Canada Commerce

December/January 1983-84

The Port of Halifax

PORTS CANADA

Canada Commerce

The Honourable Edward C. Lumley
Minister of Regional Industrial Expansion

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

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Cover: The Port of Halifax, past, present and future, is covered in this first of a series on Canadian ports.

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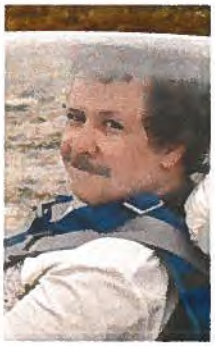
Productivity: The world's central bankers are subject of an in-depth study on their work, view and image.



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Small Business: Canadian company revives venerable bush aircraft by installing new engines.

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Regular Features:

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Business Review

Canada-U.S. to Work on Ocean Drilling Program

Canada will work with the United States in a scientific program of ocean drilling to probe deep beneath the sea floor, according to the Department of Energy, Mines and Resources.

Britain, Japan, West Germany and France are expected to join the project. Designed to gather geoscientific information, the drilling phase of the project is expected to start next fall and move to the Labrador Sea in 1985. The knowledge gained will contribute to an understanding of the geology of the Labrador Sea and aid Canada in the search for hydrocarbons off the east coast.

Plans are to be developed for research off Canada's west coast in subsequent years.

China: Open for Business, Via Singapore

In response to the still stagnant domestic energy industry, the Canadian Oilfield Manufacturers Association (COMA) has continued its international marketing program in support of broad-based energy expertise that has taken many years to develop in Canada.

A visit to Singapore has resulted in a possible key to open another door to the People's Republic of China through Singapore. COMA has appointed a major firm with connections in China, Intraco Ltd., as its Singapore-based representative office.

New Gift Show Marketplace Established

A new feature of the semi-annual Canadian Gift Shows is the International Tabletop Marketplace — *Tabletop VI* — formed recently for the exclusive housing of tabletop companies in the new Building #6 at the International Centre in Toronto.

The premier of *Tabletop VI* will be at the 22nd Canadian Gift Show scheduled for January 29 to February 2, which will also include Canada's only Bed, Bath and Linen Show.

Contact: Ann Dutchburn, Director Trade Shows, EKSPO, 33 Isabella Street, Suite 102, Toronto, Ontario M4Y 2P7; Tel: (416) 960-8739.

Seven Hotels Get Top Rating

Seven Canadian hotels have been given *Five Diamond* ratings in 1983, the highest possible award from the American Automobile Association (AAA). The awards are given for superiority in guest facilities, services and atmosphere.

Canadian winners, among only 47 hotels and resorts throughout North America, are: Hôtel Bonaventure, Quatre-Saisons and the Ritz-Carlton in Montréal; Four Seasons Hotel in Toronto; Four Seasons Hotel, Hotel Vancouver and Westin Bayshore in Vancouver.

Concrete Oil Drill Platform

The Foundation Company of Canada Limited of Toronto, in a joint-venture with Sanska of Sweden, has proposed a concrete platform to Mobil Oil Canada for use on the Venture Gas Field off Nova Scotia. Designed for use in 22 metres of water, the platform is a scaled-down version of the huge structures used in the North Sea.

Foundation feels that concrete-base gravity structures can be built for less cost than an equivalent complex of steel jackets.

Canadian Consultant Designs Sewers in Jordan

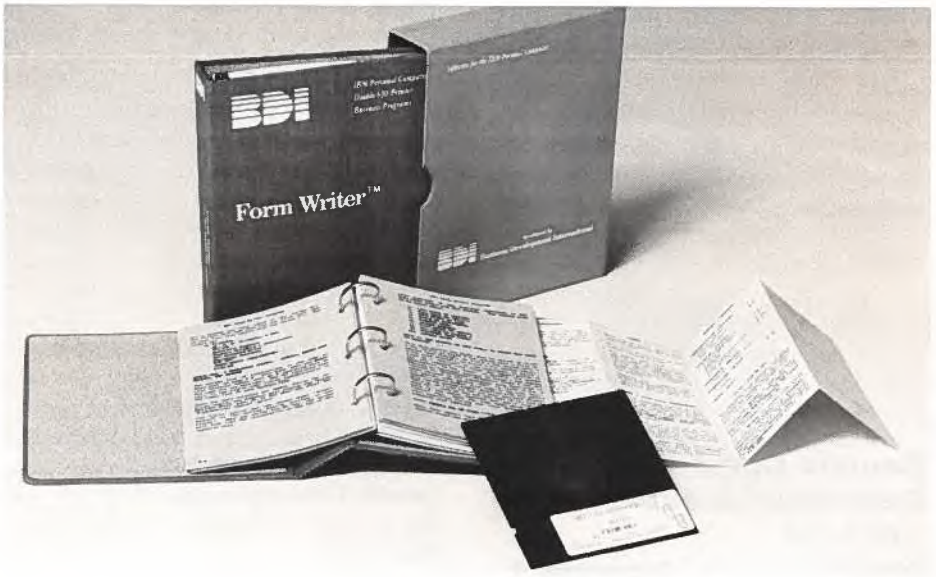
Cansult Limited of Toronto, a firm of consulting engineers and planners, has been appointed to design 200 kilometres of sanitary sewers in Amman, the capital of Jordan.

The firm is already well-established in the Middle East with projects currently under way in Saudi Arabia, the United Arab Emirates, Oman, Iraq and Lebanon. This is Cansult's first project in Jordan.

Royal Bank Issues Gold and Silver Certificates

The Royal Bank of Canada has started issuing its own gold and silver certificates through the bank's International Money Markets Group.

Initially this new service, which requires a minimum transaction of 32 ounces of gold and 500 ounces of silver, is intended to meet the needs of corporate or personal investors wishing to hold precious metals in Canada with the Royal Bank. Over the next two years, the bank will gradually introduce a broader range of precious metal services.



Canadian Software Producer Makes Good in Boston

BDI Business Development International, a computer software producer with headquarters in Winnipeg, aroused considerable interest with its new *Form Writer* program, introduced at a recent trade show in Boston.

Much of the interest came because BDI was exhibiting an "Office Automation Software" program people could understand — no computer programmers or trained machine operators are needed.

Québec government and the federal Department of Regional Industrial Expansion (DRIE) further honoured the four — Alcan Smelters and Chemicals Ltd.; The SNC Group; CAE Electronics Ltd; Spar Aerospace Ltd. — with special pennants bearing the *Canada Export Award* insignia. Left to right are: Christian Latortue, acting deputy minister, Québec Ministry of External Trade; Dr. J. Ron McCullough, vice-president and general manager, Spar Aerospace; David Tait, vice-president, CAE Electronics; Jean-Paul Gourdeau, president and chief executive officer, The SNC Group; Douglas Ritchie, president, Alcan Smelters and Chemicals; Claude Huot, DRIE regional executive director.

Trade Show Round-up

International Mineral Processing Congress

The XVth International Mineral Processing Congress will take place in Cannes, France, June 2 to 9, 1985. It will deal with *Beneficiation of Complex Ores in Mineral Industry* concentrating on new plant developments, fine grinding, process minerology.

Contact: Secrétariat, XVe CONGRÈS INTERNATIONAL DE MINÉRALURGIE, R. Bloise, B.P. 6009, 45060 Orléans Cedex, France; Tel: (33) 38/63.80.01 (ext. 35.95, 39.72); Telex: BRGM 780 258 F.

Traffic and Transportation Conference

The 1984 Annual Conference and 25th Annual Meeting of the Canadian Institute of Traffic and Transportation (CITT) will be held January 25 to 27 in Toronto's Westin Hotel.

The theme of the day-long conference will be *CITT — 25 Years of Progress: What's Next?*

Contact: Renée Cairo, CITT Co-Conference Chairman, 60 Birmingham Street, Toronto, Ontario M8V 2B8; Tel: (416) 251-1131.

Export-Related Show in October

What has been termed the largest exposition and conference for export management and export-oriented companies in North America — Export Expo '84 — will take place October 1 to 3, 1984, in Bally's Park Place, Atlantic City, New Jersey.

A concurrent two-day seminar will provide business executives with the opportunity to make significant contacts with export consultants in a variety of fields.

Contact: Delia Associates, P.O. Box 338, Route 22, Whitehouse, New Jersey 08888, U.S.A.; Tel: (201) 534-9044.

Winnipeg Chamber of Commerce Business Show

Scheduled for the Winnipeg Convention Centre May 8 to 11, the 1984 Winnipeg Chamber of Commerce Business Show will offer the business community a business awareness program and will promote the chamber and its operations.

Contact: Travis Grimes, Exhibit Co-ordinator, H.I. Marketing Services, 253-375 York Avenue, Winnipeg, Manitoba R3C 3J3; Tel: (204) 944-1464.

Communications Network System

A team of the Innovations Foundation of the University of Toronto has developed a local area network communications system, HUBNET, that connects different computers, terminals and work stations. The system is one of 170 inventions considered since the foundation was established three years ago.

HUBNET is reported to have many advantages over existing systems — it processes data faster and data collisions are avoided. A major feature is that, through the use of fibre optics, it provides greater security from those computer "hackers" who break into computers by decoding passwords.

Orcatech, NRC Sign Development Agreement

Orcatech Inc., a leading manufacturer of computer graphic work stations, has signed a contribution agreement with the National Research Council (NRC) for funds and technical assistance to develop a sophisticated, interactive shaded graphics and solid modelling computer system.

Under the agreement, NRC will provide up to $500 000 over the next 14 months in a project that will cost $900 000 overall. The shaded graphics and solid modelling technology, for which important research had begun at NRC, will form the basis of a revolutionary graphics processor to be included in Orcatech's product line.

Short Training Courses for Business People

A training program for business people, the *Business TIP (Training Improves Productivity) Program*, is presented by Alberta's Lakeland College.

The new program was developed by the college to provide the business community — managers, owners and employees — with a convenient way of keeping in touch with modern business methods. It consists of a series of independent seminars and workshops conducted in local communities by professionals in both industry and education.

Contact: Gordon Earle, TIP Program Co-ordinator, Lloydminster Campus, Lakeland College; Tel: (403) 875-8828.

Are Central Bankers a Breed Apart?

Since there are more than 100 central banks in the world today, the thought of a "breed apart" is curious — and yet. . .

Central bankers of various countries have not had an easy time of it ever since in the 1970s they introduced pragmatic "monetarist" policies to slow down inflation. In the last few years their approach seemed to produce drastic and often unpredictable swings in the level and volatility of interest and exchange rates, without a compensating abatement of inflation. The situation came to a head in August 1981, when prime rates of Canada's chartered banks reached nearly 22 per cent and conventional mortgage rates averaged 21 per cent — almost double the then prevailing rate of double-digit inflation. Yet bank loans continued to increase, in part to finance substantial business takeovers. High interest rates seemed to have lost their deterrent power for many who anticipated continued inflation. The strong credit demand for many acquisitions of existing firms or properties had a voluntary character. To the general public, central bankers appeared to live in a rarefied atmosphere of high finance, far removed from the toil and stress of ordinary citizens.

Whatever their native tongue, central bankers speak a language of their own, discussing the formerly simple concept of money supply, for instance, in plural terms to distinguish the degrees of liquidity. Earlier this year one of their number, Paul Volcker, an appointed official heading the United States Federal Reserve System, was regularly referred to in the American and international financial press as the "second most powerful man in the U.S.". Are they indeed a breed apart?

There are now over one hundred central banks, more than half of which are of post-World War II origin. Even if one considers only the Western industrialized countries, the idea of central bankers forming a breed apart is at first sight somewhat surprising. After all, they have different national, educational, cultural and social backgrounds. They operate under a variety of political and economic systems and owe their appointments to governments of different political persuasions.

Nevertheless, central bankers as a profession tend to develop a certain communality of views, not because their backgrounds are similar, but because their tasks are. One of the principal functions of a central bank is "to protect the integrity of its nation's currency, both domestically and internationally". As money, whether in the form of bank notes or of more-or-less liquid bank deposits, has no intrinsic value, its acceptance, either as a means of exchange or as a standard of deferred payments, depends ultimately on its relative scarcity compared to the volume of transactions in the economy. The task of monetary policy is to ensure that the growth of the money supply does not outstrip a money demand for transaction purposes that can be accommodated by higher real output at reasonably stable prices.

Respect for market forces

Central bankers, unlike most other senior public servants, are experienced and active buyers and sellers in free markets. They participate in domestic and international money, capital and exchange markets through treasury bill auctions, open-market transactions in government securities, and foreign exchange transactions (in Canada, on behalf of the Canadian government's Exchange Fund Account). This has given many of them a favourable opinion of the efficiency with which free financial markets normally operate and an awareness of the problems created by attempts to curb their activities. Financial markets tend to be competitive, highly organized, well-informed and international in scope, as they deal in fungible (homogeneous) or at least classifiable "commodities" such as currencies or securities, thus fulfilling some of the theoretical requirements of a perfect market.

Of course, financial markets sometimes lose their bearings. Central bankers then "lean against the wind" to maintain orderly conditions from day to day, or to achieve a smooth transition from one market level to another. When the Bretton Woods system of fixed but adjustable exchange rates broke down in the early 1970s and floating rates became predominant, there was a great deal of discussion about free floats, managed floats and "dirty floats" (pretending to be free while in fact being managed). The opinions about these three options seem to have moved somewhat closer now. "The exchange rate is too important a macro-economic variable to be relegated to the position of a residual item. . . ," said Dr. Jelle Zijlstra, then president of the Bank for International Settlements, in Basle, Switzerland, in 1981; ". . . we need sufficient management of floating rates to avoid movements of currencies that are erratic or completely unrelated to fundamentals."

All major currencies are managed occasionally to some extent along the lines suggested above, with the exception of the U.S. dollar which, as the world's leading trade and reserve currency, is in a unique position. The U.S. dollar is the currency in which other leading industrial countries hold most of their international monetary reserves and that they use for official intervention in exchange markets. Such action could be frustrated by U.S. policies having the opposite effect. The United States has over time practised both intervention in and "benign neglect" of the external performance of the U.S. dollar.

Markets thus have their defects and have to be steadied from time to time, but usually most leading central bankers much prefer working with and through market techniques. As a group, they don't like, for instance, the introduction of direct controls in foreign exchange markets, even if at one time or another they have been obliged to apply them. Canada, for instance, instituted foreign exchange control

during World War II, which for its specific purposes operated "under almost ideal conditions". The war sparked a spirit of patriotism, Canadian citizens were prepared to submit to obligatory permits for *any* transaction involving foreign exchange and to put up with strict surveillance of all border traffic and even with having their mail opened by censors. It is almost unthinkable that such controls would be acceptable in peacetime. The enormous postwar increase in Canada's international trade, capital flows and travel would also greatly complicate implementation.

