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Canada's IMAX film top draw at New Orleans Expo '84

When the 1984 World Exposition opens in New Orleans, Louisiana on May 12, the star attraction in the Canadian Pavillion will be a 15-minute film that is described as a revolution in entertainment.

River Journey, made by Canada's IMAX Systems Corporation, is a completely different system of film production and projection that involves viewers in an exciting and dramatic experience.

Roger Scruggs

In *River Journey,* viewers sitting in a special custom-designed theatre will be swept across rivers and waterfalls, and will plunge into a whitewater cauldron hemmed in by steep canyon walls. They will be carried across pastoral landscape, race with windsurfers, and fly over cities and harbours.

Behind the scenes, a single powerful projector throws an image on the screen ten times the size of that in a conventional movie theatre. A six-track Dolby state-of-the-art sound system completely surrounds the viewer with the music and sound of the picture. The result is breathtaking: the viewer experiences the action.

The IMAX story is one of daring and inventiveness, experimentation and success. Its roots go back to 1967, when the hit of Montreal's Expo '67 was undoubtedly the National Film Board of Canada's *Labyrinth,* a powerful, multi-screen film. Popular and critical acclaim for *Labyrinth* and *Polar Life,* another outstanding multi-screen Expo film, convinced long-time friends, Graeme Ferguson, Robert Kerr, and Roman Kroitor, producers of the two films, that the giant-screen experience could be used effectively in a new generation of motion picture theatres throughout the world.

Their goal was to develop a completely new system, using a single, powerful projector instead of the cumbersome multiple projectors used at Expo '67. The system would have to meet the highest technical standards while projecting images on the largest screens in cinema history. The three men formed Multi-screen Corporation (now IMAX Systems Corporation), a small Canadian company that would revolutionize the art of the cinema.

The incentive was an invitation from Japan to première the new system at Osaka's 1970 Exposition. The new company accepted the challenge. Consultants warned that the technical problems might be insurmountable: how for instance, to project the largest film frame ever used without tearing it to shreds?

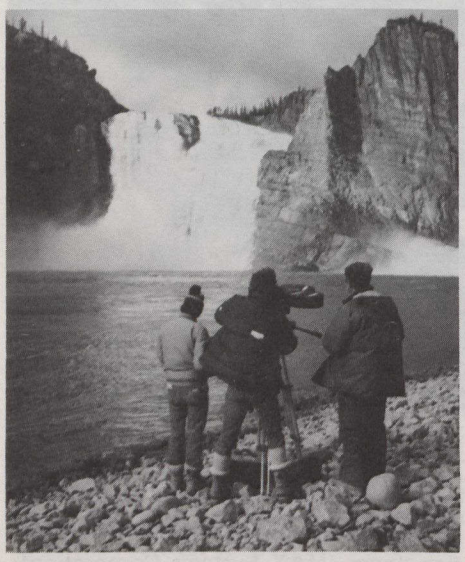
A close associate, Jean-Philippe Carson, was aware of a new invention. Half-way across the world, Ron Jones, the owner of a small machine shop in Brisbane, Australia, had been working on a similar problem. His lifelong fascination with cinematographic equipment had just led him to the invention of the Rolling Loop, a mechanism that pushes the film in gentle, caterpillar-like waves. Recognizing its importance, the Multi-screen partners immediately bought the patent rights, and invited another friend, William Shaw, to join the team. As director of development, Shaw's first assignment was to

External Affairs Canada Affaires extérieures Canada

design the new projector, incorporating the unique Rolling Loop. With no previous experience in film technology, and with the Osaka deadline looming, he set out to build a projector that would have to out-perform any other ever built.

A totally new camera was needed too, so that the film crew could start shooting. Shaw and Ferguson chose a Norwegian designer of specialized film equipment, Jan Jacobsen. He constructed the first IMAX camera in a record-breaking three-and-a-half months.

Donald Brittain, one of Canada's most prominent documentary film directors, agreed to write and direct the Expo '70 film, with Roman Kroitor and Kiichi Ichikawa as co-producers.



