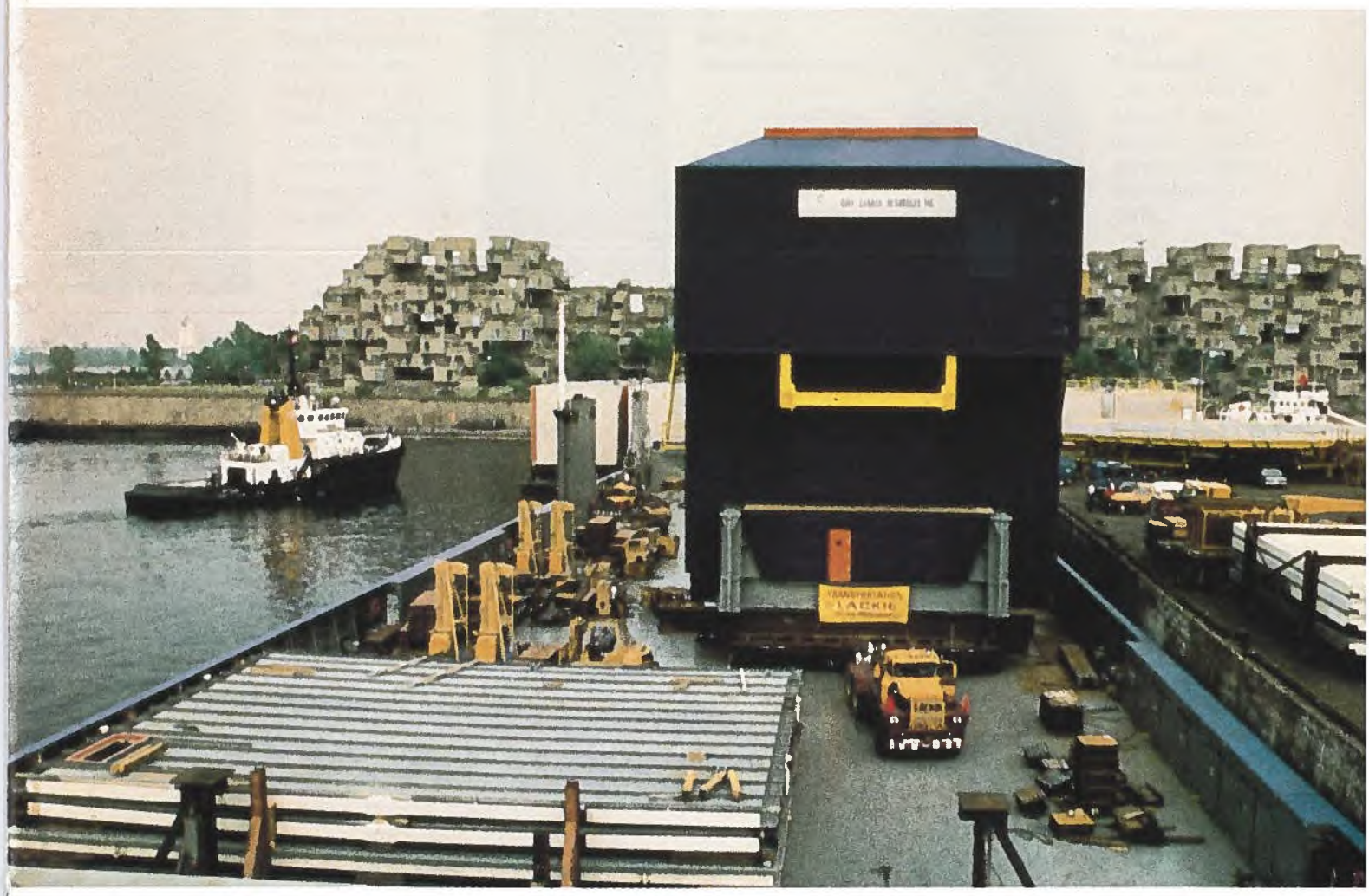
Canada Commerce

July/August 1983



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SMALL BUSINESS

Canada Commerce

The Honourable Edward C. Lumley
Minister of Industry, Trade and Commerce
and
Regional Economic Expansion

The Honourable David P. Smith
Minister of State for Small Business and Tourism

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Regular Features:

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July/August 1983
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Please note that Canada Commerce is available in Canada only, free of charge to interested Canadian manufacturers and business persons.

(Publié aussi en français)

Business Review

New Nuclear Fuel Development
Welding specialist Bruce Merritt of Westinghouse Canada Inc., Hamilton, Ontario, displays a specially fabricated "water-cross", one of the key components of a new type of fuel assembly designed for U.S. and European nuclear generating stations.

The company's plants in Port Hope and Cobourg have responsibility for developing and manufacturing the "water-cross" and the fuel channel into which it fits. Westinghouse Hamilton facilities are conducting hydraulic and critical heat flux tests of the complete fuel channel.

Textile Procurement Projects for National Defence

The federal Department of National Defence is participating in two textile procurement projects worth $42 million under the federal Special Recovery Projects Program.

The projects will introduce new personnel load-carrying equipment (or webbing) and chemical protective clothing for the Canadian Forces and will mean major contracts for Canadian textile and specialty clothing manufacturers.

CAD/CAM Directory Success

The CAD/CAM Directory, published by the federal Department of Industry, Trade and Commerce and Regional Economic Expansion, has had considerable success not only in Canada but abroad.

Word has been received that the highly popular booklet has now been translated into Chinese and it has been proposed to publish and distribute it in China to facilitate communication and to encourage potential trade opportunities.

Satellite Communications System for Manitoba

The Manitoba Telephone System (MTS) has become the second telephone operating company to use Spacetel, a new satellite telecommunications system produced by AEL Microtel Limited of Burnaby, British Columbia.

The system, developed by the British Columbia Telephone Company, links remote communities with metropolitan centres and will connect northern Manitoba settlements with Winnipeg.

A single-channel-per-carrier (SCPC) system, Spacetel uses Telesat's Anik C-3 satellite to provide a subscriber loop from remote areas to urban centres. When using Spacetel, residents in the remote communities will immediately receive a Winnipeg dialtone and have access to the same telecommunications services available to Winnipeg residents.

Federal Harbour Development Funds

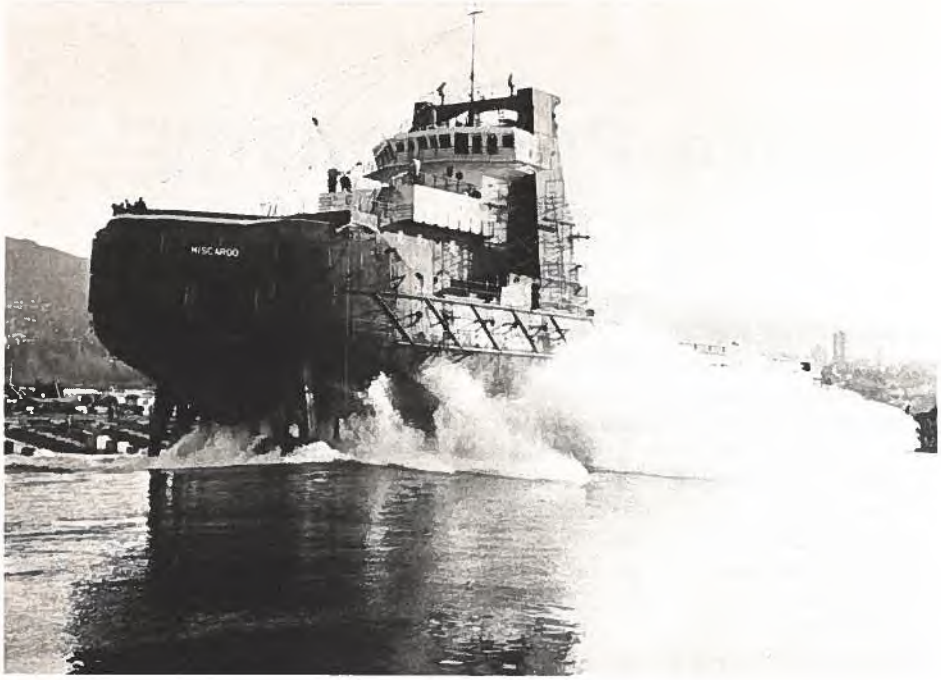
The federal government is investing $140.7 million in fisheries infrastructure and harbour development across the country as part of the recently announced Special Recovery Capital Projects Program.

The funds are earmarked for such projects as marine service centres, small craft harbours, fish unloading systems, ice-making facilities, bait storage depots, saltfish processing facilities, etc.

SPAR Funds R&D Robotics Project

SPAR Aerospace Limited is providing an annual grant of $250 000 together with specialist technical assistance to the Canadian Institute for Advanced Research for a scientific research program into the relationship between man and machines in the field of robotics. The grant will run for three years starting July 1, 1983.

The Canadian Institute for Advanced Research was founded in 1981 as a non-profit corporation to support research in selected fields important to Canada's future and carried out by Canadian scientists who have demonstrated world class expertise.



Beaufort Bound

The 79-metre, Arctic class ice-breaking supply vessel *Miscaroo* hits the water in a side launch at Vancouver Shipyards Limited. The vessel is one of three being built on the west coast for Gulf Canada Resources Inc. as part of a $674 million Beaufort Sea drilling system. The name *Miscaroo* is a Loucheaux Indian word for owl.

$44 Million Grant for B.C. Salmonid Enhancement

The federal Department of Fisheries and Oceans has approved new funding of $44 million for the Salmonid Enhancement Program (SEP) in British Columbia to carry the program through a two-year transition phase beginning in 1984.

SEP is a joint federal-provincial program dealing with five species of Pacific salmon as well as steelhead and sea-run cutthroat trout. Its long-term objective is restoration of Pacific salmon catches to full potential as measured by historic levels.

New Brunswick Manufacturing Technology Centre

A 17-member advisory board has been established for the New Brunswick Manufacturing Technology Centre charged with ensuring that the centre's objectives are achieved.

The centre was formed to bridge the gap between technologies and their commercial use by New Brunswick industries and is the result of co-operation between the provincial Department of Commerce and Development, the University of New Brunswick, l'Université de Moncton, the Research and Productivity Council and the New Brunswick Community College.

Consumer Protection Legislation Convictions

There were 20 convictions against firms and individuals and fines totalling $17 200 under consumer protection acts during the three-month period January 1 to March 31, according to the federal Department of Consumer and Corporate Affairs.

Half the convictions were for contraventions under the Weights and Measures Act with eight firms and individuals paying $7 350 in fines for odometer tampering. Six other convictions were under the Packaging and Food Labelling Act including putting on sale prepackaged food items falsely or misleadingly labelled as to net weight and for possessing for sale prepackaged Easter eggs falsely labelled as to net quantity. Other offences were under the Food and Drugs Act and the Hazardous Products Act.

Service No Longer Available

In the December-January issue of *Canada Commerce* an article on "How to Locate Industrial Licence and Joint Venture Opportunities" listed the ONTAP Service in South Australia. The Department of State Development for South Australia advises that this service is no longer available.

New Winter Wheat Licensed

King Grain Limited of Chatham, Ontario, has been granted a licence to market Frankenmuth, a new, soft white winter wheat, for Ontario. The variety, which has been in the Ontario Co-operative winter wheat trials since 1980, will provide more choice and selection in the fall seeding programs. It is a mid-season variety of wheat that has a medium length spike that is brown when mature.

