas during preliminary surface drilling. Because there is no conductor barrel around the drill at this early stage, the gas



Manager Louis Goulet (left) watches Pat Hockings operate the drill.

bubbles uncontrolled through open water up to the rig. One spark could ignite it, enveloping the barge in flames.

If such a pocket is encountered, all deck motors are immediately shut down, the rig hydraulically "pops off" the drill shaft, leaving it in place, the barge hoists its four anchors and it moves away from the site. Once the gas is exhausted, the barge moves back, sets its anchors again, and divers are taken by helicopter to hook up the drill shaft to the rig.

There are two 12-hour shifts of seven men on board the rig at all times. One sleeps while the other works, and a third shift vacations on shore. Crews work eight days, take four days off, work another eight days, take five days off, and the rotation begins again — except for tool pushers, who work four days, and get four days off.

The tool pusher probably works the hardest of all crew members as he is ultimately accountable for everything. Next in the rig hierarchy are two roughnecks, who manhandle the pipes, chains and tongs into position at the drilling platform. The motorman ensures that all motors, pumps, winches and compressors are doing their jobs, and the derrickman sees to above-deck equipment. The driller supervises, and a cook serves up free, high-quality, all-you-can-eat fare.

(Condensed from an article by Colin Languedoc in *The Citizen*, Ottawa, August 21, 1984).

SL-1 network in Algeria

Northern Telecom International Limited of Mississauga, Ontario, recently won a contract against international competition to supply 17 of its fully digital SL-1 private automatic branch exchanges (PBXs) to Sonatrach, the Algerian national oil company.

The SL-1 digital business communications system is the largest selling digital PBX in the world, with over three million lines installed in 42 countries.

The contract with Algeria, valued at \$2.5 million, covers the installation of a network of SL-1s at Sonatrach installations along a 1 000-kilometer pipeline running from the Haoud El Hamra oil field in the Sahara Desert to the Mediterranean port of Arzew. The SL-1 network will service some 4 400 lines at the 17 facilities.

"We are scheduled to have the systems in service within the first half of 1985," said Brian Baynes, managing director of Northern Telecom for the Near East and Africa. "They are the first fully digital PBXs to be installed in Algeria," he added.



Lynn Ball, The Citizen Photos

Geologist Myron Korpan shows bit used to drill for natural gas on the floor of Lake Erie.

Canadian farm machinery at Australian fairs

The manufacturers in Canada of agricultural machinery and equipment were well represented at a number of trade fairs in Australia this summer.

Twenty-eight firms participated at the Canadian national stand at Ag Quip 84 in Gunnedah, New South Wales from August 21 to 23, while five other Canadian companies were represented independently. This was a record number of Canadian manufacturers of agricultural machinery and equipment participating at this annual agricultural trade fair in Australia where Canadian firms have been in attendance since 1979.

After Ag Quip, a number of the companies participated at Dowerin Field Days in Dowerin Western Australia on August 29 and 30 and at Farmfest 84 in Toowoomba, Queensland from September 4 to 6.

Some of the firms were also represented locally at Newdegate Field Days in Western Australia, September 5-6. A further five Canadian companies were represented in Dowerin and Newdegate by their Australian agents. A spokesman for the Canadian group said 1984 was the first time that Canada had participated in Newdegate.

Feature film

A Canadian-made film on soil conservation was a feature of all the agricultural trade fairs in which the companies from Canada



Aerial view of part of Ag Quip 84, Gunnedah, shows Canadian stand (second row foreground, striped tent near centre).

participated. In addition, Vancouver-based agricultural expert Glenn Downing gave seminars on "dryland" farming prior to presenting seminars in China on the subject over a three-month period.

Canadians are world leaders in dryland farming machinery and equipment which is particularly suited to Australia. The dryland technique is designed to conserve moisture and prevent soil erosion. Dryland farming methods are applied to rain-fed lands



Canadian High Commissioner in Australia Edward Schreyer inspects the cab of a Versatile Farm Equipment Company Model 1150 tractor at Ag Quip 84 in Gunnedah. The company was one of 33 Canadian firms exhibiting farm machinery and equipment at the fair attended by 130 000.

under minimum moisture conditions to enhance crop yields.