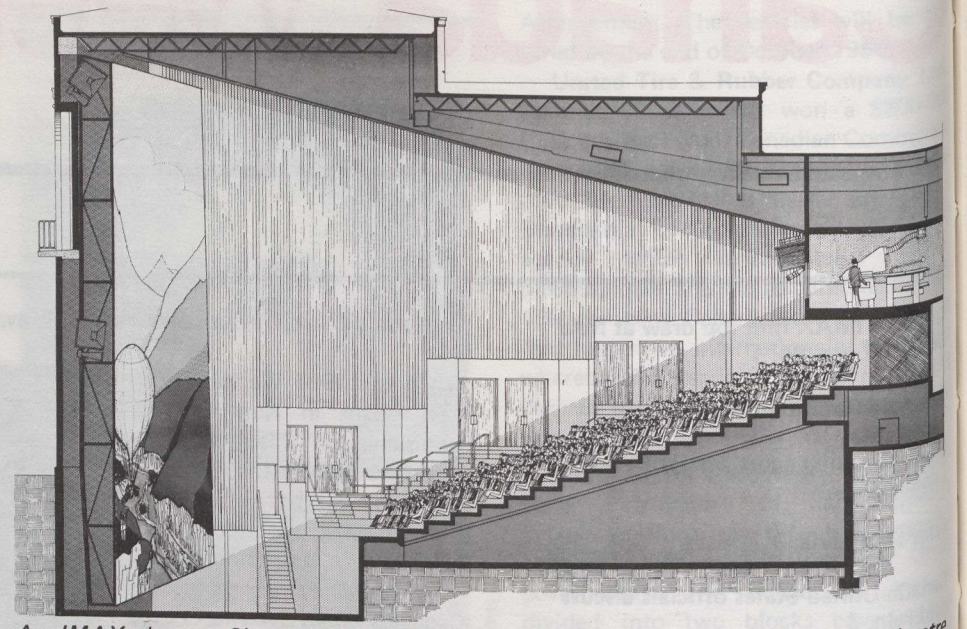
IMAX camera crew shooting segment of new 15-minute film River Journey.

Robert Kerr took on the difficult task of finding the financing. When he and Ferguson canvassed the financial community, they found not a single investor willing to take a chance on the new idea. Finally Kerr succeeded in obtaining some support from the Canadian government's Department of Industry, Trade and Commerce.

Together, the team achieved the almost-impossible: they designed, built, and delivered the IMAX projector, on budget and on time, for the Osaka première.

The IMAX system was an instant success. Thirty thousand people a day boarded the huge revolving turntable in the Fuji Pavilion to watch *Tiger Child.*

The Osaka success was repeated a year later when Ontario Place's Cinesphere, the first North American IMAX theatre, opened in Toronto with Ferguson's spectacular *North of Superior,* which became perhaps the most widely-seen Canadian film. During the following years, Ferguson and Kroitor produced several films, exploring IMAX's potential and refining their tecnique.



An IMAX theatre. Since the IMAX film frame is ten times the size of a 35-millimetre movie frame, the IMAX screen can also be ten times the size of a conventional screen.

At the same time, they encouraged other filmmakers, including Academy Award winners Christopher Chapman and Francis Thompson, to use the system. In 1973, a further innovation was realized: dome-screen OMNIMAX premièred in San Diego's Reuben H. Fleet Space Theater, and *Newsweek* marvelled that it was "the ultimate trip". The public was quick to agree.

Today, IMAX Systems Corporation continues to design and build cameras and projectors, and licenses their use world wide. It designs theatres, produces and distributes films, and is engaged in an ongoing research and development program.

Canadian film captures robot arm's rescue feat

The space shuttle's dramatic rescue of a stranded satellite using its Canadian robot arm will soon appear on film.

IMAX Systems, a Toronto company that makes larger-than-life films for Ontario Place and other wide-screen theatres, sent a special 70-millimetre camera into orbit with the astronauts. And with the dramatic rescue of the crippled *Solar Max* satellite, IMAX got even better footage than it bargained for.

"They didn't film the actual moment when the robot arm grappled onto the satellite, but we've got some good shots of *Solar Max* being berthed (in the shuttle's cargo bay)," said IMAX president Graeme Ferguson. "When the astronauts go EVA (outside the shuttle) to repair it, we'll get some really sensational stuff."

Ferguson was at Mission Control in Houston, Texas, to direct the astronauts as they used a specially-adapted IMAX camera to film the deployment of an experimental satellite by the robot arm, the *Solar Max* rescue and other experiments.

The modified movie camera uses a special 70-millimetre film whose individual frames are stretched to three times their normal length to produce the wide-screen effect. Film from this and the next two shuttle flights will result in a 27-minute production called *The Dream Is Alive,* set for distribution next year.

While few Canadian theatres can handle the hi-tech film, a theatre with a wide screen is tentatively planned as part of the new National Museum of Man in Ottawa.

The $3.5-million project – the second space shuttle film produced by the company – was sponsored by the Smithsonian Institute and Lockheed Corp.

Ferguson said the special camera will also be sent aloft on the June space shuttle flight. It was originally scheduled to film the launch of a Canadian *Anik* satellite on that mission, but that launch has been delayed.

