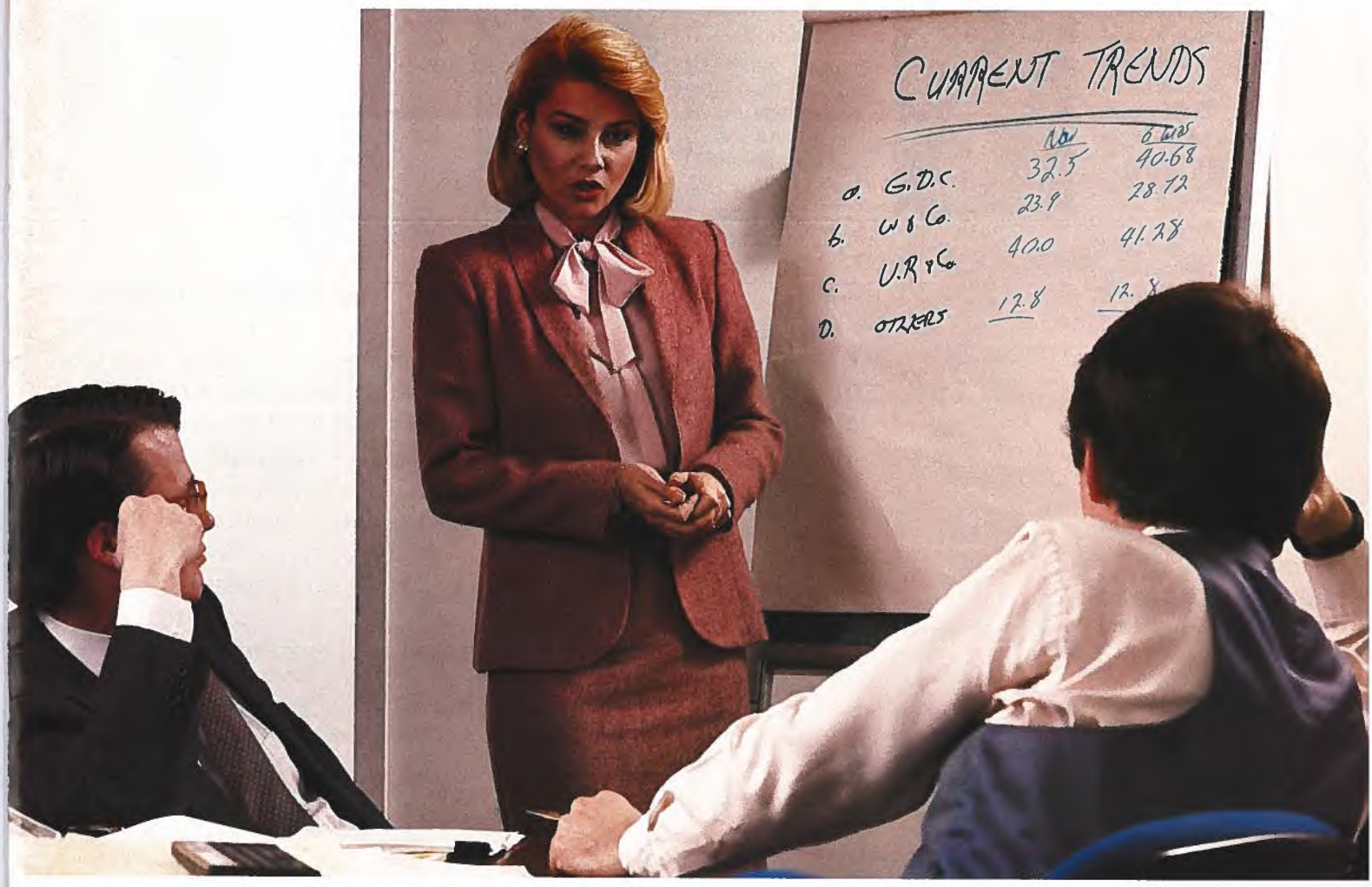
Canada Commerce

September 1984



Shehtah Rig No. 1 — Symbol of Co-operation

DIDAK: Small Business Gives Big Boost to Small Town

WOMEN AT WORK

Canada Commerce

The Honourable Sinclair Stevens
Minister of Regional Industrial Expansion

The Honourable Thomas McMillan
Minister of State for Tourism

The Honourable André Bissonnette
Minister of State for Small Business

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List of Regional Offices — inside back cover

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Business Review

Export Market Intelligence Report

Performance Partners Inc. of Montréal has introduced *The International Trader* intended for suppliers of technology, equipment, machinery, materials, MRO supplies and services.

The bi-weekly research report lists hundreds of little-known export sales opportunities, enabling suppliers to make direct contact with key company managers that make, specify and influence purchasing decisions.

For further information, contact: Performance Partners Inc., 2055, rue Peel, Bureau 1100, Montréal (Québec) H3A 3B8; Tel: (514) 845-0571; Telex: TELSEC MTL 05561742.

Warehousing Guide Available

The *1984/85 Guide to Public Warehouses & Distribution Centres* is now available from the Canadian Warehousing Association (CWA). This annual directory lists public warehouse facilities across Canada with details of the types of storage and services available at each location. In addition, it includes a description of the CWA public warehouse Program of Accredited Service Standards (PASS) which all CWA members must meet.

A free copy of the guide, plus information on CWA audio-visual presentation on modern-day public warehousing, may be obtained from: Canadian Warehousing Association, 517 Wellington Street West, Suite 209, Toronto, Ontario M5V 2X5; Tel: (416) 596-7489.

Ottawa Firm Makes Sales to China

Dipix Systems Limited, a six-year-old Ottawa firm which develops and markets image processing systems, has recently negotiated two sales to China worth $700 000(US).

Two ARIES Network Workstations, based on the VAX 11/750 host computer sub-systems, have been sold to the China National Instruments Import and Export Corporation and are due to be shipped in January 1985. One system goes to the Xinjiang Institute of Physics for remote sensing. The other will be used at the Institute of Basic Medical Sciences for research into medical applications of image processing.

Manufacturers' Central Data Bank Expanding

The Manufacturers' Agents' Association of North America is expanding its Central Data Bank to allow a greater number of Canadian manufacturers to plug into expanding domestic sales and world opportunities.

The data bank, which provides selected printouts of contacts for specific product lines, contains the country's largest list of agents, commission representatives, wholesalers, jobbers and distributors.

For further information, contact: The Manufacturers' Agents' Association of North America, 40 University Avenue, Suite 208, Toronto, Ontario M5J 1T1; Tel: (416) 593-4658.

Licensing Executives Society-USA/Canada

In the June issue of *Canada Commerce* there was an article entitled "Canadian Businessmen Slowly Awaken to the Licensing Game" and written by Guy-J. Houle, vice-president, Canada Region, Licensing Executives Society (LES)-USA/Canada.

Many readers have asked how to contact LES-USA/Canada and, while the society does not have an office as such in Canada, **Mr. Houle may be reached at:** Swabey, Mitchell, Houle, Marcoux & Sher; 1001, boulevard de Maisonneuve ouest, Montréal (Québec) H3A 3C8; Tel: (514) 845-7126.

New Maritime Consulting Firm

Four Maritime engineers and scientists recently combined the expertise and experience of their companies to form CANAT Overseas Ltd.

Responding to the needs for water and food in developing countries, the new Halifax, Nova Scotia, company will provide consulting services in earth sciences including hydrogeology, water treatment and distribution, fisheries and agricultural resources development and material procurement and construction management.

For further information, contact: CANAT Overseas Ltd., P.O. Box 1541-m, Halifax, Nova Scotia B3J 2Y3; Tel: (902) 422-9656; Telex: 019-21577.

Second Quarter Housing Starts

Housing starts during the second quarter of 1984 were at a seasonally adjusted rate of 133 000 for all areas, according to figures released by Canada Mortgage and Housing Corporation. The comparable rate for the first quarter was 145 000.

The actual number of dwelling units started during the second quarter was 40 571 while there were 34 704 dwelling units completed.

Film/Video Trade Mission Pays Off

During a trade mission to Cannes, France, this spring, Ontario lined up television programs sales that could top $23 million.

At the 20th International Television Program Market, 14 Ontario producers and distributors secured initial sales of $1.9 million and future sales and co-productions worth an estimated $21.6 million.

The international market attracted close to 6 000 people representing more than 1 000 production and distribution companies from at least 110 countries.

Conservation and Renewable Energy Demonstration Program

The Canada/Northwest Territories Conservation and Renewable Demonstration Agreement (CREDA) program triggered 27 demonstration projects in the Northwest Territories over its four-year period ending March 31, 1984.

The purpose of CREDA, which is now terminating, has been to prove energy conservation and renewable energy technologies in actual demonstrations and pass on the results to those who can use them.

Sperry Digital Flight Control System for Helicopter

Sperry Inc. of Rockland, Ontario, has been selected by the Bell Helicopter Textron Division of Textron Canada Ltd. to provide a digital automatic flight control system for Bell's new Model 400 TwinRanger helicopter.

The Sperry SPZ-7000 system will be offered as a factory standard option for the aircraft.

Microtel Wins Patents

Microtel Limited of Burnaby, British Columbia, a major Canadian manufacturer of telecommunications equipment, has been awarded 10 patents.

The patents cover equipment and processes designed and developed mainly at the company's research and development centre.

Conference Round-Up

Three-Day Seminars on Microcomputers

The Concordia Centre for Management Studies, Montréal, announces a series of three-day seminars entitled "MICRO-COMPUTERS: How to Select and Use the Right System", scheduled for November 1 to 3 at the Plaza II Hotel in Toronto and December 6 to 8 at the Queen Elizabeth Hotel in Montréal.

The Centre also announces day-and-a-half executive briefings entitled "STATE-OF-THE-ART IN STRATEGIC PLANNING: Rx or R.I.P.?" to be held October 23 to 24 in Montréal and November 6 to 7 in Toronto.

For further information, contact Susan Long, Tel: (514) 879-4014.

Ergonomics Explained

A 24-page, full colour brochure, entitled *Ergonomics for Human Effectiveness and Well-Being* is now available from the Canadian Business Equipment Manufacturers Association (CBEMA) which clearly and concisely explains the principles of ergonomics.

It defines ergonomics as the study of human behaviour and reactions in relation to work and outlines six major components of an ergonomically sound environment — office layout, lighting, flexible machines, furniture, temperature and noise.

Single copies of the brochure are available free but larger orders may incur a slight charge. **They may be obtained from:** The Canadian Business Equipment Manufacturers Association, Suite 212, Yorkdale Place, 1 Yorkdale Road, Toronto, Ontario M6A 3A1.

Seminar on Collective Bargaining

A three-day national seminar on "Strategies and Techniques for Collective Bargaining in the Public Sector During and After Restraints" will be held at the Chateau Laurier in Ottawa, October 3 to 5.

The seminar will be a practical, comprehensive workshop for directors of personnel, administrators, union negotiators, mayors, councillors, trustees, department heads, conciliators/mediators and management negotiators.

For further information, contact: Management Resources at Work Limited (MRW), P.O. Box 7305, Ottawa, Ontario K1L 8E4; Tel: (613) 235-5507 (Patty Pailing) or (613) 824-4084 (MRW 24-hour information).

The International Market for New Technologies

From October 2 to 5 Place Bonaventure in Montréal will host a Canadian premiere on research and development — the exhibition, conferences and scientific visits of "The International Market for New Technologies", R & D '84: Business and Technology.

For more information, contact: Robichaud, Poulin & Ass. Inc., 1117, rue Sainte-Catherine ouest, Bureau 700, Montréal (Québec) H3B 1H9; Tel: (514) 849-5778.

Ad Campaign Has Dramatic Pay-Off

Sales of fish and seafood are up dramatically in Canada as a result of the five-year generic promotion campaign launched last January by the Department of Fisheries and Oceans (DFO).

Industry figures show a turnaround in retail sales of frozen fish and seafood. During February and March sales rose six per cent compared with the previous 12-month downward trend of -3 per cent. Even more dramatic, sales rose 13 per cent for frozen fillets compared with -19 per cent for the same period a year ago.

High Cost of Work Injuries and Illness

Preliminary data from Labour Canada reveal that more than 850 Canadian workers died from work-related injuries and illnesses in 1982. More than 15 million working days were lost due to injuries (the equivalent of 62 000 person-years) at an estimated cost to the Canadian economy of $10 billion.

This information is contained in *Employment Injuries and Occupational Illnesses 1972-81* produced by the Occupational Safety and Health Branch of Labour Canada, available from the Publications Distribution Centre, Labour Canada, Ottawa, Ontario K1A 0J2; Tel: (819) 994-0543.

Canadian Fisheries Highlights, 1983

The federal Department of Fisheries and Oceans presents its annual *Canadian Fisheries Highlights, 1983* containing the latest figures on Canada's fish landings and production for the Atlantic and Pacific coasts and the inland fishery, as well as imports and exports of fishery products.

Among other facts, the publication reports exports of fish and shellfish products valued at $1.6 billion in 1983, a decline of about two per cent from 1982. However, preliminary figures from other countries indicate that Canada continues to be the world's number one fish-exporting nation.

Copies in English or French are available from the Communications Directorate, Department of Fisheries and Oceans, 200 Kent Street, Ottawa, Ontario K1A 0E6.

Woman's World '84

(Ottawa, October 12-14, 1984)

Hold it! — Before you turn the page! Don't let the title mislead you. Woman's World '84 is much more than a basic beauty, fashion and food trade show. It is a three-day event that offers a complete marketplace of products, information and services which, though they apply most specifically to women, are of real interest to men as well.

Of course there will be fashion shows and exhibitions of arts and crafts offered as entertainment, but, in addition, there will be seminars dealing with business and social issues as well as career guidance, all of which are intended to educate, motivate and stimulate the people attending the show.

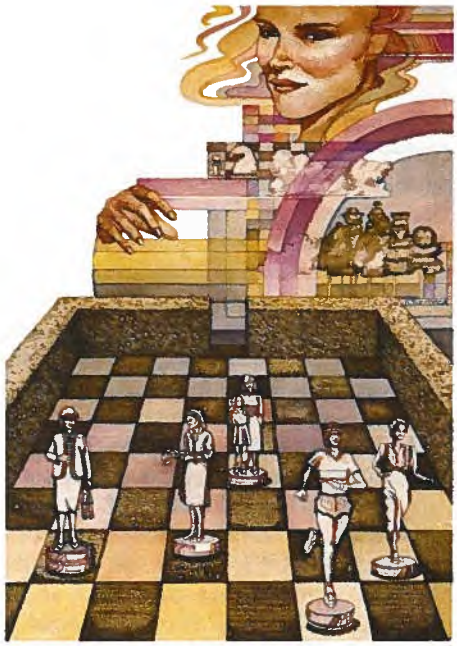
Woman's World was created three years ago and has been held each year at the Hamilton Convention Centre. It has proved highly successful and the turnout has increased phenomenally since its inception.

Shirley Molot, director of Woman's World, and her former partner Diane Ziff, initiated the idea of this multi-purpose trade show in response to a desire to do something exciting in the city of Hamilton. The newly-built convention centre was about to open and what could be more appropriate and better for the local economy than to plan a convention, and what more exciting than to pick the theme of women.

With the help of her sister, Sandra Levinson (current director of the Ottawa's Woman's World), Shirley set out to help other women solve the intricacies of starting up new businesses; to prepare them to obtain loans on their own; to enter or re-enter the work force; to provide information on a wide variety of issues ranging from coupon clipping to violence in the family, from fitness to banking; and, at the same time, to provide them with entertainment.