After the US, Australia is Canada's largest export market for farm machinery. The activities of some Canadian agricultural equipment companies in Australia date back to the early 1970s. Several companies established themselves in Australia with either their own marketing and distribution offices or through exclusive agency agreements.

Cattle range project in China

A potential overseas market for Alberta cattle has been created with the official opening of the Qiqihar range-improvement project in the northern Chinese province of Heilongjiang, reports *Canadian Scene*.

At the opening ceremony, Leroy Fjordbotten, Alberta's agriculture minister, said that the range project, a joint undertaking of Alberta Agriculture and the Heilongjiang agricultural authorities, "represents a major positive step in Alberta-China relations".

The project is an extensive program to upgrade available rangeland and improve range management in Heilongjiang, Alberta's sister province under a twinning agreement signed in 1981. The project is based at the Qiqihar animal breeding farm outside Harbin and is expected to play a major role in development of the Chinese province's cattle sector.

Upgrading efforts previously were hampered by lack of management expertise and insufficient pasturelands. Under the range project, research and extension directed at overcoming these difficulties is being carried out by specialists from Alberta Agriculture.

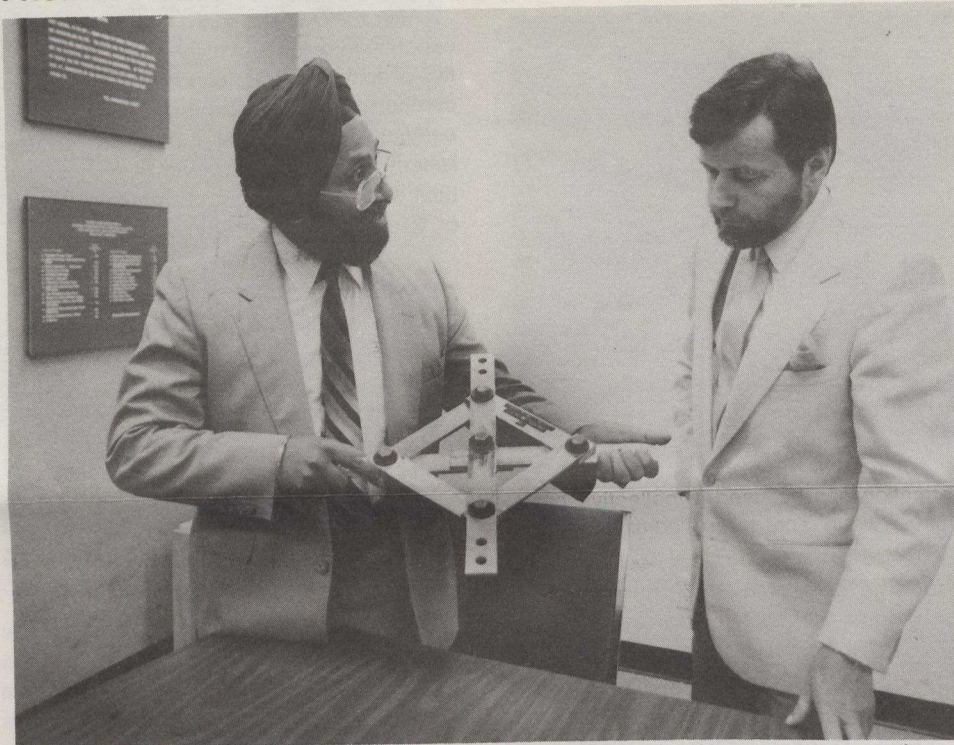
It is estimated the work will require between one and three years to complete and that potentially more than 40 million hectares of rangeland in northern China could be affected.

Successful completion of the project could yield substantial benefits for Alberta cattle breeders in the form of sales of live animals and frozen semen.

Mr. Fjordbotten cautioned, however, that "our success in this country will depend very much on whether or not Canada can come to a health agreement with the Chinese on the export of live animals. Present regulations are unworkable, and until an acceptable agreement has been reached, no sales of Alberta livestock can take place".

Canada and China have been negotiating a bilateral animal health agreement for more than two years and the Alberta minister said he hoped his presence in China would have "a positive effect on this situation".

Friction brakes to avert earthquake damage



Dr. Avtar S. Pall (left) demonstrates a half scale model of one of his earthquake resistant devices to Jean-Louis Dontigny, the chief structural engineer of the SNC Group. The simplicity and economy of the devices are among their great advantages.

