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INTERNATIONAL EDITION

VOLUME 10, NUMBER 2, OTTAWA 1972

Co-ordination key to Canadian container success

by David Magee
Assistant Editor, Canada Courier
Peter Hunter is a self-confessed "nut" about containerization. Any mention of the subject is enough to get him talking at great length and with considerable authority. Mr. Hunter is container projects consultant for Steadman Containers Limited, container builders and lease operators. He is based in Toronto and for years has been one of Canada's most outspoken proponents of containers and their uses. He is closely

involved with the Canadian government on a number of matters related to containerization.

Mr. Hunter states that Canada is in a very advanced position in the field despite the fact it has no large fleet of salt water merchant ships. Canada not only has container handling capabilities at major ports, it also has inland transportation systems operating in conjunction with port services. This means goods shipped into the country can be widely distributed extremely quickly and efficiently.

Work done by Canada's two trans-continental railways in the early 1960's, according to Mr. Hunter, is what has put Canada in its unique position.

Canadian National Railways and CP Rail both adopted domestic container handling systems back in 1963 and '64 which, in time, proved to be compatible with international standards which were put into force in 1965 and '66. Both CN and CP used, and continue to use, the Canadian-developed side transfer system which

involves rather simple equipment and is being accepted in other countries.

Canada's railroads run right into port terminals. The result is two co-ordinated and integrated transportation systems. CP can provide complete shipping service with its fleets of trains, planes, ships and trucks while CN has a huge inland transportation operation with a wide network of agents overseas.

Authoritative persons echo Mr. Hunter's contention that Canada is "second to none in the handling of container movements inland in both domestic and foreign service traffic." Helen Delich Bentley, of the United States Maritime Commission, stated recently that Canada's regulatory atmosphere, the labour climate and aggressive management of railroads and steamship lines have resulted in ability to offer an inter-modal service which is a model for other countries, including her own.

Meanwhile, the executive vice-president of Associated Container Transportation of New York, Donald Chakas, has been quoted recently as speaking very favourably of Canadian abilities in the field. Mr. Chakas' organization is a major partner in PACE Line, which ships containers between the East Coast of North America and Australia-New Zealand. PACE ships call at U.S. ports as well as Saint John, New Brunswick. Mr. Chakas said he was impressed by the efficiency of operations at Brunterm Ltd.'s terminal in Saint John. PACE Line's ship, ACT 4, was recently unloaded there at the rate of 23 containers per hour with one crane,

and refrigeration units (PACE ships mainly canned goods and refrigerated meat into North America) clipped on rapidly, one every three-and-a-half minutes. By the time ACT 4 was loading export containers, most of the import containers were on their way to their destinations.

Mr. Chakas said shipping through Canada means lower costs. This includes port handling costs and the saving made by carriers because they have no need to supply truck-trailer chassis and "primarily, the total economics of the whole movement." There is still another incentive. Shipping through Eastern Canada ports often means two or three days can be cut off transit time. For instance, Halifax Container Terminal, the largest in Canada, is hundreds of miles closer to Europe on the Great Circle Route. Ships stopping at Halifax require only a 20-mile (32.2-km) diversion, enabling inbound containers to reach destinations faster.

There are container facilities for maritime traffic at Halifax, Nova Scotia; Saint John, New Brunswick; Montreal and Quebec City in the Province of Quebec and Toronto, Ontario, in Eastern Canada. On the West Coast there is Vancouver, British Columbia. All of these ports can handle large shipments of all sorts of goods and all are integrated with inland transportation. Peter Hunter sums it up neatly: "Canada provides the kinds of services which enable quick, easy movement of goods; which is what containerization is all about."

Code 1-1



Containers on the move at the Port of Toronto.

Canada back at Budapest

For the third year in a row, Canada is exhibiting at the important Budapest International Trade Fair. This year, the products and capabilities of 20 Canadian companies are on display. There is a cross-section of Canadian industry, with examples of heavy machinery, commercial equipment, electronics systems and components, transportation services, food and beverages.

Some of the products displayed are described in detail in the articles on page 4. Others include an ingenious three-wheeled tractor

from Baltes Farm Equipment Manufacturing Limited that is able to go over or around crops without causing damage. This tractor is available with several accessories.

Products of interest to logging companies and others come from Terry Industries, with its Home-lite saws from Eaton Yale Ltd., the Timberjack 360 powershift skidder; from Canadian Car (Pacific), the Chip 'n' Saw sawmill system and from Windsor Metal Products Inc., the Timber King Speed Tip guide bar.

Canadian Marconi Company has

developed digital transmission of voice and data over micro-wave radio. Its model MCS 6900 represents the first viable use of the PCM technique in this fashion. CAE Electronics Ltd. has become a trend-setter in flight simulator equipment. Its simulators and electronic gear, such as the Telepath electronic control system, are highly sophisticated.

Of the 10 leading standards laboratories in the world, nine rely on equipment from Guildline Instruments Ltd. This company's new Model 9520 automatic digital tera-

ohmmeter has the highest accuracy commercially available. Electrovert Manufacturing Co. Ltd. provides some of the best wavesoldering and tinning equipment to be had.

With the never-ending world demand for new roads and road maintenance equipment, machinery which can lay asphalt efficiently and economically is absolutely necessary. The All Paver Model A-100 from Allatt Limited presents a new concept in compact pavers.

The Model "44" diamond core drill produced by Canadian Longyear Limited, is highly versatile and has a complete array of power and accessory modules to match any drilling job. This company was established in 1891. Willis Oil Tool Canada Ltd. manufactures valves of highest quality, tailored to exacting specifications of the petroleum industry to control oil and gas movement along flow-lines.

And there are other fields — the Model B-1 semi-automatic end load cartoner produced by H. J. Langen & Sons Ltd. solves many packaging problems — the B-1 is completely portable and self-contained. Canadian Club whisky from Hiram Walker International Company has become known as "Canada's good-will ambassador." This fine whisky has won praise for a century and continues to make new friends. Now in its 114th year, Macdonald Tobacco Inc., with its international branch, W. C. Macdonald International Ltd., is a privately owned and wholly independent Canadian tobacco company. Macdonald is synonymous with the best quality cigarette, cigar and pipe tobaccos. Another Canadian whisky is satisfying people in many countries. The House of Seagram introduced Seagram's V.O. more than 100 years ago and this product is still one of the first in popularity.

Code 1-2



Sicard Inc. has been making airport and highway snow removal equipment for more than half a century. See story on page 4.

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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.

Port facilities allow first-class handling

In September 1970 the Toronto Harbour Commissioners opened Torport, a \$2,300,000 Container Distribution Centre. In May the following year the German m/v "Tilly Russ" arrived at Toronto with a cargo of 20 and 40-foot containers. Full containerization had come to the vast Great Lakes shipping area with the Port of Toronto at the hub.