Shirley and her partners see women as pawns on a chess board trying to direct their lives with variety and choice to make the proper moves. As Sandra Levinson put it: "To our children, we are the mothers; to our men, we are the lovers; but we are also the business women or the career professionals and we also wish to be healthy and fit. We have to be aware and we have to meet all expectations." With the benefits of proper child care, job sharing programs and public awareness, Sandra is convinced that ultimately we can be whatever we choose to be.

The areas of concern that immediately came to mind when planning these conferences were: business and finance; home and family life; careers; health, diet, fitness; fashion and beauty; and, arts, crafts and leisure.



At the conference that will be held at the National Capital Congress Centre in Ottawa, the areas of concern have been addressed in three different ways:

- **Exhibits**: This is a marketplace for products, information and services geared to the woman as a consumer or to the woman in search of career guidance.
- **Resource area**: Non-profit organizations and community service groups have representatives on hand to give out materials and publications or present films and videos to increase public awareness of what they do for the community. Topics will vary from maternity and abortion to rape, pornography, single-parent families, public speaking, literacy and other issues of interest to all.
- **Showcase**: High profile informative speakers will deal with women's issues and concerns. There will also be fashion shows and demonstrations staged at various times during the event. The Women Credit Union and the regional arts council have provided local artists with an opportunity to have their first art showing at this conference.

The three-day event, a first for Ottawa, will be highlighted by the appearance of Judy Chicago, the internationally known feminist artist and the creator of "The Dinner Party", who will show the history of women through her art.

Women will get inside information from experts on such subjects as networking, investment planning, insurance advice, credit ratings, the middle years, healthy living, inflation fighting, single lifestyles, mother-daughter relationships, computer literacy, planned parenthood, re-entry into the workforce, women and politics, culinary arts, rating diets, health and beauty counselling, legal advice and career and job opportunities.

There will be something for every type and age of women whether a high school student deciding on a career, a middle-aged mother considering entry into the workforce, or an elderly woman wishing to acquaint herself with the products of the computer age. For mothers and their families, there will be a youth program set up to encourage children towards education, job opportunities and career possibilities.

As Woman's World is not sponsored by the government, any profits made must come from the number of exhibit booths that are sold (at $600 a piece) or from the admission fee.

Sandra Levinson encourages men to come along, she says that "interesting and interested men are welcome".

Come and discover what it's all about!

Contact:
Sandra Levinson
Director, Woman's World '84
606 Tillbury Avenue
Ottawa, Ontario
K2A 0Z8
Tel: (613) 729-1855

Women at work

Businesswomen — A Growing Force

North America, over the last decade or so, has seen social and economic change combined with rapid technological development particularly in communications and data processing. These changes have created a new breed of entrepreneur and, significantly, have brought about the emergence of the businesswoman.

Within this period, the number of women who have joined the work force either as employees or as owner/managers has increased phenomenally.

In Canada, the rate at which women are going into business for themselves is substantially greater than that for men. The percentage of businesses owned by women is increasing rapidly, although it still does not reflect their participation in the paid labour force as a whole.

According to a study commissioned in 1982 by the federal government's Small Business Secretariat from Queen's University, Kingston, Ontario, most women business owners start from scratch rather than inheriting their businesses or buying existing ones; most are the owners of relatively new businesses; these businesses tend to be labour intensive, particularly in the employment of women; very few are franchises; many of the female owners come from entrepreneurial families.

The study found that challenge was one of the most important motivational factors and that most of these women business owners felt that the problems they encountered differed little from those faced by their male counterparts. The study also showed that on average women-owned businesses tend to be less profitable than those owned by men.

Statistics provided by Revenue Canada seem to confirm that business ownership for men is more profitable than it is for women. The primary reason for this may be that businesses owned by women tend to be concentrated in the retail and services sectors where profit potential may be more limited. Other factors may include lack of time for the businesses to mature, different sector location, and different motivational objectives.

The Queen's University study showed that major motivators for women to become entrepreneurs were perceived to be: economic necessity; the desire to be independent; a need to achieve; and, the search for job satisfaction.

The arrival of the woman business owner as a significant phenomenon coincides with the surge of the baby boom generation into the work force. These men and women carry with them a passion for individual expression and an equal dislike of large institutions. Unscarred by the post-Depression mentality that sought security above all else, many of these people are self-reliant, believe in their own abilities and are willing to take risks.

The obvious choice for this active, ambitious new breed, looking for a different, more personal type of work environment, is the creation of smaller independent businesses.

In 1983, the Human Development Centre of Winnipeg undertook a study of self-employed women in Manitoba. In it was stated that "self-employment is an option which is being forced upon people by the current economic conditions. Some of the women in this survey are self-employed because there didn't seem to be any alternative."

The study revealed that, almost unanimously, the women who had previously been employed by larger companies would never go back, not even for more money. Success for these women was redefined in terms of quality of life, rather than in material terms or power.

However, in addition to the need for independence and a more personalized work environment, there are other factors that motivate women in becoming business owners. It can be because they have been exposed to a situation (divorce, employer closed operation, a life passage) or a person (role model, financier, partner) which "prompted" the actual entry into entrepreneurial activity.

Professor Lois Stevenson, from Acadia University in New Brunswick, recently published a study entitled *An Investigation of the Entrepreneurial Activity of Canadian Women* for the Small Business Secretariat of the Department of Regional Industrial Expansion. In this study she showed that:

- Generally women do not have equal access to experience in management positions prior to becoming business owners, and have not historically been allowed equal access to wealth or capital, or to an education which might prepare them better for business management.
- Women are likely to feel greater restraint due to family obligations, financial limitations and societal role definition.
- Women business owners frequently express dissatisfaction in their dealings with government bodies, bankers, lawyers, accountants, husbands, family and even customers, and stress how important support from these groups is for the development and success of their businesses.
- Women have less to lose. Family risk may be higher, particularly if children are involved, but there may be less career risk because women are less likely to leave top notch positions in other organizations before starting businesses.
- Men have higher expectations because of the role they have been given in society, reared to be in the public sphere and to achieve high levels of success. Women have been reared with lower expectation levels and consequently have less to risk personally than men if the business fails or does not achieve high levels of success.

Professor Lois Stevenson's study reveals that in Nova Scotia, until 1968, married women could not own property or enter into legal contracts in their own right. The fact that married women couldn't own property (personal wealth) in this country until well into the 20th century, and were segregated throughout the educational system to the "arts" and domestic sciences goes a long way, then, in explaining the rarity of women entrepreneurs. The wealth and knowledge of this culture has historically been awarded to men.

A questionnaire answered by 183 of 477 businesswomen identified in the Maritimes by Prof. Stevenson included businesses with sales of between $10 000 and $2 million with women as principal or sole owners.

Seventy five per cent of these women (137) had applied for bank credit for their businesses. Only 26, or almost 19 per cent, had ever applied for bank credit and been turned down or rejected. Of these 26 women, 21 or 80 per cent were eventually able to obtain financing from a banking institution. As pointed out in the Queen's University study, once established the women seem to have fewer problems with the banking institutions.

Twenty per cent of women in this study were refused bank financing but, through perseverance, eventually obtained financing elsewhere. These firms are now successful. But how many potentially successful firms were refused initial start-up financing from the commercial banks? If these women were refused financing because attitudes of bank personnel towards women as business owners (evidence of this in the Maritime Provinces) or because there were no husbands or other male guarantors to co-sign the loans, then women do not have equal opportunity.

Before starting the Queen's study, Professor Frank Collom contacted six lawyers, six accountants and six bankers, amongst others, and asked this question:

"From your experience, can you relate any incidences where you felt that women might have had problems in starting, owning, or operating a business?"

The answers were revealing:

"Some women have not done the careful kind of analysis needed before beginning the business . . . Some appear to be rather "flighty" in their analysis and tend to have a "romantic" view of the business world . . . Many are very naive about money and credit, and about the need to keep good sets of account books . . . In many cases it required the agreement of the husband before the venture was taken on . . . Some husbands have used us to convince their wives that the venture was not a good idea or had little chance of success . . . Women often need the backing of the husband before credit would be extended or before a landlord would lease a premise."

Credit policies have not traditionally been oriented towards lending money to women. While some of these problems have been overcome it is evident from respondents' comments that they are often treated differently by banks because they are female. It became evident that this feeling persists in the leaders' debate on women's issues held on August 15, 1984.

BUSINESS PROPRIETORS* — 1964-1981

Taxation Year	Number of Business Proprietors	% Increase in Business Proprietors	Number Owned by Women	% Owned by Women
1964	333 357		37 733	11.3%
1966	347 120	4.1%	42 682	12.3%
1968	351 621	5.5%	47 096	13.4%
1970	362 021	8.6%	53 694	14.8%
1972	377 736	13.3%	61 964	16.4%
1974	402 888	20.9%	71 106	17.6%
1976	430 678	29.2%	93 939	19.5%
1978	485 205	45.5%	115 299	23.8%
1980	501 773	50.5%	145 680	29.0%
1981**	493 234	47.9%	142 194	28.8%

*** Business proprietors are defined as those persons who derive at least 50 per cent of their incomes from self-employment sources.**

****Most recent figures from the 1983 edition of *Taxation Statistics*. Other data from *Statistical Profile of Small Business in Canada, 1983,* DRIE.**

The table shows that the number of business proprietors overall increased by 50.5 per cent from 1964 to 1980 and the number of women proprietors increased by 90.9 per cent. (Statistics are not included for incorporated businesses.)

The number of businesses owned by women almost tripled in 1980.

In 1981, when the economy was suffering the worst recession in 50 years, business proprietorship dropped generally and it has been seesawing ever since. Insufficient data does not allow us to see at present how it affects the rate at which women are becoming business owners.

The Canadian Federation of Independent Business stated, on July 25, 1984, that the economy is on the brink of a new recession. It foresaw a downturn as being likely before the end of the year.

Small businesses form the economic backbone of most countries today. The Canadian federal government estimates that 97 per cent of all businesses in Canada are "small", defining these as any operation having sales of less than $2 000 000 per annum.

Despite the effects of recession and a projected downturn in the economy, statistics show that, although the absolute numbers are still considerably smaller, women business owners are starting businesses at a relatively higher rate than men.

The studies quoted refer to a definite mix of business owners, in the sense of sector representation, geographic area, background, degree of success, etc. They give a clear idea of the situation of women business operators in many larger urban areas across the country. Most of the information shows consistency from one study to the other, in spite of the time spread in the preparation of the studies.

In the Acadia University study, Lois Stevenson feels that attitude change is required. Women must be integrated into the mainstream of entrepreneurship and have access to equal opportunity. She feels government is in a position to implement policy to alter the cultural climate surrounding appropriate "roles" for men and women in business and to instigate change. Educating the public regarding the existing situation is a key first step.

• More information regarding the extent and contribution of women in business should be collected and disseminated to illustrate the realities and dispel the myths which perpetuate negative attitudes towards women as business owners.

• Programs should be implemented to enable women to obtain start-up capital for their businesses. Credit policies need to be assessed. Government could establish a seed capital fund for women wishing to start small businesses, or establish equity fund programs much like venture capital firms, but specifically for small business enterprises (not necessarily in manufacturing) started by women.

• Management assistance programs should be made more accessible to women. There appears to be the need for two different kinds of programs. Information on how to get started — and information on the functional and operational areas of the business.

• There also appears to be a need for the establishment of a good data base on women-owned businesses in Canada. How many there are, where they are, what the growth rate of their businesses is and their economic contribution. Statistical information should be made available to the general public to impress upon it the nature and extent of women-owned businesses.

• Success stories should be collected and shared to serve as encouragement to others and provide public awareness.

• Government assistance programs at provincial and federal levels have been established to assist in the development of small business but these programs do not appear to be heavily utilized by women. Of the 10 federal programs, FBDB received the greatest number of contacts from women business owners but the number is still small.

• It would seem that in terms of seeking help "suppliers" and "friends" are by far the most valuable source of information and assistance.

In conclusion, it would appear that, despite the difficulties of getting started and overcoming the problems of surviving the first few years, women are enjoying and responding successfully to the challenges of operating their own businesses. They are gaining a considerable degree of acceptance within the business community and achieving a reasonable level of success.

— by Ginette La roche and Gillian Welbourne
Canada Commerce

Shehtah Rig No. 1 — Symbol of Co-operation

A "Quantum Leap Forward" in sometimes tempestuous relationships.

Perched atop a tiny, man-made island in the muddy Mackenzie River is Shehtah Rig No. 1, a proud symbol of native-corporate co-operation in Canada's north.

The rig is only one of many being employed by Esso Resources Canada (the exploration arm of Imperial Oil) to drill an expected 160 production wells in its Norman Wells field. But, Shehtah No. 1 is a rig with a difference: like NASA's famed "one small step", this rig represents a qualitative leap forward in the sometimes tempestuous relations between Mackenzie Valley natives, the southern-based resource companies and the federal and territorial governments.

In the wake of Justice Thomas Berger's pipeline-zapping report in 1977, Esso took careful note of native concerns when it decided to vastly expand production of the Norman Wells field and to build a pipeline to carry oil up the valley to Zama, Alberta.

With the full encouragement of the two levels of government, the oil giant began negotiations in 1981 with native groups to explore ways the native peoples could participate in — and profit from — the billion-dollar project.

Within a year, the Dene Nation and the Métis Association had formed Dehcho Drilling Ltd. and reached an agreement-in-principle with Esso to establish a joint-venture drilling company, Shehtah Drilling Ltd. The $5 million capitalization was to be shared equally by Dehcho and Esso.

In a Norman Wells riverbank ceremony on July 13, 1983, federal and territorial cabinet ministers assisted in the official launching of Shehtah Drilling Ltd.

Government support for the native organizations' participation came in the form of a $780 000 contribution from the Department of Regional Industrial Expansion (DRIE) under the federal/territorial Special ARDA program, and a $720 000 grant from the Department of Indian and Northern Affairs' Indian Economic Development Fund. The native groups raised the remaining $1 million of their share through a Bank of Montréal loan.

Shehtah used the assets to purchase a drilling rig and a service rig from Esso and to establish a work camp at Norman Wells. Its initial work force was made up of experienced Esso rig hands and natives and northerners most of whom Esso had been hiring and training on its own rigs.

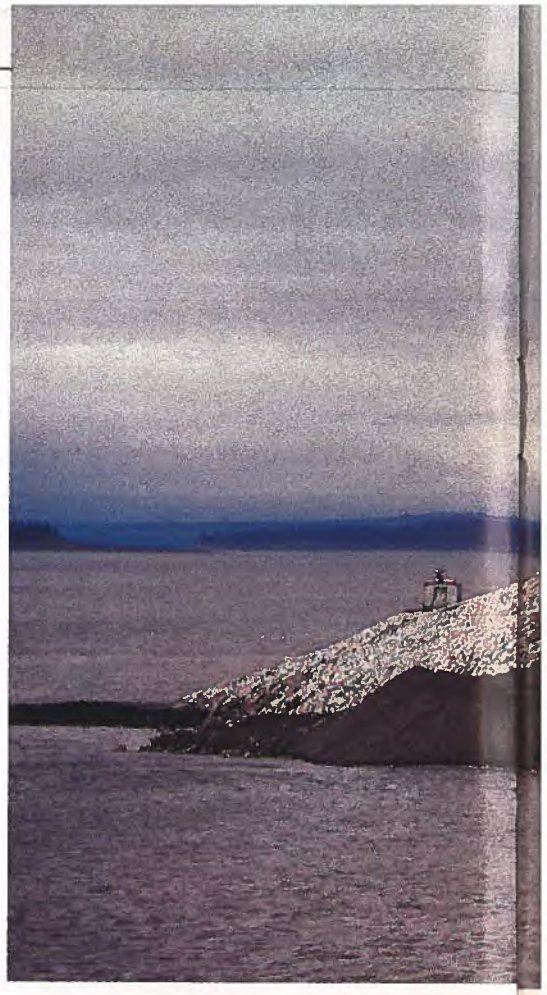
Shehtah Drilling Ltd. was officially launched July 13, 1983, with the assistance of federal and territorial cabinet ministers.

