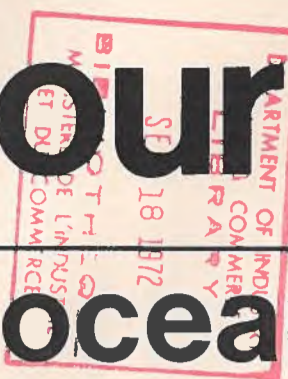


canada



courier



More detailed information on any product or service mentioned in this issue is available through the nearest Canadian Government Trade Representative, or by completing the Trade Inquiry Form on page 7 and mailing it to Canada Courier, Department of Industry, Trade and Commerce, Ottawa, Canada. Postal code: K1A 0H5.

INTERNATIONAL EDITION

VOLUME 10, NUMBER 4, OTTAWA 1972

The world's oceans, Canada's oyster

by David Magee
(Assistant Editor, Canada Courier)

In Canada the winter winds are howling while the crew of one of the world's most advanced hydrographic vessels swelters in the Caribbean sun. The Canadian Survey Ship Baffin is on one of its regular training cruises. These voyages ensure that recruits to Canada's Marine Sciences fleet will work at peak efficiency during the period when surveys in Canadian waters are possible.

In icy waters off the coast of Labrador, Canadian divers work 600 feet (182.8m) down to repair oil-drilling equipment. New Canadian-developed gear soon will allow them to dive even deeper — to between 1,000 feet (304.8m) and 2,000 feet (609.6m).

In Brighton, England, Canada is winning rave reviews at Oceanology International '72. Several Canadian exhibitors make sales of their equipment at the show and a report released by the producers of Oceanology International calls this "virtually unprecedented at a technical event of such specialization."

In total land mass Canada is the second largest country of the world. Naturally Canadians were first concerned with developing their land resources but they have not been slow to recognise the implications of the fact their country also has the world's largest coastline. There are few areas of marine science and technology in which Canadians are not working.

The federal government has undertaken many programs in marine research and development and has provided funds and other assistance for universities and the private sector. A recent publication of the Canadian Department of Industry, Trade and Commerce lists more than 50 Canadian companies which provide marine services or hardware.

Many of those companies were represented at Oceanology International '72 and at the more recent Offshore Technology Conference at Houston, Texas. The Houston show was geared to the offshore oil and gas industry, an area in which Canadians have shown much inventiveness. Naturally they have had to cope with harsh weather and frigid

water and many Canadian companies have special competence in dealing with these conditions. Ice and snow aside, however, Canadian companies have proved their superior engineering. It isn't difficult to cite examples.

Halifax Shipyards constructs Sedco-type oil drilling rigs measuring 325 feet (99.06m) from the bottom of the three 801-foot (24.4-m) diameter footings to the top of the drilling derrick. The rigs are 343 feet (104.5m) long and 380 feet (115.8m) wide, with a light ship weight of close to 11,000 tons.

Several Canadian shipyards have orders for offshore oil drilling support vessels worth about \$2,000,000 apiece. Allied Shipbuilders on the west coast has an order from International Offshore Services of Bermuda for five 195-foot (59.4-m) tug-supply vessels capable of towing offshore drilling rigs. They will be used in the North Sea.

Another western ship builder, Star Shipyards, is constructing three offshore supply vessels — two for Nordic Offshore Services Ltd. of Vancouver and one to be jointly



With the longest coastline in the world, Canada has become a nation of ocean experts. Canadian vessels probe the depths from Greenland to the Caribbean.

owned by Nordic and Federal Commerce and Navigation Co. Ltd. of Montreal. Bel-Aire Shipyards Ltd. of Vancouver is building four similar vessels. Two offshore supply ships are on the ways at Ferguson Industries Ltd. of Pictou, Nova Scotia, on Canada's east coast.

Kenting Ltd., an internationally-known petroleum field survey-engineering firm based in Calgary, Alberta, proved its Arctic expertise with a 60-day Polarquest '71 seismic survey for a consortium of 15 oil companies. Polarquest produced 12,000 miles of reflection seismic

data between the Arctic islands and in Baffin Bay — twice the output expected — and confirmed that such an open-water survey was better and cheaper than ice-based surveys.

Canadian Engineering Surveys Co. Ltd. of Edmonton, Alberta, has recorded locations every few seconds during precharted point-to-point surveys with its "CES SHIFT-DRIFT NAV" navigation system using electronics and computer gear on a survey boat.

Considered one of the most versatile submersible types developed in the 1960's, the Pisces class submersibles from International Hydrodynamics Co. Ltd. (HYCO) of Vancouver, British Columbia, have been the workhorses of the ocean industry. Pisces submersibles have recovered more than \$10,000,000 in ordnance for the United States Navy, which also used tools and manipulators designed by HYCO. Vickers in England has used a Pisces to inspect wellheads and pipelines in the North Sea and to carry out salvage work, including torpedo recovery. Vickers has ordered a second Pisces-type craft from HYCO.

HYCO has also constructed a six-man lock-out submersible and the self-contained Hudson Handler which is a self-propelled catamaran

barge capable of sustaining ten men for a month of off-shore work and features a mobile ramp enabling launch and recovery of Pisces-class submersibles.

Fathom Oceanology Limited of Port Credit, Ontario, recently won a contract exceeding \$100,000 to provide hydro-carbon "sniffing" equipment for Texas Oil. Fathom also offers its FLEXNOSE cable fairing to reduce cable drag and to improve the constant depth-keeping capabilities of fish-shaped electronic devices. The system cuts needed drag horse-power by half and increases by 75 per cent the depth a cable can tow without snapping.

Toronto-based Access Company's Narwal, a manned submersible for Arctic seismic exploration, is now being constructed and will soon be tested. It will operate between one opening in the ice and another. Because it will be capable of being transported by STOL aircraft, no support ship will be needed. Narwal will carry two crewmen; dive to depths of 1,025 feet (312.4m) and remain submerged up to 48 hours. Narwal's nickel-cadmium batteries will charge in three hours instead of the usual eight.

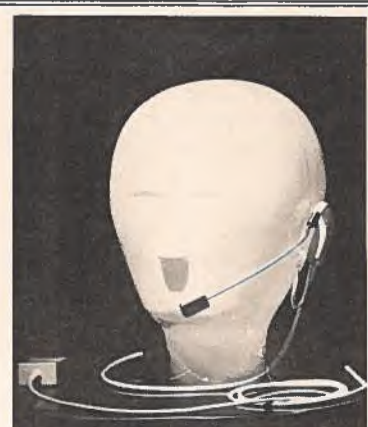
As oil production from standard platform systems becomes uneconomical

Continued on page 2



Canada's iron and steel makers now produce more than 9,000,000 tons (8,000,000 metric tons) of pig iron a year. Steel production totals at least 12,000,000 tons (11,000,000 metric tons) — more than double the production 10 years ago. By 1980 it will probably have reached 20,000,000 tons (18,000,000 metric tons) a year. The tremendous growth of Canada's iron and steel industry is a reflection of advanced technology and enterprising management which have given many Canadian companies global reputations for excellence. The photograph shows a night view of the blast furnaces at Dominion Foundries and Steel Limited in Hamilton, Canada. This is one of many dramatic illustrations from "Iron and Steel from Canada" — a new booklet produced by the Canadian Department of Industry, Trade and Commerce. The booklet, available free of charge in English, French and Spanish, describes 14 Canadian iron and steel makers in detail and includes a reference chart listing all products from these companies. Interested readers should complete the trade inquiry form on page 7, stating language required. Code I-1

And inside . . .	Page
The good life	3
Canadian tree seed	3
STOL projects	4
Bottled water	4
Floor systems	5
Jet exhauster	5
Separating wheat	6
Fighting forest fires	6
Coaches down under	7
Patient care	7
Total telecommunications	7
Trade inquiry form	7
Beauty aids	8
Pollution control	8



Spage age headset page 6

**canada
courier**

Richard Waugh, Managing Editor

Anna Armstrong, Editor

David Magee, Assistant Editor

Al Viscount, Designer

Published by the Department of Industry, Trade and Commerce, Ottawa. Copies available without charge from Canadian Government Trade Representatives at 78 posts in 54 countries. Contents may be freely reproduced.

World's oceans

Continued from page 1

mical past relatively shallow depths, Lockheed Petroleum Services Limited of Vancouver has developed and successfully tested its manned capsule and one atmosphere well-head cellar system as a less expensive alternative for deep-sea production.

