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Canada's crash position indicator contributes to aviation safety

Almost 25 years of effort at the National Research Council's National Aeronautical Establishment (NAE), has resulted in the design of a unique system for locating a downed plane, its passengers and the flight recorder. Called the Crash Position Indicator (CPI), this invention of Harry Stevinson, an engineer with NAE's Flight Research Laboratory, is manufactured and marketed by the Avionics Division of Leigh Instruments Ltd., at Carleton Place, Ontario.

When planes crash in remote areas of the world, such as Canada's North, searching for them without the aid of an emergency radio beacon's distress signal is like looking for a needle in a hay stack. Rescue may take days when the chances of survival of the injured may hinge on only a few hours. While early recovery of passengers is one of the key arguments for using emergency radio beacons on aircraft, another important consideration is the recovery of the aircraft or its flight recorder so that the problem causing the crash can be determined and thereby avoided in future flights.

Twenty-five years ago, aviation people were aware of the need for a reliable emergency radio beacon. Beacons carried inside aircraft were practically useless in many crashes because they were either destroyed, buried or sunk. A successful beacon would somehow have to escape from the plane just before the crash. At the same time, the best system fired the beacon device from a mortar, but it never gained popular acceptance. There were simply too many vulnerable devices involved — a parachute, a shock absorber, two orienting arms, an external extendable antenna, and a flotation bag; added to this, the mortar system did not necessarily have the time to fire the device clear.

What was needed

Harry Stevinson, electrical engineer-cum-inventor who joined the Flight Research Laboratory in 1945, decided to try to

build an escape device system without moving parts which would contain the transmitter, antenna and the delivery system all in one package. He believed that, if the device were mounted externally on the plane's body and attached by a spring-loaded latching mechanism which released on impact, the air rushing against the CPI's leading edge would strip it away from the plane almost instantaneously. At the same time, its shape would provide enough lift to carry it a safe distance away from the crash scene but produce enough speed-reducing drag to land safely nearby. The outer protective skin and shock absorbing foam would have to be tough, transparent to radio waves, and the antenna capable of transmitting a



Harry Stevinson points to a CPI attached to a Canadian Forces' plane. The leading edge, held by a spring-loaded latch, is forced up when released, allowing the on-rushing air to lift the CPI away from the plane. High-speed planes are equipped with flush mounted CPI's.

National Aeronautical Establishment

Twenty-two years ago today...
Lester B. Pearson succeeded Louis St. Laurent
as Leader of the Liberal Party of Canada.

signal whatever its orientation on the earth's surface. Finally, the package would have to float and be fire resistant.

Paper model

After a year or two of experiments, Mr. Stevinson and his co-workers came up with the first facsimile of the modern CPI, a paper model which was first tested by dropping it from the balcony of the hangar laboratory. The disc-shaped device, which tumbled as it fell, gave encouraging results, and he built the next version out of aluminum. The model's performance, tested by releasing it from a speeding car, convinced Stevinson that the tumbling-airfoil principle was almost ideally suited to this complex task.

Transmitter attached

While Mr. Stevinson and his co-workers were adapting the system to various aircraft, the Division of Electrical Engineering developed his ideas for a radio transmitter and an omni-directional antenna small enough to tuck into the CPI.

When the first reinforced plastic CPI (containing transmitter and antenna) was assembled, it was attached to a rocket sled and fired at a cliff at speeds up to 370 kilometres an hour. The model detached from the sled as predicted. While the sled was crashing into the cliff, the CPI flew in an arc over the site, slowed, and gently landed above the cliff, with only minor scrapes to its tough outer skin. The transmitter worked without a hitch.