Food aid for 1984-85

Canada, through the Canadian International Development Agency (CIDA), will provide up to $362.5 million in Canadian food aid to developing countries in 1984-85, it was announced recently. Of this amount, $132 million will support multilateral initiatives, $194.5 million will be provided from government-to-government, $13 million will be used to support the development efforts of Canadian non-governmental organizations and $23 million will be held in reserve funds for emergency situations arising during the year.

With respect to multilateral initiatives, Canada is contributing $105 million in food and $20 million in cash to the World Food Program (WFP), a joint program of the United Nations and the Food and Agriculture Organization. The WFP uses food aid in food-for-work projects and in other projects targeted to poor and nutritionally vulnerable groups. Another $7 million will be allocated to the International Emergency Food Reserve, managed by the WFP, which deals with food emergencies in developing countries.

The $194.5 million in bilateral or government-to-government food aid will be provided to 20 countries in Africa, Asia and the Americas. The majority of the countries are in Africa, which will receive almost double last year's allocation to help combat food shortages resulting from a prolonged and devastating drought.

Oil exploration agreement with Sri Lanka

Peter M. Towe, chairman of Petro-Canada International Assistance Corporation (PCIAC) and Daham Wimalasena, chairman of CEYPETCO, the national oil company of Sri Lanka, have signed a co-operative agreement for oil and gas exploration for $1.7 million (Cdn.). The project, financed by Canadian government aid funds on a grant basis, will be carried out on two offshore licences in the Gulf of Mannar. The licences are held by Phoenix Canada Ltd.

PCIAC has entered into a joint venture with this Canadian company on behalf of CEYPETCO and has undertaken to conduct a reconnaissance seismic survey for 1 000 kilometres of marine seismic data. The survey will use Petro-Canada's seismic vessel, the *Bernier* and is scheduled to start this summer. This exploration project is part of an aid program undertaken by PCIAC to assist oil-importing developing countries to explore and develop indigenous sources of oil and gas. Such projects are aimed at reducing oil import costs, a major obstacle to economic development in many Third World countries.

Imported oil vital

Sri Lanka has at present no indigenous sources of oil. Imported oil currently accounts for one third of Sri Lanka's primary energy supply and will continue to play a role in its energy future. Between 1978 and 1981, the oil import bill more than tripled and the proportion of export earnings devoted to oil imports rose from 11 to 39 per cent.

The Sri Lanka project is the first joint venture entered into by PCIAC with a Canadian company. Such ventures in oil-importing developing countries not only help these countries reduce their dependence on imported oil but also provide Canadian companies working abroad with a reduction in risk and financial requirements.

PCIAC now has projects in more than 15 oil-importing countries. In Asia, the Sri Lanka project will be carried out subsequent to similar activities in other project countries, including Thailand and the Philippines, during 1984.

Sales to Algeria

The Export Development Corporation (EDC) has signed a $542.5-million (Cdn.) line of credit to support sales of Canadian capital goods and services to Algeria.

The line of credit with Banque Algérienne de Développement will assist Canadian exporters competing for sales of capital goods and services in Algeria by providing their buyers with a simple and easily accessible credit facility.

Banque Algérienne de Développement, a state investment and financing institution that extends loans to Algerian public enterprises, is one of five financial institutions in charge of implementing the current five-year development plan.

Relations between Canada and Algeria have taken great strides, particularly in recent years. Examples of this development are the existence of a Canada-Algeria joint commission, the 1983 signing of a framework agreement on scientific and technical co-operation, more frequent ministerial visits and numerous technical and university missions.

Algeria has become Canada's most important market in Africa and the Middle East, and Canada's eleventh commercial partner with annual sales averaging $470 million (Cdn.). The newly established line of credit should contribute to the growth of commercial relations with Algeria.

Canada-United States officials discuss acid rain

Canapress

Canadian Environment Minister Charles Caccia (left) *holds up an "acid rain umbrella" with Massachusetts Lieutenant Governor John Kerry when the two met recently at the Statehouse in Boston to discuss the acid rain agreement reached at a meeting in Ottawa.*

Versatile new telephone

Trillium Telephone Systems Inc., which was born last year, is a spin-off company of Mitel Corp. of Kanata, Ontario, to market a unique telephone and intercom system.

Trillium's TalkTo 109 telephone system and TalkTo intercom represent a $10 million to $15 million investment over the next two years. Start-up funding was provided partly by Mitel and through public funds raised when the firm was listed on the Toronto and Montreal stock exchanges last December.

The TalkTo system uses one sophisticated integrated circuit on a silicon chip to replace the 15 circuits previously required for its functions.