Canada's Humanitarian Aid

Canada's official humanitarian assistance for the 1982-83 fiscal year amounted to $34 500 000 or some $7.8 million more than for the previous year. This figure accounts for all Canadian government contributions through the International Humanitarian Assistance (IHA) program of the Canadian International Development Agency (CIDA).

A large portion of the increase was due to the growing number of refugees from Afghanistan, Southeast Asia, Africa and Central America. Well over two-thirds of the IHA budget for the year was directed to assisting refugees.

Mitsubishi Reactivates Midland Plant

Almost 600 unemployed workers in the Midland, Ontario, area, will have jobs by 1987 thanks to the reactivation of the former RCA Midland colour television picture tube plant by the Mitsubishi Electric Corporation. This is the first major Japanese manufacturing investment in the Canadian electronics industry.

Mitsubishi has purchased the plant for $20 million and, with assistance from the federal and provincial governments, will invest another $26 million in projects aimed at modernization and product diversification over the next five years.

The federal contribution of $7.5 million, announced July 5 by ITC/REE Minister Ed Lumley, was made under the department's new Industrial and Regional Development Program (IRDP).

Awards Recognize Productivity Improvement

There is a growing awareness of the need for improved productivity in Canadian industry and this is reflected in the metalworking industry by the annual National Productivity Awards (NPA) program created a year ago by the *Canadian Machinery & Metalworking* magazine.

The Second National Productivity Awards, held in May, emphasized this awareness by the fact that, with 27 entries, it had grown more than five-fold from the first program in 1982. The program is planned and carried through by the newly-formed National Productivity Awards Foundation.

Close to 300 metalworking executives and their guests attended "A Celebration of Productivity" — the awards luncheon in Toronto, and watched seven companies receive recognition for their productivity improvement. Another seven companies received Certificates of Excellence.

The major trophy — the Eric Crawford Memorial Award — was presented to Fisher Gauge Limited of Peterborough, Ontario, by the luncheon keynote speaker, Ed Lumley, Minister of Industry, Trade and Commerce and Regional Economic Expansion. The gold award was accepted by the company's founder and president, Bill Fisher.

"It is through innovations such as those recognized by this awards program that Canadian industry will maintain a lead on the competition," Mr. Lumley said in his speech.

The key to meeting the competition head-on is productivity and "the very existence of this awards program, with the impressive array of entries from all sorts of businesses, testifies to your awareness and expertise in the area of productivity improvements," the Minister said.

The National Productivity Awards Foundation was established by *Canadian Machinery & Metalworking* earlier this year as a non-profit organization to promote productivity and design in the Canadian metalworking manufacturing industry.

Its objectives are:

- To create awareness of the need for innovation in design and productivity improvements by Canadian industry;
- To recognize and reward companies and individuals for achievement and to generate industry-wide recognition of their accomplishments;
- To raise the image and profile of the Canadian industry among groups whose positive attitudes could assist growth and development. This includes the general public, customers, governments and others.

Guests at Ontario Place, Toronto, for the National Productivity Awards celebratory luncheon, leave the reception on the Roof Garden for Pod One and the luncheon.

The main strategy for obtaining these objectives is through the building and publicizing of the National Productivity Awards as a major annual event. To do this the foundation will plan and carry through events and functions, enlisting the participation and financial support of business, industry and government.

There were eight sponsors for this year's NPA program: Aeromet International Inc.; Aluminum Co. of Canada; Ferro Technique Ltd.; the federal Department of Industry, Trade and Commerce and Regional Economic Expansion; the Ontario Ministry of Industry and Trade; Ingersoll-Rand Canada Inc.; Precious Plate Ltd.; and SKF & Dormer Tools of Canada Ltd.

The 27 entries in the NPA competition this year were judged by an eight-member advisory/judging committee under the chairmanship of Walter Fell, general manager of Dominion Engineering Works of Montreal. The other judges were Allan Calvert, Cochrane Tool & Die, Toronto; Ron Hodges, vice-president, consumer services, Guaranty Trust Co. of Canada; Peter Kondoff, consultant and teacher, Toronto; Nelson Lake of Schick Safety Razor; Jean-Pierre Reny, director general, machinery branch, Industry, Trade and Commerce and Regional Economic Expansion; Bob Schechter, teaching master, Humber College of AA&T; and Dr. Jiri Tlusty, head of faculty, mechanical engineering, McMaster University, Hamilton, Ontario.

The National Productivity Awards major trophy, the gold Eric Crawford Memorial Award, was named for Eric Crawford, 25-year editor of *Canadian Machinery and Metalworking* who, during his long and distinguished career, was active in many technical associations as well as business and publishing circles. He was widely respected in the metalworking industry.

The 1983 major award winners in the NPA competition were:

The Eric Crawford Memorial Award — Fisher Gauge Limited of Peterborough, Ontario, for its injected metal 'Fixturblok'™ system used by major turbine engine builders in North America and Europe to hold turbine or compressor blades for machining. Pre-

Major productivity award named for a former editor of the *Canadian Machinery and Metalworking* magazine.

sented to Bill Fisher, president and founder, with credits to the designers and technicians headed by vice-president and general manager, Eric Graham.

Gold Winner — Products — Quinel International Ltd. of Markham, Ontario, for its mould washing system now one of the most advanced in the world. Presented to Neil Werfhorst, project co-ordinator.

Gold Winner — Systems — Diemaster Tool Inc. of Mississauga, Ontario, for the design and building of an efficient machine shop which has improved productivity by 20 per cent since it was opened in 1982. Presented to George Yui, company founder and president.

Silver Winner — Products — TRW Canada Ltd., Carr Division, Research and Development Department, of Stoney Creek, Ontario, for the redesign of an automotive horn relay. Presented to Rod Hayden, advanced electromechanical applications engineer.

Silver Winner — Systems — The Bradbury Co. of Scarborough, Ontario, for the installation of CAD/CAM system in its roll tooling shop. Presented to Steve Bradbury, president.

Bronze Winner — Products — ITT Grinnell, Division of ITT Industries of Canada, Engineering Department, of Toronto, Ontario, for installation of a special machine that drills flanged, cast iron fittings. Presented to Jim Forsythe, manager, industrial engineering and quality control.

Bronze Winner — Systems — Canadian General Electric Co. Ltd., Switchgear and Equipment and Components Section, of Peterborough, Ontario, for the installation of a low-cost DCNC system in its sheet metal shop. Presented to Ron Dibsdal, supervisor, industrial engineering and operation support, manufacturing engineering.

Certificate of Excellence winners were:

• A.G. Anderson Ltd., London, Ontario, installation of CAD/CAM system in its pattern making, foundry and machine shop.

Eric Graham (left), general manager of Fisher Gauge Ltd., examines a Fixturblok project with Bill Fisher, company president. Fixturblok won the National Productivity Awards highest honour.

Innovation will help industry maintain lead on the competition — Mr. Lumley commented.

• Fischer & Porter Canada Ltd., Tooling Department, Toronto, Ontario, portable rig to co-ordinate and speed up assembly of wires used in the manufacture of process instruments.

• General Motors of Canada, Axle Plant, Transmission Department, St. Catharines, Ontario, multi-head hobbing of planet pinions and sun gears to increase productivity and reduce costs.

• Victor Products, Hayes-Dana Ltd. Inc., St. Thomas, Ontario, implementation of statistical process control program by quality control department to increase process quality and improve productivity.

• Kenhar Products Inc., Forklift Manufacturing Department, Brampton, Ontario, redesign of forklift manufacturing production line to improve quality, efficiency and reduce production costs.

• Wilson Machine Co. Ltd., LaSalle, Québec, redesign of plant to improve efficiency and lower costs to beat international competition.

• A.G. Simpson Co. Ltd., Plant Engineering Department, Scarborough, Ontario, installation of electrocoat cathodic system to improve product quality and plant productivity.

Details and entry forms for the 1984 National Productivity Awards program will be published this autumn in *Canadian Machinery & Metalworking* when plans will also be announced for the awards presentations.

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Federal Business Development Bank

Opening the Door to Business

A Canadian business training program that delivers information and practical skills. . .

Monday, 6:30 p.m., across Canada, thousands of business people wishing to improve their management skills are going through the same experience as John Brown. John is going back to school. . . .

John is the owner of a machine shop that he opened a year ago. His first few months in business were filled with the unexpected, leading to many crises; John had no choice other than to work long hours to overcome these problems. Now, a year later, the firm is operating relatively smoothly. However, John feels that he's missing some of the "tools" he needs to manage his business really well. He is increasingly aware that good management is becoming more and more important and he doesn't know much about it . . . . After all, he is a machinist. He heard that his community college offered courses for owner/managers of small and medium-sized firms, so he decided to register.

After a full day at work, he phoned home: "I won't be home for supper because I don't want to be late for this first class." Once comfortably behind the wheel of his pick-up, he thinks: "Going back to school . . . at the same college as my children . . . who would have thought . . . ?"

On arriving at the college, John is a little uncomfortable. He's visited the college a few times and knows the general layout well enough, but tonight things are different; it looks bigger, much more mysterious. Corridors seem to go on forever. There's much more activity than he would ever had believed. He expected to see a small group of people, 30, 50 at the most; but there seems to be almost as many people at night as during the day!

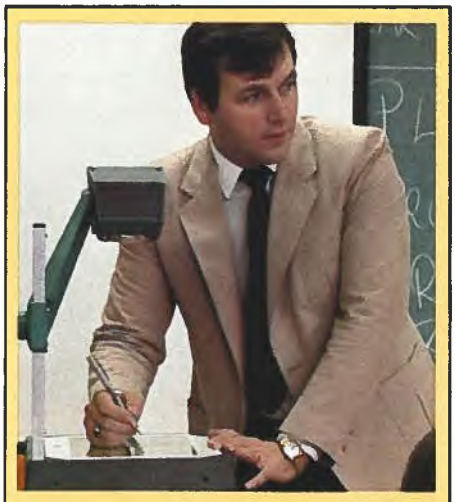
John tries to figure out where he is and stops a young student:

— Excuse me miss, could you tell me how to get to room 427 please?

— Certainly, it's on the fourth floor, directly opposite the stairs.

John moves forward, turns left, climbs the stairs to the fourth floor and stands in front of a door: ROOM 427. The lights are on in the room but there's no one there. "Should I go in?" he wonders. John hesitates a few seconds then decides to enter.

Once in the room, John feels even more uncomfortable; everything has changed, nothing's the same: the "black boards" are green! The teacher's big desk has been replaced by a plain table, the map that used to hang above and behind the teacher has been replaced by a roll-up projection screen . . . .



Course Leaders are usually business people with practical experience.

With some difficulty John manages to slide into a chair attached to an arm-rest/table. "This has changed also! They've replaced the wooden desks and chairs we had with these metal and plastic things . . . maybe that's progress but I preferred the old desks and at least the old chairs were big enough to sit in!" he muses.

"I hope I can keep up with the others," he thinks. "After all, I've been out of school for more than 15 years . . . it's a strange feeling to be back again . . . Bah! these courses are supposed to be designed for us, adults in the business world. I hope so, because my memory isn't what it used to be . . . and neither is my writing; I can fill in forms, but explaining my views in writing, that's not the same . . . anyway, we'll see." John, lost in his thoughts, hadn't noticed the arrival of two other people who were sitting nearby.

— Oh, hello! Are you taking this course as well? he asks a young woman.

— Yes, it's my second one.

— Ah! In that case maybe you could tell me how these courses work?

— Oh, you'll see, it's fun, they're designed for business people like you and me.