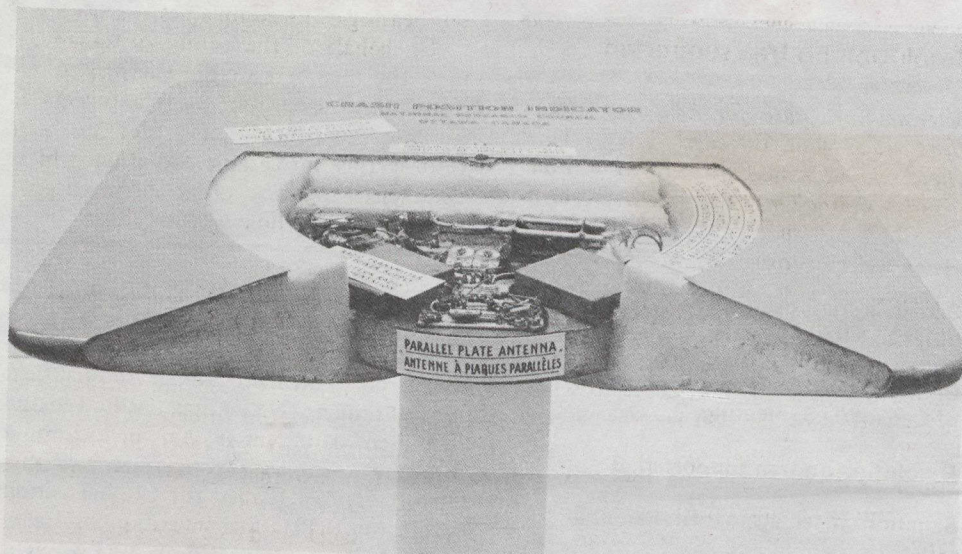
Success proved

Tests that included a series of drops from aircraft over all types of surface proved the performance of the CPI.

Early production models of the CPI were fitted mainly on aircraft operating in Canada's North. When some of these crashed, the CPI was instrumental in their early location and recovery. In one plane crash in the Yukon mountains, location would have been impossible without the CPI. The internal antenna was able to get the signal between the mountain peaks to the search aircraft.

U.S. appreciation

In another example, the United States Air Force credited the CPI with the early location of one of their aircraft which crashed at night in the ocean. The life of at least one critically injured person was saved by the quick rescue (Leigh Instru-



The final version of the CPI developed into a wing-shaped structure. Here a cut-away resting on a pedestal shows the different components, all in one neat package.

ments received a letter of thanks, which was forwarded to NAE).

The next development by Leigh in the CPI story involved the inclusion of a flight recorder with the emergency signal transmitter. The flight recorder, or "black box", is an electronic recording device which monitors the aircraft's systems and operations, information vital to identifying the cause of aircraft accidents. Most heavy aircraft carry a "black box" as a permanent internal fixture, but they are prone to damage in a crash. In one case, it took many hours of painstaking effort at NAE's Flight Recorder Playback Centre to extract the recorder's information from the charred magnetic tape. Although the Centre was able to reconstruct the doomed flight, a lot of time and effort

could have been saved if the recorder had been contained in a CPI.

The success of the Crash Position Indicator is now well established. The Canadian armed forces are committed to using them, as are some of the American Armed Forces. European jet manufacturers are placing CPI's on planes such as Panavia's *Tornado*, and many private planes flying Canada's remote northern routes carry them.

For Leigh Instruments of Carleton Place, CPI has meant commercial success. Manufacturing and marketing the product has created a healthy financial picture for Leigh's Avionics Division, with CPI sales of \$6 million in 1978 alone.

(From an article by Sadiq Hasnain in *Science Dimension*, 1979/4.)

Education of engineers subject of Canada/U.S. meeting

Canadian and American engineers met recently in Niagara Falls, Ontario, to discuss the present and future education of engineers.

Sponsored by McMaster University in Hamilton, the American Society for Engineering Education, the Institute of Electrical and Electronics Engineers and the Engineering Institute of Canada, the "Frontiers in Education" conference was held for the first time in Canada. The major topic of discussion was the challenge of rapidly-advancing technologies to the processes of education in engineering fields. Workshop sessions covered such topics as microcomputers in laboratories

and in industry; techniques for teaching and evaluating energy engineering education for the public; teaching and learning by computer and its associated problems; and the future of personal computing.

The conference's first session, dealing with microprocessors (microcomputers) was of particular interest because of the increasingly rapid growth of the use of the miniature computers in laboratories and classrooms at many educational levels. Speakers at the conference included Dr. James Ham, president of the University of Toronto and Dr. Gordon R. Slemon, dean of applied science and engineering, University of Toronto.

Resolution on Iran supported

Secretary of State for External Affairs Flora MacDonald travelled to New York where she addressed the United Nations Security Council meeting on Iran, December 30. In her speech, she said that Canadians were "outraged by the violation of international law" that has occurred in Iran. Excerpts from her statement follow:

Rarely is a turning point in world history so clear to the people in whose hands a decision lies. To ignore this stark need for communal corrective action would be to threaten the fabric of the international community, and to risk a dark age of diplomatic anarchy.

