CANADA COMMERCE

MAY
1975

New crane at Rodney Terminal

The first of two 45-ton-capacity portainer cranes is towed towards the slip berth at the new Rodney Terminal at Saint John, N.B. The massive crane, weighing 600 tons, was lifted on hydraulic jacks, placed on specially constructed rail tracks and towed by two caterpillar tractors to complete the 90 degree, 450-foot movement.

The first berth in the 40-acre complex was ready to receive its first containership in mid-March. When fully operational in about two months, the two-berth terminal will be capable of handling more than 100,000 containers a year.

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In This Issue

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The Hon. Alastair Gillespie, Minister

You have probably noticed that our green centre section has been beefed up considerably in recent issues. This section is typeset much later than the main part of the magazine, which means we can use it for last-minute items, and this is exactly what we have been doing lately. You can expect to be reading more in this section about developments in the Department of Industry, Trade and Commerce and other government departments and agencies, in addition to our regular features such as International Projects and Export Opportunities. And we want our readers to take advantage of the green section. If your organization has information that might be of interest to *Canada Commerce* readers, please get in touch and we will publish it as soon as possible.

Yugoslavia:

Straddling two worlds

Heavy industry yes; consumer goods maybe

R.F. TURCOTTE, Commercial Counsellor, Belgrade

Yugoslavia, as a European country, is considered to be one of the most highly developed of the LDC's, both in its industrial structure and "in-house" engineering capabilities, as well as in its relatively high level of production of consumer goods and industrial products. This country offers attractive opportunities to Canadian engineering firms, not only as a market in itself but also as a partner for engineering co-operation in third markets.

Yugoslavia's inclusion among the LDC's, while technically correct (average GNP: $900 per capita), is in many ways misleading because some regions are more highly developed than others. The northern third of the country, with only 15-20 per cent of the population, has a GNP approaching that of neighbouring Austria and is based on a highly advanced and sophisticated manufacturing industry.

On the other hand, the centre region and, more particularly, the populous south, still suffer from severe regional disparities, although most of the country's impressive mineral and forestry wealth is concentrated there. It has the largest copper, lead and zinc production in Europe and is fifth in terms of exploitable forest stands. The Yugoslav government has recently implemented a Regional Development Fund, including special funding and tax rebates to accelerate industrialization in these underdeveloped areas.

In both north and south, there are rich opportunities for Canadian suppliers of know-how, plant, engineering equipment and some services. These can take various forms, ranging from straight classical supplier-credit financed export of equipment and services, to bidding on internationally financed projects (World Bank loans to Yugoslavia — $1 billion), as well as equity joint ventures and production-sharing arrangements which are eligible for special government incentives and encouragement.

However, Yugoslavia's industrial development also means an impressive engineering capability has been developed at home, which is beginning to make its presence felt internationally. Canadian firms working in other LDC markets and which have run up against Yugoslav competition will have a keen appreciation of its potential. Yugoslavs are involved in

Approaching the market

D.P. McLENNAN, Assistant Commercial Secretary, Belgrade

Yugoslavia's population has the greatest ethnic and religious diversity in Europe. The country straddles two worlds, linking East and West both culturally and ideologically.

While continuing to adhere to a communist socialist ideology, it must be stressed that Yugoslavia differs radically from the U.S.S.R. and the East Bloc countries. Centralized control and planning, except of an indicative kind, has virtually disappeared and the Yugoslav market should probably be regarded as having more in common with Western Europe than with COMECON countries.

Enterprises, banks, producers, service and trading companies are all free to compete against each other and the role of the state has been limited basically to the introduction of general measures and regulations aimed at the fulfillment of fiscal, monetary and economic development policies.

In this unique economic system — often referred to as a socialist market economy — there are to be found neither state trading corporations (as in Eastern Europe) nor privately-owned firms (as in Canada). The basic commercial and industrial unit is the enterprise, set up as an independent economic organization, and expected to turn a profit at year-end. The assets of each enterprise are considered to be autonomous "social" property, with workers possessing both the right and obligation to manage and dispose of assets within the parameters of the enterprise's founding charter and acceptable management practices.

Individual enterprises are run by a worker's "self-management" system. This term refers to the Yugoslav concept of placing the management of each enterprise in the hands of the workers concerned and not in those of shareholders or government bureaucrats. Major financial production and marketing policy decisions are made by an elected workers' council while day-to-day management functions are the responsibility of the management board which is selected by, and responsible to, the workers' council.

Yugoslav enterprises wishing to engage in foreign trade are required to register with the government. There are numerous trading companies, of widely varying sizes, in direct competition with each other. Legally, these are entitled to exclusive representational rights for all of Yugoslavia. But this provision does not rule out dealing directly with end users which, whenever practical, is the best method of doing business in this country.

Many large industrial and agricultural producers have departments established specifically for foreign trade. Others that do not, can finalize all transactions with the exporter and

such projects as these: airports in Kuwait; rail cars to Brazil; overland powerline pylons to California; ports in North Africa; mining in Guinea; and offshore oil exploration in Bangladesh. The article on page shows how Canadian firms can take advantage of these hitherto totally unexplored opportunities for penetration of new markets in the third world by working with Yugoslav contractors.

But the very engineering capabilities that make Yugoslavia so competitive in third markets also mean that there is little room in Yugoslavia for Canadian consultants to compete, except in areas of very specialized technology or software services in which Yugoslav firms have not developed sufficient expertise. Therefore, a distinctively different approach must be made to the Yugoslav market.

As for consumer goods and small industrial products — experience has shown that Canadians are not generally competitive on the Yugoslav market, with some exceptions of course, against nearby European producers. There are several reasons for this: habit and traditional links; transportation costs; proximity of European competitors; but perhaps most of all, Europeans have been prepared and able to exploit more difficult local marketing situations by resorting to licensing, joint ventures, and industrial and technical co-operative arrangements of various sorts.

Canadian manufacturers of consumer and small industrial products, when approaching this market, should be prepared to examine seriously these alternative possibilities. In some cases, industrial co-operation arrangements in Yugoslavia can lead to the bonus of market coverage in neighbouring COMECON countries.

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then nominate an import firm to carry out the necessary import procedures at a nominal fee.

Export-import firms are not manufacturing concerns. Their main functions are: importing goods on behalf of non-licensed end users; representing foreign firms as agents; and maintaining consignment stocks, etc. In general, they tend to be concerned primarily with short-term profits so that risks and major expenditures are avoided whenever possible. Consequently, Yugoslav trading companies favour selling on a consignment basis rather than purchasing on their own account and they tend to deal with products that have established, rather than potential, markets. For these reasons, Yugoslav trading companies often end up handling a wide range of unrelated products and may offer only limited facilities for introducing new products.

When the nature of the product makes direct contact with end users impractical, an agency should be chosen with the greatest of care. Experience has shown that factors such as changes in economic regulations, the loss of a key man, or the simple discouragement resulting from initial sales not meeting expectations is enough to stop further marketing efforts.

The acute shortage of foreign exchange, which is likely to persist for a number of years, and the complexity of the foreign trade regime often lead the Yugoslav importer to adopt business attitudes which, to the Canadian businessman accustomed to less complex markets, may seem somewhat alien at first. It is important however that the exporter understand his customer's problems and be as flexible as possible in helping him to overcome them. Industrial co-operation, joint ventures, and compensatory trade (barter) are sometimes proposed to Canadian firms as a means of concluding a sale by reducing the total value of foreign content and thereby conserving hard currency.

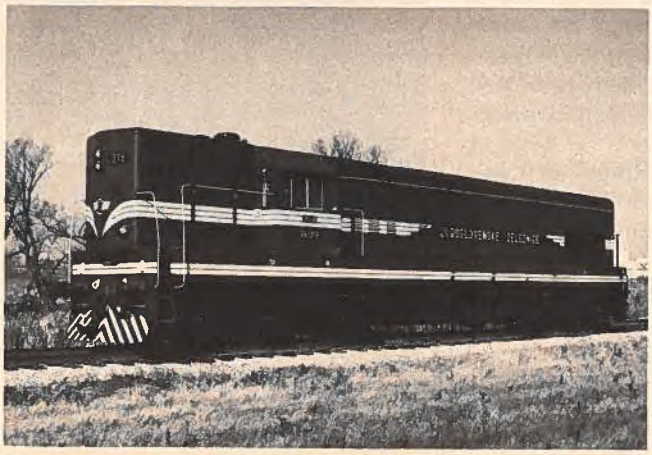
It is this continuing scarcity of foreign exchange and the government's industrial development objectives which have been the main reasons behind the maintenance of a rather complicated import scheme. All import commodities are classified according to the manner in which foreign exchange is to be made available. These categories range from free import to import licence and quotas.

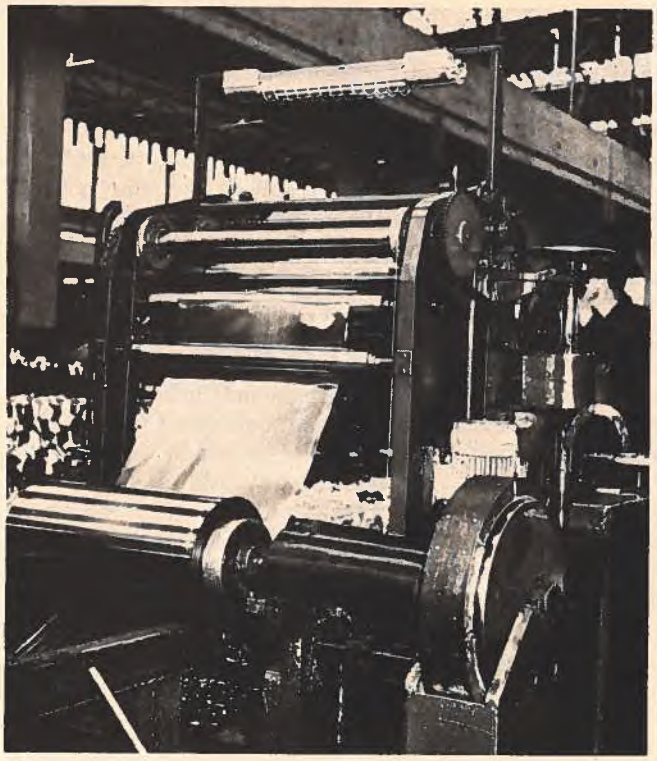
Although it is useful to be aware that this system exists and to know what category his products come under, the Canadian exporter should in general leave it to his customer to sort out the details. But a knowledge of the system can be useful if the customer blames the system for payment delays or other short-

comings.

Trade fairs provide a useful avenue of approach to the Yugoslav market where there are numerous national and international exhibitions each year. The largest and best-known is the Zagreb International Fair, which is a general exhibition held each fall. In addition, there are numerous smaller specialized fairs in cities throughout the country, which often attract participation from both Eastern and Western Europe.

The Commercial Division at the Canadian Embassy in Belgrade invites enquiries from all Canadian firms seeking advice and assistance in approaching this fascinating market.





WHAT CANADA SELLS TO . . .

	$'000	
	1973	**1974** (9 mos.)
Refined sugar	2,595	–
Hides	709	340
Asbestos	1,124	1,381
Woodpulp	3,681	4,141
Newsprint	–	667
Paperboard	–	271
Pig iron	435	1,441
Aluminum	266	–
Machinery	602	1,218
Locomotives	24,510	–
Trucks	1,405	1,776
Switchgear	–	356
Computer cards	135	610
Total, including all others	**36,735**	**14, 436**

. . . AND BUYS FROM YUGOSLAVIA

	$'000	
	1973	**1974** (8 mos.)
Food	178	81
Wines	427	219
Fibres, fabric, yarns	745	335
Leather	1,547	1,205
Ferrochrome	702	–
Ferrosilicon	1,426	1,580
Magnesia	199	569
Copper pipe & alloys	388	111
Lathes, metalworking	377	227
Metalworking machinery	270	58
Furniture	1,732	1,730
Athletic footwear	1,134	1,236
Skis	228	104
Clothing	295	540
Total, including all others	**12,292**	**10,026**

Your business visit

Canada-Yugoslav trade relations are prospering and if you are a businessman looking to Europe for new partners in export, import or joint ventures you should make a point of including Yugoslavia on future excursions.

You will learn quickly that Yugoslav enterprises greatly prefer talking business over the table and generally are poor correspondents. They want to get to know not only the firm but also the people with whom they are dealing.

Canadians require a visa to visit Yugoslavia but this can be picked up on arrival with only minor delays. Major centres in this Balkan country — Belgrade, Zagreb, Ljubljana — are well served by a number of airlines operating out of most Western European capitals while Yugoslav Airlines (JAT) operates frequent charter flights from Toronto. The more adventuresome may prefer the Orient Express rail service from Britain via France and Italy.

Any amount of foreign currency may be brought into the country but no more than N.D. 500 (17 New Dinar - approximately C$1) may be taken into or out of Yugoslavia.

Checking in from London, Paris or Rome, Canadians find the price of hotel rooms in Yugoslavia to be quite reasonable, with a SWB running in the $12-$20 range. But rooms are best reserved in advance because frequent special events, such as trade fairs and visiting dignitaries, occasionally relegate unexpected travellers to a long night in an overstuffed chair in the lobby.

Dining out can be a real pleasure in Yugoslavia. The cultural and ethnic variety of the country carries into the kitchen and the combined excellence of domestic brandy, wines and cuisine can be both delightful and relatively inexpensive. An average meal (three courses with wine) is likely to run $7-$10 a person, depending on whether it is lunch or supper. But beware the Yugoslav "business" lunch which commences at about 2:00 p.m. and stretches right through the afternoon!

Getting around in major towns poses no problem, for taxis are plentiful, but the schedules of internal flights to the various republican capitals may cause minor hold-ups and necessitate lay-overs.

Like several countries in Europe, Yugoslavia is best by-passed in July and August, unless of course you are heading for the Dalmatian coast on the Adriatic Sea. A vacation exodus

leaves most enterprises with only skeleton staffs at this time of year.

Some Yugoslav businessmen speak French or English, however, the Canadian Embassy in Belgrade is in a good position to assist in obtaining a qualified translator.

Negotiations in Yugoslavia call for a radical departure from customary Canadian business hours. Local firms open their doors at 7:00 a.m. and close them again at 2:30 p.m.

There are no special social customs about which Canadians should be forewarned; on the contrary, business visitors to Yugoslav firms will be warmly welcomed and will be offered Turkish coffee, fruit juice or Sljivovica (plum brandy). It is considered impolite to refuse.

It would be a mistake to interpret seemingly excessive time devoted by Yugoslav officials to initial pleasantries as a frivolous approach to business. Quite the opposite, these formalities are only an introduction to what are normally very serious discussions. The apparent lack of protocol can also be deceptive; normally contracts will be made between people of comparable standing. Nor should you be surprised to find that even initial meetings are considered of sufficient importance to merit the participation of numerous members of the enterprise management who provide specialized back-up for the senior official. It is important of course that you be fully prepared to demonstrate, in spirit, if not in numbers, an equal degree of interest and expertise.

When talking about travelling to Yugoslavia, even in an article addressed to the businessman, it is difficult not to rave about the country's well-deserved renown as a tourist destination. From a geographical, idological and religious point of view, Yugoslavia spans East and West: seven neighbours, six republics (provinces), five nationalities, four languages, three religions, two alphabets, one country. In sum, a great place to visit on your next trip to Europe.

Joint ventures and production sharing

In recent years Yugoslavia has given active encouragement and incentives both to joint ventures and industrial co-production arrangements between Yugoslav and foreign partners, not only to promote industrial development in itself, but also as a means of guaranteeing the technical quality, economic viability and export orientation of the investment project concerned, through shared long-term co-operation with the foreign partner.

The underlying potential of this policy has been proven by the overwhelming success to date; more than 120 joint ventures with a foreign equity participation of more than $200 million have been established in the eight years since the first enabling legislation in 1967, and there have been more than 400 production-sharing agreements.

Yugoslavia, as a European country, is one of the most developed of the LDC's both in its industrial structure and its domestic consumer-goods oriented market. Therein lie the many opportunities for the foreign industrialist and investor, who increasingly finds himself in good company, as the accompanying tables indicate.

There are real opportunities for Canadian firms and manufacturers seeking to expand their market, share their production technology, arrange production of sub-assemblies or assure themselves of long-term supply. Yugoslavia is one of the more wealthy of European countries in terms of a number of natural resources and foreign joint venture partners are even being sought for off-shore oil and gas exploration in the Adriatic.

There is no lack of opportunities for joint ventures. The words "joint venture" and "investment partner" are so constantly on the lips of Yugoslav industrialists that our endeavours to promote the sale, under classical terms, of Canadian engineering services, plant and equipment, in spite of attractive supplier-credit financing offers, are meeting increasingly with the response that the Canadian supplier must also provide a joint equity position, albeit usually modest and only sufficient to operate as a form of long-term performance guarantee (through the shared-risk principle). In a typical contract, of a total 100 per cent investment in a joint venture, some 70 per cent would be in loans and credits (both domestic and foreign) and 30 per cent in equity to be divided between the partners.

Until April 1974, there were 120 joint ventures with total equity investments of around $200 million, of which 20 per cent was provided by the foreign partners and 80 per cent by the Yugoslav partners. Analyses indicate that foreign partners hold the maximum allowable 49 per cent share in just over one-third of the established joint ventures, with the average share running closer to 17 per cent. Only in a handful of the contracts is the foreign partner's share less than 10 per cent. Of the total foreign equity investment in Yugoslavia to date, only 15 per cent was made in cash foreign exchange with the balance composed of know-how and other forms of assets.

How joint ventures work in Yugoslavia

Foreign investment in Yugoslavia is permitted only on the basis of joint ventures with local enterprises. Yugoslav law sets out the basic general rules within which equity joint ventures may operate in Yugoslavia, but leaves it up to the partners to regulate their business relationship by detailed legal contract.

Under the Yugoslav enterprise self-management system, domestic firms make their own decisions on production, marketing, financing, the distribution of profits and association with other enterprises. State agencies as such, therefore, play no part in the organization of joint ventures, which must be set up by direct negotiation between the foreign and Yugoslav partner. The resulting contract establishes such matters as the amount to be invested by the partners, the operation of the business, and the distribution of profits. The contract is subject to registration with government authorities, but this is only a means of ensuring its compliance with Yugoslav regulations.

Registration — All joint-venture contracts must be registered with the Yugoslav Government and conform to Yugoslav law and Yugoslav national interests. Joint ventures are Yugoslav legal entities and as such must submit to Yugoslav regulations.

Equity share — The foreign partner may invest a maximum of 49 per cent of the total invested, with a minimum participation of $100,000 (likely to be raised shortly). Provision does exist for the foreign share to go beyond 49 per cent by decision of the Federal Assembly if considered in the national interest, although it is not believed this provision has ever been used.

Form of investment — Investment by either partner may be in cash, equipment, know-how, licences, technical assistance, land and buildings and working capital (latter three usually domestic partner only), and in some cases also in material used directly in production. The make-up of these investments is determined by the contract between the partners.

Areas of joint venture activity — Foreign investments are permitted in all socialized productive activities in industry, agriculture, international transport, tourism, and scientific research work. They are not allowed in the general service fields of banking,

Canadian firms have been slow to examine serious possibilities of co-operation with Yugoslav enterprises, with one or two very notable exceptions. A large Montreal-based firm has entered into a joint venture arrangement in chemicals production and a manufacturer of food packaging is currently seeking a production joint-venture for this bullish consumer packaging market. Another possible arrangement may be special processing of ore imported from a third country for re-export in semi-processed form to the Canadian partner.

If you wish to examine opportunities you should contact our office as we can render considerable assistance in finding a suitable Yugoslav partner as well as directing you to authoritative local sources of information and further assistance.

JOINT VENTURE AGREEMENTS

Country	No.	Investment as % of total
Italy	22	22
West Germany	20	21
Switzerland	9	5
IFC Washington	4	8
France	6	11
Austria	4	5
United States	10	10
Belgium	4	3
Others	3	1
Britain	13	14
Total	**95**	**100**

CO-PRODUCTION AGREEMENTS

Country	No.	% of total
West Germany	145	39
Italy	76	20
Austria	28	8
Hungary	22	6
Czechoslovakia	20	5
Others	84	22
Total	**375**	**100**

Note: These are mid-1973 figures.

insurance, domestic transport, trade (domestic and foreign) and communal or social services.

Form of joint ventures — Foreign investment may be in existing enterprises or sub-divisions thereof, in newly formed enterprises, or in any other more complex type of organization. The majority of joint investment projects so far have involved creation of new divisions (i.e. so-called independent basic units of production) of existing enterprises, capitalizing on existing enterpreneurial know-how in the mother enterprises while avoiding the problems of liabilities from previous business operations.

Duration — The joint-venture by definition must be of long-term character; it can provide for shorter-term investments but, as a minimum, no shorter than for the period required for the realization of the stated business aims. The usually accepted minimum is five years, with 10 years considered more normal.

Management — The joint venture enterprise is run by both parties in common through a management board, whose composition, competence and term of office are fixed by contract (i.e. not by law). Among other things, the contract should spell out carefully the division of competences between the management board and the workers' council, and is then binding on the latter. Although the foreign partner has only a maximum 49 per cent or less equity share in the joint venture, the two parties can be equally represented in the joint business board with a unanimous vote required on all important decisions.

Contractual rights of foreign partner — The joint venture contract cannot provide the foreign partner with different or more rights than has the Yugoslav partner.

Profit calculation — This is established by contract and will depend on negotiated values for depreciation, salaries, etc.

Withdrawal of equity — The foreign partner may withdraw his capital share:

a) at normal termination of the joint venture contract;

b) at any time if the contract provides for partial withdrawal during the life of the contract;

c) if either partner does not live up to the contract;

d) after two successive years of business losses;

e) if results fall considerably below stated expectations;

f) or any other grounds provided for in the contract.

A foreign partner may sell its interest in a joint venture to another foreign or Yugoslav party, but must give first option to its original Yugoslav partner.

Export orientation — By definition, any foreign investment in Yugoslavia is expected to introduce modern technology into the domestic enterprise and contribute to an increase in production, productivity, and exports. The latter point – export orientation of the venture – is especially important and is made binding by legal provisions whereby the foreign exchange necessary for the transfer of a foreign partner's profits and repatriation of its capital can only be generated from the joint venture's eventual export earnings.

Profit transfers and capital repatriation — Yugoslav currency (dinars) is not normally convertible, although Yugoslavia has the stated objective of achieving convertibility as quickly as possible. Under current provisions, joint ventures may use two basic sources of convertible currency for the transfer both of profit and capital, as well as foreign debt service:

a) a percentage (known as the retention quota) of the currency earned by the joint venture through exports and which all Yugoslav enterprises are allowed to keep; it is currently 20 per cent for all sectors except tourism, where it is 45 per cent;

b) for joint ventures only, an additional allowance of 33 per cent of hard-currency export earnings.

Additional foreign exchange can be purchased outright on the foreign exchange market to an amount equal to 5 per cent of the depreciation allowance of the equipment and machinery only (write-off allowance currently runs at 12-15 per cent but may go up to 20-25 per cent for some assets and even considerably higher in special cases).

Together, a) and b) amount to 53 per cent (78 per cent in tourist ventures of export earnings). Any part not used in a given year may be carried forward to subsequent years.