— Excuse me, but I'm a bit nervous, this is my first course. My name is John Brown. I went into business for myself about a year ago, and I'm realizing that there are quite a few management skills that I'm lacking.

— My name is Leslie, Leslie Durham. I went into business with my husband about three years ago. Don't worry, you're not the only one with those questions, that's why I'm taking courses. And here, let me introduce you to Ray. He's owned his hardware store for years.

— Pleased to meet you Ray. Is this the first time that you've taken one of these courses?

— No, I've taken . . . .

The group continues their discussion; other people arrive, most between the ages of 25 and 50, choose a seat, and talk, laugh, and exchange their uncertainties about going "back-to-school."

The door opens again and a man walks over to the table, puts down a briefcase, looks at a list he has in his hand, goes back outside the room, checks the number on the door and

Each participant makes comments and actively discusses each other's inputs in analysing case studies.

returns. After putting his papers on the table he moves around the room chatting to different groups about one thing and another. At seven o'clock, he moves to the front, calls for everyone's attention and asks them to be seated.

— Good evening, glad to see there's so many of you. My name is Chuck Taylor and I'm your course leader. Before going any further, I'd like to check a few things.

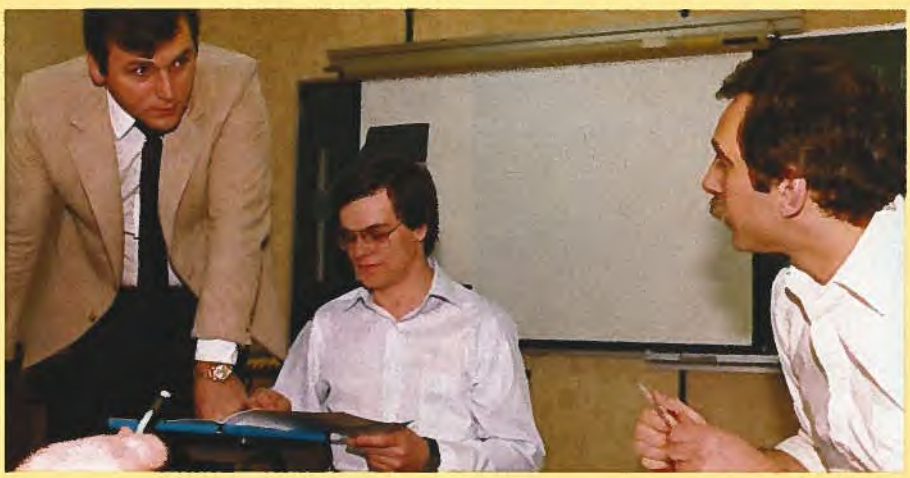
"One thing's for sure," John thinks, "he doesn't act like a teacher or a professor. Well, that's okay with me — at least we're all in the same boat."

— And now I'd like to give you a brief overview of what we will be covering in this course. An Owner/Manager Course such as this contains 30 hours of instruction divided into 10 sessions of three hours each. Generally, these courses are offered one night a week for 10 weeks, but, in our case, we'll be meeting two nights a week for five weeks. Any questions?

— I've heard about courses that are offered during intensive weekend sessions. Does this apply to Owner/Manager Courses?

— Yes, some colleges will offer a course over a weekend if there is sufficient interest and enrollment.

. . . and what would happen to your profit picture if . . .



A relaxed, informal atmosphere encourages the exchange of experiences and knowledge.

Owner/Manager Courses provide small and medium business owners with a chance to improve management skills.

— Thank you.

— Participation is a very important part of Owner/Manager Courses. That's why I introduced myself as your course leader and not as your professor or teacher. This means that you should participate and contribute ideas as much as I do, if not more. What we'll do is share our experiences and knowledge. Our objective is for each class to give you a specific idea to try in your business the following day. We have the tools and the structure to help us achieve this. For example, each three-hour session is divided in two parts: the first half is a discussion of the material to be covered, and the second focuses on the application of our newly acquired skills.

— Excuse me sir, are you referring to case studies?

— Yes, I'm referring to activities such as case studies but we may also be using role plays, simulations and exercises. And please, because we're going to be working so closely together over the next few weeks, call me Chuck.

— Thank you . . . Chuck.

— If you look over the material that you've received you'll see that it's a far cry from the text books you may remember from school. This material is made up of individual modules or booklets that are easy to read and well illustrated. You'll notice that the text contains two type styles: the regular style for the material covered in the module and italics for examples. This is done to make your jobs easier. Now I think it would be a good idea for us to get to know each other. I'd like each of you to introduce yourselves and, in a few words, tell us why you registered for this course. Who's brave enough to start it off?

— Good evening, my name is Jane Hamilton. I don't own a business but I am the assistant manager of a dry-

Realistic case studies generate lively team discussions.

cleaning firm. I registered for this course to improve my management skills and do a better job. Also, if I ever decide to go into business for myself, I'll be ready.
— Thank you Jane. Next?
— I'm Ray Beach and I've owned my hardware store for over 10 years. I've been taking these courses because I learn skills that help me better manage my business. I figure the way things are changing these days I'd better make an effort to keep up if I still want to be in business 10 years from now . . . .
— Welcome Ray, I'm sure you'll have a lot to contribute to our discussions. Next?
— Well, ah, I'm John Brown. I started my own business last year. It's a machine shop. I've realized that my business skills need some sharpening, so to speak. Some people have told me that most small businesses failures occur within the first five years of operation. I want to do everything I can to make sure that mine isn't one of them.
— Thank you John. While these courses aren't a guarantee for business success or survival, they should certainly help improve your chances. Next?

The participants continue introducing themselves and explaining their reasons for taking the course. John realizes that he isn't alone in wanting to improve business or management skills. This makes him feel better and he begins to relax . . . .

— I guess it's my turn to introduce myself: Chuck Taylor and, as I said earlier, I'm your course leader. I'm also the manager of a medium-sized firm that distributes commercial refrigeration units. I've been a manager for four years now. I've also worked as a sales representative for a multi-national in the chemical products industry. This will be the third time that I'll be leading this course. I'm sure that by working together we'll succeed in reaching our objectives.

Chuck then discusses the material for tonight's class. John appreciates Chuck's approach. He feels that he'll be discussing his questions and problems with someone who "has been there", someone who knows from practical experience. John's feeling more and more comfortable.
— Now, before moving on, let's stop and take a break to stretch our legs. We'll meet back here in ten minutes and get to work on the case study.

During the break Chuck moves from one group to another asking people questions, making a few jokes and generally encouraging the participants to interact.

Once back in the classroom, the participants are divided into teams. Chuck gives a brief overview of the case study and the teams begin their analyses and discussions. Each participant makes comments, suggestions and actively discusses each other's inputs. Without being aware of it, John has become a very active member of his team. Other team members seem to respect his experience and his judgment. John feels he is making a useful contribution and at the same time he is learning many new things.

An objective of each class is to give the participants an idea they can try out on their own businesses the next day.

"Excuse my interruption," says Chuck, "but in five minutes we'll all get back together. So, it would be advisable to determine your team's conclusions on this case study."

After each team has presented their conclusions, Chuck summarizes the session, wishes everybody a safe journey home and reminds them of the date and time of their next meeting. Slowly, participants say their goodnights.

At the end of his long day John is relaxed. Slowly he puts his course material in his briefcase while thinking of his first Owner/Manager Course class: "I'm glad I decided to come back to school. I really enjoyed our class tonight and I learned a lot."

Back in his pick-up, on his way home, John thinks "It's strange . . . it doesn't bother me any more that the board is green, that the desk has been replaced by a table, or the map by a screen . . . but they've certainly made the new chairs too small." ◘

To obtain a free brochure describing the courses available in the Owner/Manager Course Program please write:
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Zenair — A Canadian Light Aircraft Manufacturer Expands Its Capability

The Enterprise Development Program (EDP) has assisted Zenair to graduate from designing and selling aircraft kits to the manufacture of an exciting new aircraft, the four-seat CH400.

The "CH" designation is the proud trademark and initials of Chris Heintz, president and majority shareholder in Zenair Ltd., located in Nobleton, a hamlet 15 km north of Toronto.

Zenair had its origins in 1974 when the independently-minded Heintz left his job as stress engineer with de Havilland Canada to exploit the results of his spare time labours, the two-place Zenith aircraft. As crossword enthusiasts will note, Zenith is an anagram of Heintz and is another demonstration of the personal commitment of the designer to the provision of affordable, aerobatic — but above all safe — light aircraft. Heintz emphasizes that any credit due should be shared by his less-visible partner, Plant Manager Gerry Boudreau, and a workforce of 12 technicians.

The Zenith was the first of a series of aircraft kits, designed, certified and put on the market at the extraordinary rate of almost one new aircraft each year. The next model was the single-seat CH100 with wide cabin comfort and excellent visibility. A larger aircraft, the three-seat Tri-Z was unveiled at the 1977 Convention of the Experimental Aircraft Association in Oshkosh, Wisconsin, mecca of light aircraft buffs. In 1980 a low cost competition aerobatic aircraft, the Acro Zenith made its debut.

Zenair adapted a French design, the smallest twin-engined aircraft in the world and launched the Cricket in 1982. The Zipper ultralight arrived on the market in 1983 offering several unique features such as a hinged wing which can be folded in two minutes for towing. 1984 should see the first Zenair factory-built plane, the four-seat CH400.

Heintz was born in France and graduated from the prestigious Eidgenossische Technische Hochschule in Switzerland with his degree in aeronautical engineering. Returning to France he served in the Air Force, contributed to the design of the Anglo-French supersonic Concorde and then joined Avions Pierre Robin as chief engineer. Looking for new fields, Heintz brought his family to Canada in 1973 and joined the staff of de Havilland before establishing his own business in 1974.

Zenair's marketing efforts have been essentially factory-based with massive free advertising resulting from record-breaking achievements. At the 1976 Oshkosh Convention a stock Zenith kit was assembled by volunteers and test flown in only 8 days — a demonstration that resulted in a flood of orders from the United States, Canada, Europe, New Zealand, Australia and South Africa. A Tri-Z was flown by "Red" Morris on July 1, 1978, 4 830 kilometres across Canada, non-stop, in 22 hours, a phenomenal performance.

A key factor in marketing to the U.S. has been the establishment of two subsidiaries, in Atlanta and Seattle, for rapid response to customer demands. In contrast with the experience of Canadian subsidiaries of foreign companies, Heintz was able to maintain his Nobleton workforce at a stable level during the recent economic downturn by reducing operations in the U.S.

The international scope of Zenair's operation is exemplified by a joint venture with the Government of Colombia on behalf of the Andean Pact Nations (Colombia, Venezuela, Peru, Chile and Ecuador). The aerobatic version of the CH200 is provided in kit form to the Colombian associate company, Agrocopteros Inc., where it is assembled as the basic trainer for the Andean Air Forces. An associated event demonstrated Zenair's flair for publicity when Gerry Boudreau became the first Canadian to fly a home-built aircraft to South America when he ferried a Zenith to Colombia on a problem-solving mission.

The Zenair CH200. This aircraft was built by volunteer helpers in eight days and flown at the 1976 EAAA Convention in Oshkosh.

The Zenair CH300. This aircraft was flown coast to coast in 1978 — 4 830 kilometres non-stop in 22 hours.

The four-place CH400 is Zenair's first factory-built aircraft.