Container traffic through Toronto had accelerated since the mid-1960's and Torport was the culmination of careful planning. The new facilities include Torport with its large refrigerated storage areas, specialized equipment and

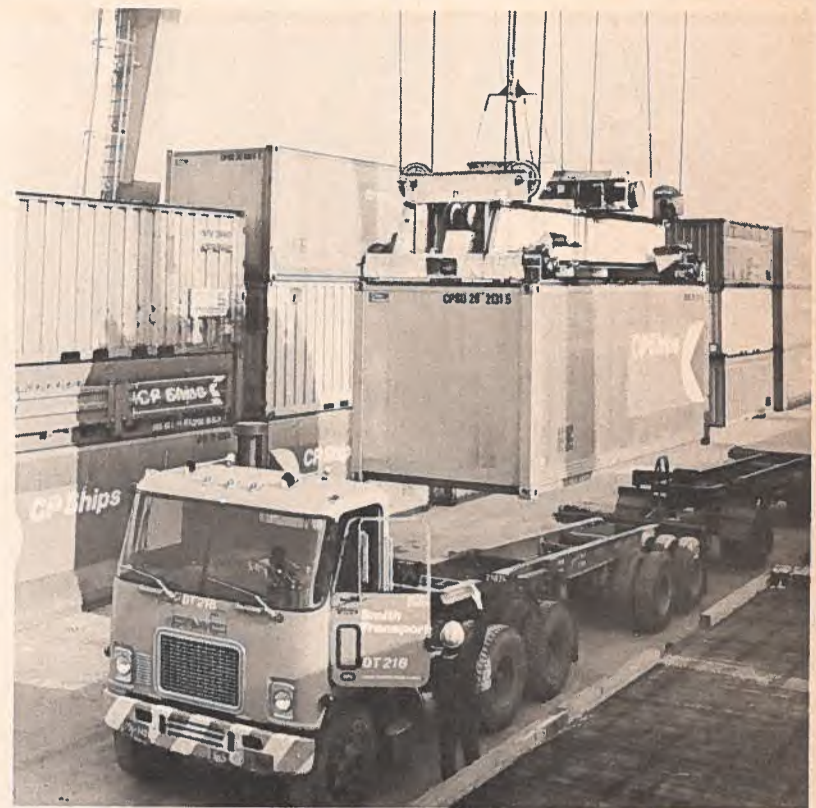
a \$600,000 mobile crane built to Harbour Commissioners' specifications.

C.D.C. Torport is in service year-round. The cooling and deep freeze areas have been in constant use and many shippers are now consolidating their cargo at Torport, where there are complete packing, unpacking, rail and truck services. Customers leaving cargo in storage at Torport receive monthly inventories. Additionally, the Port of Toronto provides four container pools with large storage areas where containers are maintained.

The Harbour Commissioners are proud of their relations with the waterfront labour force which has a very high productivity rate. Toronto is also considered, in the words of C.D.C. Torport Superintendent Gordon George: "The most security-conscious port in the world." There are professional harbour and port police forces which have established Toronto as a crime-free port.

Toronto is one of six fully-containerized ports in Canada. Others in Eastern Canada are: Montreal, Quebec; Quebec City in the same province; Halifax, Nova Scotia and Saint John, New Brunswick. On the West Coast there is a container terminal at Vancouver, British Columbia.

Halifax Container Terminal is Canada's largest intermodal distribution centre. The Terminal co-



Container being loaded onto a truck from a rail car at Quebec City's container terminal.

vers 56 acres (22.7 hectares) and its equipment can swing containers ashore at the rate of one every three minutes, or about 100,000 a year. Four major container lines are using Halifax Container Terminal. Its success lies in its excellent rail services right from dockside to inland Canada and the United States. In the near future, Halifax will have a feeder system through which containers will be discharged at its terminal, then carried by smaller vessels to

other East Coast ports and to the Caribbean.

Quebec Container Terminal is another high-capacity operation. It is capable of handling 1,600 containers per week each way. It has first-rate equipment: a 35-ton Portainer crane, 35-ton Transtainer crane, three 35-ton straddle carriers and a big rail terminal. Canada's other container ports are similarly well-equipped; all are completely integrated with inland transportation. Code 2-1



View of the eastern end of Toronto Harbour, with the Port's Gottwald crane undergoing testing in the foreground.

Containers come in all shapes and sizes

As anybody involved in transportation knows, containerization involves rather more than simply stuffing items into big boxes. Types of containers have proliferated in the past few years and now there are a great many classifications, for example: general dry-freight, open-top, insulated, insulated and heated, insulated and refrigerated, watertight bulk, top-loading and end-loading bulk, open-bulk trays, automobile carriers, livestock pens, even collapsible rubber containers for liquids like petroleum products.

Containers have even become a mode of transportation in themselves. A container becomes a truck by putting it on a chassis and hooking up a tractor unit; lift it off the chassis then put it on a rail car; add a locomotive and it becomes a train. Hoist the container off the rail car and into a cellular ship and it becomes one of the vessel's holds.

All this means containers and related services are very big business. A Canadian company, Steadman Containers Limited, has developed many techniques in containerization. Its Raitainer, a side-transfer unit, moves containers sideways from truck to rail car or vice-versa and is in service on Canada's two transcontinental railways, CN and CP. The system is also being used in Australia and Liberia, West Africa. The Steadman Towtainer MK1.1 is designed for low-cost terminal handling by standard road tractor and has a self-contained power unit for lifting.

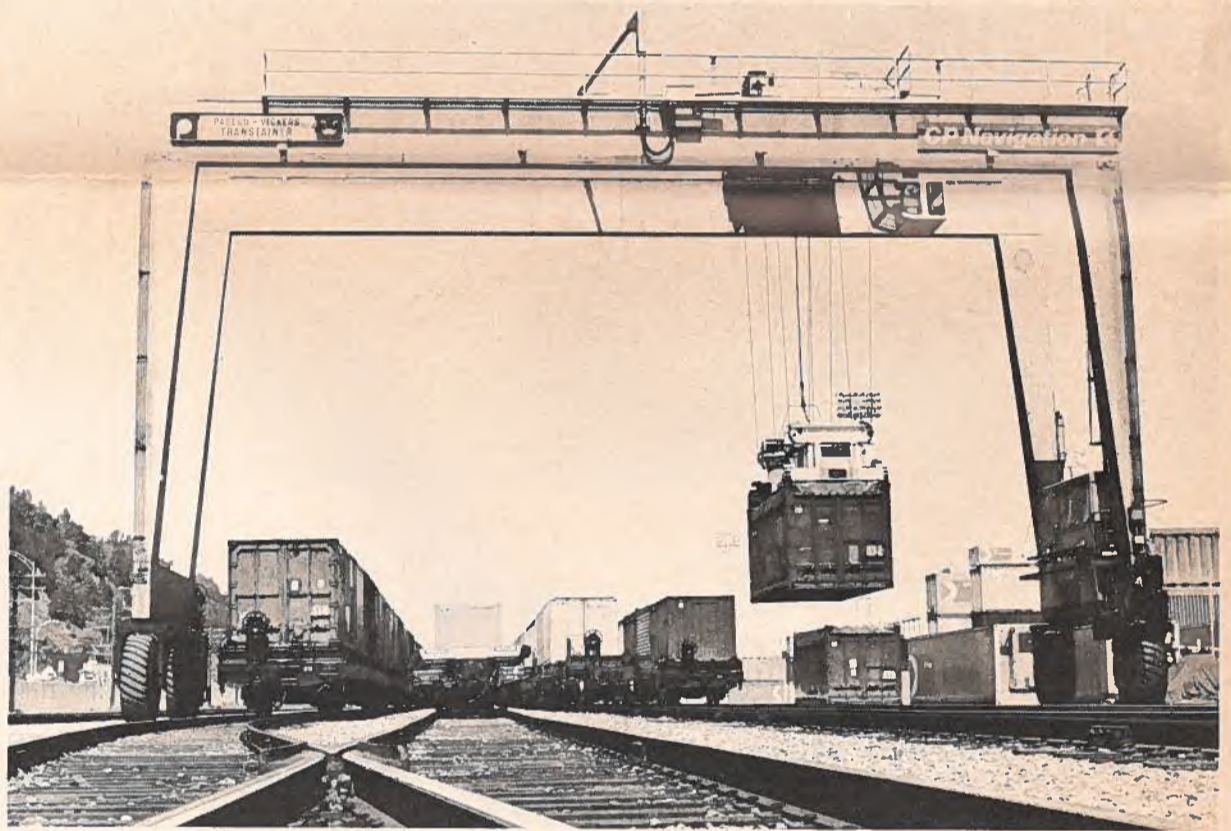
Steadman has also found new ways to use containers. Parts for a cooling tower atop a 57-storey