But, Mr. President, what the Security Council faces today is more than just a decision on a matter of humanitarian rights or of international law. Members should all be conscious that their decision may substantially affect the relevance, the very usefulness, of the United Nations as an instrument for the maintenance of world order.

The Security Council has already called upon Iran to release the hostages it holds in Tehran, and has asked both Iran and the United States to take steps to resolve the remaining differences between them. The International Court of Justice, in a unanimous decision, has also called for such release. Clearly, those actions have not sufficed to convince Iran to live up to its international obligations.

The resolution you have before you allows for a final, intensified effort at persuasion by the Secretary-General further to those he has already made. We pray it will be successful. But should he fail, should Iran not respond, you are asked to agree to take further measures: to implement sanctions under the provisions of the Charter of the United Nations. These provisions were designed from the outset to be used in situations such as this one, where a country is in flagrant violation of the obligations it has undertaken as a member of the international community.

* * * *

By supporting the resolution, members of the Council will be sending a direct message to the Government of Iran that its current behaviour is totally unacceptable to the [rest of the] world. But it should be clear that, once Iran has again made its behaviour conform with international law, it will be able to turn to the international community for a full and

fair hearing of its complaints.

On behalf of the people of Canada, I urge the members of the Council to endorse this resolution. It is a powerful, positive and peaceful step that can help resolve this intolerable situation which threatens the peace, order and good governance of the whole world.

Sanctions lifted against Rhodesia

Canada will lift the economic sanctions which have been in force against Rhodesia over the past 14 years, Secretary of State for External Affairs Flora MacDonald announced December 18.

Miss MacDonald expressed her satisfaction at the announcement in London that the Lancaster House talks had reached a successful conclusion. All parties concerned have joined in the comprehensive plan proposed for a peaceful solution to this long-standing problem and the objectives of the Lusaka Declaration to which the Canadian Government has subscribed have been met. Upon the establishment of an effective cease-fire the threat to international peace and security, which led to the imposition of sanctions in 1965, will have been removed, said the Minister.

Miss MacDonald also expressed the hope that the international community would assist in the early implementation of the London accords.

Government rejects Soviet intervention in Afghanistan

Secretary of State for External Affairs Flora MacDonald said in a statement December 28, that the Canadian Government could not accept the reasons cited by the Soviet Union for its military intervention in Afghanistan.

The Canadian Government could not find any "evidence for the contention that Afghanistan has been the object of external aggression", said the Minister. "The situation in Afghanistan, in the view of the Canadian Government, is one of civil war based on the resistance of a substantial part of the Afghan population to the policies of a regime which seized power by means of a *coup d'état* in April 1978 and whose tenure of power has been marked by increasing internal dissent. The military intervention of the Soviet Union in Afghanistan is, therefore, an

intervention in a situation of civil conflict and not of external aggression."

"The Canadian Government," she said "accordingly rejects the view that the situation in Afghanistan is such as to justify action under...the United Nations Charter which, in any event, would require an immediate report to the Security Council."

"The Canadian Government deeply regrets the action taken by the Soviet Union which will have an adverse effect on stability in the immediate region, in other parts of the Asian continent, and on the climate of *détente* which depends on an atmosphere of mutual confidence and on the practice of restraint by all the states concerned in all parts of the world," said the Minister.

Oil and gas survey augurs well

A significant portion of revenues generated from oil and gas is being reinvested in the search for and the development of costly energy resources, according to a Federal Government study.

The results of the 1978 Canadian Petroleum Corporations' Monitoring Survey indicate that total funds available to the reporting companies were over \$8 billion in 1978, of which internal cash generation in the producing sector contributed \$4 billion, an increase of 20.2 per cent over the 1977 figure. This was attributed principally to increases in well-head prices. Capital expenditures in Canada by the companies participating in the study increased by 16.1 per cent to \$4.7 billion.

The survey included information on 31 corporations, which have previously voluntarily participated in the study, and other data covering all corporations that have reported since the enactment of the Petroleum Corporations' Monitoring Act in June 1978. Total industry coverage now represents 90 per cent of Canada's crude oil production.