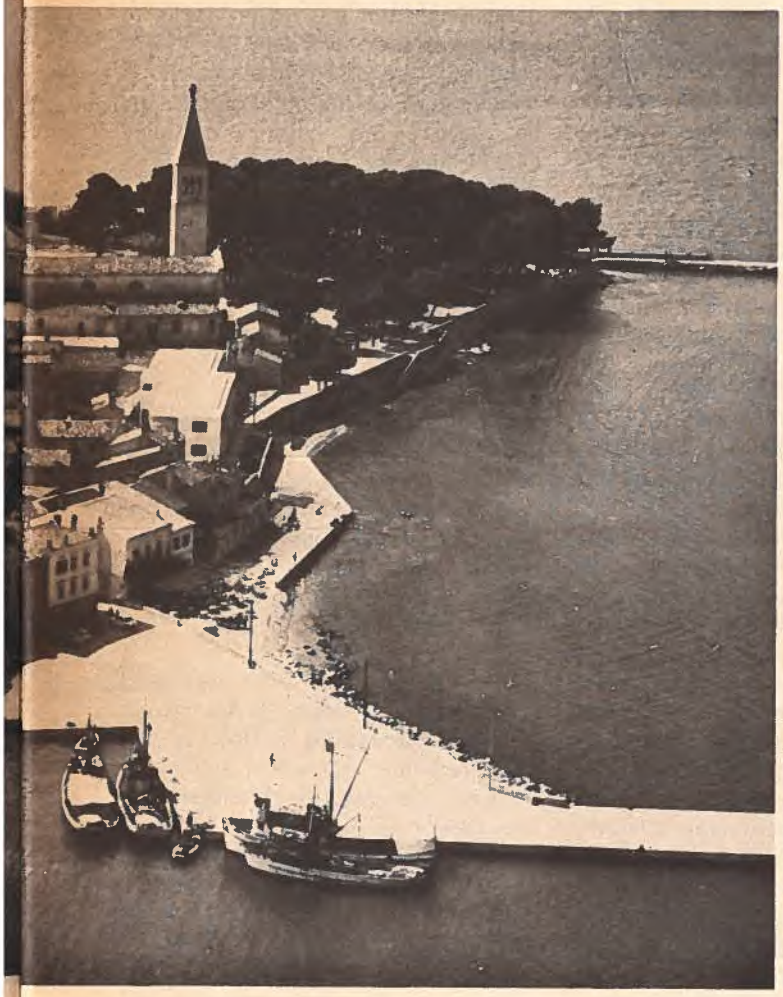
It should be noted that any loans and credits obtained by the joint venture in hard currency must also be paid back out of hard-currency export earnings. In case insufficient hard currency is available to repatriate full annual profit, the balance in dinars may be re-invested in the same or some other joint enterprise under favourable progressive tax rebates, or deposited in banks at tax-free interest (current Yugoslav government bonds yield 10 per cent).

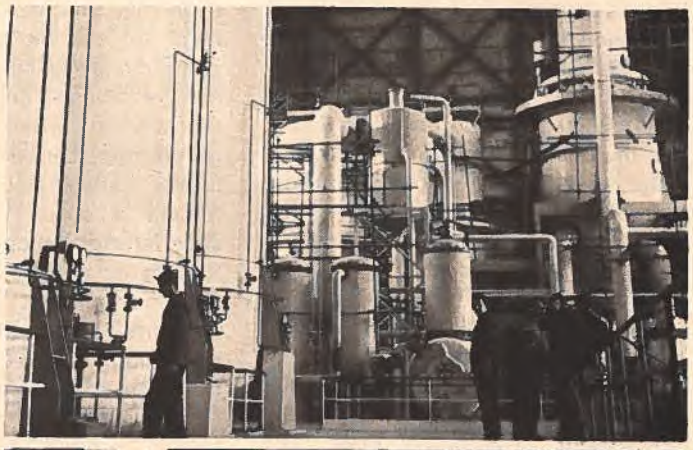
Taxation — Foreign joint-venture capital is not subject to tax. The profits of the foreign partner, however, are taxed at a basic rate of 35 per cent, except that:

a) if re-invested in a Yugoslav enterprise, progressive tax rebates are allowable;

b) if the joint venture is located in an officially recognized "underdeveloped region", the tax rate on profits can be as low as 14 per cent.

Safeguards — Article 27 of the Yugoslav Constitution is said to guarantee that any change in Yugoslav laws (except those relating to taxes) subsequent to the coming into force of a joint venture agreement cannot





be applied to that joint venture in such a way as to affect it adversely (any favourable change, however, should benefit the venture). Also a number of Western governments now include Yugoslavia in their guarantee schemes insuring direct private investment against non-commercial risk.

Information — Other than the services of the IICY (see accompanying information), there are a number of excellent Yugoslav lawyers and experts cognizant of Yugoslav legislation of foreign investment (and co-production). Also, a recent authoritative book published in the English language is available, *Joint Business Ventures in Yugoslavia Between Domestic and Foreign Firms: Developments in Law and Practice*, published jointly in 1973 by the Institute of International Politics and Economics of Belgrade and the IICY.

N.B. *While the author has taken all care to provide an accurate profile of joint-venture and co-production legislation and other provisions, these are subject to both change and varying interpretations, and Canadian firms contemplating a business venture should obviously consult authoritative sources carefully to determine feasibility in each case.*

"Co-production" is a form of long-term industrial co-operation involving the exchange of parts and components for technologically-related products. It is based on the premise that mutual supplies through specialization, together with longer production runs should result in advantages for both partners interested in manufacturing of end product.

Officially known in Yugoslavia as "long-term production co-operation", these production-sharing arrangements are defined as consisting of the production, for mutual delivery, of components, constituent parts, assemblies and sub-assemblies intended for incorporation into a larger product which is the final objective of the co-operation agreement, and is based on a mutually-agreed, long-term joint manufacturing program, including the exchange of technological and research experience.

Co-production can involve anything from very simple to sometimes very complex arrangements for financing, purchasing licences, technical aid and mutual deliveries. The contracts are usually for a minimum of five years, and must be registered officially in order to benefit from government incentives, with all foreign transactions being carried out through a special foreign exchange account for accounting purposes. Registered and approved co-production arrangements qualify for imports of parts and components without restriction, up to the amount of foreign exchange earned through corresponding exports sales to the foreign partner, irrespective of the customs regime normally applicable to the product concerned.

Co-production versus joint ventures — Co-production does not exclude joint ventures; in fact, co-production arrangements often grow into full joint ventures with mutual equity participation as a higher form of co-operation. Some joint ventures have from the outset incorporated co-production arrangements, thereby benefitting from the import facilities not otherwise available for joint ventures. Use of co-production in a joint venture, on the other hand, does not affect the latter's currency availabilities for repatriation of profit and capital.

To protect the Yugoslav partner against so-called "unequal" forms of co-production, and to encourage acquisition of technological know-how in Yugoslavia, the Yugoslav partner is not permitted to manufacture only the less sophisticated parts of the final product, or parts not technologically related to it. However, the domestic partner is permitted by law to use local sub-contractors for the supply of some goods to his foreign partner, although he must manufacture himself at least 30 per cent of the value of the final product.

How the IICY helps joint ventures

The International Investment Corporation for Yugoslavia (IICY) was created in 1970 under sponsorship of the IFC of Washington with the encouragement of the Yugoslav authorities, primarily to promote direct foreign investment in Yugoslavia. IICY shareholders are 42 major banks of Western Europe, the U.S., Japan and Kuwait, 13 major Yugoslav banks and the World Bank (IBRD).

Since its creation, the IICY has been directly instrumental in establishing some 24 joint ventures, or more than one fifth of all the joint venture contracts written up since enabling legislation was first passed in 1967. These IICY-sponsored joint projects involve total investments of more than $550 million, of which over 40 per cent is represented by foreign equity and loans. The IICY participated directly in 20 of these with its own equity and loans, mostly refinanced ($11.3 million). IICY provided consultant and technical services only, for the other four joint ventures. The IICY is a profit-making institution and charges for the following types of services:

- Helping foreign and Yugoslav companies find and select suitable joint venture partners
- Assistance in negotiation of joint venture contracts concerning possible legal and financial structures, taxes, management, labour relations and commercial aspects
- Arranging required finance by involving IICY's shareholders and other institutions
- Investing and/or lending from its own resources to joint ventures which it has organized
- Providing, where needed, additional services such as feasibility studies, advice on the Yugoslav accounting system, etc.

Enterprise organization and forms of co-operation

Under the unique Yugoslav form of socialism, all industrial, business and service enterprises are considered to be "social property", i.e. neither private, nor strictly state-owned. The 1967 economic reforms made all enterprises independent from state ownership and set them up as autonomous organizations, self-managed by a Workers' Council and subject to profit-and-loss similar to western enterprises (in terms of the concept of "social" ownership, the closest comparison in Western terms, is the foundation type of organization whose endowment capital and assets actually belong to no one). The Workers' Councils of these self-managed, "socially-owned" enterprises appoint a manager and chief executive officers, decide on the production program, budget and balance sheet, and longer-term policies. In principle, the state, as such, has no direct influence on the business policies of the enterprise and if the business is unsuccessful, it may be allowed to go into bankruptcy in spite of its "social" character.

Under Yugoslav law Yugoslav firms may set up six different types of co-operation with foreign partners:

1) joint ventures (up to 49 per cent foreign equity);
2) long-term production-sharing arrangements;
3) joint marketing of complementary products;
4) co-operation in joint design and engineering;
5) exchange of industrial property rights and licensing;
6) "joint appearances" in third markets for various purposes.

Engineering partnerships in third countries

Last year 95 Yugoslav enterprises carried out engineering and construction projects in 50 countries on four continents with a total value of some $500 million. Ten years ago the total value of this kind of work was less than $30 million. The rapidly expanding activities of Yugoslav enterprises abroad offer some unique opportunities for Canadian firms possessing special expertise and/or supplier-financed equipment.

This rapid development has been made possible by the fact that Yugoslavia — as a European country — is one of the most industrially-advanced LDC's, possessing a surprisingly broad engineering and industrial capability which has made it a highly respected competitor in certain areas. In addition, Yugoslavia's position as a lending member of the "non-aligned" movement has provided Yugoslav enterprises with a warm welcome in most LDC markets.

The special interest for Canadian firms derives from the necessity for Yugoslav enterprises to seek additional outside assistance on at least some projects in areas requiring specialized expertise and/or sophisticated supplier-credit-financed engineering equipment not always available in Yugoslavia. Specific examples of areas of possible co-operation are airports, metallurgy and mining, hospital equipment, industrial equipment, and food-processing and storage facilities, etc. The list is long and co-operation could take a number of forms: sub-contracts for consulting on various aspects of particular projects; specialized know-how and technology exchange; or supply under sub-contract of equipment and goods with Canadian supplier credit financing. And there are other possibilities. Yugoslav firms are even seeking foreign partners for off-shore oil and gas exploration on concessions in various parts of the world.

Yugoslav enterprises are active not only as main contractors in Africa, Asia and Latin America, but also in Western Europe, particularly West Germany, where the bulk of the work involves building construction under sub-contract, and in Eastern Europe where much of their activity is concentrated in tourism construction. In 1973, for example, some 11,000 Yugoslav construction workers were employed by Yugoslav firms in West Germany, out of a total of 21,000 employed in all countries.

Up until the end of 1973, Yugoslav enterprises had founded 378 firms abroad, mostly in the form of mixed associations, of which 280 were located in Western Europe, 31 in North America, 36 in Africa, 21 in Asia, eight in South America, and two in Australia. The bulk of these were for capital construction works abroad, while 84 were engaged in manufacturing. Interested Canadian firms should approach us and we will be happy to assist them in finding Yugoslav firms interested in third-country partnerships.

Value of Foreign Projects — 1973
($ million)

Structural	325
Hydro	94
Civil	41
Total	**460**

Major Projects

Electric power plants: Cambodia, Congo, Togo, Zambia, Libya (thermal) Burma (3), Syria (3), Pakistan (5)

Irrigation systems: Peru, Mali (2), Burma (5), Pakistan (4), Egypt, Libya

Ports: Ethiopia, Ghana, India, Kuwait (east and west ports), Syria (4), Sudan (2), Tunisia (4), Bangladesh (2)

Other (various countries): dams, tunnels, canals, airports, highways, housing complexes, administrative buildings, cultural institutions; universities, schools, hospitals, banks and other facilities, warehouses, tourist facilities, slaughterhouses, fish processing plants, pumping stations, stadiums, textile factories, grain elevators

Incentives to forestry and wood products

KRSTA DJORDJEVIC, Commercial Officer, Belgrade

After stagnating for some years, Yugoslavia's forest and wood industries are to be given a new impetus by establishment of new priorities and additional funding. There may be opportunities for Canadian know-how and equipment.

More than one third of Yugoslavia's 100,000-square-mile surface is covered by forest, placing the country fifth in Europe in terms of forest stands. But 37 per cent of the total is brush-forest and degraded wood stands. In fact, Yugoslavia is a net importer of pulp and some other forest products.

A draft 10-year forestry development plan to 1985 is now in preparation aimed at upgrading Yugoslav forest and wood industries in the hope, not only of satisfying domestic requirements, but also of developing production for export into European and world markets. The main points of the plan include:

Forestry and extraction — There will be better maintenance and improvement of forest stands, reforestation of bare mountain areas, improved harvesting and increased investment in extraction and primary processing, so as to increase the production of wood fibre as a basic condition for the development of secondary wood processing industries. As part of these investments, the plan provides for increased poplar plantations as a replacement for pine and other softwoods. The plan envisages an average annual increase in wood production of 4 per cent to reach 20 million cubic meters annually by 1985.

Wood products — There will be continued concentration on furniture production, based on increasing domestic consumption as well as export potential (Yugoslavia already has developed significant markets in Canada and the U.S.). This will entail expanded capacity for production of boards, veneers and laminates used in this industry.

No special priority is being given to construction materials as Yugo-

slavia is considered to have sufficient productive capacity to satisfy domestic needs, which are low because materials other than wood have traditionally been used in building construction. In fact, Yugoslavia is a traditional exporter of cut oak and beech structural timber, although it is a net importer of softwood structural timber. The few pre-fabricated elements used in house construction are completely of Yugoslav origin and small quantities are even being exported. The policy for the future is to continue increasing export of hardwood timber and decrease imports of softwood timber.

Pulp and paper — A large increase in production of domestic pulp and cellulose is planned in order to build up domestic supply to meet the demands of existing and planned paper production facilities, and to eliminate the current expensive imports of pulp of various types. Priority is given to kraft and corrugated board production to match increasing domestic demand for wrapping and packaging materials. Although Yugoslavia still has the lowest paper consumption in Europe (except for Albania), production has not matched demand and paper imports have increased from year to year.

The current stagnant state of Yugoslavia's forest and wood products industries has been occasioned by a number of converging factors. Although an effort was made at the time of the major economic reforms in 1967 to encourage development of this sector by fixing more realistic market prices for forestry products, inflation of production costs in subsequent years, lack of bank credits and inadequate financing neutralized this policy and led to stagnation, low wages and inefficient production methods.

The draft forestry plan, among other things, recommends the formation of a special fund for faster forestry development through pooling of financial resources from all the constituent republics (Yugoslavia is a federal system) into one fund which would be used to make improvements. The fund would also be used to help construction of forest transportation systems which have been totally neglected in the past. In addition to this and other financing to be provided by the forestry exploitation companies, obligatory contribution to the special fund would also come from agricultural and hunting organizations, hydro power and electro-energy associations, railway and road transportation organizations, tourist organizations, etc.

The plan is still at the drafting stage but the following incentives are being envisaged:

1) Reduction of customs duties and other taxes on imports of forestry, wood working and pulp and paper equipment not manufactured in Yugoslavia (which includes most categories);

2) Elimination of import duties and reduction of import taxes for softwood pulp;

3) Increase in producer prices for pulp and paper products;

4) Special encouragement to furniture sales and exports by lowering of the turn-over tax and a decrease in mark-up; encouragement of bank consumer-credit financing for furniture sales; facilities for exports to North America; and facilities for access to hard currency funds;

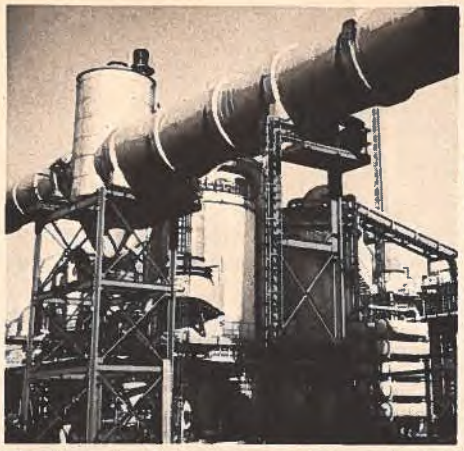
5) In the case of non-export-oriented forestry projects where enterprises have no means of earning directly the hard currency required for imports of equipment.

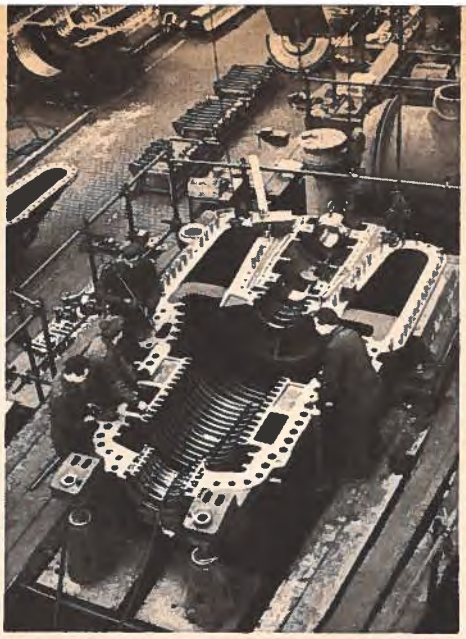
1973 CONSTRUCTION MATERIALS PRODUCTION

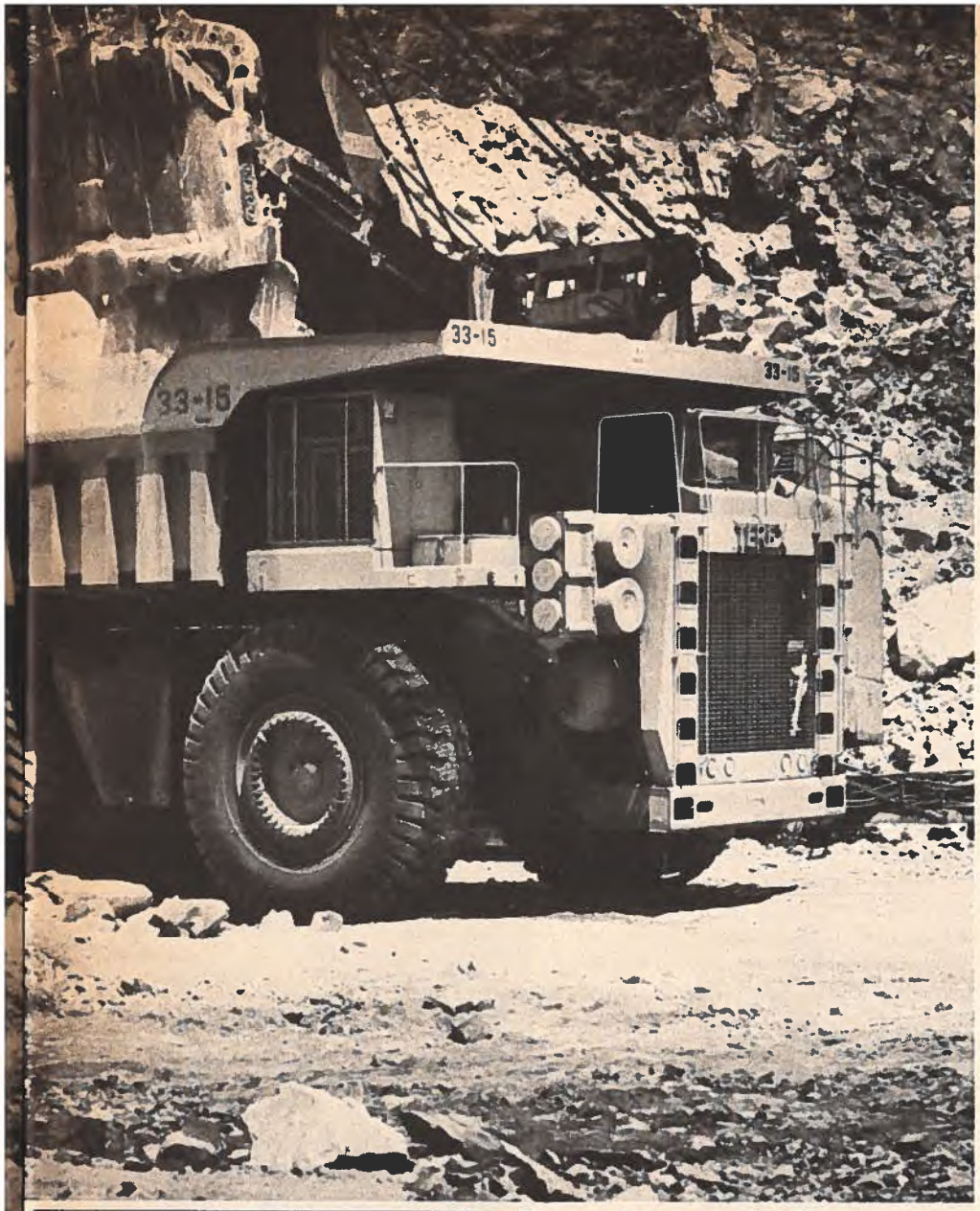
Oak, beech, pine soft & hard deciduous trees	3,361,000 cubic meters
Parquet	1,601,000 cubic meters
Deck floor	61,000 cubic meters
Doors — in pieces	1,351,000
Windows — in pieces	1,006,000
Other construction elements	78,000 cubic meters
TV boxes	653,000

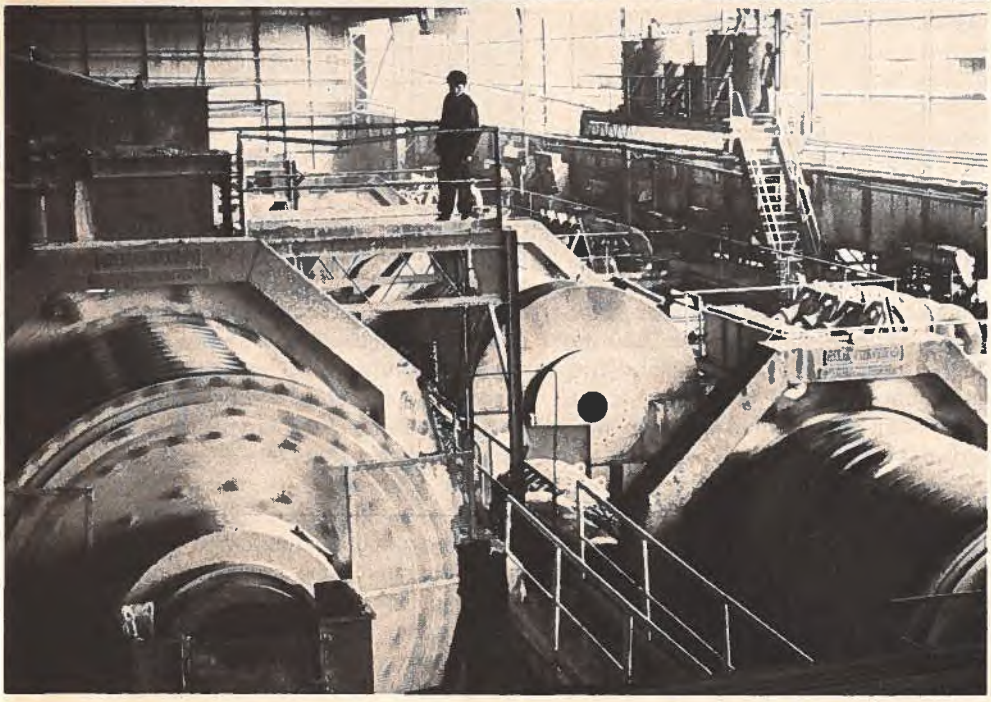
ESTIMATED PULP & PAPER PRODUCTION BY GROUPS
(in '000 tons)

					Increase Rate		
Description	**1965**	**1970**	**1975**	**1985**	**1975/65**	**1985/75**	**1985/65**
Cellulose for paper production	237.4	293	380	1,144	4.9	11.6	8.2
Cellulose for prod. of viscose	56.0	63	140	295	9.6	7.8	8.7
Semi-cellulose	30.5	34	100	655	12.6	22.1	16.7
Woodpulp	84.0	94	110	468	2.7	15.6	9.0
Fibres	408.0	484	730	2,562	6.0	13.4	9.6
Paper & cardboard	496.5	589	870	2,259	6.9	10.0	8.4
Fine paper processing	211.8	409	590	1,190	10.8	7.3	9.0









Developing Yugoslavian natural resources

DUSAN RATIBOROVIC,
Commercial Officer, Belgrade

Yugoslavia is one of the leading European producers of copper, lead and zinc, and has significant reserves of some other metals and minerals. Canadian consultants and equipment suppliers are already active here, and new opportunities are developing.