Many hours of underwater testing on the capsule and cellar have been completed and Lockheed plans to evaluate the system on a live sub-sea well in the Gulf of Mexico this year. Lockheed also expects to start development this year of a prototype for its sub-sea manifold centre to handle oil from several well-head cellars.

ComDev Marine, of Ottawa, Ontario, provides electronic navigation and survey services including continuous positioning of ships or planes up to 500 miles from shore. Barringer Research Limited, Rexdale, Ontario, makes an easily operated magnetometer adaptable to small salvage boats and large ocean-survey craft. Oil Containment Booms from Bennett Pollution Controls Ltd., Vancouver, have worked effectively for three major oil companies in the Gulf of Mexico. Bennett also produces barge-mounted skimmer oil-recovery units.

J. Kobelt Manufacturing Co.

Ltd., Vancouver, offers pneumatic remote controls for variable pitch propellers as well as mechanical equipment such as shaft disc brakes. Double-drum anchor handling and towing winches come from Swann Winches of Vancouver. Unique Search Initiator Buoys that serve as automatic anchoring devices for buoyant life-saving equipment are produced by Star Lifeline Limited of Vancouver. Huntex ('70) Limited of Toronto, Ontario, makes marine seismic equipment combining high resolution and deep penetration.

Most of these companies participated in the Offshore Technology Conference at Houston. Hundreds of products and services are available from many other Canadian firms specialising in marine science and technology.

Canada is involved in marine science and technology not only for its own good but for the benefit of other nations as well. M. J. Colpitts, Chief, Marine Division, Canadian Department of Industry, Trade and Commerce, reminds us that Canada, along with about 20 other countries, is represented on the Engineering Council on Oceanic Resources. ECOR is an international, non-governmental group, organised to consider professional interests in the ocean and its resources and for advising such international bodies as UNESCO.

Mr. Colpitts suggests that growing interest and activity in oceanology in Canada's government agencies, economic, engineering and scientific communities, universities and private industries is providing a pool of expertise which Canada could make available to the world.

Among the government organisations doing marine research is the Fisheries Research Board of Canada. The Board maintains a Biological Station at St. Andrew's, New Brunswick, to advise the government on industrial and resources management problems and to conduct fundamental and applied research on

bioaquatic resources. The Station is one of eight centres run by the Fisheries Board.

St. Andrew's Biological Station is located on the Bay of Fundy within easy reach of the continental shelf area. A fleet of surface vessels probes the waters from Greenland to the Caribbean isles. There are plans to add submersibles to the fleet.

Included in the Station's research are life, history, population and behaviour studies leading to a sound scientific basis for conservation and management of commercially important species of marine life. Some of the work involves searching for new fishing grounds and finding new means of improving fishing methods and gear.

Strong ties are maintained with international agencies such as the International Council for the Exploration of the Sea and the International Commission for the Northwest Atlantic Fisheries. St. Andrew's Station has made many contributions to marine science and enjoys international acclaim.

Canadians have established a firm position among the leaders in marine science and technology and the work will continue. Next winter a new type of submersible will head for the bottom off Resolute in the Canadian Arctic. The tests it performs could have wide-ranging significance in future oil and natural gas explorations.

Perhaps even more exciting is a project that will start in November this year. Divers will carry out experiments in living beneath the ice-covered Arctic seas in a transparent habitat secured to the ocean bottom.

Experts tell us the future of the world could depend upon our knowledge of what lies beneath the oceans. These and many other imaginative Canadian projects should help ensure that international marine research and development accomplishes something more than a mere rippling of the surface.

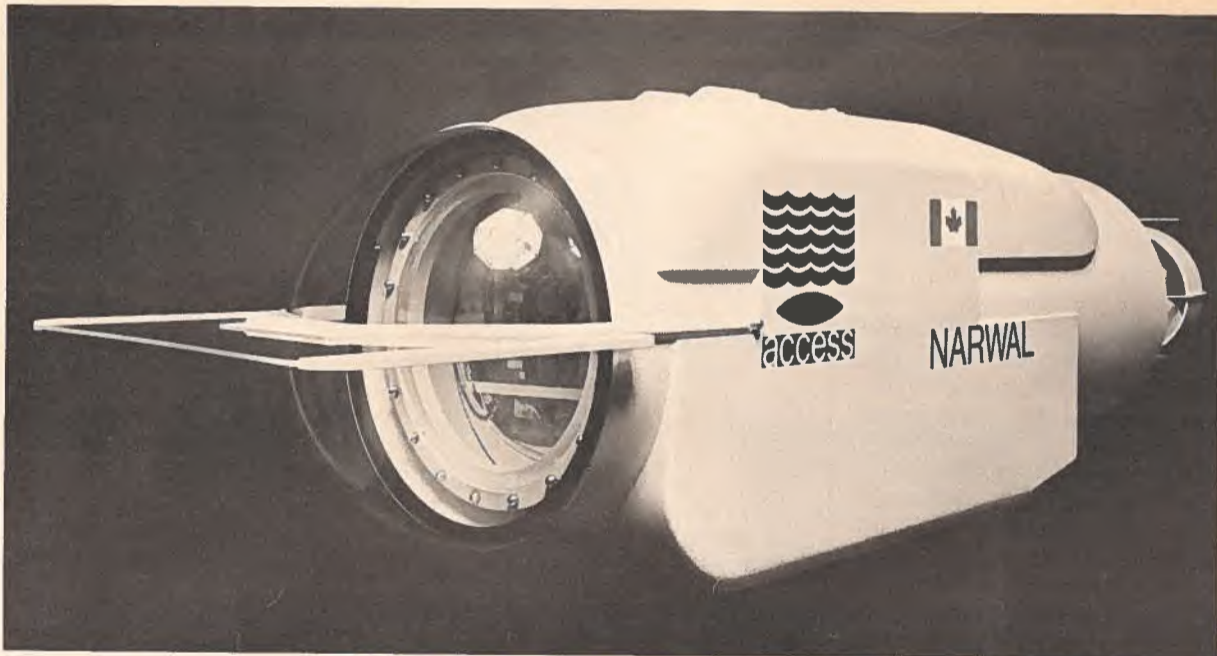
Code 2-1



St. Andrew's Biological Station on Canada's east coast is one of eight marine research centres operated by the Canadian Fisheries Board. St. Andrew's has made many important contributions in the field of bioaquatic resources management.



Canadian scientist places dye in water as part of a study of ocean currents. Canada has many experts in marine science and technology.



Narwal — a two-man submersible for Arctic seismic exploration — will be able to dive to 1,025 feet (312.4m) and stay submerged up to eight hours. It is expected to record better quality data at half the cost of a surface operation.

Port designer for the world

Definition and innovation might be the motto of Swan Wooster Engineering. This is a Vancouver-based firm of engineering consultants which specialises in planning and designing ports and marine terminals as well as development of new methods and systems for moving commodities between water and land. In addition to the headquarters office, Swan Wooster has three offices in Eastern Canada and another in Portland, Oregon, U.S.A. In all offices emphasis is on problem definition and use of innovative solutions based on careful research.

The firm was established in 1925

and since that time has expanded considerably, adding staff and American affiliations. A staff of more than 300 people offers what Swan Wooster management terms "totally integrated engineering services" ranging from systems analysis, feasibility studies, design, supervision of construction, purchasing and expediting to total project management in a number of engineering disciplines — all related to industrial development and land and water commodity transportation.

Swan Wooster has become increasingly involved in harbour and marine terminal projects throughout Canada, the United States and

other countries. The growing need to view port developments as only one link in the transportation chain between producer and consumer led the company to add transportation economists and economic planners to its staff. For the past 10 years transportation analysis involving road, rail and ocean transport has been an integral part of many of the firm's assignments.

Because Swan Wooster has its headquarters in Canada's largest dry bulk cargo port, it is natural it should have been particularly active in bulk commodity terminal design. Such projects, which have been designed for many parts of



The Roberts Bank Superport off Canada's west coast. This huge facility handles rail car unloading, stockpiling, reclaiming and shiploading. Swan Wooster Engineering was responsible for design work and this assignment included consideration of materials handling alternatives and capital cost estimates.

the world, have involved transportation of various types of products under widely varying climatic conditions and different organizational structures.