When fully staffed, Shehtah will provide between 40 and 50 jobs, about three-quarters of them going to northern natives.

To steer the company through its initial 23-month contract with Esso, the oil company "loaned" Shehtah the services of project director Mike Bacon who took on the role of general manager.

Jack Poitras and John Koyczan, both NWT Métis, were hired as assistant managers for training to take over Bacon's position and run the company.

Making up the board of directors are two Esso representatives, one member from each of the Métis Development Corporation and the Denedeh Development Corporation, and Hay River businessman Gordon Gill, a mutually-acceptable "neutral".



Shehtah Rig No. 1.

"It's a small company," Bacon told the NWT's Native Press. "It's a Shehtah-type company, not an Esso-style operation."

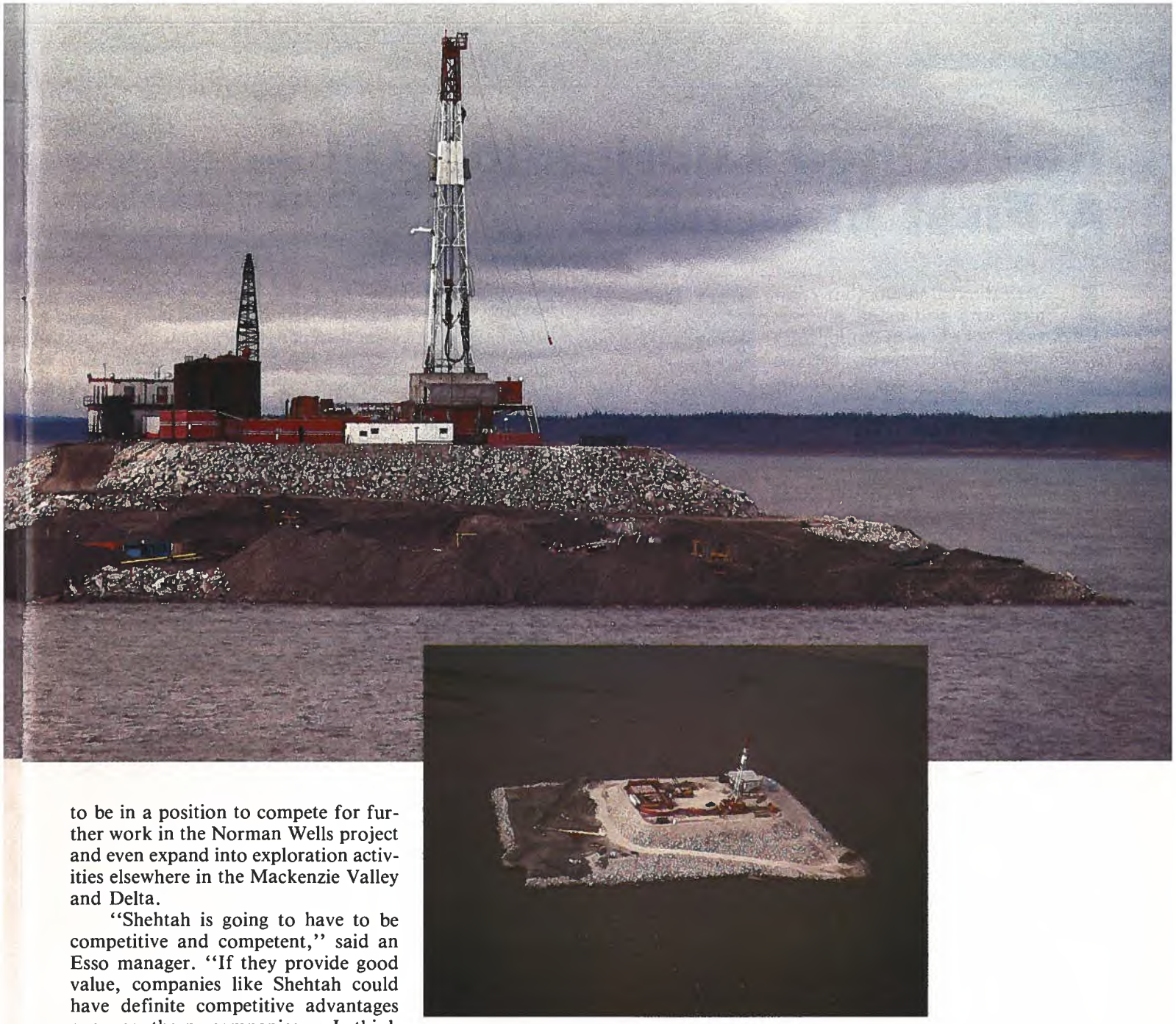
In many ways, Shehtah functions more like a co-operative than a corporation, with intensive consultation between the directors, management and the employees, and the workers' response has been enthusiastic.

"I may have been the first guy who has been their manager," Bacon said, "who has talked to them about their career concerns."

Training is a high priority with the new firm which hopes to be able to promote workers from within its own ranks to replace Esso people still employed on the rigs.

"Of course, it's also me they're training," Bacon said. "I feel that I'm on a training program as well, and so are the company directors. . .I'm quite cognizant that I'm here on their (the natives') invitation."

But, Shehtah is definitely not a corporate or make-work charity. By the end of its current contract with Esso, it plans



Man-made island in the Mackenzie River.

to be in a position to compete for further work in the Norman Wells project and even expand into exploration activities elsewhere in the Mackenzie Valley and Delta.

"Shehtah is going to have to be competitive and competent," said an Esso manager. "If they provide good value, companies like Shehtah could have definite competitive advantages over southern companies. . .I think most oil companies today would favor dealing with a local drilling contractor."

Esso also sees the company as a public relations plus.

"It's our hope," said Esso official Mike Arnett, "that our relationship with native communities and people will be enhanced by our participation in Shehtah."

For the natives of the Mackenzie Valley, Shehtah provides a "window" into the oil and gas exploration business, giving them their first opportunity to see such an operation from the inside.

For Shehtah, it means living in the limelight with considerable attention being focused on it by the media, the governments and the native organizations.

"After all," says Don Weisbeck, the NWT government's chief of Planning and Resource Development, "there's nothing like this that has ever, ever been done here before."

Although Shehtah may be the current attention-grabber on the Mackenzie Valley development scene, both Esso and its pipeline contractor, Inter-Provincial Pipe Line (NW) Ltd. (IPL), have devoted considerable time, effort and money to ensuring that Valley residents and firms have had a chance to participate in the development.

Both firms sent teams out to Valley settlements to hold consultation and information sessions to keep residents fully informed and answer any questions they might have on the project and on employment and potential business opportunities.

As a result, from 1981 to 1983 Esso awarded nearly $65 million in contracts to NWT firms, and estimates that another $12 million will be let out in 1984. In the same period, IPL spent more than $17 million for goods and services from more than 45 NWT firms, with more than half of that sum going to communities along the pipeline route.

Esso's spending was spread among nearly 200 northern firms for construction services, purchases of equipment and supplies, leasing of equipment, consultant services, transportation and lodging.

Re-Refined Lubricating Oil — A First in Canada

Lubricating oil has much in common with bathwater: it never wears out and its basic properties do not change, but eventually, because of contamination, it becomes unfit for use.

The disposal of used oil, however, is much less simple than that of bathwater. All too often it is burned, messily and inefficiently, sprayed on roads as a dust suppressant or discarded into drains or sewers, ultimately seeping into water systems, vegetation and, in time, the whole ecological system.

Responding to the need for environmental protection as well as energy conservation, re-refining technology has advanced to the degree that used oil can be collected and restored to its original — and in some cases, slightly improved — condition. Through the processes of de-metallization, filtration, fractionation and hydro-treating Canadian Oil of Toronto, Ontario, a subsidiary of Shell Canada Ltd., offers this specific technological capability to Canada for the first time.

From the outset it has been the intention of Canadian Oil to produce consistently high quality products by means of high technology processing.

The company's plant, which officially opened on the Toronto waterfront in September 1983, took four years to build and cost $21.4 million. During construction more than 13 million gallons of used lubricating oil were collected from as far afield as Nova Scotia and Alberta. Within a radius of 640 kilometres (400 miles) the used product was brought in by truck, and from farther afield by tank car.

The quality of the used oil collected varies enormously and is reflected by the prices paid. Used hydraulic and passenger car motor oil command top prices.

Production began on April 23, 1983, and since then the plant has operated without any major unscheduled shut down. Canadian Oil uses a multistage process method of de-metallizing, filtering, distilling and hydro-treating used oil.

Table A: Used Oil Quality Control Tests

Odour
Water Content
Flash Point
Density
X-Ray Elemental Analysis
Infrared Analysis
pH
Sediment
PCB Analysis
Vaccuum Distilation

Output in three viscosity grades — RR HVI 100, 250 and 580 — can be used as a base oil, or blended for use in a range of products.

Consistency of Feedstock

Studies revealed that many existing re-refineries are short of capital resources and consequently have to process whatever product is brought in the previous day. As noted, there is a tremendous range in the quality of used oil, so whenever these under-financed operations receive a batch of inferior grade their quality can suffer.

Canadian Oil's objective, on the other hand, is to maintain a consistent high quality output. To make sure that excellent product is not produced one day, and poor quality the next, a large pool of oil is maintained. In that way the quality of incoming batches is leveled, and no single batch affects finished product quality.

For this reason the re-refinery has extensive storage facilities and the aim is to have 13 million litres (3 million gallons) of used lubricant on reserve at all times. As a further step in achieving this desired consistency, extensive and thorough testing of incoming used oil takes place. Within half an hour of the arrival of any batch of used oil, its contents have been determined.

Table A shows the tests done and the time involved in a typical testing procedure.

Certain contaminants such as PCBs, which sometimes show up in used oil, are detected promptly and the shipment is rejected. If PCBs are found, the supplier is obliged by contract to take the oil back. There is seldom any problem in this area because of the interest of the federal Department of the Environment. In any event, should undetectable levels of these objectionable materials be brought into the plant the pollutants are destroyed or dechlorinated by hydro-treating.

Quality

Canadian Oil's objective is to make a product that is as good as virgin oil. That objective has certainly been met and surpassed in several respects. Re-refining is now truly proven as a working process and, one day, recycled oils may be sold as premium products.

In the following tables the qualities of Canadian Oil re-refined products are compared with various Canadian and U.S. virgin oils and two competitive re-refined oils.

Table B: Competitive Base Oil Properties

Property	Canadian Oil	Virgin Oil A	B	C	D	E	Re-Refined Oil F	G
Viscosity, mm^2/S, @ 40°C	42.14	51.90	28.73	49.30	34.38	50.80	39.56	47.85
VI	96	93	89	93	104	94	94	103
Pour Point, °C, ASTM D97	−12	−15	−12	−15	−18	−15	−6	−9
Colour, ASTM D1500	1.5	0.5	1.0	1.5	0.5	0.5	5.0	4.0
Acid Number, mg KOH/g, ASTM D664	0.05	0.05	0.05	0.05	0.05	0.05	0.24	0.05
Sulphated Ash, % wt	0.001	0.001	0.001	0.001	0.001	0.001	0.001	°0.001
Ramsbottom Carbon Residue, %, ASTM D524	0.06	0.06	—	0.07	—	0.05	0.27	0.22
Clay-Gel Analysis, ASTM D2007								
Saturates, % wt	82.78	75.29	79.82	79.80	97.67	80.74	74.98	80.28
Aromatics, % wt	16.58	24.28	19.96	19.30	2.30	19.05	23.66	18.55
Polars, % wt	0.64	0.43	0.22	0.90	0.03	0.21	1.36	1.17
Sulphur, ppm	780	5200	750	650	5.0	37.0	2460	1050

°Traces of Ca, Mg and Fe.

Table B shows conclusively that a very fine oil has been produced. In many respects the Canadian Oil base stocks are indistinguishable from several other competitive virgin base oils. Many of the physical properties and qualities commonly used to characterize base stocks such as colour, pour point, acid number, VI and Ramsbottom Carbon Residue are typical of virgin oils and certainly distinct from two commercially available re-refined oils.

The composition of the Canadian Oil base stocks is similar to that of several commercially available virgin oils. The sulphur level in the Canadian Oil stocks is in the mid to low range of base oils listed and reflects the mode of refinement. The lower sulphur level is achieved by hydro-treating although not with as severe a treatment as for oil D. The role of sulphur compounds seems to be different in virgin and re-refined oils. In virgin stocks sulphur imparts natural anti-oxidant properties to the oil whereas data would indicate that lower sulphur levels are desirable in re-refined oils.

Table C compares the uninhibited oxidation stability of the light and medium viscosity Canadian Oil stocks to comparable competitive virgin stocks. Performance of the oils is generally similar with the exception of oils J and M which are representative of oils which have been refined to a level resulting in the removal of all of their natural inhibitors. These oils generally respond well to anti-oxidants.

Table C: Uninhibited Base Oil Oxidation Test

	Light Neutral Canadian Oil	Virgin Oil H	I	J	Medium Neutral Canadian Oil	Virgin Oil K	L	M
Viscosity Increase, %	34	53	12	2000	13	20	12	800
Sludge, Lacquer Formation, % wt	0.45	0.82	0.35	0.01/ 18.0	0.29	0.11	0.30	0.01/ 4.2
Acid Number mg KOH/g	1.5	3.5	1.5	24.0	1.4	1.0	1.3	19.0

Table D: Base Oil Consistency — HVI 100

Property	Production Period May	June	July
Viscosity, mm^2/S, @ 40°C	23.41	22.62	20.77
VI	94	94	92
Pour Point, °C, ASTM D97	−12	−12	−12
Flash Point, °C, C.O.C.	196	196	192
Colour, ASTM D1500	1.0	1.0	1.0
Aniline Point, °C, ASTM D611	100.3	99.6	100.8
Sulphur, ppm	540	560	502
Copper Corrosion, ASTM D130	1A	1A	1A
Clay-Gel Analysis, ASTM D2007			
Saturates, % wt	83.08	83.21	83.35
Aromatics, % wt	16.50	16.48	16.33
Polars, % wt	0.42	0.31	0.32
Ramsbottom Carbon Residue, %, ASTM D524	0.05	0.06	0.04
Acid Number, mg KOH/g, ASTM D664	0.01	0.01	0.01
Metals, ppm			
Zn	0.1	0.1	0.1
Ca	0.1	0.1	0.1
Fe	0.2	0.1	0.1
Chlorine, ppm	1.0	1.0	1.0
Phosphorus, ppm	10	10	10
Demulsibility, ASTM D1401 Oil-Water-Emulsion	40-40-0(5)	40-40-0(5)	39-41-0(5)
Odour	nil	nil	nil

Table E: Base Oil Consistency Oxidation Screening Tests

Test	Induction Period (Minutes) HVI 100 May	June	July	HVI 250 May	June	July
RBOT — ASTM D2272						
Package A	134	145	142	134	138	134
Package B	264	254	247	274	256	257
Sequence IIID Screening Test						
Package C	228	232	233	242	242	235

The consistency of re-refined oils produced at Canadian Oil in three months of operation is shown in Table D. The 100 neutral product proved to be very consistent in physical properties and composition. Variation in viscosity can be attributed to optimization of distillation column operation. The absence of impurities is also indicated by the extremely low levels of metals, chlorine and phosphorus. The Canadian Oil stocks also exhibited excellent demulsibility.

Consistent response to anti-oxidants was also demonstrated in Table E as the oxidation life was evaluated using three anti-oxidant packages.

The sludging tendency and viscosity increase of a re-refined oil were determined to be superior to two virgin oils

The 100 per cent neutral product re-refined oils produced at Canadian Oil proved very consistent physically and in composition.