Word of the quality of the Zenair product and the adaptability of the company to innovative ventures has opened new markets. A group of 12 Koreans recently spent nine days at the Nobleton plant learning construction and assembly procedures. This is an investment which Heintz appreciates runs the risk of generating competition but he is confident that Zenair's constantly improving technology will keep him in the lead and result in the Koreans purchasing aircraft, components and designs from Canada.

Heintz pursues every opportunity to promote safe and economical flying. Jay Hunt, a leading Canadian aerobatic pilot, praises Heintz as "one of the greatest aviation assets Canada has" and "an absolute genius in designing small aircraft".

Hunt is proud of the association of his company, Aerovol Inc. of Ottawa, with Zenair in developing the Super Acro-Zenith. The "Acro-Z" is probably the best all-round, international-class aerobatic aircraft in the world; the kit is easy to assemble in, it is claimed, approximately one-third the time and at one-half the cost of the nearest competition. The Acro-Z brings the sport of aerobatics within the reach of thousands in terms of both cost and required assembly skills. It is significant that Bernard Collière, the French aerobatic champion, is building an Acro-Z.

Professional awards have been showered on Heintz and his aircraft. At the 1978 Oshkosh Convention, Experimental Aircraft Association President Paul Poberezny, presented Heintz with the Dr. August Rasper Memorial Award "For Outstanding Contributions to the Advancement of the Design of Light Aircraft". In 1979, Zenair aircraft were given the Seal of Quality by the National Association of Sports Aircraft Designers.

Zenair is a regular attendee at major fly-ins and airshows where there is always interest in what Zenair plans this time. The tiny Cricket — twin engines and aerobatic but with a wing span of only 4.9 m and a length of 3.9 m — is the current star.

A sound business sense hides behind Heintz' artistic design flair and imaginative marketing techniques. Sales currently run at about $0.5 million per year and are stable, because of their diverse base, in a very cyclic market which is subject to outside influences such as the availability of discretionary income. A typical new home-built design will see a rapid growth following its introduction but the market will then disappear while these aircraft are being built, only to suddenly revive in a year or two when the finished products appear and excite new enthusiasm.

Overheads are kept low at the Zenair plant where there is no executive suite and no receptionist. Heintz is as likely to be found at the work bench as he is in his cramped and cluttered office. Most of the office work is done by Heintz at home in his "spare time" — the plant is for building aircraft.

Heintz is a typical representative of the small businessman who is frustrated by government bureaucracy and would prefer to go his own way. He did, however, respond to an initiative by the former Department of Industry, Trade and Commerce which, in 1980, organized a series of industry and government discussions to identify means of redressing the large level of imports in light aircraft.

Heintz made an articulate plea for the strengthening of existing capability (as opposed to encouraging foreign manufacturers to locate in Canada) and emphasized the requirement for the large front-end investments necessary for an aircraft manufacturer to maintain technological leadership. The result was the award of financial assistance from the Enterprise Development Program (EDP) to finance the CH400 airworthiness certification program.

The CH400 represents a major advance for Zenair as it is the company's first factory-built aircraft — with the associated strict requirements for design, performance and quality control. Assembly will require an airfield for test flight indicating a move from Nobleton or the establishment of another facility. Production is due to commence in 1984 when some dramatic publicity to launch this latest and largest Zenair venture can be expected.

— by S.B. Shaw
Electronics and Aerospace Branch
Industry, Trade and Commerce/ Regional Economic Expansion

Diagnostic Chemical Kits from P.E.I. Used Coast-to-Coast and Overseas

Julian Gaudin, director of diagnostic manufacturing at Diagnostic Chemicals, prepares the freezer that will dry chemicals at a temperature of −50°C.

CHARLOTTETOWN, P.E.I. — Less than five years ago, every hospital and laboratory in Canada making tests on the thousands of blood samples taken daily from St. John's, Newfoundland, to Victoria, British Columbia, had to rely on imported diagnostic chemicals to do the job.

Now, thanks to an advertisement that produced an unexpected response, and the natural curiosity of a University of Prince Edward Island professor, the tide has turned. A small P.E.I. chemical company is making big inroads into not only Canadian markets but overseas as well.

Created by Professor Regis Duffy as a part-time project to help provide summer employment for his top students, Diagnostic Chemicals Ltd. has grown to international status in only five years of operation. The company now has distributors across Canada, in the United States, Britain, the Mediterranean area, Korea, Singapore, Taiwan and Hong Kong.

Regis Duffy's small P.E.I. company challenged the American, European and Japanese suppliers of the Canadian market head on — and won. Now, with a steadily growing output (the company has increased its sales by more than 30 per cent in each of the past three years) he is preparing to launch another attack, this time on the home base of the highly competitive Japanese producers.

Duffy, who returned to his native Prince Edward Island after earning a Ph.D in 1964 at New York's Fordham University, developed an enthusiasm for research in the late 1960s by working on federally-sponsored projects in the Atlantic Region in the university's summer vacation months.

"The federal grants made it possible for me to hire three or four of my top students each summer," said Duffy. In the early 1970s the federal money belt tightened and Duffy found it necessary to cast around for alternate sources of research money.

"Trying to locate organizations needing research done on a small scale, I placed an advertisement in an American chemical magazine," he recalls. "The one reply, from a small chemical producing firm in New Jersey, asked if I had the facilities to produce, in quite large quantities, a specific chemical compound. Since the money meant keeping my team of students together I accepted the work, although it was hardly the research I had hoped for."

Duffy's curiosity as to the ultimate use of the chemical was the stepping stone to the first growth of Diagnostic Chemicals Ltd.

"The New Jersey firm had no hesitation in telling me that the bulk product was used, in minute quantities, in medical diagnostic kits," said Duffy. "It didn't worry me that the company was making vast profits from our P.E.I. operation by selling precisely measured small quantities in individual kits, but what I didn't like discovering was that our Canadian-produced compound was shipped back to Canada and sold at high prices to Canadian hospitals and laboratories."

Duffy made an immediate decision to take a year's sabbatical from his university work to concentrate on investigating the possibility of producing Canadian-made diagnostic kits for direct sale to Canadian users. "Within weeks I knew the potential was immense," he said.

The remainder of the year was spent experimenting, in a laboratory he built in his garage, with production methods for the variety of chemical

compounds he would have to produce to offer a quality of service the Canadian market would demand.

By the summer of 1975, Duffy was convinced he had prepared sufficiently to launch an attack on the corporate chemical giants now supplying the Canadian laboratories.

So far he had used his own financial resources to complete the experimental period, but he knew he would need financial help to move to a more substantial plant and hire at least five new employees to augment the four he was paying from his own pocket. An approach to the then federal Department of Regional Economic Expansion (DREE) office in Charlottetown was answered quickly. DREE offered $58 730 to help buy needed equipment and a move to a new building in Charlottetown's West Royalty Park.

Regis Duffy and his team were ready to go into production within two months. An initial promotional campaign to Atlantic Region hospitals and laboratories brought a favorable response. "Many of the area buyers expressed pleasure at being able to buy Canadian-made diagnostic kits," said Duffy. "They were just as enthused as we were that the money was going to stay in Canada."

But the larger, nation-wide, market he knew he had to reach if his company was to become profitable, was not so easily cracked. "The toughest problem," he recalls, "was finding distributors willing to put our product in competition with the imported kits. We beat them easily on price and, perhaps most important, on quality, but needed that sales support to survive."

Enzymes used in Diagnostic Chemicals' diagnostic kits are extracted in this enzyme reactor.

The first break came in Toronto, where Duffy was introduced to Hong Kong-born Gregory Wong. Wong, then specializing in exports to the Pacific Rim countries, was interested in entering the Canadian market.

"We went into partnership as Diagnostic Chemicals Marketing," said Duffy. That partnership has now grown to become a worldwide venture.

Gregory Wong convinced Ontario users to try the P.E.I. product and soon a Quebec distributor, Quelab, of Montreal, added the new diagnostic kits to its sales catalogue.

Sales spread to the west coast of Canada and Duffy, content that he had good people pushing for him in Canada, decided to expand his initial bulk production and see if other companies, like the one in New Jersey, would be interested. The result was a new market for the company.

So far Diagnostic Chemicals Ltd. has had little luck selling the individual kits to the United States where the major manufacturers have a tight grip on the market. "But don't think we've given up," said Duffy, "because we haven't."

Through Gregory Wong, the company has built up a steadily growing demand for its diagnostic kits and bulk chemicals in Hong Kong, Taiwan and Singapore. "We are currently sending our first order to Australia, and the markets in Europe are showing signs of interest."

Diagnostic Chemicals Ltd. already puts close to half-a-million dollars into the Charlottetown economy each year from the salaries paid to its 25 skilled employees.

"But that total could be doubled if the federal government would not only promote a 'Buy Canadian' campaign but make it financially worthwhile, perhaps through tax breaks, to the companies who comply. Most institutions we sell to are government funded, so why not stipulate — as a condition of that funding — that they buy Canadian where a product at competitive price and equal quality is available."

Equalling the quality of imported diagnostic kits is no problem for Duffy's company. Quality control is top priority. "We know we are producing chemicals that are purer than any being

Quality control is of vital importance to Diagnostic Chemicals operations. Here Marie Molyneaux, research chemist, carries out quality control procedures.

right
Meliga Nagarian, research chemist with Diagnostic Chemicals, is carrying out research on enzyme isolation.

imported," said Duffy. "And in these days of automated tests that purity and standard of quality is more important than ever."

Through the former federal Department of Industry, Trade and Commerce (ITC), the company has been able to expand its market research and attend trade conferences and fairs. Through the National Research Council (NRC) the company has found ways to produce its own enzymes instead of having to purchase them. The potential market for these is in the United States.

In 1982 Regis Duffy attended a Trade Conference in Tokyo. "That's a tough market to get into," he said. "But we made contacts, let them know what we can produce, and only in April, this year, we bid on our first contract there."

Tradition is the toughest competitor for Diagnostic Chemicals in Canadian hospitals and laboratories.

"When a company has bought its diagnostic kits from a reliable source, perhaps for more than a decade, with little or no trouble, it is extremely difficult to convince the buyer to change to an untried product where reliability is vitally important," said Duffy.

But satisfied customers are spreading the word and slowly, but surely, tradition is being overcome.

Most companies hoping to establish industry in beautiful Prince Edward Island are beaten by the product shipping cost. Diagnostic Chemicals Ltd. has no such trouble.

"Because of the light weight of the product we can afford to ship everything by air and still be competitive," said Duffy. "The stability of the island's labor force makes this an ideal location for industries such as ours."

Every year more than 200 million blood tests are made in Canada, and the number is growing each year. "As the population of the nation gets older, the number of tests will increase dramatically," said Duffy. "We are undoubtedly in a major growth industry."

Regis Duffy has no regret about leaving his lucrative post with the University of Prince Edward Island to challenge the industrial world with his quality products.

"The trouble with too many Canadian entrepreneurs is not that they have a bad product but that they lose faith in the product when the going gets tough," said Duffy. "If we had lost faith we might not be here now. Far too often I see Canadian companies collapse just when the big break is waiting round the corner."

He advises every entrepreneur to check federal programs of assistance "that cover just about every potential". He praises the federal government for the variety of technical, informational and financial assistance provided to Diagnostic Chemicals Ltd. "I have received total co-operation," he said. "But if you don't ask you won't get help. They are not going to come to you."

Chemical technician with Diagnostic Chemicals, John Coady is shown surrounded by glass equipment as he performs research into new diagnostic kits.

The rounded bottoms of plastic bottles gleam as they wait in Diagnostic Chemicals' production area to be used as part of the company's diagnostic kits.