An earthquake resistance device invented by Canadian engineer, Dr. Avtar S. Pall, was a highlight of the eighth World Conference on Earthquake Engineering held in San Francisco in July. The invention applies the principle of the friction brake to building construction.

Dr. Pall, of the Montreal-based SNC Group, Canada's leading engineer-constructor, said he believes his invention could revolutionize structural engineering and construction practices in earthquake-prone regions.

A number of friction devices suitable for different types of building have been developed and patented by Dr. Pall. They not only offer a simple, low-cost way of controlling earthquake effects in new buildings but they can also be added easily to existing frame structures.

Basically, the devices consist of heavy duty brake lining pads, trapped between two sliding steel surfaces, which can be incorporated at strategic points in building joints. They then act as safety valves to limit forces exerted on the structure or they serve as dampers to limit the extent of vibrations.

According to Dr. Pall, "when a major earthquake occurs a large amount of kinetic energy is fed into a structure. The building sways back and forth in proportion to the energy fed in. At a

certain point, materials bend, twist or crack," often resulting in excessive damage. He suggests that while the standards set by current building codes should avert collapse in severe seismic shocks, they accept bending, twisting and cracking as unavoidable.

"With my devices, all that could change. Much of the vibrational energy would be dissipated mechanically. Just before the materials reach the limit of elasticity, the devices slip. As in a moving car, the motion is slowed by braking," maintains Dr. Pall.

Tests to date have shown that device-equipped buildings perform better compared with the computed responses of conventional buildings. Independent studies carried out by the Earthquake Engineering Research Center of the University of California at Berkeley have confirmed Dr. Pall's original findings. Large scale model buildings equipped with the devices on a shaking table are currently being tested in separate studies of the University of British Columbia and at Concordia University in Montreal.

Dr. Pall has already been acclaimed for his original research on the devices which he initiated in his home. In 1982 he received the American Society of Civil Engineers' Raymond C. Reese Research Prize for outstanding contributions to structural engineering.

Vote by phone

Canadians can now dial "900" numbers to register votes or listen to public announcements, now that Telecom Canada member companies have received regulatory approval of the new 900 service. Telecom Canada will offer the service for two years on a trial basis.

The Canadian Radio-Television and Telecommunications Commission (CRTC) has approved the first phase of the trial for Bell Canada and the British Columbia Telephone Company. Other Telecom Canada members will receive their approvals through provincial regulatory authorities, as required.

In the trial's first phase, which began July 1, Canadians will have access to vote-ins and recorded or live announcements provided in the United States through the AT&T DIAL-IT 900 Service. In the second phase, to begin October 1, the service will be available to Canadian producers, and callers will be able to access "made-in-Canada" applications.

Dial-a-shuttle

"With 900 Service, we'll be able to join Marc Garneau, Canada's first astronaut, in the space shuttle this fall," said John Farrell, president, Telecom Canada. "We'll be able to listen to the astronauts talking to mission control."

The number to call for "dial-a-shuttle" is 1-900-410-NASA (112-900 for all 900 numbers in British Columbia), sponsored by the National Space Institute in the US. It will be available for the next shuttle flight as well as for Garneau's flight in October.

Said Farrell: "The shuttle hotline is only one example of a 900 service application that Canadians have tried to access in the past, but couldn't."

Applications of 900 service are advertised by sponsors, advising customers of numbers and times to call. The variations range from vote-ins on political issues to 24-hour sports or stock market "hot-lines".

Sponsors benefit from 900 service in many ways. They can use it to promote products, reinforce a corporate image, create a media event, send a message to a target audience and track responses, or provide a public service.

For instance, rock Star Michael Jackson can be heard promoting his latest tour on a 900 service information line: 1-900-410-8687.

Updates on current 900 numbers in the US are provided on a 900 service information line. A caller to 1-900-410-1212

will hear the program names and the corresponding numbers.

To access recorded or live public announcements, callers simply dial the published number. A call to a 900 number for a vote-in is automatically tabulated on special recording equipment when the call is connected.

Telecom Canada member companies will charge 50 cents per call for vote-ins and one-minute information messages. For longer announcements, the charge will be 50 cents for the first minute plus 35 cents for each additional minute.