The Citizen

Assembling Trillium's TalkTo 109.

Using existing wiring and a single outside telephone line, the TalkTo 109 becomes a private, in-house telephone and intercom. A control box the size of a video-game cartridge, linked with up to nine monitor and page units, allows call transferring to various areas of a home businesss, conference calls, automatic dialing of often-called numbers and an intercom link between remote units.

Individual rooms — such as a baby's bedroom — can be monitored at the flick of a switch, or callers can be put on hold.

Trillium is hoping the TalkTo system will go the way of hot tubs, video-cassette recorders and personal computers to become standard equipment in the homes of an increasing number of North American families. Trillium estimates there are 20 million potential buyers on the continent, and say 15 per cent of all new homes already include intercoms.

Small business is another target market. According to various marketing studies, 60 per cent of all North American businesses have just one telephone line coming into their establishments.

For both types of customer, the firm will concentrate on the US market.

Trillium says the Swedish Telecommunications Administration has approved the company's TalkTo 109 system. The contract is worth about $12.5 million, of which $4.1 million is due this year from the delivery of 9 000 TalkTo 109 systems, beginning in July. Similar amounts are scheduled for shipment in the following two years.

Prostate cancer research encouraging

A new combination of drugs to combat cancer of the prostate has proven ten times more effective than conventional treatments, says the Quebec researcher who developed it.

Dr. Fernand Labrie, director of the Research Centre in Molecular Endocrinology at Laval University, Quebec said recently that a new treatment which completely blocks male hormones has dramatically increased the survival rate among 250 victims of prostatic cancer treated.

With current treatments for cancer of the prostrate, the death rate is about 35 per cent after one-and-a-half years," he said. "Among the test group, the death rate dropped to 3.3 per cent — and without the unpleasant side effects patients feel now."

Dr. Labrie presented his findings at an American Cancer Society science writers' seminar in Florida. He hoped the treatment could be available in hospitals across Canada later this year.

Dr. Labrie's treatment is aimed at blocking the hormone androgen, believed to promote cancer of the prostate gland. The prostate partially covers the bladder and urethra, the tube from which urine leaves the body.

Current treatments, including surgical castration and the use of chemicals and the hormone estrogen, have been effective in about 65 per cent of cases, but do not completely block the production of androgen. As well, they cause unpleasant side effects such as enlargement of the breasts and blood clots.

Talking computer dictionary

For most people, leafing through a dictionary presents no problem. But using a dictionary the size of a set of encyclopedia — in the dark — can be a burden.

That was the situation faced by a blind student at the University of Regina in Saskatchewan. When he wanted to find the correct spelling or definition of a word, he had to wade through 28 cumbersome volumes of the university's braille dictionary.

Last September, he took his predicament to Dr. Allan Law, a computer science professor. Since then, Dr. Law, with the help of student Glen Sandness, has worked at developing a computerized talking dictionary for the blind.

Glen Sandness said that while the solution sounded simple enough, arriving at a working model was a different story. The two had to devise a computer that could "browse" the pages of a dictionary using a voice synthesizer. After six months and $4 000, they feel their goal is within reach.

Standard computer keyboard

The machine works off a standard computer keyboard. If the blind person knows the correct spelling of a word they can just type it into the system, with the machine announcing each letter. In about ten seconds the computer provides the definition in a tinny, mechanical voice.

Misspellings do not throw the computer off track. If the word is typed in as it sounds, the computer will check for similar words and then announce them along with the correct spellings.

The prototype now is programmed to provide definitions for several dozen words. Mr. Sandness said the major obstacle to putting a full dictionary on a similar system is the time involved in entering the information into the program. He said it was no surprise the model would be developed at a place like the university and not at a major corporation.

"They (corporations) are not looking at the applications, but instead at the market, whether it's economically feasible.... The market for these machines is limited so it is up to small institutions like this to do the necessary development. We don't have to worry about making a profit from it later."

He said the next step is to adapt the present system into something that not only works but carries an affordable price tag. He hopes the price can be cut to about $1 500.

Fibre mix flies light

A materials revolution is developing in the aircraft industry that features the replacement of heavier aluminum parts with light fibre composite structures, reports *The Globe and Mail.*

The objective is to save weight, "which translates into increased payload (or fuel saving) without changing the aircraft's size", said Michael Davy, vice-president of engineering for de Havilland Aircraft of Canada Ltd., Toronto.

The composites are made of glass or carbon-graphite fibres, or combinations of both. They are embedded in epoxy resins that, after baking and curing in an autoclave pressure oven, have the strength of steel.