The firm has also been involved in terminal planning for special non-bulk and general cargo installations with increasing emphasis on containerization. Some of the projects tackled in recent years include the Roberts Bank Superport on Canada's west coast; expansion of El Salvador's Port Acajutla; a salt

loading terminal at Salif, Yemen Arab Republic; a single terminal Dock Assembly System for Seaboard Lumber Sales Company of British Columbia, Canada. Swan Wooster was recently awarded the contract to design new port facilities at Guacolda, Chile. The firm is registered with many international agencies including IBRD (World Bank), the Asian Development Bank and the Canadian International Development Agency.

Code 2-2



Two famous names in power boating circles — Evinrude and Johnson — come from Outboard Marine Corporation of Canada Ltd. This family is enjoying boating with power from a Johnson Sea-Horse 65, an engine equally at ease racing or trolling.

OMC makes the good life better

If for some reason a man had to buy a boat and motor, a snowmobile, a lawn mower, a snowblower, a chain saw and a 2-cycle engine, all in one day, all in one place, he could do it at Outboard Marine Corporation of Canada Ltd. of Peterborough. Furthermore, he would have an extraordinary choice from any one of OMC's lines. Even a seemingly mundane item like a power lawnmower comes in ten different models in five Lawn-Boy series. There are mowers for home gardening or parks maintenance or just about any job between those extremes. The same diversification is found in other product lines.

"Get a Johnson" is a catchphrase in a series of radio commercials for Johnson boat motors. People have been getting Johnsons for more than 50 years but another name has been around even longer — Evinrude — and that's not surprising because Ole Evinrude invented the outboard motor. Outboard Marine Corporation of Canada produces both these famous series. Then there's OMC Stern Drive which puts a whole new complexion on power boating.

Evinrude and Johnson motors come in V-4, 3-cylinder or 2-cylinder

configurations with a selection of power that is rather more than adequate. The V-4's range from 85 to 125 horsepower; there's a 65hp 3-cylinder motor in each series and the 2-cylinder models start at 2hp and progress to 50hp.

OMC engineers are particularly proud of their clean water program which has become a big selling point. Overboard fuel drains are gone on every motor. Crankcase fuel condensate that once went into the water now is re-cycled into power. Other new developments mean less oil is burned — and burned cleaner. Fuel also burns cleaner and more completely. There are new electronic ignition systems and timing stays permanently tuned. There are new piston rings and better cooling systems. Tuned exhaust systems give improved performance and economy.

Ultimate power boat performance is obtained from the OMC Stern Drive line. Smallest engine in the group is a 100hp in-line 4. Biggest is a 350 cubic inch (5540cc) V-8 putting 250hp into the propeller. OMC Stern Drives are mounted directly on the stringers of the hull which means better power use. Special aircraft-type iso-

lators soak up noise and vibration. Another feature is SelecTrim, a unit which permits the boat operator to adjust hull trim for various conditions. The nose of the boat stays flat with the load aft or comes up to proper plane when passengers are in the bow. All moving parts are inside the hull away from possible damage and corrosion. Many accessories and propeller options are available and service is no problem.

Snowmobilers can choose between Evinrude or Johnson lines and chances are there's a model which will precisely suit their requirements. All accessories are available in addition to a full line of snowmobile clothing.

Automatic oiling is a feature of all Pioneer chain saws from OMC. Pioneer chain saws are produced in a number of models for amateur or professional woodsman. OMC Lawn-Boys are all powered by rugged 2-cycle Iron Horse engines which have become synonymous with dependability. Iron Horse engines are available as separate units and find wide usage wherever small engines are required. Code 3-1



OMC produces Pioneer chain saws to satisfy needs of cottagers or loggers alike. All Pioneer saws have automatic oiling.

Canadian seed increases European tree production

Use of tree seed from Western Canada may be the best way for European foresters to increase wood production on their lands. Experimental plantations in North-Western Europe, especially Britain, Germany and Sweden, have shown that species native to British Columbia are capable of producing top quality wood at a considerably faster rate than native European species. Some experiments in Sweden have shown a 300 per cent increase in growth of B.C. Lodgepole pine over native Scots pine.

Western Tree Seeds Ltd., of Blind Bay, Canada, is a tree-exporting company which takes pride in not only supplying seed of the required provenance but also in locating new and superior areas of collection. Three species account for 95 per cent of Western's sales volume: Sitka spruce (*Picea sitchensis*), Douglas fir (*Pseudotsuga*

menziesii) and Lodgepole pine (*Pinus contorta* var.). The company is able to collect a number of other species in smaller quantities. They are: Ponderosa pine (*Pinus ponderosa*), Western White pine (*Pinus monitcola*), Western Red Cedar (*Thuja plicata*), Western hemlock (*Tsuga heterophylla*), Black spruce (*Picea mariana*), White spruce (*Picea glauca* var. *albertiana*), Engelmann spruce (*Picea engelmannii*), Alpine fir (*Abies lasiocarpa*) and Grand fir (*Abies grandis*).

Due to changing policies of various governments and the intermittent nature of seed production, (some species can be expected to produce a good crop only every five years and others average a crop only every two-and-a-half years), availability and prices fluctuate. Therefore, Western Tree Seeds Ltd. makes up a new list of available seeds and their prices every year — in late July or early August.

Code 3-2



Designs like this proved to be real traffic stoppers at the recent Canadian Womens' and Childrens' Apparel Show in London, England. Bright bold bands set off the skirt of this outfit by Superb Sportswear Ltd., Toronto. The separate chiffon top has full double-tiered sleeves with a deep V front that buttons to the waist. The skirt of double-knit 100 per cent polyester with provocative side slit is easy to wear. Code 3-3



A ten-year-old plantation in Sweden. Note the tall Lodgepole pine, produced by seed collected in central British Columbia, compared to the native Scots pine.

Boeing and deHavilland team up on STOL projects



The Boeing/de Havilland "Augmentor Wing" STOL research vehicle flew for the first time May 1, 1972, in Seattle, Washington. The aircraft is a modified de Havilland Buffalo. It is powered by two Spey jet engines specially modified by Rolls-Royce Canada. The experimental aircraft is pioneering a generation of jet-STOL aircraft for the 1980's.

The de Havilland Aircraft Company of Canada Limited and Boeing Company of the United States are proceeding with their joint plan of contacting selected airlines as part of a market assessment for the DHC-7 Short Takeoff and Landing airliner. The extensive market definition scheme also includes a technical evaluation of the DHC-7, comprehensive market studies and a marketing program plan.

The two companies have another project afoot. A de Havilland twin-engine Buffalo has been converted into an experimental jet-STOL aircraft. This plane, with two Rolls-Royce Spey jet engines, employs the augmentor-wing concept for high-lift performance at low noise levels. With this wing system, engine air is bled off to the wings by ducts and blown out through a slot over specially designed wing flaps, creating an air flow that provides lift assist at low speeds, substantially shortening takeoff and landing distances.

The experimental jet engine Buffalo recently completed its first

test flight. The test pilot commented that the aircraft flew just as expected, with no difficulties whatsoever. "We look upon this as being the next generation after the DHC-7, a jet-STOL for the Eighties as distinct from a propeller STOL," a de Havilland spokesman said after completion of the first test flight.

However, the DHC-7 is still de Havilland's most important project at this time. It is a 48-passenger, high-wing aircraft powered by four United Aircraft of Canada PT6A-50 turboprop engines. (See article on this page on the PT6 series.) It is intended for STOL operations. According to T. G. Higgins, DHC-7 project manager, the DHC-7 will carry a full payload over ranges of 450 miles (720km) from 2000-foot (609.6-m) airstrips and up to 800 miles (1280km) using slightly longer runways.

The aircraft generates extremely low levels of noise which should make it unobtrusive to people in communities near airports. This advantage is coupled with basic design features ensuring minimal air

pollution and economical operation over short routes.

Population growth, ground and airway congestion and environmental concern are merging to create demand for quiet, short-field, short-haul aircraft which can operate close to suburban and city centres where most short-haul traffic originates. Such aircraft are needed as soon as possible within this decade, to satisfy present demand and to lead the way for the next generation of STOL aircraft, the jet-STOLs, which will use systems such as those being tested in that converted Buffalo.

The DHC-7 is based on de Havilland's extensive background in Short Takeoff and Landing aircraft. It is designed to fill these roles and to exploit growing worldwide demand for quiet, economical short-haul service. In addition to being a pioneer in this area, the DHC-7 should find a continuing role in the short-haul market for some time.