Metallic Minerals

Copper — Copper is one of the most important minerals exploited in Yugoslavia, and is obtained from Europe's largest copper mining complex (which at the same time is said to be Europe's largest open-pit mine of any kind).

The main copper deposits are all in East Serbia and are concentrated within the giant Copper-Kombinat BOR, which comprises two existing open-pit mines at Bor and Majdanpek, as well as a huge projected pit mine development at Veliki Krivelj.

Copper ore mined in this area before World War Two contained up to 7 per cent of copper, but by the sixties the copper content had dropped to only about 1.44 per cent. But thanks to new technology, it has become profitable to exploit ores containing as little as 0.4 – 0.5 per cent of copper. In fact, these new developments make possible the opening of the new Veliki Krivelj pit.

All smelting operations are concentrated at Bor, site of the original mine. However, ore reserves at Bor (production now at 4½ million tons, averaging 1 per cent copper) will be phased out over the next 10 years while Majdanpek's capacity will be increased from the current 11 million tons of raw ore (averaging 0.7 per cent copper) to 14 million tons by 1977. Interesting opportunities for Canadian processing equipment should develop here.

The Veliki Krivelj mine, near Bor, will begin operation next year and will be bigger than Bor and Majdanpek together. Basic initial capacity will be 19 million tons annually, which should yield 75,000 tons of copper. Crushing and flotation plants will have

to be imported and eventually there will be five complete lines of crushers and flotation plants processing 3.8 million tons each. The first line is to start operation in three years, with each additional new line to be opened over the following four years. Total investment in Veliki Krivelj will be around $200 million with about a 50 per cent import component.

All concentrates will go to the Bor smelting operation which probably will also have to be expanded, from a current 160,000 tons to 235,000 tons capacity once Veliki Krivelj comes into full operation.

Lead and zinc — Yugoslavia is an important producer of lead and zinc, with 3 million tons of ore a year yielding 100,000 tons of lead and 55,000 tons of zinc.

Lead and zinc have been produced in Yugoslavia for a long time. Initially they were the by-products of intensive silver mining and while today the processing of this ore is oriented to the production of lead and zinc, it still provides 90 per cent of total Yugoslav silver production and virtually all the bismuth and cadmium, as well as 13 per cent of domestic gold supplies.

While 46 per cent of Yugoslav lead and zinc production derives from major mines in the Kosovo region of southern Yugoslavia (Trepca, Kisnica, and Ajvajlija mines), these metals are also found in nearby Macedonia as well as Bosnia and Slovenia to the north.

The Trepca Kombine, which is the 26th largest enterprise in Yugoslavia, owns about eight mines and smelters in the Kosovo region and has a total annual output of 3.5 million tons of ores, 165,000 tons of concentrated lead, 40,000 tons of electrolytic zinc, about 280,000 tons of lead, 100,000 tons of superphosphate, 150,000 tons of complex fertilizers and corresponding quantities of other products. With its new metallurgical capacities Trepca is today the largest European producer of lead from it's own resources and one of the largest producers of silver, zinc and other accompanying metals.

While Yugoslavia is a net exporter of lead and zinc metal, smelting operations have had to import ore concentrate to meet production demand. Even more imports will be required with the coming on stream of a large smelter at Titov Veles in southern Yugoslavia which will eventually produce an additional 65,000 tons of zinc and 35,000 tons of lead.

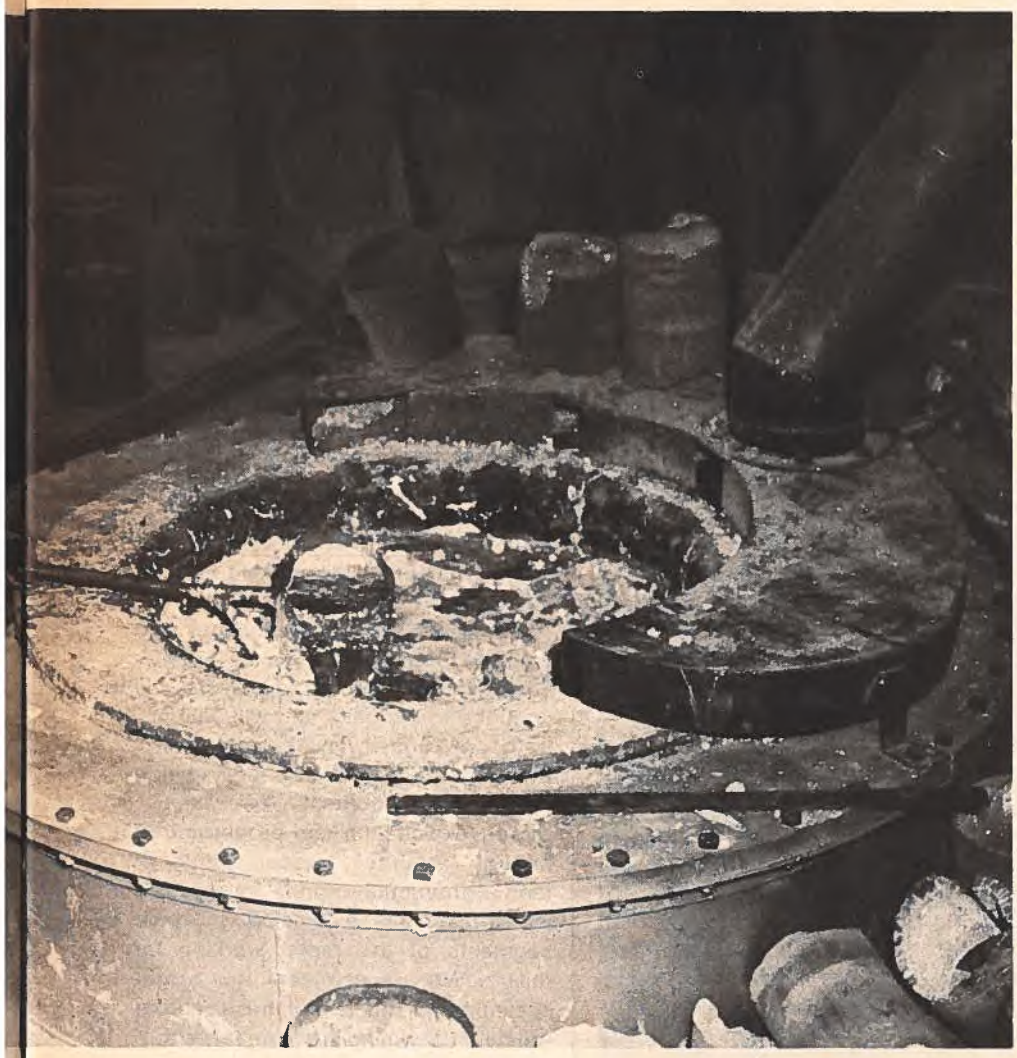
Because of this, exploration is being accelerated and new mines and processing facilities are planned. Current projects are being carried out in co-operation with East European partners who supply equipment and financing, but new opportunities of interest to Canadians, both for equipment and consulting, can be expected to develop either under bilateral supplier-credit financing arrangements or under IBRD projects.

Aluminum and bauxite — Aluminum production in Yugoslavia has been exclusively based on the processing of domestic bauxite and total cumulative bauxite production from all sources up to 1970 amounted to 36 million tons. Recent and anticipated production rates have shown considerable increases, with an output in 1974 of 2.1 million tons, with a 6 million ton output projected by 1980 (of which 2 million tons are to be exported.)

Yugoslavia has traditionally been a bauxite exporter, producing in 1969 some 5 per cent of world bauxite output but only 0.5 per cent of world aluminum output. It is only in recent years that aluminum production has shown significant increase, from an average of 45,000 tons annually, in the period 1965-71, to 90,000 tons in 1973 and 150,000 tons in 1974, with a planned output by 1980 of 400,000 tons. It is anticipated this level of production will eliminate further imports of the light metal. In fact, only about 250,000 tons a year will be earmarked for further domestic processing, with the balance available for export.

Currently aluminum is being given priority for development funds and undoubtedly projects will be forthcoming in both bauxite and aluminum production. An interest in special new technology may also develop.

Iron and steel — Iron ore is found in most areas of Yugoslavia and in 1973 production amounted to 4.6 million tons, with pig iron accounting for 1.9 million tons and steel for 2.7 million tons. Ferro-alloys and ferro silicate are manufactured in Yugoslavia, and steel makers use domes-



tic chrome, molybdenum and manganese for alloying. 154,000 tons of ferro-alloys were produced in 1973.

Other metals — Yugoslavia has been one of Europe's largest chromium producers and ores have contained up to 55 per cent metal. Production rose from 45,000 tons in 1939 to 108,000 in 1961, but has since been declining to only 40,000 in 1969 and is now being phased out.

Molybdenum and manganese are also mined in small quantities in Yugoslavia, and some nickel is found.

Mercury production in Yugoslavia (from a single mine) currently represents 7 per cent of world production. In 1970, 290,000 tons of ore yielded 533 tons of quicksilver but ore quality is deteriorating. With current reserves estimated as good for only 15 years production, exploration for other sources of this important hard-currency-earning resource is being undertaken.

Yugoslavia has also been one of the important world producers of antimony, but high costs and a significant drop in ore quality will probably bring an end to production soon.

Tin production currently does not fully match increasing Yugoslav consumption, although further deposits have been discovered.

Non-Metallic Minerals

Coal — Total reserves are estimated at about 22 billion tons, of which 90 per cent is soft lignite and anthracite only 10 per cent. Yugoslav coal contains high percentages of sulphur and moisture. Annual production stands at around 20 million tons, 50 per cent of which is used in production of electricity. While there is continuing expansion of production, there do not appear to be any significant opportunities for Canadian engineers or equipment suppliers.

Oil and gas — Yugoslav production (on-shore) of oil stands at 3½ million tons with annual domestic consumption of more than 10 million tons. Current priorities are aimed at off-shore exploration in the Adriatic, and opportunities will be opening during 1975 for foreign firms to enter into joint-venture enterprises with one of the domestic oil companies for both exploration and production. Foreign partners will be expected to be competent in both fields. Interested parties should contact our office for further information.

Construction of a $600 million oil pipeline from the Adriatic across Yugoslavia to Hungary and Czechoslovakia, to supply all three countries is about to begin, and here again opportunities may exist for Canadians. New refineries are also being planned.

Annual gas production stands at 1.3 billion cubic meters and although there are no opportunities in extraaction operations, the current IBRD financed gas-pipeline project does offer some attractive prospects.

Canadian firms interested in any of the above fields should contact our office to determine current prospects.

International finance organizations big in Yugoslavia

R.F. TURCOTTE and A.S. POOLE, former Assistant Commercial Secretary
(Mr. Poole was posted recently to Bonn.)

International institutional financing — particularly by the IBRD (World Bank) but also the UNDP — is playing a fast-increasing role in the development and growth of key segments of the Yugoslav economy and has provided numerous opportunities for foreign suppliers.

Of primary importance is financing by the World Bank which, after a modest start in 1949, has now committed over $1 billion to Yugoslavia, more than half of which has been approved since 1970. So far, the level of Canadian participation in IBRD-financed projects in Yugoslavia has been disappointing, which probably relates to the nature of the earlier World Bank projects in Yugoslavia — prior to 1970, more than 60 per cent of funds went into rail and highway improvement, with the balance distributed between electric power infrastructure projects and general industrial development.

However, new and more attractive opportunities for Canadians have developed since 1970, with a noticeable movement of IBRD lending for projects involving more sophisticated engineering equipment and industrial know-how in areas where Canada has proven international capability.

Opportunities for equipment suppliers on IBRD projects are usually well publicized, the signing of loan agreements usually being accompanied by numerous press releases providing general details about the project value and general content. Also, the Department of Industry, Trade and Commerce in Ottawa monitors the progress of each IBRD project and takes steps to inform potentially interested Canadian firms of project requirements and scheduling prior to tenders being called.

Consultants — Feasibility and pre-investment studies are usually completed prior to World Bank approval of a loan, so that opportunities for foreign consultants normally arise only after a particular project has been well defined, and are limited to areas where gaps exist in local expertise such as management services, including logistic studies, information systems design and marketing studies, rather than classical engineering.

Procedure — Standard IBRD procurement procedures in all cases apply, which in practice means:

- For engineering and other consultant work, a pre-qualification procedure is normally followed to restrict proposal submissions to manageable proportions.
- On equipment supply, IBRD procurement guidelines usually provide for a 15 per cent advantage to domestic producers.
- Recent IBRD project tender documents have provided for cost escalation clauses.

Yugoslavia does not have a centralized and compulsory development plan and projects normally originate at the level of individual enterprises or through local organizations; it is only after the initial engineering and feasibility studies are completed that the project is presented to the Federal Secretariat of Finance for approval, which in turn makes formal application to the World Bank for assistance. Only at this stage do general project details become available.

In the case of consulting services, direct contact between interested Canadian firms and the Yugoslav borrower (normally the end user and/or a chartered bank) in many instances is required to properly follow up interesting projects and ensure consideration when proposals are adjudicated. Canadian firms seriously interested in a specific project should be prepared to visit Yugoslavia.

Naturally, the approach to be followed varies noticeably according to the project's status and the Yugoslav borrower. In all cases, it is highly recommended that the Commercial Section of the Canadian Embassy in Belgrade be kept fully advised of any specific interest or action, whether planned or already undertaken.

For the Trade Commissioner, such contact is essential as an indication of the projects for which continuous follow-up is warranted, as well as for determining the areas of concentration within each project. In addition, the Trade Commissioner is in a position to locate key Yugoslav project officials and maintain frequent contact with them in order to provide advice to Canadian firms. It should be borne in mind also that the period permitted for tendering or pre-qualification is often restricted to two months, of which up to 30 days can be wasted by simple mail delays. In these circumstances, direct contact with and through the Canadian Trade Commissioner can mean the difference between meeting the deadline or being excluded.

New projects — Indications are that the number and size of IBRD-financed projects in Yugoslavia will continue to increase and will concentrate on Yugoslavia's current industrial and economic priorities, which include development of electric power, exploitation and processing of natural resources, modernization of food production and processing industries, and expansion of most segments of the metal working industry. We are confident that large-scale projects in each of these sectors will be forthcoming in the near future.

While opportunities for consultants on IBRD projects are limited to highly sophisticated areas of management and control systems, additional opportunities for engineering, feasibility and pre-investment studies, as well as for social science research exist in projects assisted by other international agencies such as UNDP, FAO, UNIDO, etc.

The UNDP, for example, is quite active in Yugoslavia, with a notational plan of $7 million over five years. Projects currently being undertaken cover the fields of agriculture, health, industry, natural resources, science, social security and transportation.

The key consideration with all

these agencies (except the IBRD) is that the consultant is chosen by the headquarters of the implementing organization and not by the Yugoslav project manager. Therefore, our office in Belgrade is not in a position to assist directly in obtaining a UNDP-assisted project, which can be done only through registration of the interested Canadian firm directly with the organization concerned. But our office can be of considerable assistance in obtaining preliminary information on project content, timing, etc. from the local project manager. A list of current UNDP-assisted projects is also available from our office.

Industrial shows important way of doing business

For foreign companies, trade fairs are one of the best ways of making contacts in Yugoslavia. The photo shows a portion of the Belgrade Fair Grounds, with some of the largest and most modern permanent show buildings anywhere in Europe.

Attendance at Yugoslavian fairs is always impressive. Last year, for example, 400,000 visitors trooped through 700 stands at the International Technical Fair in Belgrade. Another important fair is the annual industrial show at Zagreb, which is held on grounds at least as big as those of the Canadian National Exhibition in Toronto. The show is open to the public and millions attend.

Opportunities in Argentina: an analysis

CARLOS HOIC, Commercial Officer, Buenos Aires

This article is based on a study of Argentina's most significant imports so as to define more clearly those product areas where Canada's participation could be improved. The analysis of imports was made after the official publication of import values for 1971 (the latest figures available) that are classified according to the Brussels Tariff Nomenclature, and deals only with those items that are significant to Canada.

Coal — Argentina is trying to increase local production of coal but still imports a sizeable amount. The main supplier is the United States, with Poland coming second. Imports probably will not increase but should stay at about the same level. Other fossil fuels that are imported come from the member states of the Organization of Petroleum Exporting Countries.

Chemicals — Sodium carbonate is the most important import as far as Canada is concerned, and in 1971 cost Argentina $7.78 million. Canada was not included in the list of 11 suppliers, nor was it included in the list of 14 suppliers of sodium bichromate, imports of which were worth $2.38 million.

Canada could contribute to the imports of Thomas phosphates, which were worth $3.2 million and came mostly from the U.S. Another item is titanium dioxide, which cost Argentina more than $5 million in 1971. The Canadian supply of this was less than 5 per cent, worth $215,000.

Resin and resin acids could be another worthwhile Canadian export to Argentina. Mexico is the country's chief supplier, $3.6 million worth out of a total of more than $4 million.

Among the synthetic rubber products are the butadiene, butyl and polychloropene types, of which Argentina imported close to $5 million worth in 1971, from nine suppliers (the U.S. share, the largest, was worth $1.7 million). Canada's share was less than 1 per cent, worth $30,000.

Lumber, paper products — Argentina imports large quantities of lumber, traditionally from Paraguay and Brazil, countries with a common border. Brazil, however, has prohibited exports of lumber, and Canadian suppliers, particularly of hemlock and Douglas fir, could well step into the breach, especially if costs can be trimmed.

There are several items in the paper and paper-making categories which Canada could supply in greater amounts than it is now. Imports of dissolving pulp with an alpha-cellulose content of not more than 90 per cent were worth about $4.14 million in 1971. Canada sold $5,700 worth in 1971 and was the second largest supplier with 15 per cent of the total.

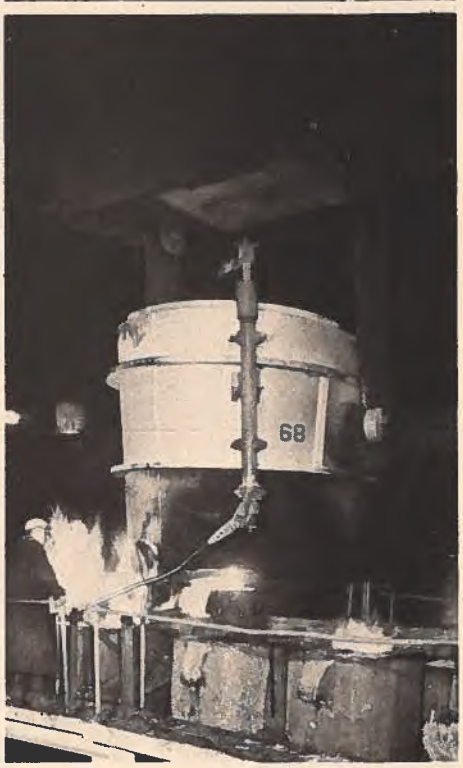
The Canadian contribution to imports of long-fibred soda and/or sulphate wood pulp was about 4 per cent ($540,000) of the total of just over $12 million. Sulphite long-fibred bleached pulp imports totalled $2.3 million, of which Canada's share was worth $80,000. Watermarked book printing paper imports were worth $1.93 million, and coated paper with watermark $3.21 million. Canada had no share of these last two items.

Iron, steel, copper — In the list of imports concerning iron, steel and copper products, 23 classifications appeared to be of importance to Canadian suppliers. The total value of these products ranged from a low of $1.03 million (alloy steel and high carbon steel blooms and billets — five suppliers) to a high of $45.81 million (slabs and sheet bars containing less than 0.25 per cent carbon — again five suppliers). Running close were iron or steel cores for re-rolling, the value of which was $44.77 million. Of these 23 classifications, Canada was a supplier of seven only.

Machinery and parts — The chapter on machinery and mechanical appliances contained 72 items, the imports of which were each worth more than $1 million, and our analysis, therefore, was confined to those items

worth more than $3 million, of which there were 29. Of these, the highest in value were statistical machines operated by punched cards ($18.56 million), followed by parts for internal combustion piston engines ($15.38 million). Canada is a supplier in 17 of the categories, and so Canadian prices are competitive, but Canadian participation is small, ranging from a high of $380,000 for mechanical sprayers for liquids or dusts (not specifically identified) to a low of $49 only for parts for typewriters, calculating machines and statistical machines. (Argentina, by the way, imported $3.32 million worth of these parts.)

Our analysis of the statistics on these 29 items showed that the duty on them was either 5 per cent, 80 per cent or 110 per cent. In order to protect local industry, the Government puts a high tariff — a minimum of 80 per cent — on those items



locally produced, but allows easy entry for items not manufactured in Argentina. There is a Buy Argentine Commission that has to certify in writing that a product is not made in the country before it can qualify for the 5 per cent tariff. But a local manufacturer may need parts or components to complete his product and he is usually able to choose his supplier. Canadians, therefore, should be on the lookout for opportunities like this.

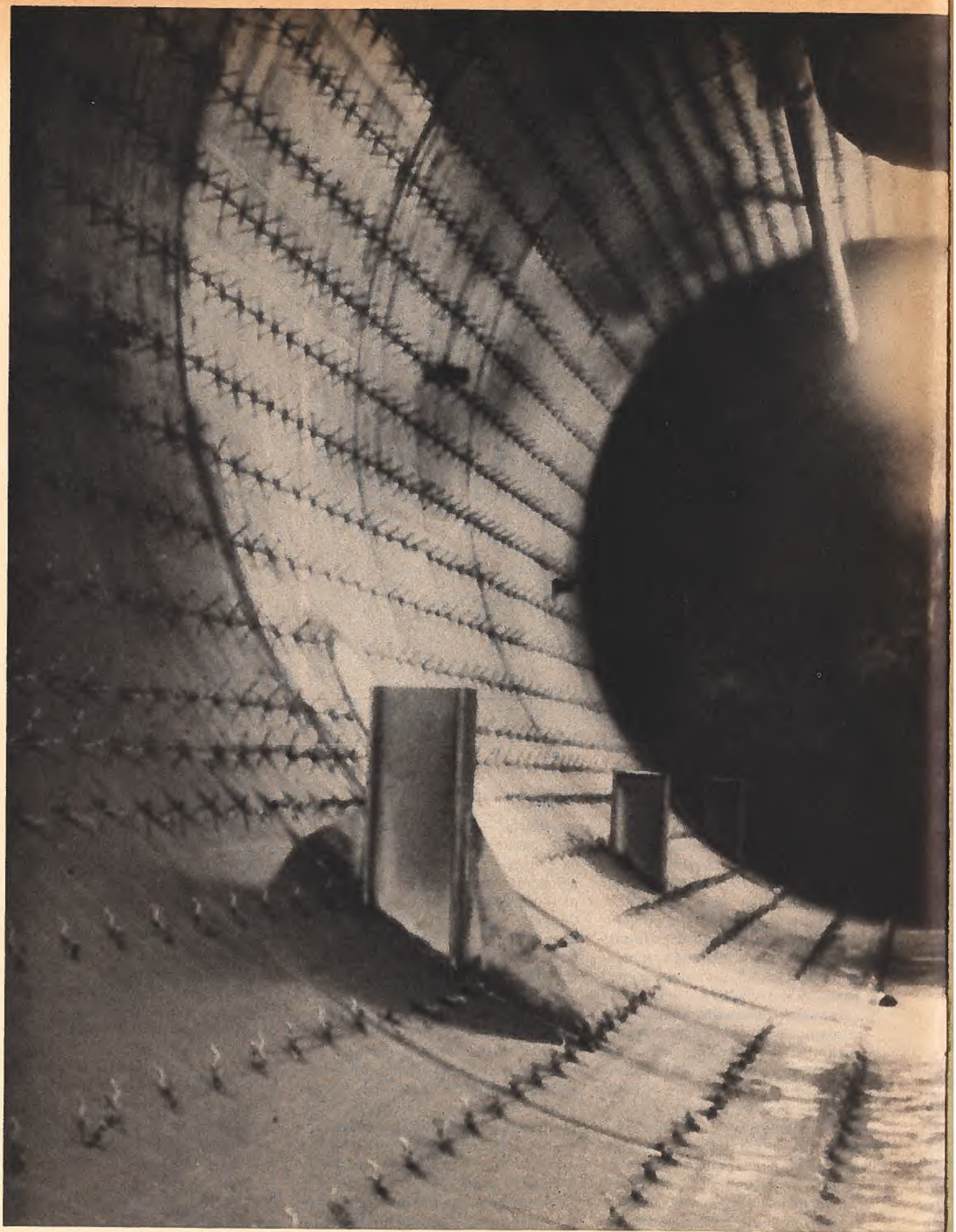
Electrical, electronic equipment — Here again there were 22 items in the 1971 statistics imports of which were worth more than U.S.$1 million. We picked out 10 that were each worth more than $2 million and which Canada could either supply or increase its share of supply. For instance, we did not supply any parts for either rotary or static generators, and Argentine imports of such parts were worth $19.2 million, from 15 countries, in spite of a 20 per cent duty on them.