They are easily sculpted and do not require the heavy machining that metal requires in order to become a part. However, extensive use of the composites is being held back by cost and the need to meet the certification standards being established for them.

The cost of composite material can range from $40 to $100 a kilo, with $2 a kilo for metal. The trade-off comes from the lighter weight and the ease of tailoring a component to the strength required, compared with the time to machine the same part from a billet of aluminum.

Composites can be built up from continuous, short – or "whisker" – fibres embedded in resin. The fibres can be oriented in one direction or laid down at random. "You can build in the direction you want your strength," Mr. Davy said. "And you get an extremely clean finish."

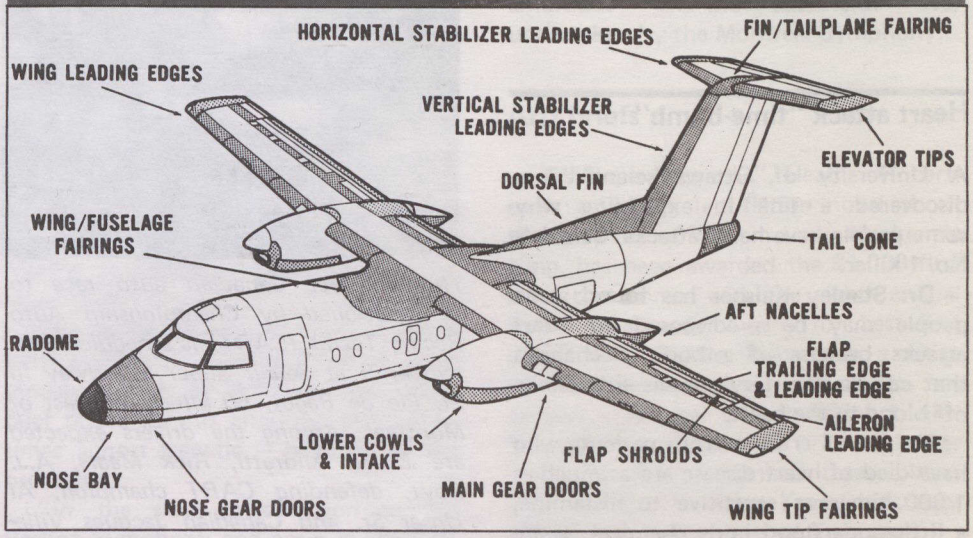
De Havilland has pioneered the use of fibre composite aircraft structures in Canada, beginning seven years ago with its 50-passenger *Dash 7* commuter airplane. It has substantially increased the amount of composite material it uses in its new 36-passenger *Dash 8* commuter airliner.

Composite structures

All aircraft that have come off the drawing boards in the past few years are flying with composite structures. The new *Boeing 767* and *Boeing 757* airliners use composite parts.

Canadair Ltd. of Montreal has used composite structures to reduce the weight of its *Challenger* business aircraft. Innotech Ltd., also of Montreal, has gained industry recognition as a manufacturer of lightweight cabin interior walls made of glass-fibre for corporate aircraft.

Tony Honeywood



De Havilland Dash 8 *uses composites in secondary structures to save weight.*

De Havilland, which builds its own cabin interiors, is making extensive use of composite materials for cabin floors, bulkheads, walls, galleys and toilets. In the floor alone, there is a weight saving of about 60 kilograms.

The move to composites has been gradual, but their use is increasing as experience increases. All fibre composites at de Havilland are being used in secondary structures – those whose loss would not be a hazard in flight.

However, there is a move to application of composites to primary structures, such as a wing spar, which bears the load of the wing.

Other applications seen for composites are under-fuselage skins and the front of the aircraft from the nose to the cockpit. De Havilland has experience in working with composites that would enable it to build a small aircraft – the size of its 19-passenger *Twin Otter* – with major composite components.

Composites in the *Dash 8* are used in the nose bay, tail cone, cabin floor, landing gear doors, wing-to-fuselage and wing tip faring, flap shroud and other parts.

Aid for refugees

Canada will provide $900 000 in humanitarian assistance to Cambodians displaced by conflict in their country. The grant will provide medical, relief and protection services to Cambodians living in camps along the Thai side of the border.

To date, Canada has contributed $27 million to assist these displaced persons.

Also announced is a grant of $125 000 to the United Nations High Commissioner for Refugees for some 10 000 Sudanese refugees in Ethiopia. The refugees fled Sudan after the mid-1983 reorganization of the regional government in South Sudan. They settled near the town of Gambela, 80 kilometres from Sudan.