Figure 1: Sludge Formation

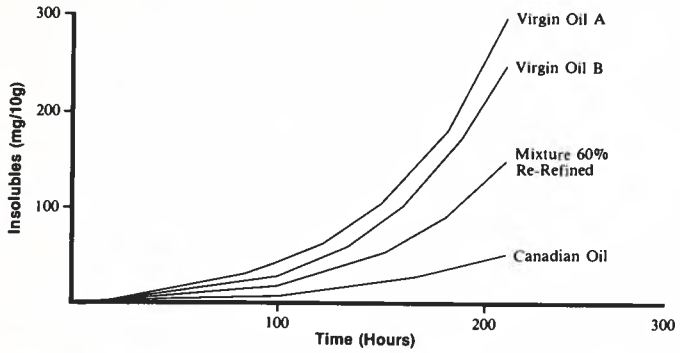


Figure 2: Modified Continental Oxidation Test

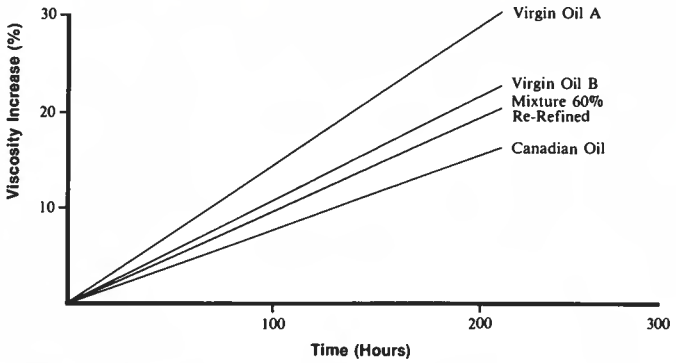


Table F: Modified Continental Oxidation Test

Oil Type	Designation	Time (Hours)	Viscosity Increase %	Insolubles mg/10g
Virgin	A	110	14.5	45
		160	25.0	150
		210	28.0	290
Virgin	B	110	10.0	27
		160	17.0	120
		210	20.0	250
Mixture 60% Re-Refined	C	110	10.0	33
		160	14.0	67
		210	19.0	140
Canadian Oil	D	110	9.0	16
		160	12.0	21
		210	16.0	40

Test Conditions:
Temperature — 172°C
Air Flow — 10 litres/hour
Base Oil plus Anti-oxidant
Dry Test

inhibited with the same anti-oxidant in modified Continental Oxidation Test as illustrated in Figures 1 and 2.

Performance in hydraulic oils is shown in Table F. The performance of the Canadian Oil stocks is compared to virgin blends using a commercially available hydraulic oil package designed to meet premium quality levels. Performance of the virgin and re-refined counterparts is very similar. The re-refined oils show a slight reduction in oxidation stability. Further research has indicated that minor modifications to the additive package result in significantly improved oxidation life which would certainly be competitive with many quality hydraulic oils marketed today.

Satisfactory engine test performance has also been demonstrated with Canadian Oil stocks in a 10W30 engine oil formulation. Table G illustrates satisfactory oxidation life and piston cleanliness in the Sequence IIID test while

Canadian Oil base stocks are of excellent quality and may be used in a range of formulations from hydraulic oils to automotive.

excellent sludge and varnish results as well as wear protection were indicated in the Sequence VD test. Satisfactory diesel performance was also achieved in the Caterpillar 1H-2 engine test. All engine test results were obtained from reference laboratories.

Conclusion

Canadian Oil base stocks are fully re-refined utilizing state-of-the-art technology. They are of excellent quality and may be used in a wide range of formulations from hydraulic oils to automotive engine oils. Clearly the Canadian Oil re-refined stocks are competitive with available virgin oils and in many cases indistinguishable from their virgin counterparts.

D.A. (Dave) Fisher, Business Manager, Canadian Oil (re-refining project) is a leading authority on re-refined lubricants.

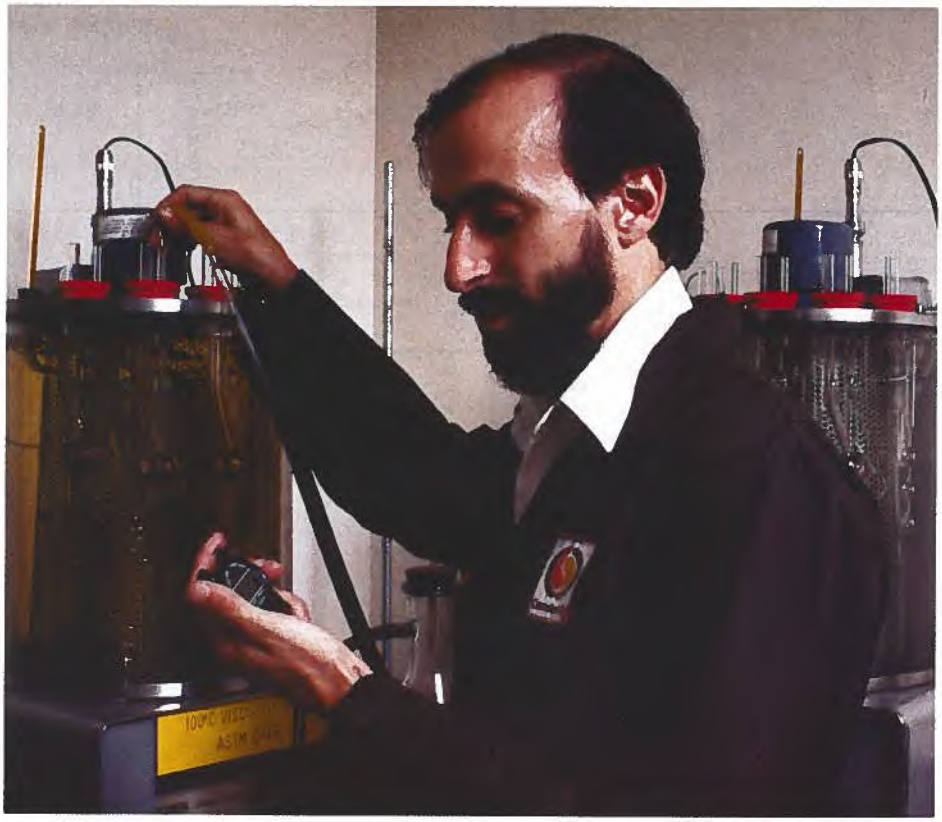
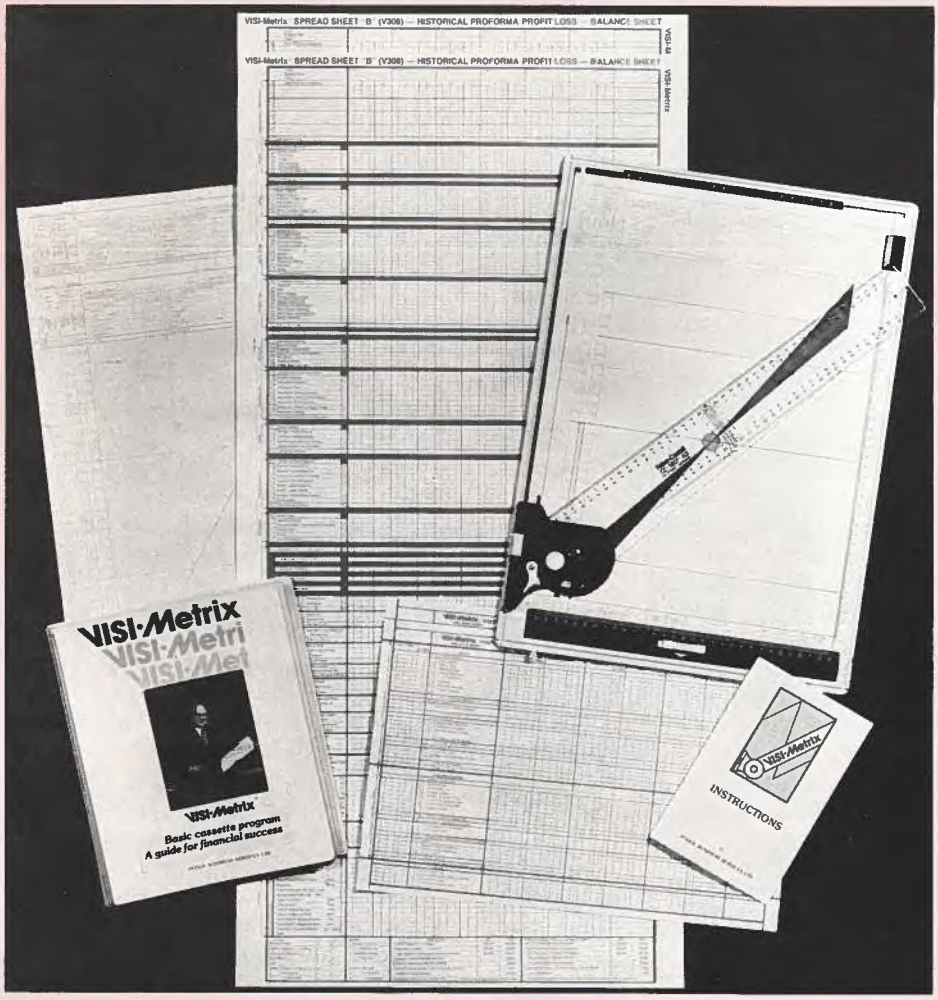


Table G: Engine Test Results

		CANDIDATE 10W30
SEQUENCE IIID Ratings	**RESULTS**	**API SF/CC LIMITS**
Average Sludge	Pass 9.49	9.2 Minimum
Average Varnish	Pass 9.26	9.2 Minimum
Ringland Varnish	Pass 7.54	4.8 Minimum
Viscosity Increase		
% increase @ 64 hours	Pass 69	375 Maximum
Oil Consumption	Pass 5.13	6.38 Maximum
SEQUENCE VD Ratings		
Average Sludge	Pass 9.63	9.4 Minimum
Average Varnish	Pass 7.72	6.6 Minimum
Piston Skirt Varnish	Pass 7.12	6.7 Minimum
Wear		
Average Cam wear, inches	Pass 0.0002	0.0010 Maximum
Maximum Cam wear, inches	Pass 0.0003	0.0025 Maximum
Oil ring clogging, %	Pass 0	10 Maximum
Oil screen plugging, %	Pass 0	10 Maximum
Ring sticking	Pass None	None
CATERPILLAR 1H-2		
Top groove fill	Pass 12	45 Maximum
Weighted total demerits	Pass 138	140 Maximum

CANADIAN COMPANIES & PRODUCTS

Companies wishing to take advantage of this feature may do so without charge simply by sending sufficient material on product or service for no more than 100 words and a glossy black and white photograph to Canadian Companies & Products,, ***Canada Commerce*** (BCOM), Department of Regional Industrial Expansion, Ottawa, Ontario K1A 0H5. As ***Canada Commerce*** is produced in both official languages, please send material in both languages if it is available.



A Financial Analysis "Tool" for Small Business

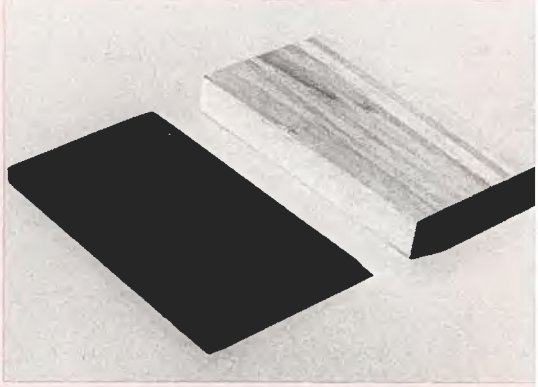
VISI-METRIX — for financial analysis — has been developed by Pogue Business Services Ltd. of Calgary, Alberta, as a tool to aid in the decision-making process of economic entities. It is "practical" in that the steps are logical and sequential; "visual" in that a graphic illustration is constructed to the model of the existing economic entity; "comparable" because it is difficult to make rational decisions unless alternatives can be displayed and compared.

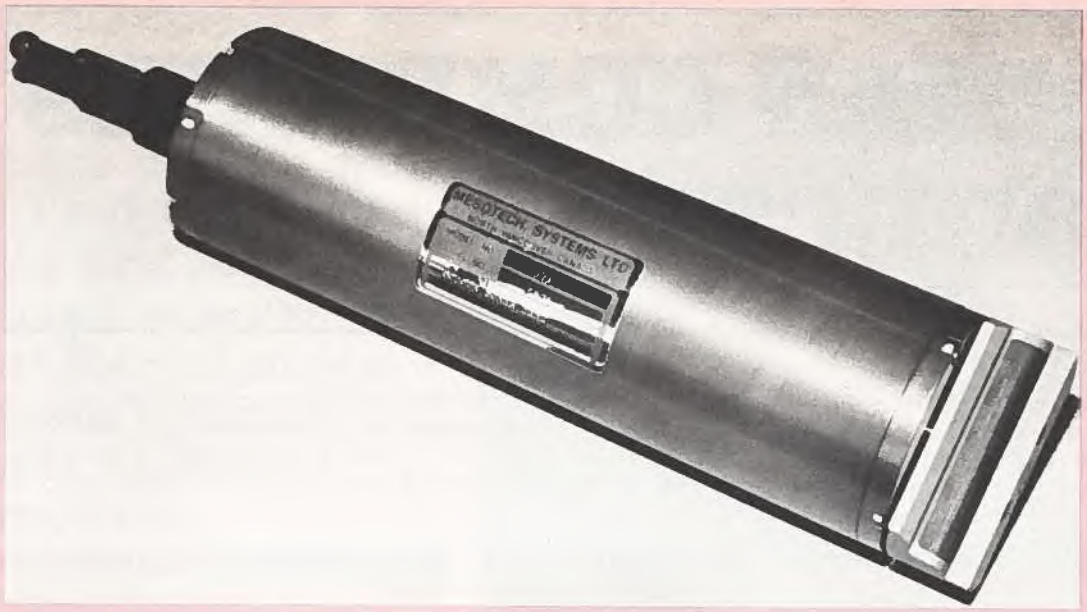
The basic version of VISI-METRIX is in two versions. The first is a manual kit including portable drafting board, instructions and appropriate graphs and schedules. This will be supplemented by a six-tape cassette program.

A New Product from "Weed Trees"

Renova Manufacturing Company Ltd. of Ottawa has developed a process to convert fast growing, low quality woods — poplar, alder or aspen — into "manufactured hardwoods" with the same visual and mechanical properties as natural hardwoods such as walnut or birch, as well as similar machining and finishing qualities.

A variety of hardwoods can be produced depending on the type of low quality wood used. For example, using poplar as stock will produce a walnut appearance while alder will produce a dark ebony-type hardwood. The commercial uses of these "manufactured hardwoods" are the same as any high quality hardwood and they can be produced as a veneer or in a wood plank form.





Precision Sonar Wins U.S. Design Award

A new precision colour imaging sonar, Model 971, has been introduced by Mesotech Systems Ltd. of Port Coquitlam, British Columbia. The company has recently been awarded a "Special Meritorious Award for Engineering Innovation" by *PETROLEUM ENGINEERING International* and *Pipeline and Gas Journal*.

Model 971 is capable of producing high definition images of the underwater scene and effectively extends the range of human vision (typically five metres maximum) to 100 metres. This allows inspection, measurement and site supervision for offshore oil, civil engineering, pipe and cable laying, and archaeology.