Optical, medical, photographic equipment — This is a fairly wide field and imports of the 11 items we picked as important to Canadian suppliers amounted to nearly $30 million. But of this $30 million in 1971, the Canadian share was small indeed, amounting to $28,000 only. And in no case did any item have fewer than 12 supplying countries. Canadian expertise in this field should be able to overcome some of the admitted problems such as high tariffs and freight costs.

One area that deserves looking into is photographic supplies such as films, both in rolls and bulk, and films and sensitized paper for polychromic photography. There were no suppliers from Canada in 1971 and Argentina is going to require a lot in the future.

There are a few other commodities also that Argentina imports in sizeable quantities and which Canada should be able to supply. Flat sheets of unsilvered glass, polished on both sides; glass for cathode ray tubes, and magnesite-chrome and aluminum silicate refractory bricks all indicate possibilities for Canadian suppliers. Compressed air brakes is another item; the value of the imports of these in 1971 was $7.44 million.

As was pointed out at the beginning of this article, all the products mentioned here as potential opportunities were identified from the 1971 figures of Argentine imports. At this stage we have not gone any deeper in our investigations, but would welcome specific inquiries from Canadian businessmen. Tell us about your products, your prices, and we will try to help you any way we can in your search for new markets.



Foreign Exchange Rates

These nominal quotations may help exporters in checking prices, but they should consult their banks before making any firm commitments. When more than one rate is shown, the one to be used depends on the commodity traded. Information on the rate for any specific commodity may be obtained from the International Bureaux, Department of Industry, Trade and Commerce, Ottawa.

The mid market rates only are quoted, except when buying and selling rates are specified. The buying rate is that at which banks purchase exchange from exporters; the selling rate is that at which banks sell exchange to importers.

Rates used exclusively in non-merchandise trading are *not* included in this table.

Note: The following rates were current at April 7. Because of unsettled market conditions exporters should consult their bankers for up-to-date quotations.

Country and Currency	foreign currency unit in Canadian dollars	Canadian dollar in foreign currency units
Algeria		
Dinar	.2380	4.20
Arab Republic of Egypt		
Pound (official)	2.5699	.38
Argentina		
Peso (financial)	.0667	14.99
(commercial)	.1006	9.94
Australia		
Dollar	1.3611	.73
Austria		
Schilling	.0597	16.75
Bahamas		
Dollar	1.0056	1.00
Belgium and Luxembourg		
Franc	.0286	34.96
Bermuda		
Dollar	1.0397	.96
Bolivia		
Peso	0.503	19.88
Brazil		
Cruzeiro (official free)	.1304	7.67
Britain		
Pound	2.3938	.42
British Honduras		
Dollar	.6078	1.64
Burma		
Kyat	.2089	4.79
Chile		
Escudo (commercial)	.0003	3,333.33
(financial)	.0002	5,000.00
China, People's Republic of		
Yuan	.4188	2.39
Colombia		
Peso (fixed)	.0360	27.78
Costa Rica		
Colon	.1207	8.29
Cuba		
Peso	N.A.[10]	
Czechoslovakia		
Koruna (fixed basic rate)	N.A.[10]	
Denmark		
Krone	.1838	5.44
Dominican Republic		
Peso	1.0056	1.00
Ecuador		
Sucre (official)	.0402	24.88
El Slavador		
Colon	.4022	2.49
Fiji		
Dollar	1.2570	.80
Finland		
Markka	.2848	3.51
France, Monaco, etc.[1]		
Franc	.2376	4.21
French Pacific[2]		
Franc	.0130	76.92
Franco-African Republics[3]		
Franc	.0047	212.77
Germany		
D Mark	.4242	2.36
Ghana		
New Cedi	.8715	1.15
Greece		
Drachma	.0333	30.03
Guatemala		
Quetzal	1.0056	1.00
Guyana		
Dollar	.4444	2.25
Haiti		
Gourde	.2011	4.97
Honduras		
Lempira	.5028	1.99
Hong Kong		
Dollar	.2094	4.78
Hungary		
Forint (official)	.0869	11.51
Iceland		
Krona (official)	.0067	166.66
India		
Rupee	.1302	7.68
Indonesia		
Rupiah	.0024	410.00
Iran		
Rial	.0134	74.63
Iraq		
Dinar	3.3967	.29
Ireland		
Pound	2.3938	.42

Country and Currency	foreign currency unit in Canadian dollars	Canadian dollar in foreign currency units
Israel Pound	.1646	6.08
Italy Lira	.0015	666.66
Jamaica Dollar	1.1062	.90
Japan Yen	.0033	303.03
Kenya[4] Shilling	.1379	7.25
Korea, Republic of Won	.0024	404.38
Lebanon Pound (free)	N.A.[10]	
Libya Dinar	2.777	.36
Malawi Kwatcha	1.2280	.81
Malaysia Dollar	.4445	2.25
Mexico Peso	.0804	12.44
Morocco Dirham	.2353	4.25
Netherlands Florin	.4153	2.41
Netherlands Antilles Florin	.5618	1.78
New Zealand Dollar	1.3505	.74
Nicaragua Cordoba	.1410	7.09
Nigeria Naira	1.4700	.68
Norway Krone	.2028	4.93
Pakistan Rupee	.1016	9.84
Panama Balboa	1.0056	1.00
Paraguay Guarani (free)	.0080	125.00
Peru Sol (free)	.0225	44.44
Philippines[5] Peso (free)	.1402	7.13
Poland Zloty (fixed basic rate)	.2577	3.88
Portugal & Overseas Provinces[6] Escudo	.0410	24.39
Saudi Arabia Riyal	.2850	3.50
Sierra Leone Leone	1.2371	.81
Singapore Dollar	.3358	2.98
South Africa Rand	1.4782	.68
Spain & Dependencies Peseta	.0172	58.14
Sri Lanka[7] Rupee	.1534	6.52
Sweden Krona	.2538	3.94
Switzerland Franc	.3947	2.53
Syria Pound (free)	.2711	3.69
Thailand Baht (free)	.0502	19.92
Trinidad & Tobago[8] Dollar	.4987	2.00
Tunisia Dinar	2.3107	.43
Turkey Lira	.0726	13.77
United States Dollar	1.0056	1.00
Uruguay Peso (free)	.0007	1,428.57
Venezuela Bolivar (official free)	.2302	4.34
Yugoslavia Dinar (official)	.0571	17.51
Zaire, Republic of[9] Zaire	1.961	.51
Zambia Kwacha	1.3893	.72

1. Franc is also used in French Guiana Guadeloupe and Martinique.

2. New Caledonia, New Hebrides, French Polynesia.

3. Chad, Central African Republic, Congo (Brazzaville), Dahomey, Gabon, Ivory Coast, Islamic Republic of Mauretania, Niger, Senegal, Upper Volta, Cameroon, Togoland, and Malagasy. Also Reunion, Comoro Islands, St. Pierre and Miquelon.

4. Rate also applies to Tanzania and Uganda.

5. Exchange rate in Philippines on floating basis with daily quotations by banks.

6. Approximately same for Portuguese territories in Africa.

7. Formerly Ceylon.

8. E.C. dollar, at same rate, used in Leeward and Windward Islands.

9. Formerly Congo (Kinshasa).

10. Rates not available at press time.

International Projects

HIGHWAY PROJECTS FOR ZAIRE

The International Development Association has approved a $26 million credit to the Republic of Zaire for a Third Highway Project, designed to meet the country's urgent need for road rehabilitation. The project includes: a) rehabilitation of 600 kilometers of gravel road between Kabinda and Kindu; b) technical assistance to the Bureau of Roads; c) organization of two pilot highway maintenance schemes; d) establishment of a country-wide logistic support system for highway maintenance; e) feasibility studies affecting about 1,500 kilometers of roads; f) a highway traffic survey.

Implementing organization. Bureau of Roads, Kinshasa Gombe, Republic of Zaire.

Procurement: Contracts for equipment and road-rehabilitation construction will be awarded through International Comparative Bidding. Local competitive bidding will apply for construction of workshops, stores and office buildings.

Consultants: Will be retained.

BANGLADESH FERTILIZER PLANT

The Bangladesh Government and the International Development Association (IDA) have signed an agreement for an IDA credit of $33 million to assist in financing a $250 million fertilizer plant in Bangladesh. The agreement is conditional upon completion of arrangements with six other agencies which have indicated agreement in principle to provide $109 million of additional finance for the project.

The fertilizer plant will be located at Ashuganj, 60 kilometers northeast of Dacca. It will consist of a 1,600 ton-per-day (TPD) urea plant with an intermediate 925 TPD ammonia production plant having annual capacities of 528,000 tons of urea and 305,000 tons of ammonia. The principal raw material will be the natural gas from the nearby Titas gasfield. The project will be carried out by the Ashuganj Fertilizer and Chemical Company Ltd. (AFCC).

Implementing organization: The Ashuganj Fertilizer and Chemical Ltd., Ashuganj, Bangladesh.

Procurement: Goods and services with a foreign exchange cost of about $88 million will be procured under international competitive bidding or in the case of services under procedures specified under IDA Guidelines. Goods and services with a foreign exchange cost of about $54 million will be procured in accordance with the procurement procedures of the agency financing the items concerned. Although none of the IDA financed goods is expected to be procured in Bangladesh, prequalified local suppliers would receive, for purposes of bid evaluation, a preference of 15 percent of the level of customs duty, whichever is less. Local contractors would receve 7½ percent preference.

FERTILIZER PROJECT FOR INDONESIA

The World Bank has approved a $115 million loan for a Second Fertilizer Expansion Project – PUSRI III – in Indonesia. This is the first World Bank loan and the second Bank Group operation with P.T. Pupuk Sriwidjaja (PUSRI), a Government-owned limited liability company. The previous operation with PUSRI, in 1970, an International Development Association (IDA) credit, intended to help finance the foreign exchange costs of the construction of a nitrogen fertilizer plant.

The project includes the detailed engineering, construction and start-up of a plant, adjacent to and interconnected with PUSRI's existing facilities near Palembang, in South Sumatra. The project consists of single-train ammonia and urea units, with an annual capacity of 330,000 and 570,000 metric tons, respectively; a gas treatment unit; and off-site and auxiliary works, such as an ammonia storage tank, a 15 MW electric power plant, a steam-generating unit, a bag-making plant, shipping facilities, spare parts, and housing and hospital facilities.

Implementing organization: P.T. Pupuk Sriwidjaja (PUSRI), Suangai Selayur P.O. Box No. 84, Palembang, Sumatera, Indonesia.

Procurement: All major equipment, material and supplies (estimated to cost about $85 million) will be procured after international competitive bidding. Proprietary equipment items in limited supply and related spare parts (estimated to cost about $10 million) will be procured based on competition among firms included in a list of qualified suppliers. Items costing less than $50,000 each and totaling about $1 million, will be purchased from suppliers on the basis of suitability, availability and price. When international bidding is used, qualified local manufacturers will receive a preference of 15 percent or the level of customs duties, whichever is less.

SAN SALVADOR WATER SUPPLY

The Inter-American Bank has announced the approval of a $30 million loan to help expand and improve the water supply system of the metropolitan area of San Salvador, the capital of El Salvador.

The loan, which was extended to the Republic of El Salvador, will be used by Administración Nacional de Acueductos y Alcantarillados (ANDA), the national water and sewage agency, to carry out a project designed to meet the water requirements of San Salvador and surrounding municipalities up to 1980.

The total cost of the project is estimated at $50.4 million, of which the Bank loan will cover 59.5 percent and the Government of El Salvador the remaining 40.5 percent.

Implementing organization: Administración Nacional de Acueductos y Alcantarillados (ANDA), 9a Avenida Sur, # 214, San Salvador, El Salvador.

Procurement: International public bidding among eligible member countries of the Bank on imported goods and services covered by resources of the Bank loan — national bidding on domestic purchases.

LIVESTOCK IN MALI

The International Development Association, an affiliate of the World Bank, is providing $13.3 million for a livestock project in Mali which will benefit around 600,000 people. The project, with a total cost of $17.3 million, aims at the rational use of land and water in Mali's most important and high-potential livestock area, the

5th Region, which was strongly affected by the 1972/73 drought. The project will develop effective grazing control measures through incentives, education and regulation, and will help rebuild and improve herds belonging to 100,000 pastoral families in that region, to better protect them against future droughts.

This first comprehensive effort in West Africa to increase range livestock production by pastoralists in the Sahelian zone, includes the introduction of livestock extention services and grazing controls in three special development areas, together with the provision of improved animal services throughout this region. It also includes the construction of seventy wells and fifty ponds, an abattoir and hide-drying facilities at Mopti-Sevare and five livestock markets, the establishment and management of a 150 hectares livestock and pasture trial station, the provision of personnel training, the testing of a functional literacy program for pastoralists and the preparation of a second-phase livestock project.

Implementing organization: Opération de Développement de L'Elevage de la Région de Popti (ODEM). c/o Ministère de la Production, Bamako, Mali.

Procurement: Contracts for all items in excess of $50,000 will be awarded on the basis of international competitive bidding. This will aggregate about $7.8 million, covering buildings and construction ($3 million); installation of 40 wells in the Seno Mango area ($2.2 million); vaccines ($0.9 million). Contracts for all items below $50,000 will be awarded on the basis of competitive bidding advertised locally and in accordance with local procedures. Domestically manufactured goods procured for the project will be allowed a price preference of 15 percent (or the level of applicable import duty, whichever is lower) over foreign goods; and for civil works, domestic contractors will be granted a 7.5 percent preference.

Consultants: Will be retained.

Wanted Manufacturers

This information is intended to promote additional manufacturing in Canada. Further material on items listed is for prospective Canadian manufacturers only. No responsibility is assumed for claims or statements made. Address inquiries, quoting item numbers, to: Industrial and Trade Enquiries Division, Department of Industry, Trade and Commerce, Ottawa K1A 0H5.

Doors, movable walls, garbage trucks
Swiss firm is offering the rights to manufacture under licence in Canada its folding, sliding and combination sliding-and-folding doors. These doors, with their appropriate operating mechanisms and controls, are of standard construction and are simple to make and to install. As for the movable walls, they are solid, adaptable and absorb noise. The bottom sill, which has no guide rod, is lowered by a removable crank and can be adapted to any floor. Acoustic isolation reaches 30 to 45 decibels. A third product offered is a truck body of simple and efficient construction for garbage vehicles. A 3-stage telescopic cylinder activates both the compaction and ejection processes. Literature available. **Item 3149**

Industrial filters
Danish firm is offering a licensing arrangement to a Canadian manufacturer for producing its stationary or mobile dry-dust bag filters for cleaning hot exhaust gases from asphalt plants, cement factories and other industries. With capacities ranging from 16,000 m^3/h to 200,000 m^3/h, the filters are equipped with filterbags made of heat resistant material capable of withstanding temperatures up to 230°C. The cleaning process is automatic and is accomplished by reversing the air stream in each filter chamber, one after the other. Of solid construction, the filter is claimed to be easily accessible for maintenance purposes. Literature available. **Item 3150**

Cylinder lock
Swiss company wishes to enter into an agreement with a Canadian company for the manufacture under licence of its key-operated cylinder lock of the pin tumbler type which incorporates locking blades within a rotating cylinder. The locking blades extend on both sides of the cylinder and lock it against rotation when the key is withdrawn. The cylinder is of the highest quality, yet is claimed to be inexpensive to produce. Incorporating a device which protects against lock-picking, the system can be applied to all locks for apartments, garages and office furniture. The unique construction is claimed to permit a large series of locks with individual keys and skeleton keys for all or a group of locks in the series. Literature available. **Item 3151**

Quartz watch
Swiss firm seeks to licence a Canadian company to manufacture its quartz watch. The watch is tuned by a quartz crystal oscillating at a frequency of 32,768 KHz. This frequency monitors the second hand which moves in steps of 1 second. The frequency division from 32,768 to 1 is obtained by using an electronic and a mechanical divider palced in series. The movement has 12 jewels and is claimed to be easy to manufacture in quantity and to have a low sensitivity to dust. The watch incorporates a calendar mechanism of simple design. Literature available. **Item 3152**

Fluxless aluminum brazing
Canadian company offers under licence the Canadian manufacturing rights to its fluxless aluminum brazing process. The method uses new clad aluminum brazing alloys either in a vacuum or non-oxidizing atmosphere, without the need for flux. It is claimed to completely eliminate costly post-braze cleaning and to produce a part that is free of flux-induced corrosion. Literature available. **Item 3153**

Asphalt plants
Danish firm offers under licence the Canadian manufacturing rights to its line of asphalt plants. These complete plants are comprised of aggregate feeders and conveyors, drying units, mixing plants, finished goods silos, filler silos with transportation equip-

ment, bitumen storage tanks with oil heating system, and high efficiency dry dust filters. Plants are claimed to produce material in accordance with rigid specifications and to be reliable, easy to maintain and economical with a thermal efficiency of more than 0.85. Literature available. **Item 3154**

Trailer suspension system

Australian firm offers under outright sale or licence the Canadian manufacturing rights to its trailer suspension system, in which all wheels actuate independently. The axle members are constructed of hollow structural tube sections. Elliptical laminatlations for lower centre of gravity and better appearance. This system is claimed to improve towing safety and wear and tear by eliminating trailer sway. It can be used on all types of trailers at time of manufacture or can ed leaf spring allow low-line instalbe added later as a conversion kit. Literature available. **Item 3155**

Export Opportunities

Machinery and equipment

ALGERIA — Algerian Railways is calling tenders for 46 automatic level crossing signals with closing date of June 10: Commercial Secretary, Canadian Embassy, 27 bis, rue d'Anjou Hydra, Mailing address: C.P. 225, Alger Gare, Algiers, Algeria.

ARGENTINA — Voltage transformers and auxiliary equipment. Interested companies should contact: Gerencia Tecnia de Hidronor SA, Pte. Yrigoyen 379 - 9° Piso, Cipoletti — Rio Negro, with copies to Sir Alexander Gibb & partners, Asociados con, Merz & McLellan, Leandro N. Alem 1074 - 4° Piso. Contracts will be awarded for supply, transport, installation and maintenance of the equipment and companies will be informed of date tender documents will be required.

INDIA — Three-wheeled diesel road rollers with tenders closing June 20: Counsellor (Development and Commercial), Canadian High Commission, P.O. Box 5208, Shanti Path, Chanakyapuri, New Delhi 21, India.

MALAYSIA — Kuala Lumpur firm of importers and distributors seeks sources of following products: electrical motors, pumps and starters, household Kwh meters, overhead conductors, welding equipment, appliance connectors, fuse units, H.T. switchgears and transformers, lighting equipment; abrasives, grinders, drills, sanders, saws, grass cutting knives, locks, industrial safety helmets; pipe bending machines, pipe threaders, chain hoists, conveyor systems, power chains, power tools; hotel equipment such as stackable and nesting boxes, baggage trolleys, supermarket trolleys, ash trays, waste paper bins; kitchen sinks, basins, bath tubs, plumbing supplies and equipment; building materials; chemicals for pigments, dyestuffs, perfumes and flavourings: Commercial Secretary, Canadian High Commission, P.O. Box 990, A.I.A. Building, Ampang Road, Kuala Lumpur, Malaysia.

Materials

DENMARK — Asbestos products, such as sheet, insulation, packing string, woven goods: Commercial Counsellor, Canadian Embassy, Prinsesse Maries Allé 2, Copenhagen V. Denmark.

Miscellaneous

MALAYSIA — Everyday and seasonal greeting cards: Commercial Secretary, Canadian High Commission, P.O. Box 990, A.I.A. Building, Ampang Road, Kuala Lumpur, Malaysia.

Foreign Tariffs and Trade Regulations

Argentina

- The Government has cancelled all Declaracion Jurada de Necessidad de Importation or need certificates which must be submitted by the importer to obtain approval for the importation by the Ministry of Commerce. Certificates will have to be applied for again and will be studied individually. This will mean delay for the opening of letters of credits for almost all imports.
- The peso was devaluated on March 3 as follows: Financial rate raised from 9.98 pesos to 15.10 pesos per U.S. dollar. Commercial rate raised from 5 pesos to 10 pesos per U.S. dollar.
- Economy Resolution 206 has eliminated the surcharge on imports of toilet paper up to June 30, 1975, in view of the critical shortage of this product. The customs prior deposit requirement is also waived.

Barbados

Miscellaneous Controls Regulations of January 31, 1975 adds the following products to the list of goods requiring a specific import licence prior to importation.

32.09.9 Paints, enamels, varnishes (lacquers)
38.18 Thinners
70.10 Bottles, jars
73.36, 74.17, 76.16, 85.12 Appliances for use as cooking stoves
Ex 73.40 Metal, bituminous - roofing material
84.15 Appliances for the refrigeration or freezing of food.

Brazil

In a move to further restrict imports, Brazilian Central Bank Resolution 319 of March 1, 1975 establishes that commodities subject to an import duty of 37 percent and more will only be permitted customs clearance after complete payment of the necessary foreign exchange has been carried out by the importer. This extends the measures of Resolution 289 of July 1974 which introduced the same provision for commodities dutiable at 55 percent or more.

The new resolution also requires prepayment of foreign exchange for commodities imported into the Manaus free trade zone.

The following products are exempted from the provision of Resolution 319: (a) commodities falling within chapter 30 of the Brazilian Customs Tariff (pharmaceutical products); (b) commodities listed under chapters 84 and 85 machinery and electrical equipment and by products for electro-mechanical use; (c) goods listed under headings 12.01 (oil seeds and oleaginous fruit), 29.44 (antibiotics), 38.11 (disinfectants, insecticides, weed-killers), and 76.01 (unwrought aluminum); (d) commodities related to drawback operations; (e) imports financed by medium and long term foreign loans or foreign investments; and (f) commodities exempt from import duty by special laws, either referring to the commodity or the importer.