Code 4-1

Bottled water more than a fad



Canaqua — pure, natural spring water from Canada.

Bottled water — now there's a good thing for the up-and-coming entrepreneur — just put a little water in a bottle; maybe add some carbonation; slap on a fancy label and sell it to the rapidly-growing number of people who refuse to drink any water other than bottled water. But wait a minute — there's more to this than meets the eye.

In Canada, as elsewhere, the market for bottled water is growing. A company in Montreal — Twincraft Ltd. — has spent the past couple of years and \$200,000 in research and development to bring its water to the consumer. The name given this pure spring water is Canaqua.

Travellers, health addicts and connoisseurs have been drinking bottled water for years but only recently has it gained wider popularity. More and more people are being nauseated by tap water tainted with chemicals of one kind or another. In some places even foaming tap water is reported, the foam caused by detergent residue.

In the United States, for example, it is estimated that consumption of bottled water has risen 50 per cent in the past five years and is continuing to rise at the rate of 20 per cent per year. The supply of bottled water has grown into a multi-million dollar industry. In one U.S. city there are an estimated 60,000 users of bottled water with prices ranging from 25 cents a

Canadian gas turbine engines solid success in the air

Canadian aviation recently celebrated a milestone event with delivery of the 5,000th PT6 gas turbine engine from United Aircraft of Canada Limited. This engine series has powered light turboprop aircraft in 82 countries to the equivalent mileage of 8,000 trips to the moon.

Since UACL delivered the first in the series in 1964, 75 per cent of the engines have been exported. Number 5,000 went to the Canadian Ministry of Transport in Ottawa. MOT operates such PT-6-powered aircraft as the Beech King Air, de Havilland Twin Otter and the Bell Two-Twelve twin turbine helicopter.

The PT6 was the first Canadian designed and built aero engine certified for commercial application. Within the same basic cylindrical configuration [five feet (1.5m) — 300 pounds (136.2kg)], it has been upgraded from 450hp to 1,200hp. It powers business and light transport airplanes and twin engine helicopters built in Canada, the United States, Switzerland, Italy, Czechoslovakia, Brazil and New Zealand. PT-6 is the power plant for more than 1,850 aircraft that have flown a total of more than 8,000,000

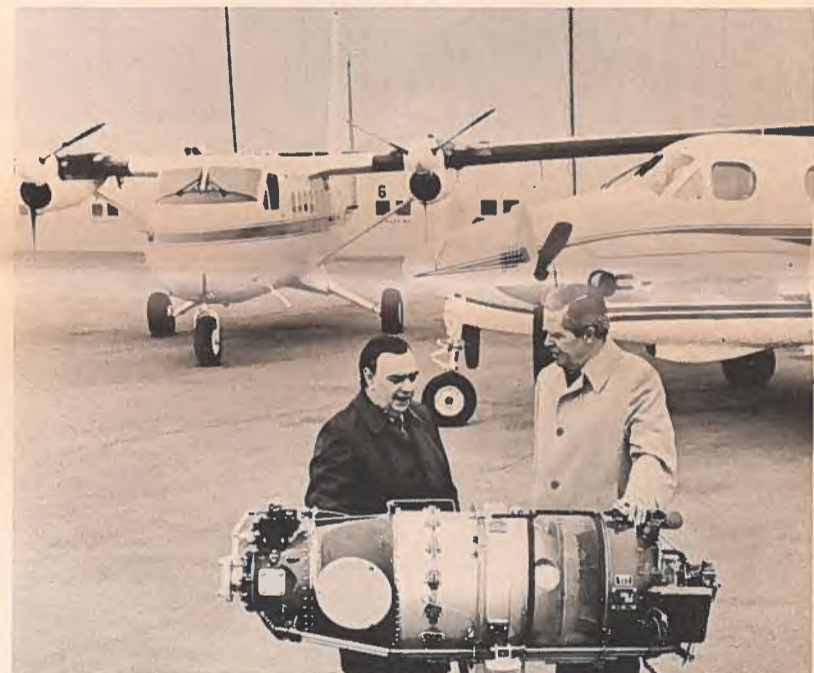
hours. Latest version of the turbine, PT6A-50, will power the DHC-7, de Havilland Aircraft of Canada Company's STOL airliner now in development.

All but two of the dozen engineers on the original PT-6 design team remain in engineering and management at United Aircraft Company of Canada Limited. From this small nucleus, UACL's engineering department has grown to almost 700 people involved in many research and development projects.

A modified sailplane, built in Dallas, Texas, and powered by a UACL PT6A-34 engine, recently flew to an altitude of 51,000 feet (15,544.8m) and set a new world altitude record for turboprop aircraft. A total of three altitude records have been claimed for the aircraft, an LTV Electrosystems Inc. L450f.

The claims were filed with the Federation Aeronautique Internationale in Paris, the recognised authority for world record flights. The former altitude record for turboprop aircraft was set in 1968 by a Pilatus Aztaou, in France. That airplane climbed to 44,242 feet (13,485.9m).

Code 4-2



The 5,000th PT6 gas turbine engine produced by United Aircraft of Canada Limited has been delivered to the Canadian Ministry of Transport, Ottawa. Thor E. Stephenson (right), president of UACL, officially presented the engine to Transport Minister Don Jamieson. A Twin Otter and a King Air, both MOT aircraft powered by PT-6 turbines, are parked in the background.

quart for distilled water to 65 cents a quart for some spring waters. Distilled water is pure H₂O but it is rather flat on the palate. It is the presence or addition of a particular combination of natural minerals or salts that makes one water taste different from another.

David Asch, Twincraft Ltd. vice-president, says Canaqua pure spring water is unique in a number of ways: "It is a relatively soft and exceptionally pure water. It is truly purified by nature after filtering slowly for years through fine sand and mineral deposits, all of which are protected from any possible surface contamination by a thick layer of impervious clay . . . the greatest benefit to the consumer is that the soft quality and delicate mineral balance and purity make it magnificent for tea, coffee, frozen orange juice or baby formulas and of course, it is an ideal natural thirst quencher at any time of day." Canaqua's source is a spring high in Quebec's picturesque Laurentian Mountains.

Canaqua is bottled without any processing or treatment and bottling is inspected and monitored. Mr. Asch believes the Canaqua container is the only hermetically-sealed plastic container for bottled

water now available. He says freshness, sterility and absolute purity are guaranteed.

Most bottled water containers use ordinary screw caps or friction fit caps but Twincraft has designed a tamper-proof closure. Canaqua is supplied in a container which is made, filled and sealed on a single piece of equipment in a matter of seconds. The container itself is made from a special plastic material which incinerates easily, yielding only water vapour and carbon dioxide and leaving little residue. Many other containers are made of a plastic commonly known as P.V.C. which does yield odours and corrosive vapours when burned. Mr. Asch admits P.V.C., with its glass-like clarity, may look better but he says: "We feel we must settle for the formulation we use in order not to add any pollution to our environment. After all, Canaqua is partially a result of today's pollution problems!"

Mr. Asch says Twincraft plans to aggressively promote export business. The company has already had inquiries from places as far away from Canada as South Africa, even though Canaqua has been on the market only a short time. Code 4-3

One-third the concrete, one-third the steel and one-half the manpower

A Canadian system is being promoted as the most significant development in floor construction in recent years. The D-500 Composite Floor System from Hambro Structural Systems Limited of Ottawa involves open-web steel joists, removable, reusable wooden forms and structural concrete. The special top chord shape is mechanically locked into the concrete slab and complete interaction between joist and slab is achieved. The unique reusable slab forming system is supported from the joists and also functions as a rigid horizontal diaphragm to provide lateral support for the top chord during construction (non-composite) stage.

The slab reinforcing mesh is draped over the top chord to form a catenary; the top chord functions as a reinforcing "high chair" and a ¾-inch (19.05-mm) concrete cover is maintained over the mesh. Bottom chairs are not required. For short and medium spans propping is not needed as the joist itself is designed to support all construction loads.

Exhaustive full-scale load tests have been conducted and witnessed by independent consulting engineers. Tests also show that, as a result of embedding the top chord in the concrete slab, considerable lateral rigidity is transmitted to the bottom chord, eliminating need for bottom chord bridging. During construction all necessary bridging is provided by the forming system. Tests by Canada's National Research Council show the Hambro system has acoustical qualities as good or better than those of con-



Workmen using the Hambro D-500 Composite Floor System at the site of an apartment development.