Monetary policy limits

Another common trait of central bankers is their lively awareness of the limits of monetary policy. Although they attach great importance to price stability and have in monetary policy a powerful tool to promote it, central bankers are well aware that progress in this direction has been agonizingly slow during the decade of the great inflation (1973-82). Toward the end of the 1970s central bankers increasingly became preoccupied with this disappointing experience, as is evident from the lectures delivered at the annual international conferences of the Per Jacobsson Foundation (an offshoot of the International Monetary Fund), where central bankers, past and present, meet with kindred spirits and let their hair down — just a little.

The September 1979 Per Jacobsson lecture was delivered by Dr. Arthur F. Burns, who had retired the year before as chairman of the Federal Reserve Board (1970-78). He referred to the paradox that the powerful tools of monetary policy "had failed so utterly in recent years" to establish price stability, in spite of the dedication of central bankers to this goal. It is perhaps useful here to point out that the roots of inflation, as of any other disturbing phenomenon for that matter, always exist before the effects are visible and people (sometimes even central bankers) become aware of it. For the United States the first seeds of inflation are considered to have been sown after 1965, when the simultaneous pursuit of Great Society goals and the acceleration of the Vietnam War put too great a strain on the U.S. economy. Then came the inflationary effect of two devaluations of the U.S. dollar (1971 and 1973), the worldwide boom of 1972-73, crop failures and rising food prices in 1973-74, the first Organization of Petroleum Exporting Countries (OPEC) crisis in late 1973, a sharp deceleration of productivity growth, and finally, in Dr. Burns's recital, the growing belief that inflation was here to stay, leading to behaviour that gave "inflation a momentum of its own".

Dr. Burns attributed most of the persistent inflationary bias to "philosophical currents that have been transforming economic life in the United States and elsewhere since the 1930s". The Great Depression ended a long American tradition of individualism and self-reliance; it inaugurated greatly increased federal government responsibilities to *cure* unemployment and depression. In the 1940s the government was compelled by World War II to mobilize all available human, material, and capital resources — unemployment and undercapacity disappeared. Then the Employment Act of 1946 explicitly proclaimed the U.S. federal government's responsibility to promote "maximum" employment, soon to be interpreted as full employment. To the *curative* responsibilities of government of the 1930s had been added the *preventive* duties of the government in the postwar period.

For a while this worked fine. There was a pent-up replacement demand for automobiles and all kinds of other consumer durables after the war, and the appearance of new and improved articles such as TV sets sustained aggregate demand in a later stage. Expanding consumer credit facilitated such purchases. The heady experience of many years of economic progress strengthened the public's expectations of continuous further progress, "a feeling of entitlement to annual increases in real income".

Not all groups shared in this progress, however, and social unrest erupted in the 1960s. Once the government started to accept responsibility to solve problems and relieve hardships — not only for society at large but also for *specific* industries, regions, occupations or social groups — "a great and growing body of problems and hardships became candidates for governmental solution". New and often highly sophisticated techniques for pressuring the Congress emerged, and every success attained led to their adaptation by other interest groups. Many results of this interaction of government and citizen activism proved wholesome, acknowledged Dr. Burns. "Their cumulative effect, however, was to impart a strong inflationary bias to the American economy." Federal officials began to react instantly to any slackening of economic activity and loss of jobs, rather than worry about the incipient dangers of current or prospective inflation. All kinds of cost-raising devices to protect particular groups (higher price supports, increased minimum wage levels, lower import quotas) "were liberally employed even in the face of accelerating inflation during 1977 and 1978".

How about the attitude of central bankers during this inflationary process? In the abstract, the Federal Reserve had the power to abort inflation "at its incipient stage. . . or at any later point". It did not do so because the Fed itself was caught up in the philosophic and political currents of the day. Besides, the Fed had to consider political realities, Dr. Burns said, including the risk of legislation "that could destroy any hope of ending inflation".

In retrospect, "the Federal Reserve may at times have overestimated the (political) risks attaching to additional monetary restraint". Dr. Burns believed, however, that the possibilities of errors in economic and financial judgments were much greater. Income maintenance programs and multiple-earner families have affected the interpretation of unemployment statistics, for instance. Monetary theory is a controversial area. "It does not provide central bankers with decision rules that are at once firm and dependable." When inflationary expectations become embedded in people's minds, high and rising interest rates may not restrain expansions, and an "inflation premium" creeps into nominal interest rates and is accepted by borrowers expecting to pay loans back with cheaper money. New computer technology enabled bank customers to economize on non-interest-bearing demand deposits (the narrow money supply) without effect on the volume of their financial transactions. This meant that a considerably lower than foreseen target of the narrowly defined money supply was actually required in order to achieve any desired rate of restraint.

Dr. Burns found some encouragement in the belief, growing at the time, that inflation had become the largest problem facing the country. However, he concluded reluctantly that "fairly drastic therapy will be needed to turn inflationary psychology around".

The rest is history by now. Barely a week after Dr. Burns's speech, on October 6, 1979, the new chairman of the Federal Reserve Board, Paul Volcker, administered a drastic shock to the entrenched conviction that inflation would go on forever. Modest successive increases in interest rates on federal funds had clearly proved ineffective in breaking inflationary expectations and practices. The Federal Reserve therefore boldly switched horses, abandoned its preoccupation with money market rates, and jumped instead on the growth of bank reserves as a way of controlling the holdings of money in the hands of the public. Control of the *volume* of credit (the source of much of this "bank money") became the immediate concern of the Federal Reserve, leaving the *cost* of credit (interest rates) free to fluctuate in the market. Now, if the volume or supply offered in any market is restrained and the demand keeps up, the result is a rise in prices. In this case, the link led to the volatile upsurge in interest rates during 1980-81, at times well beyond the rate of inflation. This made interest rates high in real, not just nominal, terms.

The old bromide that large borrowers benefit from a stiff dose of inflation has, under the new dispensation, proved to be bitter medicine in several cases. Instead of being able to pay back with money of lesser value (a case of savers subsidizing borrowers), some prominent corporate and public debtors (including sovereign countries) have had difficulties in meeting their obligations. A variety of headlines in the world's financial press indicates that this has been an international phenomenon. Inflation has come down substantially, and inflationary expectations are not blatant anymore but are perhaps still dormant.

Relations with government

A third common link among central bankers is their need to maintain good working relations with their governments. To understand the somewhat ambiguous and delicate bonds between central banks and governments, it helps to know something of their history. With the exception of the oldest (the Swedish Riksbank of 1668), they started off as private institutions chartered by governments and engaged in general banking activities. Only gradually did they acquire several of the distinctive functions or characteristics of the nineteenth century or contemporary central banks, such as the exclusive right to issue bank notes (paper money). The Bank of England (1694), which became the prototype of other central banks, had this privilege from the start, but it was not exclusive. The Banque de France (1800) obtained the exclusive right of note issue initially for Paris only; not until 1848 was this monopoly extended to the whole country. The Reichsbank (1876), Germany's first central bank, did not receive the by-then customary monopoly to issue bank notes until 1935.

Until that year Canada did not even have a central bank. It is thus a Johnny-come-lately among its counterparts among the Western industrialized nations, although not in the world at large. In the first few days the Bank of Canada consisted "of myself, my secretary and two desks", as its first governor, Graham Towers, once remarked, but it got organized quickly.

The Bank of Canada was originally established by parliament with private shareholders, but this soon changed and the government became the sole shareholder in 1938, with all the shares held by the minister of Finance. The deputy minister, the most senior official of the Department of Finance, sits ex officio on the Board of Directors and the bank's Executive Committee — but has no vote. This illustrates the subtle relations existing between central banks and governments: close, but not too close.

Several of the long-established central banks became government-owned after World War II. The Banque de France was nationalized in 1946, as were the Bank of England (1946) and the Netherlands Bank (1948), among others. In Britain the relations between the privately owned Bank of England and the government had already become so close in the 1920s that Montagu Norman, the governor at the time, observed that the bank had the right to offer advice but was always subject to "the supreme authority of the government". Since 1946 the British Treasury may, after consultation with the governor, give such directions to the bank as they consider in the public interest, but so far this right has not been exercised. In the Netherlands, the minister of Finance can give directions to the central bank, but the latter has the right to appeal to the crown if it disagrees with the directions.

The German Bundesbank (1957) is perhaps the most independent of all. Under the statute governing the bank, it is charged with safeguarding the value of the currency; another section of the same law prescribes support for the economic policy of the federal government. However, the successive presidents of the Bundesbank have considered safeguarding the soundness of the currency as their *primary* responsibility under the law, a goal to be pursued independent of government, economic interests, and even parliament.

In Canada the respective responsibilities of the minister of Finance and the governor of the Bank of Canada in the conduct of monetary policy were agreed upon in 1961, after unresolved differences of opinion between the two had shown the need to formulate "due process" by which such difficulties might be resolved ("the Coyne Affair").

In essence, in the ordinary course of events the Bank of Canada has the responsibility for monetary policy, for it has to be sufficiently independent and responsible to withstand day-to-day pressures from any source. But the government has the ultimate responsibility and is in the position to instruct the bank formally about the monetary policy it desires to be followed. Such a directive, which the bank has to carry out, has to be in specific terms and must contain the reasons for the government's stance, have a time limit and be made public. Accordingly, the Canadian public would be fully informed of the issues involved. It virtually ensures a public debate on the merits of the various policy options, if this had not already occurred earlier. These rules, subsequently incorporated in the Bank of Canada Act of 1967, resemble the pro-

cedures adopted in Britain in 1946, except for the stipulation of public announcement and other specifics. In financial circles it is assumed that a governor who received such a directive would probably feel obliged to resign. As to the government, it would presumably hesitate to resort to this unless it felt such a step would generate a favourable response in financial markets. In practice, it seems highly unlikely that any such directive would ever be issued, as there is continual consultation between the bank and the Department of Finance, both of which have an interest in avoiding policies likely to disturb domestic and international financial markets. The main purpose and effect of the law is "that neither the bank nor the government can deny any responsibility for monetary policy, and the public can hold us both responsible unless the directive power is used" (Governor Gerald K. Bouey, September 5, 1982). The government may not necessarily agree with or even have an opinion on everything the bank does day by day, but it has responsibility for the basic thrust.

Dr. Jelle Zijlstra, who for several years was minister of Finance in the Netherlands before he became president of the Netherlands Bank (and of the BIS in Basle) in 1967, explained the need for such co-operation in a 1981 Per Jacobsson lecture. "After all, the Finance minister is badgered from all sides by the ministers of the spending departments, who will always conspire to spend more money than is justified by a sound financial policy. In this struggle, he is inevitably alone and consequently lonely." And, one might surmise, he may not always win that struggle, hence these disputes with the central bank. But if the relationship is good (Dr. Zijlstra again), the minister's "best ally is the central bank". In today's world, with its deep-seated inflationary tendencies, "there is an immense need for a close alliance between these two". Dr. E.P. Neufeld, senior vice-president and chief economist of the Royal Bank and formerly a senior Finance official, explains the relationship this way: "Since central banks and Finance departments are both concerned with macroeconomic policy, it is natural that they would have great sympathy for each other."

Long-term views

Central bankers, by the nature of their functions, are inclined to take the long-term view of what best serves the economic goals of their countries. This common bond was strengthened in the 1970s. Central bankers discovered that frequent shifts in monetary policy ("fine tuning") to counteract fluctuations in economic conditions were not too helpful. "There is often a long and unpredictable lag between money supply action and its full impact on inflation and real economic activity."

Anti-inflationary policies, which intensified in 1975, took many years to produce the desired effect on entrenched inflationary practices and expectations. And central bankers feel an obligation to promote the long-term view, as they are legally and intentionally sheltered from the numerous instant, vocal, sometimes contradictory, and often highly localized pressures exercised on elected representatives in office. Furthermore, although central bank presidents or governors are appointed for limited periods without any guarantee of reappointment, their professional longevity in various countries appears in practice often to exceed that of their governmental masters, who are subject to the vicissitudes of political life, such as election results or changes in portfolio.

Since the Bank of Canada was established in 1935 it has had four governors and 16 ministers of Finance. This is not unusual: similar situations are found in such countries as West Germany and the Netherlands. It evidently does not matter whether a country is governed in the British parliamentary tradition, which often produces a lopsided majority for one party, or follows in some way the continental tradition of proportional representation, which often results in a succession of coalition governments. Under both systems there is likely to be more continuity in the position of the central banker than in the position of the minister of Finance. It implies that the top position at a central bank is essentially non-political, to be filled by an experienced, pragmatic professional with a financial background and a solid grasp of economic processes. In making the appointment, the government has to have due regard for the effect of its decision not only on the bank's relations with domestic but also with international financial institutions and markets.

Of Canada's fours governors, three have been reappointed by a government of different political persuasion than the one that initially appointed them. Personalities, however, sometimes play a decisive part in the smooth functioning of relations between government and central bank. A recent case in point was Mrs. Thatcher's choice for new governor of the Bank of England late last year (effective July 1, 1983). Compatibility with the views of the prime minister was a factor in this appointment. There was some criticism on this score, but as Robin Leigh-Pemberton at the time had been chairman since 1977 of one of the world's 10 largest banks (the National Westminster), one may assume that the new governor does not lack rapport with "the City" (London's financial district) either.

The financial community, of course, sees the actions of the central bankers, e.g., the Bank of Canada, primarily in a short-term perspective. What will the treasury bill rate be next Thursday? Will there be some intervention by the bank to stabilize interest rates or the Canadian dollar on the exchange market? These day-to-day operations are an important part of the Bank of Canada's function. One might say that the long-term perspective of "money you can trust" (as regards purchasing power) is part of the bank's strategy, while its short-term activity represents its tactics. Hence the view that central bankers have a long-term perspective extending over several years is perfectly compatible with their preoccupation with important day-to-day decisions. After all, "lender of last resort" in emergencies is also one of their historic functions, and this is certainly a short-term activity.

International implications

Because the monetary policy of a country cannot be properly conducted without regard for the economic policies of its principal trading partners and in particular of the United States, central bankers share a common concern about trends in international trade and in the world's money, capital and exchange markets. Central bankers have excellent facilities for regular contacts with each other, without fanfare or publicity, through a variety of committee meetings and working parties under the aegis of international institutions such as the International Monetary Fund (IMF)/World Bank Group in Washington, D.C., the Bank for International Settlements in Basle, the European Economic Community in Brussels, and the Organization of Economic Co-Operation and Development (OECD) in Paris. A new governor or president of one of the principal central banks will meet his most important opposite numbers (to whom he is probably already known) within a month at a BIS meeting and then at least once a month thereafter. This creates personal bonds that permit a frank discussion of common problems, practices, policies and experiences, as well as an exchange of views. It will often lead to some similarity of views on objectives in monetary policy and (probably to a lesser extent) on specific methods to achieve them. The views of central bankers will often gain weight domestically through like-minded attitudes of their counterparts elsewhere. Great importance is attached to the proper operation of international as well as domestic capital, money, and exchange markets. Central bankers have recently played an important role in the efforts of governments and international institutions to prevent a serious global debt crisis that might have severely damaged not only debtor countries but the Western creditor nations as well.