Chile

By Decree No. 822 of February 11, 1975, the Chilean authorities have re-established the List of Permitted Imports. The new list contains 709 items that are now subject to the prohibitive 10,000 per cent prior import deposit, as compared to only about 95 items in the previous list. The 10,000 per cent deposit is not an absolute import prohibition because exemptions from the deposit may be granted in certain cases at the discretion of the Central Bank. Items included in the list for which no deposit is required are products, equipment or materials which are relatively essential and/or not available in quantity or quality from domestic supply and that must, therefore, be imported.

Guyana

The Government added the following products to the list of goods which must be imported through the External Trade Bureau and placed price controls on them effective February 1, 1975: cosmetics; toilet preparations; toilet paper; tires and tubes for bicycles, motor vehicles and trailers; wire rods and other rods, joists, angles, girders, shapes, sections, bars and sheets of iron or steel; sewing machines and parts; and bicycles and parts.

Mexico

The new Mexican Customs Tariff which became effective January 1, 1975 has been received. The number of tariff items has been reduced from 12,500 to 7,281 and specific duties have been eliminated. The 10 per cent additional tax which was levied on a wide range of commodities has been abolished and a new 1 percent surtax applicable on most imports has been introduced.

Information regarding rates of duty may be obtained from the Latin America Division, Western Hemisphere Bureau. Canadian exporters with enquiries should specify the products in which they are interested.

Uruguay

The consular invoice has been abolished effectlve March 21, 1975. The exporter has only to present to the Uruguayan Consul in Canada four copies of the commercial invoice and/or four copies of the certificate of origin to be stamped by the Consul. The consular fees will be payable by the Uruguayan importer at destination.

West Malaysia

Importers in West Malaysia are hereby notified that with effect from March 6, 1975 the importation of the below classified goods into the principal customs area of the States of Malaya and into Penang Island from all countries is subjected to specific licensing and quantitative restriction (quota):

Heading No.

29

Description of Goods

Mosquito destroyer falling under heading numbers 38.11 910, 38.11 920 and 38.11 990 of the Customs Duties Order, 1968

Country

All countries and East Malaysia

Under customs (Prohibition of Imports) (Temporary protective measure) 1973 prohibits the importation of the stated goods except under specific licence.

IASS World Congress on Space Enclosures

The organizing committee of the IASS World Congress on Space Enclosures is calling for abstracts for this international meeting to be held in the Hotel Bonaventure, Montreal, July 4th to 9th, 1976. The Congress is presented by Montreal's Concordia University and International Association of Shell and Spatial Structures (IASS) in co-operation with Ecole Polytechnique, Montreal and Carleton University, Ottawa.

The objective of the Congress is to bring together practitioners and scholars of various disciplines to discuss the problems of design, construction and performance of space enclosures of diverse function and

form. This Congress considers shell as a space enclosure and defines it as a surface boundary that separates two potentially different environments and fully or partially encloses or "excloses" purposeful space. This broad concept of space enclosure includes, and extends beyond, the limited concept of shell as a purely structural-mechanistic form.

The technical program consists of presentations in the fields of housing; large-span assembly buildings; and special-purpose and special-nature space enclosures such as spacecraft, oceanic structures and reservoires. Presentations may focus on one or more of the following: morphology, architecture, performance criteria, design approaches, loads and structural behavior, environmental factors, materials and methods of construction, and economics.

Abstracts of papers should be submitted in triplicate not later than July 1, 1975, and should be 300 to 500 words in length. The name, affiliation, position and complete mailing address should be indicated on the abstract. Authors of accepted abstracts will be required to submit the completed manuscripts for final review by December 1st, 1975.

The host for the 1976 IASS World Congress is the Systems Building Centre of Concordia University, which was formed by the union of Sir George Williams University and Loyola of Montreal. Established in 1968, the Centre has been active in building engineering, education and research and in May 1974, was the setting of the Third International Symposium on Lower Cost Housing Problems which attracted 450 delegates from 37 countries.

IASS, in existence for ten years and having members in 66 countries, has organized annual meetings in Spain, Belgium, France, East Germany, Czechoslovakia, Italy, Mexico, the Netherlands, Poland and the Soviet Union. These meetings bring together engineers, architects and contractors from all over the world to develop international exchange and cooperation.

Abstracts and inquiries concerning submission of papers should be sent to: Dr. A. Biron, Chairman, Papers Committee, WCOSE-76. Section de mécanique appliquée, Ecole Polytechnique, Case Postale 6079, Succursale A, Montréal, Québec H3C 3A7.

For further information regarding the World Congress on Space Enclosures, contact: Dr. P. Fazio, Chairman, Congress Committee, WCOSE-76. Systems Building Centre, Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, Quebec H3G 1M8.

First visit to Hanoi

Armand Blum, Commercial Counsellor at the Canadian Embassy in Peking plans to travel to Hanoi for the first time, for detailed discussions on trade possibilities. Mr. Blum plans to make the visit in the latter half of June.

Canada recognized the Democratic Republic of Viet Nam in early 1973 but little commercial contact took place until the Canadian Ambassador presented his credentials to Hanoi officials in January this year. Preliminary trade discussions at that time confirmed that the DRVN was recovering from the effects of war and was rebuilding vigorously.

Foreign trade is still modest but certain Canadian products may be of interest now or in the future. These include newsprint, mining equipment, wheat and corn seed, hides, synthetic fibres, non-ferrous metals, ships, aircraft and various types of production machinery. Canadian firms interested in exploring the possibilities should send full information to: Commercial Counsellor, Canadian Embassy, 10 San Li Tun, Peking, People's Republic of China.

What's happening in Canada's North?

There is a lot of activity in Northern Canada these days and the outside world is becoming more interested in what is going on. D.B. Reesor, a young management counsultant working out of Yellowknife, N.W.T., has started publishing a weekly newsletter called *Northern Business Letter.*

A quick review of the content of the first issue indicates that Reesor will be doing a good job of covering commercial and industrial activities in the North. A year's subscription is $25. For more information, contact D.B. Reesor & Associates Ltd., Box 2544, Yellowknife, N.W.T. X0E 1H0.

More pull for CP Rail

CP Rail is adding 90 new diesel locomotives to its fleet this year. Fifty 3,000-hp. SD-40-2 locomotives from General Motors of Canada Ltd were delivered in March and another 40 of the same type will be delivered beginning in mid-October. The units are worth a total of more than $40 million and are being assigned to fast freight services on CP Rail's Edmonton-Calgary route as well as other operations in Western Canada. The latest

order will bring to 1,365 the number of locomotives used by the railway.

ESE contact scanners for AECL

ESE Limited of Rexdale, Ontario has received an order for two contact scanning systems from Atomic Energy of Canada, Limited. They are worth a total of almost $100,000 and are of the Sequence of Events (SOE) type.

Earlier orders for similar systems came from Hydro Québec and General Atomic of San Diego, California. Ted Strain, vice-president of ESE's Digital Products Division, foresees steady growth in the market for contact scanners as demand grows for automatic control of installations. He told *Canada Commerce* that "these installations have several thousand contact points and our scanner system can resolve the order of events on these points to within a few milliseconds."

Norwegian airline takes another option on DASH 7's

The Norwegian domestic airline, Widerøe, recently placed a preliminary order for its third and fourth DASH 7 STOL airliner. The first two aircraft will be delivered in early 1977 with the next two coming off the de Havilland line a year later.

The airline has also taken delivery of its tenth Twin Otter from de Havilland. Company officials say that Widerøe's use of the DASH 7 is a logical progression for an airline that has developed a highly successful short-field network in just five years.

The first of two pre-production DASH 7's is now being flight-tested and it is expected that Transport Category type certification will be granted by November 1976.

Ocean Freight Market

Prepared by the Office of the Transportation Policy Adviser, April 9, 1975.

Throughout the first quarter, rates in both dry and tanker charter markets continued to drift downward. Charter inquiry was restrained in line with the world-wide economic slowdown, impelling many shipowners to lay up vessels.

There were relatively few publicly-reported dry cargo fixtures in Canadian deep sea trades and those rates that became known were at depressed levels. Iron ore was shipped to the Netherlands at spot charter rates of Cdn. $1.89 and $2.00 compared to $3.21 in September 1974 and $8.22 in April 1974. Grain was transported from the Maritimes to Italy at $8.70 and $10.25 per ton compared to $20.51 in February 1974.

The coal trade from Hampton Roads, Virginia to Japan provided further examples of declining rates. For shipments of approximately 50,000 tons, rates dropped as low as $6.90 per ton in March 1975 compared to a range of $8.41 to $8.95 in January 1975 and $17.12 to $17.41 in April 1974.

Tanker rates continued falling despite an increasing total of laid-up tonnage. As of March 1, tankers amounting in the aggregate to more than 13.7 million tons deadweight were inactive while others were reported as "slow-steaming". March 1975 rates in the Persian Gulf-Western Options trade were at about one-quarter of the levels reported a year ago. Ranging from $1.78 to $1.93 in March, rates in the shorter distance trade from the Caribbean to United States North Atlantic ports (including Portland, the terminus of the pipeline to Montreal) were approximately one third lower than the levels of a year ago.

CHARTER RATES FOR REPRESENTATIVE CANADIAN AND WORLD TRADES

Trading	Month	Rate (Cdn. $ per long ton)	Fixture Tonnage
Voyage Charters			
I. COAL			
Hampton Roads, Virginia to Japan			
	March 1975	6.90 to 7.50	53,000 to 55,000
	February 1975	8.00 to 8.15	50,000 to 55,000
	January 1975	8.41 to 8.95	50,000 to 55,000
	April 1974	17.12 to 17.41	50,000
II. IRON ORE			
St. Lawrence River ports to the Netherlands			
	March 1975	2.00	100,000
	January 1975	1.89	114,000
	September 1974	3.21	70,000
	April 1974	8.22	75,000
III. CRUDE PETROLEUM			
Persian Gulf to Western Options[1] (Ships over 100,000 dwt only)			
	March 1975	1.83 to 3.16	120,000 to 265,000
	February 1975	2.48 to 3.72	115,000 to 220,000
	January 1975	1.73 to 3.70	125,000 to 340,000
	March 1974	6.25 to 12.03	100,000 to 250,000
Caribbean to U.S. North Atlantic[2]			
	March 1975	1.78 to 1.93	32,000 to 52,000
	January 1975	2.14 to 2.68	32,000 to 50,000
	December 1974	2.23 to 3.79	19,000 to 60,000
	March 1974	2.75 to 3.52	20,000 to 39,000
Time Charters			
Dry cargo ships of 15,000 to 30,000 tons deadweight for up to 12 months chartering			
	March 1975	8.31	1 fixture
	January 1975	5.64 to 6.32	3 fixtures
	December 1974	8.60 & 11.94	2 fixtures
	March 1974	7.77 to 12.10	13 fixtures

(1) "Western Options" includes ports in Britain, Northwestern Europe, Scandinavia and the Atlantic Coast of North America. In view of the substantial change in base rates between Worldscale tariffs of 1974 and 1975, it is no longer appropriate to utilize Worldscale rates in comparing fixtures over those years. Port Hawkesbury, N.S. has been selected among "Western Options" ports for purposes of presenting rate developments in the above table.

(2) Includes Portland, Maine, the terminus of the Montreal/Portland Pipeline. For comparison purposes, Worldscale rates have been converted into dollar terms in the trade Puerto la Cruz, Venezuela to Portland.

Canada Commerce computerizes mailing list

Actually, that headline is misleading. We have not yet put our mailing list on computer tape but we will be doing so in the near future. To assist us in getting this done we ask readers who change their address to send us an old address label along with the notification. The computer boffins assure us this will save a lot of time and the best way to do it is to rip off the entire back page of an old issue rather than trying to peel the label off.

Number please!

Somehow, a number of Department publications have incorrectly listed the telephone number of the Canadian Embassy in Helsinki, Finland. Charles Donley, Commercial Secretary in Helsinki, tells us the correct number is 11141. Other listings had dropped the last numeral one.

OUR MISTAKE

It has just been brought to our attention that the dates for the Semain du Cuir, a leather goods show to be held in Paris, France, were incorrectly listed in the trade fairs directory published in our January issue. The correct dates are September 6 to 9, rather than September 13 to 17. Our thanks to F.A. Glasser of Robson-Lang Leathers Limited, who is also president of the Tanners' Association, for spotting this error and telling us about it.

The charts on trade with Panama on page 12 of the February issue indicated that the figures were in millions of dollars. This was not correct — the statistics should have read in thousands of dollars.

Water and sewerage in Kabul

Canada will finance the design of the most urgently needed sections of a water and sewerage in Kabul, the capital of Afghanistan. The Canadian International Development Agency will provide the World Health Organization (WHO) with a grant of up to $1.1 million to complete the engineering design of the first part of a three-phase, $90 million project that will improve general levels of public health among Kabul's 500,000 people. By 1979, phase one will bring covered sewers to the oldest and most densely populated part of the city, and will also create a water reservoir to allow 24 hour-a-day water supply. By the year 2005, Kabul is to have a completed system.

The Toronto firm of Procter & Redfern International Limited, selected earlier by WHO to create the master plan for the whole project, is again being retained by the UN agency for the phase one detailed design work.

Warning

The following first appeared in *The Bulletin*, published by the Government of West Germany, under the headline "Warning from Berlin; Humanity Itself Can Alter World's Climate":

Fluctations in the Earth's climate can only be explained in part by such features as volcanic dust or Antarctic ice, Bonn meteorologist Professor Hermann Flohn told the Physics Association's spring congress in Berlin.

Man too can cause worldwide climatic changes through the growing production of energy, the reshaping of the Earth's surface, the destruction of vegetation and the spread of industrial waste gases. But Man bears little of the responsibility for climatic changes in the past ten years, the Professor claimed.

At the same time he warned of the consequences of increasing fluctuation, as they could prove fateful. Studies conducted at the Berlin Institute have backed up his theory of an increase in weather anomalies which could have a serious effect on agriculture.

Asked whether our climate was heading for a new ice age, Professor Flohn said decisively that it was not. The reverse was more likely to be true. He thought that climate zones would spread north if the ideology of growth continued to gain support and if the population explosion were not stopped. The consequences would become obvious in the second half of the 21st century.

Spec writers gather

The Specification Writers Association of Canada is holding its annual convention in Winnipeg June 17, 18 and 19. At the convention the Association will formally become Construction Specification Canada in order to more broadly represent its membership.

Members are drawn from all sectors of both the design professions and construction fields — contractors, subcontractors, trade and manufacturing groups, not just as the name might imply — professional specification writers. The Association is also to form a Construction Specification Foundation to tackle the problems of design-construct still facing the pro-

fessions and industry. Theme of the convention is "United we go" — meaning for example — United we go metric, united we go in one voice and so on. . .

While the Association has worked diligently in its 21-year history to help solve the disarray between the design and construction sides of the fence, there are still problems to be resolved for the last quarter of the century. The convention should help in achieving this goal.

Canada / EEC Agreement

Negotiations between Canada and the European Economic Community, arising out of the entry of Britain, Ireland and Denmark to the EEC, have let to agreement on a number of trade matters. The purpose of the talks, which began in Geneva, Switzerland more than two years ago, was to agree on a package of trade concessions to compensate Canada for the loss or impairment of certain of Canada's GATT rights to previously-negotiated tariff rates in the three new members of the EEC. The agreement covered a number of products important to Canada, including newsprint, plywood, cheddar cheese, and canned and frozen salmon.

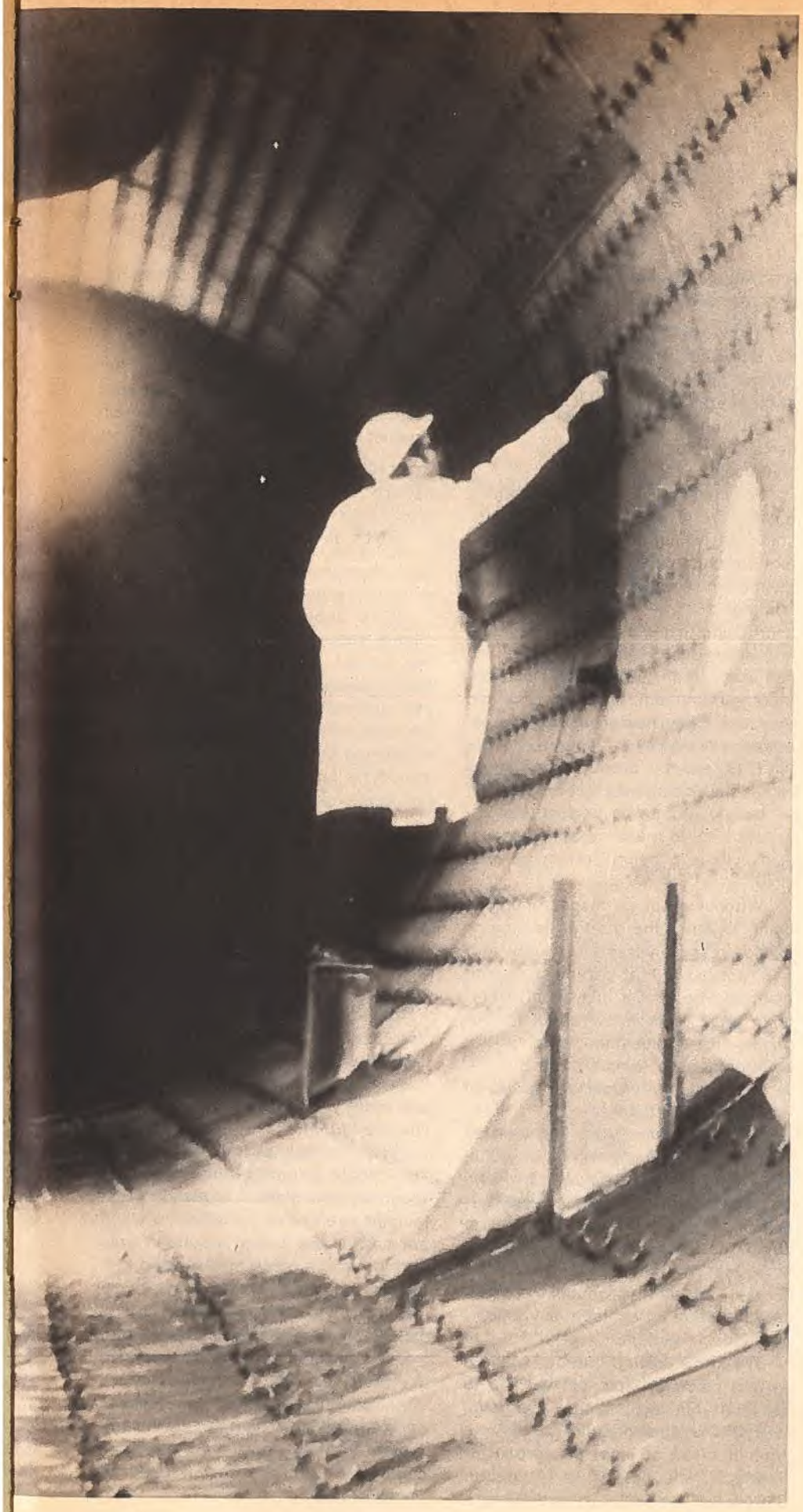
Salmon had enjoyed free entry to Britain but was facing a Common External Tariff of 13 percent for canned salmon and 8 percent for frozen salmon. The phase-in of these rates for imports by Britain had already begun. Under the agreement the Common External Tariff for canned salmon will be reduced to 10 percent, effective January 1, 1975 and to 7 percent, effective January 1, 1976. The CET for frozen salmon is reduced to 4 percent, effective January 1, 1975.

Telecopier installed at IT&C HQ

ITC's Telecommunications Section recently completed installation of Xerox 410 telecopier equipment at the Department's headquarters in Ottawa. This means IT&C is now able to send and receive facsimiles of documents and other important material which cannot be transmitted by conventional Telex facilities. Readers of *Canada Commerce* whose organizations have compatible equipment are invited to take advantage of the new facilities. The number to dial is (613) 997-3573. The equipment is in operation 24 hours a day.

Next Month in Canada Commerce

How oil has tranformed the economies of the Gulf States;
The growth of Somalia into a potential horn of plenty;
Keeping tradition alive in a small Ontario cheese factory;
A computer expert examines the plugged-in society.



Tottrup +Associates: expanding their horizons

Pipeline builders across Canada have no trouble telling what the letters T&A stand for and these initials, stencilled on pipes and other structural products, are becoming increasingly familiar to industry around the world.

T&A — Tottrup & Associates Ltd. — a firm of Edmonton-based consulting engineers started back in 1960 by specializing in line pipe inspections. Today, company officials claim that "90 per cent of the pipeline produced in Canada in recent years has been inspected by T&A."

The firm has offices or affiliations in North America, Western Europe and Japan, staffed by about 300 full-time employees. It now offers not only inspection of pipe, pipe fabrication and pipeline construction but also ensures high standards in pressure vessels, plastics, heavy machinery, electrical equipment, forest products, marine equipment, vehicles, and shipping and loading procedures. Other services include laboratory testing, metallurgical consulting, specification writing, feasibility studies and insurance investigation.

Aage F. Tottrup and Frank C. LaRose started T&A when it became evident that pipe users in Western Canada were not happy with the inspection services available at the time. Between them, Tottrup and LaRose had considerable expertise in engineering and inspection and felt sure they could give more value for the dollar than was being given.

Taking advantage of the shortcomings of other firms and making sure they did things the way customers wanted them done, Tottrup & Associates acquired an enviable reputation in Alberta, British Columbia and Saskatchewan in only a couple of years. By 1964, just four years after putting out their shingle, one of T&A's clients awarded them a job that enabled their operations to expand to Eastern Canada. That was where the real action was as far as pipe and tube making were concerned and T&A moved right in. They have, as the saying goes, never looked back. In an interview in Edmonton, Mr. LaRose talked about the company's remarkable success and how it was achieved.

You seem to attract a lot of repeat business and a great deal of word-of-mouth promotion. What's the basic reason for that?

Well, we don't keep companies with us just because we've had their business for a number of years. We maintain this business because nobody's come along who can do the job the way we do it. At least, that's what our clients tell us. They get the same quality of work on their latest projects that they got when they first came to us.

We employ a particular philosophy in getting this repeat business and that is, every time we get a job, no matter how many we've done for that client, we are still proving ourselves to him as far as we're concerned. It's as simple as this — if we make a mistake, somebody else is going to take up

Alright then, what are some of specific things that make your services special?

All industrial material is purchased to a basic specification but that doesn't give any particular guarantee of its overall quality. All it says is that the manufacturer has made it in a certain fashion and that it has been given certain tests.

For example, if you're talking about line pipe, it's given a hydrostatic test which means it's subjected to a certain level of water pressure for maybe ten seconds — but that's really nothing. In the field, the stand-up hydrostatic test is usually for 24 hours and at an even higher pressure. I do not make that statement to suggest that the manufacturers only make that one test. They make all that are required and usually a lot more. People tend to expect products made by reputable companies to be "perfect" — but no product is perfect. Our inspectors try to make sure the product is as close to being perfect as possible.

When we put an inspector into a plant, whether the product is pipe or exotic pressure vessels, we know that he's worked in that particular type of plant and he knows just about everything there is to know about it. Our people are tradesmen who've not been content to remain tradesmen — they've become practical experts in their respective fields.

They go into a plant and can tell whether a manufacturer is doing things correctly, whether the end product is going to be the best possible or barely able to meet minimum standards. Our people spend a lot of time with the manufacturer before, during and after production to encourage him to achieve as good a product as he can.

We know that no one can make a perfect piece of pipe, but we like to get them thinking that they are going to try. If a specification calls for a product to be at least 90 percent of "perfect", that leaves a 10 percent margin that we like to try and cut by at least 50 percent. You'd be surprised how you can go into a plant talking sensibly and knowledgeably to the management, maybe even suggesting some corrections, and have them be perfectly willing to make improvements in order to get a better finished product.

In a sense, you're giving the manufacturer a free service while guaranteeing your client top-quality material?

That's absolutely right.

And your inspections can actually save both sides a lot of money.