SUPER-PROOFER — 35mm Contact Printer

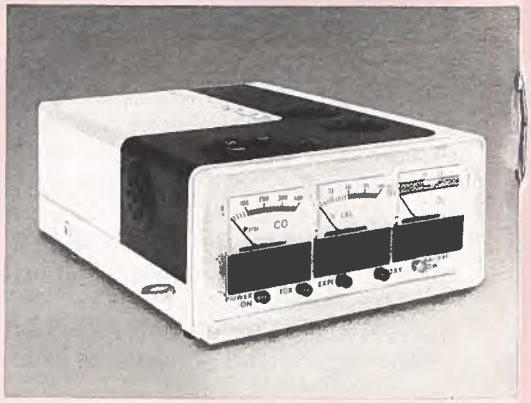
A new kind of 35mm contact printer for use in the darkroom — the SUPER-PROOFER — has been developed by ADITA Photography of Calgary, Alberta, a division of ADITA Enterprises Inc.

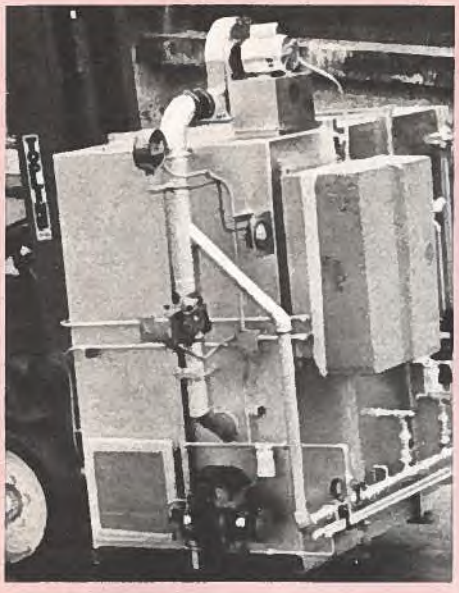
The SUPER-PROOFER can be used by amateur darkroom enthusiasts and professionals alike and is a 35mm contact printer unlike any other on the market. It has no glass pressure plate thus eliminating the problems of dust, fingerprints or scratches. Its own built-in paper holder assures perfectly registered prints every time. In addition, SUPER-PROOFER has no baseboard, making it lighter, more compact and less expensive than conventional contact printers.

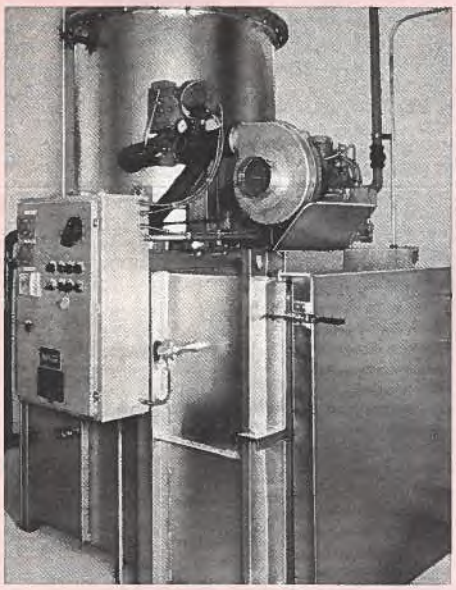
Breakthrough in Gas Detection

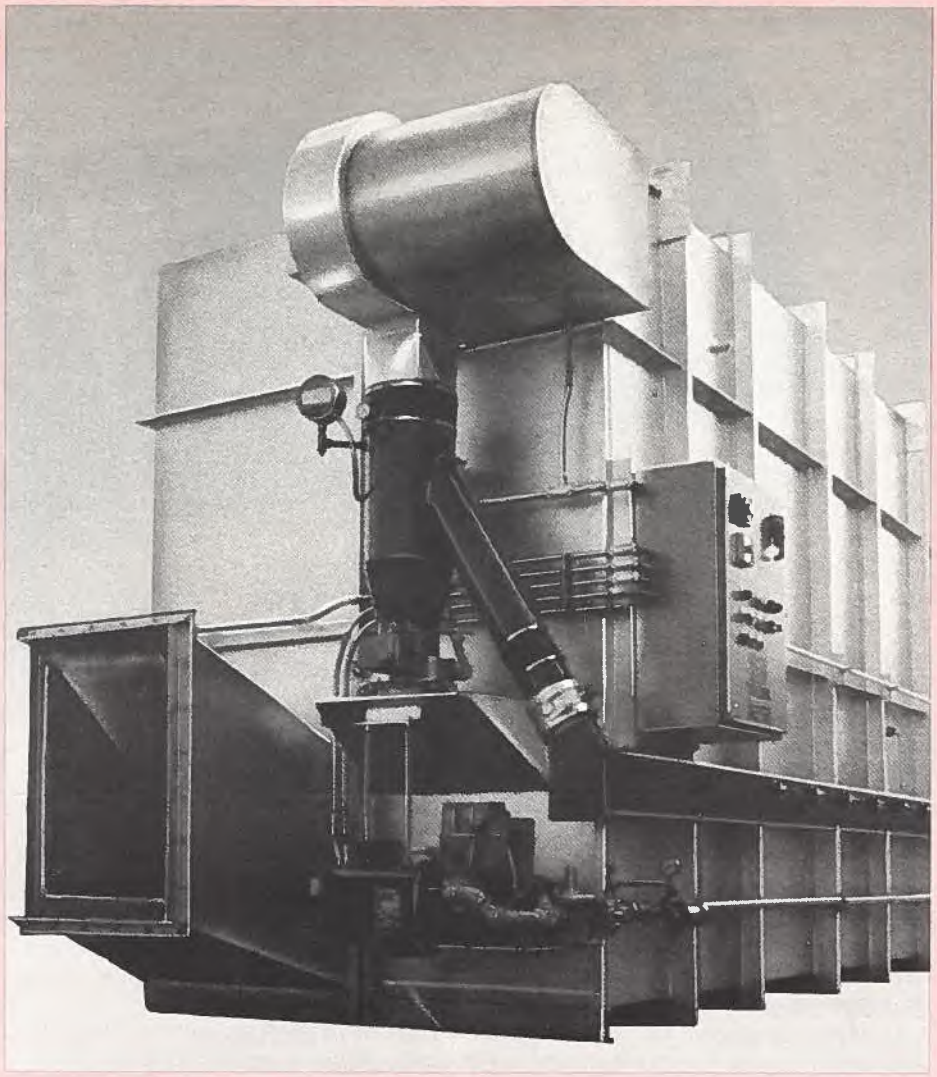
The Armstrong Monitoring Corporation of Nepean, Ontario, reports a breakthrough in the field of gas detection. The company's innovative Model 3000 series of monitors, with an exclusive three-meter, three-sensor concept, uses the most simplistic and efficient principles for ease of use in the field. It is proficient in detecting oxygen deficiency, toxic gases and explosive gases simultaneously.

The company also produces the "Macron 9000", designed to comprehensively detect the levels of deadly hydrogen sulphide while not reacting to interference gases that can mislead the user.







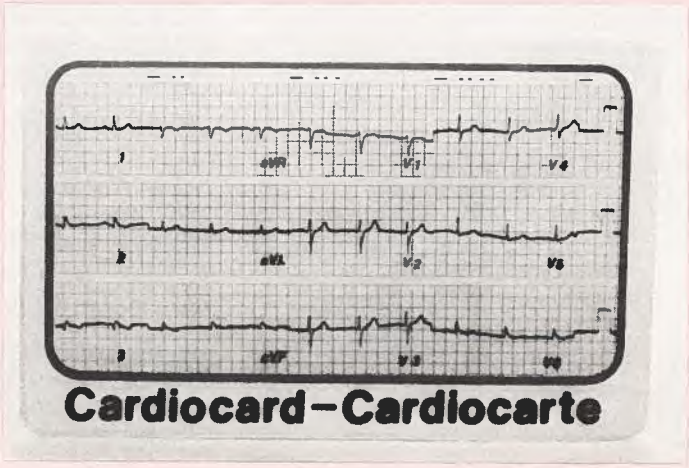


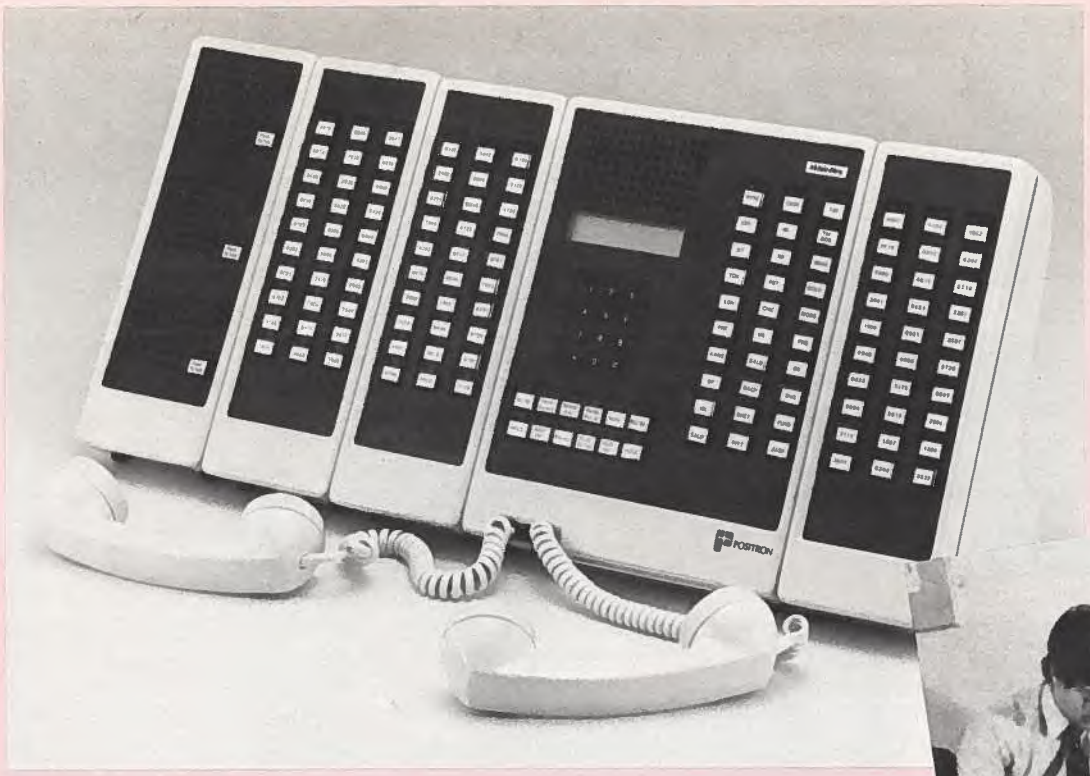
Solid-Waste Incineration Systems
The Trecaire[R] range of controlled-air solid-waste incineration systems, designed and manufactured by Trecan Limited of Mississauga, Ontario, are used in a wide range of industrial operations, municipal waste disposal, hospitals and clinics, construction camps, security disposal operations and nuclear power plants.

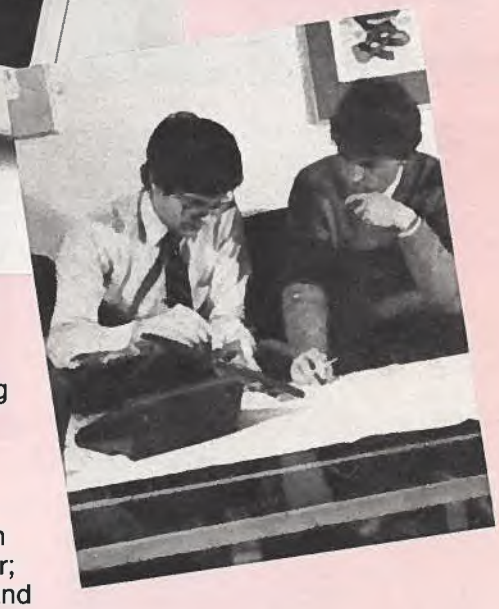
The solid waste is decomposed in a primary chamber and smoke and gases completely oxidized in a secondary chamber. No gas clean-up equipment is required to meet government emission standards for burning of conventional solid wastes.

Personal Card Identifies Heart-Related Problems
Wilmar Medical Services Ltd. of Montréal, Québec, has developed a valuable aid for people with heart-related problems. The CARDIOCARD is a wallet-sized (85.7 mm × 28.5 mm — 3⅜ in. × 2⅛ in.), portable, high-resolution reproduction of a patient's 12-head, standardized electrocardiogram.

The patient carries the CARDIOCARD at all times and presents it to a doctor to assist in diagnosis. It is also helpful in emergency situations where the vital information provided can be compared with emergency room tests. An additional printed card is included in the CARDIOCARD package listing patient and doctor identification, diagnosis, treatment, medications and any other serious illness.







Modular Electronic Telephone System
A recent challenge for Gad Shaanan Industrial Designs Inc. of Westmount, Québec, was to design a modular electronic telephone system for stock exchanges, banks and commodity traders requiring rapid access to multiple lines — and to produce it at a reasonable cost. The solution is the modular "System 302", a totally flexible system that can grow from 30 lines to 300, expanding in 30-line increments.

Many features are built into the system including red and green line use indicators; conference with up to three parties; speed dialer; last number recall. The design was based on field studies, testing and consultation with traders.

For further information about the companies, products and services listed, please contact:

Pogue Business Services Ltd.
505 - 6th Street S.W.
Suite 2605
Calgary, Alberta
T2P 1X5
Tel: (403) 269-2424

Renova Manufacturing Company Ltd.
170 Booth Street
Ottawa, Ontario
K1R 7W1
Tel: (613) 234-4523

Mesotech Systems Ltd.
2830 Huntington Place
Port Coquitlam, British Columbia
V3T 4T3
Tel: (604) 464-8144
Telex: 04-353637 (MESOTECH PTCQ)

ADITA Photography
Division of ADITA Enterprises Inc.
116 Bermondsey Way N.W.
Calgary, Alberta
T3K 1V4
Tel: (403) 274-7494

The Armstrong Monitoring Corporation
215 Colonnade Road South
Nepean, Ontario
K2E 7K3
Tel: (613) 225-0120
Telex: 0534895 AMC OTT

Trecan Limited
4540 Dixie Road
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L4W 1N2
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Wilmar Medical Services Ltd.
5845, Côte-des-Neiges, Suite 390
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Tel: (514) 739-5935

Gad Shaanan Industrial Design Inc.
4211 St. Catherine Street West
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Tel: (514) 931-8209

At Regional Launches

Strong Support Shown for "Think Canadian"

A catchy tune with an upbeat message supported by appropriate clips of Canadians at home, at work and in stores and supermarkets was launched on National TV in mid-August.

The 30 and 60-second TV ads ask the viewer to "Think About It — Think Canadian" when making their next purchase.

The federal government launched the campaign to help Canadian manufacturers capture some of the multi-billion dollar market for imported goods. In its cross-country program it has enlisted powerful allies in the business community to put its message across — Canadians help themselves when they buy Canadian goods that are competitive in price, quality, availability, service and replacement parts.

Included are the Canadian Chamber of Commerce, the Canadian Manufacturers Association, the Canadian Labour Congress, the Retail Council of Canada and the Purchasing Management Association of Canada, each of whom sees the program as a sophisticated version of the former "Shop Canadian" campaigns which relied more heavily on patriotism than comparison shopping.

Regional meetings set the campaign in motion across the country. John Alexander, vice-president of the Toronto advertising company which kicked off the campaign, told attendees at the Ontario regional launch that research showed that Canadians were irritated by the former campaign's call to patriotism. However, he stressed the new campaign is strictly voluntary and, given the new thrust of comparison rather than patriotism, it is designed to gain consumer confidence.

"Canadians don't seem to take well to being told what to do," he said. "But there is another factor here and that is now being addressed. Previous programs as well as this one have been aimed at the consumer market. But there is another major buying power and that is business, industry and commerce and they purchase vast amounts ... in

fact their purchases are larger than those of the consumer market for products used in the office or in their businesses as well as for parts and sub-assemblies. A 'Think About It — Think Canadian' campaign superimposes itself across this consumer group more satisfactorily than say 'Buy' or 'Shop Canadian'."