Recent discoveries in the Beaufort Sea, the Arctic Islands, off the East Coast and in the conventional southern basin together with the preliminary approval of the Alsands and Cold Lake projects and the expansion of the Great Canadian Oil Sands are encouraging events in recent months, said Energy Minister Ray Hnatyshyn. The Minister was optimistic that this trend would continue throughout 1979 and into the 1980s.

First Canadian stopover for refugees

Scores of Indochinese men, women and children are now arriving weekly from Southeast Asia and spending their first days on Canadian soil at staging areas in Edmonton or Montreal.

Co-operative reception

Once they have arrived at Longue Pointe in Montreal or Griesback Barracks in Edmonton, the refugees become the responsibility of a corps of immigration officials, medical experts, military personnel, customs and agricultural officers, interpreters and volunteer agency representatives.

The centre at Longue Pointe is open 16 hours a day, from 8 a.m. to midnight, seven days a week. Three teams of nine Department of Employment and Immigration staff take care of immigration documentation for the refugees, with ten to 30 interpreters available to help as needed. Doctors from National Defence and National Health and Welfare conduct the medical examinations. The same facilities are available in Edmonton.

The 22 people at Griesback Barracks are divided into teams who work on the basis of an eight-hour day. On days when the planes come in, however, they can work as long as 24 hours.

Full schedules for all

Humanity and efficiency are the watchwords of those preparing the refugees for the journey to their final destinations in Canada.

On arrival at Longue Pointe or Gries-



Touchdown — and first steps in a new country.

bach, the incoming refugees are ushered into reception areas and given a welcome to Canada and an introduction to their staging area where they will stay for the next two to five days. As this is taking place, a light meal is prepared and rooms are assigned. The new arrivals are ten to a room in Longue Pointe. At Griesbach refugees are allotted one room a family.

After a brief customs, medical and agriculture check, the refugees usually rest overnight before undergoing more time-consuming immigration procedures and, if necessary, receiving medical treatment.

In the days that follow, families move

in and out of the various offices. At Canadian Immigration Centres, they are first given the status of permanent residents in Canada.

Preparation for life in Canada

When all immigration and other clearance procedures have been carried out, the refugees are given some basic information about the Canadian way of life and general explanations of such things as Canada's monetary system, provincial health insurance plans, the labour market and social insurance system, and the services available to them through the Government.

They also receive a small kit containing a map of the country and basic information on credit systems, housing, volunteer organizations, etc. They are also provided with a daily allowance to meet small expenses.

The small store set up at the Longue Pointe military base provides each individual with such things as underwear, two pair of socks, trousers and a sweater. The steadiest clothing demand seems to be for children under the age of three.

Hamburgers and rice

Except for their large consumption of rice and general disinterest in breakfast cereal, the Indochinese generally follow western eating habits. Hamburgers and hot dogs are big favourites and usually disappear quickly.

The popularity of these North American staples is second only to apples. Accustomed to paying \$2 an apple in Southeast Asia, the refugees take advantage of this Canadian delicacy.

Travel not finished

During the refugees' brief stay at the staging area, immigration officials are kept busy clearing up a number of details, including arranging transportation to final destinations and notifying the Canada Immigration Centre in the destination community as to their arrival. The centre will then contact sponsoring groups or other relevant local organizations who will meet the family on arrival and help them integrate into the community.

The refugees receive more detailed counselling from local immigration centres, sponsorship groups, and immigrant aid organizations after they have reached their new homes.

(From Panorama, October 1979.)

Indochinese refugee statistics — sponsorship program

Sponsorships as of November 2, 1979	Sponsors	Persons Sponsored
<i>Provincial distribution</i>	4,165	22,706
British Columbia	550	3,022
Alberta	396	2,287
Saskatchewan	187	1,084
Manitoba	310	1,569
Ontario	2,061	11,356
Quebec (as of October 26)	499	2,528
Nova Scotia	54	275
New Brunswick	58	335
Prince Edward Island	15	87
Newfoundland	25	131
Yukon	7	13
Northwestern Territories	3	19
TOTAL	4,165	22,706

News of

Telidon goes to the Maritimes

The first field trial of Telidon in the Maritimes, will begin in Saint John, New Brunswick later this year, Communications Minister David MacDonald has announced. Telidon is a two-way television technology developed at the Department of Communications' research centre and is considered to be the most advanced of its kind in the world (see *Canada Weekly* dated October 10, 1979).