Canoeists cross Quebec

Six Montreal men are planning to retrace the 1 000-kilometre cross-Quebec trip of the seventeenth century Jesuit missionary Charles Albanel.

The trip from Tadoussac, Quebec where the Saguenay River flows into the St. Lawrence River, to Fort Rupert on James Bay, is their way of marking this year's four-hundred-and-fiftieth anniversary of explorer Jacques Cartier's landing in Canada. Using a fibreglass canoe 7.6 metres long by 1.2 metres wide and weighing 143 kilograms, the team expects to take about 75 days to cross northern Quebec from east to west.

Heart attack "time-bomb"

A University of Ottawa scientist has discovered a link in explaining why some people have heart attacks, Canada's No. 1 killer.

Dr. Stanley Kalsner has found some people may be predisposed to heart attacks because of a body mechanism that can cause artery spasms that choke off blood to the heart.

He found arteries from patients who have died of heart disease are as much as 1 000 times as senstitive to histamine, a little-understood body chemical, as are arteries from patients who have died of other causes.

He has also found heart patients' arteries contain twice as much histamine as other patients' arteries.

"It's sitting there like a time-bomb waiting to go off," said Dr. Kalsner, a world-renowned pharmacologist and the only Canadian studying live human heart arteries.

The next step, he said, is to find out what triggers the explosive release of histamine from its "storage depots" in cells, and whether drugs, for example antithistamines, can block or depress the sensitivity of some people's arteries, especially as they age.

Dr. Kalsner said it might be possible to give preventive treatment to patients with a family history of heart disease.

He has also found that arteries from heart disease victims are hypersensitive to several other body chemicals, although not quite to the degree that they respond to histamine.

"We're on the threshold," Dr. Kalsner said.

Canada hosts auto race

Canapress

The first-ever Canadian auto race to be sanctioned by Championship Auto Racing Teams (CART) is scheduled September 9 at Senair Super Speedway in St. Pie de Bagot, 50 kilometres east of Montreal. Among the drivers expected are Mario Andretti, Rick Mears, A.J. Foyt, defending CART champion, Al Unser Sr. and Canadian Jacques Villeneuve (above), *brother of late Formula One driver Gilles Villeneuve.*

Male contraceptive

A professor at the University of Western Ontario in London, Ontario may have found the long-sought male contraceptive — 100 per cent reliable and without side effects.

Dr. John Wiebe was searching for substances that induce puberty when he found that low dosages (about 140 micrograms) of one molecule completely halted production of male rats' sperm cells. This contraceptive effect was total with a single injection into each testis: after four matings (presumably to clear existing spermatozoa out of the rats' reproductive tracts), the treated animals were completely sterile. All measurements of physiology and behaviour, such as hormone levels and frequency of sexual activity, showed no difference between the treated rats and a control group.

According to Dr. Wiebe, the contraceptive molecule (which will not be identified until patents have been filed) is specific for cells that produce spermatozoa, and does not appear to affect any other tissues. Furthermore, the molecule is not a toxin.

In human males, contraception using this technique would dispense with surgery, postoperative recovery, internal pressures on the reproductive system, and possible autoimmune response. All of these effects may follow vasectomy, the only currently feasible way to sterilize males. Autoimmune response occurs when reabsorbed spermatozoa trigger the body's own immunological system; the result could be an allergy to one's own sperm.

As well as human contraception, the new technique might also control populations of agricultural breeding stock and pets. Tests on monkeys may soon be under way, to be followed by tests on human volunteers. Dr. Wieb is especially interested in proving that the effect is reversible — that after a few months, the effects of an injection simply wear off.

(Article from Science Dimension.)

Canada supports humane trapping research

Environment Canada will provide $1.5 million over a four-year period for the research and development of humane trapping devices and methods, Environment Minister Charles Caccia has announced.

The money will be used to field-test devices already in different stages of development and for their further modification, as well as for research into new and more humane and effective trapping devices and methods. An additional $350 000 will be provided to train trappers in the use of these devices, and for the development of national standards to govern humane trapping practices.

The funds will go to the recently formed Fur Institute of Canada (FIC), whose primary responsibility will be research and development of humane devices and methods for the trapping of fur-bearing animals and for trapper training.

The FIC succeeds the federal-provincial Committee on Humane Trapping, which had previously approved 16 new trap designs as being humane. The majority of these are now being field tested on several provincial traplines. Trapping practices are regulated by the provinces.

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News of the arts

Computer graphics star in film

When Paramount Pictures Corp. releases the movie *Star Trek III* in theatres across North America this summer, the faithful legion of Canadian fans who follow the exploits of Captain Kirk, played by Montreal-born actor William Shatner, will be treated to even more home-grown talent.