Modern-day rainmakers study particles in clouds

Alberta rainmakers can finally prove their efforts produce more than just a drop in the bucket.

Three years of research by the Alberta Research Council has found dropping dry ice particles and silver iodide from a plane onto a certain type of cloud will make it rain where it would not otherwise have rained.

The results are the "closest to conclusive proof" scientists anywhere in the world have ever presented for the success of

cloud seeding, said James Renick, the agency's manager of storm formation and field operations.

A cloud seeded with only a few grams of silver iodide can release 1 200 cubic metres of water. When spread over 1 000 square kilometres it may represent only a few millimetres of rain, "but if we could seed a number of clouds we could help the farmers a great deal".

The Alberta researchers are working on measuring the "seeding window", how big the clouds must be and how long they must last to be rain producers. Especially important is a cloud census. "We don't know how often these clouds occur. Are there hundreds or thousands? Some of them form rain on their own. Are there enough of the clouds that we can make a significant difference in rainfall?" Mr. Renick asked.

Hail suppression

The Alberta researchers are also hoping for a breakthrough on another, more controversial front, a study of hail suppression.

On the prairies, where hail stones can reach the size of tennis balls, the ability to head off a hail storm before it reaches crop land has more than esoteric interest. Hail forms when an updraft pushes ice that would normally fall and melt into rain back up into the cloud. Depending on the strength of the wind, many layers of water can freeze around the ice pellet.

"The theory behind seeding is competition." If the cloud is seeded so there are 100 times more pieces of ice, they will in theory all collect water from the cloud and make the maximum size of the hail stone smaller, Mr. Renick said. Unfortunately, it is also possible the extra stones will only add to the problem. The scientists are still trying to answer that question, Mr. Renick said. The updraft speed is important. The higher the speed to keep the ice up, the longer before the pellets fall.

But the extra weight of all the ice may counteract the wind. "You can hold one brick over your head, maybe two or three, but eventually you reach your limit." The Alberta researchers will try to determine whether this works in clouds as well.

They use instruments aboard a research plane to measure the activity inside a cloud. Lasers send 25 narrow beams into the cloud and measure the size of ice and rain particles inside. Some beams are so close together they can record particles as small as flecks of dust while others can measure hail stones a centimetre or more in diameter.

Average rates of pay across Canada

Wage Rates, Salaries and Hours of Labour, October 1983 with data on pay rates for maintenance, service and office occupations found in most industries, as well as several hundred occupations peculiar to specific industries, has been released by Labour Canada.

The publication is a series of 23 reports, 22 covering the larger urban centres and one report containing all-Canada information. Unpublished information for about 90 communities is also available.

The data was collected through an annual survey distributed among 16 300 establishments with at least 20 employees, in principal communities across the country. The

information can be used in collective bargaining, wage and salary administration, human resource and policy planning, to assist in deciding on plant location and for social and economic research.

The reports, *Wage Rates, Salaries and Hours of Labour, October 1983*, can be purchased from the Canadian Government Publishing Centre, Supply and Services Canada, Hull, Quebec, K1A 0S9.

Unpublished information on communities across Canada as well as data for each province and the territories is available from the Surveys Division, Labour Data Branch, Labour Canada, Ottawa, Ontario, K1A 0J2.

Average wages for selected occupations

	Labourer non-production (hourly)	Electrical repairer (hourly)	Office boy/girl (weekly)	Clerk general office, senior (weekly)
St. John's, Nfld.	8.02	11.91	254	361
Charlottetown	8.56	13.19	-	377
Halifax-Dartmouth	8.76	12.31	248	379
Saint John, N.B.	9.49	14.69	249	385
Montreal	9.71	12.87	270	406
Quebec City	9.95	12.88	284	411
Trois-Rivières	11.27	13.55	312	408
Ottawa-Hull	9.51	13.41	268	395
Hamilton	10.77	15.42	297	408
Kitchener-Waterloo	9.63	12.86	228	356
London-St. Thomas	9.67	13.39	257	386
St. Catharines-Niagara	9.97	14.08	332	395
Thunder Bay	11.20	15.08	336	426
Toronto	9.18	12.93	253	396
Windsor	11.42	13.68	265	411
Regina	10.26	14.72	297	387
Saskatoon	10.03	14.84	289	403
Calgary	10.63	15.64	274	399
Edmonton	10.34	15.93	260	396
Vancouver	11.84	15.90	293	417
Victoria	12.22	16.45	302	381
Canada	10.03	13.97	273	398

Gold in Newfoundland

The Selco division of British Petroleum Canada Inc. of Calgary has discovered what company officials call a "significant" gold mineralization near the Chetwynd copper prospect about 80 kilometres east of Port aux Basques, Newfoundland.