About 75 homes and a few businesses will be provided on a rotating basis with Telidon user terminals. The field trial, which is expected to continue for one to two years, is being sponsored by the New Brunswick Telephone Company Ltd. and the federal Department of Communications (DOC).

The DOC will provide about 20 Telidon user terminals, one information provider terminal and technical assistance. New Brunswick Telephone will provide the data base computer and the dedicated access network and will manage and operate the trial.

Users will be able to retrieve information from the data base for display on modified television sets. The information will be of local and national interest. Other services to be included in this trial are automatic and manual intrusion alarm systems, fire alarm, medical alert, meter reading, energy management systems and an automatic telephone testing service.

The experiment is part of a co-ordinated series of Telidon field trials being conducted across Canada involving telecommunications carriers, cable companies and broadcasters. This trial will bring the total number of committed terminals to 1,600.

Refugee sponsorship changes

The Federal Government has cancelled future sponsorship of Indochinese refugees, leaving it to private sponsors to meet the bulk of the Ottawa target of 50,000, Immigration Minister Ronald Atkey and Secretary of State for External Affairs Flora MacDonald have announced.

Mr. Atkey explained that the Government planned to redirect the money it would otherwise spend on the refugees to food and medical supplies for Cambodian refugees starving in over-

crowded camps.

The new plan does not mean that the Government has abandoned its goal of allowing 50,000 Vietnamese boat people into Canada. It is just that the matching formula, whereby the Government sponsored one refugee for every one privately sponsored, is being changed to put a greater onus on private sponsors.

The change is being made because private sponsorship has passed the point whereby if matched equally the total number of refugees would exceed 50,000. The Government spends approximately \$1,300 on each refugee it sponsors and it is this money that will be redirected elsewhere.

It is estimated that private groups have sponsored 26,196 refugees. The Government has brought in about 12,000, which means that private groups will have to sponsor a further 11,800 if the 50,000 target is to be met by the end of next year.

The sponsorship program was implemented last summer to help refugees fleeing Vietnam in boats to nearby countries.

Under private sponsorship, a group of five or more individuals signs a contract agreeing to provide moral and financial support to a refugee for at least one year.

DASH to the Olympics

Montreal will be brought closer to the Winter Olympics at Lake Placid, New York, from February 13 to 24 with the help of the De Havilland *DASH-7* air shuttle service.

In less than an hour and a half, visitors will clear customs at Montreal's Dorval Airport, fly to Saranac Lake, New York and bus 11 kilometres (6.8 miles) to Lake Placid, for a round-trip fare of \$100. Actual flight time on the 48-seat plane is 24 minutes with ten return trips a day.

Charter bus transportation between Montreal and Lake Placid is also available at less cost (\$24), but at slightly more than double the travel time.

As the closest major centre to Lake Placid, Montreal has been officially designated a gateway city. Approximately 600,000 visitors, sponsors and others are expected to arrive in Montreal to use the city as their headquarters during the event.

Cadets mark centennial

Royal Canadian Army Cadet Corps across Canada celebrated their centennial November 28 with a variety of commemorative events.

Prince Philip, Colonel-in-Chief, issued a special Order of the Day and Governor-General Edward Schreyer attended an open house at the Ottawa Garrison December 1. In addition, New Brunswick and Quebec held an Army Cadet Week. Events including freedom of the city parades, open houses, presentation of souvenir scrolls and albums, have taken place since the summer.



Governor-General Schreyer speaks with a cadet while visiting the Ottawa Garrison.

The Royal Canadian Army Cadets (RC Army C) originated in 1879 and modern cadet units were begun in 1898, when an agreement was reached with Ontario and the designation "Cadet Corps" was used for the first time. In 1909, Lord Strathcona, then High Commissioner for Canada in Britain, who became interested in promoting cadet training in Canada, established a trust fund to teach military drill and rifle shooting and foster patriotism to instil in youth that the first duty of a free citizen is to be prepared to defend his country.

By the end of the Second World War a total of 115,000 cadets were enrolled and a survey indicated that more than 124,000 ex-cadets had volunteered to serve their country with the Navy, Army, Air Force and Merchant Marine.

High rating for Air Canada

A survey of international airlines by restaurant rater Egon Ronay, which was published in several British newspapers recently, placed Air Canada second in performance after Delta of the United States.