Central bankers' critics

The semi-independence of central bankers has recently been criticized (as regards Canada) by the distinguished historian J.F. Granatstein (*Saturday Night*, April 1983). There are two parts to his argument. First, he raises the question: What if the governor is ever wrong? His second point is that in a democratic state people are supposed to be able to elect governments that carry out their will, even a demand that the central bank lowers interest rates.

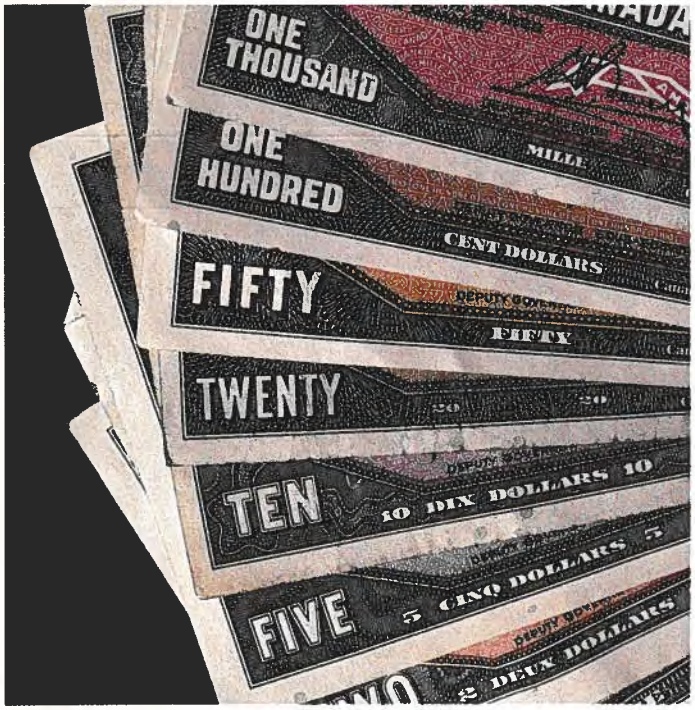
The first question implies that monetary policy is a one-man show. This is an oversimplification, not just for Canada, but generally. Calling Paul Volcker, for instance, "the second most powerful man in Washington" is hyperbolic. His influence does not only derive from his position but also from his unparallelled previous hands-on experience in domestic and international finance, from strong (although not always unanimous) backing by the Federal Reserve Board and the Federal Open Market Committee, and from considerable support for the general thrust of his policies in both the American and the international financial and business communities. In short, Mr. Volcker does not just speak for himself; he expresses a whole body of informed opinion.

The Canadian governor, while he may be the most visible exponent of Canada's monetary policy, is not a one-man band either. There are regular consultations with the minister of Finance (usually an experienced generalist as well as a seasoned politician) and his officials. Most large central banks (including the Bank of Canada) have extensive research departments that are constantly investigating the pros and cons of current and alternative policies and practices, both at home and abroad. Their operating divisions take the pulse of money, capital and exchange markets hour by hour. Besides, over each head of a central bank hovers a flock of keen observers ready to pounce on inappropriate moves in policy or practice, real or perceived: the nation's bank executives, investment dealers, corporate treasurers, financial journalists, business and bank economists, and professors of money and banking. If he fails to take international repercussions into account, either the markets or his peers abroad will inform him. The question "What if the governor is wrong?" has thus this likely answer: He will soon find out, and change his course. The one thing no central banker will willingly abandon, however, is the idea that no modern economy can work well with chronic inflation.

Professor Granatstein's second point is that the complexity of monetary policy is not a valid reason to leave it to the experts. Elected representatives, he noted, handle other complex matters such as defence policy or urban planning or energy policy, so why not monetary policy? The question is intriguing and merits consideration. Most decisions parliament makes in any of the three areas quoted above usually cost money. This by itself is a powerful brake on going too far with ventures in defence or energy or urban planning. No such obvious restraint, however, exists in monetary policy which does not *cost* money but *creates* it (more precisely, it governs the additions to the money supply commensurate with an economy growing in real terms). This is the crux of the matter. That is the reason why parliament has enacted in 1967 what Governor Bouey called "a pretty sound proposition . . . that there ought to be some kind of check and balance or obstacle or hurdle between the power to spend money and the power to create it". Otherwise there will be excesses lead-

ing to accelerating inflation, as the recent past has demonstrated.

As central bankers are sometimes perceived as remote from the concerns of ordinary citizens, it is perhaps worth noting that the present governor has vivid personal memories of the 1930s Great Depression. In 1980, during a return to his place of origin, he described his youth in a southern Saskatchewan farming area during those years, with drought and dust storms and all, in a compassionate, yet light-hearted fashion — perhaps distance lends enchantment to the view? When he started as a bank clerk, there was no fear of holdups, but "we were terrified that someone might actually try to borrow some of the bank's money", and no doubt with good reason: the customer would probably not be able to pay it back. He recalled how almost everyone in his community then was poor, virtually "sunk without a trace below any poverty line that would be drawn today".



Mystery men?

Such enlightening glimpses from the personal experiences of central bankers are rare. Most people consider these functionaries as distant and guarded in their utterances. The senior deputy governor of the Bank of Canada, R.W. Lawson, does not see it this way. During informal comments before the Ottawa Association for Applied Economics he has pointed to the efforts increasingly made by central bankers to get the rationale of their policies across in presentations to parliamentarians, business groups, professional associations, and the public at large. This is undboutedly true; 30 years ago the annual report of the Bank of Canada was a slim booklet that could fit folded in a lady's purse.

Yet it might be argued that central bankers are still to some extent "mystery men" to the general public, for two reasons. First, they are public servants, albeit of a special kind. In a democratic society, politicians can rely to varying degrees on a mixture of personality and programs to get elected. As regards the latter, they are, if they so desire, free to speak on any topic related to actual or proposed government policy that concerns the electorate. Central bankers, on the other hand, clearly cannot use personal popularity as a means of winning support among the public for their policies. Even when they wish to make the valid point that monetary policy needs support from other public or private sector policies or practices, their public servant status imposes discretion. For good reasons, such observations are cloaked in general terms, avoiding specifics. In the United States, for instance, Paul Volcker has repeatedly pointed out publicly that the size of the U.S. federal deficit may pose a serious problem, without suggesting specifically how it might be curbed.

The second reason why central bankers are still considered to be somewhat mysterious is that their function is mysterious to many. It is a very small fraction of the population, Dr. Neufeld has observed, "that knows anything at all about the character of money, the nature of money supply control, and the techniques for controlling money supply". This, of course, does not make the task of central bankers easier. These are always those people who know little about art (here, the difficult art of central banking), but are sure of what they like (lower interest rates, usually). Central bankers have no quarrel with that as an ultimate objective but have to cope with numerous disturbances and complexities along the way, along with factors beyond their control (e.g., fiscal policy). Fortunately, inflation has abated considerably and this has made lower interest rates possible.

Conclusion

This bird's-eye view of central banking, while of necessity highly selective, appears to confirm that central bankers of different backgrounds tend to develop, through their work and responsibilities, some common objectives and viewpoints. These include a respect for the efficiency of properly functioning financial markets; a desire for a clearly defined status vis-à-vis the government; a tendency to take a long-term view of what best serves the economic goals of their countries; concern about the proper operation of international as well as domestic financial markets; and a realistic recognition of the complexities and limitations of monetary policy, which without support from other public and private policies and practices cannot achieve a reasonable degree of price stability.

Above all, central bankers believe that other widely desired economic goals (such as higher output and employment) in the long run cannot be achieved or maintained without approximate stability in the value of the medium of exchange and in the standard of deferred payments. In short, in the contemporary world, with its extensive division of labour and its myriad of transactions, an advanced nation cannot prosper over time without "money people can trust". ◘

— by Herbert C. Byleveld
Senior Economic Analyst
DRIE

(Condensed with permission from an article published in The Canadian Business Review, Autumn 1983.*)*

Computer Learning: The Industrial Opportunity

The role of the computer in education and training is becoming big business and someone is going to make money from it. But the development of the industry in Canada is hampered by complicated government policies which must be addressed if we want a share of this market.

Computer learning — the learning process which employs the computer as a learning tool — is part of a wave of computerization brought on by advances in microelectronics. Computer costs have dropped, microcomputer power has grown, and computer learning systems have gotten better.

Three broad markets for computer learning (known in the field as "CL") are now evolving: in education, where microcomputers are being bought by schools at prodigious rates; in industrial training, where the computer saves time and therefore money; and in a consumer market for microcomputers and special handheld computer learning devices.

From an industrial viewpoint, computer learning is ripe for attention. It has reached the moment of commercial success. CL has promising potential in international markets and it involves multiple facets of the high-technology sector — hardware manufacturing, software production, telecommunications systems and assorted consulting services.

But, will Canada be a largely passive market for foreign products in this developing area, or can Canadian industry make gains in computer learning, in domestic as well as export markets?

This is the concern and the focal point of a report entitled *Computer Learning: the Policy Imbroglio*, written for the Institute for Research on Public Policy through a grant from the Technological Innovation Studies Program of the Department of Regional Industrial Expansion (DRIE). The report shows how government policies influence the development of CL, and the purpose of its writing has been to make that relationship better understood so that new actions can be taken to promote Canadian industrial advances in the field.

Although Canada showed instances of advanced development of CL in the past, the state of computer learning is weak in Canada today. Weak support for CL becomes more significant now that a time of accelerated growth has arrived. Without supportive conditions for industry, Canada will have to meet its domestic needs through imports, while international markets will unfold with little benefit to Canadian firms.

Computer learning calls for a spirited attitude and for thinking in international terms. There is no established market hegemony in this area: no giants dominate in either hardware, software or content, and no country has advanced to the point where any field of schooling or training is flush with well developed CL material.

Much more information is needed to estimate market sizes for computer learning. For example, there is little information available about training in industry as it is carried out by traditional means. A second major point about computer learning markets is that the institutions of the past for education and training are changing today. Post-secondary institutions, for instance, are straining under new demands for part-time and continuing education as more and more people seek education or training for such reasons as self-development, upgrading of work skills, acquisition of new work skills, or simply the satisfying of general interests.

Informal education and training, outside of structured degree-granting programs, is on the increase. Such trends represent a new demand for flexibility in time and place of study that computer learning could potentially meet.

That there is a large industrial opportunity for Canada in this area is unquestioned. However, at the present time, CL development is taking place in an environment of such complicated government policies that successful exploitation of the opportunity is by no means assured.

There are a number of policy "players" whose actions influence CL development. From the viewpoint of education and training, the principal actors are the provincial ministries of education and the Council of Ministers of Education, Canada; the Canada Employment and Immigration Commission, which supports substantial amounts of training through its funding to industry for training purposes, and through the purchase of seats for trainees in institutions; and the federal government itself, with its internal training needs in the military and public service.

From the viewpoint of industrial development one finds the Department of Regional Industrial Expansion; the industrial development program of the Ontario government's Board of Industrial Leadership and Development, which stands out as a provincial initiative with emphasis on the "high-tech" sector; and the National Research Council, which has a long-standing interest in CL.

The policy environment for CL is complex even if one considers only the major players involved. Not only are numerous parties involved, but both federal and provincial levels of government are concerned. Split jurisdictions complicate the policy setting for CL. In manpower training, for example, a considerable federal role exists despite provincial jurisdiction over education.

In general, the support for computer learning has been weak despite CL's potential from either the educational or the industrial viewpoint. Only in Ontario have procurement policies attempted to combine educational needs with industrial advancement in CL. In training, government has not acted as a "catalyst user" to support CL, as has the military in the U.S. R&D has been scarce and CL fails to fit the funding frameworks of either of the two federal councils which give research grants to universities. CL is almost invisible at the university level, where expertise must be built if CL industries grow.

The weak support for CL can be attributed to a number of factors: the relative newness of its commercial viability, which in industrial development circles has been overshadowed by higher profile industries; a split federal/provincial jurisdiction in education and training, which leads to a blind spot in funding for educational technology projects; and a narrow understanding of major changes which are now occurring in education and training.

The need for a remodelling of training in Canada has become a policy issue in itself, and at the same time the educational system is struggling to meet new demands for both informal learning and informal training. In particular, new demands for computer-related skills are exerting pressure on the old institutions. Yet there is no real vision of the changing needs in education and training, or the ways in which the computer as a learning tool can fit into this transition.

The report describes three facets to the matter of policy to advance computer learning: a need for increased attention to computer learning among government players who undertake or set policy for education and training; a need for increased attention to CL among industrial strategists; and a need for improved mechanisms for liaison and co-operation in planning for CL.

As far as policy strategies for the promotion of CL are concerned, the report groups them into three approaches:

- organizing the marketplace, which would include building up knowledge about CL, organizing content supply, and organizing the hardware market;
- giving financial support to provide catalyst use of CL, to fund R&D, to support exemplary projects and to support user markets;
- creating favourable conditions for CL business by providing supportive financing and tax conditions, encouraging the software industry, encouraging R&D supported by industry and encouraging expansion into export markets.

Policies may variously address hardware, software, educator support, learner awareness or telecommunications in efforts to promote CL. The contention is that emphasis should be placed upon software, especially applications software, which is lacking at present and which is the substance of CL. Software should no longer be considered a lower priority than hardware manufacturing, which has dominated industrial development attention.

In the past, the provincial ministries of education have been the main actors in CL policy, responding to pressures from teachers to organize aspects of the use of microcomputers in schools. Their efforts have concentrated on organizing the marketplace, solving problems in marketplace conditions where immediate problems are felt, through such solutions as clearinghouses.

But a more forceful position is required. From both the educator and industrial viewpoint, it makes little sense to organize the marketplace for the distribution of poor quality material or, as is likely, for imported U.S. material balanced by a few Canadian-made products. Financial support is needed — for content development and for exemplary projects. To date, only Ontario has supported content development in a major way.

Financial support for CL is also recommended in several other ways: through catalyst use of CL, particularly by the Canada Employment and Immigration Commission with its role in manpower training; and through R&D grants to universities, especially for long-term R&D.

Industrial development programs which give grants to CL firms will quickly evoke responses from industry. Industrial development policies, however, should focus also on the creation of favourable conditions for business generally. Rather than attempt to select a few firms who benefit from a granting program, the task is to form a favourable framework in which CL companies can operate.