The gold discovery has been tested by a series of shallow diamond drill holes spaced about 100 metres apart. The company said the drill intersections are too widely spaced to enable any grade or tonnage calculations to be made. Further drilling is proceeding.

Test results from the latest nine holes drilled showed grades ranging from 0.79 grams of gold a tonne to 19.5 grams a tonne. At current market values, an open pit mine requires a grade of 2.06 grams a tonne to be profitable while an underground mine requires a grade of 6.86 grams a tonne.

The mineralization is close to the surface but the company says the property is in too early a stage of development to determine whether it will be an open pit operation.

Waterloo's 'Waterloop': First systolic loop supercomputer

Computer scientists at the University of Waterloo, Ontario, have built what they believe is the world's first working systolic loop supercomputer.

The prototype machine — dubbed "Waterloop" by its creators — uses 64 microprocessors connected in a loop that allows data to be automatically recycled in repetitive calculations.

"We've designed Waterloop for high speed, repetitive computations. It will be ten times faster than a comparable VAX machine, and only about one-quarter of the cost," said Peter Pfister, a research assistant to Professor Neil Ostlund of Waterloo's computer science department.

Mr. Ostlund, designed the machine's architecture with two US collaborators at Carnegie-Mellon University in Pittsburgh.

The computer's main application is expected to be in performing mathematical simulations of molecular motion for physics, biology and chemistry research, although other applications involving large amounts

of data (such as weather forecasting) are also possible. Most currently available mainframe computers use only one large microprocessor.

Mr. Ostlund predicts computers of the future will contain multiple microprocessors. The Waterloo prototype is one of the largest multiple microprocessor systems in the world, he said. It has an additional advantage of flexibility because additional microprocessors can be easily added to increase the system's power.

It is also easier to write operating systems and applications software for Waterloop than for computers that use a single microprocessor, the research group said.

Meanwhile, the university's researchers are already working on a successor to Waterloop. Graduate student Scott Darlington is trying to add high speed floating-point processors to the machine's central processing units to increase the computer's speed to 100 times faster than its current operation.

Around-the-world travellers raise money for cancer

Stan Guignard, a 64-year-old retired businessman from Callander, Ontario, and his wife Hazel, recently completed a round-the-world odyssey for cancer research. They raised more than \$300 000 for the cancer societies in the countries they visited.

Driving a 1928 Model "A" Ford called *Gladys* after his first wife that he lost to cancer, Stan Guignard left Canada 15 months ago on his fund-raising journey. He had also lost his mother to cancer.

The journey started on June 1, 1983 in Toronto, Ontario, from where Mr. Guignard travelled westward taking collections at shopping malls and antique car rallies for the Canadian Cancer Society. From Vancouver, he and the car were transported to Japan in a Canadian Pacific Airlines *Boeing 747*.

Mr. Guignard drove through Japan collecting for the Japanese Cancer Society and then continued his travels in Hong Kong and its territories where he collected funds for the Community Chest there. In the Orient, he became a celebrity and donations were very high, sometimes up to \$5 000 a day. In Hong Kong, he had to empty his collection box three times as people crowded around him throwing money into the car.

Hong Kong was also the place he met his wife Hazel and they married later in Australia. The trans-Australia section of the campaign began in Perth and ended

in Sydney. The money collected at the shopping centres of the many cities and towns visited, was given to the state cancer societies.

After touring Belgium, Germany, France, The Netherlands, Luxembourg and Britain, Mr. and Mrs. Guignard started their home stretch in Halifax on July 9, 1984. The

odyssey ended in North Bay near Callander on September 1. They were met by a parade of antique cars and honoured at a civic reception and a fund-raising dance.

The Model "A" Ford bears stickers from all the places through which it passed. It is Mr. Guignard's intention to place the car on display now as an attraction to help him fulfill his ambition to raise \$1 million to build a cancer hospital in Canada.