In recent *Canada Commerce* interviews with Neil McLeod, executive vice-president of the Purchasing Management Association of Canada (PMAC), and Verne Denholm, vice-president, Canadian Manufacturers Association (CMA), both were in complete agreement with Mr. Alexander. They were particularly pleased that the new program dealt with commercial purchasing.

For Mr. Denholm the new initiative is a logical extension of the former programs which, as far as CMA is concerned, go back to 1910 when it launched its "Proudly Made in Canada" slogan to promote its buy-domestic policies.

Another facet of the program, the recently published book *Manufacturing: A Catalogue of Canadian Market Opportunities*, is a further initiative that is strongly backed by CMA, and one which ties into CMA's own Canadian Trade Index. While the catalogue identifies products currently supplied through imports, CMA's Index identifies Canadian firms which either supply or are capable of supplying similar products.

To make the Index service even more valuable to firms seeking company and product information the CMA is now making it available through computer terminals to companies which subscribe through the Info Globe division of the *Globe and Mail*.

In this the Index complements another phase of the "Think Canadian" program, the up-dated Business Opportunities Sourcing System (BOSS) of the Department of Regional Industrial Expansion (DRIE), which also provides a computerized listing of Canadian suppliers and their capabilities. As the lead government department in the program, DRIE makes this information available through Business Information Centres in its regional and local offices, as well as designated offices of the Federal Business Development Bank and Chambers of Commerce across Canada.

The PMAC, says Neil McLeod, will be promoting the campaign through its newsletter and seminar programs. He was particularly pleased that chief executive officers of Canadian manufacturing companies received letters from DRIE. In that way, he said, the "Think Canadian" program would be made company policy in many of their member firms ... providing greater incentive to the purchasing agents to follow suit.

A staunch supporter at the Toronto regional launch of the program was Alasdair McKichan, president of the Retail Council of Canada. "Our attitude is one of enlightened self interest," he says. "What is good for primary, secondary and tertiary manufacturing in Canada is, by extension, good for retailing. We don't have customers in our stores unless they have jobs.

"What we'd like to see our customers reminded of is that, when all things are equal, there is a benefit to the economy and indirectly to them if they choose Canadian," he continued.

All in all, the "Think Canadian" program has been well accepted by the business section. The next several months will determine whether this enthusiasm translates into Canadian sales and Canadian jobs.

SDF — A Fund for Ideas

A hypodermic injection without a needle . . . a machine that bores tunnels in rocks and erects the walls behind it . . . a twin-engine inflatable search and rescue boat . . . just some of the projects supported by the Source Development Fund (SDF) of Supply and Services Canada.

The SDF is an important element of the Canadian government's economic expansion strategy of the 1980s. In line with the policy of purchasing from Canadian sources wherever possible, the SDF helps Canadian-based industry get a larger share of the more than $10 billion in annual purchases of goods and services made on behalf of federal departments and agencies.

The SDF was established in 1981 for a trial period of three years at a level of $10 million per year. Its purpose is to encourage the establishment or expansion of Canadian sources of supply for various products or services required by the federal government. Provided there is a firmly identified government requirement and significant and lasting economic benefits to Canada, the SDF is able to assume certain incremental and developmental costs relating to Canadian content, and product development or innovation.

The SDF is highly regarded by provincial governments, industry, labour and federal user departments as a means of increasing the level of participation of Canadian business in federal purchasing and in promoting early use by government of new high technology products with substantial export potential.

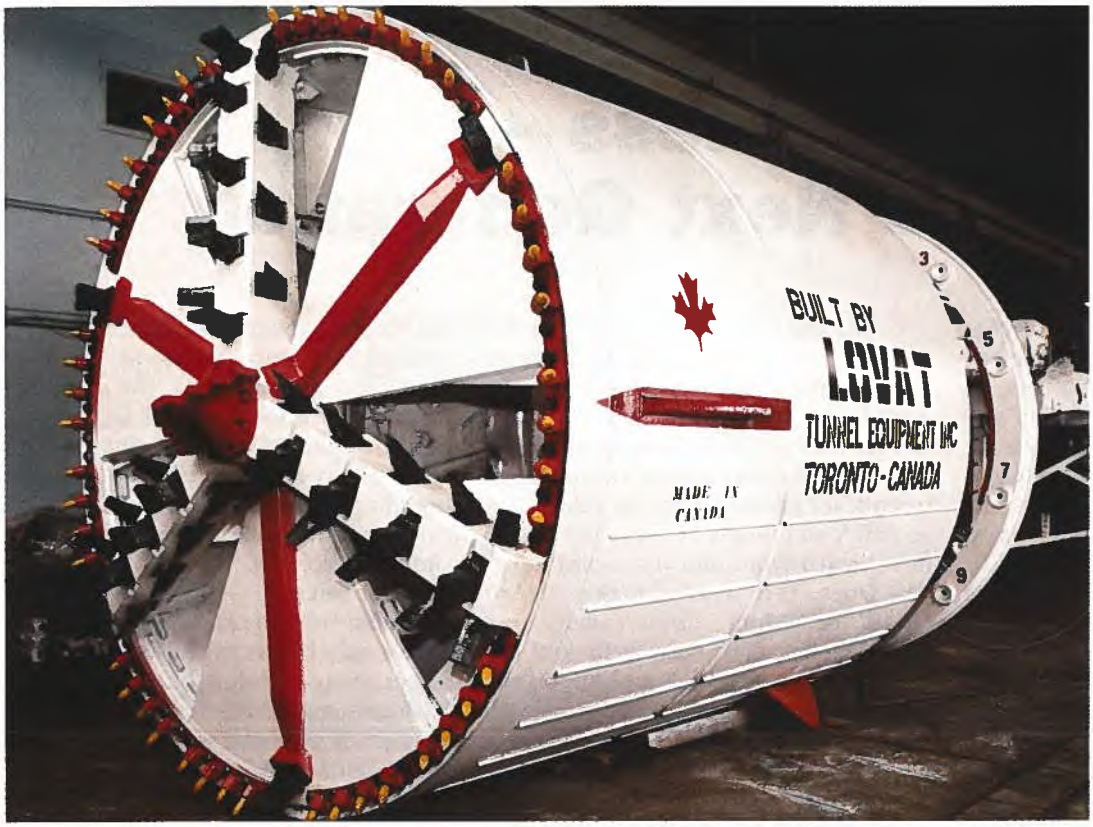
For instance, with the help of the SDF, the Department of Veterans Affairs acquired from Preci-tech Ltd., of Montréal, Québec, and Charlottetown, Prince Edward Island, preproduction prototypes of a needleless hypodermic injection device known as Preci-Jet for clinical operational testing and evaluation in the treatment of diabetics at Sainte-Anne-de-Bellevue Hospital, near Montréal. The instrument is specifically designed for self-administration of insulin but other areas of application are being explored concurrently.

Manufacturing production is planned for the company's Charlottetown facility and will result in up to 300 person-years of high technology employment in Prince Edward Island over the next 10 years.

In another illustration, the SDF and the NRC's Program for Industry/Laboratory Projects supported Lovat Tunnel Equipment of Toronto in the development of the cutting technology required to deal with the high density sedimentary rock found in coal mines. In view of the potential productivity and employment benefits involved, the Treasury Board authorized the SDF to assist the Cape Breton Development Corporation (DEVCO) of Nova Scotia with the purchase of a $10 million, 762-cm (300-inch) Tunnel Boring Machine for use in opening the Donkin-Morien mine.

This prototype unit has satisfactorily completed its initial 1 200 test drivage. Cost savings on this phase, estimated at about $8 000 per metre, have alone more than repaid the SDF contribution to the project.

Twin-engine inflatable search and rescue boat.



Tunnel boring machine.

Moving westward, the SDF awarded a contract to C. W. Lucas Ltd. of Richmond, British Columbia, to develop and manufacture a prototype twin-engined rigid hull inflatable boat. Lucas is now in a favourable position to capture a substantial portion of the rapidly emerging North American market for improved search and rescue craft; sales of 300 boats over the next 10 years are anticipated, providing 146 additional person-years of employment.

The above are only three of the many proposals supported by the SDF, resulting in significant and lasting benefits to Canada and the Canadian economy. Any Canadian-based manufacturer may submit proposals to the SDF provided the following important conditions are met:

- there must be a current or firmly identified future requirement by a federal government department or agency;
- there must be a significant and lasting industrial benefit to Canada;
- the fund can pay only incremental costs on contracts let by Supply and Services Canada or another authorized contracting authority on behalf of federal departments.

One of the criteria for SDF assistance is that there must be a significant and lasting industrial benefit to Canada.

For information on the SDF and a copy of the *Guidelines for the Preparation of a Source Development Fund Application* write to:
Manager
Canadian Business Opportunities Group
Supply and Services Canada
Place du Portage, Phase III, 3C1
11, rue Laurier
Hull (Québec)
K1A 0S5
or call (819) 994-3791

Needleless hypodermic injection device.

Federal Business Development Bank (FBDB)

The Family Business — Teaching the Next Generation

Everyone is more or less a teacher at heart; each enjoys the ego satisfaction of showing others, of advising, of putting our thoughts and ideas into other minds. And every business person with a child plans on teaching that child what he or she thinks he or she has learned about the great mysteries of life. This is normal.

But is it a good idea? George Bernard Shaw once observed: "He who can, does. He who cannot, teaches." Of course, Shaw was a famous cynic — but was he not also a pragmatic realist? Can one actually teach modern business methods — how to run a firm, how it should be run, how to cope with changes and growth — to one's children in a family concern?

The most common reaction to this question is, "I'll do whatever teaching is necessary. Where else can my child learn how to run my business?" So most of that younger generation play at work in the firm during summer vacations, go to college, perhaps back to school for an MBA and finally arrive ready to step in a "learn from dad (or mom)".

Does this really make sense? "Dad" or "Mom" doesn't really need a student — they need help and are much too busy to do a thoughtfully thorough, well organized teaching job.

Look at how it works in practice:

Case History #1

This company is a major midwest electrical wholesaler. The father, now in his late sixties, has become wealthy and a leading community citizen, well known for his civic and charitable activities. A man of boundless energy, he heads up a half dozen committees, two fraternal lodges, is director of a bank and a number of small businesses — yet puts in a 10-hour day at work. He owns a yacht but charters it out because he (realistically) has no time for vacations and similar frivolities.

The son is 50 — and has worked for his father full time for 28 years! By now he not only knows the business, and his father's way of doing things, but he has become steeped in it. Unfortunately, as is frequently the case with such a strong-willed father, the son merely does what (and how) he is told.

After three decades of "experience", the son knows all he needs to know — except how to think for himself, or to be a dynamic president. He knows nothing about meaningful responsibility, idea generation, venture management, risk taking, or decision making. He has not been permitted mistakes so he has never had the chance to learn from them; he has never known the pleasure of a good decision nor the educational value of a wrong one. He was not taught by his father — he was drilled.

OBSERVATION: This is a bad situation, carried to the ultimate. Eventually, the son will doubtless become president and be utterly unprepared for the responsibilities of the position. Unless the firm runs itself, the son would appear to have only three choices:

First, try to find a consultant, advisor, or director who could guide him in learning the responsibilities and decision-making which a president must know. Second, resign and let the fireball grandson take over. Third, sell the firm. Whatever the future of this firm, the father has come perilously close to wasting his son's entire life.

Case History #2

A similar beginning, but here the father let the son "try out" in the various departments, getting a smattering of

each, then select the area which he liked best. The firm is a stamping plant and the son took over the sales end. He has been quite successful and, at 42, has developed into a fine salesman.

Unfortunately, however, the father is about ready to retire and it has just begun to sink in that the son can sell stampings but he has only a vague idea about how to run a stamping plant. A bigger firm might have developed people he could lean on — strong manufacturing and estimating departments under the father — or the son might have become executive vice-president, learning to work with all the departments. But this did not happen.

In a sense, the son was not taught at all; he was pushed into sales (which the father did not like) or else he moved toward sales work to obtain independence. Today he knows next to nothing about the business as such.

OBSERVATION: Like the first example, this father is a doer, and either not interested in teaching or is incapable of doing it. The son is a self-taught sales "manager". Fine as such, but a bad risk when he takes over total management. His best bet will be to sell the firm to another stamper who is weak on sales (which should not be difficult to find). Learning the business will be hazardous at best. Not impossible, of course, but the firm will have to be very solid to survive a couple of years of his amateur management.

Case History #3

This company is a cutting-tool manufacturer, employs 110, the father is 56 and the son 34. The son worked summers at his father's plant through high school and four years of college. Then, under his father's guidance, he left to work at various jobs for other companies all in metalworking, all small precision parts, each with between 35 and 200 employees. He has been a foreman, methods man, salesman, and cutting-tool service man.

He has just rejoined his father and will take over production management. No vice-president title — he will earn his keep. But he has followed a carefully prearranged plan worked out years before.

He has knocked about, seen other businesses, worked for other men and has convinced himself that he wants to take over the family business. He brings in the fresh air of outside ideas and

experience, and has deliberately arranged for constant replenishment by carefully selected outside advisors.

So this father has the rare pleasure of knowing that his son has joined him because, as an adult, he has decided to — not because of habit or ignorance or because he could not make it on the outside. The son has learned about business and the world — now he is ready to learn about the family business and about his father's methods.

OBSERVATION: The future looks bright for this business. Not that all will be rosy, or that the son will not want to bring in ideas and methods or to make changes which will shock his father. But the son is not just "Sonny", he is an adult and an experienced businessman. Granted, he has not run a company, but he has watched four other presidents run companies; he has seen brilliance and stupidity, good luck and bad, confidence and timidity. He will look at his father as a man of great accomplishment, but not as a demigod. They will make an excellent team — if the father can rise to his own planning.

COMMENTS: The best of these three examples — the last one — has developed a son with considerable outside business experience but no actual experience with management, risk taking, or decision-making. These he still must learn and they are crucial. While this particular company, and father-son team, will probably do all right, it would have benefitted greatly if the son had actually managed a business, no matter how small.

For that reason, a better example was set by a Detroit firm. Here the son has worked only for the family firm but one department was split off as a completely separate corporation, with the son as president. It is small (18-man) but he runs every aspect of it. He has his own suppliers and sells to both the family business and to other customers.

The father taught his son the rudiments of business, then turned him loose to develop working experience at the helm of his own company. They plan to remerge the firms when the son is ready to move in and begin to apply his know-how to the larger operation. But in the meantime he is learning presidenting by actually being a president; a rare and valuable experience.

Supplied to Canada Commerce *by the Federal Business Development Bank. Adapted from* The Family in Business *written by Frank M. Butrick, a leading consultant, speaker and author on family-owned businesses.*

Room to Make Mistakes

Genuine creative organizations work best with leaky systems that might be just a little bit out of control

There is a definite and precise menu for creating excellence in managing the modern corporation. The first ingredient is, of course, professional management, because without it you are not going to have proper development of the other ingredients, such as innovation and high productivity.

Professional management by definition includes a striving for excellence. It includes as well an ethical sense and a set of carefully crafted values. It requires deep skill learned over years as a result of long apprenticeship or practice. Professional management also requires a dedication to quality and, perhaps most important of all, a commitment to something beyond money.

Profits are like breathing. You have to have them to make the business function. But that is not why you're in business. A willingness to get it right, even if it costs you money in the short-term, is a prerequisite of professional management. The Japanese have this willingness, along with a commitment to the long-term, which our corporations have not been able to develop to any great extent.

Excellence in management means innovation in two senses. The first is the ability to create a steady stream of new products in response to change. The second is the creation of a climate of innovation, and it is in this aspect that good managers stand out from their more mediocre fellows.