Those industrial development programs which give grants to CL firms will quickly evoke favourable response from industry.

R&D should be encouraged within industry — by tax policy, for example; the software industry should receive favourable treatment. And expansion into export markets should be supported through such means as financing aid, trade agreements, market intelligence, and so on.

A specific recommendation is also made regarding the need for a co-ordinative mechanism in CL planning. In the complex policy environment for CL with its many players, divergent and disjointed actions may not only be detrimental to industry but may also prove inefficient if incompatibilities are entrenched. More opportunities for co-ordination should exist. A strengthened version of the National Research Council's Associate Committee on Instructional Technology appears as the most likely candidate to fulfill a co-ordinative role and to promote CL interests among the many policy makers whose decisions affect the future of this fledgling industry.

Micronav Limited and MLS — High Technology in Cape Breton

For many Canadians, Cape Breton conjures up images of highland games, fiddle tunes, and pastoral scenes — hardly the stuff of which high technology is made. But high technology is flourishing in Cape Breton at the Point Edward facility of Micronav Limited.

Incorporated in December 1980, Micronav was established to manufacture a microwave landing system (MLS), heir-apparent to the instrument landing system (ILS). Today, Micronav is the only Canadian company actively developing MLS units.

It is not surprising that this Cape Breton company should be in the forefront of Canadian navigation research and development. Company president, John Currie, is also president, founder and major shareholder of Internav Limited, the first company in Canada to manufacture Loran C receivers for shipboard use. Started as a 10-man operation in 1977, Internav now has a workforce of 50.

Mr. Currie has a wealth of experience in the marine and aviation navigation fields. Under his direction, Internav developed and manufactured Loran C radio receivers for both seagoing vessels and aircraft.

With the United Nations directive that ILS units be replaced by MLS units at designated airports around the world by 1995, the next logical step for this innovative entrepreneur was the founding of Micronav and the development of Canadian-made and designed MLS units.

Since World War II, airports have used ILS to guide aircraft landing in bad weather. ILS operates on two fixed electronic beams — one allows for proper alignment with the runway; the other shows the proper angle of descent. The system is limited to 40 frequency channels, is costly to install, and is not suited to airports located near high ground or mountains, which affect its electronic signals.

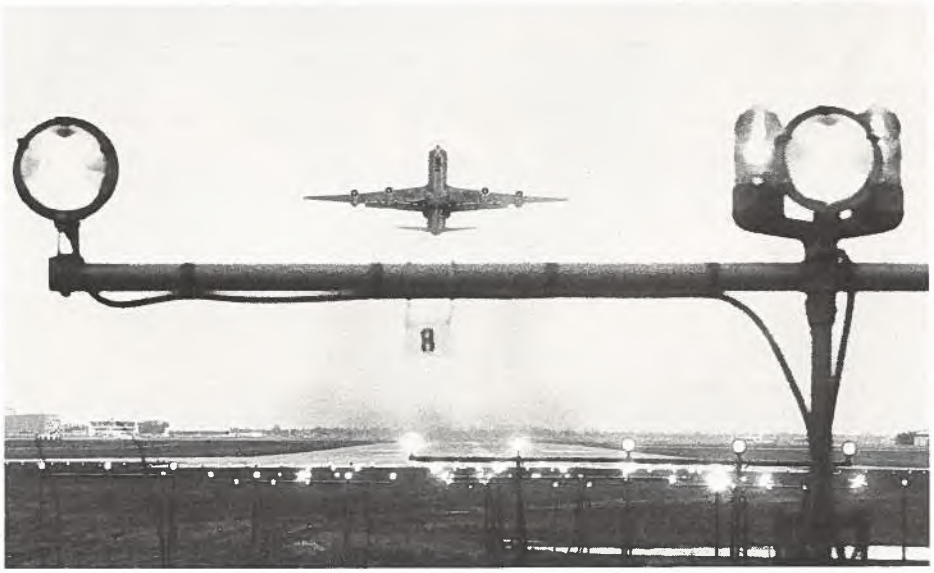
With the wide variety of aircraft in use at airports today, a more flexible landing aid is required to achieve optimum use of facilities.

MLS Provides Flexibility

MLS provides that flexibility. Two beams scan rapidly back and forth. One beam covers an 80° wide pie-shaped sector out from the end of the runway. The other beam covers a 0° - 15° sector up and down from the runway. Special cockpit equipment allows pilots of large jets to fly conventional "straight in" approaches while short take-off and landing (STOL) aircraft and helicopter pilots can fly in on steeper paths, angling in from left or right of touchdown point. With MLS, maximum runway use is achieved.

Projected market demand is for 5 000 units worldwide. In Canada alone, the Ministry of Transport has identified almost 200 airports which will convert from ILS to MLS. Not included in this figure are smaller airports, heretofore unable to provide all-weather landing systems due to topographical restrictions, and the ever-growing offshore exploration industry.

The company has begun an aggressive marketing program in Canada, the United States and overseas. With a per unit cost of $1 million, Micronav's market share could exceed $430 million.



MLS offers 200 frequency channels at one site, allowing busy airports to install as many units as are required. Microwave signals generated from MLS units are not affected by the surrounding terrain. Its light weight and low installation cost makes the MLS unit suitable for and attractive to smaller airports and offshore drilling rigs.

Work on a prototype is now underway at the Point Edward facility and is expected to be completed by 1985. In developing its prototype system, Micronav has assembled a strong team. Canadian Astronautics Ltd. of Ottawa will develop a special antenna while Maurice Myers, pioneer of the MLS and an acknowledged authority in the field, will provide consultant services.

Support for Micronav

Micronav, in competition with such multinationals as Hazeltine, Bendix and Thompson CSF, has received wide support to develop its MLS. Private investors, the federal Department of Industry, Trade and Commerce and Regional Economic Expansion (ITC/REE), the Ministry of Transport and the National Research Council have contributed to Micronav's work.

When the next Gathering of the Clans is held in Nova Scotia, it is conceivable that aircraft bringing Scots from around the world will be guided by Micronav-built MLS units.

— from the Halifax Regional Office of ITC/REE

Canadian Lobster — A Swiss Treat

One of the highlights of dining in Switzerland and West Germany last summer was the promotion campaign for Canadian lobster presented by a Swiss restaurant chain, Movenpick. An estimated 22 000 meals were sold by Movenpick restaurants in major population centres such as Zurich, Basle, Lausanne, Berne, Geneva, Lucerne, Ticino, St. Gall.

Clearwater Lobsters Ltd. of Halifax supplied the delicacy and Air Canada shipped an estimated 5.5 tonnes to Switzerland and a further 8 tonnes to West Germany, all consumed by enthusiastic diners.

Canadian ambassador to Switzerland, M. de Goumois, and embassy staff member Ms Ch. Weick, tuck in.

Participating restaurants featured the same menu and, for SF16.80 ($10.00 Cdn), one could have half a lobster (approximately 250 grams) served with a "Vaucluse" salad (a Movenpick creation with celery branches, beans, small carrots, mushrooms and mayonnaise). A choice of sauces accompanied the dish — "Lemon mousseline", with pieces of lemon and cream; "Rouille-Sherry", garlic mayonnaise with sweet peppers in Sherry; "Mousseline with crustacea", lobster sauce with whipped cream and cognac.

In addition, Movenpick's chef in Berne Max Brunschweiler, recently returned from North America, introduced such North American culinary delights as surf and turf (lobster and steak) served with baked potatoes and sour cream for SF32.50 ($20.00 Cdn) and, for the first time, lobster thermidor.

Was the campaign a success? Satisfied diners seemed to indicate it was and Alex Walser, Movenpick's vice-president, Quality Food Procurement, and director, Food Department, answered the question with an unequivocal "Yes"! He added it was so successful that already his firm is planning a further Canadian lobster promotion next June.

Much advanced planning, preparation and publicity went into the campaign and helped ensure that success.

Publicity began well ahead of the promotion dates with advertisements in major daily newspapers and there was a direct mailing from each restaurant to selected clients. Approximately two weeks before the feast began, diskettes announcing the proposed arrival of the fresh lobster were played periodically in participating restaurants.

Within days of the event, further newspaper ads highlighted the arrival of the fresh lobster.

Special attention was given to the restaurant staffs and to the preparation and presentation of the meals. Chefs were trained to prepare the various dishes and other staff members instructed in presenting and serving them.

A feature of North American lobster meals, the "bib", was introduced.

The lobster was flown in live from Halifax to Zurich three times a week. Purchases were co-ordinated through Movenpick's central buying office.

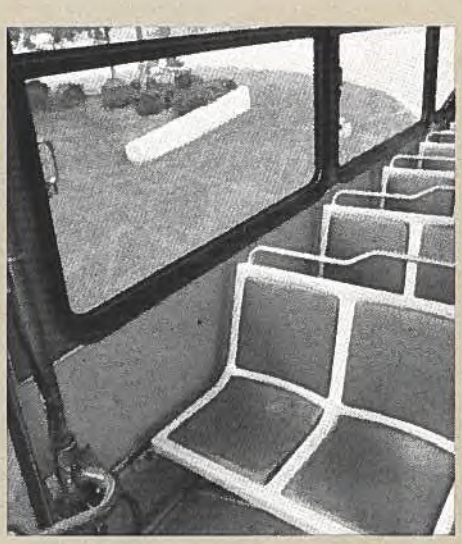
Would discriminating Swiss and German diners appreciate this gourmet crustacean? They did and that is what made the promotion the success it was.

It was further endorsed by the obvious delight Canada's ambassador to Switzerland, M. de Goumois, and members of the embassy staff. To quote one local newspaper, *The Berner Bar*: "Even Ambassador de Goumois didn't miss this event!"

A dish fit for anyone — Canadian lobster.

CANADIAN COMPANIES & PRODUCTS

Firm Wins "Canada Export Award"
Canparts Automotive International Ltd. of Cambridge, Ont., has recently won the "Canada Export Award" for its efforts in supplying customers in over 40 countries with its line of CANSTOP automotive disc brake parts which meet or exceed original equipment standards for British, European and Japanese applications. The pads are available in four grades to meet every driving condition.

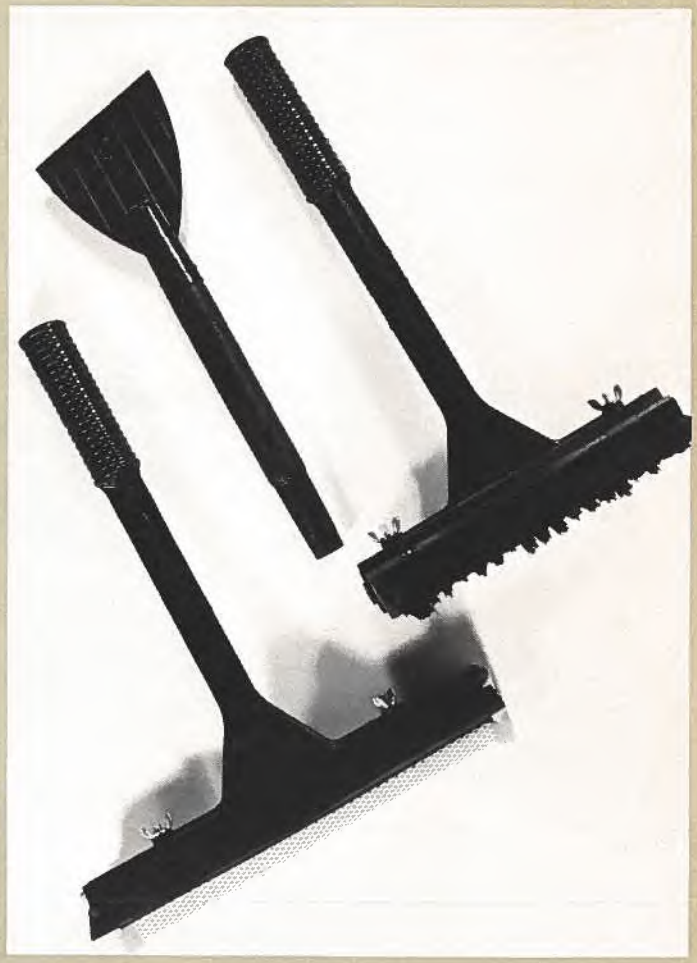


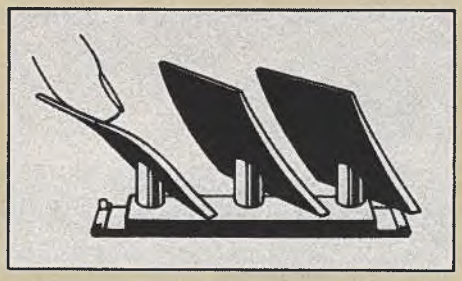
Orion II — New Small, Heavy-Duty Bus
Orion II is a new small, low floor, highly accessible, heavy-duty transit bus designed by Ontario Bus Industries Inc. of Mississauga, Ontario, for para-transit operators and transit authorities. To achieve its very low ground clearance, the bus has been designed with the main-frame strength in the roof, eliminating thick floor support members. Another advantage is its detachable power train module which includes the engine, transmission, front wheel drive assembly, suspension and steering. The whole module can be removed in less than an hour and returned in the same short time.

Cold Weather Starts
At this time of the year, cold weather starts are the curse of Canadian motorists. One Canadian manufacturer that has developed a complete product line to overcome winter motoring problems is Tempro Division, Budd Canada Ltd. of Winnipeg. Its line up of coolant heaters — Lower Radiator Hose Heater (A); the Heat Ram (B); and Circulation Heater (C) — are all designed to keep engine coolant warm and, in the case of B and C, circulating throughout the engine.

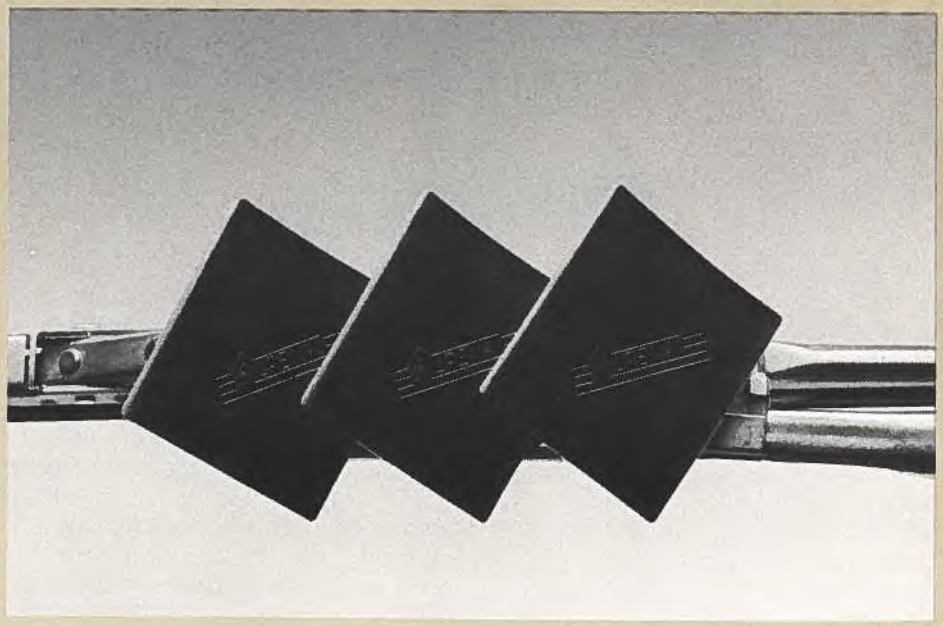
Tempro also supplies a complete line of battery warmers, block heaters, diesel starting aids, interior warmers for most makes of cars and trucks, both domestic and imports.