Stan Guignard and his wife, Hazel, stand beside their 1928 Model "A" Ford. The Guignards recently completed a round-the-world trip to raise money for cancer research.

National anthem exhibit

O Canada, an exhibition playfully exploring some of the symbols and themes in Canada's national anthem, was recently on view at the University of British Columbia's Museum of Anthropology. Produced by anthropology students, the exhibition presented some basic questions about Canada in an imaginative and provocative way.

The exhibition was divided into six themes based on phrases from the national anthem. The phrases were "True Patriot Love", "Our Home and Native Land", "We See Thee Rise", "The True North", "Glorious and Free" and "We Stand on Guard". Each theme was explored within a rich visual environment, combining the use of familiar objects, from food to back-packs to liquor. Cartoons, photographs and models were employed to put these objects into context. Each theme's environment also included several different sides of the social and political issues that the themes themselves evoked.

Playwrights win competition

John Gregory of Victoria, British Columbia, won first prize for his play, *The Road*, in the forty-fifth annual Canadian Playwriting Competition for one-act plays. It is the longest-running competition of its kind in the country.

John Gregory's play was selected from among 72 entries. Adjudicator Peter Froehlich termed it "a taut, beautifully written piece with vivid and highly suspenseful action, rich, well drawn characters and powerful dialogue." First prize includes \$1 000, a special medal donated by photographer Yousuf Karsh and a gold medal given by Henry Birks and Sons.

The second prize of \$500, donated by the Ottawa Little Theatre, went to Lionel Reid of Vancouver for *The Long Distance*, which Professor Froehlich described as "unique, funny, thoughtful and bitterly satirical", and the winner of the third prize was Ottawa writer Rebecca Buyers-Dasso with *Bear Trap*, a play about four women of widely different backgrounds confronting each other in a remote Ontario cabin. The award includes \$300 given by the University Women's Club of Ottawa.

The adjudicator, Peter Froehlich, is a director, actor, playwright and an associate professor in the theatre department of the University of Ottawa. He directed the 1982 production of Shakespeare's *A Midsummer Night's Dream* at the Stratford Festival, as well as this year's production of *Waiting for Godot* at the Toronto Free Theatre.

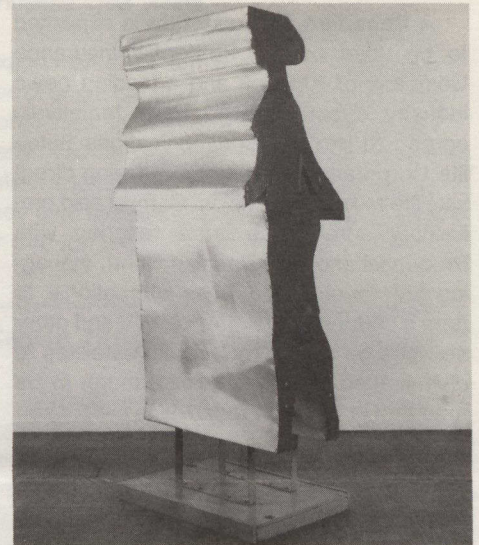
Walking Woman exhibition ends tour in Toronto

A major retrospective exhibition of the Walking Woman series by Canadian artist Michael Snow will complete its extensive tour across Canada and the US at the Art Gallery of Ontario in Toronto. It is scheduled to open there on November 3.

The exhibition, *Walking Woman Works*, is an analysis and documentation of the development of Michael Snow's Walking Woman series, dated and isolated as a distinctive activity between 1960 and 1967. The range of media in the 79 works comprising the exhibition is extensive and includes sculpture, prints, drawings, paintings, collages, mixed media works and installations, and documentary works.

Among the more well-known works in the exhibit are a monumental steel piece called *Expo Walking Woman* (1966-1967), a delicate cut-out of the Walking Woman rolled up on cardboard cylinders (1961), a bright little three-part enamel-painted depiction of the Walking Woman in Hawaii (1964) and a photographic print of musician Carla Bley playing the part of the Walking Woman (1965).