Mr. Ronay's team, which examined 14 airlines flying regularly between North America, Britain and Ireland, reported that generally, passengers were taken for granted, treated with contempt, herded like cattle and given unspeakable food.

Commenting on Air Canada's performance, the report said: "We came away in a good mood, feeling that we had been served by crews who worked as a team and took pride in their job and their country."

Classifying 14 aspects of air travel at all stages and expressing performance as a percentage, the report gives the following standings: Delta 77 per cent; Air Canada 69 per cent; TWA 66 per cent; British Caledonian 65 per cent; National 62 per cent; Air India 59 per cent; British Airways 58 per cent; Braniff 57 per cent; Aer Lingus 57 per cent; Laker 56 per cent; Northwest Orient 54 per cent; Pan American 52 per cent; Iran Air 37 per cent; and El Al 36 per cent.

Postcard pollution prevention

An unusual method of helping scientists predict the direction and speed of oil spills began recently off the coast of Labrador.

Small, laminated plastic cards, dropped in the ocean during onshore winds, enable experts to test the influence of local surface currents caused by wind, depending on where and when the cards reach land.

A \$1-reward is offered for each card completed and returned to the Bedford Institute of Oceanography in Dartmouth, Nova Scotia. Residents, and fishermen in particular, have been asked to watch for the cards.

Some 3,000 cards, which float on the surface and travel much as spilled oil does, were dropped from three drilling rigs off Labrador during September and October.

Oil spills tend to drift in the direction of prevailing winds and ocean currents. In Labrador, that means in a southeasterly

direction, or away from the coast. But spills may be affected by local winds and, for this reason, the "drift" cards are released only when winds are blowing shoreward.

Spills from offshore wells are rare, causing only about 1 per cent of total marine oil pollution. Most oil pollution in the sea (54 per cent) comes from urban waste and 35 per cent is from shipping; the remaining 10 per cent from natural oil seeps.

Young soccer players win prizes in Japan

Soccer players Tony Wilkins, Tom Foy and Don Morrison returned from Japan recently after winning their respective divisions in the world soccer skills championships in Tokyo. The finals of the two-day competition were held before the World Youth Soccer Tournament final at National Stadium.

Wilkins, from Peterborough, Ontario, captured the under-12 division with 4,975 points. Foy, from Oakville, Ontario, scored 7,118 points to win the under-14 category and Morrison, from Brampton, Ontario, collected 7,758 points to take the under-16 division. Morrison also won the over-all championship, earning more points than any of the other competitors in the four age categories.

Fourteen boys from five countries competed in this skills competition sponsored jointly by Coca-Cola and Adidas.



(From left to right): Tony Wilkins, Don Morrison and Tom Foy hold one of the three championship trophies they brought back from Japan.

Forced sterilization condemned

Mentally handicapped people should be protected by law from being coerced into so-called voluntary sterilization, according to a recent Law Reform Commission of Canada report.

The 157-page working paper on sterilization concluded that the law on sterilizing the mentally handicapped has concentrated on protecting society "against" such people rather than protecting their rights to determine their own sexual and reproductive behaviour. The Commission includes both the retarded and the mentally ill in its category of the mentally handicapped.

"The laws have been founded on unsound, unscientific views" and "have the potential for discriminatory results in practice", the report says, calling for safeguards to ensure that "victimization" of the mentally handicapped does not continue.

The Commission says the mentally ill and retarded who can understand the consequences of sterilization should have the same rights to seek, consent to or refuse the operation as anyone else.

Hearing recommended

The report recommends that a judicial hearing be required before a person could be ruled incapable of understanding the consequences of sterilization. At the hearing, the person would be represented by independent counsel. The findings would be subject to appeal.

Sterilization of people ruled incapable of making the decision could nonetheless be authorized only by a provincially appointed board made up of medical, psychological and legal experts, advocates capable of assessing social and ethical evidence and lay persons with expertise in mental handicaps and human rights.

British Columbia and Alberta, the only two provinces which had compulsory sterilization laws, repealed them in the early 1970s.

But the report says voluntary sterilization laws of other provinces, including Ontario, have amounted to compulsory sterilization because the consent for the operation can be given by a parent, guardian or even an institution.