In 1981, Diagnostic Chemicals Ltd. moved from its leased premises to a new $650 000 production building specially designed by Regis Duffy. A DREE grant of $202 580 helped make the move possible.

With a catalog of 17 different chemical diagnostic kits, the ability to produce 14 enzymes and a wide variety of bulk chemicals, the company is far from being the largest producer of chemical compounds in North America, but its quality of product "can't be equalled", said Duffy.

But Regis Duffy's undoubted success would not have been so satisfying or complete had he established Diagnostic Chemicals Ltd. in any other community than his hometown, Charlottetown, Prince Edward Island.

"We have tried to nail the lie that the top people have to leave the Atlantic Region to find good jobs," he said.

"We are using a large percentage of Atlantic Region trained technicians, and they have proved conclusively that they have the expertise not only to do the job but to do it better than anyone else. Our success won't be complete until we have shown other entrepreneurs hoping to establish high technology operations in the Atlantic Region that we have everything here just waiting for their ideas."

— by Charlie Foster
ITC/DREE Moncton

Alligrader — Building a Road to Success

The F-100 road building at sea level.

A young Canadian company is out to make a dent in the North American road equipment market — and smooth away highway dents and potholes in the process.

Alligrader Machinery Inc. of Toronto is a manufacturer of small to mid-sized road equipment on the move to market.

The company is the dream of two men who started with the idea that there is a potential, not particularly touched by the big manufacturers, for their product. They have financed the dream, developed the product and are now ready to sell it.

Joseph Fenninger and Roger Lamont both have extensive backgrounds in the design, manufacture and marketing of heavy equipment and they put this experience together in a partnership in 1981 to form their company, initially incorporated as 111845 Canada Ltd. but now known as Alligrader Machinery. Lamont was responsible for finance and marketing while Fenninger, a manufacturing engineer, worked on the development of their first mid-sized motor grader.

With only limited resources of their own, Fenninger and Lamont established an alliance with Misener Holdings Ltd. which provided capital to fund the project through the development stage.

A contribution of $133 700 through the Enterprise Development Program (EDP) of the then Department of Industry, Trade and Commerce was obtained to help in the financing.

"It is no secret that the EDP contribution is what put us over the top," says Roger Lamont.

A prototype of a mid-sized, 6 350 kg (14 000 lb.) motor grader was ready in the spring of 1982 and was put through extensive testing in co-operation with the Regional Municipality of Hamilton-Wentworth and the Ministry of Transportation and Communications.

The testing brought a purchase agreement worth $57 000 with Hamilton-Wentworth to buy the second prototype which was delivered in April this year.

A measure of the company's growth is the fact that by February this year, Fenninger and Lamont had paid back the loans they had obtained from Misener Holdings to get their dream on the road.

This spring they launched their well-designed and marketable grader on the Ontario market and have their eyes on the larger North American markets.

And they have done their research. Throughout North America there is a market for 5 500 graders of the type Alligrader produces in 1983, their studies show, and this should grow to 6 000 by 1984 and 6 400 by 1985. Alligrader intends to have a reasonable chunk of that market.

Their research also showed that heavy government expenditures on highway construction of the 1960s and 1970s is a thing of the past and the motor grader market is shifting rapidly to a maintenance function rather than construction. Lower cost, lighter weight utility shouldering machines are required for maintenance, not the heavier, bulky machines produced by the major manufacturers today.

Already two Alligrader machines have been sold and will be ready for delivery in July. Orders for another five

are expected to come in July and six additional machines are expected to be sold by September.

The official launch of Alligrader was in February at the Canadian Construction Show in Toronto. "Judging by the comments and enquiries, our presentation appeared to be a large success," reports Lamont. The company also expected to attend the Canadian Association of Equipment Dealers convention in Vancouver in mid-June.

"So here we are!" says Lamont. "We are actually in very good shape for a small corporation. We are now entering into a joint venture arrangement with a manufacturer in Stoney Creek to produce Alligrader in economical quantities."

The complex nature of the company's undertaking was evident to its two founders when they began working on their Alligrader dream.

"Joe Fenninger and I were under no illusions about the realities which we faced," recalls Lamont. "Although we started with very little money and no manufacturing plant, the project appears to be meeting its goals. We started in the worst possible economic climate when interest rates were soaring above 20 per cent and when competition for business has never been greater. Most people we encountered did not give us a ghost of a chance."

Alligrader has established a track record in developing high quality small to mid-sized road maintenance machinery.

Just proving how wrong those people were, Alligrader now has a 7 484 kg (16 500 lb.), 100 h.p. motor grader called the F-100 which is simple to build and maintain and for which there is a substantial global market.

Now that the company has established a track record in developing machinery and has overcome the hurdle of initial design, it is moving down in size to a smaller, 5 443 kg (12 000 lb.) no frills, shoulder type grader called the F-75. In addition, it is moving in the other direction to a larger, 10 886 kg (24 000 lb.), 125 h.p. machine, the F-125, which it hopes to launch within three years.

As small loaders and sweepers are not manufactured in Canada, Lamont believes Alligrader could build and market them as well.

"These machines should be built in Canada and our manufacturers should be controlled by Canadian free enterprise," he says. "It just takes investment and skill. The skills are in place. Research and development investment capital is available.

"When we started the program it was a very *high risk* but, due to our efforts, we have greatly reduced the exposure. Taking what was once a high risk, we turned it into a *moderate risk*.

"We are currently working on turning the venture into a *good risk* controlled by professional people."

The Alligrader project has taught Fenninger and Lamont many things.

"It has opened our minds to new thought, to new processes, to greater creativity and to reasonable challenges. We have had to convince many people of our credibility.

"As more people become aware of us, our status improves and so does the status of the project in monetary terms. The fact that lies most heavily in our favour is the cash outlays of three levels of government to Alligrader in order to launch our project. This is the best testimonial to our potential.

"The time is right!"

"All we have to do is produce and sell Alligrader at a profit and everyone will be happy."

Alligrader's F-100 makes its mark at an equipment show.

The "Nordic Marketplace" — A Tradition of Trade

"Viking" — the word conjures up scenes of ancient piracy, pillage and loot, of terror spread throughout Christendom. But it also conjures up another image — one of shrewd and determined businessmen whose trading instincts took them far down the rivers of Russia and to Iceland, Greenland and North America.

In the ruins of their great trading centres, such as Birka in Sweden and Hedeby in what was then Denmark but is now part of West Germany, archeologists have found startling evidence of the diversity and value of this trade.

Today, the "Nordic Marketplace", including Finland, Sweden, Norway, Iceland and Denmark, carries on this tradition with the same skill and acumen of their Norse ancestors. And it is a marketplace that holds opportunities for Canadians.

Canada has already penetrated this market to a degree with products ranging from blueberries to high-technology electronics equipment. But it is not an easy market as competition from established European, American and Japanese companies is strong as is that from industry within the market area, according to a report prepared by the Western European Division, Office of Trade Development (Europe) of the Department of External Affairs.

Trade restrictions, competitive prices, preference for known and local sources are among the factors that must be taken into account by anyone wishing to enter this market, the report states.

The report, highlights of which are presented here, outlines the potentials and problems for Canadian products by commodity for each "Nordic Marketplace" country.

Sweden is the largest importer of Canadian goods, according to data supplied by Statistics Canada, to a total value in 1982 of $365 632 000, followed by Norway at $254 558 000, Finland at $110 588 000, Denmark at $82 821 000 and Iceland at $6 155 000.

Canadian design engineers check the plot of an electronic circuit prior to mask making.

Sweden

There appear to be good prospects for expanding Canada's exports to Sweden of electronic products including telephone switching equipment, word processors, computer software and process control equipment. There is increased demand in the country particularly for information systems, process control, robotics and terminals. However, competition is stiff and foreign suppliers may not be able to sell complete systems. Also, as telecommunications is a government concern with preference given to local suppliers, joint ventures, licensing or subsystems supply are virtually the only prospects.

Canada already exports a wide variety of frozen, cooked, cured and canned seafood products and is Sweden's third largest supplier. Such foodstuffs as sweet corn and wild blueberries have good markets and there is potential for others such as cloudberries, pork tenderloins, specialty beef cuts. For both seafoods and foodstuffs, however, a Swedish agent is necessary.

Cold weather garments, sports and leisure wear, industrial clothing and a variety of textiles sell well as do outdoor sports equipment such as for hockey, curling, archery, camping, surfing, fishing, etc. There is growing competition for hockey equipment.

Potential also exists for highly specialized equipment in most sectors of Swedish industry and Canada has done reasonably well in automotive parts and accessories. Supply of equipment and subsystems to shipyards is a possibility.

Vehicle transmissions roll off a Canadian automotive plant assembly line.

Norway

The offshore oil and gas industry is highly important for Norway and opportunities exist for industrial cooperation between Canada and Norway in joint ventures, licensing and subcontracting agreements. Also, there is good potential for Canadian exporters of consulting engineering services; high-technology products for geophysical exploration; underwater remote controlled vehicles for inspection and maintenance of pipelines and platforms; drilling equipment; and high pressure valves, trash compactors, flare ignition systems and survival suits.

In foods, Canada's main opportunities in Norway appear to be in such items as pizza crusts, frozen corn, frozen blueberries, turnips and pulse as well as some pears. Canola sales are buoyant. Sporting goods represent a $400 million market and Canadian-made camping, hiking, ski, hockey, fishing and hunting products stand good chances.

Canadian electrical and electronic equipment also have good potential.

Sales are already good in such electrical items as reactors, line traps and line stringing equipment with opportunities for condensators, high voltage circuit breakers, isolators, instrument transformers, non-linear arrestors and metal-clad SF6 insulated switchgear.

Canadian electronics manufacturers of word processors, office terminals, printed circuit boards and telephone exchanges are meeting with success and prospects are good for data information systems, process control and instrumentation equipment and some telecommunications equipment.

Opportunities for Canadian products exist in "Nordic Marketplace" but, while it can be rewarding, it can also be difficult.

Electronic technology replaces the drafting board.

Forest products, such as the waferboard made in this plant, are important exports.

Finland

Finland's imports from Canada appear most visible in the electronics field with Canadian word processors as the most popular. However, the market is highly competitive with local production growing fast. Possibilities include instrumentation for ships and equipment for drilling platforms, electronic components, software and weather radars.

Many imports of fresh and frozen fish are restricted by import licences in Finland including such species as salmon and herring but they are not required for boneless salmon or herring fillets or smoked salmon fillets. Sales are good for frozen whitefish (for local smoking), sugar salt cured herring, frozen cod fillets and some shellfish (a product not well known in Finland).

Food sales opportunities are restricted to some Canadian berries such as blueberries and cranberries. Sporting goods are mostly for hockey (except sticks). Some eight of every 10 pairs of skates sold are Canadian.

Fisheries form a major Canadian industry.

Iceland

While Iceland is a small country, it imports more per capita than any other nation and, since direct shipping services now exist between Halifax and Reykjavik, dealings between Canada and Iceland are facilitated.

Fish sales to Iceland are not large but the island nation's largest canned fish processor has shown interest in Canadian crab and frozen shrimp. On the other hand, Iceland is more open to Canadian foods with good markets for flour, apples, rutabagas and onions plus a number of frozen and canned goods, particularly frozen French fried potatoes and frozen mixed vegetables.

Canada has been one of the traditional suppliers of wood to the virtually treeless Iceland but competition and escalating prices have cut into this. A feasibility study is being carried out into a pulp mill relying on imported wood fibre. If the project proceeds, this could open a market for 20 000 m^3 of woodpulp a year. Iceland also offers a small but interesting market for a wide range of wood products and building materials including waferboard, plywood, creosoted poles and stockfish drying poles.