office complex in Toronto were loaded in 20-foot containers at the factory, taken to the building site and hoisted directly to the roof, still in their containers.

There have been other "firsts" for Canada: the first inter-modal container system anywhere, on the White Pass Route, a railroad in the Canadian North; the use of stillages (bases to keep containers off the ground, allowing trucks to do other work while containers await shipment) was pioneered on the Route. Canada was also the first country to use open-top containers in domestic steel shipments.

New Canadian developments show great promise. In Victoria, British Columbia, a firm of marine engineering consultants, Case Existological Laboratories, is "catamarizing" older ships to give them new life. The vessel is cut up, then re-assembled with a catamaran-style twin hull. This enables placement of new superstructure, widening and lengthening, or other improvements. The method could be used to convert obsolete vessels into containerships.

The Bell Voyager Air Cushion Vehicle, now undergoing tests, was specifically designed to carry (among its other functions) a 25-ton payload in four 20-foot containers at speeds of more than 50 miles per hour (80 km/hr). So far, this ACV has exceeded expectations. It could be used as a container transport in remote areas. Examples like the Voyager ACV or the Steadman Raitainer system illustrate only a few of the ways Canadians are dealing with the container revolution. Code 2-3



Canada's two transcontinental railways, CN and CP, have played major roles in developing the country's container handling capabilities. Railways are completely integrated with port operations.

Rail systems put Canada in lead

The importance of Canadian National Railways and CP Rail to the development of containerization in Canada cannot be over-emphasized. Without the work done by these two huge organizations a decade ago, Canada would not be in the position of world leadership it now enjoys. CN and CP container handling systems were developed before international standards were set but they proved to be compatible with those of other countries, which meant Canada had several years' lead-time in container experience. Ports and inland transportation systems have been completely integrated for most efficient usage.

CN is one of the largest railroads in the world and has agents in many countries. Key link in CN's container network is the 10-acre (4.05-hectare) Conport Ter-

minal at Toronto. It is an integral part of the railroad's 100-acre (40.5-hectare) Concord Yard. The yard is electronically monitored and can handle about 5,000,000 pounds (2,270,000kg) of express items every day. The heated express shed in the yard is a bit bigger than four football fields, which makes one wonder if "shed" is quite the right word.

Conport handles all CN domestic and import-export container traffic as well as piggyback operations. Among its equipment is a 40-ton mobile straddler gantry crane which can work two rail tracks at a time. One 40-ton and two 30-ton silent cranes also operate full-time.

CP Rail's intermodal terminal at Toronto is becoming the railroad's distribution centre for all central Ontario. New equipment is being

added to increase container handling capability there. Canadian Pacific also has fleets of trucks, airplanes and ships working domestically and internationally. CP Ships recently expanded sales and service outlets in Canada in response to growing container traffic volume between Canada and Europe. According to CP Ships' general manager of freight services, D. R. Newbery: "The volume of containers moved by CP Ships has already reached the level predicted for 1975." CP Ships has recently placed orders for almost 2,000 new containers with a value around \$3,000,000 and a fifth container ship, CP Explorer, has been added to the company's northern service connecting Liverpool and Greenock with Quebec City. Code 2-2

Shipping lines favour Canadian ports

Canada is well-served by ship lines handling container cargo out of Atlantic, Pacific and Great Lakes ports. The shipping pages of newspapers are filled with advertisements and schedules for well-known companies. Clarke Traffic Service Ltd. links Canada with Britain and continental Europe and Australia-New Zealand, as well as Japan, Hong Kong, Taiwan and Korea. CP ships ply between Britain and Europe. ALLTRANS-PAC ships to Australia and New Zealand. The "blue boxes" of Cast Containers Limited are a familiar sight on the docks of Montreal and Antwerp. March Shipping Limited, which spans the world, offers container service to a number of countries and has agents in four Canadian cities.

Latest official statistics show international tonnage moving through Canadian ports in 1970 totalled 164,390,086 tons — an increase of 22.1 per cent over 1969 — while cargo from Canada to overseas destinations reached 105,608,960 tons in 1970. Shippers are using Canadian ports for good reason; they get excellent service. More carriers are taking advantage of Canada's integrated container transport systems. For instance, CP Ships has added another vessel to its trans-Atlantic fleet and Federal Atlantic Line is making plans to open container service from the Great Lakes to Britain this year. That company already ships 2,000,000 tons of cargo annually from Europe to Canada.

Meanwhile, Canada's National Harbours Board is opening central offices in Winnipeg and Toronto. The purpose is to create better liaison between Canadian ports and their users and between the federal government and the private sector.

Chairman of the NHB, Delmer Taylor says: "The services that will develop from these offices will be equally available to any shipper, or customer and to all Canadian commercial ports." The Board intends to monitor cargo movements and shipping operations generally. Part of the plan is to avoid over development or duplication of marine facilities in maintaining Canada's high efficiency in cargo handling.

Code 3-1



A Gottwald mobile container crane discharges a container from the m/v RANDO, on charter to the Head Line. The RANDO was the first fully-cellular vessel to call at Toronto.

Canadian timber-frame homes in France Igny project complete

The first major Canadian-style housing project in Continental Europe was completed well within schedule and is drawing complimentary comments from buyers in the Paris suburb of Igny.