Excellent companies in the U.S. and Canada treat all their people as a source of ideas for innovation and productivity improvement just as the Japanese do. They have very rich systems of rewards that include more than just money. They have gold stars. They have hoopla. They celebrate success. They make most people winners. They value products that give meaning to the things people must do to earn their living.

The thing about innovation is that you never really know where it is coming from. An Arkansas farmer running a little company called Chicken Pride reprogrammed some of Data Point's software on his own and astonished the company's engineers with the improvements he made in their systems. At Hewlett-Packard, an engineer who was dissatisfied with the company's progress in personal computers took some borrowed equipment and in only three weeks, working by himself, put together a beautifully running, saleable prototype of a personal computer that was capable of doing almost everything the company required of it.

There are many other examples of how individual ingenuity, almost randomly applied, came up with innovative products that generated millions of dollars in sales for the companies involved.

Excellence in management means innovation in two senses: creating a steady stream of new products and a climate of innovation.

A husband fixed up a little package of tape and gauze to cover the many burns his new wife was suffering while trying to learn to cook. The little package turned out to be Johnson & Johnson's phenomenally successful — and useful — Band Aid. Similarly, a chorister, wanting something better to mark the pages in his hymnal, came up with those marvelous little pieces of sticky yellow paper that the 3M company is now marketing so successfully.

The point of these and thousands of other similar examples is that innovation just does not happen in predictable ways. Successful managers realize this. However, until we get our managing systems more consistent with the way the innovative process really works, our corporate capacity to innovate is always going to be unnecessarily limited.

Innovation is often sloppy, slogging work, more often the product of what have been called "leaky" systems — or systems that leave people space so that they can fool around with things on their own. This is true of creative organizations. They give their people some room to try out ideas, to make mistakes and not get killed in the process. Organizations that are broken up into small units not only work, but are very innovative, thus reinforcing the conclusion that the whole process of innovation is messy as far as formal management techniques are concerned.

However, you have to give up some control in order to achieve greater innovation. You do what the Japanese do. You widen the boundaries around the solution space. You say to the organization, in essence, "Look, we want to compete in these areas, doing approximately these things."

Then you let the organization go to work in a very loose and informal way. You almost foster randomness in the system. In fact, this is one of the things that really makes for innovative cultures, organizations, and economies.

Management needs more often to apply the "ready-aim-fire" principle. You get a lot of things going, make mistakes, even encourage mistakes. You work through a control system that is just tight enough to keep you from going out of business in the process of being innovative.

Knowing how to handle people is, of course, a key to innovation. It is perhaps *the* key. As somebody who was supposed to give a speech on "industrial relationship" put it, "I can't do it. I don't know any industrials. All I know are people." And it is people who are the key to making an organization productive.

In 1976, Lucas Aerospace was faced with a massive layoff of its 20 000 employees. With an uncharacteristic fit of British energy, the employees came

forward with 150 new product ideas, all carefully documented with market research and technical specifications. They were presented to management in six volumes of 200 pages apiece. Management looked them over, decided they were all practical, and fired the work force anyway. Since then, the work force was nominated for the Nobel Peace Prize and a lot of those ideas were tried out and produced successfully by others.

Failures of this kind are not confined to any one nation. Look at Gaines Dog Food, where the plant manager and 70 workers had taken on the jobs normally handled by middle management — designing work flow, job rotation, and the like. They were running productivity at 40 per cent above their previous experience or that of similar plants in their industry. Within five years the corporate staff at General Foods had fired the group's leader and gone back to the old system, with the result that they lost all their productivity advances.

Then there is the Dana Corporation. They have accomplished phenomenal productivity improvements in an industry that is a dog, strategically speaking. The basis of their philosophy is that nobody knows better than the person sitting within the 2.3-square-metre (25-square-foot) area of his machine how to operate that machine and improve the quality of its output, optimize the material flow, and how to keep that machine in operation.

Schlumberger Ltd. has an annual volume of $6 billion, return on sales of 21 per cent, and return on equity of 34 per cent. Tremendous. In talking about his corporation, the chief executive told a *New Yorker* writer, "One of our problems that we worry about all the time is how to maintain and propagate the company's spirit." The word he used was spirit. This super-ordinate goal is a preoccupation of Schlumberger executives.

That leads me to my last point: the love of product, the love of what you do. I think of Herman Lay of Lay's Potato Chips with its fabulous market shares and wonderful margins, unabashedly standing in front of a business school audience, waxing eloquent for about five minutes on his concept of the perfect potato. Some of the ripe, young, and eager students may have been nonplussed. Not Lay. He loves potatoes and potato chips. And his business certainly shows it.

Ray Kroc, founder of McDonald's says in his book, *Grinding It Out*, "You've got to see the beauty in a hamburger bun." And then he goes on to compare a hamburger to a fishing fly. Isaac Walton may have rolled over in his grave. But then he never ran a hamburger franchise.

Aside from normal corporate concerns with quality, service, and profits, excellent companies focus on allowing space for innovation and conveying strong positive feelings about the product to their employees. Executives who are able to do these things are the true professionals.

— by Robert H. Waterman Jr. A Director of McKinsey & Company Inc. (San Francisco, Calif.) a major U.S. consulting firm.

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DIDAK — A Small Business Gives a Big Boost to a Small Town

Didak Manufacturing Ltd., with its Axiom label, is poised to capture a fair share of the expanding Canadian market for floppy diskettes — the recording medium of the mini-computer — and prove itself a good corporate citizen of the Ontario town of Arnprior.

When two young men, Jim Wilson and David Rothwell, were given the green light to do a market analysis of floppy disks or diskettes (as a result of studies by their parent companies Didak Corporation and Compusave), they set to work with a vengeance.

A year and a day later, on June 6, 1984, the market study was completed, finances raised, facility constructed and staff hired and trained — and Didak Manufacturing Ltd. held its official opening in the small Ontario town of Arnprior.

While Arnprior was chosen by Didak, it is symptomatic of what the rapidly expanding market of electronics can do for small towns anywhere in Canada and what those towns can do in attracting it . . . provide the necessary infrastructure and be on the lookout for the entrepreneur with the ideas that can capture a small but significant niche in the marketplace.

Small Town Advantage

In the words of Jim Wilson, "In larger centres it would have taken more than a year just to have building permits approved. We have received the highest level of support and enthusiasm from (Arnprior) Mayor Tom Sullivan and his council. But there were other reasons, some personal and some business, which entered into our decision. Both Dave and I live in the area, within 25 kilometres of Arnprior, and it is in close proximity to the high technology industry in Ottawa with easy access to Montréal and Toronto."

For Arnprior, the new industry is a major boost to the town's economy, promising to provide up to a hundred new jobs when in full production and currently employing approximately 70, most of them from Arnprior itself and from the surrounding townships.

For Didak, the challenge is to establish a share for its new product of a market that is growing at some 40 per cent annually.

Recognizing that floppy diskettes must be manufactured to exacting standards, Didak President Wilson and Vice-President (Marketing) Rothwell decided to use only the latest in proven machinery and production processes. It was only in this way that high quality, so necessary for long-term growth and market penetration, could be achieved.

Quality A Must

Because such a vast amount of information can be stored on a single diskette, there is virtually no room for tolerance in their manufacture. According to Wilson, "Most consumers realize the time and effort it takes to enter data on a diskette. The loss of this effort through faulty manufacture of the diskette will result in a loss several times that of the cost of a blank — sometimes an irretrievable loss."

"As a result," adds Rothwell, "some 20 per cent of our manufacturing process will be devoted to quality control. This is very much a high-tech product. Every stage is super-critical and every one is carried out in clean rooms with strict control of air pressure, humidity and static electricity as well as dust and particle removal. A whiff of cigarette smoke, for example, could be a disaster in this business."

Diskette in Two Parts

A diskette is made up of two parts — a flexible mylar disk and an outer envelope. The disk has a spindle hole and is coated with iron oxide particles. The black plastic envelope is fabric-lined with slots and holes to provide access to the disk, which is sealed inside.

When a finished diskette is inserted in a disk drive connected to a microcomputer, data can be magnetically recorded (written), read back or erased — all with incredible speed.

Fewer than eight companies in the world now produce the iron-oxide-coated mylar from which the disk of the diskette is made. It comes in a relatively rough form and the surface of every batch varies from the next.

Mylar Imported

Didak imports the coated mylar in rolls and then, by a process of die-cutting, burnishing and testing, turns out disks that are absolutely uniform, regardless of the source of the material.

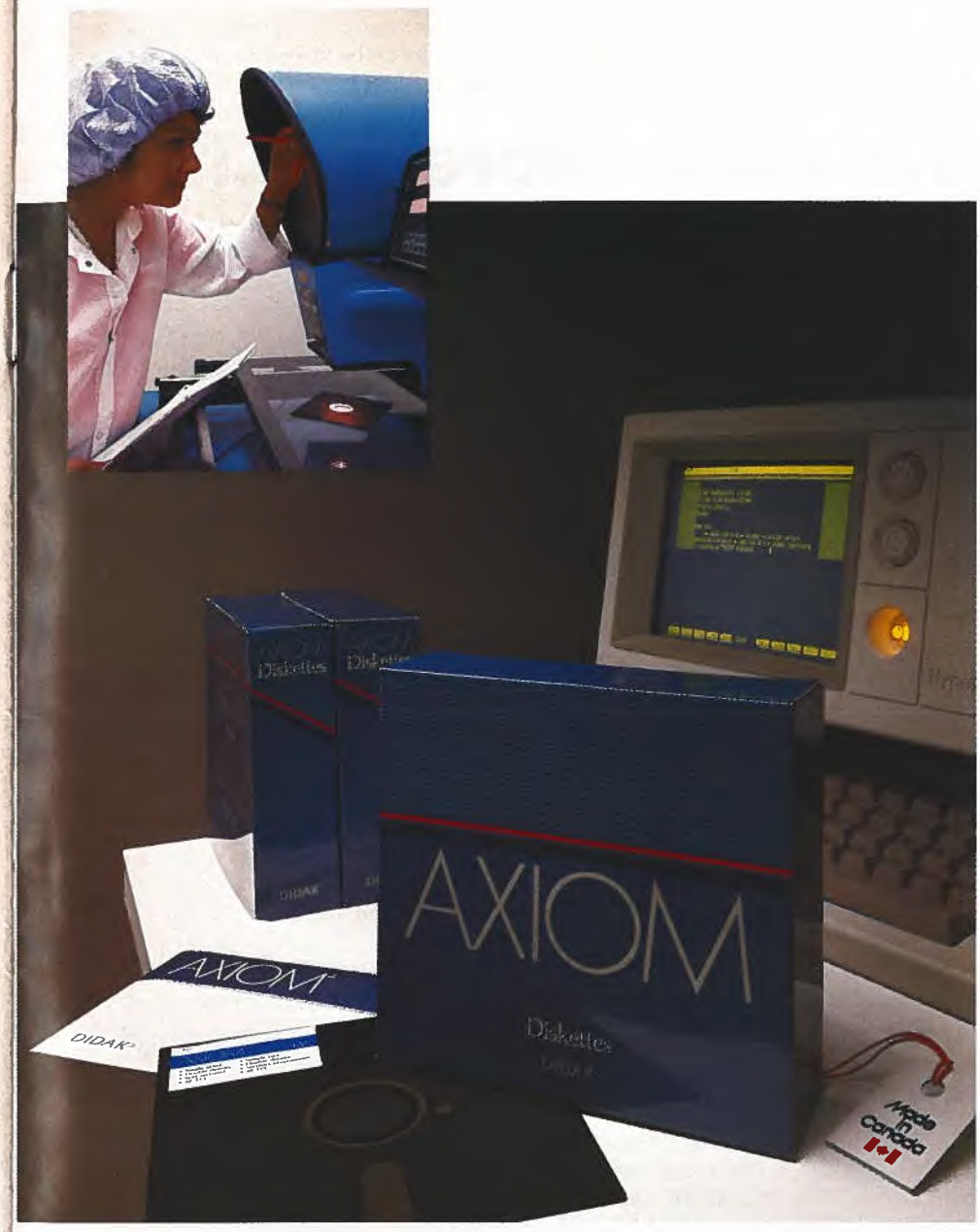
The envelopes, on the other hand, are made from Canadian raw materials and must meet standards that are almost as strict as those for the disks.

While initial runs at Didak are being concentrated on the 13.3 cm (5.25-in.) and 20.3 cm (8-in.) sizes at present, the company also plans to produce micro-diskettes (less than 10 cm — 4 in.) when industry standards are set.

For Greater Flexibility

To give greater flexibility to its operations, Didak has equipped its plant with the necessary machinery to duplicate format diskettes which carry the program instructions for operation on a mini-computer. By providing a one-stop service to program developers, the company expects to capture a large share of the Canadian market from the point of both convenience and price.

Backed by a business plan based on the experience of their engineering consultant firms, Wilson and Rothwell were able to raise most of the $2.7 million total cost of the high technology venture, aided by a $655 000 repayable contribution from the federal Department of Regional Industrial Expansion (DRIE) under the Industrial and Regional Development Program (IRDP).



Strict quality control (inset) at its Arnprior plant is winning domestic and foreign orders for Didak's Axiom line of floppy disks for mini-computers.

By November 1983 construction had started on the 1 675 square metre (18 000 sq. ft.) plant, the precision equipment was ordered and a two-month training course for employees was being developed.

In order to keep abreast of the latest technology, the company relies on its research and development and engineering department. Headed by Yehiel Sobol, this department is responsible for expanding current disk technology and improving the capability of Didak's Axion diskettes.

"The production technology in this business is changing so quickly that manufacturers who don't have the latest proven production equipment are at a distinct disadvantage," says Sobol. "We are constantly testing new machinery and materials to see if we can improve our production, particularly the quality of our product."

As far as R & D is concerned, Didak is currently working on the 13.3 cm (5.25 in.) and 20 cm (8 in.) diskettes and will go into full-scale production this fall. The smaller micro-diskette is awaiting the establishment of industry standards.

Success Story

All of this is a success story, not only for Didak but also for the small Ontario town of Arnprior in which it is currently located.

Although the twin underpinnings of the town's economy throughout the 19th and 20th centuries — forestry products and textiles — are still important, Arnprior has been actively wooing other, more contemporary industries since the mid-1950s.

Forestry still plays an important role, with operations both in the town proper and in nearby Sand Point but the loss of the Kenwood Blanket Mills a few years ago spelled the end of the traditional textile factories.

However, related textile industries continue including the production of felt and fabric belts for the pulp and paper industry by Huyck Canada Ltd. (employing 250), and a wide range of fibres and yarns for the carpet industry by Badische Canada Ltd. (employing 220).

Didak is the latest in an impressive line of industries Arnprior has attracted over the years including: Playtex Ltd. (1953); Boeing of Canada Ltd. (1954); Chase Nuclear (Canada) Ltd. (1956); Nor-Sand Metals Inc. (1954); Pfizer Canada Inc. (1956); Calcutron Corp. (1969); Hypernetics Ltd. (1972); and Square D Company of Canada Ltd. (1975).

One of the main attractions of the town today, as it was in 1831 when it was first settled by the Scottish Highland Chief McNab, is its location at the junction of the Madawaska and Ottawa Rivers.

Venture A Winner

All in all, the Didak venture in Arnprior looks like a winner from all points of view.

- For the investors, the product is establishing itself in a growing market.
- For the company, it is a success in the making.
- For the town of Arnprior, it means more employment for its labour force and added tax base.
- And, for the government, it means that another high technology product can be sourced Canadian, thus improving the nation's balance-of-payment picture on the international market.