The exhibition originally opened at the Herbert F. Johnson Museum of Art at Cornell University in Ithaca, New York in November 1983 as part of the university's Canadian Arts Festival which ran through the 1983-84 academic year. During 1984, it has appeared at the Agnes Etherington Art Centre in Kingston, the Dalhousie Art Gallery in Halifax and the London Regional Art

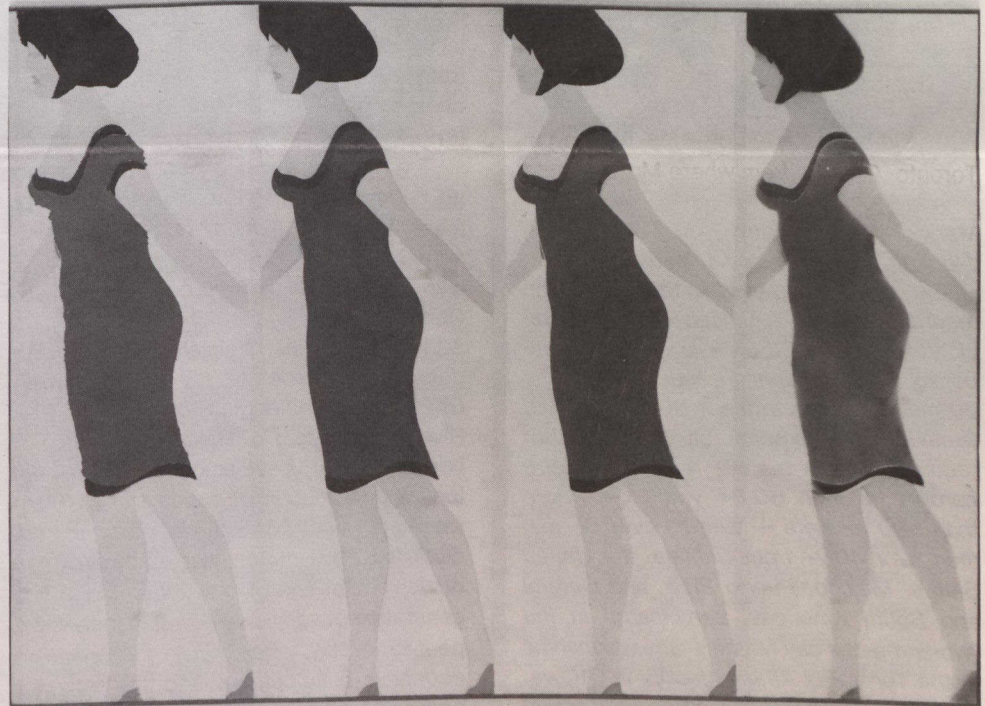


One of 11 components of *Expo Walking Woman*, stainless steel and wood, 1966-67.

Gallery. It is currently on view at the Art Gallery of Greater Victoria, British Columbia.

With grants from the Canada Council and the Ontario Arts Council, the exhibition was organized and researched by Louise Dompierre, the associate curator at the Agnes Etherington Art Centre. The works were borrowed from public and private collections across Canada, and in New York, Washington and California.

A catalogue prepared by Louise Dompierre includes a critical and historical evaluation of the Walking Women series. It is extensively illustrated.



Just Once, spray enamels, oil and acrylic on canvas, 1965.

News briefs

A Canadian Anik satellite is expected to be used by the Prudential Insurance Company of America and a leading news industry executive who have tentatively agreed to join the Communications Satellite Corporation (Comsat) in offering direct satellite-to-home television. Comsat said preliminary agreements were reached with Prudential and with Douglas Ruhe, managing director of United Press International, to form a partnership to offer pay TV and other services beamed directly from satellites to dish-shaped antennas small enough to be mounted on a house roof. Plans call for ser-

Age poses no hurdle in Masters Championships



Mark Brennan, born in Toronto on January 22, 1904, did not let his age stand in the way of establishing two Canadian records in the Pan-American Masters Championships held in Ottawa this summer. Competing in five running events from the 80-metre hurdles to the 1 000-metre run, Brennan left his mark on the Canadian record books in the 80- and 200- metre hurdles for men 80-84 years old. More than 500 masters — women over 35 and men over 40 — from Canada, the United States, Mexico, Puerto Rico, and Central and South Americas, participated in the two-and-a-half day Masters Championships at the Terry Fox Athletic facility in Ottawa. More than 35 Canadian records were established during the games.

vice using the high-powered satellites in eastern and central time zones by 1986.