"Parc des Érables" comprises 114 houses which were built at the

rate of 15 per month by a French labour force using Canadian timber-frame techniques. At the end of nine months the houses were up, all services had been installed and landscaping carried out — this in spite of the fact that the French workers were not familiar

with timber-frame construction and received on-the-job training.

Delighted with the success of their joint venture are Campeau Corporation Limited, Ottawa, a leading Canadian building contractor and developer, and Société Dumez of Paris, a major French general construction company.

Happy too are the families who have already moved in to their



Chimneys, in this case, were "capped."



A steel framework in standard container configuration allows this 4,000 gallon (18,200 litre) tank to be handled in the same fashion as ordinary containers. The tank and framework were developed by Steadman Containers Limited and Robin Hood Multifoods for shipment of animal feed ingredients.



When there's danger . . .

These new warning lamps command attention. Assembly Electronics Ltd. is making a new series of Strobe Warning Lamps for use in the air, on the road and in the factory. Solid state components eliminate moving parts, giving high dependability with current drain of only one ampere at 12 volts D.C. Lamp life is 2,000 hours. Strobe lights are extremely brilliant, providing ultimate emergency warning. Assembly's lamps are available in 12, 24, 36, 48, 72 volts D.C. and 115 volts A.C. or 22/300 volts A.C./D.C.

Code 3-2

Canadian-style homes. The average buyer is under forty, has two children and works in Paris — a distance of 10 miles (16 km) — or in the southern suburbs. About half of the wives work.

While there have been some minor criticisms such as flexibility of floors (a feature of timber-frame construction with which most European home owners are not familiar) the buyers have generally shown confidence in Canadian construction methods and materials and a willingness to recommend such homes to their friends. Praise has been particularly directed to the quality of insulation, comfort and design. . . "This type of construction gives a great deal of satisfaction. It permits a number of interior arrangements to suit individual tastes. . .," said one owner.

There are 10 styles involved in the Parc des Érables project with homes ranging in size from five to seven rooms. All have large living rooms and kitchens, separate bathrooms and showers, built-in clothes closets, utility rooms and garages. Usable floor area ranges from

1,300 to 2,450 square feet (126m² to 230m²).

From the builders' point of view the Canadian timber-frame house has many advantages — among the most important, speedy erection. Factory production of various wood components and the application of drywall panels to interior wall surfaces are important labour-saving features which make it possible to erect a timber-frame house in days instead of weeks.

Durability is another feature of Canadian timber-frame homes; when properly constructed they maintain a value comparable to that of a house constructed of concrete, masonry or other building materials. For many generations houses erected by this method, traditional in Canada for residential building, have withstood the extremes of Canadian climate while providing solid comfort for the owner.

The feasibility of using the Canadian-style timber-frame construction technique in the European environment has been proved at Parc des Érables, Igny.

Code 3-3

Cutting it fine

The Oregon Chain Saw Division of Omark Canada Ltd. introduces its Micro Chisel Chain, for fast cutting action and variable pitches. An all-round cutting chain, Micro Chisel will cut efficiently in hardwood and softwood and performs well in boring or when the nose of the bar is buried in the cut. The modified "L" shape of the cutter — its chisel shape — allows the chain to work faster because it cuts the maximum width of its kerf in a single pass, never going through the same cross-grain twice. It has offset depth gauges to promote smooth cutting, fastback tail for smoother boring and chisel-type cutters for high speed and smoothness. Generous clearance allows chips to flow out of the way without riding chain tops or packing the sprocket cover and hence slowing down the action.

Micro Chisel Chain is ideally suited to large and small saws (more than two cubic inches (32.7 cm³), and comes in a variety of pitches — currently available in 3/8 and .404 pitches, with the line to be expanded. The chain has excellent stay-sharp characteristics with hard-chromed cutting edges and sharpens quickly and easily with regular round chain files.

Protective plastic coating keeps the new chains factory-sharp and ready to use, with no need for preliminary touch-up. The coating starts to peel off as soon as the chain bites into its first cut.

Omark is one of Canada's largest makers of saw chains, guide bars, sprockets and related accessories. Its Oregon brand is well-known wherever chain saws are used. Code 4-1

New freight service, Canada to Eastern Europe

Air Canada . . . one of the world's largest airlines. . . continues expansion of services to the fast-developing tourist and industrial areas of Eastern Europe. There is regular service between Canada and Czechoslovakia (Montreal-Prague) with reciprocal service by the Czechoslovak national airline, CSA. Now, freight service between Canada and Vienna, with trans-shipment to Budapest guaranteed, has been established.

Air Canada's first regular flights to Eastern Europe were inaugurated in 1966 between Montreal and Moscow via Copenhagen. Aeroflot, the Soviet national airline reciprocated. This was the first regular air service between North America and Eastern Europe.

It is hoped, through further bilateral negotiations between Canada and other Eastern European countries, agreements will be reached allowing Air Canada to extend passenger and freight routes. In this way travel from North America to Eastern Europe's attractive tourist destinations would be greatly simplified. Air Canada flies to 37 cities within Canada and to another 24 centres in other countries. In all, Air Canada spans one-quarter of the globe. It is now using the Boeing 747 jumbo jet and plans include delivery of other types of advanced aircraft to increase its scope and efficiency. Code 4-5

Plastics processing pioneer

In the fast-growing vinyl plastic industry, Lembo Corporation of Canada has built a solid reputation for its equipment designed to meet the most critical demands of a host of industrial applications.

Throughout North and South America and in many other countries, Lembo products are in daily

Canada back at Budapest



Smoke from hot asphalt pours out as Allatt Limited All Paver Model A-100 is tested. This is a new idea in compact pavers. It has a power driven hydraulic motor with which it can be manoeuvred without assistance from the towing truck, saving the contractor's time and money. All Paver will do almost anything that larger and more expensive pavers will do and use up to four fewer men into the bargain. Maintenance is minimal — the hydraulic system involves no chains or sprockets; design is simple, with heavy-gauge steel construction; eight rubber tires give maximum flotation with no scuffing of freshly laid asphalt. Code 4-3



There is a Homelite saw for every job. Manufactured by Terry Industries, Homelite saws are renowned for their light weight, high performance and dependability. Homelite saws feature Power Boost combustion with a "hemi-head" cylinder to give increased combustion efficiency. High energy ignition means easy starting under all conditions. Code 4-4

use and include laminators, embossers, multicolor gravure and flexographic register presses, single and multi-colour valley printers, calendars, coating systems, tenters, ovens and a broad range of system-support units.

With research and development programs always under way and a highly experienced and skilled staff, Lembo can point to a solid record of many important contributions to the steadily advancing technology of plastics processing. The company was first with a laminator-embosser for embossing and valley printing light-gauge vinyls. Striking three-dimensional patterns and many decorative effects are achieved in the production of vinyl asbestos flooring, through rectified techniques developed by Lembo in precise valley print-embosser systems.

With experience and innovative thinking, Lembo can, and will, accept any challenge of machine or system designing to produce any desired result in continuous processing of paper, film, foil or textiles. Code 4-7

Snow trouble, no trouble with Sicard sweepers

When snow blocks an airport runway or a highway, Sicard Inc. knows what to do about it, with a base of 50 years' experience in snow removal. The company's equipment has become a major factor in keeping transportation moving in almost any area of the world where snow can create a problem.