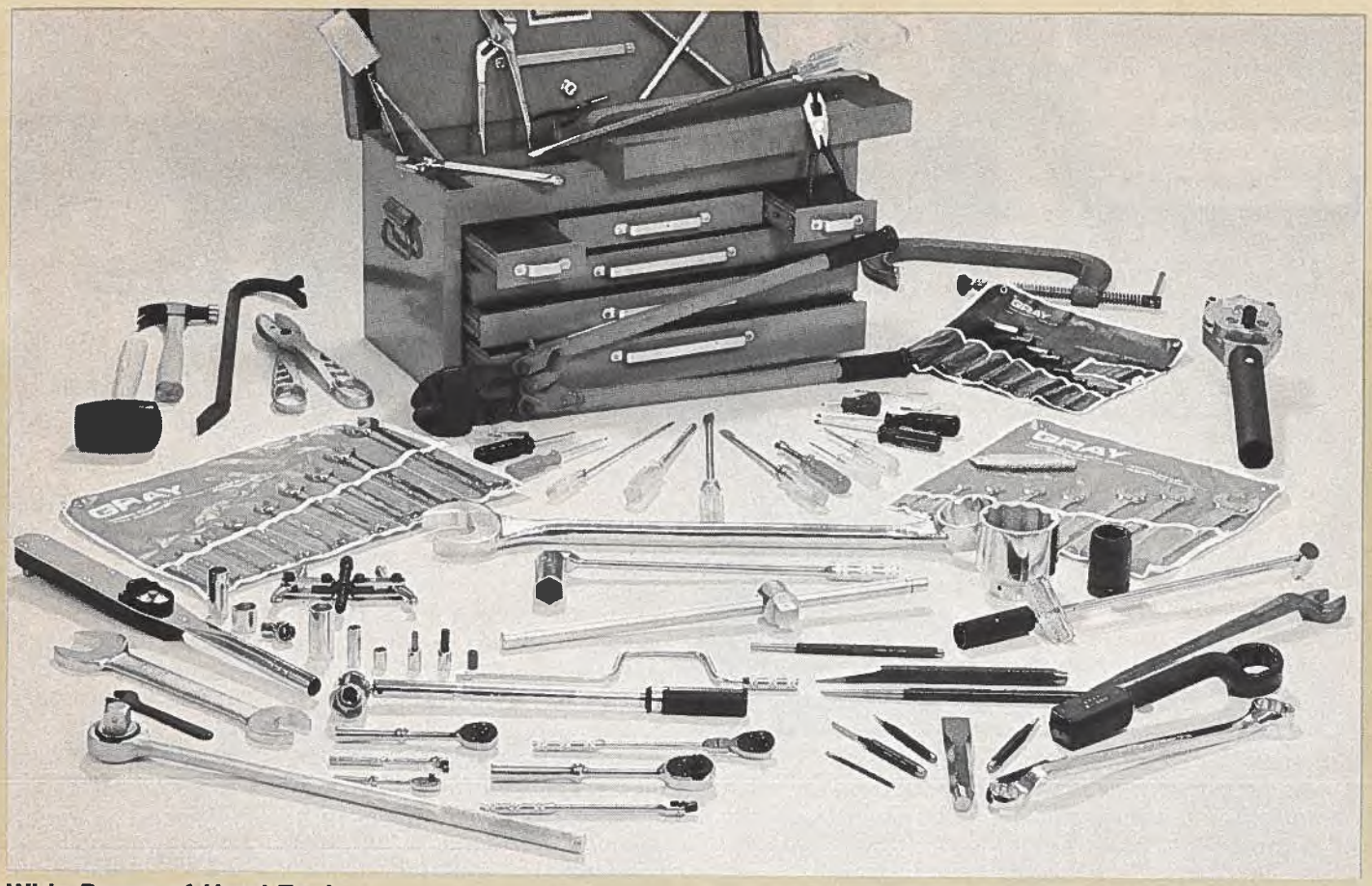
Snow Brushes and Squeegees
National Pro Industries' latest entry into the plastics field is a patented line of snow brushes and squeegees. Made of high impact plastic and interchangeable parts, the new strong and light-weight products should have a ready market throughout Canada this winter. In addition to the ice scraper handle which extends the length of the squeegee and snow brush, all wear parts are replaceable.





Wiper Wings Virtually Indestructible
Alpena Wiper Wings are designed to eliminate those irritating hits and misses of your wiper blades in strong winds by applying downforce on the blades. Made by Marklyn Company Inc. of Mississauga, Ontario, of premium quality polypropeylene, the wings are virtually indestructible.

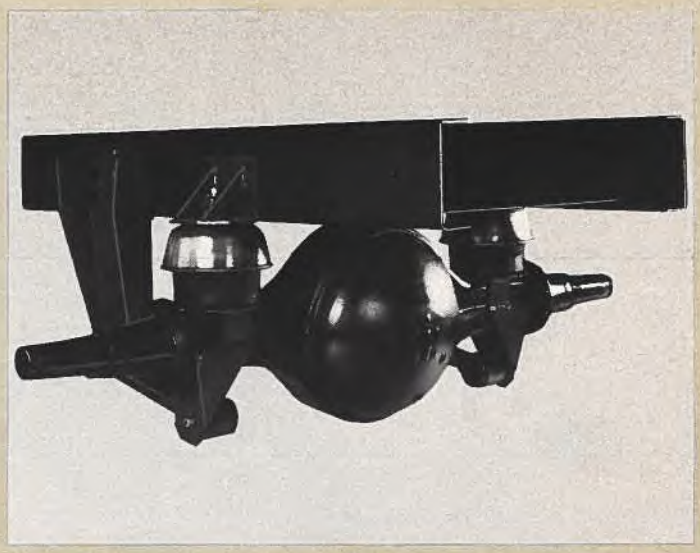




Wide Range of Hand Tools
Gray Tool Company of Canada Ltd. manufactures a wide range of hand tools for the professional mechanic and the do-it-yourselfer. More than 3 000 individual items are produced at its two Canadian plants to meet and exceed Canadian government specifications — among the highest in the world.

Explosion Suppression System
Ignite it, shoot it, burn it, store it for years and a gas can won't explode provided it is equipped with Explosafe. Canada's only explosion suppression system was developed by Explosafe America Inc. of Rexdale, Ontario. The product is made of heavy aluminum foil, sliced and stretched into a honeycomb of cells, constructed to dissipate heat and suppress complete combustion. When cut to shape and fitted into any container of volatile liquid or gas, it has less than two per cent displacement. The new product removes the danger of carrying extra gas in the trunk of cars or truck cabs.

Miniature Air Compressor
A new product for Webster Mfg. (London) Ltd. is a miniature air compressor, designed to operate off an automobile cigarette lighter. Mini-air is finding wide acceptance in a market now dominated by Pacific Rim countries and completes the company's range of air compressors from the top-of-the-line to the inexpensive.



Unique Truck Suspension System
Chalmers Suspensions International Limited of Brampton, Ontario, has come up with a unique suspension system for trucks and trailers with tandem suspension. The system utilizes a patented rubber spring and equalizers or walking beams which rest on the two axles. Each axle is located longitudinally, transversely and torsionally by four rubber bushed torque rods. In operation, the system automatically balances the load on each set of wheels. The system is said to improve cornering, reduce tire wear and maintenance and increase stability. The single axle version (shown) utilizes two load-guard rubber springs, one on each outer side of the frame and is claimed to have the same advantages.

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

Canparts Automotive International Ltd.
177 Pinebush Road
Cambridge, Ontario
N1R 7H8
Tel: (519) 623-9000

Ontario Bus Industries Inc.
5395 Maingate Drive
Mississauga, Ontario
L4W 1G6
Tel: (416) 625-9510

Tempro Division Budd Canada Inc.
P.O. Box 962
Osborne & Mulvey
Winnipeg, Manitoba
R3C 2V3
Tel: (204) 452-2005

National Pro Industries Inc. Les Industries National Pro Inc.
91, de la Barre
Boucherville (Québec)
J4B 2X6
Tel: (514) 641-1634

Marklyn Company Inc.
58 Oakwood Avenue North
Mississauga, Ontario
L5G 3L8
Tel: (416) 274-4060

Gray Tool Company of Canada Ltd.
299 Orenda Road
Brampton, Ontario
L6T 1E8
Tel: (416) 457-3014

Explosafe America Inc. Vulcan Industrial Packaging Limited
15 Bethridge Road
Rexdale, Ontario
M9W 1M6
Tel: (416) 743-8682

Webster Mfg. (London) Limited
P.O. Box 4580
1161 King Street
London, Ontario
N5W 5K4
Tel: (519) 455-1220

Chalmers Suspensions International Ltd.
P.O. Box 1000
Brampton, Ontario
L6V 2L9
Tel: (416) 451-1312

Armstrong — For the Future in Dangerous Gas Detection

Currently the largest Canadian manufacturer of toxic and combustible gas detection equipment is a dynamic, young firm located on the outskirts of Ottawa in the satellite city of Nepean, Ontario.

The Armstrong Monitoring Corporation is an operation headed by Lawrence J. Armstrong and William L. Armstrong, a father and son combination with years of experience in gas and related fields (i.e. pipeline and electronic products). They started their business in late 1980 by acquiring the assets of an existing gas equipment manufacturer and promptly embarked on a development program geared to state-of-the-art gas detection systems.

In this growing area with gross sales estimated in seven figures for 1983-84, Armstrong Monitoring has shown a measurable amount of success.

Making good use of various government assistant programs such as the Program for Export Market Development (PEMD), Canada Manpower Industrial Training Program (CMITP), the Ontario Career Action Program (OCAP) and others, the company has maximized its potential both in terms of production capabilities and in employment.

With this help Armstrong Monitoring has expanded from its original small staff to more than 30 with distributors and agents across North America and in Australia.

Although the acquisition of 1980 brought with it some design, engineering and technical personnel, further staff was required to allow for on-going research and development and the actual production records the company has since established.

Incorporated in January 1981, Armstrong completed its first gas detection equipment by mid-year with additional product and systems design available by early 1982. As is the case of many companies in their infant stages, the company was able to establish a powerful research and development organization consisting of a chief product engineer and a complete engineering staff. This has been a major factor in allowing Armstrong to compete internationally and offer a product that is as advanced as anything available in today's market, if not more so.

The Armstrong line ranges from rack and wall mount units to portables. In the rack and wall mount units are three main components — a monitor, a remote calibration transmitter and a sensor.

The monitor or controller is wall or rack mounted and will provide the user with continuous readings of gas levels by an analogue or digital meter. It has the ability to sound alarms at various gas concentrations and may be interfaced with a strip recorder or computer. It can be single or multi-channel.

Armstrong's new portable amc 3000 detector used on a manhole.

Armstrong has package systems of up to 10 channels and can provide readings from hundreds of sensor-transmitters through microprocessing and computer combinations, thus eliminating the controller.

In the transmitter there is an explosion-proof device to which the sensor is attached and this actually analyses and transmits the sensor signal back to the monitor.

Another feature is a remote calibration which means, simply, that the sensor, calibrated to whatever level of gas is required, can be adjusted at the actual location of the sensor by a technician/operator, saving time and money to an extent not found in the competition.

The sensor is also explosion-proof and can be one of several types from catalytic, solid-state, thermal conductivity, thermistor and ionization. In each case, a particular type of sensor element is required for each gas or group of gases and can be specific to one gas.

Armstrong's latest breakthrough has been in the portable detector field with the introduction of the innovative model 3000 series. This contains an exclusive-to-Armstrong three meter and three sensor concept that incorporates principles unparalleled in simplicity and efficiency. The industrial applications of this lightweight, portable unit are virtually endless due largely to the fact that the one or more separate sensors are proficient in the detection of oxygen deficiency, toxic gases and explosive gases simultaneously.

The systems are designed for applications in petrochemical plants, refineries, mining, oil and gas drill sites and other locations where dangerous gases might lurk. It can be used in schools, hospitals, parking garages, anywhere there is carbon monoxide.

Already a strong competitor in the international marketplace through word-of-mouth alone, Armstrong Monitoring is currently involved in a total re-aligning of its marketing department in order to capture a more prominent share. Sales have been negotiated with such companies as Mobil, Texas Instruments, Dome, Stelco, Honeywell, among others, in Calgary, Edmonton and Toronto; Houston, Dallas, New York and Denver, U.S.; and Sydney, Australia.

Expansion plans include a doubling of the company's facilities on current holdings to take full advantage of expected increase in sales volume.

A company on the move, The Armstrong Monitoring Corporation is showing that, against all odds and barriers, Canadian management, ownership and the technology they control, can and will continue to compete successfully in a rapidly changing high technology environment.

For further information, please contact:

The Armstrong Monitoring Corporation
215 Colonnade Road South
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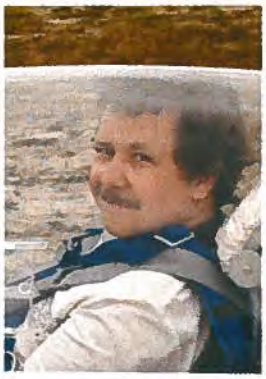
A New Lease on Life for Beaver and Otter Aircraft

A de Havilland Otter re-engined by Airtech with a PZL 1 000 h.p. engine and four-blade propeller.



Airtech's president, Bogdan Wolski.

An innovative Canadian company, Airtech Canada of Peterborough, Ontario, is giving a new lease on life to two venerable Canadian aircraft.

The rugged Beaver and Otter aircraft established the reputation of de Havilland Canada as a builder of "bush" planes in the 1950s and 1960s. Aimed primarily at the domestic market for an aerial workhorse, the aircraft found customers worldwide who needed their reliable performance and ability to operate from short landing strips.