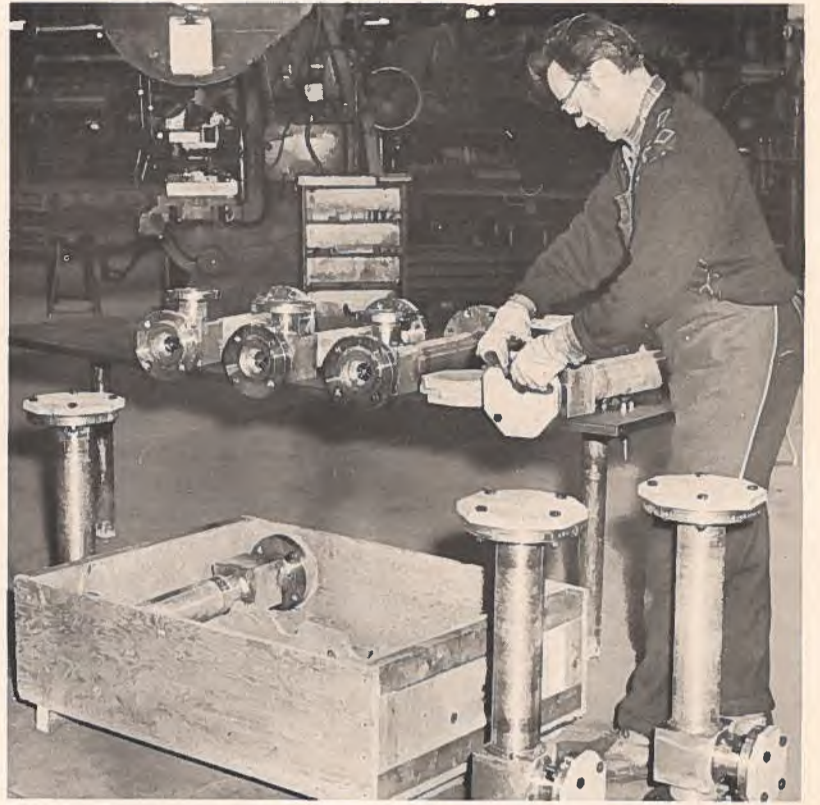
ventional floor construction systems. It has also passed fire tests and received Central Mortgage and Housing Corporation of Canada approval for one and two-hour ratings.

Hambro Structural Systems Limited claims that the D-500 system requires one-third the concrete, one-

third the steel and one-half the manpower of conventional floor construction methods. Hambro has obtained patents in 22 countries and the system is being produced, under licence, in England. Negotiations to licence companies in other countries are underway.

Code 5-1

Canadian jet exhaustor for Indian atomic project



The Penberthy Division of Anthes Eastern Limited at St. Catharines, Ontario, has shipped 26 specially-designed water jet exhaustors to the Madras Atomic Power Project in India. For several years the division has been supplying ejectors and exhaustors to atomic power projects in India. The water jet exhaustors for Madras were constructed of stainless steel and each was carefully inspected under prescribed hydrostatic and helium leak test procedures laid down by the Atomic Energy Commission. Great care was taken in machining and assembly to ensure adherence to minimum tolerances. Jet exhaustors represent only a small part of Penberthy's product line. Jet pumps powered by steam, air or liquid have a variety of uses including pumping liquids, gases, slurries or solids; heating liquids; circulation; mixing and creating vacuums. The photograph shows a workman completing final assembly of protective wooden flanges and rubber gaskets prior to shipment of water jet exhaustors to Madras. Code 5-2

Why southeastern British Columbia?

Let's face it — when a company looks for new plant locations — the big factor is money. How much money will be tied up in plant; how much will raw materials cost; how much will go to services; what will it cost to get the product into the marketplace and what's the price of labour?

If the answer to these questions are favourable — good. But there's another factor to consider. Is the location an area where your people will want to be?

Think about Southeastern British Columbia. You'll find the right answers to your questions — plus Rocky Mountain scenery, skiing, hunting, fishing, boating — all close to modern, growing communities.

It's possible, by locating in Southeastern British Columbia, to save a substantial portion of capital costs through special Federal Government grants. That alone is a pretty big incentive to locate in one of North America's great potential growth areas — Why not Southeastern British Columbia?

Code 5-3

Space age headset lightweight, noise-cancelling

Bulky headsets for telephone operators, air traffic controllers and other communicators soon will be relegated to the status of museum objects. The headset of the future — lightweight, noise-cancelling and clear in transmission — is here now, according to Ottawa's Bell-Northern Research of Canada, after much experimentation with new technology.

Focus of attention in the unique design is a tiny microphone suspended near the corner of the user's mouth. A thin, slightly-curved boom holds the microphone close to the mouth as well as connecting it to a miniature amplifier within a small housing behind the ear.

The slim new headset weighs less than an ounce — conventional sets are ten times as heavy. The microphone cancels out background noise, permitting the operator to speak in normal tones and be heard with perfect clarity. In noisy environments this feature reduces operator fatigue, besides improving transmission. Nucleus of the microphone is an extremely thin metalized sheet of film, an electret, which has a permanent electrical charge in the film surface and acts in the same fashion as a conventional microphone diaphragm. Electrets have revolutionized microphone



Light-headed view of the headset of the future.

technology and Bell-Northern Research has taken full advantage of the advances they permit. The company's engineers and technologists are still making technical and de-

sign changes; however, field trials are progressing and the new headset is expected to be available soon on the international market.

Code 6-1

Separating wheat from chaff the modern way

Redesigned stone separation equipment from Kipp Kelly Limited of Winnipeg has been introduced to the world market. It com-

prises three models of the company's air flotation stoner which separates impurities from rice, wheat, rye, barley, oats, peas, cof-

fee, peanuts, lentils and other products.

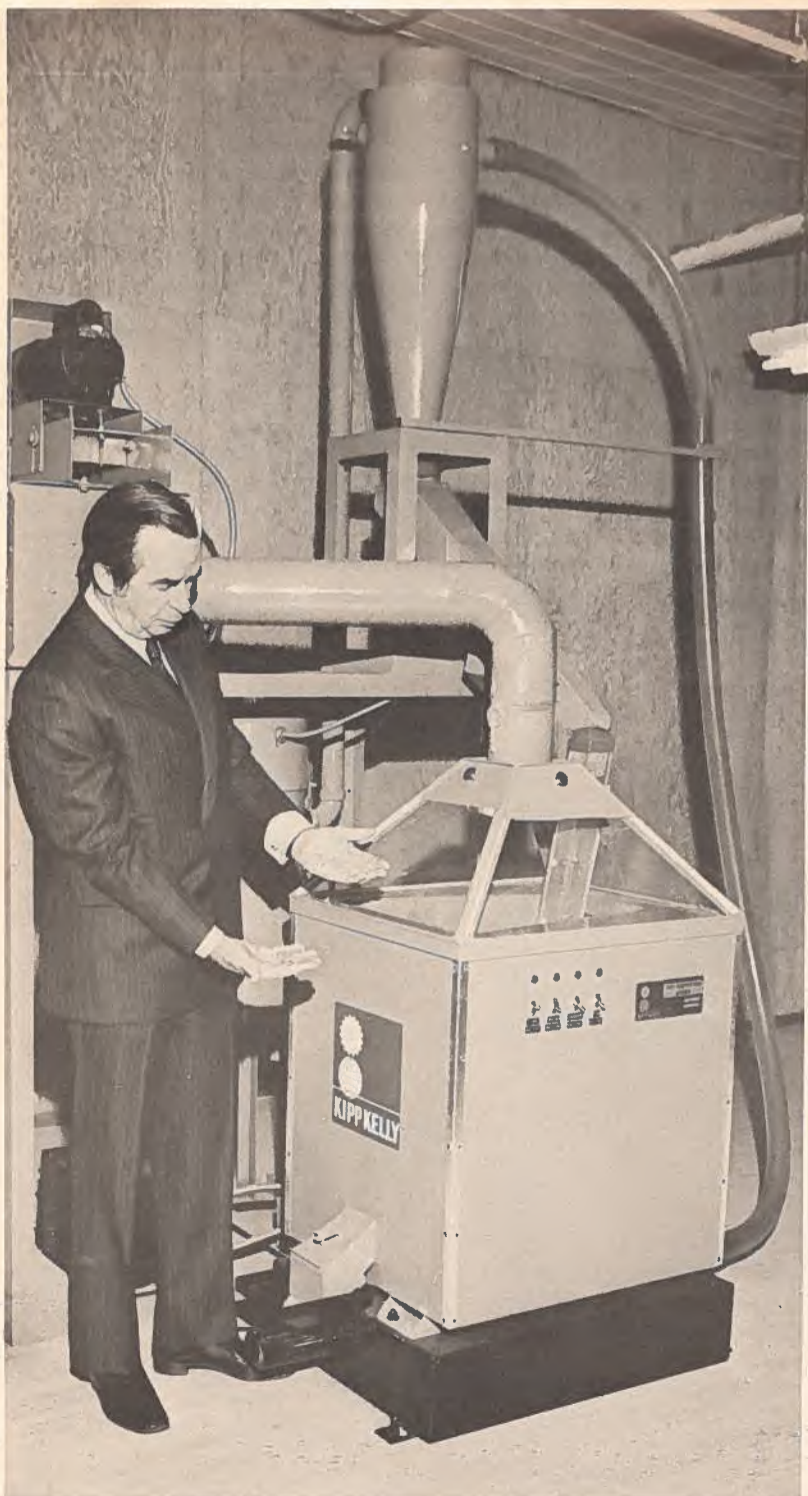
The new equipment is the result of four years' research and development by Kipp Kelly and it is being featured at the Canadian Trade Exposition in Peking this summer. A small-scale demonstrator unit has been built for the show. The new designs replace Kipp Kelly standard models which have been familiar around the world for many years.