There are excellent opportunities in Iceland for telecommunications equipment including digital switching and transmission equipment, underground cables, multiplex equipment and radio systems for rural applications.

Denmark

The Denmark market for Canadian goods is not particularly strong at the moment for a variety of reasons. However, some significant export benefits should materialize in the near future for telecommunications and defence products, aircraft and energy diversifiers.

A major effort is to be made to promote Canadian videotex technology — Telidon — through demonstrations in Copenhagen and other cities. In addition, a national wideband telecommunications network is to be established across Denmark and Canadian suppliers and manufacturers have been alerted to the possibilities.

The Danes are also studying the potential of nuclear-generated electric power and Canada's CANDU system is a top contender.

With TELIDON, Canada leads the world in videotex technology.

The Canadian Trade Centre in Tokyo; the Concept Continues to Grow

In the past, there has been much written about the difficulties and high costs of marketing manufactured goods in Japan. Slowly but systematically, legal barriers to trade into Japan are being dismantled. The Japanese government recognizes problems exist and has embarked on a program of market liberalization measures from which Canadian exporters stand to benefit. However, no market opening measures can substitute for direct contacts with Japanese importers, for first-hand knowledge of the market and for understanding of the complicated distribution system of Japan.

One of the early measures taken by the Japanese government in reply to criticism from abroad was to set up the Manufactured Imports Promotion Organization (MIPRO), an arm of the Ministry of International Trade and Industry (MITI). With the assistance of MIPRO the Canadian government, through the Commercial Section of the Canadian Embassy, since 1979 has been operating the Canada Trade Centre (CTC), located in the World Import Mart, Sunshine City Complex, Ikebukuro in Northwest Tokyo.

Since 1979, the CTC has featured a number of exhibitions covering a wide range of manufactured products from all across Canada. A total of 59 shows (including 19 solo shows) have been held since the opening of the facilities. For fiscal year ending March 31, 1984, 10 shows are planned. As of March 31, 1983, companies from all over Canada have exhibited their products at these exhibitions. On-site sales were reported at $12 million with follow-on sales estimated at $110 million.

There is no doubt that the CTC has helped increase the levels of Canadian exports of manufactured goods to Japan. Statistics show that between the end of 1978 to the end of 1982, total exports of manufactured goods to Japan reached $260 million, an increase of $120 million over the 1978 annual figure.

The CTC is a place, an exhibition centre, but the CTC is above all a concept. It is a device or a method to promote Canadian products. The CTC does not replace international fairs, but it does prepare Canadian exporters with little or no experience in Japan for entry into the Japanese market. It is comparable to a trade mission which, instead of having a series of meetings in various locations across Japan, takes place in one locale to which potential customers are invited.

Ribbon cutting ceremony at the Yokohama Trade Fair. Left to right: P. Linenback, director, U.S. Trade Centre; T. Nozaki, executive director, MIPRO; Y. Igarashi, director general, JETRO, Yokohama office; M. Saito, executive director, JETRO; R. A. Fairweather, commercial counsellor, Canadian Embassy.

Consequently, and this sometimes comes as a surprise to Canadian exporters experienced in large European and American fairs, the number of visitors to a typical CTC show is comparatively small. However, as show attendance is the result of a direct mailing tailored to the event and products exhibited, each visitor walking into a CTC show has a genuine interest in the products. This often leads to the appointment of a representative in Japan.

Decisions are not taken quickly in Japan and, apart from certain exceptions, Canadian exporters should not expect to have a contractual relationship with a representative in Japan before a year of subsequent negotiations following a CTC show. However, once a solid relationship has been established with a Japanese counterpart, then comes the time to participate in larger international exhibitions, in co-operation with the Japanese representative, in order to reach the larger audience afforded by such an event.

It has been found that export promotion through participation in international fairs in Japan in many cases can be beyond the financial means of Canadian exporters or, at least, constitutes a financial burden that many companies consider excessive at the early stages of their marketing efforts in Japan. For the same reason, direct consumer advertising costs can be unbearable to such companies. Therefore, exposure through the relatively inexpensive means of a CTC show is a good way to begin to penetrate the Japanese market.

Regional Import Fairs

Another option is now available to Canadian exporters. Again, through collaboration among foreign embassies

(including Canada), MIPRO, JETRO (Japan External Trade Organization) and local prefectural and city governments, it is possible for foreign companies to participate in regional import fairs.

The services provided vary depending on the type of exhibition, but in general the exhibition space and some form of basic booth are provided free of charge to a country exhibit. This means that representatives or agents of Canadian firms can reach wide audiences throughout Japan at reasonable costs which helps to reduce the financial burden of introducing new products into the market.

Until recently, the number of Canadian firms represented in Japan was not large enough to allow a "Canadian Stand" to be put together. However, the situation has changed and local firms representing Canadian companies are anxious to co-operate in mounting such displays.

North American Fair

February 17 to 20, under the sponsorship of JETRO, MIPRO and Kanagawa Prefecture, the first "North American Fair" was held in Yokohama in conjunction with the 12th International Import Fair of Yokohama.

As soon as the concept of the fair was defined, the Commercial Section of the Canadian Embassy in Tokyo, directly and through the Yokohama JETRO Office, contacted representatives of Canadian companies in Japan to determine their interest in participating in this fair which featured consumer goods, including food products. Ten companies replied positively. Collaborating with the above representatives and JETRO, the Commercial Section put together a Canadian stand at which the Tourism Section of the Embassy had an information booth and two receptionists were provided.

The fair attracted 6 200 visitors over four days, and all agents were pleased with the results. Participants reported an excellent response in terms of serious inquiries and/or spot sales. All agreed that the fair provided an opportunity for greater consumer awareness of Canadian products in a relatively new marketing area; to quote one participant: "low-cost advertising."

The Yokohama Office of JETRO has the following comments on the fair (JETRO report):

At the Canadian exhibit, Yokohama Trade Fair. Left to right: Paul Linenback, director, U.S. Trade Centre; R. A. Fairweather, commercial counsellor, Canadian Embassy; Moriyuki Saito, executive director, JETRO.

"The Commercial Section of the Canadian Embassy is working closely with JETRO, MIPRO and other organizations concerned to organize other regional fairs in Japan as these afford excellent opportunities to "spread the word" about Canadian capabilities in the manufactured products sector.

"It is hoped that the interest in the participation to these fairs will increase as more Canadian companies become established in Japan. By so doing the CTC will become a promotion tool for Canadian products not only in Tokyo but in all regions of Japan, the ultimate aim of the CTC concept."

Solo and Provincial Shows

The Commercial Section of the Canadian Embassy, where CTC shows are co-ordinated, is eager to make even fuller use of the facilities at the disposal of Canadian exporters in Tokyo. Individual Canadian companies have been encouraged to and have actually taken advantage of the CTC for solo shows, i.e. exhibiting their own products for periods up to one week, depending on the availability of space. In such cases, of course, each company is financially responsible for display equipment, interpreters and other variable costs although the arrangements can be made through the Commercial Section.

Export priorities may differ from one region of Canada to another and, consequently, provincial governments are also encouraged to make use of the CTC facilities. Again the Commercial Section is at the service of interested parties and will gladly put at their disposal the knowledge acquired through four years of experience in organizing such shows.

Ontario was the first province to use the CTC for holding a "Houseware Show" March 29 to 31. Some 12 companies participated and, from all reports, the show was a success thanks to the comprehensive preparation of parties concerned and as a result of the high quality products displayed. For further details on this show, interested parties can contact Charles E. Morgan, International Marketing Consultant, International Trade and Investment Branch, Government of Ontario, Ministry of Industry and Trade, 900 Bay Street, Hearst Block, Toronto, Ontario, Tel: (416) 965-5704, Telex: 06-219768.

Any enquiries concerning possible participation in a group or solo show at the Canadian Trade Centre in Tokyo should be directed either to the Commercial Section, Canadian Embassy, Tokyo, or the Department of External Affairs, DOF, K. Tyrrell. A film on the Trade Centre is available on request from all regional offices.

CANADA TRADE CENTER SHOWS 1983/84

1983
August 23-27*
Solo Show (Hurtig Fur)
Sept. 7-9*
Crafts/Gifts Show***
November*
Health Care Show & Technical Seminar

1984
January*
Sportswear/Sports Equipment Show

Note:
* tentative
*** due to large number of Canadian exhibitors, held in large MIPRO Exhibition Halls, Culture Center Bldg. (adjacent to World Import Mart Bldg., in which CTC housed)

Exhibition Opens Markets for Canadian Building Products

U.S. buyers check out Canadian products.

Canadian building products can sell well in northeast United States.

That is the conclusion drawn by 18 companies that took part in the successful, first-time Canadian exhibit in the AMERICA/EAST 83 Building Products Exhibition in Boston last January.

The Exhibit was sponsored by the Department of External Affairs with active support of the Resource Industries and Construction Branch of the Department of Industry, Trade and Commerce and Regional Economic Expansion.

Canadian participation far surpassed the expectations of the participants. For example:

• It was hoped that there would be some $100 000 in on-site sales during the exhibition — actual on-site sales totalled $360 000 with a potential of $15 million in sales over the next 12 months.

• It was hoped that about 10 000 American construction materials buyers, agents and dealers would visit the Canadian exhibit — more than 12 000 such visitors were recorded.

The Canadian exhibit featured what has been described as "an excellent blend of products" ranging from nails to floor tiles, from concrete blocks to paint and including some manufactured wood products.

Of the 18 small to medium-sized companies taking part, most had no experience of the AMERICA/EAST exhibition and were new to exporting as well.

Their reactions to the exhibition, to the sales potential and to the federal government for making their participation possible, were extremely favourable.

Comments included:

. . . "Being in this show has moved our export efforts forward by two years". . .

. . . "Being with the national group has given us more credibility than we could ever achieve alone". . .

. . . "We'll come to this show alone in future (because of its potential) but the government participation helped us find and come to the market". . .

. . . "We wouldn't have come without the government because we couldn't afford the administrative headaches but the rewards of being here have opened up a totally new area for us". . .

Some of the companies indicated they would have to rethink their marketing effort since the New England market had more potential than they had foreseen. Because of high costs of freight and distances for ongoing sales and follow-up, some companies were seriously considering concentrating their efforts on this, for them, new found opportunity.

According to a post-fair evaluation report by the Office of Trade Development (United States) of the Department of External Affairs, the New England market shows signs of picking up in terms of its economy and buyers at the show appeared to be preparing for future purchases.

The show is reported to have put a number of Canadian participants in advantageous positions to profit from this upswing, particularly as U.S. companies in the area appear ready to establish sources of supply in Canada. There is a good market potential for a wide range of Canadian building products which U.S. buyers judged to be competitive and of high quality.

In addition, the show emphasized the Canadian industry's ability to manufacture to short production runs and deliver on time as well as the fact that it is innovative and competent.

Canadian exhibit at AMERICA/EAST 83.

Canadian products prove popular.

Products on display in the Canadian exhibit included energy-saving windows that provide clear visibility in the cold days of winter; asbestos-free tiles that reduce health hazards in home, school or office; wall systems that incorporate insulation and are cheaper to erect than other types of wall construction.

Companies participating:

A.B.P. Aluminum Building Products Inc., Montréal-Nord, Québec — aluminum windows, storm doors and patio doors.

Alexandria Moulding, Alexandria, Ontario — wood mouldings.