De Havilland capitalized on this experience to graduate to larger aircraft — the Twin Otter, Buffalo and Dash 7 — and the bush plane production lines were closed down in the late 1960s. At the same time, Pratt & Whitney stopped manufacturing and supplying the radial piston engines used by both Beaver and Otter. The result has been a steady business in engine maintenance and repair to keep these venerable workhorses flying.

However, engines have only a limited life, even with expert repair and maintenance. With many hours of airframe operation still remaining, the survivors of the 1 657 six-seat Beaver and 460 12-seat Otter faced being grounded forever because of engine deterioration.

Airtech Canada recognized an opportunity and tapped the only source of new radial piston engines, the PZL factories in Poland, to re-engine and revitalize the Beaver and Otter.

As a result of the application of engineering ingenuity and the exercise of considerable diplomatic skill, Airtech can now offer a conversion for both aircraft at a price that compares favourably with the overhaul cost of the old Pratt & Whitney engines.

This position, however, was not easily achieved.

The Department of Transport (DOT) must be assured of the safety of all aircraft flying in Canada or exported from Canada. Airtech's efforts to demonstrate the soundness of its development involved a lengthy interchange between the Polish authorities and DOT resulting in a bilateral certification agreement between the two countries. This has facilitated several other certification procedures and significantly improved communications between Poland and Canada.

Airtech's first Otter conversion was a straight exchange of a 600-h.p. Pratt & Whitney engine for a PZL unit of the same horsepower. Nine such conversions were made before Airtech responded to pleas of operators to increase the Otter's power for improved performance, particularly when fitted with floats. Now the company installs the 600-h.p. engine on the smaller Beaver and has increased the Otter's power with a 1 000-h.p. PZL engine.

Airtech claims that the re-engined aircraft can perform as well with floats (weighing 385 kg [850 lb.] for the Otter), which generate enormous drag, as they could previously with wheels.

As an incentive, Airtech offers a $10 000 engine overhaul for the Beaver at 1 000-hour intervals, compared with $20 000 for the Pratt & Whitney engine at 800-hour intervals. Conversion cost for the Beaver is about $80 000 and for the Otter about $90 000.

The airspeed of both Beaver and Otter is limited by the airframe design so the increased horsepower cannot be used to generate higher speeds. However, it is possible to economize by cruising at reduced power settings. Airtech claims that this ability, with the Otter, for example, can reduce cruise fuel consumption from 200 to 160 litres (45 to 35 gallons) per hour.

Test pilot Paul Hartman, reflecting the need for maximum power on takeoff and somewhat critical of the power available to the original Beaver and Otter, comments: "It is nice to know that you can now get out of the small lakes you can get into."

One of the first Airtech 600-h.p. Otter conversions is flying in Peru with *Wings of Hope*, a Canadian non-profit organization which provides free transportation and communications to isolated jungle villages. *Wings of Hope*, founded in 1965, emphasizes self-help and trains the natives to become pilots, radio operators and managers. From two main bases at Satipo and Iquitos, *Wings of Hope* provides food, mail, pharmaceutical products and emergency service to 62 jungle landing strips. Saving lives is almost a daily occurrence when severely injured or sick patients can be conveyed to base hospitals in a matter of hours compared with the only other means of transport — a litter carried over jungle trails: a journey which can take several weeks.

The rugged, reliable Otter has borne a large share this load for the past year. Montréal pilot Jean-François Taschereau, who flew the aircraft from Peterborough to Peru, appreciates its STOL (Short Take Off and Landing) ability on rough strips which have slopes of up to 10 degrees, are as short as 215 metres (700 feet), and can be covered in mud during the rainy season. Lionel Couture, president of *Wings of Hope*, reports that his Otter flew for 600 hours in its first year of operation transporting more than 400 tonnes of diverse goods essential to the well-being of more than 250 000 native people served by his organization.

Repeat business is the prime endorsement of any product and Airtech received a second order from *Wings of Hope*, this time for the smaller Beaver with a 600-h.p. PZL engine and equipped with amphibious floats. Last August the Beaver flew to Peru where aircraft performance deteriorates in the hot conditions typical of the region and where the extra power is welcome, especially when dragging the performance-destroying floats. Lionel Couture notes his plans to return the original Otter to Airtech for installation of the more powerful 1 000-h.p. PZL engine.

The aerospace market is cyclic in nature and the survival of a small company depends upon its versatility and the diversity of its product line. Airtech's base of operations is general aircraft maintenance and repair supplemented by the Beaver and Otter conversions and the import of four-place Wilga aircraft and gliders from Poland. All the imports generate Canadian work. The Wilga, for example, is shipped from Poland in pairs packed in a 12-metre (40-foot) containers — Airtech assembles, paints, installs radios, flight tests and prepares each aircraft for delivery which generates six person-weeks of work per aircraft. Canadian Aircraft Products in Vancouver has designed the floats for the Wilga and is the sole source of supply.

For the future, Airtech is trying to interest Canadian companies in joining with PZL in development and manufacture of a new bush aircraft in the Beaver and Otter tradition.

This small Canadian company has identified a market niche which avoids head-on competition with the major aerospace companies. Airtech has pioneered trade relationships with Poland which has generated work for Canadians, revitalized old Canadian-built aircraft, created exports and displaced imports.

The only direct financial support that Airtech has received from the federal government has been from the National Research Council's Industrial Research Assistance Program (IRAP) for work on the 1 000-h.p. Otter conversion. The services of the federal government, however, have played an important part in the success of the company.

With new PZL 600 h.p. engine from Airtech and floats by Bristol Aerospace of Winnipeg, this Beaver is back in business.

The Department of Transport has provided vital advice and encouragement at an official level and also on a personal basis from individuals in the Certification Branch. Negotiations in Poland would have been difficult, if not impossible, without the active support of the Canadian Trade Commissioner in Warsaw.

Airtech established credibility and identified new opportunities as a result of the mission organized by the then Department of Industry, Trade and Commerce in 1981.

— by S.B. Shaw
Electronics and Aerospace Branch
ITC/REE

A Banker Looks at Small Business

The bankers role for small businesses is one of social responsibility as far as constructive lending is concerned, according to J. P. (John) Clarke, vice-president for commercial lending of the Royal Bank of Canada.

Associated with a major bank since 1946, Clarke has had extensive experience in various domestic banking fields including retail, commercial and branch banking. He has been especially close to small, independent businesses for many years and has acted as a "money doctor" to ailing enterprises. He emphasizes that for the "money doctor" to be able to help the hard-pressed businessman, the businessman must tell the doctor what ails him and must not hide or hold back any information if he expects effective help.

Regarding the banker's role of social responsibility, Clarke states that it can be utterly irresponsible for the banker to be merely kind and agree to a loan for a borrower who pledges himself as collateral and yet is going down the drain.

This has happened so often that a borrower who lost out came complaining afterwards to the banker: "Why did you make that loan to me? Now my business is bankrupt and I have lost my home and I am deeper in debt than ever." Under the circumstances, it appears it would have been better for the banker and would-be borrower for the banker to have said "no".

"Money is like fire," according to Clarke, and the borrower must be able to handle it.

It is important for the customer to make money with a bank loan because the banker is interested in small business and sees such loans as good income earners, especially where interest earned is prime and there is the addition of a percentage.

Borrowing from a bank is a contracted obligation. The banker provides the money and, in return, expects the obligations of interest, capital payments, security provision and interim financial information, to be properly met as agreed.

If difficulties arise in meeting such obligations, the communication between banker and businessman becomes even more important. At such times much soul searching is completely necessary to maintain good relations with the banker. As long as full communication is maintained, the banker is not likely to send cheques back marked NSF (not sufficient funds) unless the "end" is near.

Clarke regards small business as the backbone of the nation and is full of admiration for the man who goes out and stakes his livelihood on the pursuit of an idea in the face of the risks involved.

Somehow, the small businessman has become afraid of the "banker" and this is of concern to Clarke who has developed close relationships with many small businessmen during his years in retail and regards this as a kind of partnership.

He sees himself as the "money doctor" who expects the client (patient) to tell him everything, warts and all, because otherwise the "doctor" cannot help the "patient".

His bank is highly supportive of the small business sector and concerned with fostering its growth, he states. For example:

- Special independent business managers have been appointed to develop this sector because small business can be very profitable to the bank. These managers can support the branch manager in getting closer to the small business sector and they are trained to make calls on the man who runs a drugstore or a manufacturing concern.
- An independent business department has recently been formed.
- A complete series of excellent booklets on all phases, problems and controls for small business is available for the asking.

He believes in lending for constructive purposes. It is important that the customer should make money with borrowing rather than simply "working for the bank".

Clarke maintains that the principles of making loans to small business are the same as those for loans to big business. The branch manager in a small business sector does not look with less confidence on small business since they constitute his major clientele and he too must make a profit. Thus, small business loans are his "bread and butter".

His bank has not been excessively apprehensive regarding loans to small business, he maintains. In fact, he feels that at times it has not been apprehensive enough and occasionally authorizes too generous loans, sometimes because of the pressure to acquire new business.

The bank does not look for only gilt-edged accounts but is quite happy with those of fair quality and Clarke feels, as a banker, that if the customer succeeds, he has succeeded as well.

There has been a decentralization of the loan-granting structure, Clarke

states, and a broadening of the individual branch manager's discretionary limits. The vast majority of all loan approvals can now be made within those limits. However, such decentralization and broadening of his limits might make a manager more conservative.

Therefore, it is absolutely essential that proper presentation be made to the banker when applying for a loan. The banker expects the loan applicant to be well prepared. A few figures scrawled on the back of an envelope are a sure way to lose the banker's interest in any proposal or request for a loan.

Clarke's recommendation is that, under the circumstances, it might be wiser to have a good accountant prepare balance sheets, cash flow projections and all the necessary and relevant information. Not only does the banker require this, but so does the would-be borrower. Otherwise, the banker would consider such behaviour as unbusiness-like and the likelihood of a loan would become increasingly remote.

Clarke emphasizes the importance of having a competent chartered accountant to set up a management information system available both to the client and the bank. But, he warns, such a professional accountant should not be treated merely as a bookkeeper but rather as a kind of vice-president of finance to help with the cash flow.

He believes that the greatest causes of business failures are lack of management, mismanagement and lack of experience. There seems to be an inborn tendency in small business for ill-advised expansion — a desire to grow regardless of whether such growth can be sustained or not. While a business remains reasonably small and avoids premature expansion, the independent businessman can keep a "hands on" attitude. With rapid expansion, this is no longer possible and risks increase.

Clarke recommends that the small businessman ask himself:

- Why is he in business?
- What does he expect to achieve?
- What are his plans for achieving his goals?

This implies budgets, cash flow projections, planning for innovation, cost control — all of which become crucially important in hard times.

On the touchy subject of the banker sending a businessman's cheques back marked NSF, Clarke says this will not happen if the banker has been given a good and valid reason. Even in tough situations, the banker is approachable and things can be worked out.

However, there is a limit on how long a bank can wait before taking action if the business growth is excessive and not sustainable because of high overhead, or sales volume is too low to justify overhead. It is better to stay small and manageable and plan for sustainable growth than to expand into bankruptcy!

All this calls for incredible self-discipline and Clarke suggests that the banker who pushes his client to have the necessary information and keeps him strictly accountable is more of a friend than the over-generous banker.

Communication is most important and, if information and proper explanations are forthcoming, the bank will bend over backward to be tolerant so long as the communication is maintained.

The foregoing was prepared for Canada Commerce *by the Federal Business Development Bank with the co-operation of the Canadian Bankers' Association.*

Sun Dancer Air Shows Ltd.

Halifax Harbour

Canada's Atlantic door to the world is always open for business.

The Conference Board of Canada is confident about the economic growth of Nova Scotia. In a forecast of provincial trends in 1984 the board indicated a 3.1 per cent improvement in the Atlantic province's real domestic product. That note of optimism, reserved exclusively for Saskatchewan and Nova Scotia, is attributed to Maritime construction projects and gas drilling operations in the vicinity of Sable Island.

In fact, the commercial parameters of Nova Scotia gas reserves have yet to be determined, but positive offshore tests have encouraged a steady increase in drill rig activity. Busy, too, is a fleet of supply ships whose advanced engineering features and versatility are reflected in their $20 million price tags. Shuttling between shore and rigs, they carry from recently established Canadian sources all the equipment, tools and materials which will be used to pump natural gas from the ocean floor to Nova Scotia processing plants.

The harvesting of Sable Island wealth is two or three years down the road, which means that today's offshore prosperity is generated solely by the preparations for tomorrow's natural gas bonanza. But whilst there's no ignoring the fact that gas investors' money is currently giving buoyancy to the Nova Scotia economy, there is in Halifax ample evidence of another stratagem, another recipe for industrial success which dates back to 1812, when Haligonian Sam Cunard took over his father's shipping business and spread his name and fame across the seven seas.

Cunard was a visionary and opportunist. When still on the right side of 40 and already a millionaire from successful ventures in timber mills, coastal shipping and mail services, he foresaw the ascendancy of steam over sail. But rather than risk seeing his own money go up in smoke, he journeyed to Scotland and there persuaded George Burns and Robert Napier to finance the design and construction of steamships capable of braving the North Atlantic in winter and maintaining a regular transatlantic service using Halifax. For more than a century Clyde-built Cunarders would rule the waves, the mightiest of them, the Queen Mary and the Queen Elizabeth, regular visitors to Nova Scotia during World War II.

By the mid-1960s ocean liners had lost out to airliners, and the last regular Atlantic passenger link with Halifax terminated in 1967. Yet another blow to the Nova Scotia port had been the opening of the St. Lawrence Seaway in 1959. Large ocean freighters could now bypass Maritime harbours and ply their main trade along the St. Lawrence, and by way of Lake Ontario to Cleveland and Detroit, or continue across Lake Huron and Lake Michigan to Chicago, almost to the heartland of North America.

In the general euphoria which peaked with the celebration of Canada's 100 years of nationhood, few Canadians realized that a new chapter had opened for the people and products that depend upon deep sea transportation. Ship owners, alarmed by the escalating cost of traversing canals and waterways, getting tugboat assistance, berthing, meeting harbour dues, loading and unloading, and being held to ransom by this or that dissident work force faction, were embracing a new concept in ocean transport: containerization. The traditional method of crowding into the ship's hold a vast assortment of individual crates,

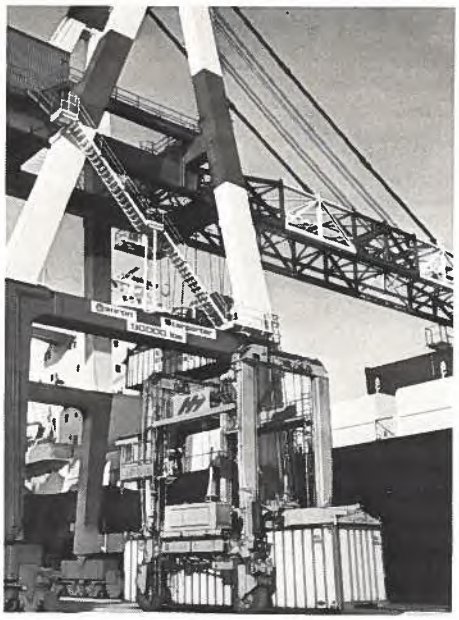
boxes and packages was giving way to the systematic stacking of uniform containers which would come in two sizes.