Specifically designed for airport runways is the Sicard Runway Sweeper Series 300. It can sweep a jet runway clear in 20 minutes in all weathers, removing debris, snow, slush, water, dirt, sand, insects, leaves or other material. A one-man operation, the sweeper can clear 1,200,000 square feet (111,500m²) in an hour, sweeping a strip 12 feet (3.4m) wide on each pass at speeds up to 25 miles per hour (40.2km/hr). Fast sweeping action is due to a high-speed steel tufted brush and a powerful double-outlet air blower. Broom and air nozzles are angled to the left or right to take advantage of

wind conditions or overcome landscape problems. The sweeper is also capable of making a 180-degree turn in its own length.

Sicard's Snowmaster Series 7000 snowblower incorporates the latest snow-clearing developments and has a choice of two fronts: the single conveyor unit for maximum tonnage and speed on airport runways; and the dual conveyor front for ice and snow-banked streets and highways. Both feature the Sicard impeller system which can cast snow up to 150 feet (45.7m) on either side of the vehicle or spot-cast snow accurately from four to 50 feet (1.2 to 15.2 m).

Snowmaster detachable snowblowers are powerful blower-engine packages which can be installed or disconnected quickly from a tractor, loader or other carrier for use when the blower is not required. BB Series 1000 has a 60hp motor and a capacity of six tons of snow per minute. BM Series

Bombardier booms ahead . . .

Bombardier Limited of Valcourt, Quebec, is not only the world's largest manufacturer of snowmobiles; it is probably also the most advanced in its approach to product development. Latest Bombardier program has enlisted the help of the National Research Council of Canada in wind and water tunnel testing new equipment.

Some Bombardier designs have already been tested and it is expected that every new model of Bombardier's Ski-Doo and Moto-Ski snowmobile lines could undergo full-scale testing at NRC. Part of the testing revolves around Bombardier's efforts to reduce noise of snowmobile engines. Some heat dissipation problems have been encountered as noise suppression is increased. The company aims to solve this difficulty without adding to vehicle weight or cost.

Bombardier is now marketing its products in many countries. Its 21 divisions and subsidiaries produce varied types of vehicles and other items. The Ski-Doo division designs, builds and markets Ski-Doo snowmobiles. The Moto-Ski division is a producer of snowmobiles and Moto-Skeeter motorcycles. Other divisions are responsible for industrial tracked vehicles, street cars, two-cycle air cooled engines, indoor and outdoor snowmobile clothing and children's outdoor clothing, as well as rubber, plastic, and fibreglass products and seats for snowmobiles, automobiles, tractors and buses. The company does all its own precision parts tooling. To date, Bombardier has garnered 42 per cent of the world snowmobile market. Code 4-2

Fishy story— with a difference

IMO Foods Limited won't make you a "red" herring but they do have herring fillets in whisky sauce and there are other sauces fit for the most discriminating palate. IMO's sauces are the product of considerable experimentation and tasting to find just the right mix. Other taste delights include tomato, sweet pepper, curry, paprika, French Onion, mushroom, bacon, parsley and cheese. All blend perfectly with the herring.

During IMO processing, herring are moved by conveyor directly from landing docks to the filleting machine and rapid handling ensures optimum product freshness. The fillets are partially cooked and conveyed to holding tables for manual packing of cans which then move through a feeding unit where sauces are introduced in precisely measured amounts. The cans are then closed and moved to retorts for final cooking before being washed, dried and conveyed to cartoning machines.

IMO is the only Canadian company using "tear-top" cans for packing fillets. Popular in Europe, the can has a ring pull similar to those found on beer cans and is lacquer-lined to protect contents. IMO is developing new product lines: smoked eel, lungfish, caviar and lobster, and plans are afoot to establish a trout farm for breeding of rainbows and other types. Code 4-6

2000, with 160hp motor, has a capacity of 10 tons per minute. BX Series 3000 has twin augers and handles 20 tons of snow per minute. Code 4-8



Light as a breeze is this Spanish print negligee of 15 denier nylon. Skirt and cuffs boast butterfly pleats, while deep ruffles circle the collar. A matching gown of 40 denier nylon completes the ensemble from Moly-claire Limited of Montreal. Code 5-1

Hear-Saver reduces chance of hearing loss

So far, a better mouse trap has eluded inventors. However, a Canadian company believes it has a better ear plug. Hear-Saver Ltd.'s new pre-formed ear muffles have several improvements not found in conventional ear plugs. Hear-Saver's ear muffles are not inserted in the ear canal as are other types; they stay outside the canal, forming a noise trap and seal around its outer rim. It is believed this feature eliminates any possibility of heat and pressure build-up — common reasons for wearers to discard old-style ear protection.

Hear-Saver combines wax, oils and long-fibre cotton in its new ear muffles. A novel "wall bend" and flange design, combined with the muffle's wax bonding with natural waxes of the ear, results in custom fit. The seal is not broken by talking or gum-chewing. Tests indicate noise absorption and deadening of 36 per cent.

Hear-Saver claims significant cost reduction with its new product. Sterile packaging in pairs minimizes dispensing time. The ear muffles are non-irritating, reducing chances of ear canal infections. The one-size-fits-all feature cuts inventory and eliminates time spent on custom-fitting. The new product is useful outside industry; it is gaining acceptance by swimmers, hunters and others. Code 5-2



Many industrial locations, like this underground drilling site, are noisy enough to present a hazard to hearing of workers. Hear-Saver ear muffles help to minimize ear damage.

Royal Canadian Mint expanding to meet world coin demand



The Royal Canadian Mint's presentation set of seven Canadian coins received wide acclaim in 1971 and is being offered again this year. The six reverse designs are displayed and an additional dollar shows the obverse design which is common to all. To obtain better quality, each coin in this set is struck twice while in the coining press. The genuine leather case is satin-lined and the coins are protected by a clear plastic cover. The Royal Canadian Mint now is producing coinage and coin blanks for other countries.

The Royal Canadian Mint has produced the coinage of Canada at its National Capital Mint in Ottawa for more than 60 years. Recently, work was begun for other countries as well. The first foreign proof issue ever produced by the mint involved two commemorative coins for Jamaica in \$10 and \$20 denominations, which were struck early this year in honour of Jamaica's 10th independence anniversary. Contracts to produce circulation coinage or blanks have been obtained from Brazil, Iceland, Yemen and Singapore. Negotiations with three other countries are currently under way.

The Canadian government has embarked on expansion of minting capacity. A new mint is being built at Winnipeg, Manitoba, to produce coins for Canada and the export market. In addition, present facilities in Ottawa are being considerably improved. The gold refining operation will remain in Ottawa and numismatic coin production there will be increased. The world market for circulation coins and numismatic coins is growing steadily. Of the 105 countries with recognized coinage systems, only 40 operate their own mints. The 65 countries without mints require more than 3,000,000,000 coins each year. The Royal Canadian Mint hopes to meet part of this demand.