Majestic Contractors Limited of Edmonton and Perini International Corp., two units of Perini Corp. of Framingham, Massachusetts, recently won a \$15-million sub-contract from Sperry Corp. of New York. The contract is to develop two radar sites for the US Air Force along the Arctic Circle in Eastern Canada.

Voter turnout in the September 4 general election was highest in Canada's smallest province with 85.2 per cent of eligible voters in Prince Edward Island going to the polls. Saskatchewan had the second-highest turnout, with 84.6 per cent, and British Columbia was third with 79.8 per cent. The statistics were taken from a preliminary survey by electoral officials, where 241 of the 282 federal ridings show that 76 per cent of the 16.6 million voters registered across the country cast ballots. It was about the same percentage as in 1979.

Mother Teresa of Calcutta, has sent four nuns of the Missionaries of Charity, to open a mission in Winnipeg, Manitoba to help poor and needy. Winnipeg archbishop Adam Exner said he asked Mother Teresa to send the four sisters when she visited the city two years ago. Mother Teresa has set up similar missions in US cities, but the Winnipeg mission is the first of its kind in Canada.

Statistics Canada reports that for the first six months of 1984, net generation of electricity totalled 214 114 GW.h, up 9.5 per cent from the January-June 1983 level of 195 574 GW.h. Exports of electricity were up 5.8 per cent to 18 882 GW.h from 17 852 GW.h while imports decreased by 30.5 per cent to 1 384 GW.h from 1 990 GW.h.

The Export Development Corporation (EDC) and Canadian International Development Agency (CIDA) signed parallel loan agreements on August 3, in New Delhi with the National Hydroelectric Power Corporation to finance \$403 million and \$217 million, respectively, of Canadian goods and services for the 540 megawatt Chamera Hydroelectric Project on the Ravi River in the State of Himachal Pradesh in northern India. These amounts complement India's contribution of goods and services valued at about \$648.5 million and the additional \$28.5 million loan under a CIDA power sector line of credit with India. The generation of additional power in India is expected to play a key role in the country's economic development, and this project is one part of an overall plan to develop its substantial hydro resource.

The thirty-fourth International Congress on Alcoholism and Drug Dependence will be held at the University of Calgary in August 1985. It is the largest event of its kind in the addiction field and is expected to attract some 1 500 representatives from around the world. It represents the first time Canada has hosted the Congress and sessions on smoking and health, and alcohol and drugs will feature health and welfare programs such as the Generation of Non-smokers, Stay Real and Dialogue on Drinking, as well as Canada's participation in the United Nations' International Year of Youth.

Alootook Ipellie of Frobisher Bay was recently appointed editor of the Inuit Circumpolar Conference (ICC) magazine, *Inuit Arctic Policy Review*. He is an outstanding graphic artist, writer and a former editor of *Inuit Today*. Renowned for the directness and clarity with which he reflects the viewpoint and mentality of the Inuit in his work, his appointment has been applauded by the Inuit leaders of Greenland and Alaska. Mr. Ipellie replaces Lars Toft Rasmussen of Denmark in the position.

A new audio-visual presentation, *Uninvited Guests to Dinner*, explaining how to avoid food poisoning through the safe handling of both raw and cooked food products has been released by the Department of Health and Welfare. The presentation is expected to be of great value to schools, consumer groups, public health professionals and those interested in raising public awareness of safe food handling practices.

Carling Bassett of Toronto beat third-seeded Hana Mandlikova at the National Tennis Centre in New York to become the first Canadian ever to reach the semi-finals of the US Open tennis championships. Playing in her first tournament since Wimbledon because of a bout with mononucleosis, Bassett took a 3-0 lead in the second set, then lost her service in the fifth game. But she broke back in the sixth, then held serve in the seventh and ninth games to win the match and advance to a meeting against second-seeded Chris Evert Lloyd.

Canada Weekly is published by the Public Affairs Branch, Department of External Affairs, Ottawa K1A 0G2.

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Cette publication existe également en français sous le titre Hebdo Canada.

Algunos números de esta publicación aparecen también en español bajo el título Noticiero de Canadá.

Alguns artigos desta publicação são também editados em português sob o título Notícias do Canadá.

Canada

ISSN 0384-2312