The video computer graphics and effects used in the film are the brainchild of John Pennie, president and chief executive of Omnibus Computer Graphics Inc. of Toronto.

Pennie hopes this exposure will put his two-year-old firm, which specializes in computer animation and special effects for advertising, television and films, on the map.

In fact, Paramount and Omnibus are putting the final touches on a deal that will see the Canadian firm set up shop in Hollywood in June, with a production facility linked *via* satellite to Omnibus's Toronto headquarters and its new American subsidiary — Omnibus Computer Graphics Centre Inc. — which opens this month in New York City.

Symphony wins rave reviews

The Montreal Symphony Orchestra capped a triumphant West European tour recently with rave reviews from Britain's newspaper critics.

Edward Greenfield of *The Guardian,* who once called the orchestra "the finest French orchestra in the world today", outdid even that high praise.

After "the most gruelling of European tours (14 concerts in 15 days in four countries) I feel like upping the estimate", wrote Greenfield, "and proclaiming them not just the finest French orchestra of all time, but the most beautiful orchestra from North America".

He added: "What triumphantly kept coming out of this long and taxing program — Ravel's *Rapsodie Espagnole,* Prokofiev's *Piano Concerto No. 3* and Berlioz's *Symphonie Fantastique* followed by Verdi's *Forza del Destino* overture as an encore — was the happy marriage between French and American traditions."

Greenfield's enthusiasm for the single London performance by the orchestra on its fiftieth anniversary was matched by critics from *The Times* and *The Financial Times.*

Dominic Gill of *The Financial Times* termed the orchestra "a hugely accomplished band, in spirit and technical polish unarguably of world class".

Argentine pianist Martha Argerich — the soloist for Prokofiev's concerto who appeared in seven of the orchestra's European concerts — also won unanimous acclaim.

Gill called Miss Argerich's work "a consummate soaring display which (conductor Charles) Dutoit needed only to, as he did, stand back and courteously take his cue".

And *The Times'* Hilary Finch added: "This is an orchestra which equally unashamedly operates under the hypnotism of Charles Dutoit. This implies not passivity — far from it — but an almost unnaturally heightened awareness, an immediacy of response more inspirited than inspired. Only an orchestra as rigorously trained to anticipate, listen and respond with such consistently confident virtuosity could have avoided getting at least one finger burnt during Martha Argerich's white-hot performance," she wrote.

Charles Dutoit, the 47-year-old Swiss-born conductor who has become enormously popular in Montreal, won individual praise for his charismatic — sometimes almost frenetic — handling of the orchestra.

"In the slow introduction to the Berlioz Symphony and again in the slow movement, Dutoit was daring in encouraging such a whisper of sound yet... each strand in the texture was perfectly clear, delicate and transparent," said Greenfield.

Canapress

Montreal Symphony Orchestra conductor Charles Dutoit in rehearsal during the group's triumphant European tour.

The critical acclaim echoed the warm ovation from the packed 2 000-seat Barbican Hall where the orchestra completed its first European tour in eight years.

For Dutoit, a European tour has been a goal since he took over as the orchestra's music director in 1977.

Critics on the continent raved about the orchestra as did their counterparts in London.

With five concerts in Dutoit's native Switzerland and eight in West Germany as well as performances in Paris and London, the tour was by far the most ambitious — and most successful — ever undertaken by the Montreal Symphony.

Arts briefs

"Willie, a Romance", Heather Robertson's rollicking fact-fiction novel about the early life of William Lyon Mackenzie King, has been awarded the $1 000 first prize that comes with the eighth annual Books in Canada Award for best first novel of 1983. Miss Robertson, a native of Winnipeg now living in Toronto, has written a number of non-fiction books. Her portrait of the late prime minister is the first in a planned three-volume series called *The King Years.* It is published by James Lorimer of Toronto.

Toronto will once again host a commercial trade fair for visual art. Scheduled to take place at the new Metro Convention Centre November 2 to 4, Art Expo Toronto will feature booths for commercial art dealers, periodicals and arts organizations. It will also be the occasion of an exhibition called Happy Birthday Toronto, now being organized by Joan Murray, director of Oshawa's Robert McLaughlin Gallery. More than 15 000 people are expected to attend the three-day weekend.

A group of well-known Canadian artists from across the country will take part in a cultural exchange with Israel, May 21 to June 4. Organized by the Toronto-based Canada-Israel Foundation, the trip to Israel will include meetings with prominent Israeli artists, curators and museum directors, as well as tours to various sites of historic and cultural importance. Invited artists are Richard Prince, Ron Moppett, John McEwen, Joyce Wieland, Stephen Cruise, Bill Vazan, Irene Whittome, Sylvain Cousineau and Molly Lamb Bobak.