The mint has its own staff of engravers and all work is done in house. The Jamaican commemorative coins were designed by the Chief and Deputy-Chief of the Engraving Division. The \$20 coin is .500 fine gold measuring 27mm in diameter and is believed to be the world's only truly circulating gold coin. The \$10 coin is Sterling quality .925 fine silver measuring 45mm in diameter.

Until the Winnipeg Mint is in operation in about two years' time, all coin production will continue at the National Capital Mint. Code 5-3

Superior name in children's wear



Established in 1921, Norfolk Knitters Ltd., of Port Dover, Ontario, has continued to prosper, thanks to booming exports and a burgeoning home market. Norfolk knits specially selected yarns under exacting quality control. Only through rigid inspection, from yarns to finished garments, is the company able to maintain high standards that are synonymous with Norfolk. The company makes comfortable, durable and fashionable infants' and children wear. Products include: shirts, shorts, playsuits and swimsuits, bunting bags, jackets, sleepers and pram suits, in brightest and newest shades. These garments, made of Stretch Acrilan Terry — a fabric exclusive to Norfolk — may be machine-washed and dried, do not shrink, retain their shape and colour and are non-allergenic. All sizes are available and these "wear dated" styles are guaranteed for one full year. Code 5-4

Faster than a speeding bullet...

That's what they used to say about the comic book hero Superman. It would be a supreme understatement about laser beams, which show increasing potential as the "Supertools" of the future. Cana-

dian scientists are finding exciting possibilities for lasers in many fields. Lasers have found use in communications and medicine and they may find applications in fields like construction, machining, even

textile cutting. The following articles tell of two Canadian success stories in laser technology and they provide an excellent illustration of the versatility of laser beams. Code 6-1



A Canadian National Research Council scientist testing a piece of laser equipment.

World's hottest laser . . .

What do you do with a laser that can instantly vaporise just about any known substance? A Canadian company, Lumonics Research Limited, has such a laser system and it is being used in the new field of plasma physics. When a target substance is vaporised by laser a plasma — an electrically-charged gas — is formed. Scientists hope their work in plasma physics will lead to production of electricity from nuclear fission. Lumonics' low-cost, simple in-

struments produce pulses of radiation 100 times greater than those of existing gas lasers (in excess of 10 joules). Temperatures created by Lumonics lasers are greater than those of the sun's surface.

Using a Canadian government patent, the company began production less than a year ago and has already received a number of important contracts. Lumonics laser systems or hardware have been supplied to a United States Atomic Energy Commission project, the

U.S. Armed Forces, Massachusetts Institute of Technology, the Battelle Memorial Institute at Columbus, Ohio, and others. The fields of plasma physics, spectroscopy and propagation studies were involved in these contracts.

Lumonics systems are unique. Nothing like them is available anywhere and the company is preparing to announce even more advanced equipment. They will produce systems involving extremely high pulse energies (in excess of 100 joules) and high average powers (in excess of 100 watts). Code 6-2

Colour photos from space

A Toronto scientist's invention will be used to produce colour photographs from data transmitted by satellite and aircraft in Canada's remote sensing program. Dr. J. W. Locke of the University of Toronto's Institute for Aerospace Studies calls the unique device a laser beam image recorder.

Briefly, the data from satellite or aircraft reaches the image recorder in the form of electrical signals which are decoded by laser

beam into colour pictures, or rather, negatives of colour pictures. Other systems are capable of producing black and white pictures from electronic data but involved secondary processing is required to obtain colour. The laser beam image recorder is uniquely able to correct pictures for any discrepancies which may occur in spacecraft orientation while pictures are being taken.

Dr. Locke states that the image

recorder produces extremely detailed pictures and distances and relationships between objects photographed are accurate to one ten-thousandth of an inch. The system is also capable of reconverting colour pictures to electronic data.

Canada now has a remote sensing program to gather data, by satellite and aircraft, about the earth's surface and atmosphere. The first image beam recorder will be used in this program in cooperation with the United States. Code 6-3

For Your Bookshelf ..

Canadian Auto Parts — this edition of the much-in-demand directory lists approximately 800 Canadian manufacturers and includes an easy-to-read product guide — available in English. Code 6-6

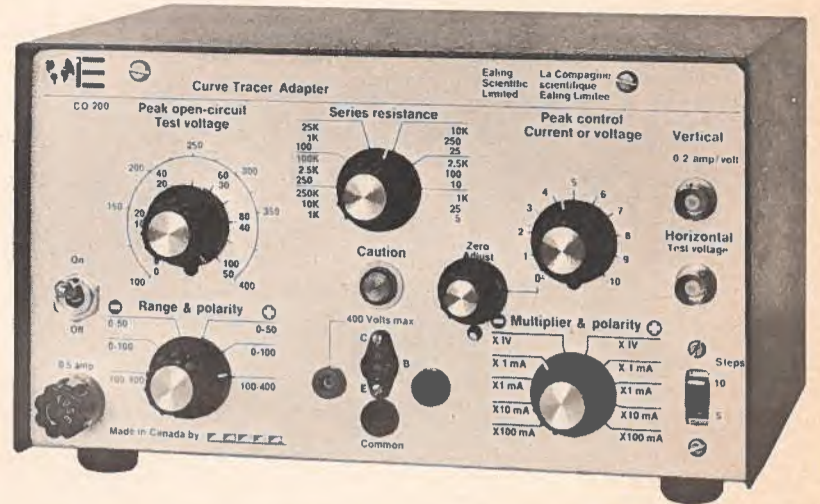
Canadian Short Line Farm Equipment — this directory lists companies serving the North American market and outlines the success Canadian manufacturers have had in the export field — available in English. Code 6-7

Readers interested in obtaining "bookshelf" publications should complete the trade inquiry form on page 7.

Pioneer develops new antenna

For more than 20 years, Valeriot Electronics (Guelph) Ltd. of Guelph, Ontario, has pioneered in designing, making and installing antenna systems for a variety of applications. This company was among the first to produce filament-wound epoxy-glass structures, including whip antennas up to 80 feet (24.7m) for land and marine use. Newly developed is the D-32570 Discone Antenna, designed to meet severe Arctic conditions faced by oil-exploration teams. A filament-wound epoxy-glass mast

and polyester-glass tube elements make for easy transportation and simple assembly with ordinary tools. It has a design frequency range of 3-25MHz but can be used above and below this range. The 2-30MHz Valeriot whip antennas can withstand winds of more than 100mph (160km/hr) and ice loading with minimum deflection. The epoxy glass construction is also exceptionally good for tubular guyed masts and antenna booms requiring lightweight strength. Code 6-5



Ealing Scientific Limited is marketing a new line of electronic instruments, including this Curve Trace Adapter.

Widening electronic instrument range . . .