J.B. Charron (1975) Ltée, Sainte-Thérèse, Québec — aluminum windows and doors with metal or wood frames.

Curry Industries Ltd., Winnipeg, Manitoba — polyfastener, plastic film kits for storm doors, storm windows, econo-pak reels, self-adhesive foam tape.

Flextile Ltd., Toronto, Ontario — residential and commercial vinyl floor tiles including asbestos-free tiles.

Jos. Gingras & Fils (1974) Ltée, Saint-Hyacinthe, Québec — cedar windows, pine doors, aluminum-clad patio doors and windows.

Les Industries Aciflex Inc., Saint-Hubert, Québec — plastic shower stalls and bath walls.

Les Industries Lightsteel Inc., Anjou, Québec — metal cladding, studs, guard rails, roof rails, door tracks, Z bars, steel stoppers.

Macfor Sales, Orangeville, Ontario — cedar panelling.

Maisonneuve Aluminum Inc., Montréal, Québec — aluminum doors and windows.

Ornamental Mouldings Ltd., Waterloo, Ontario — wood mouldings and ornaments.

Premium Forest Products Limited, Scarborough, Ontario — insulated wood doors, pine doors, louvered doors, pre-hung door units.

Repla Limited, Oakville, Ontario — vinyl-clad or rigid vinyl windows and doors.

Sivaco Québec, Marieville, Québec — steel wire nails, welded wire mesh, galvanized wire, black annealed wire, bar tie wire.

Sovebec Inc., Sainte-Foy, Québec — white cedar shingles, cedar shim, pine boards.

Sparfil International Inc., Cobourg, Ontario — insulated concrete block wall system.

Swing Paints Ltd., Montréal, Québec — furniture stripper, varnish paste.

T.R.T. Construction Accessories Inc., Saint-Laurent, Québec — panelgrips, sealing fasteners, self-tapping, self-drilling screws, nylon head fasteners, closure grips, sealing washers, colour-coated fasteners.

Canadian Oilfield Equipment Opportunities in Southeast Asia

Work progresses on a Canadian-designed offshore oil rig. Canadian oilfield equipment and accessories are of growing interest for Southeast Asian nations.

There is considerable potential for Canadian oilfield equipment manufacturers in selling to Southeast Asia but it is not an easy or straightforward market to penetrate and is extremely competitive, according to a report specially commissioned by the Canadian Oilfield Manufacturers Association (COMA).

The report is a result of surveys carried out for COMA in Western Australia, Indonesia, Singapore, Malaysia and Japan. It points out that there is much interest in Canadian equipment but there are factors that would have to be overcome if the market is to be penetrated successfully.

Generally, the report indicates three major hurdles facing Canadian exporters — incentives offered by other governments; availability of Japanese export/import finance; and constraints imposed by North American governments.

It quotes the support of the Japanese government to Japanese companies in securing a substantial portion of the market for major construction projects in Southeast Asia. Japan also offers considerable bank financing needed by a Japanese contractor, equipment supplier or potential investor on all machinery and equipment.

Probably the most important constraints on Canadian business in Southeast Asia are those imposed by North American governments.

First is the limitation of export financing, the fact that insufficient funds at approximately competitive rates are available to allow North American contractors and equipment suppliers to pursue projects aggressively.

Another is the limited availability of funds for pre-feasibility and feasibility studies in areas where further trade for North American companies is significantly possible.

Taking each of the countries surveyed separately, the report points out the opportunities and problems in each.

Western Australia

While activity in the Australian oil industry remains high, the effects of world and Australian energy situation (slower market growth and lower real prices), high cost of money and the impact of rising inflation on labour and equipment costs, are being felt.

Despite this, however, the activity has attracted all the major international supply houses and competition is severe in areas such as down hole tools, rods, casing, consumables, rig components, electrical logging equipment, geophysical services, etc.

It is a distinctly buyers market. However, Canadian companies with competitive products (on both price and technical basis) can succeed. But it is essential to identify a qualified Australia-wide representative as oil activity is spread right across the country and a service centre in only one location will not satisfy customers on the other side of the continent. In addition, remoteness of drilling and exploration

activity makes market service both difficult and expensive.

The Western Australia (where most recent oil activities have centred) business environment is quite similar to that of Western Canada and Perth, the capital, is considered a most straightforward place in which to do business.

Indonesia

As Southeast Asia's major oil producing nation, Indonesia presents both an interesting potential and a difficult market. The potential of exports, industrial licensing or joint ventures is "enormous", the report states. However, equally as great are the difficulties of doing business in Indonesia due to an overriding government interest in nationalization and a business environment that operates on very different principles than in North America. Also financing can be a problem.

For the larger Canadian concern, dealing directly with Indonesian firms in the form of agents or fabricators is probably the best method of operating. This would preferably be with the ongoing support of a company representative based in Jakarta, possibly on a shared basis with other Canadian companies because of the cost.

For the smaller Canadian company, indirect dealing through Singapore may be the best strategy, selecting a Singapore-based agent or fabricator with established lines of contact into Indonesia.

Taking into consideration the constraints outlined, the report stresses that opportunities appear to abound for Canadians in terms of export and technology transfer potential.

Singapore

Singapore has no hydrocarbon resources and yet petroleum is the country's main industry, contributing well over 50 per cent of the value of total manufacturing output. The industry is primarily involved in trading, refining and exploration and production support and today Singapore trades with 49 countries in a wide variety of petroleum-based products.

Any company wishing to penetrate or expand in Southeast Asian markets in the shorter term would be wise to place Singapore on its priority list for contacts with agents or fabricators, the COMA report advises.

Through Singapore there is also access to the huge Chinese market due to Singapore's geographic location, its fabrication and supply capability, and China's mistrust of dealing directly with Japanese or western firms.

Singapore has shown considerable interest in Canadian oilfield manufacturing capability.

Malaysia

Malaysia is a relatively small oil producer and, apart from gas transmission and processing, most projects of interest to Canadian oilfield equipment manufacturers are offshore. A far smaller current market than Indonesia, Malaysia still offers good longer-term potential and a chance for Canadians to get into the marketplace immediately and on the ground floor.

Although similar to Indonesia in its nationalization program (creating a need for Canadian firms to deal through Malay-owned and managed companies), financing and business ethics create fewer headaches for Canadians.

The Canadian "option" generally appeals to Malaysian companies, according to the COMA report, and quick follow-through is recommended to convert this interest into something more tangible at a time when other traditional sources of supply are turning sour.

Japan

Japan is a major player in resource development in Southeast Asia and participates in more than half such projects in providing expertise and/or hardware.

Japan is also a major importer of oilfield equipment, largely subsurface and high technology items from the United States for onward transmission to overseas projects. These supply lines are well established and difficult, but not impossible, to replace with Canadian products.

Some of the best opportunities for Canadians in the considerable but tough Japanese market involve joint venture work in resource development between Japanese and Canadian firms, offering better chances for the specification of Canadian expertise and equipment.

Regarding the potential for Canadian offshore equipment in Japan, the report points out a number of factors that must be taken into account including: the relative strength of the Canadian technology subsector; the relative weakness of the Japanese technology subsector; growth potential for the Japanese subsector; specific bilateral issues with impacts on the ocean industry.

Accounting for these and other factors, the report indicates that Canada's efforts appear to be best directed at ocean research and resource development with secondary emphasis on pollution control and diving. Ice engineering and the equipment requirements of Arctic resources development (both Canadian specialties) are also areas to investigate.

Oil and gas pipelines — Southeast Asia possible market.

Huge Project Proves Canadian Capabilities

The drilling module, weighing almost 750 tons is eased onto the vessel, *Sea Bridge*, which will carry it from Montreal to Japan where it and its companion modules will be assembled on the massive steel caisson being built in Japan. The module houses the equipment and services directly related to the drilling activities and is designed to accommodate minor movement by a hydraulic jacking system.

As the specially-designed vessel, *Sea Bridge*, set sail for Japan from Montreal late in June, its cargo, the superstructure of a massive drilling caisson for the Beaufort Sea, proved once again that Canada has the engineering and technical capabilities to construct these one-of-a-kind multi-million dollar projects.

But for Canada's economic recovery, it proved the value of industry-labour-government co-operation and vindicated the establishment of the Office of Industrial and Regional Benefits (OIRB) in the former Department of Industry, Trade and Commerce (ITC).

The OIRB was established to ensure that Canadian industry and labour received their fair share of contracts in mega-projects across the country. It was successful in convincing Gulf Canada Resources that Canadian industry did indeed have the necessary facilities and skills to participate in the Beaufort Sea Drilling System, a project that involves capital expenditures of $674 million, approximately half of which has been sourced in Canada.

In addition to Mobile Arctic Caisson, the superstructure of which was just completed by Dominion Bridge-Sulzer (DB-S) at its Lachine, Québec, plant, the massive project will include a conical drilling unit, two ice-breakers and two supply vessels to be towed or sailed to the Beaufort site later this year. The ice-breakers are being supplied by Burrard Yarrows of Vancouver and one of the supply vessels by Vancouver Shipyards.

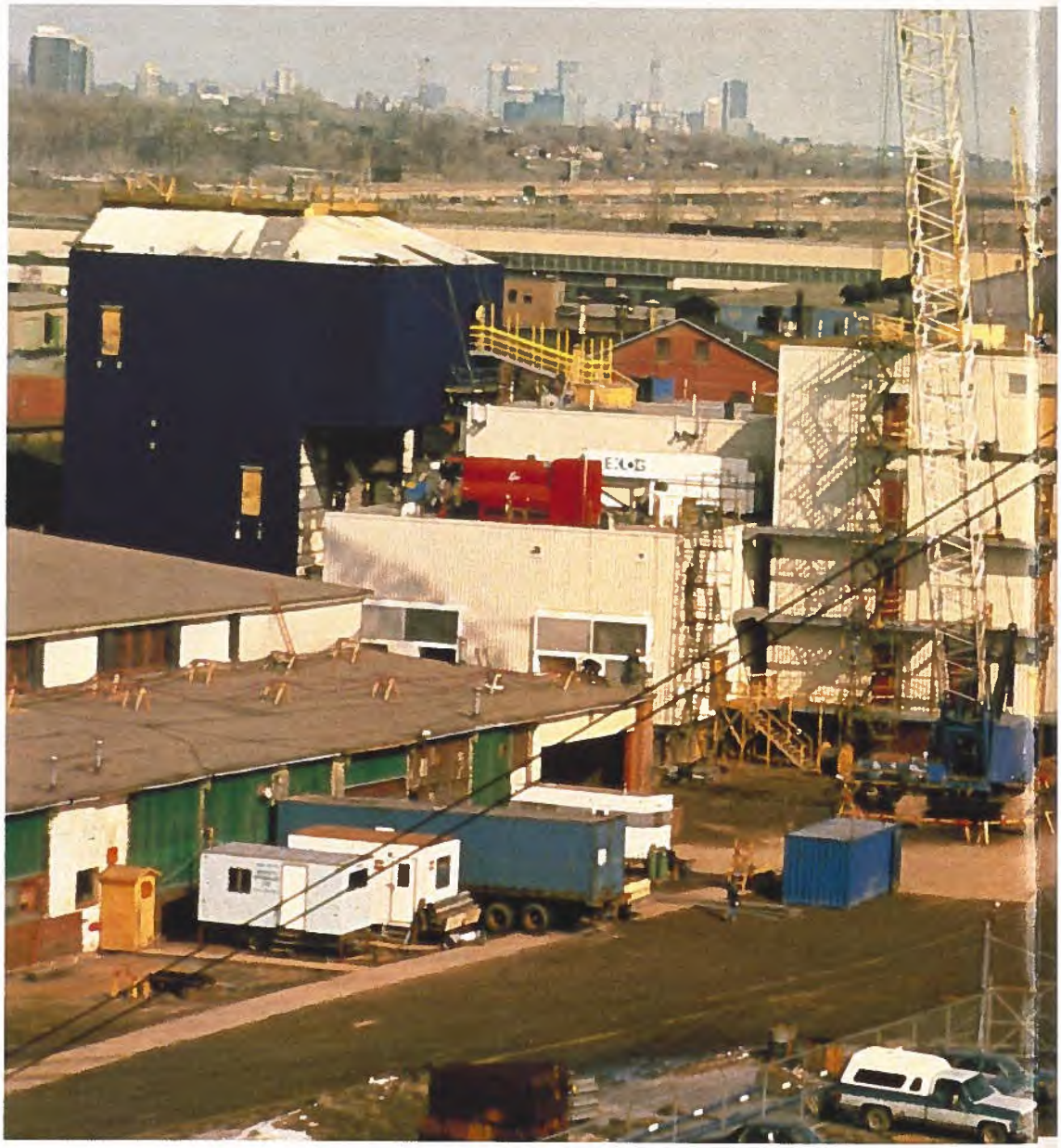
The 14 ship-like modules which left the Port of Montreal last month will provide total living and working facilities for the 100-strong crews who will operate the drilling rig in shallow waters some 500 kilometres north of the Arctic Circle.