The working paper sets out the Law Reform Commission's views and is intended to elicit public discussion before final recommendations are made to the Minister of Justice and to Parliament.

News of the arts

Historic ship exhibition

Sailing ships and steamers that once plied Canadian waters are featured in a new exhibition at the Royal Ontario Museum in Toronto until April 6.

Approximately 60 "ship portraits" are on view and each of the vessels is identified by name to provide an intriguing record of Canada's maritime history from the mid-eighteenth to the early twentieth century.

The ships were involved in many aspects of Canada's past exploration, military life, commerce and immigration. One of the earliest oil paintings in the exhibition, signed by Francis Swaine and dated 1760, is of *H.M.S. Vanguard* of Percé Rock. This ship, involved in sieges off Louisbourg in 1758 and Quebec in 1759, returned to Quebec in 1760 under the command of Robert Swanton as the flagship in the final siege that secured Canada for the British.

The War of 1812 stimulated the ship-building trade in Canada. One of the fascinating watercolours in *Sailing Canadian Waters* depicts the launching of the massive *St. Lawrence* from the Kingston naval yard. The ship carried 112 guns and, in 1815, was the largest vessel on the Great Lakes.

First steamer across Atlantic

The first vessel to cross the Atlantic under continuous steam power in 1831 was the Canadian built *Royal William*. Early Canadian steamers were plagued, however, with technical problems and



The Nancy, a fur-trading vessel.

sailing ships, therefore, remained popular throughout the better part of the century. *Sailing Canadian Waters* records the mid-nineteenth century sail-ship building boom with pictures of the Nova Scotia built *Lydia X* and the *Magnolia Y*, both bound for Liverpool.

Better navigational methods and improved engines facilitated the transition to steam in the latter part of the nineteenth century. Among the steamship magnates competing to establish a Canadian Atlantic mail service was Sir Hugh Allan. A watercolour of the powerful *S.S. Sarmation* of the Allan Steamship Lines, in service from 1871 to 1908, reflects this quest for faster and cheaper transportation.



The Emmanuel Swedenburg was engaged in world-wide shipping during the 1800s.

Revised publishing program

A revised program of assistance to the Canadian publishing industry has been approved by Treasury Board.

The new policy retains the funding level of \$5.4 million for this fiscal year as previously announced but revises the former criteria to encourage a more business-like approach to publishing decisions. Publishers must now concentrate on generating greater sales of their books to qualify for assistance, in contrast to the previous emphasis on simply producing new titles regardless of their marketability. In addition, the revised policy increases the weighting factor for regional publishers in recognition of the smaller markets and higher business costs which hamper their commercial viability.

The publishing program will be effective for three years, by which time it is expected that government and industry will have agreed on a long-term package of structural reforms and incentives for publishing. As well as marketing assistance, the program offers aid to publishers in improving their business and technological efficiency.

National Gallery sends exhibitions on tour

The National Gallery will send 11 exhibitions to regional and local art galleries next year as part of its one-hundredth anniversary program.

Included will be works by charter members of the Royal Canadian Academy, donated when the academy and the gallery were both founded in 1880 by the Marquis of Lorne, then the Governor General.

Twenty-four communities from Newfoundland to British Columbia will receive displays.

Although the gallery has had a touring program for a number of years, this marks a new effort to have at least part of every show mounted in the National Gallery seen in other parts of Canada.

A private collection of South Asian sculpture given to the National Gallery by Max Tanenbaum of Toronto as a one-hundredth birthday present will tour during 1980 and 1981. Thirty-five works covering more than 1,000 years will be shown next year in Halifax, Edmonton, Saskatoon and London, Ontario.

B.C. big on French immersion

Public schools and private pre-schools in British Columbia are having to turn away children from French immersion programs because the demand is so great.

Vancouver school authorities receive calls from parents in maternity wards wanting to reserve desks in future French immersion classes. On Vancouver Island, some parents drive their children 50 miles for French kindergarten.

"It's overwhelming," said Judith Gibson, president of the B.C. chapter of Canadian Parents for French. "Perhaps 95 per cent of the children enrolling to learn French as a second language have never heard more than a few words of French on Sesame Street before starting school.

"Classes are becoming very popular in B.C. now as word spreads that there is such an animal as immersion in existence."