A new line of electronic instruments is being produced by CO-PAQ of Montreal for Ealing Scientific Limited of Dorval, Quebec, a supply company. Production is supervised by Dr. Carl Weissfloch, formerly of Marconi, then professor at McGill and Laval Universities.

Ealing's Curve Trace Adapter is considered a breakthrough. Used with a standard oscilloscope, it becomes a professional curve tracer for both low and high-power devices — remarkable for performance, range, workmanship, stability and economy.

The electronic Four Decade Counter-Timer — a self-contained unit with integrated circuit and

read-out tubes — likewise combines high-quality with moderate cost. When the internal 1-kHz oscillator is calibrated against the internal time base, it will measure times and frequencies (counter-rates) with accuracy of plus or minus one millisecond and plus or minus 0.01 per cent of one Hz respectively.

Other Ealing instruments include signal and function generators, stroboscopic timers and various types of amplifiers. Coming up is a new line of chemical analytical instruments such as gas chromatographs; carbon, hydrogen and nitrogen analysers; optical spectrometers and equipment and Mossbauer spectrometers. Code 6-4

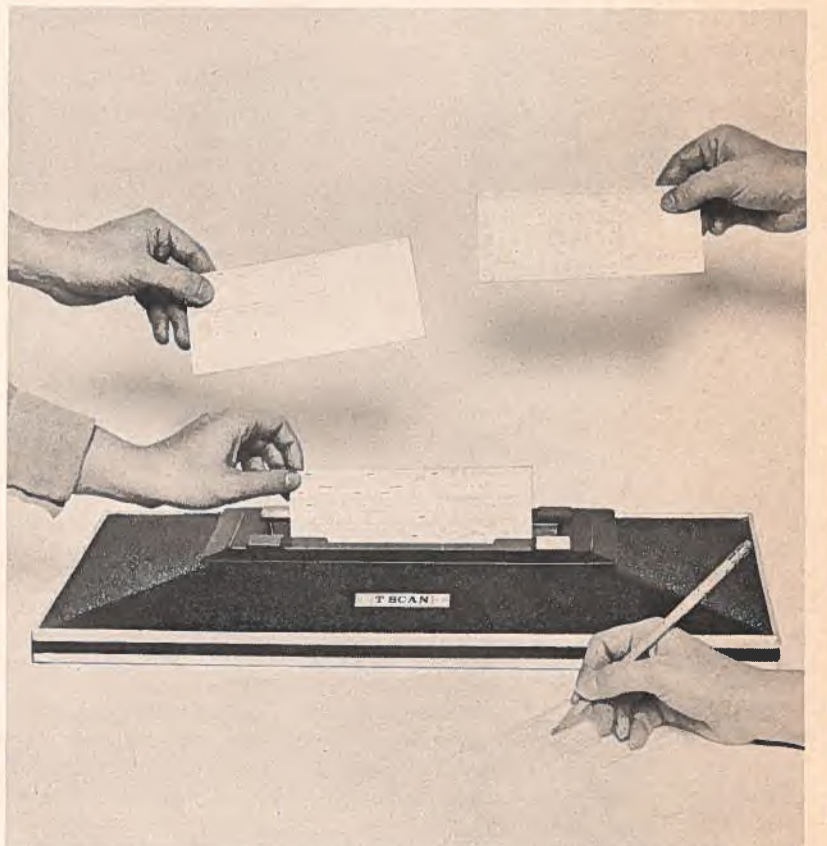
Like to talk to a computer?

A transaction card that lets an ordinary person "talk" with a computer is the key to T-Scan Limited of Toronto's technique. In its system, several terminals and a computer are attached to the same data communication line. The computer "asks" each terminal if it has information. When the operator marks a card and drops it into the terminal, the "info" on it goes to the computer, which processes it promptly and sends a reply to the terminal. Within seconds the operator has the card back with a printed reply.

Advantages over the "old" transaction computer system are stated by the company as: a customer can use a computer directly. In ticket reservations, he can fill out a card, place it in a T-Scan terminal slot and receive reservation information within two seconds. In a system for a 100-plane air-

line, the company says T-Scan would save up to several million dollars in capital costs, compared with a system using a cathode-ray-tube readout system — and that terminal maintenance costs would be 25 per cent lower because fewer are needed with T-Scan. It also — while storing a permanent record — eliminates one time-wasting step.

T-Scan is, however, by no means restricted to airline operations. It is also used in schools, universities, hotels, hospitals, banks, brokerage houses and other institutions. The company and Ferranti-Packard Limited of Toronto are at work on modernizing Sao Paulo Stock Exchange. T-Scan is providing 11 transactor terminals for use there and in brokerage houses, while Ferranti-Packard is supplying display boards and related equipment. Code 6-8



T-Scan transaction card and terminal system reduces computer communication to simplest form.

Canadian crane output on upswing

A plant in British Columbia soon may be one of the biggest tower crane builders in North America. Heede International Ltd. at Port Moody, British Columbia, is filling several large orders from the United States for giant tower cranes. Heede has new plant facilities at Port Moody and exports next year are expected to run \$3,000,000 above normal sales volume. Marketing plans indicate

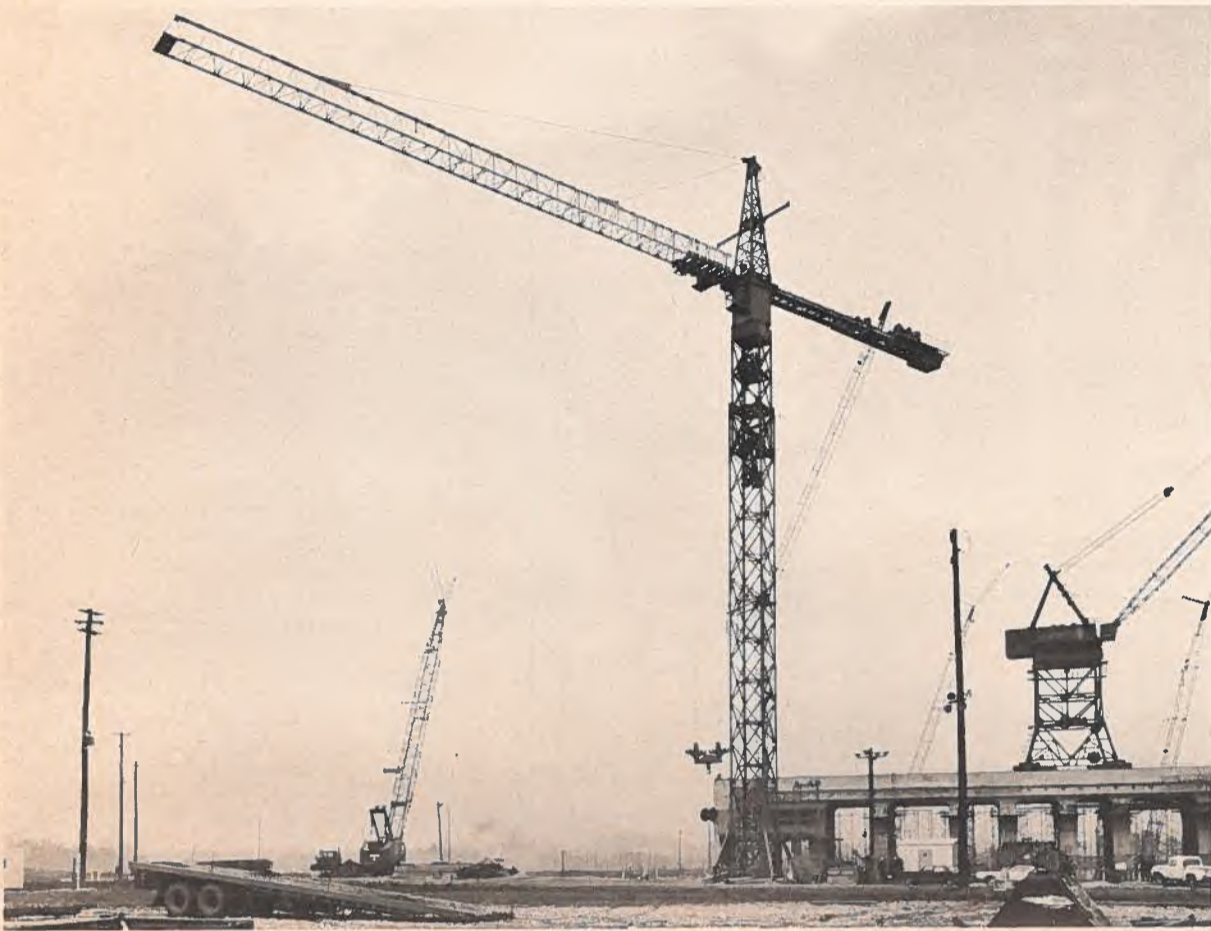
these exports will double in the second year. Heede tower cranes are made to free-stand (without support of building itself) more than 250 feet. They can lift loads up to 44 tons, equivalent to 22 automobiles, and are usually mounted on tracks. Until now, only one crane of this type has ever been built in North America. It was assembled last year on a sub-contract basis for