— by Bob McDonell
Canada Commerce

Unitron Industries Ltd. — Helping People Hear More of Life

Smaller hearing aid resulting from advanced micro-technology

Precision is required for custom moulded in-the-ear hearing aid

It was a chance meeting that led Fred Stork to examine the potential market in Canada for hearing aids. The result of that examination was the creation and resultant success story of Unitron Industries Ltd. of Kitchener, Ontario.

In 1953, Fred Stork and Rolf Strothmann were posted by United Cotten Mills, their German-based manufacturing company, to its new plant in St. John's, Newfoundland. There they met their future partner, Rolf Dohmer.

When the company closed its doors in 1956 the three friends pooled their resources and opened a television sales and service business in St. John's.

The chance conversation in St. John's, in the early 1960s, with an acquaintance who had worked for a German manufacturer of hearing aids, alerted Fred Stork to the fact that, in the whole of Canada, there was not one single hearing aid manufacturer. The three friends and partners decided that their particular mix of education and expertise would allow them to address this deficiency with every chance of success. And so, Unitron Industries was conceived.

Fred Stork, with his business experience, was named president. Rolf Dohmer, trained in fine mechanics, was to direct production. Rolf Strothmann, who had a background in electronics, was to head product design.

Southern Ontario appeared to be the obvious choice of location for the new company, offering as it did, a labour force skilled in electronics assembly; the availability of high-tech components manufactured nearby; first-rate educational facilities situated in the area; and the close proximity of Toronto Airport, which provided easy access to Canadian, U.S. and world markets.

For a group of German extraction, Kitchener seemed the ideal situation. And so, in 1965, in a small one-storey building in Kitchener and with a total work force of five people, Unitron began to produce its first product line.

The company's maiden product, a fully rechargeable hearing aid, was a first for the industry and won it the 1967 Canadian Design Award.

Following its initial success, the company realized that, in order to grow, it would be necessary for it to export its products. Since the U.S. was closest to home it was chosen as the first export market.

After that, the partners set their sights on West Germany, Europe's largest market. Preliminary investigation revealed that, to participate fully in this market, a local sales office would be essential. As a result in 1969, Unitron Gmbh was established in Bremen.

It was difficult to break into the German market where, to be successful, companies must make long-term commitments. Several U.S. firms had pulled out of Germany after only one or two years of operation because results were not immediately forthcoming. Consequently, dealers were unwilling to buy from new companies which might not remain in business long enough to service their products.

However, by persevering through the slow years and by offering quality products, the innovative rechargeable hearing aids were followed by another first for the company and the industry, input compression aids (hearing aids with a form of automatic gain control to reduce the shock of unexpected loud noises). Unitron was able to earn the confidence of the German marketplace and gain acceptance.

After Germany, Unitron began marketing operations in other parts of Europe and the near East. Soon the company's products were available in France, England, the Scandinavian countries, Spain, Greece, Turkey and Egypt as well as the U.S.

In 1974, Unitron received the "A" for Achievement Award from the Government of Ontario. This award is given to Ontario manufacturers who make outstanding contributions to the

provincial economy through increased exports or increased production facilities or who have engaged in new product development or research programs. Unitron qualified on all counts!

Increased export activity in the U.S. resulted in the establishment of a sales subsidiary in Port Huron, Michigan, the following year.

Today, Unitron exports 70 per cent of its total production to more than 30 countries around the world. The Canadian Trade Commissioner Service and the Program for Export Market Development (PEMD) assisted with the preliminary research into many of these markets.

Hearing aids are even sold in Japan, a market traditionally difficult to penetrate. In that country, where a formal health services system has not been fully developed, hearing aids are regarded as a commodity and sold in department stores alongside shavers and toothbrushes. Recently the company's Japanese distributors identified a need in the country's large welfare market for a simple, low-cost pocket-model hearing aid. Unitron's R&D department responded quickly and produced an attractive cost-efficient design.

Fred Stork, president of Unitron, attributes the company's success to its emphasis on research and development, quality control and service. Over the years Unitron has benefitted from several Enterprise Development Program (EDP) loans. With this assistance and the company's own policy of allocating approximately 10 per cent of sales to R&D — a considerably higher percentage than is usual — Unitron has incorporated state-of-the-art technology while remaining cost-competitive.

Fred Stork also points out that for the big multinational companies, hearing aids are only one more product which contributes to the "bottom line". For Unitron there are no other products so hearing aids *are* the "bottom line". As there are no other divisions to carry the company through difficult times Unitron is well aware of the necessity to deliver quality products at competitive prices.

The development of sub-miniature components has made smaller, more compact hearing aids possible. In 1983, Unitron introduced a custom, in-the-ear hearing aid for the North American market. This model is individually molded to the wearer's ear by either an audiologist or a hearing aid dealer and results in an extremely inconspicuous fit. It is predicted that this type of hearing aid will capture a significant share of the world market within the next few years.

Expanding markets necessitated another move for Unitron — a third over the past 20 years. In April 1984, the head office and plant occupied a new, highly efficient building of approximately 2 500 square metres (27 000 square feet), more than double the area of the former facility. The expansion was made possible, in part, by the federal government's Industry and Labour Adjustment Program (ILAP).

The move has been completed and work begins in earnest on the company's latest developments involving hybrid technology. Currently Unitron is examining surface-mounted technology which is a first step towards hybrid technology. Components are now individually attached to the surface of a printed circuit board but when the new technique is employed the process would become semi-automatic. Eventually hybrid technology would allow certain components to be screened onto the printed circuit board.

The perfection of this process will increase productivity, be more efficient and will help Unitron to continue being innovative, price-competitive and, consequently, successful in domestic and world markets.

Sophisticated acoustical simulations are used at design stage

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— by Gillian Welbourne
Canada Commerce

Rubbish! It's in the bag!

When you've used up all of your plastic shopping bags for garbage, what do you do? Odds are, one of the products you might use is a roll of disposable bags from the Roll and Rack waste disposal system manufactured by Extrufix Inc., a small family-owned Canadian company that introduced this easy-to-install and simple-to-use product to the Canadian market 14 years ago.

This space-saving, easy-to-hide, trash container consists of a wire rack with a tray at the bottom and a plastic lid on top to contain odours. A garbage bag is pulled up into the opening and, when filled, lifted out. Extrufix makes the frame and the replacement bags and sells them both individually or as a package.

Samples of the waste disposal system developed by a huge Danish plastic company were brought back to Canada by Frank McNerney after a business trip he made to Denmark in the late 1960s. He presented these samples to the plastic extrusion firm he worked for but they showed no interest in this innovative product. It was Oonagh McNerney's sharp eye for the potential of this new gadget that made the McNerneys buy the North American rights to the product and start their own company in September of 1970. With Frank's background in plastic extrusion, a quality end product, consumer acceptance, enthusiastic sales efforts and good marketing skills, the company has enjoyed rapid growth and a steady sales increase ever since.

To offset the anticipated decline in sales of kitchen racks, Extrufix has acquired a hardware business that adds new products.

Until 1973, the McNerneys imported the waste disposal system from Denmark, topped it off with a lid and sold it in hardware and department stores across Canada. Both Frank and Oonagh took turns in demonstrating the containers to shoppers. Sales were nearing the $500 000 mark and Extrufix was more than breaking even. But with Denmark's high labour costs and the financing necessary to pay for inventory up front, the company had but two choices: raise prices or manufacture the product in Canada. They opted for the latter and negotiated a deal with the Danish plastic products firm.

With their own profits, investments, and a $200 000, 15-year mortgage loan with the Federal Business Development Bank, they established themselves in Pefferlaw, Ontario, a small town near Toronto chosen because of the high unemployment that prevailed. There, they equipped a 900 square metre (10 000 square foot) plant, and hired 17 people. At this time, the facility was used only to extrude the polyethylene for the garbage bags.

By 1978, the McNerneys had put $2.5 million into the plant and expanded it by another 900 square metres. The main purpose of this move was to integrate the wire manufacturing operation with the extruding process.

In 1973, Colgate Palmolive bought the U.S. rights from the McNerneys for $100 000. However, as a result of a poor marketing strategy and the state of the U.S. economy, losses for this company added up over the years to $750 000 in

the U.S. market. In 1979, the McNerneys borrowed $200 000 and bought back the U.S. rights. The Danish patent holder was paid his last royalty from Canada in 1979, and received his final payment on the American operation in 1984.

Altogether, it has cost the McNerneys "more than a million" to pay off the Danish firm and Chesapeake, the venture capital firm that invested in them originally. Today, Extrufix owns both the Canadian and American rights to the product.

Over the years, Extrufix has applied for grants under programs sponsored by the Ontario government or under the federal government's Program for Export Market Development (PEMD) to enable it to attend government-sponsored trade shows in a number of countries. The company also hired top-notch representatives for the U.S. market in 1983.

Extrufix was able to market its product in the U.S. and overseas with excellent results and enormous potential for growth. The containers this firm produces are being exported to Australia, West Germany, Japan and, in smaller quantities, to Iceland and the Caribbean, with the United States and Britain as the main customers.

Sales volume for the company grew by an impressive 25 per cent in each of its first years of operation and, despite the recession, annual growth is fairly steady at about 10 per cent. In 1983, Extrufix increased its overseas export sales by 242 per cent and U.S. sales by 29 per cent.

With the exception of the plastic lid, the plant handles all aspects of the manufacturing process, i.e. wire fabrication, fluidized bed coating, film extrusion and bag conversion.

Extrufix head office is located in Markham, Ontario, and the company has four distribution centres: Calgary and Vancouver, for the western market; Montréal, for Québec and the eastern provinces; and, Wilmington, North Carolina, for the U.S. The operation in North Carolina could easily be converted into a manufacturing facility should the demand for the product justify such an expansion. However, recession has made purchasing managers at large U.S. department stores reluctant to commit money for new products, therefore the idea of a plant in Carolina remains in the planning stages.

Extrufix now employs close to 70 people and, in established markets, sells eight refill rolls for every rack and holds close to 65 per cent of the Canadian market for kitchen-sized plastic bags. Its main competitor in Canada is Union Carbide of Canada Ltd., a Toronto firm which introduced a similar product three to four years ago.

In 1982, according to the *Financial Post*, when the economy was at a record low, surveys put out by the Canadian Federation of Independent Business indicated that only 10 per cent of small businesses were in a position to expand while another 30 per cent were expected to lay off employees before yearend. Extrufix was amongst the 10 per cent expected to grow. In 1982, Extrufix had sales of $5 million in Canada, plus another $1.25 million in export sales to the U.S. and overseas. The firm netted between 7 per cent and 9 per cent that year.

Fully aware that the demand for replacement bags was likely to continue but that the kitchen rack sales would eventually decrease, Extrufix Inc. diversified its product base through the acquisition of Klassen Bronze Ltd. of New Hamburg, Ontario, a hardware business that produces weatherproof adhesive numbers and letters and supplies key-cutting machines. Some time in the future, the company plans to acquire a new line of popular British-designed drapery tracks that would be manufactured at the Extrufix plant. This would entail, of course, adding new machinery and expanding the operation.

Oonagh McNerney, or "Canada's bag lady" as she likes to call herself, operates the company with her son as general manager and her daughter as salesperson. Although her husband remains chairman of the board at Extrufix, he concentrates his efforts on the newly acquired hardware business.

A Federal Business Development Bank mortgage loan of $200 000 helped Extrufix start manufacturing plant in Ontario.

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— by Ginette LaRoche
Canada Commerce

Time-of-Use Metering Idea Becomes Reality

Electronics, a small Canadian company, and a utility ready to become the guinea pig, all promise a bright future for time-of-use electrical rates.

There are 500 customers of hydro-electric power in Port Colborne, Ontario, who are the focus of attention of electric power authorities throughout North America. They are participating in studies of "time-of-use" metering undertaken by their municipal electrical utility.

The success of these studies promises to reduce costs associated with electrical generation and distribution; change the pattern of electrical use both in Canada and the United States; and provide a vast market for a small Canadian company — E.D. Metering Inc. of Toronto.

For electrical utilities, time-of-use metering is important to help balance their individual rate structures. Their costs of operation are largely controlled by the size of the plant — generation, transmission and distribution, expressed in kilowatts — required to meet demand or load. Their rates, on the other hand, are set on the amount of energy consumed measured in kilowatt-hours.

To encourage the greatest use of kilowatt-hours for the amount of installed demand, for a long time utilities have encouraged their large industrial users to spread their energy consumption over longer periods of time. This reduces the amount of installed capacity (kilowatts) required to service the energy needs (kilowatt-hours) of these customers.

The method used is to set rates according to the time-of-use — the highest rates at peak periods (usually from 7:00 a.m. to 9:00 a.m. and 4:30 p.m. to 6:30 p.m.) and the lowest rates in the midnight to 5:00 a.m. period when energy demand is at its lowest.

Thus, by balancing their loads over longer periods, the customers using the largest blocks of off-peak power satisfy their energy requirements at the lowest possible cost.

While time-of-use structures have been common in Europe and for large industrial and commercial users in North America, the cost of metering has always proved prohibitive for the millions of residential and small commercial units throughout Canada and the United States.

That is, until E.D. Metering Inc. developed its electrical meter retrofit which measures peak and off-peak energy consumption at a fraction of the cost of previous devices.

The E.D. Metering retrofit, a small computer-like device, is the first to fit into existing residential kilowatt-hour meter.

The kilowatt consumption is stored in the unit's memory and a computerized time clock permits storage of accumulating kilowatt-hours at six predetermined times thus recording the energy consumed during that period — peak, off-peak, holidays and weekends.

On command, the retrofit supplies LED (light-emitting diode) visual readouts of 14 pieces of information and automatically slips forward or backward to facilitate daylight-saving time.

For electrical utilities, the studies of the Port Colborne experiment promise a method to bring into balance through rate structures those two major cost-related components — peak power requirements and energy consumption.

Since a major cost for utilities is the construction of plant to meet peak demand (kilowatts), even distribution of this demand (kilowatt-hours) is of utmost importance.

Control of the ratio between kilowatts and kilowatt-hours serves as a major key to the ultimate cost of electrical supply and industrial and commercial users of various forms of energy are constantly looking at peak-load control as a load management tool to effectively reduce energy costs.

However, residential energy consumption, representing 25 to 50 per cent of electrical energy used by customers of most utilities (31 per cent in Ontario), has remained mostly unaddressed by load measurement authorities.

What appeared to have been a soft or non-aggressive approach to residential load management has been dictated by the lack of an accurate yet economical instrument to record and store the variable time-slot-oriented time-of-use consumption.

For electrical utilities and small customers alike, the Port Colborne studies may hold a solution.

The Port Colborne Hydro Electric Commission divided its sampling into five main groups according to size and type of building with a further breakdown into type of building material, heating system and many other differentials.

"I'm trying to produce a study that will be useful for any utility that wants to use it," explains Roy Bishop, Port Colborne's Hydro Commission manager. "From this statistical breakdown, anyone can take our profile, ratio it up or down depending on the make-up of their community, and get a reasonable idea of what impact time-of-use rates will have on their community."

The Port Colborne studies already appear to be generating widespread interest. There have been inquiries about the field test from virtually every electric utility in North America and from as far away as Dublin, Ireland.

For E.D. Metering president, Hans Sollinger, this interest means that his device has a tremendous export potential. In fact, the company has already entered into a licensing agreement with Helix Inc. of Salt Lake City, Utah, to more adequately serve large areas of the U.S. market.

To assist E.D. Metering and Port Colborne Hydro in the costs of these tests, the federal and Ontario ministeries of energy have provided grants.

Roy Bishop is enthusiastic about preliminary results of the studies. "Our aim is to save the cost of future generation and other facilities that go to make up the cost of distribution. We are hoping that the lower rates will encourage people to use the power in off-peak periods, just like we have been asking them to do all along but, until now, we have really offered them no incentive," Bishop says.

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