The modules — commissioned by Gulf 14 months ago at a cost of about $35 million — first travel to Japan for final re-assembly and mounting on a gigantic, hull-like caisson, which will provide both buoyancy for mobility and a solid bottom-anchor when filled with sand at the drilling site.

At a recent ceremony marking the completion of construction, DB-S Vice-President of Operations Don Matheson noted that the complex manufacturing and construction project had to conform to a tight time-schedule, so the completed caisson can pass through a "narrow window in the Arctic" next summer.

The project — a first of its kind for Canada — brought together the skills of some 400 DB-S workers in the manufacturing field and a further 300 for the construction operations. "Given the challenge offered by the complex manufacturing and construction operations

The DB-S assembly and erection yard at Lachine was a hive of activity as preparations were made to move the accommodation modules. The modules will serve as living quarters for the 100 crew members and come complete with offices, kitchen, dining room, recreation rooms, laundry, communication centre and hospital.



(Lower right)
The drilling module moves onto a barge at DB-S assembly point on the banks of the Lachine Canal.

Huge project, with its emphasis on Canadian content, follows the government in developing the country's industrial capacity.

required to complete this unique project within the stringent time frame," commented Mr. Matheson, "we can wish these modules 'Bon Voyage' with justified pride."

For its part, the federal government had assisted Dominion Bridge-Sulzer to upgrade its facilities at the company's Lachine plant through the Montreal Special Area Agreement administered by the former Department of Regional Economic Expansion (DREE). This plant upgrading, originally begun to allow DB-S to complete the fabrication of North America's first Straflo water turbine commissioned for Hog's Island Pilot Tidal Station at Annapolis Royal in Nova Scotia, was extended to include the company's facilities for the Gulf project.

Almost fully loaded, the *Sea Bridge* prepares to set sail for Japan. The port's grain elevators provide the background.

On behalf of Gulf, D. R. Motyka, vice-president of Gulf Canada Resources, expressed his company's interest in encouraging Canadian companies to supply their needs. In fact he quoted from a current ad in Gulf's corporate ad program, which supports this program of maximizing Canadian content.

He went on to point out that the modules for the Beaufort Sea Drilling System could probably have been built at less cost by offshore contractors but the company respected the government's wish to maximize Canadian content and to develop the country's industrial capacity.

He added, however, that all parties committed to development of Canadian manufacturing capability must accept a shared responsibility. Governments may be in a position to influence the awarding of contracts to domestic suppliers, and domestic buyers may co-operate in supporting government goals but the ultimate test of success falls on the supplier. The supplier has the responsibility of acquiring the engineering capability, the planning skills and quality control and price control programs to reach and maintain a strong competitive position in international markets.

In private, Mr. Motyka outlined the three criteria that suppliers must meet to effectively compete in international markets today — firm delivery deadlines, quality and a guaranteed competitive price. Failure to meet the delivery and price criteria was often as much the fault of the engineering departments of the domestic buyer as that of the supplier. This arises as the engineers try to upgrade the product through engineering changes to incorporate the very latest technology and improvements in a project well advanced in construction.

While in the long run such changes might be advantageous in both cost and effectiveness, when such costs are built into the pricing structure, they effectively preclude the consideration of the bid. By way of comparison, he cited the case of the Japanese, who will not cut one piece of metal or make any change to the existing blueprints, without change authorizations and additional funds being committed. The cost of such changes precludes the use of any but the most urgent. This in turn assists in keeping schedules.

In this project, the topside components — some weighing up to 700 tons — were carried on barges to Montreal where they were loaded aboard the *Sea Bridge* for their journey through the Panama Canal and on to Japan.

The accommodation modules comprise complete living quarters for the drilling rig personnel, including offices, kitchens, dining rooms, recreation rooms, laundry facilities, communications centres and hospital facilities.

In the utility and power modules are housed rig and hull power generation and distribution, compressors, boilers, desalinators and electrical control centres — everything needed to allow the complete units to operate as self-sufficient entities in the remote waters of the High Arctic.

Caisson base being built in Japan.

With a capacity to drill up to 32 000 metres deep, the rigs are able to operate all year round as self-contained units in the Beaufort Sea. Given the nature of exploration work, it is anticipated that they may be moved every year. Set down and refloatation is achieved principally by addition or removal of water ballast.

In addition to the associated supply vessels, the caisson will be serviced by helicopter, using the helicopter pad provided on the structure.

This 8 000-ton per hour coal shiploader designed and built by Dominion Bridge-Sulzer (DB-S) in operation at Thunder Bay, Ontario.

Removal of the modules from the Dominion Bridge plant down the Saint Lawrence Seaway by barge was an extremely sensitive operation. The most worrisome aspect of the trip was at the Lachine Lift bridge where very close tolerances both as to height and breadth were encountered. The main module, which contains most of the drilling equipment, electrical generation plants and the desalination equipment, stands as high as a seven-story building and its large flat sides made it as effective as a sail in moving the entire load sideways or, even more frightening, smashing it against the canal walls or up on the river's banks. As a result the barges moved only when the wind was below 16 kilometres per hour.

Adding to the logistics problems was the moving of the modules ranging from 200 tons upward onto the barges and from the barges to the *Sea Bridge*. However, the operation was handled smoothly and without incident using hydraulic jacks, 64-wheel dollies and the trimming of ballast on both ship and barge.

Some idea of the size of the project can be gained from the material involved. The project called for the handling of some 3 300 tons of structural steel, 360 pieces of mechanical equipment, 62 400 metres of electric cable, 41 600 metres of piping, 650 monitoring instrumentation items — gauges and probes, 800 valves and some 67 500 litres of paint.

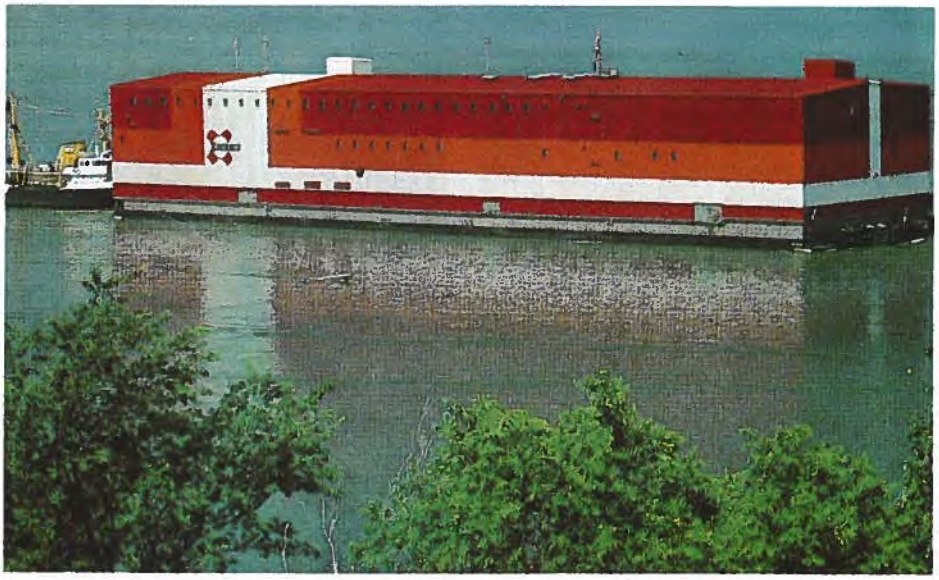
While this project was one-of-a-kind, Dominion Bridge has a long and illustrious history of meeting Canadian engineering challenges. Founded more than 100 years ago in 1882 to tackle the bridge work for the newly formed Canadian Pacific Railway's first transcontinental line, Dominion Bridge has, over the years, expanded its operations both in Canada and the U.S., as well as around the world.

During the 1960s and 1970s Dominion Bridge grew from a Canadian manufacturing organization doing $168 million in business in 1969 into an international operating company currently approaching $2 billion in revenues worldwide.

In 1981 the company name was changed to AMCA International Limited with headquarters in Montreal and consisted of over 50 companies, including Dominion Bridge-Sulzer.

Bridge building over the years has expanded into a wide range of projects from coast to coast — the James Bay and Churchill Falls hydro projects; Bay of Fundy tidal power; Pickering and Point Laprade nuclear plants; the distant early warning (DEW Line) air defence system; Arctic barges for the northern transportation network; the National Research Council radio telescope; floating ore concentrator factories for commercial extraction of High Arctic mineral resources; the Olympic Stadium; and many buildings for Expo '67.

Gulf Canada Resources is the exploration and production arm of Gulf Canada Ltd. and its current major frontier interest is in the Beaufort Sea. It operates 637 000 hectares and has interests in exploration operated by others over 820 000 hectares.



In another one of many joint ventures, DB-S and Comstock built the Cominco lead-zinc processing plant for Betchel. It was erected on a barge at Trois-Rivières and transported 2 500 nautical miles to Little Cornwallis in the Arctic.

— by Bob McDonell
Canada Commerce

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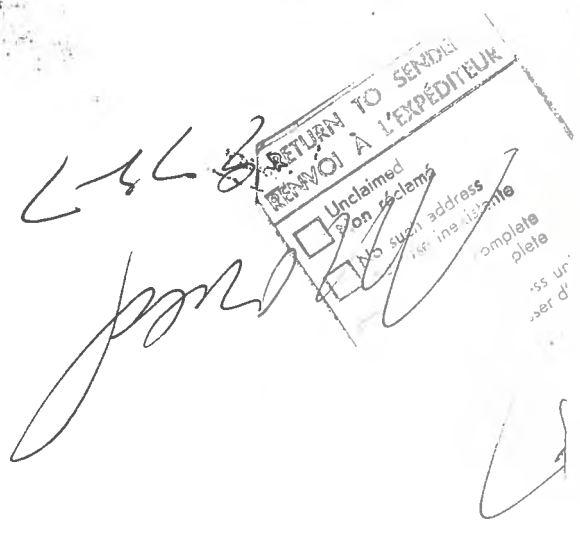

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