Anything going by sea would have to be packed into boxes measuring 20 ft. × 8 ft. × 8 ft. or 40 ft. × 8 ft. × 8 ft. Containers to be provided by the shipping company and packed by the sender, who must also arrange customs formalities before the consignment began its journey to the port by specially designed road vehicle or rail car. The loading and unloading equipment on the quay itself — cradles, gantrys and cranes — must also be custom-tailored for the job.

Unlike an uprising in some remote land that attracts legions of commentators and, thanks to television, invades the privacy of the family living room, the ship container revolution — its impact worldwide — gathered momentum without public approbation or political acrimony. No modern Sam Cunard stood up, taller than his fellow Canadians and able to point the way to new trading horizons. Yet in 1968 the first permanent container facilities went into operation at Montréal and interim container services were provided at Halifax, Saint John, Québec and Vancouver. In that same year the 11 principal ports of Canada received 37 794 ships and handled 72 781 405 tons of cargo.

Halifax ranks third among Canadian ports in terms of shipping traffic. As a natural deep water harbour, it has few rivals anywhere in the world. During some previous millenium glacier movement gouged a deep cleft in the ironstone rock on which Halifax stands. Unlike some other famous ocean terminals, the harbour has no river to silt its ice-free waters. The approach channel has a minimum depth of 21 metres (70 feet), almost twice as much as Vancouver and double the equivalent figure for Montréal. Ships' captains can set course for Halifax happy in the knowledge that they can dock at anytime, regardless of the tide.

Beyond the u-shaped waterfront, both sides of which boast piers, docks and shipyards, there is a second, longer and wider anchorage. The Bedford Basin, roughly three miles by one mile, has a maximum depth of 60 metres (200 feet). During two world wars it offered sanctuary to as many as 150 ships at a time. Here the great convoys assembled: heavily laden freighters, oil tankers and



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former luxury liners now in drab camouflage paint and ready to ferry fighting men to foreign battlefronts, their escorts almost invariably the most powerful and most potent elements of Allied naval fleets.

The natural assets of Halifax harbour must be measured against its distance from the industrial and commercial hub of Canada. The railway line from Halifax stretches 1 352 kilometres westwards to Montréal, 1 891 kilometres to Toronto, 2 945 kilometres to the grain elevators at Thunder Bay. So the economy of the Nova Scotia port depends to a large extent upon the efficiency of the rail link with Central Canada. There are other factors, most notably the alternative services offered by Saint John, New Brunswick, and the splendid shipping facilities available at Montréal, the country's major seaport. Rivalries between the three cities are keen, at times cut-throat, according to some observers.

Local port authorities are championed by their respective provincial governments. Union leaders jealously guard the interests of their members. Ottawa mandarins, ever mindful of the need to minimize regional economic disparities, try to emulate Solomon. But ultimate decisions about port usage are the prerogative of the customers, of the shipping companies whose allegiances may lie far beyond the boundaries of Canada. Since all concerned are interested in bottom line dollar figures, the logical starting point is the cargo vessel itself.

The container ship concept was dictated by the need to reduce operational overheads, including loading and unloading. Before container ships were conceived, a gang of 16 dockers would load on average 30 tons of general cargo per hour. Nowadays, if the same general cargo is stowed in containers, each 20 ft. × 8 ft. × 8 ft. box will take approximately 16 tons. Using specially designed quayside lifting equipment, dockers can handle 25 containers, or 400 tons per hour.

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CN yards and sidings cover 257 kms., handle 6 000 rail cars.

Automation has its price. The average container ship capable of carrying, say, 1 800 20-ft. containers will cost around $130 million if constructed in Japan or South Korea, two countries which presently account for 83 per cent of the world's shipbuilding. The Orient contributes old fashioned work ethics rather than technological innovation.

Quayside gantry cranes come in at $5.5 million each and railcar loading cranes run to $1 million each. The container terminal at the mouth of Halifax harbour, fully operational since 1970, is equipped with three gantry cranes, six railcar loading cranes, 18 tractors, 15 trailers and three heavy-duty lift trucks. Tucked away in a corner of the 24-hectare facility are eight straddle carriers (total catalogue value $2 million) which were overtaken by more efficient container-handling equipment after performing 10 years yeoman service.

By international agreement containers are 20 ft. and 40 ft. in length.

The charter charge for a large container ship is somewhere in the region of $30 000 per day. To clear that overhead, the number of containers carried should be close to the maximum, and stop-overs at ports of call reduced to the absolute minimum. Halifax scores because its small tidal variable (1.2 metres — 4 feet) makes it equally accessible day or night. In pre-container eras, a general cargo vessel might be tied up at a pier for as long as a week. Nowadays, a container ship captain can get into and out of Halifax within 12 hours. For that length of stay he pays Ports Canada, a federal agency, approximately $600 berthage plus $2 per ton of cargo loaded or unloaded. Should the ship still be immobile beyond the twelfth hour, another $600 falls due.

Slickness pays. And so, too, does investment in the most advanced products of marine engineering. Whereas the merchant fleets of not-so-long ago depended upon stern propellers which produced only fore and aft movement and were of little help if the captain had to manoeuvre slowly towards a pier or anchorage, modern ships have auxiliary propellers (thrusters) on the side of the bow and the stern. Driven by electric motors, they simplify turning and sideways motion. Such chores used to be the specialist domain of squat, muscular tugboats, two or more of them pulling and pushing every large ship towards its chosen resting place. Today, thanks to their side-mounted auxiliary propellers, most ocean freighters berth at Halifax with the assistance of only one tug and, except in stormy weather, head for the open sea without outside help. Many modern ships almost invariably dock and sail under their own power.

Not every item of cargo can be accommodated in a box measuring 20 ft. or 40 ft. in length. Typical examples are printing presses, electric generators and industrial ventilation units manufactured for overseas customers. Rather than ignore such business, shipowners challenged nautical designers to come up with a concept that would enable a vessel with no derricks of its own to deliver heavy and cumbersome objects to small ports ill-equipped with lifting devices. The answer was, of course, a freighter with a stern or quarter ramp that can be lowered to the level of almost any harbour pier. By the simple expedient of placing a dolly under the heavy shipment, it can be rolled up the ramp by the same small band of dockers that handle 400 tons of containerized cargo per hour.

Build a ship that combines container facilities with a roll-on-roll-off stern ramp and harbour authorities all over the world rush to invest in special L-shaped piers, gantry cranes, dockside tractors and trailers, custom-designed rail cars and road vehicles, etc.

A second Halifax container terminal was opened in July 1982. Located at Fairview in the Bedford Basin, that unique inner harbour which nature endowed to Nova Scotia, it is operated by Cerescope of Chicago. Covering 21 hectares, Fairview boasts two $5.5-million Paceco gantry cranes capable of lifting 40 metric tonnes. The 335-metre berth has a reinforced roll-on-roll-off (ro-ro) ramp and is long enough to accommodate the average globe-trotting freighter plus a coastal-waters container ship. In merchant navy circles the larger vessel is referred to as a mother ship — for the simple reason that she feeds containers to small cargo boats moored alongside. This is further evidence of the revolution in deep sea transportation.

Containers were conceived before OPEC countries first escalated oil prices in 1973. But as dearer oil began to permeate every strata of national economies, the cost of moving goods across vast oceans threatened to become prohibitive. Suddenly, the container con-

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Grain elevators store 5 250 000 bushels.

Important as they are, the two container terminals represent only a fraction of the waterfront activities of Halifax and Dartmouth, the latter city on the eastern side of the great natural harbour that serves both communities.

People who abhor all forms of martial conflict are often the beneficiaries, directly or indirectly, of war or preparations for war. Halifax owes its existence to the creation of a military post, and the city's greatest periods of prosperity and industrial growth occurred during two world wars. The dockyard dates back to 1759. Then an arm of Britain's Royal Navy, it helped to sustain the fleet (and Halifax) during the Seven Years War, the American Revolution and the Napoleonic Wars. Today, it is the largest Canadian Armed Forces base and is home port for the East Coast Fleet.

Sun Dancer Air Shows Ltd.

Pier A — Ocean Terminal, with 853 metres of berth space.

Sun Dancer Air Shows Ltd.

Home port of East Coast naval fleet. Original construction 1759.

cept became doubly attractive. Because a container is so easy to lift and lay and its contents are not subject to en-route pilferage, ship-owners took another look at their sailing schedules. Why, they asked, send a large ship from Europe on a circuit of North Atlantic ports and include also cities on the St. Lawrence and Great Lakes? That 10-week voyage might be cut to three or four weeks simply by restricting the largest and fastest ships to major ports on the Atlantic seaboard. Let mother ships drop off at key points the containers which smaller feeder vessels can deliver to harbours close to their ultimate destinations. The same process applies equally well to North American products destined for Europe.

Thus it is that the Fairview container terminal earns a lucrative slice of business as the hand-over point for European exports destined for U.S. cities, and for U.S. exports to countries on the other side of the Atlantic. For every ton loaded and unloaded, the Port of Halifax earns $2. Then there are the ship berthing charges. And, of course, each container handled gives employment to local citizens.

If Halifax shipbuilders have cause to complain about a scarcity of orders for new naval vessels, other Haligonians can rejoice at the $300 million of Canadian tax payers' money recently expended on paint and plaster and whatever else was necessary to enhance the prospect of navy piers, sheds and administration blocks. Civic fathers in Halifax and Dartmouth have also worked closely with provincial and federal government agencies to clean up the entire waterfront. Rather than aim bulldozers at 19th century dockside warehouses, the authorities encouraged

building restorers to create tourist attractions. To serve both sightseers and the local working populace, the Department of Regional Economic Expansion raised its sights from the ranks of disadvantaged Nova Scotia companies to sponsor the construction of two excellent terminals for ferries that smoothly span the harbour in 10 minutes.

Located on the Dartmouth side of the harbour is the Coast Guard base, the largest in Canada, which employs 500 officers and crew plus 120 landlubbers. Nearby are Imperial and Texaco oil refineries. Immediately below the McKay Bridge, the newer of two magnificent suspension bridges in which all of Canada invested, is the Bedford Institute. This the country's principal oceanographic institution operates six research vessels and has more than 800 employees.

Sun Dancer Air Shows Ltd.

It's a far cry from Nova Scotia to the Mississippi River, but Canadian gypsum, 2.2 million tonnes of it, is shipped each year, much of it by self-loading vessels, from the Bedford Basin to Canadian and U.S. customers. Some of the latter are situated along the meandering Mississippi.

Gypsum carriers are easily distinguishable from the gleaming white cruise ship familiar to devotees of the "Love Boat" television series. Gypsum carriers are ugly ducklings even in the company of salt-caked container ships that limp into harbour after a week of North Atlantic gales. But the annual tonnage handled by all of the world's cruise liners, container ships and ro-ro freighters adds up to less than one-third

Sun Dancer Air Shows Ltd.

Imperial Oil refinery, Dartmouth landmark since February 1918.

of the total bulk cargoes represented by commodities such as gypsum, grain, coal, flour, timber, iron ore, bauxite, pulp and paper.

Halifax specializes also in bulk cargoes. Most of them are products of Central Canada and the Prairies, which makes Halifax the servant of its hinterland. By the same token, hinterland producers are dependent upon the manner in which rail employees and port workers co-operate with ships that cannot afford lengthy delays. Container ships simply won't wait. If the service at one port falls short of requirements, contracts can be cancelled and containers — so easy to lift and lay — routed through a rival harbour. Like fish, ships are slippery customers.

On the day the writer visited Halifax dockland a Belgium-bound ship was receiving barley from three delivery shutes at the rate of 1 000 tonnes per hour. At another pier seven gangs of dockers were wrestling with bags of flour, each tonne absorbing one man hour. A German ship flying a Panamanian flag was loading 16 800 tonnes of flour for Egypt. A second flour cargo was destined for Spain, and yet another consignment, this time 10 000 tonnes, was being lowered into the bowels of a Russian freighter heading towards Cuba. In an adjoining dock, wood pulp was being sent on its way to the Peoples' Republic of China, helping to lift the gross tonnage handled by the port to well above the equivalent figures for the same month in 1982.

In the first eight months of 1983, Halifax welcomed 1 582 commercial vessels (1 357 in 1982). In terms of gross registered tonnage, this represented a 17 per cent increase. Cargo tonnage through the port during the January-August period totalled 8 060 426 metric tonnes, a 9 per cent improvement over the previous year. Bulk cargo tonnage went up by 12 per cent, general cargo tonnage up by 1 per cent. The only decrease was in containerized general cargo — down 4 per cent. A contributory factor here was the shifting of certain shipping line activities to another Canadian port; but new container services started at Halifax in September and October 1983, and for this year the prospects are bright.

Certain ships unload on the Dartmouth side of Halifax harbour a commodity which doesn't come under the definition of bulk cargo. Autoport Limited, a subsidiary of CN Railways, handles something like 100 000 imported and domestic road vehicles annually. They bear the trademarks of 18 manufacturers, arrive in loads ranging from 300 to 2 000 units, and are brought ashore at the rate of 200 vehicles per hour.

For years, British cars constituted the bulk of foreign imports to North America. But as labour-management relations deteriorated in sections of the British automobile industry, so did the quality and reliability of certain products. In due course, Ford and GM models made in England were no longer shipped across the North Atlantic.

This particular sequence of marketing disasters serves to illustrate how economic tides can ebb and flow in a seaport. In the case of automobiles, as imports of British Austins and Hillmans dwindled, the trickle of Japanese cars which started in 1967 swiftly increased in volume. Ironically, some marques came from Japanese factories which had previously manufactured Austins and Hillmans under licence.

If North American automotive companies, for decades undisputed masters of that industry, could be surprised by the devastating strength of the Japanese car invasion, how could harbour authorities be expected to make provision for the revolutionary container ships of the mid-Sixties and their recent progeny, the ro-ro container ship? That question is pertinent, because during this first month of 1984 the executive committee of Canada Ports Corporation must deal with a request to build a $23-million extension to the container terminal at Fairview Cove. The existing pier offers 335 metres of berthing space, which allows ample room for a mother container ship and a coastal feeder vessel. So why pour tonnes of rock and cement into the Bedford Basin to create a 365-metre extension to something that can cope adequately with current container traffic?