Robert A. Kipp, company president, says patents on the new machines have recently been secured in 25 countries, including the U.S.S.R. He says policy has been to continually improve and update equipment. "Our new machines are one more step in this direction and will certainly place our customers in a more competitive position," he said. "Our new flotation stoners represent years of careful study and we believe they are the most efficient machines on the world market today."

Outstanding features of the new models is their ability to separate products faster and sharper. They are vacuum units which stratify by suction rather than forcing air up through the deck. There are other features: vibration reduced by patented suspension system; one-man deck cleaning; units are completely enclosed and therefore dustproof.

The three new models are capable of high volume. For example, suggested per-hour capacities for wheat are 200, 400 and 600 bushels respectively. Mr. Kipp says these estimates are conservative, that actual production depends on operator efficiency.

The Kipp Kelly president points out that company policy of free laboratory tests to verify actual capacity and efficiency will continue. He says: "Our company has always had an excellent reputation throughout our entire market area. We feel certain these new models will enhance this image." Code 6-3



Kipp Kelly Limited president, Robert A. Kipp, shows demonstrator model of new series of stone separation equipment introduced by company.

Canadian company in control when forest fires strike

A forest fire is an emergency of the first magnitude: it must be fought with equipment which is lightweight for easy transportation, simple to operate and always reliable. Wajax Manufacturing Limited of Montreal, Canada, produces this kind of hardware.

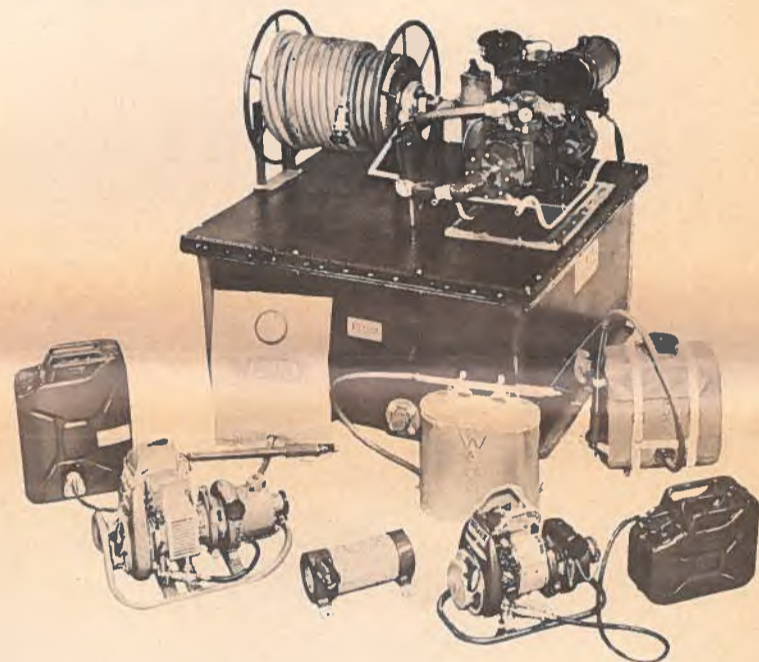
Since Wajax began to supply fire control equipment 78 years ago, research, design and production have grown considerably. Wajax pioneered development of portable pumps in the 1920's and, more recently, development of centrifugal pumps for forest fire control. Other Wajax firsts include all-synthetic fire hose, high-strength polycarbonate plastics and a variety of specialized water-carrying devices. Wajax is also actively involved in aircraft support equipment, retardants and other chemicals which increase effectiveness of water against fire.

The company has always been quick to act on ideas and suggestions from users of its equipment.

When necessary, manufacturing and licensing agreements are arranged and when technological facilities are not sufficient within Wajax, work on products is carried out for the company under supervision. Wajax officials believe it is their obligation to help customers understand and properly operate and maintain Wajax equipment. To that end, training and refresher courses have been organized in a number of countries. Parts and service facilities are available on a 24-hour-a-day basis. Equipment models are often donated for educational purposes.

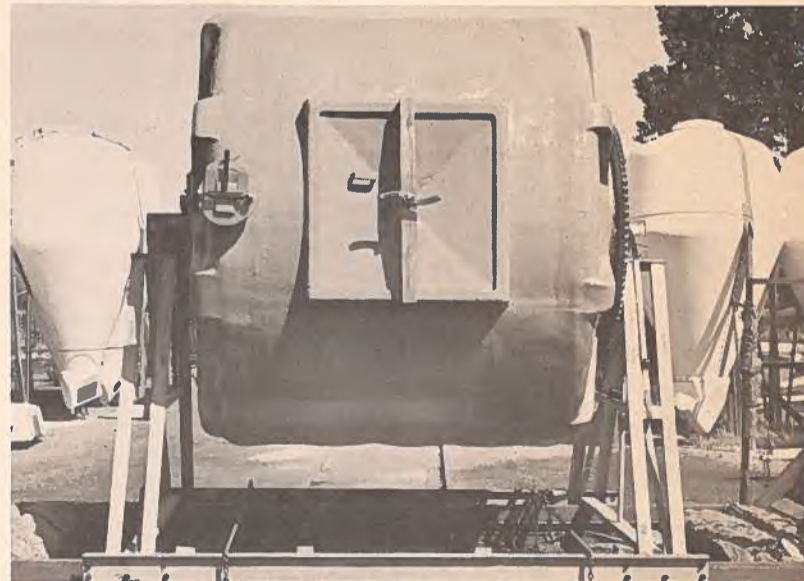
Wajax products are being used in many countries. One of the most significant international sales was to Chile last year. Wajax filled a \$1,500,000 order for a package of forest fire control equipment, including a high-frequency radio communications system as well as hose, pumps and other hardware.

Code 6-2



Slip-on tanker, hand pump outfits and portable pump units built by Wajax Manufacturing Limited. The slip-on tanker can be loaded easily on any pickup truck or trailer which becomes an "instant fire engine." The pump detaches easily for location near water source to pump directly to fire or to refill the 200-gallon (910-litre) fibreglass tank.

Simpler, smoother tanning process



Fibreglass tanning and colour mills from Canbar Industrial Plastics of Waterloo, Canada, offer several advantages over conventional wood designs. Fibreglass means corrosion resistant, smooth interiors which should remain so more than 30 years; no colour absorption and easier cleaning. In fact, a Canbar mill can be cleaned out in about three minutes and it is possible to follow dark colours with light. Standard drive arrangement is vee-drive with chain-operated sprocket drive an option on drums up to eight-foot (2.43-m) diameter. If required, complete drum and drive package can be supplied. Another Canbar product is the Incline hide processor, a vertical integrated system which will process 20,000 pounds (908kg) of hides from hair stage to tan leather stage in 24-48 hours.