News briefs

The Quebec government, working with the private sector and the federal government to mount an international software trade show in Montreal next year, hopes it will become an annual event. The show, planned for June 3 to 5, 1985, will be organized and operated by a new company called Le Marché international du Logiciel de Montreal (MIN) Inc. of Montreal. It will feature the work of software designers, manufacturers and distributors. It will be held concurrently with a series of international technical and marketing conferences.

A $1.7-million contract — the largest ever awarded by the radar group of Hughes Aircraft Co. of Los Angeles to a Canadian supplier — has been signed with Epic Data Sales Ltd. of Richmond, British Columbia. The contract, for the supply of data collection equipment, is the fifth to be signed between various Hughes divisions and Epic and calls for 16 host control units and a total of 597 dual-function terminals.

A Cornwall, Ontario company has been awarded a contract by the American Institute of Aerospace Medicine of Miami, USA, for the construction of a sonar system to be used in medical-research submarines. Scannar Industries Inc. will sell the new sonar system at $500 000 per unit. It expects to sell up to 100 systems to the Institute and associated groups over the next four years.

Seven Canadians are among the first 49 international businessmen and women chosen to discover firsthand the Japanese way of doing business. Under a one-month intensive training program sponsored by the Japanese government, participants will take part in lectures, plant and office tours, marketing studies and in-house training at Japanese businesses. The idea is to acquaint business people from Japan's major trading partners — the European Economic Community, the United States and Canada — with the Japanese way of doing business and to help them expand their trade.

Honeywell Inc. of Willowdale, Ontario has signed a letter of intent to acquire the assets of its distributor in the Republic of Korea, Hyundae Engineering Co. Ltd. of Seoul. Hyundae has distributed Honeywell residential, commercial and industrial control products since 1963. Honeywell has also agreed to form a joint venture with The Lucky-Goldstar Group of Korea, principally to market and install commercial-building and industrial systems in Korea.

Spar Aerospace was one of a number of Canadian companies honoured by a Canada Export Award at recent special ceremonies in Montreal. The company, which received a large Canada Export pennant, won the award for its Satellite and Aerospace Systems Division's Brazilsat program. The newly established Canada Export Award recognizes outstanding achievement in exporting Canadian products.

The newest container shipping line on the North Atlantic began service recently when The Canada Line's Dart Europe loaded 1 800 containers bound from Montreal to the European ports of Felixstowe, Le Havre, Antwerp and Hambourg. A new company formed jointly by CP Ships and Dartcan, The Canada Line will be the leading cellular container shipping company on the North Atlantic between Canada and Europe.

New wave lifeboat

Canapress

Toronto insurance broker John Ingle shows off a scale model of his invention, a 14-person lifeboat called a Sea Orb, *at the Canadian Spring Boat Show held recently in Toronto. Ingle's creation is a circular platform suspended inside a plastic ball about three metres in diameter. It contains provisions for 14 people for six days, self-powered beacons, homing devices, a radio and an air-exchange system. It has a toilet and can navigate at up to ten knots an hour.*

A new generation of magnetic tape drives for computers that replaces the familiar reel of tape with a cartridge has been introduced by IBM Canada Ltd. of Markham, Ontario. The drives, part of the IBM 3480 magnetic tape subsystem, double the rate at which tape devices transfer information and offer significantly greater data reliability. The small, rectangular cartridge used in the subsystem is about one-fourth the size of a standard 26 centimetres reel of magnetic tape, but stores up to 20 per cent more data — about 200 million characters. The drives also achieve reductions in power and maintenance requirements.

Canadian Commercial Corporation (CCC) has awarded a contract amendment valued at $7.3 million (Cdn.) to Montreal's CAE Electronics Ltd. on behalf of the Federal Republic of Germany for the Tornado operational flight and tactical simulator. Since the early 1950s, Germany has purchased simulators from CAE for *UHID, CH-53* and *Sea King* helicopters and for the *F-104 Starfighter* and *Alpha Jet* trainer/support aircraft. This particular sale represents the seventh *Tornado* aircraft simulator to be supplied by CAE for the German forces.

Canada will provide $225 000 in emergency funds to assist the victims of a severe cyclone and subsequent flooding in Mozambique and Swaziland. These funds will help to provide shelter, food and blankets for some 10 000 families who have lost all their possessions. There have been 109 deaths in Mozambique, and 41 in Swaziland. Seventy thousand rural families lost all or part of their crops when 250 000 hectares of agricultural land were flooded.

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