The answer is simple: just beyond the horizon is a new breed of vessel: the super container carrier. Like the super oil tankers spawned by Persian Gulf machinations, the super container ship is a child of the times. Having established that a modern mother ship can swiftly cover major international harbours and there transfer containers to smaller vessels serving secondary ports, why not try to win the eternal race against world inflation by building bigger ships with increased container capacity? Economists and accountants who ask such questions come up with what has become the proverbial answer of that genre: cost effectiveness.

Cost effectiveness is also very much in the minds of the men who will decide the fate of the proposed Fairview Cove terminal extension. Now if someone at that committee meeting in January could summon the spirit of Samuel Cunard, how might he cast his vote? Would he first entrall his listeners with an account of his first purchase of large vessels designed to deprive the Americans of their lucrative Caribbean trade? Would he remind them of his skill in diversifying during periods of economic adversity? Sam Cunard was ahead of his time: when his tall powerfully built manservant complained day after day about his meagre pay and the weight of the Cunard fortune he carried around for his master in a long woollen sock, Cunard dispensed with the services of the cash custodian and helped to establish the bank that now bears the name of his beloved province.

Maybe the former shipping czar would remind the committee that he had always worried about the thousand miles that separated his Halifax terminal from the main industries and commercial companies of Central Canada. But today a daily schedule of CN freight trains covers that same distance in under 36 hours, which means that containers loaded in Québec and Ontario can be delivered to British and European customers in fewer than 10 days. That time will be reduced when super container ships start their express crisscross ocean service. And since the giant cargo vessels will not navigate the St. Lawrence, Halifax, close to Great Circle shipping routes, is a natural port of call.

Perhaps if an ethereal Cunard could assimilate contemporary shipping data, his message might be directed, not to the Halifax committee but to all Canadian manufacturers and producers east of the Rockies. DON'T MISS THAT BOAT.

— by Harry Traynor
Canada Commerce

Sun Dancer Air Shows Ltd.

Room for 100 000 imports, unloading 200 per hour.

Canadian Firms to Build Military Vehicles

For the first time since shortly after the Second World War, Canada is re-establishing its industrial capabilities in the field of military vehicles — both trucks and light armour.

Two Canadian companies, Bombardier of Québec and General Motors of Canada, Diesel Division, have used substantial Canadian orders from the Department of National Defence to build up their expertise and manufacturing capabilities to undertake export development.

Bombardier Enters Military Field

For the many thousands of members of Canada's armed forces, both past and present who have, over the years, developed a love-hate relationship with the ugly duckling *Jeep*, an era is coming to an end.

Under a contract signed late last fall, the Canadian Forces (Army) will be accepting delivery of the Jeep replacement — *The Iltis* — starting in August this year. By December 1985 the army will have received 1 900 from the Logistic Equipment Division of Bombardier based at Valcourt, Québec.

Bombardier's second largest contract in as many years for Canada's armed forces, it will provide an estimated 540 person-years of employment at Valcourt and, thanks to its 60 per cent Canadian content, will also have a positive effect on some 100 Canadian suppliers in five provinces. The first contract for the Canadian army was for 2 762 two-and-a-half tonne trucks and is expected to be completed this month. In addition, Bombardier has a five-tonne version of its military truck line under development and a one-and-a-quarter-tonne in the planning stage.

Bombardier's second largest military contract ever will provide a Canadian replacement of the venerable military *Jeep*.

Bombardier to manufacture for the Canadian Forces 1 900 of *The Iltis*, a new small vehicle to replace the venerable *Jeep*.

Bombardier's new 2.5 tonne military truck.

Interest in military equipment by Bombardier dates back to 1975 when the Department of National Defence (DND) purchased snowmobiles for its requirements. The Alpine and Elan models have been sold on a more or less regular basis since that time.

In 1977 the Department of National Defence purchased 75 motorcycles and was instrumental in securing contracts for 3 000 military motorcycles from Britain and a further 600 from the Belgian Army, by Bombardier.

When DND announced its intention to renew its fleet of 2.5-tonne trucks, Bombardier seized the opportunity and concluded an agreement with A.M. General of the United States, the largest producer in the U.S. of tactical vehicles, to manufacture its M-44 trucks modified in Canada for the Canadian government as the CDN M35. Experience gained in setting up and manufacturing these trucks and the initiatives taken by the Automotive, Marine and Rail Branch of the then Department of Industry, Trade and Commerce led to the purchase of the worldwide manufacturing and marketing rights for *The Iltis* from Volkswagen of Germany.

This agreement called for the transfer of all technology, as well as the tooling equipment used in its manufacture. This will also include supplying replacement parts for the 9 000 *Iltis* now in service with the German army.

To fulfill its commitments, Bombardier has assembled a skilled team of workers, established a worldwide sales force and constructed a plant which features flexibility in its design and operations and is capable of short production runs. This flexibility is expected to give Bombardier an edge in its sales efforts with smaller countries which cannot afford the large runs usually associated with this type of contract.

GM Canada Sells Vehicle to U.S. Marines

New light armoured vehicle from GM Canada.

With the increase in world tensions and the necessity to have an agile light armoured vehicle (LAV) for peace and security reasons, the U.S. Marine Corps became interested in Canada's six wheel LAV during Canadian Armed Forces demonstrations.

Subsequently, the manufacturer, General Motors of Canada's Diesel Division of London, Ontario, was one of the invited bidders when the U.S. armed forces were looking for replacements. Based on a Swiss design, the eight-wheel light armoured Canadian version won a joint Marine Corps/Army competitive trial and a contract to supply the U.S. government with 969 of the vehicles.

The production contract was accompanied by a significant research and development contract for five additional configurations for armoured vehicles.

As a result, Diesel Division of GM recently expanded its LAV plant to 28 000 m^2 (300 000 square feet) and has become a centre of advanced technology, supplying the support systems for the vehicles and operating a resident school for mechanics and drivers.

At a late Fall roll-out ceremony, the first of the new production models was turned over to the U.S. Marine Corps.

The sale was supported by the Canadian Commercial Corporation, the Canadian government agency which ratifies and executes major contracts of this kind with other countries. Support was also provided by the then Departments of External Affairs and of Industry, Trade and Commerce and Regional Economic Expansion.

Replacing the *Jeep*, *Iltis* completely lives up to its German name, "the ferret", in lightness, speed and endurance.

And Bombardier is looking beyond the military market to the larger industrial use in such areas as mining and forestry.

For many Canadians, the only question now is, will they be able to develop the same love-hate relationship with *The Iltis* that they had with the *Jeep*.

One thing, however, is certain, *The Iltis* is the same ugly drab olive as its better known predecessor, and according to all test results lives up to its German name which means "the ferret" because of its lightness and speed as well as endurance.

While the Canadian order has provided the push to get its plant up and operating, Bombardier is making an all out effort to sell its Iltis *and CDN M35 around the world.*

"Tourism Year" Given Full Support

Tourism Canada wasn't voicing empty words when it assured the Tourism Industry Association of Canada (TIAC) that 1984 "The Year of Tourism in Canada" — proclaimed by TIAC — would be accorded its full support.

The federal government tourism arm has been active in two spheres:

- Promotion of the "Year" concept to industry members, selected members of the private sector and the general public;
- Promotion of the numerous tourist-attracting events scheduled to take place across Canada during the celebrations.

As far as promotion of events is concerned, David Smith, federal Tourism minister, recently announced marketing activities that Tourism Canada will undertake. To begin with, an eight-week national television advertising campaign, starting in February and using the theme "Canada — What a Country", will be aimed at encouraging Canadians to travel in Canada.

A *Travel Times* newspaper insert will then be distributed in March to 2.4 million Canadian households detailing the events for 1984 and available in quantity for use in response to consumer requests.

The entire spring/summer consumer advertising campaign in Canada will be geared to promotion of these events. Advertising sponsored by Tourism Canada and the Alliance of Canadian Travel Associations (ACTA) will also appear in various trade publications.

Also in conjunction with ACTA, Tourism Canada will be producing an audio-visual presentation for use at ACTA seminars as a means of encouraging Canadian travel agents to sell Canada.

In addition, Tourism Canada will be giving special support to the major Québec celebrations marking the 450th anniversary of the arrival in Canada of French explorer Jacques Cartier.

In the United States, special advertising and public relations efforts are planned. A 24-page U.S. version of *Travel Times* will be inserted in newspapers in 17 major U.S. cities, reaching an estimated 2.5 million homes in March. Editorial copy will provide U.S. readers with information about events and attractions planned for Canada in 1984.

Tourism Canada will also give special emphasis to the "Year" through tourism trade commissioners throughout the U.S., who will meet travel trade and consumer groups, as well as incentive travel executives, to promote travel in Canada.

A corporate audio-visual presentation on the "Year" and its events was produced for the National Tour Association convention in Houston, Texas, and the American Bus Association convention in Louisiana. This will also be used in overseas markets.

Canada's trade commissioner in New York has already made announcements to the American Society of Travel Agents convention in Seoul, South Korea, and the U.S. Tour Operators Association in Hawaii.

Overseas, Tourism Canada will promote 1984 through additional advertising of events. The main emphasis will be in the priority markets of Germany, France, Britain, Japan and Australia. Full colour, double-page ads will be purchased in markets such as France, accompanied by editorial features in prominent publications.

"The Year of Tourism" theme will be featured in travel agents' windows in Germany and France to promote Canada as an exciting travel destination.

In co-operation with TIAC, Tourism Canada has developed a wide variety of publicity plans. They include:

- Invitations to a considerable number of corporations, within and outside the industry, to use the "Year" logo on promotional material:
- On-going liaison with trade and consumer media;
- Rotary clubs in Québec and eastern Ontario, as part of their annual public speaking contests, will feature tourism topics with travel prizes supplied by Air Canada, CP Air, Eastern Provincial Airways, VIA Rail and Voyageur Enterprises:
- It is tentatively planned that the "Year" logo will appear on Calgary's float in the Parade of the Roses in Pasadena during the Rose Bowl festivities;
- Several of the commemorative stamps to be issued by Canada Post in 1984 will relate directly to tourism;
- Appropriate Tourism Canada publications will feature the "Year" logo as well as its letterhead and banners for special events;
- The 1984 attitude and awareness campaign, including public service advertising, will reflect the "Year" message;
- The World Tourism Organization will be publicizing the "Year" among its members;
- Telephone directories in the National Capital Region, issued next June, will devote both covers to the "Year" theme and message;
- Tourism Canada has compiled a comprehensive *Calendar of Events* from information volunteered by sponsors of 1984 activities.

Regional Offices

The Department of Regional Industrial Expansion maintains regional and local offices in each province for your convenience:

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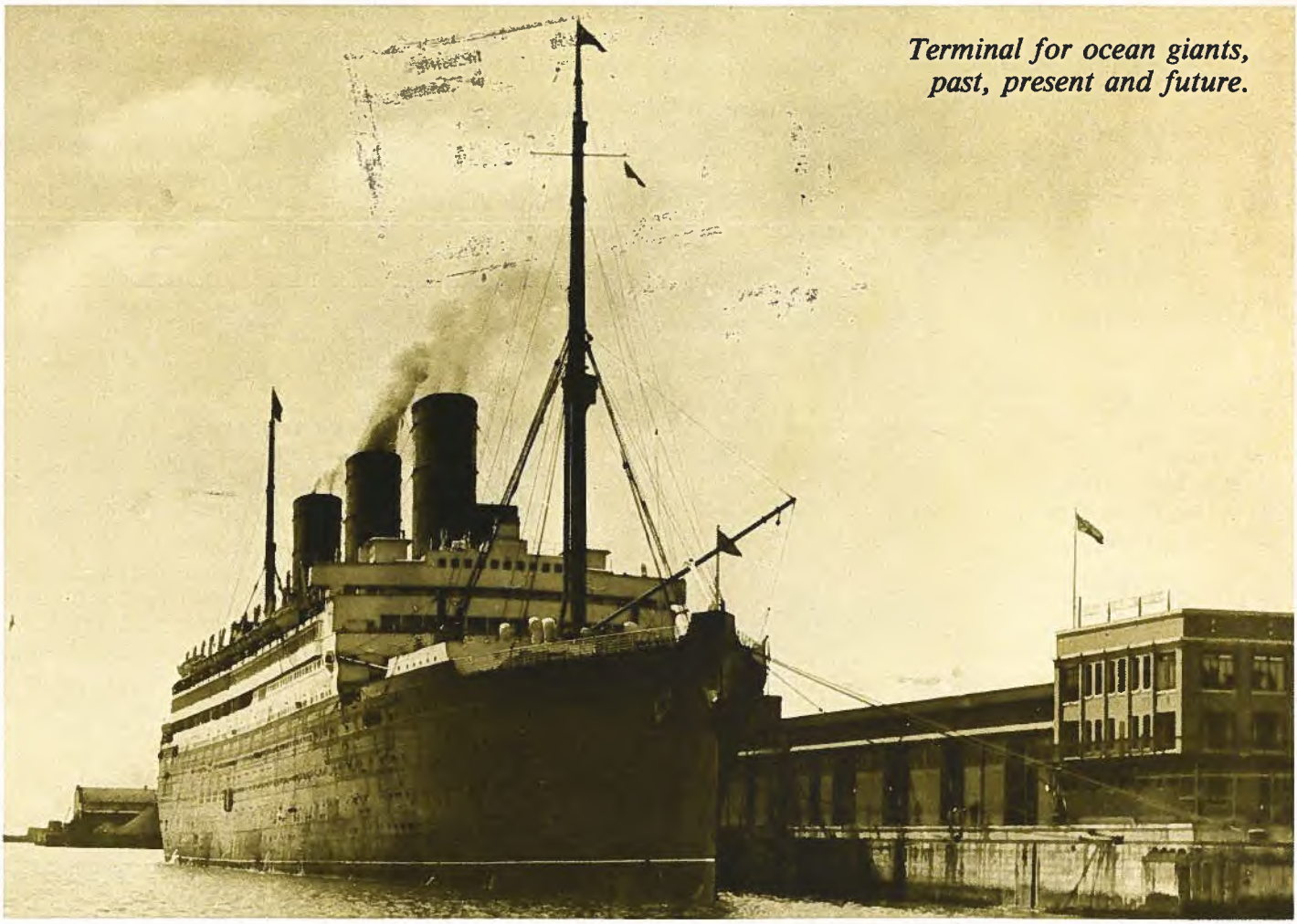

Terminal for ocean giants, past, present and future.

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Regional Industrial Expansion / Expansion industrielle régionale

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