Heede and sold for \$300,000. Fifty per cent additional space at Port Moody is already planned and more skilled employees will be recruited. Heede established its original Canadian plant at Vancouver in 1961 and since then has exported a variety of crane and hoisting equipment to the U.S., South America, Europe and the Far East. Code 7-1



Rol-loader empties trailers fast

A hydraulic truck crane, mounted on a powerful frame that rides the length of a trailer and thus speeds unloading, is designed and built in Canada by Atlas Polar Company Limited of Toronto. HIAB Rol-loader is available in "Wide Track" and "Inside Rail" models. The former operates on same 92-inch (2.41-m) centres as the commonly used overhead unloaders for brick and block. The latter — primarily intended for inside-rail trailers — allows operating on trailer with stakes in place. Both are powered by a gasoline-engine-driven hydraulic pump that operates the crane and powers the undercarriage. Code 7-2



Heede crane at Tennessee Valley Authority's Sequoyah Nuclear Project.



There may be no need to use costly factory-built insulated tankers with Fell-Fab insulated tanker liners available. These liners are easily fitted to various types of tankers. Outer cover is made of nylon material with vinyl which has welded seams. The polyether insulation is two inches (50.8mm) thick. By using Fell-Fab liners, one trucking company estimates it is saving 40 per cent compared to the cost of a factory-built insulated tanker. The 24-foot (7.3m) tanker illustrated is hauling bunker oil and can maintain a set temperature from 12 to 14 hours. Repair of the tanker itself in the event of leakage is simplified because the insulated liner is easily removed. Code 7-3

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STOR/WAL does many jobs at once



Food casings for variety of products

Few consumers appreciate the part played by artificial food casings in production of meat and other food products. However, this isn't bothering Dominion Viscose Products Limited, maker of artificial casings and exporter of "Weino" and "Apex" casings. Food processors in Australia, Britain, Sweden, Venezuela and Eastern Europe are using the company's products in great volume. Three lines of casings to suit a number of requirements are produced by Dominion Viscose. "Weino" Cellulose Casings are small-diameter regenerated cellulose tubes for production of small sausage and weiners. "Apex" Fibrous Casings are designed for large sausage, loaf items and smoked meats such as hams and shoulders. "Apex" Large Cellulose Casings are available in various types and sizes with characteristics to suit the product. These are also made from regenerated cellulose and are intended for large sausage, loaves, cooked or boiled hams and smoked meats. Dominion Viscose can print casings in many attractive designs up to four colours to enhance retail sales appeal. All casings meet and exceed food standards of all countries of the world.

Code 8-1

Featuring films from Canada...

There are approximately 150 private companies or government agencies in Canada producing films, filmstrips or videotapes. Feature films, television commercials, educational films and filmstrips — all are produced by Canadians.

The National Film Board is Canada's official producer and distributor of films and is the Canadian film source best known in

other countries. Around the world, the Board's films and other visual productions are distributed by its own offices, by film companies, by embassies or posts of the Departments of Industry, Trade and Commerce and External Affairs. There is also distribution of Board films through theatres and television. Many NFB films are introduced through international film festivals,



A scene from the film version of a well-loved children's story, "Paddle to the Sea." It tells of a young boy launching a toy canoe on a long voyage through lakes and rivers to the sea.

Code 8-4



An elegantly-styled cupboard and storage cabinet, file, binder case and wall — designed to add distinction to any office and efficiency to any filing system but at a cost that's less per square foot than many conventional systems on the market. STOR/WAL's 52 interchangeable units may be used singly or in groups — as a wall, as an office partition (serving both sides), as an area divider, a counter, in corridors and in other applications. A complete line of equipment complementary to STOR/WAL is being developed to meet growing demand for office landscaping. Steel Equipment, a division of Eddy Match Company Ltd., Pembroke, Ontario, has been manufacturing STOR/WAL since 1962 and exports to the United States and the Caribbean.

Code 8-2

where the Board is a consistent award-winner. Its productions are varied. The NFB's most popular film abroad last year was "Phoebe," a half-hour black and white film portraying the problems faced by an unmarried 18-year-old girl who becomes pregnant. The second most popular film was "Paddle to the Sea," about the travels of a toy canoe launched by a small boy and allowed to follow its own

course.

Feature film production for cinema and television is on the increase in Canada and companies from other countries are taking advantage of the excellent production facilities available. Two long-established stars, Helen Hayes and James Stewart, have recently taped a re-make of the comedy "Harvey" at the CFTO studios in Toronto.

One of the new Canadian companies is Agincourt Productions Ltd. which recently premiered its first feature film, "Faceoff." This is the story of a rising young hockey star and his romantic involvement with a famous girl singer. Other Canadian production companies include Cinevideo, Intermedia, Allan King Associates, Spring Releases and Les Productions Carl Lemay Ltée. Code 8-3



The star of "Faceoff," Art Hindle, gets some advice from a real-life hockey star, George Armstrong, of the National Hockey League's Toronto Maple Leafs. The film was made with NHL co-operation.

Code 8-5