Well, hopefully we're saving our clients the money because they're the people who suffer in the end. Manufacturers generally put a one-year guarantee on the kind of products we deal with and our aim is to get something out of them that isn't going to last for just a year. You want it to last forever — if there is such a thing!

To be perfectly honest, we've been involved in projects that have caused clients problems, but we have always been on the front steps to work with them and the manufacturers in seeking out the solution to the problems. The result is that after more than 14 years in business, we don't have a "red face" anywhere.

You seem to employ people who aren't satisfied with the status quo, as it were. How do you find these people and once you've found them, how do you keep them?

Well, I guess we found a lot of our key people primarily through me — when we first started up. Back then, I didn't even have an office to sit in because I was never around; I was always out on some job. And I'd talk to the tradesmen in the plants I was inspecting — some of them were dissatisfied just working in a plant and were attracted by the way we operated.

Mind you, we didn't hire just anybody I talked to. The people we wanted had to really know what they were doing; had to have something special going for them.

We've had people from all over the world working for us, and still do. At one time we looked like the United Nations with Europeans, Asians, Africans — everybody. Some of our best people have been with us for over 10 years. Those are the ones that have been the backbone of the company in our pipe inspection endeavours. The recognition we now have is certainly due to their continued efforts. Mind you, we have acquired some new hands that will never have to take a back seat to anyone. The sum total of the knowledge of these people is second to none. If we were to single them all out to give them credit in this article, I'm afraid that your editors would find themselves printing continuing chapters.

Also, we're able to attract the cream of the crop because the pay is tops, benefits are first-class and we try to make working conditions as pleasant as possible.

What about your competition? Where does most of it come from?

Well, the main competitor on an international scale has got to be Lloyd's — they're just everywhere. But they're also a client from time to time. We run into competition from local firms in every area we're working in and in Japan it's particularly rough. There, it's just absolutely unheard of to operate completely as an independent, without any Japanese involvement.

And we have a Japanese associate who owns no part of our business but acts as our labour contractor, hiring the locals who work under the supervisory personnel we send from here. Depending on the nature of the job, we could have up to a half-dozen of our supervisory people over there and the rest would be Japanese hired by our associate.

In Canada, there's all kinds of competition. For instance, we're not particularly strong in Vancouver, where there are many other firms. We do about one-tenth the business in Vancouver that we do in Edmonton, where we dominate. We're also strong in Calgary and while there used to be three or four firms in Regina I haven't heard much from them since we opened our office there.

I don't know how many companies there are in Toronto, but there are an awful lot of them. And then the United States is still another game. We opened an office in Houston a year ago and while there are a lot of big companies, there are more one-man operations than you can possibly shake a stick at. But we've capitalized on that by making arrangements with a lot of these independents to do work for us and the result is, we have as much coverage in the U.S. as many bigger competitors.

What about promotion? How much of your business is the result of word-of-mouth?

Oh, I'd say about 30 per cent in any given year. Most of the rest is repeat business.

Do you put out much promotional literature?

We have some very good brochures and requests for information from potential clients are dealt with as completely as possible.

Is language a problem when you work abroad? What about translating specifications and other technical material?

We've found that 99 per cent of the time, the language of work in our business is English, even in countries like Japan. There's hardly a place in Japan where you can't make yourself understood in English. Once, we translated some material into French for a trade fair in Algiers and after a great deal of effort we sent off our brochures, only to have them lost in the mail. When they finally turned up on our doorstep again, it was too late for the fair so we distributed them to potential clients in Quebec.

What are your company's plans for the future? Have you set some goal for, say, five years from now?

In five years I would like to see us in as strong a position in the U.S. and Europe as we're in here at home. We'll never be as big as a company like Lloyd's, at least not in my lifetime, but I think we can be as successful in other parts of the world as we are in Canada.

Do you think you'll be able to reach that stage by continuing to operate much as you do now, or will there be changes?

We must maintain the quality of our work. If we can't do that, we might as well give up. There will always be changes but our success depends greatly on the people we have working with us. Not too many years ago an inspector justified his existance by telling the client that he had rejected substancial quantities of a manufacturer's production. To operate on that philosophy today would cause the end user great anguish. Our objective now must be to work with the manufacturers — not comprising ourselves — but endeavouring to assist them in achieving a finished product that does not have to be rejected.

What T&A Does

Assignments carried out by the firm's personnel have included inspection and expedition of pressure vessels, reactors, boilers and heat exchangers; high-pressure gas and oil pipe and pipelines; electrical equipment and instrumentation; rotating, reciprocating and general industrial machinery; diesel electric locomotives, railway rolling stock, steel rail and related track components; mill and mining equipment; construction and agricultural machinery; structural fabrications, including deep-sea drilling rigs, bridges and buildings; and various other materials and equipment.

T&A's inspection services consist of independent, impartial checks of manufacturers' or suppliers' products to ensure that all requirements of the purchase order, customer's specifications, as well as national codes and standards, are fulfilled.

The firm's expediting services consist of an assessment of a sup-

plier's facilities and manufacturing practices to determine whether delivery can be completed on schedule. The actual production is then monitored to ensure that order progress is as scheduled. All expediting functions include actual, physical verification of reference materials or equipment to ensure the validity of a supplier's verbal advice and applicable documentation.

Where the inspection or expediting is to be conducted on a multi-supplier or multi-location basis, T&A can provide supervisory personnel to co-ordinate the services on a project-management basis. In addition, services such as plant evaluation surveys and insurance investigations are available from all offices. Services include preparation of comprehensive reports for clients at intervals they may specify.

Tottrup & Associates Ltd. has offices in Edmonton, Calgary, Vancouver, Regina, Toronto, Welland, Montreal, Tokyo, London, Frankfurt and Houston, with all offices connected by Telex.

Gaining an edge with quality

C.P. McPHERSON, Director, Nova Scotia Region, Department of Industry, Trade and Commerce

"A good knife is the outdoor man's number one item of equipment," says Michael Babinec, manager of Grohmann Knives of Pictou, Nova Scotia, "and I demand absolute perfection before selling one." With that philosophy it is not surprising that Grohmann Knives has won design awards and international acclaim from hunters and trappers for the superlative hunting knife that has become the firm's best-selling product. The company has added kitchen and household knives to its line and these too are gaining widespread recognition for their superior qualities.

Twenty-five years ago, Rudolph Grohmann brought his skills in cutlery craftsmanship to Canada. For a short time he headed up a cutlery firm in Pictou but it closed its operation, leaving the new Canadian out of work. Undaunted, Mr. Grohmann and his son-in-law, Michael Babinec, set up shop in a small garage. Using an old sewing machine rigged for a grinding wheel and an ingenious gadget to drill and countersink three holes simultaneously in knife handles, they launched themselves into business. Today, Grohmann Knives occupies spacious quarters in a new building and even though the founder has retired from active participation he keeps a workbench reserved and drops in occasionally to offer welcomed advice and to keep a paternal eye on the operation.

The first success was the Russell belt knife, designed by Deane H. Russell of Ottawa and field tested by hunters under practical outdoor conditions. Three more models were added: the Trout and Bird knife, the Boat knife, and the Survival knife which is rugged, dependable and meets armed forces survival training specifications.

There were many types of sports knives on the market but Mr. Grohmann believed that a product of the highest quality could compete. He set rigid standards of excellence, selecting only the best materials and personally supervising the 32 separate operations involved in making a complete knife. Some of the work utilizes machines but each knife is an individual production starting with the least-skilled operator and progressing into the hands of the plant's top craftsmen.

Quality has its beginning in the materials used. Thin rolled stainless steel comes from Germany and Sweden. German stainless steel will not rust and is ideal for blades. Canadian high carbon steel is used for the heavier, more rugged knife which is capable of shearing a three-inch nail without damage to the blade's cutting edge.

All knives must pass a severe quality control test to ensure the hardness and durability of the blades. On the Rockwell C Scale, a competitor's knife, which seemed to be a quality product, tested out at only 8 in hardness while the Grohmann Survival knife tested at 57 — about the ultimate in hardness possible for a knife. It was explained that a rating of 60 or more would make the blade too brittle and subject to breaking if dropped on a hard surface. The handles are made of highly polished rosewood and fixed to the knife with nickel silver rivets which make them almost indestructible.

In its new quarters, Grohmann Knives has steadily expanded its production capacity and doubled its work force to meet the growing world demand. The firm also produces kitchen and household knives, including steak knives, to the same high quality of its hunting knives.

A tour of the plant provides some insight into the amount of time, effort and sheer artistry that go into the making of a product many people tend to take for granted. Pride of workmanship extends even to the short demonstration Mr. Babinec gives to show potential users the correct way to sharpen a Grohmann knife, because even this best of blades can be damaged by ill treatment.

The firm is forging ahead with plans to expand its already growing markets and is receiving assistance from the Nova Scotia Regional Office of the Department of Industry, Trade and Commerce in pursuing these goals. For more information about Grohmann Knives or about how the Department can assist you in Nova Scotia, write to Department of Industry, Trade and Commerce, Suite 1124, Duke Tower, Scotia Square, Halifax, Nova Scotia.

First Twin Otters in Iran

The National Iranian Oil Company recently purchased two Series 300 Twin Otters for support of oil operations in the South of Iran. The aircraft are operated by the Oil Service Company of Iran on behalf of NIOC from their bases in Abadan and Ahwaz and provide air support to the oil production and drilling operations throughout the extensive oil fields of Iran. NIOC becomes the first Twin Otter operator in Iran and the 26th oil company to select the type for its aviation support operations.

The first NIOC Twin Otter went into service in October 1974 and logged over 500 hours flight time by the end of January 1975. Short dirt trips are being used at new drilling sights. The Twin Otter uses intermediate flotation gear (special over-size tires) during the winter months to combat the rains. On one recent occasion the truck brought up to transport the personnel and equipment delivered by the Twin Otter became bogged down on the landing strip. The Twin Otter was, however, able to taxi up to the truck and depart normally while efforts continued to release the truck.

The second Twin Otter is scheduled for delivery in June.

Designed to be used

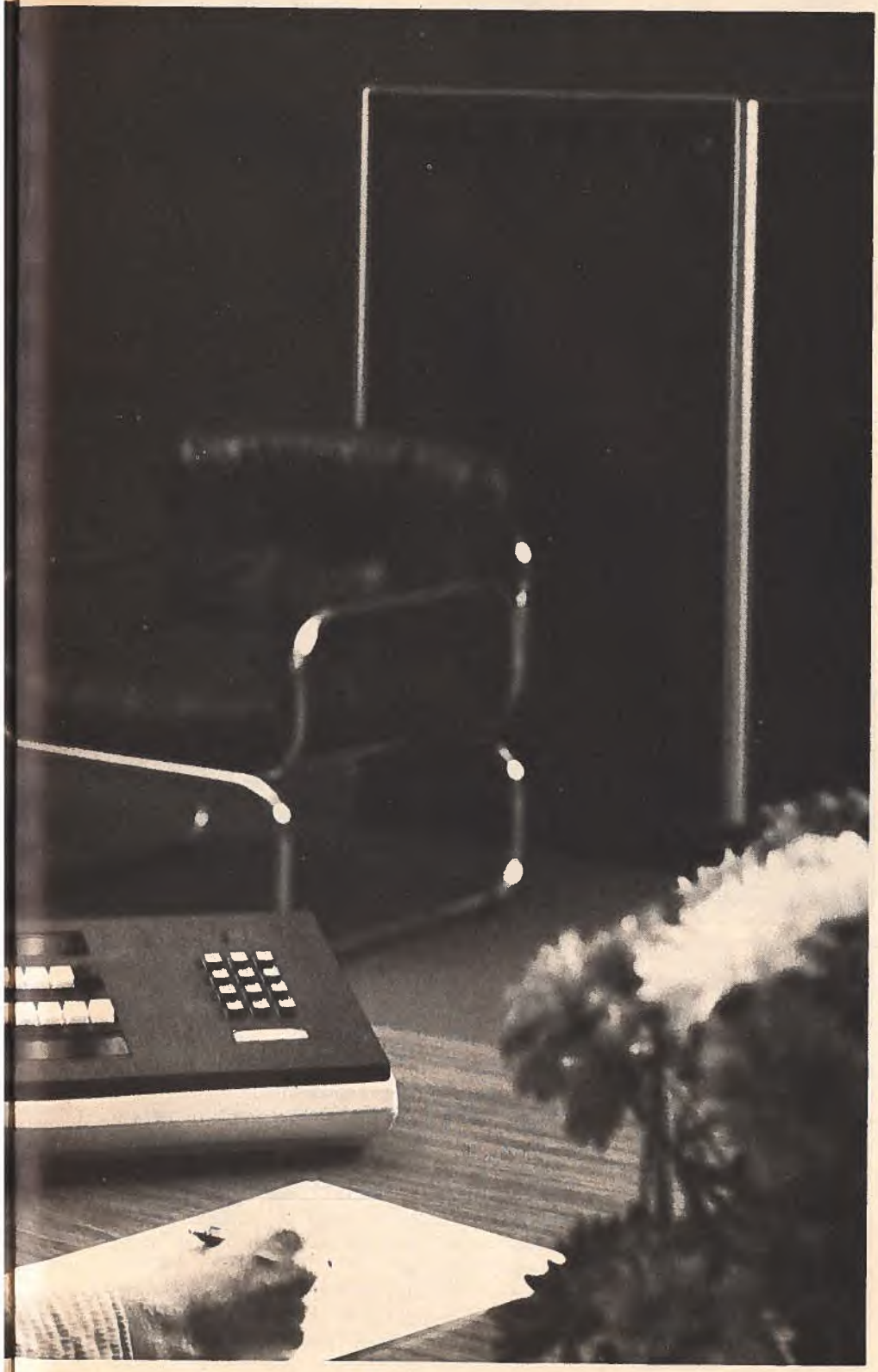
It must be considered a mark of the success of Northern Electric — a company some people used to call Canada's sleeping industrial giant — that the firm led all participating manufacturers at a major design exhibition in Ottawa in 1974.

The exhibition, called "designed to be used" and staged at the National Museum of Science and Technology, depicted products from 40 different Canadian manufacturers. Products shown are available in Canada as well as in many foreign markets around the world.

Of more than 140 products presented to a selection committee for display, only 52 were chosen, and Northern Electric had four on display, more than any other single manufacturer. All the Northern Electric products were designed and developed by Bell-Northern Research laboratories, Canada's largest private industrial research and development organization which is jointly owned by Bell Canada and Northern Electric.

The exhibition — produced by the Office of Design, Department of Industry, Trade and Commerce, in cooperation with the National Museum of Science and Technology — was staged to give the consumer a better appreciation of the importance of design in the total makeup of a product. It showed that design can mean a great deal in successfully marketing a product. And it encouraged other Canadian manufacturers to profit by making design a major part of their manufacturing considerations.

For Northern Electric, the exhibition was further recognition that its work in telecommunications is pacesetting not only in Canada but in the highly-competitive international arena. And the four products it displayed in Ottawa have been finding increasingly-larger markets in North America, Europe, the Caribbean and Asia. On display were the Logic family of business telephones, the Centurion vandal-proof coin telephone set, the Venture 1 noise-free headset, and the



buried peg locator, a device which detects pegs attached to underground cables which would be difficult to find otherwise.

The formula for Northern Electric's growing achievements at home and abroad can be summed up in the words of John Tyson, director of design interpretive at Bell-Northern Research (BNR). The designer of the award-winning Contempra telephone set — it's now used in 37 countries — says "it is up to us to try to match the consumer's need with the manufacturer's need, and with the distributor's need, and bring about a product that best satisfies all the requirements."

To Tyson, and in many respects to the Bell-Canada-Northern Electric-BNR family, industrial design really is problem solving. "It is a matter of

taking given technology and matching it to the consumer, the market place and the manufacturer by trying to draw on information from these areas, so that you can develop a product concept that will best meet the requirements of providing the consumer with added utility. The designer's role is to be a strategic link between the consumer and the technology," says Tyson.

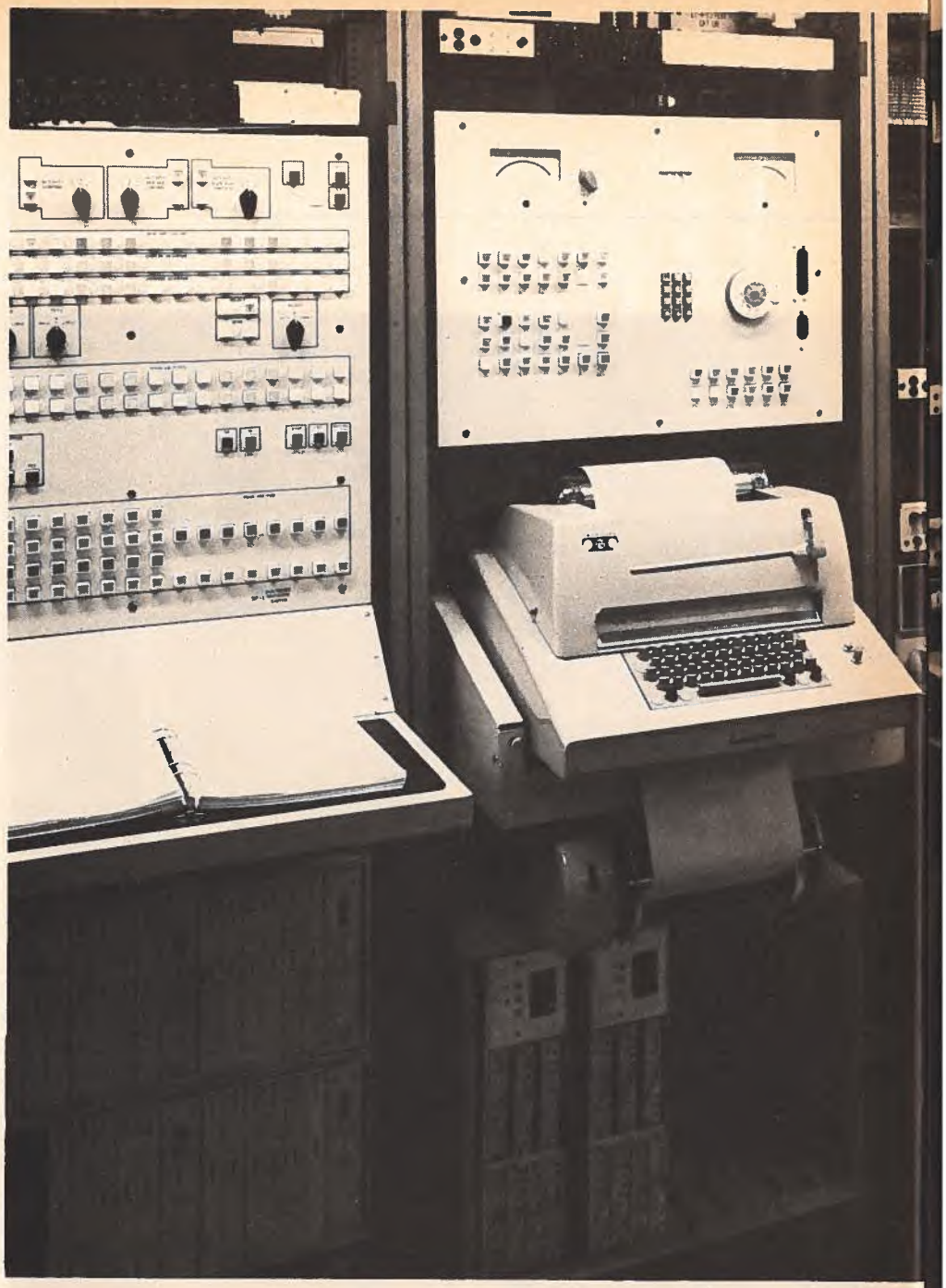
Recognizing that "strategic link" in a relatively short period of time has moved Northern Electric, a subsidiary of Bell Canada, into the top rank of telecommunications manufacturers. It has come about because of a major commitment to research and development — and design is endemic to the field. In 1974, Northern Electric spent more than $40 million on R & D, some 23 per cent more than in 1973.

Mr. Walter Light, President of Northern Electric, says that most of the effort is devoted to research into the viability and development of products and systems which the marketing people at Northern Electric and the marketing and technical people in the telephone companies recommend. He says there is continuous contact among the operating telephone company, marketing, manufacturing and research areas through a series of R & D committees set up on a product basis.

"This ensures," he says, "that the research personnel are continuously aware of the market needs and changes, that marketing is aware of the research potential and probabilities and that manufacturing is, at all times, aware of and concerned with the demands that will be made of it when the product is developed."

R & D, says Mr. Light, is being expanded as fast as manpower and funds permit. BNR also is moving into a new era as part of a planned approach that will eventually give it a worldwide R & D structure.

"We expect to be in a position," says Mr. Light, "to be able to develop, modify and design products specifically for international markets where there is a demand that cannot be met by products we design for universal use."

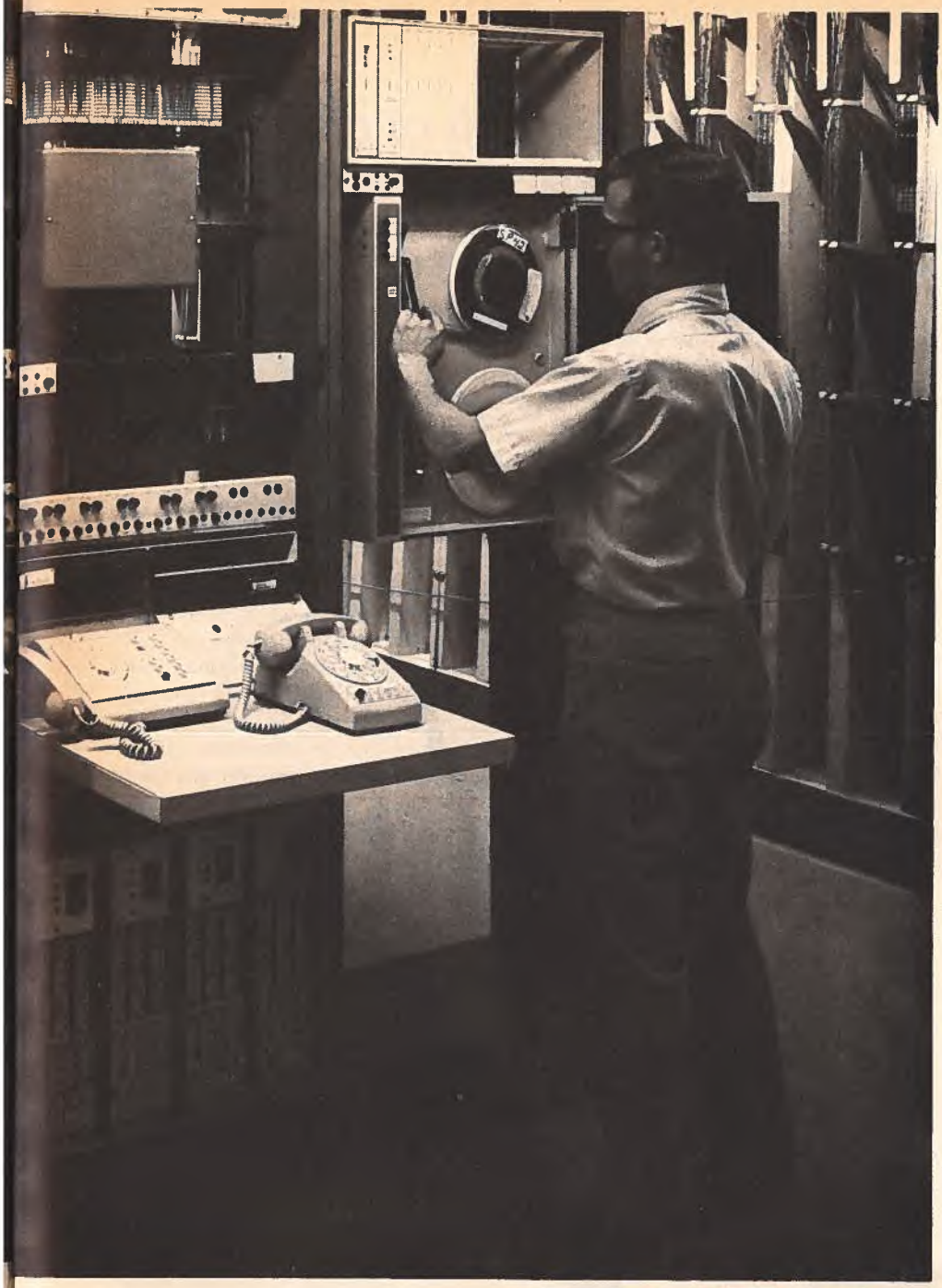


"I would imagine the best proof of any R & D program is not the number of products developed, but the level of sales of proprietary products as a percentage of total sales. Because of past associations and agreements there was for many years no great incentive for Northern Electric to develop proprietary products — we had on tap the rights to the products being developed by Bell Labs and Western Electric in the U.S.