Code 6-4

Canadian coaches down under

North America's leading manufacturer of inter-city highway coaches has recorded another first. Motor Coach Industries of Winnipeg, Canada, is delivering MCI-built coaches to the Ansett-Pioneer Company of Melbourne, Australia. This follows recent delivery of MCI buses to operators in Mexico.

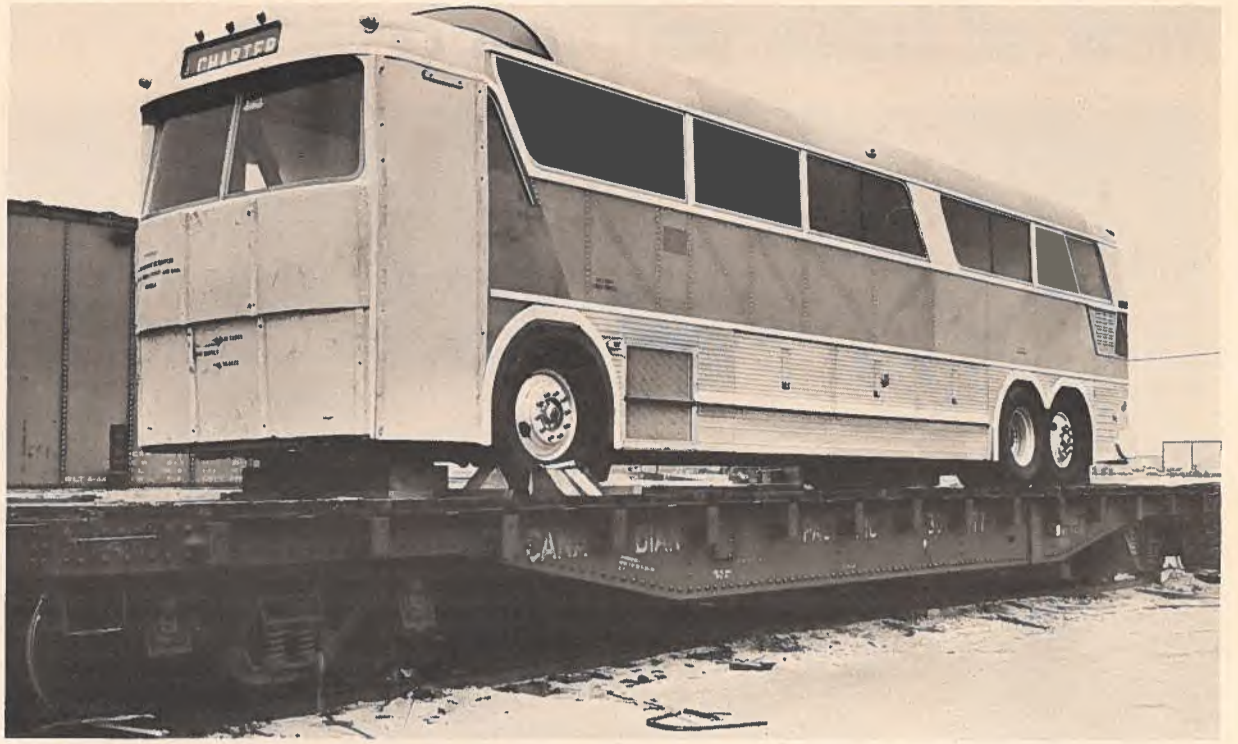
Ansett-Pioneer, an affiliate of the International Gray Line Organization, ordered Challenger MC-7 coaches, the first of which was shipped from Winnipeg early this May. The company operates sight-seeing tours completely around Australia and through the central part of that continent, in addition to scheduled inter-city passenger and express service. Approximately a half-million passengers are carried annually and fleet mileage every year totals more than 12,000,000 miles.

MCI Challenger coaches are par-

ticularly well suited to Australian operation, having been proved in the extreme climatic conditions encountered in North American service. Conversion of the MC-7's to right-hand drive will be carried out in Australia with engineering data and other information provided by Motor Coach Industries.

The Challenger coaches are the first 40-foot buses to operate in Australia and initial service is on the main line between Melbourne, Sydney and Brisbane — a distance of more than 1,500 miles (2400km).

Motor Coach Industries produces buses for many major inter-city coach operators in Canada and the United States, including all coaches for Greyhound Lines U.S. and Greyhound Lines of Canada. More than 3,500 Challenger coaches are operating on the highways of North America. Code 7-1



The first MCI Challenger MC-7 Inter-City Highway Coach loaded on a CP Rail flat car for shipment to Australia. Second coach will be shipped in July with balance of the order to follow at three-week intervals. Front end of the coach is unfinished to permit conversion, in Australia, to right-hand drive.

Patient care cart from Winnipeg company



HARCO Electronics Limited makes advanced bio-medical electronic equipment such as this crash cart and its components. HARCO's product line ranges from small battery-powered pulse-rate meters to an entire patient monitor. HARCO equipment is being used in Canada and 20 other countries. Located in Winnipeg, the company keeps abreast of medical needs through its working relationship with that city's St. Boniface Hospital. The crash cart illustrated is equipped as follows: defibrillator with synchroniser, Cardialert monitor, Cardialert intravenous drop counter and rate meter, I.V. pole (note: I.V.-intravenous), high-intensity adjustable lamp, a tray bracket with removable twin fibreglass trays and other accessories. Code 7-2

Total telecommunications planning services

What's another way to say telecommunications? The answer might be Hoyles, Niblock Associates. This firm of consulting engineers serves clients in government, industry and commerce from head offices at Vancouver, Canada. There are branches in Ottawa, Canada and Tehran, Iran. Hoyles, Niblock most often finds itself preparing feasibility studies, economic analyses; handling project financial negotiations; making rate and tariff studies; field surveying; project planning and designing or supervising projects from start to finish. The firm is extremely versatile.

Hoyles, Niblock is able to provide many services related to avionics, troposcatter systems, cable

television, television and AM-FM or short-wave broadcasting, HF and VHF communications, data and control systems, telephone and telegraph networks and microwave systems.

The firm is owned and managed by Canadian consulting engineers without manufacturing interests or supplier affiliations and is therefore able to offer impartial advice and services. Members of the firm include personnel of various academic and professional disciplines, each with specific experience in telecommunications, permitting a team of specialists to be formed to serve the particular communications or broadcasting needs of the client. Hoyles, Niblock has provid-

Canadian film prize winner at Italian competition

A first prize has been awarded to the Canadian documentary film "More Milk for More People" at the Third International Film and TV Competition for Agriculture, Food and Consumption in Padua, Italy. The film was produced for the Canadian Department of Industry, Trade and Commerce by the National Film Board and is designed to inform livestock breeders and government authorities of the merits of Canadian Holstein-Friesian cattle. The film also shows how easy it is to make arrangements to buy and ship cattle from Canada and highlights the assistance provided by the Canadian Department of Industry, Trade and Commerce, the Holstein-Friesian Association of Canada and reliable Canadian exporters. The film is available with soundtracks in French, Spanish, Portuguese, German, Japanese and Italian as well as English. Code 7-3

ed engineering services in Canada and other countries, the capital constructed costs of which, to date, exceed \$100,000,000.

At this time the firm is engaged with Ingenieria Industrial SA, of Lima, Peru, in studying establishment of a high-grade rural telephone system, intended to serve about 65 centres in the Peruvian high plateau. The new system will offer fully automatic telephone service in many small centres, some of which have manual telephone service and others of which have no telephone service at all. The system will permit eventual introduction of subscriber-dialled long distance calls.

The study requires total design and cost estimating for the new system including cable, plant, subscribers' wiring, telephone exchange buildings, power supplies and long distance links which will tie the rural service to the high-capacity national long distance telephone system. This massive study was commissioned by the Peruvian government.

The project is probably unique in the world, in respect to the altitudes at which installations will operate. Most of the population centres are between 10,000 feet (3048m) and 12,000 feet (3657.6m) above sea level and surrounding mountains rise, in some cases, to more than 20,000 feet (6816m). Many centres are situated in deep valleys and will be difficult to serve either by radio or land line. Code 7-4

Why not become a regular reader of Canada Courier? Let us put your name on our mailing list. And we'd like to hear from your business associates.