In fact, immersion, now in its seventh year in Vancouver and tenth year in suburban Coquitlam, has built up a large following. Like other provinces, B.C. scurried to implement a formal minority-language program this fall.

Enrolment grows yearly

Province-wide immersion enrolment has been growing by at least 50 per cent in recent years — largely because of persistent lobbying by the Parents for French — and could top 3,000 in elementary grades in 12 school districts this year.

In Vancouver, and to a lesser extent in other centres, immersion is an anglophone, upper-middle-class phenomenon. And principals and parents agree that the interest is not inspired by fears of a fractured Canada.

"Most people are doing it because they think it's a good thing to speak a second language," said William Hay, principal of l'Ecole Bilingue, Vancouver's phenomenally successful all-French school. "French is an obvious language to learn in this country. And it's free."

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

News briefs

Premier Brian Peckford of Newfoundland has appointed a committee to find a flag for the province, which traditionally has been represented by the red, white and blue of the British flag. Pressure from sports federations has prompted the search for a new banner. When a group of athletes attended the Commonwealth Games in Edmonton last year they found themselves without a provincial flag because Prince Philip was in attendance and the Union Jack was being flown in his honour.

Monthly family allowance payments have risen to \$21.80 from \$20 a child in most provinces and territories, the Health and Welfare Department has announced. Child tax-credit benefits have also increased to \$218 a child for families earning \$18,000 or less annually. Family allowance payments vary in Quebec and Alberta according to the age or number of children in a family, providing the payments average \$21.80 for each child in the province.

Two engineering texts by University of Calgary faculty members are being published in Russian translations to be used as textbooks in the Soviet Union. The books are *Stirling Engines* by Dr. G. Walker and *Finite Element Analysis* by Dr. D.H. Norrie and Dr. G. de Vries. Relatively few Western engineering texts are selected for translation and publication in Russia, but those that are find wide distribution and use.

The National Energy Board has announced that it has approved an application by Fraser Inc. of Edmundston, New Brunswick for licences to export firm and interruptible power until 1987 to its subsidiary, Fraser Paper Limited in Madawaska, Maine.

Three airlines, Air Canada, British Airways and Air France are offering, for the first time, major discounts on seat sales across the North Atlantic with round trip fares of \$259 between Toronto and London and \$299 between Toronto and Paris. The Toronto-Paris flights will operate only on selected weekdays — Tuesdays, Wednesdays and Thursdays — from January 14 to March 14 and will be applicable only to flights originating in Toronto and Montreal.

The Canadian International Development Agency has announced the signing

of a \$7-million engineering contract with Acres International Limited of Niagara Falls, Ontario for engineering services connected with the construction of power lines in the most populated areas of Kenya. The contract is for the first of five projects which are part of an \$82.75-million energy package to bring electric power to the Kamburu and Mombasa regions. Acres International Limited will serve as the agents for the Government of Kenya in the procurement of all equipment for the \$68-million loan project. The company will also be responsible for negotiating a contract with a Canadian firm to serve as a prime contractor for the construction of the line.

Domtar Inc. has purchased a 25-per cent interest in a joint venture to explore petroleum and natural gas rights in northern Alberta and British Columbia. Under the agreement, Domtar Energy Ltd., a wholly-owned subsidiary, will fulfil 25 per cent of the 1980 capital commitments, amounting to \$35 million, to the venture of Agnew Lake Mines Ltd. of Toronto.

A new tourism and business travel, marketing and promotion group called Canadian Holiday and Travel Associates (CHTA) has been formed in London. Its members include Canadian federal and provincial government tourism bodies represented in the British capital, and airlines, hotels, tour operators and ground transport companies active in both Britain and Canada. CHTA is being funded by its members and will provide a co-ordinated marketing plan covering all aspects of travel in Canada.

George Garland, a professor of geophysics at the University of Toronto has been elected to a four-year term as president of the International Union of Geodesy and Geophysics (IUGG). Professor Garland's appointment came at the end of the seventeenth General Assembly, which brought together some 2,000 scientists from around the world in Canberra, Australia. The IUGG is one of the world's largest non-government scientific organizations.

Sandra Wells, a swimming-pool guard from Arnprior, near Ottawa, has achieved a place in the *Guinness Book of Records* by breaking the record for treading water. In setting the new mark of 60 hours she outlasted four male companions and raised \$2,000 in aid of an aquatic program.