"Our new posture and objectives make it imperative that we develop a strong line of proprietary products that we can market or licence throughout the world. We have already made significant advances.

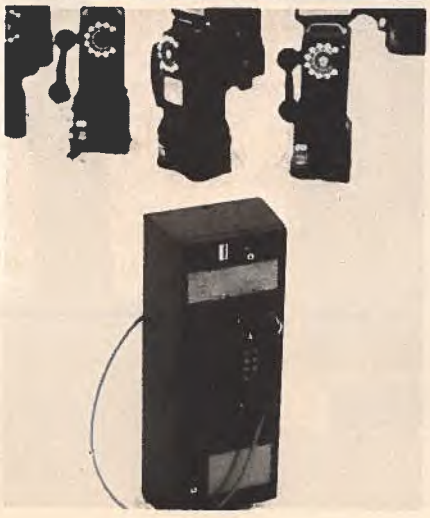
"In 1969, the percentage of our total sales represented by proprietary products was six per cent. In 1974 it was 40 per cent of a sales volume that was almost twice as large as that of 1969. In 1977, we expect our proprietary products to account for 60 per cent of an even larger sales volume."

Sales by Northern Electric and its subsidiaries in 1974 were in excess of $950 million, compared to $613 mil-



lion in 1973. In 1967 sales totalled $403 million. New earnings have increased from $2.3 million in 1967 to more than $50 million in 1973, a respectable jump by anyone's estimation.

While maintaining its position as Canada's largest telecommunications manufacturer, Northern Electric now has manufacturing subsidiaries in the United States, Turkey, Ireland and Malaysia. The U.S. operation, through Northern Telecom Inc., last year had sales in excess of $90 million. There also are purchasing operations in Hong Kong and Singapore and marketing operations in Continental Europe. Indeed, Amsterdam, the heart of the European Common Market, is the headquarters of Northern Electric (Europe) N.V., which coordinates the company's activities throughout Europe.



Amsterdam, in fact, now holds one of the most comprehensive displays of Northern Electric products. The permanent exhibit — flexible enough to incorporate new products as they become available — is a European showcase of company achievements in designed-to-be-used telecommunications products.

Northern Electric, with headquarters in Montreal, employs about 27,000 people around the world but fewer than 30 people are involved in John Tyson's design interpretive group at BNR in Ottawa, yet they comprise psychologists, engineers, statistical methods experts, industrial designers and prototype exploration personnel. That small group plays a significant role in the development of products.

Says Tyson: "The designer translates technology, marketing facts, behavioral studies, and manufacturing procedures. Each of those is, in essence, a separate language. The designer translates them into a language which is not only common to them, but which is clear, meaningful and satisfactory to the consumer and to the distributor or retailer."

The design group played an important role in extending the family of SP-1 telephone switching systems, systems that are creating growing recognition among independent telephone companies in the U.S. for Northern Electric.

The SP-1 is a stored-program electronic switching system that is usable virtually anywhere, but is best suited to medium-sized communities. It is flexible, adaptable, with reasonably easy installation and maintenance, and above all is economical. An attractive option, in which the design group was deeply involved, is TOPS (traffic operator position system). TOPS allows the telephone

operator to perform the job while seated comfortably in front of a visual information screen and keyboard. It incorporates privacy and silence and calls are handled more simply and efficiently.

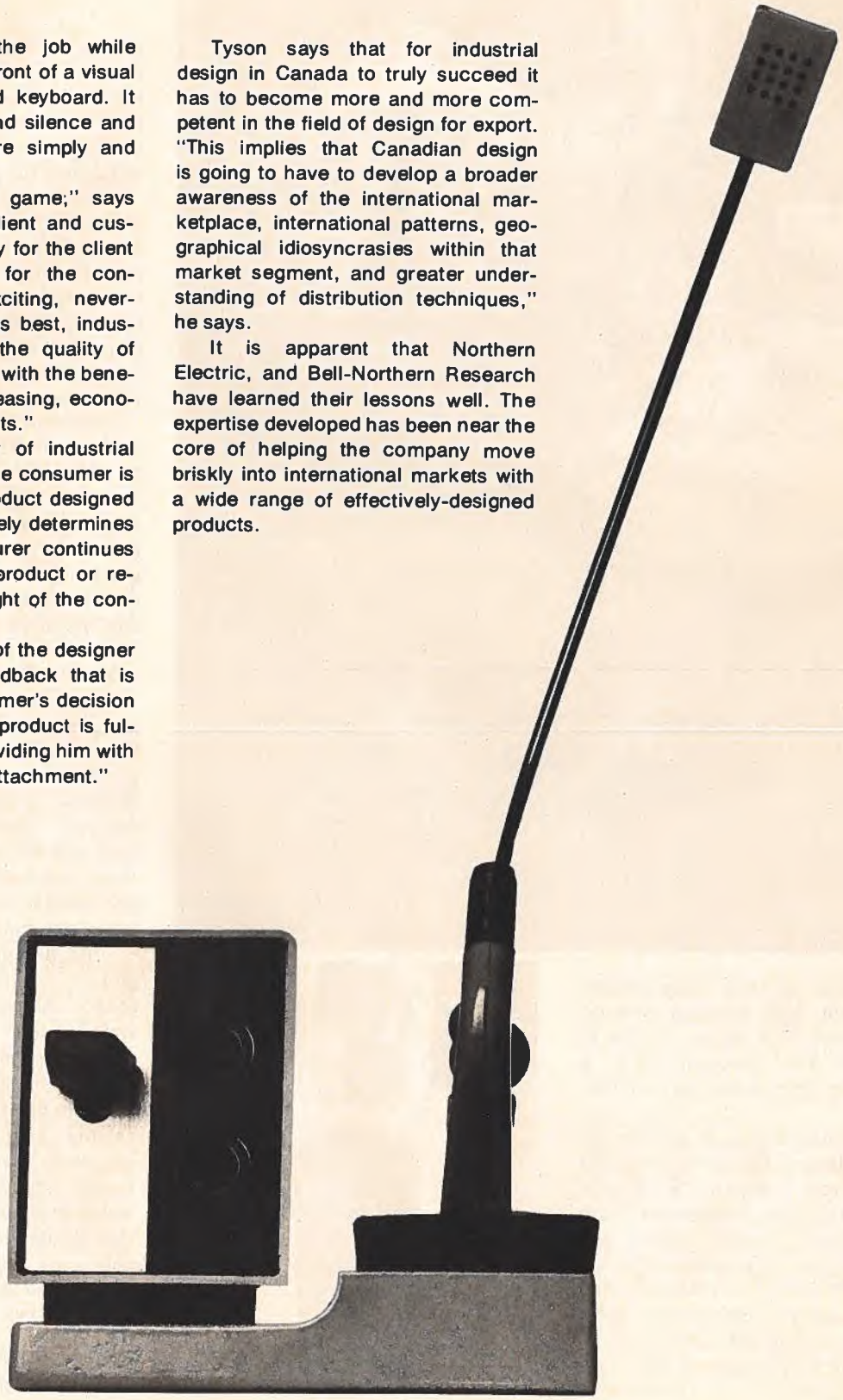
"The name of the game;" says Tyson, "is to satisfy client and customer by making money for the client through good design for the consumer. This is an exciting, never-ending challenge. At its best, industrial design improves the quality of life by providing society with the benefits of technology in pleasing, economical and useful products."

Jim Bee, manager of industrial design at BNR, says "the consumer is the final user of the product designed . . . It is he who ultimately determines whether the manufacturer continues to produce the same product or reviews the product in light of the consumer's response to it.

"The responsibility of the designer is to listen to the feedback that is generated by the consumer's decision . . . as to whether the product is fulfilling his needs and providing him with service and emotional attachment."

Tyson says that for industrial design in Canada to truly succeed it has to become more and more competent in the field of design for export. "This implies that Canadian design is going to have to develop a broader awareness of the international marketplace, international patterns, geographical idiosyncrasies within that market segment, and greater understanding of distribution techniques," he says.

It is apparent that Northern Electric, and Bell-Northern Research have learned their lessons well. The expertise developed has been near the core of helping the company move briskly into international markets with a wide range of effectively-designed products.



Something to think about: de-marketing- selling concept for an age of shortages

ROBERT SCHETAGNE, French Language Service, Office of Information and Public Relations, Department of Industry, Trade and Commerce

"De-marketing is that aspect of marketing that deals with discouraging customers in general, or a certain class of customer in particular, on either a temporary or permanent basis." Philip Kotler and Sidney J. Levy

The start of the recession we seem to be experiencing and the dim economic prospects predicted by many for 1975, are prompting many producers to take more interest in the unheralded art of de-marketing. The introduction of many business persons to this intriguing concept came from two Northwestern University professors writing in *Harvard Business Review*. Philip Kotler and Sidney J. Levy called their article "De-marketing, Yes, De-marketing", and at first reading they seem to be advocating a negation of the activities marketing people normally indulge in.

But consider Kotler's definition of those activities: "Marketing is making profits by satisfying consumers." Sounds simple enough, but there is more to this than is apparent. Marketing is a philosophy that pervades industry, from product design, to delivery to the retail outlet. It has become the guiding star of most private enterprise.

The usual way to achieve profits is to stimulate demand through advertising and other promotion. But according to Kotler and Levy, de-marketing has the same goal; to make profits and to satisfy the consumer — but it also seeks to reduce demand, a very desirable thing these days. The cumulative effect of shortages of textiles, paper, glass, metals, chemicals and other materials, and of the energy crisis, has been to direct producers toward a reduction of demand. Facing serious supply problems, they see de-marketing as a means by which they can ration their resources and still make money.

De-marketing may be called for if demand exceeds supply of a manufactured product; if a service proves too popular; if a certain type of customer is undesirable; or if a product or service becomes obsolete and is about to be phased out.

Kotler and Levy point out that the marketing people have quite a bag of tricks at their disposal in the demand-versus-supply situation. They can tone down advertising and other promotion; steer salesmen towards promoting other products; raise prices and eliminate discounts; downgrade product quality; and curtail customer service.

Tourist operators know how to reduce demand on their services and attract a higher class of clientele. Hordes of tourists may invade certain popular areas but not all of them may be wanted. The industry counters with advertising that appeals only to the most affluent persons, thus discouraging less well-heeled travellers and reducing the influx. Then the industry can concentrate on a smaller clientele that involves fewer logistical problems and actually will leave more money behind.

Hotels can get rid of customers they do not want. They seek to avoid long hair, beards and blue jeans, perhaps, in order to attract a choice clientele and, as they see it, protect the reputation of the house. This is done by continuing to provide services but making sure that they are performed in second-rate fashion; by giving the undesireables less comfortable rooms and by generally making it obvious that the cold-shoulder treatment is in effect.

A rather different game is de-marketing to create demand. Some companies will intimate to their customers that they are less interested in selling certain products and really do not want any more buyers. This often has the effect of making the products in question even more desireable. This method in particular has been practiced by small art galleries and handicrafts boutiques where the artist has been working in the back room, actually very interested in selling as much as possible.

However, legitimate as its use may be in some cases, de-marketing raises some serious questions about ethics. It can result in unfair treatment of persons of inferior social status or different racial backgrounds and the injustice can cause even more harm if the person discriminated against has no alternative. The free enterprise system is constantly under fire and de-marketing techniques will have to be applied with more than a token acknowledgement of ethics. Otherwise, the cynical consumer may change Kotler's definition to something like this: "Marketing is making profits by too often leaving the consumer unsatisfied."

The challenge of conserving energy

BLAISE DOWNEY, Energy, Mines and Resources Canada

The energy crisis of 1973 was something like a mild heart attack — a warning to the patient to slow down and change some of his behaviour patterns before it is too late.

Throughout its history, Canada has always had a bountiful supply of relatively inexpensive energy. Spendthrift fashion, we have been expending this abundance to the limit with little thought of making provision for tomorrow. Suddenly we have become uneasily aware that the days of cheap energy are over.

There are optimists who continue to insist that we have nothing to worry about, that the winter of 1973 was just a temporary scare, that Canada has abundant untapped energy sources — and anyway, before these are used up, scientists and the government will have come up with alternate sources of energy. Magic solutions like nuclear power, solar energy and methods of harnessing the tides and winds are talked about.

The fact is, there are no magic solutions. These optimists are right as far as they go, but the trouble is they do not go very far. Canada may be well supplied, but for how long? Beyond the next three to five years, there will be serious oil and gas supply problems coupled with spiralling inflation of costs as we are forced to seek these resources in almost inaccessible places and from unconventional sources.

Another factor is that Canada, long spoiled by abundance, has been wasting energy at an unbelievable rate. Paradoxically, this gives grounds for real hope, rather than blue-sky optimism. Because waste is something we can do something about — not only can, but must. If wasteful transportation methods are allowed to continue, if over-heated and inadequately insulated buildings continue to be tolerated, the future problems of discovering and paying for new sources of energy will be that much more difficult.

It has been estimated that just to build the electric generating plants, oil and gas wells, coal mines and delivery systems sufficient to maintain the present rate of increase in Canadian energy consumption over the next 10 years will amount to around $107 billion. This works out to about $20,000 for every household, over and above the ongoing and probably sharply rising costs of paying for existing supplies of energy. Whatever savings can be achieved by intelligent conservation, starting immediately, will pare millions if not billions of dollars off this staggering financial burden, by lowering future demand.

Industry and commerce account for approximately 48 per cent of total energy consumption in Canada today. If that portion of transportation required to support these activities is added, then industrial and commercial users account for almost 60 per cent of consumption. Thus, while in no way singling out industry as a villain, much less absolving private individual users of energy from the need to conserve, it is evident that elimination of wasteful energy practices in industry and devising ways of more efficiently using existing supplies will have a significant effect on total demand.

Confronted with the double jeopardy of insufficient fuels and of doubling or tripling the costs of both fuel and power, industry must reexamine the entire basis and economic viability of each process and every plant. The more energy an industry or process demands, the more urgent the need for change. New plants must be built with maximum energy efficiency as a paramount factor. Existing facilities must be studied to find ways of operating with less energy. Otherwise, with less energy available and at much higher cost, manufacturers will be at a competitive disadvantage and some may have to close down, either because they will not be able to obtain the necessary energy or because their consumption of expensive energy will have priced them out of competition.

Companies undertaking energy conservation programs — and many have — are agreeably surprised to find unexpected ancillary benefits accruing from their efforts. Aside from preventing possible difficulties of continued operation if the fuel shortage becomes more severe, they have, in some cases, actually reduced production costs, making their products more competitive in domestic and world markets. Furthermore, by monitoring consumption and finding ways of extracting maximum efficiency from energy sources, considerable reductions in pollution have resulted.

Some of the steps taken by industries have been quite basic and involved little or no expense. Typical measures include tuning up plant equipment, more careful management practices in plant operation, monitoring and, where possible, reducing the use of lighting, heating and air conditioning. These measures do not interfere with production, nor do they reduce either the productivity or safety of employees.

The amount of fuel saved by such simple steps can be considerable. One company realized a saving in energy consumption of 15 per cent merely as a result of requiring a daily report of the energy used by each department in its plants. In other words, the simple fact of making employees energy-conscious and making energy a commodity to be accounted for just like any other raw material produced marked savings.

An important fuel saving was achieved by one small plant through careful loading-dock operations. Because of the large size of the products to be shipped, trucks had to come into the plant building to load. Frequently the large loading doors were left open while a truck parked for several hours in the doorway, allowing heated air

from the plant to escape for a prolonged period. The simple expedient of having trucks come right into the loading area and closing the doors cost nothing, but resulted in significant fuel savings.

In another instance, the first conservation measure was to replace several hundred broken windows. Heated or cooled air had been escaping for years and adding to the firm's air-conditioning bills and fuel consumption needlessly. This is just one of the many cases where measures that are little more than routine housekeeping can reap real and measurable benefits.

Dow Chemical Company of Canada, which has 12 manufacturing locations in Canada, has been concerned about conservation for some time. When building a new plant recently in Sarnia, Ontario, the company specified the installation of two gas-fired turbines for generation of electricity. The specifications called for a total energy system by which waste heat from the generating process is used to provide steam for the plant. The system is operating at an exceptionally high efficiency rate of 86 per cent; most utilities regard 35 or 40 per cent efficiency in generating stations as the maximum to be hoped for.

Not all such energy conservation programs take place in industrial plants. To cite just one example of how a commercial operation was able to save energy and fuel, let us look at the head office of Metropolitan Life Insurance Company in Ottawa. In 1973, the company spent $40,000 on fuel and $140,000 on electricity. Since then the price of fuel has jumped almost 150 per cent. But by comparatively simple means and heightened employee awareness of the need to conserve energy, the company has been able to cut its fuel consumption by 33.9 per cent, and the use of electricity by 14 per cent. Some of the measures taken included turning up heat in winter and air conditioning in summer closer to the working hours, trimming three hours off the time the heat circulating fans were running. Other steps included turning off all lights at night, and eliminating outdoor floodlighting.

Bell Canada has conducted an extensive program to bring conservation to the attention of building managers and also to employees in their everyday lives.

Industry's consumption of energy falls mainly into three areas; industrial processes, space heating or cooling, and transportation. In the first category, considerable savings have been achieved by such relatively inexpensive measures as insulating steam and hot liquid pipes, furnaces and other heated containers where possible. Some interesting research has been done on the closing of open heated storage vessels by floating plastic globes similar to ping-pong balls on top of the tanks — this has proven itself dramatically as an inexpensive energy-saver. Other savings can be obtained by improved scheduling techniques, so that energy-consuming processes, such as heat-treating equipment, are used to the optimum by efficient scheduling of loads and by keeping down-time to a minimum. Electricity can also be used most effectively if some use can be diverted to off-peak periods when voltage remains high but demand is less.

There is a vast area of potential in re-designing industrial processes to conserve energy. New cement kilns, for example, use far less energy than older ones. Similar approaches are needed for other primary and secondary commodities. Furthermore, the use of re-cycled materials rather than virgin ones can bring considerable energy savings for society in general as well as the particular industry.

Apart from certain industrial processes themselves, space heating and cooling are the greediest consumers of energy in industry. It has been estimated that as much as 40 per cent of the energy consumed for heating is wasted, so savings can be substantial. Insulation proves itself increasingly more effective in terms of cost as the price of fuels increases; thermostat settings can be reduced in most cases with a remarkable cut in fuel consumption. Every degree over 68° adds an estimated three per cent to fuel consumption. In most cases, warehouse temperatures could be reduced to 60° and local heating needs probably could be more efficiently met by using infrared lamps. Savings can also be obtained by reducing lighting because many areas — both those where work is going on and where it is not — are greatly overlit.

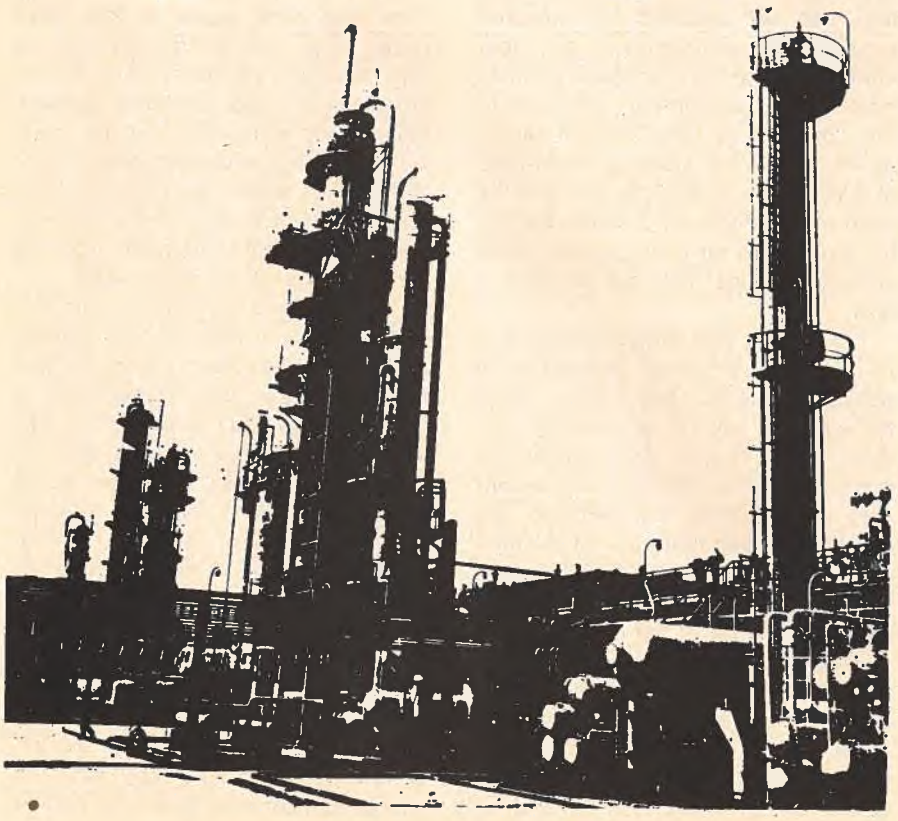
As for transportation — only a part of the conservation job can be achieved by industry. It starts at the purchasing end; don't buy larger vehicles than are required. Drivers employed by an industrial or commercial concern should be instructed in the need for fuel conservation and in the driving techniques to achieve this. Time and time again it has been shown that cars and trucks operate with maximum efficiency when motors are properly tuned, parts are replaced before they wear out, and tire pressures are kept at correct levels. Also, every effort should be made to have drivers reduce speeds on the highway and to consolidate shipments from the same location as far as possible.

To reinforce its support and encouragement to industry, the Federal Government has been putting its own house in order. The Department of Public Works, as "landlord" of millions of square feet of office space in all parts of Canada, has been active in finding ways to measure heating-fuel consumption and in "tuning" buildings to obtain the optimum efficient use of energy.

In one 10-storey Ottawa building, for example, computer monitoring of the building by a technique known as Energy Systems Analysis revealed considerable inefficiencies in the air-conditioning system; comparatively simple adjustments produced savings

worth about $100,000 in the first year. It is planned to apply energy systems analysis to all government buildings in Canada in the next few years and the savings could be in the order of $60 million annually.

In sum, eliminating the waste is only the start of an energy conservation ethic. What is required ultimately is a state of mind where every decision, from whether to produce an energy-intensive product, to the size of company cars, is weighed in terms of the hidden energy cost.



The IRI: a developing resource

A program begun during Canada's Centennial Year is developing, in the opinion of many qualified people, into a resource of considerable value to the business and academic communities of this country. The Industrial Research Institute program was introduced in 1967 because discussions between the Department of Industry, Trade and Commerce and several universities had shown a need for better communications between educators and business people. And the universities wanted to turn out graduates more attuned to the requirements of industry.