To receive complimentary copies mail the form below.

canada
courier

Department of Industry, Trade and Commerce
Ottawa, Canada. Postal code: K1A 0H5

Please send the Canada Courier edition indicated:

English/United States French German
English/International Spanish Japanese

To: V10N472
Name
Title
Company
Address
Country

trade inquiry form

More information is available without charge on Canadian products and services mentioned in Canada Courier. List the items below which interest you, complete the form, cut out and mail it to the following address:

CANADA COURIER
DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE
OTTAWA, CANADA. POSTAL CODE: K1A 0H5

I am interested in further information on the Canadian products and services mentioned in Canada Courier which I have listed below:

Code _____
Code _____
Code _____
Code _____
Code _____

V10N472

NAME: _____
POSITION IN COMPANY: _____
NAME OF COMPANY: _____
TYPE OF BUSINESS: _____
ADDRESS OF COMPANY: _____

Mink oil helps sell beauty aids



Société Jacquar Inc. of Montreal, Canada, with its Anne Marie cosmetics, provides a variety of beauty aids at reasonable cost. There are lipsticks, skin creams, eyeliners, powders, tanning preparations, hair shampoos, depilatory creams and lotions and many essential accessories such as cosmetic brushes and natural sponges for makeup and cleansing. Most Anne Marie products are formulated with mink oil and the company credits this as a major factor in their wide acceptance. Code 8-1

Pollution control made easier

Everybody talks about pollution. Sirco Controls of Vancouver, Canada, helps do something about it. This company produces sampling equipment which aids industries and municipalities in controlling effluents. Sirco builds three basic types of samplers: Series B/ST-VS which uses vacuum to draw samples into the metering chamber; Series B/IE-VS using a cup which lowers to any depth to furnish samples and Series B/DP-VS which draws samples with a pump.

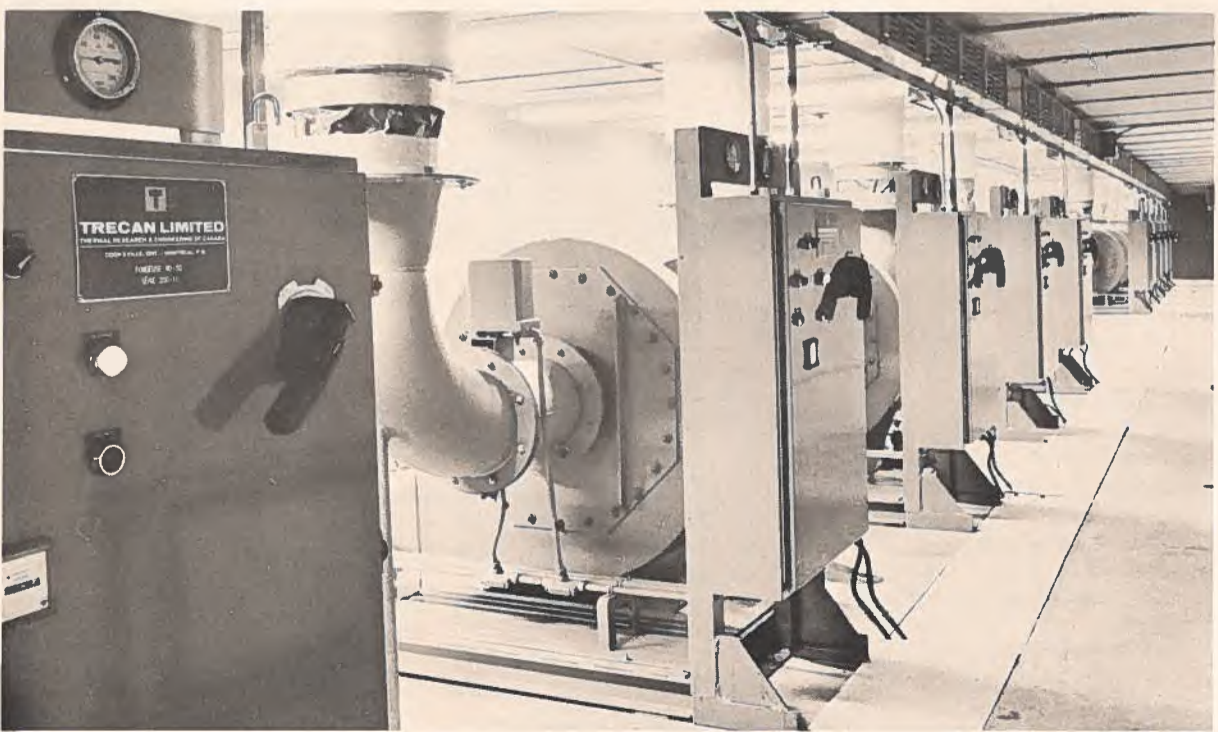
Series B/ST-VS takes solids up to 3/8 of an inch (9.5mm) in diameter, including rags, fibres and similar material. This unit is especially suited to sampling untreated raw sewage or high consistency industrial effluent. It is provided with an automatic purge system which, in the event of plugging, purges the suction line with high pressure air to clear line obstructions. Purging also takes place before and after each sample is taken to provide truer readings. Sample volume is adjustable between 10 to 1,000cc with vertical lift capacity up to 22 feet (6.7m) and horizontal extension up to 100 feet (30.48m).

Series B/IE-VS takes solids up to 1/4 of an inch (6.3mm) in diameter and is especially suited to service effluent which requires vertical sample lift exceeding 22 feet (6.7m). It is not recommended for

high consistency industrial effluent or raw sewage where large pieces of fibre, rags, paper or other relatively large pieces of debris are present.

Series B/DP-VS extracts samples from a continuous flow of liquid usually supplied by a pump. This unit is recommended for installations requiring the sampler to be located more than 150 feet (45.7m) from the sampling point. It operates by inserting a liquid diverter into the liquid flow, drawing it off into a measuring device which, when filled to pre-determined volume, dumps the sample into the sample container.

All Sirco samplers are designed to collect either composite or sequential samples and can be supplied with or without refrigerated sample collectors. Samplers can operate on timed cycle, by automatic-reset dial-adjustable cycle timer, or proportional to flow by utilizing a signal from a flow meter, or on odd cycles by use of tape or peg-programmed timer. Analytical instruments for different parameters can be incorporated, i.e.: Ph., turbidity, temperature. All wetted parts are made of corrosion-resistant plastic or stainless steel. Sirco Controls has been producing industrial control instruments for more than 20 years. Code 8-2



Snow removal is a problem for many municipalities. Traditionally, snow has been removed from streets then deposited in huge snow dumps. However, the amount of land required for these dumps is becoming increasingly scarce in many urban areas. In addition, most snow dumps become unsightly with the onset of spring. Treacan Limited, a Canadian company with a decade of experience, designs snow melting systems for municipal use. This company is able to provide all necessary know-how as well as arrange for supply of the unique Thermal High Velocity Burners which are an essential part of the system. Some types of Treacan melting equipment can turn up to 1,120 tons of snow into water per hour. Treacan systems offer a side benefit, that of improved pollution control, as most street debris is trapped in the melting chambers. Code 8-3



Sirco Controls' B/ST-VS Series raw sewage sampler is shown just before start-up in a municipal sewage treatment plant.

For your bookshelf . . .

The feature story in this edition of Courier describes the work being done in Canada in marine science and technology. A new booklet from the Canadian Department of Industry, Trade and Commerce, Marine Products and Services From Canada, lists more than 50 Canadian companies involved in the ocean industry. It is available free of charge in English. Interested readers can fill out the trade inquiry form on page 7.

The 1972 edition of the Canadian Trade Index has been released by the Canadian Manufacturers' Association. The 1,124-page edition lists approximately 13,000 manufacturing companies alphabetically and geographically, by province, city, street or box number and by product headings.

Also included in the new Index are names and titles of operating

executives, parent, subsidiary and associate companies, branch and sales offices, plant locations, brand names, representatives in other countries, number of employees, export interest, cable address, codes Telex or TWX. The product headings index is followed by a glossary in French, with a special edition featuring a Spanish glossary.

Forty-five products are listed for the first time and some of them are: electric power sub-stations, disposable clothing, emergency lighting systems, carbonless paper and electronic scoreboards.

Canada Courier will be glad to forward inquiries about the Index to the Canadian Manufacturers' Association — simply quote this story code on the trade inquiry form on page 7 and send it along to the address given. Code 8-4