Also talked about was the perennial problem of small industrial firms not having enough money to sustain adequate research and development on their own. It was found, furthermore, that many larger firms were often in need of specialized equipment or assistance for one-shot R&D efforts for which the returns would not justify the expenditure required. The consensus of the government and university people was that a kill-two-birds-with-one-stone approach could work in those circumstances; that establishing institutes at universities which could arrange for R&D to be done for private firms would help both to close the communications gap and allow the companies to take on business they might otherwise have to pass up. It was also expected that there would be considerable benefits for the participating universities in terms of faculty and student development.

The Department of Industry, Trade and Commerce agreed to supply money, in the form of grants, and four universities — University of Windsor, Nova Scotia Technical College, McMaster University and University of Waterloo — undertook to provide people and facilities for the establishment of industrial research institutes on their campuses. From the beginning, no two institutes have operated in exactly the same way. Some universities have provided office space

at no cost to the institute; some have charged rent, while others have made cash grants to help the institutes through their formative years. And there have been other differences from institute to institute.

The common denominator, apart from the philosophy of the program, has been the grants from the Department of Industry, Trade and Commerce and the conditions under which they have been made. The grants are intended to help pay a director, an assistant and clerical staff, as well as to assist in covering travel and other administrative costs. But this financing is available only during the formative years of the institute — it is more or less assumed it will be self-supporting after about five years and grants are cut off after seven years.

The institutes charge fees for their services and these normally cover not only the actual cost of doing the research but also have a built-in overhead charge designed to provide money to supplement and eventually replace the grants from I. T. & C. Generally speaking this accounts for about 30 per cent of the fee.

Research institutes are now operating at University of Windsor, Nova Scotia Technical College, McMaster University, University of Waterloo, University of Quebec-Montreal Campus, Le Centre de Dévelopement Technologique de l'École Polytechnique de Montréal, McGill University, Ryerson University and University of Manitoba.

One of the original institutes, and among the most successful, is the one at Waterloo. Until late in 1974 Waterloo Research Institute (WRI) operated under Dr. J.W. Tomecko. He recently retired and has been succeeded as Director by Dr. E.L. Holmes, who had been Associate Dean of Engineering at the University. Assistant Director is C. Frank Phripp.

A couple of weeks after he took on his new job, Dr. Holmes was interviewed by David Magee, of *Canada Commerce*. One of the first points made by Dr. Holmes was that the research done by the Institute is carried out under quite different conditions than those imposed on a faculty member working on a grant from a foundation. That sort of work is usually called grant research and, according to Dr. Holmes, it is a "nice way to work because the faculty member is pretty much a free agent. There are no real deadlines — no real pressures."

On the other hand, contract research — The type done by the Institute for industrial clients — does have deadlines and the individuals involved in the work have to bear in mind many factors they might not have to consider at all if involved in grant research.

"In contract research," Dr. Homes said, "there is a specific contract obligation between the university and the client. Reports have to be completed on time and there's often a fair amount of liaison between the university and the client. Certainly, much more emotional energy is involved in working on contracts."

Another major difference between grant research and contract research is that faculty members usually gain financially from working on contracts, whereas they do not when working on grants (although successful grant research can lead to salary increases and promotions). But according to Dr. Holmes, financial gain is not sufficient incentive to interest university people in contract research. In fact, many of them, he said, never pocket their fees, preferring to pool the money in a fund to be used to support research or other activities that might benefit the university.

What is most likely to interest a faculty member in contract research, said Dr. Holmes, is the possibility of professional development. And it is University of Waterloo policy to examine each client's request in the light of what effect the work will have on the development of faculty and students who may become involved in the project. The University does not consider a project to be a success simply because it helps the client overcome a problem — it should also result in faculty and students acquiring greater expertise. This is not entirely a selfish point of view because the researchers should then be in a better position to help other firms that may come along later.

Just what sort of help does the Institute offer? Among recent projects have been: an investigation into computer-based information, several industrial waste treatment studies, a quantitative personnel study, assistance to an inventor developing a new type of heating unit and, currently underway, work on a replacement for the common jackhammer that will use pulsed water jets.

The jackhammer replacement project is being done on behalf of the Institute for Gas Technology and it is one of many contracts that have been awarded to WRI by private industry, government agencies and business organizations. However, during WRI's first seven years of operation about 60 per cent of its contract research was carried out for government. This would seem to indicate many industries are missing a good bet and Dr. Holmes agrees this is probably so.

"But," he said, "it's a question of how quickly confidence in research and awareness of its value can be instilled in industrial managers. I think perhaps Canadian industry has developed rather slowly in this regard, tending to concentrate on day-to-day engineering problems rather than looking ahead. On the other hand, we were doing no contract research seven years ago — this year we're handling contracts worth almost a million dollars. And you've also got to realize that many of those government agencies for which we're working are closely involved with private industry."

It is true that many firms did come to the university for assistance before the Institute was established. But it

was all very haphazard, according to Dr. Holmes. He said that "what used to happen is that they'd call the engineering faculty and ask for some member they happened to know or they would call me because I was Associate Dean and they would tell us about their difficulty and ask who they could get to help them. I used to refer them to Professor X because it looked as though the problem might be in his field, but then after some discussion they would find out it wasn't really his ball game at all."

The need for some sort of central office became obvious, an office that could provide liaison between the companies and faculty members so that problems could be isolated efficiently, and it was around this time that discussions began with the Department of Industry, Trade and Commerce on the possibility of an industrial research institute program. In fact, isolating the problem continues to be a headache. "Once they know what the problem is," said Dr. Holmes, "sometimes they don't even need us."

These days, to facilitate the "isolation" process, the company generally gives the Institute an idea of what it is trying to do. Then representatives of the company are encouraged to visit the campus to meet with faculty members Dr. Holmes and his staff feel will be most helpful. If, as the discussions progress, it becomes clear additional faculty members will be necessary, they can be brought in, on the spot, for consultation.

The University of Waterloo has the largest mathematics school in the country, with its engineering faculty being among the largest. And it has well-developed contacts with more than 1,000 Canadian companies through its co-operative program, which entails engineering, science and mathematics students working in industry for alternate periods of four months from the time they enter the university until they graduate.

For example, freshmen engineers enter in September and at Christmas half of them go out to industry to work for four months, while the other half stay in Waterloo. Then they alternate and in this way students are continuously active in private companies. It means that the university is always aware of developments in many important industries and is able to use this information in its academic programs and in the work of WRI. Most of the students are given assignments in Ontario or Quebec but there are some in other provinces and even a few working overseas.

Another plus for the university is its huge computer centre. Asked what could be done with these facilities, Dr. Holmes said "the possibilities are virtually limitless." The computers are used in simulations, in graphic display work and in countless other ways. They have become basic tools for even the humanities and social sciences faculties, according to Dr. Holmes, and naturally they are invaluable to WRI.

The Institute claims in one of its brochures a number of benefits for companies taking advantage of its services and these include: short-term assistance in specialized research; ability to meet development needs without the continuous cost of additional facilities; stimulation of ongoing programs through a fresh approach; sophisticated laboratory services beyond the company's capabilities; application of new knowledge as soon as it becomes available; and assistance in seizing "profit opportunities by filling knowledge or know-how gaps."

What it all means, really, is that Waterloo Research Institute is capable of helping companies in just about everything from overcoming effluent-handling problems to designing a better shoe last to building a better maple syrup evaporator. As the accompanying box shows, the variety of projects WRI is ready, willing and able to undertake is impressive.

However, WRI is not the exclusive preserve of Canadians. Already the University has been given one contract by a British firm and Dr. Holmes said a great deal of work has been done for both private industry and government agencies in the United States. WRI goes out of its way to give priority to Canadian interests but many of the more challenging projects have come from U.S. organizations and Dr. Holmes said this may be because Americans are more accustomed to taking advantage of facilities such as those provided by industrial research institutes.

The same holds true in the case of technology transfers. Many Canadian firms could benefit greatly from purchasing technology developed in the universities and, as Dr. Holmes said, ". . . the attitude always is to give first crack to Canadians but, you know, if an individual faculty member's research results in something worthwhile, he'll look for a market outside the country in very short order, if there's no domestic response. This sort of research involves a great deal of initiative on the part of the university and it can't be allowed to go to waste."

What it all boils down to then, is this; a resource of great value is waiting, not only at the University of Waterloo but also at other universities across the country, to help give Canadian firms an advantage over their competition. But in order to develop it to its full potential, the resource will have to be used continually.

For more information about Canada's Industrial Research Institute program, write to Dr. E.S. Sanderson, Director, Science Advisors Branch, Office of Science and Technology, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

WRI Projects
(partial list)

Company or government agency	Project
Furnofan Limited	Central warm air furnace
Gulf Oil Canada Ltd.	Characterization of bituminous materials for structural response analysis of pavements
Canada-Communications	Simulation study of uses of a computer network
Canada-Communications-CRC	Programmable time-division multiplexing
U.S.A.F.	Basic mechanisms of structural fatique
Ontario-Environment	Leachate contaminant attenuation in soil
Ontario-Agriculture & Food	Maple syrup evaporator design
Institute of Gas Technology	Low pressure subsystem construction of pulse jet system
Detectra Corp. Ltd.	Smoke detector development
A E C L	Impact wear of zircaloy
Canada-Environment	Oxy-chlorination of organic pollutants
Ford Motor Company	Pre-strain effects
Norton Company	Engineered plastic components
NCR Company	Ergonomic factors affecting operators of keyboard checkout terminals
National Science Foundations	Studies on methods for reducing heat losses from solar collectors
Bell Northern Research Ltd.	Simulation study packet switching network
H.L. Gray & D.W. Bensley	Rotary engine

What's in a name

ANNA ARMSTRONG HIBBERD, Editor, Canada Courier

What is Canada Courier? It is Canada Courier, Courriere Canadien, Correo Canadiense, Kanadischer Kurier and Tsusho News — one publication whose sole purpose is to promote the sale of Canadian goods and services in countries throughout the world. Published regularly by the Department of Industry, Trade and Commerce, the content of each edition may vary to meet the needs of the particular market areas it is reaching.

How useful is Canada Courier? Well, in the calendar year 1974, Courier staff was able to forward some 18,500 trade inquiries to the Canadian companies and organizations the publication had featured. Through these contacts, direct sales were made, agents found and distributorships set up.

So, if you are interested in exporting, if you are selling Canadian manufactured products or Canadian expertise, read on . . . this story is for you.

In Ottawa's downtown Place de Ville complex, on the fourth floor of one of the glassy towers, are the Canada Courier offices — a little cramped, a little untidy with the usual paraphernalia associated with a news publication. The telephone rings in the editor's office . . .

"It's Barry Massey, in Machinery Branch. Look, I've been in touch with a die casting company which might be of interest to Courier. It's fairly small but well based and beginning to expand in the export market. They've got a good, Canadian-made product and I think they could use a little help with publicity. What should I tell them about approaching you for a *Courier* story?"

"Well, if you're going to be in contact again, anyway, Barry, why don't you ask them to submit some material . . . background on the company . . . details of the product . . . photographs if possible . . . enough to give us something to go on and we'll follow up from there. We usually have to get back to a company afterwards for more specific information and more suitable photographs, but that's OK. Or, if you'd prefer, give us the name of your contact and a phone number and we'll give them a call."

"That would probably be best. Save time. They're really keen to get going. Here's the name and number . . ."

"Thanks, Barry. We won't be able to promise a definite publication date, mind you, but we'll do our best."

* * * *

That's one way *Canada Courier* gets to know about the companies which are eventually featured in this trade promotion newspaper — through the experts who specialize in certain industry areas and who work within the many and varied line branches of the Department. Calls come, too, from the Department's Regional Offices throughout Canada. And sometimes a visiting Canadian businessman seeking marketing advice will call into a Trade Commissioner's office in another country and be directed to Canada Courier as a possible publicity vehicle.

There are other approaches to *Canada Courier,* of course. Many of the company stories which have appeared — and subsequently brought in floods of inquiries from all round the world — have resulted from an unsolicited press release or letter arriving on the editor's desk.

Now that we have sketched an idea of how a company story might get into the editorial offices of *Courier,* let's take a look at what might happen next . . .

The *Courier* editorial staff is gathered — the editor, assistant editor (Don Wight) and staff reporter (Maryanne Taylor).

"There's a good crop of story possibilities this morning — perhaps we could just divide it up between you. Maryanne, would you take these companies — they've all been suggested by various line branch commodity experts, so it's OK to go

ahead and contact the people concerned. Do it by phone if you can, if not, write and enclose our usual background material about *Courier.* Take the top one first . . . Barry Massey says they're waiting to hear from us.

"Don, these are companies we don't really know anything about, but they've sent in some interesting material. Could you clear them with the appropriate commodity line branch in the Department and then follow up in the usual way?"

* * * *

Why the emphasis on "clearing"? There are conditions that companies must meet to receive publicity in *Canada Courier:* products must be Canadian manufactured; services must reflect Canadian expertise; companies must be in a position to pursue trade inquiries from which-

Anna Armstrong Hibberd, Don Wright and Maryanne Taylor in conference.

ever part of the world is reached by the edition or editions carrying their story. And sometimes there is a timing factor — is this the right moment to promote that product in this part of the world?

On these points, *Canada Courier* takes the advice of the people in the Department who are in a position to know. *Canada Courier* staff members are specialists too, but their particular knowledge lies in the business of researching, writing, editing and producing a publication. So story ideas are "cleared" and later — before publication — the copy is checked for factual accuracy by the line branch officer concerned and by the person responsible for publicity at the company.

* * * *

Let's return to Barry Massey's die casting company, for illustrative purposes. Maryanne has contacted, in this case, the company president. All the material we need to write the story has been forwarded and there are excellent "action-type" photographs, black-and-white and colour, from which we can make a choice. (We would like to emphasize here that *Canada Courier* cannot run second-rate photographs. The publication is itself a Canadian product going to other countries and we are proud of the way it looks.)

The story is written, checked, edited and slated for publication in all editions (the company and Massey agreeing that this particular product is of interest on a worldwide basis).

All being well — and there are things which might create problems or delays such as space priorities, or a "theme" issue into which the die casting story will not fit — the story is

Canada Courier gets around. Here's Don Wight with a Puerto Rican reader.

published in the first available International English edition (distribution about 70,000 to English-speaking countries throughout the world); then in the United States edition (approximately 75,000 in the United States only); later in the French, Spanish, German and Japanese editions.

It all takes time. The president of our die casting company has called anxiously more than once to find out when his story will eventually appear. It does. He's content.

He's even more content when results start to pour in. In fact, he's so busy following up all these trade inquiries that he forgets to let *Canada Courier* know of any concrete sales and representations, as we have requested.

Never mind! At last he writes to tell us of success here, and sales there.

Now that's what I call a story with a happy ending. It could be yours!

Material should be submitted to:
The Editor
Canada Courier (Code 444)
Office of Information and Public Relations (98)
Department of Industry, Trade and Commerce
Ottawa K1A 0H5

Market facts for decision makers

Analyses of Canadian imports of a variety of products are available free of charge from the Import Analysis Division, Department of Industry, Trade and Commerce, Ottawa K1A 0H5. The following is a list of the latest available. If you would like the Branch to prepare an analysis for you, write to its Chief, or to the Industry Sector Branch that handles the product in which you are interested.

Report No.	Class No.	Subject	Period
1-74	884-99	Hearing aids	Jan. to June 1973
2-74	339-99	Synthetic fireplace logs	Apr. to Sept 1973
3-74	473-72) 638-14) 638-29)	Television receiving sets	Apr. to June 1973
4-74	339-91	Wood charcoal	Jan. to Sept 1973
5-74	584-65	Mobile homes	Mar. to May 1973
6-74	688-69) 469-75)	Wiring devices & parts (electric cords)	Jan. to June 1973
7-74	509-79	Air purification equipment	Oct. to Dec. 1972
8-74	400-49	Helium	Apr. 1973 to Mar. 1974
9-74	274-30	Diatomite	Apr. to June 1973
10-74	46-39) 46-59) 46-73) 46-82) 46-99) 141-59)	Clams & oysters	Oct. to Dec. 1973
11-74	693-27	Nickel cadmium batteries	Oct. to Dec. 1973
12-74	661-89	Microwave ovens	Aug. to Oct. 1973
13-74	523-05) 523-27) 523-96) 524-69) 524-99) 525-60) 527-56) 529-09) 529-49)	Machine knives	Mar. to May 1973
14-74	589-10	Fifth wheels	Jan. to June 1973
15-74	730-69	Lifts / hoists, garage	Jan. to June 1973
16-74	369-47) 369-49) 369-78) 369-79) 369-98) 369-99)	Cordage products	Mar. to May 1973
17-74	522-47	Construction equipment	Apr. to June 1973
18-74	593-39	Paddles / oars	Mar. to May 1973
19-74	423-15	Polyamide resins	Apr. to June 1973

Report No.	Class No.	Subject	Period
20-74	452-15	Copper pipe & tubing	Apr. to June 1973
21-74	832-38	Ski bindings	July, Sept., & Oct. 1973
22-74	465-53	Butts / hinges	Sept. to Nov. 1973
23-74	509-99	Marking / stamping machines	July to Dec. 1973
24-74	893-41) 893-45) 893-49)	Paperbacks	Apr. to June 1973
25-74	754-08	Precision gauges	Oct. to Dec. 1973
26-74	146-40) 397-39)	Drill oil	June to Aug. 1973
27-74	697-99	Electric mats / carpets	Apr. to June 1973
28-74	885-99	Crutches	Apr. to June 1973
29-74	523-06) 523-07) 523-08)	Metalworking lathes	Mar. to May 1973
30-74	950-24	Metal gas cylinders	Oct. to Dec. 1973
31-74	246-89	Man-made fibres	Oct. to Dec. 1973
32-74	523-09	Metalworking milling machines	Mar. to May 1973
33-74	771-22	Computer terminals & keyboards	Oct. 1973
34-74	445-18) 469-72)	Tank heads	Aug. to Dec. 1973
35-74	443-59	Steel castings	Apr. to June 1973
36-74	363-30) 363-50) 363-90) 366-16) 367-19)	Yarn	Apr. to Sept. 1973
37-74	410-99	Phosphorus compounds	Jan. Apr. July & Oct. 1973
38-74	509-69	Sandblasting machines	Sept. to Dec. 1973
39-74	681-73	Ships' lights	Apr. to June 1973
40-74	720-54	Traffic control equipment & railway signal systems	Mar. to Aug. 1973
41-74	706-19	Pulmonary function equipment	Mar. 1973 to Feb. 1974
42-74	423-51) 423-55)	Resins from polymerization	Oct. to Dec. 1973
43-74	323-13) 323-16)	Rubber sheeting	Oct. to Dec. 1973
44-74	246-27	Acrylic fibre	Oct. to Dec. 1973
45-74	509-29	Metal oil cans	Dec. 1973 & Jan. & Feb. 1974
46-74	509-85	Filter presses	July to Dec. 1973
47-74	639-55	Printed circuit boards	June, Sept. & Oct. 1973

Report No.	Class No.	Subject	Period
48-74	451-40	Aluminum pipe & tubing	Oct. to Dec. 1973
49-74	425-99	Plastics fabricated materials	Oct. 1973
50-74	621-09	Truck & bus tires	Oct. to Dec. 1973
51-74	652-15	Oil burning furnaces	Feb. to Apr. 1974
52-74	872-99	Antibiotics	Apr. to June 1973
53-74	634-45) 634-75) 637-37) 637-49) 637-69) 639-50)	Quadraphonic components	Oct. to Dec. 1973
54-74	524-14	Chain saws	Jan. to Mar. 1974
55-74	452-85	Copper alloy tubing	Oct. to Dec. 1973
56-74	452-75	Copper alloy shapes	Oct. to Dec. 1973
57-74	755-52	Hammers	Dec. 1973 to Feb. 1974
58-74	496-99	Pet litter	Apr. to June 1973
59-74	529-49	Metering, mixing & dispensing machinery (plastics industry)	Oct. 1973 to Mar. 1974
60-74	867-12	Trays	Oct. to Dec. 1973
61-74	503-66) 503-67) 503-69)	Electric motors	Oct. & Nov. 1973
62-74	621-15	Tractor & implement tires	Oct. to Dec. 1973
63-74	621-20	Industrial tires	Oct. to Dec. 1973
64-74	621-29	Bicycle & motorcycle tires	Oct. to Dec. 1973
65-74	697-58) 730-99)	Compactors	Feb. to May 1974
66-74	454-15) 454-69) 454-76) 454-85) 454-99)	Nickel & nickel alloy	Oct. to Dec. 1973
67-74	740-76	Picture frames	Jan. to Mar. 1974
68-74	451-05	Aluminum powder & paste	Jan. to Mar. 1974
69-74	634-90) 634-99)	Aircraft radios	Oct. to Dec. 1973
70-74	708-90	Automatic scales	Mar. to May 1974
71-74	443-30	Malleable iron castings	Jan. to Mar. 1974
72-74	634-19) 634-29)	Telephone & telegraph relays	Jan. to Mar. 1974
73-74	883-12) 883-14)	Sunglasses & frames	Mar. to May 1974
74-74	637-94	Antennae	Jan. to Mar. 1974
75-74	621-05	Passenger car tires	Oct. to Dec. 1973
76-74	529-47	Molds	Apr. to June 1974
77-74	621-49	Aircraft & trailer tires	Oct. to Dec. 1973

Report No.	Class No.	Subject	Period
78-74	874-99	Vitamins & preparations	Apr. to June 1973
79-74	357-60	Hard board	Jan. to Mar. 1974
80-74	461-13) 461-19)	Insulated steel doors	Jan. to Mar. 1974
81-74	771-15	Calculating machines	Apr. to June 1974
82-74	9-99) 46-59) 46-99)	Snails	Jan. to Mar. 1974
83-74	930-12) 930-16) 930-39)	Muzzle loading firearms & reloading equipment	Apr. to June 1974
84-74	443-25	Iron castings	Jan. to Mar. 1974
85-74	502-18) 592-27)	Diesel engines	Apr. to June 1974
86-74	639-99	Headphones	Jan. to Mar. 1974
87-74	465-56	Padlocks	June to Aug. 1974

Beauty and the Bug

BRIAN GORMAN, Staff Writer, Concordia University, Montreal

It isn't very often that a Volkswagen can compete for attention with Rolls Royce, Mercedes Benz and BMW. But, at Montreal's Auto '75 car show, in Place Bonaventure, that's exactly what happened; a car with the unlikely sounding name of Project Recycle out-drew even the most glamorous of the new cars and prototypes.

But, then, the Project Recycle vehicle, nicknamed Beautiful Bug, isn't your suburban-variety, dog-in-the-back-seat Beetle. Designed and constructed by a team of six, second-year Concordia University Engineering students from Dr. Clyde Kwok's Introduction to Design course, the Beautiful Bug bears more resemblance to a space capsule than a Volkswagen.

"It has been my life-long ambition to build a car which is a little bit extraordinary," Dr. Kwok says. "At the same time, my requirement is that the car has to be economical to run and it has to be practical." On both counts, Dr. Kwok and his class have succeeded. The practicality comes from the fact that the car is built around a Volkswagen chassis and a standard Bug engine — the only modification being the four Weber carburetors. As far as being "a little bit extraordinary" is concerned, Dr. Kwok's modesty is underwhelming.

To put it simply, the car is a knock-out. Its mail-order fibreglass body is beautiful enough to stop traffic on a street full of Ferraris and its many innovations make it one of the most advanced machines since the Model T.

The entire canopy — windshield, roof and windows — lifts clear of the cockpit to allow entry. A compressed air lift does the work. Once inside and seated in the contour bucket seats, the driver finds himself seated behind a unique set of controls. The instrument cluster — consisting of tach, ammeter, oil pressure gauge, oil temperature gauge, fuel gauge and two vacuum gauges — is situated right in the steering wheel. This is made possible by a project-originated chain steering mechanism, which eliminates the need for a centre-hub type of steering column, enabling the wheel to turn around the instrument cluster without obstructing the view. This, of course, makes it possible for the driver to scan his instruments without taking his eyes off the road.

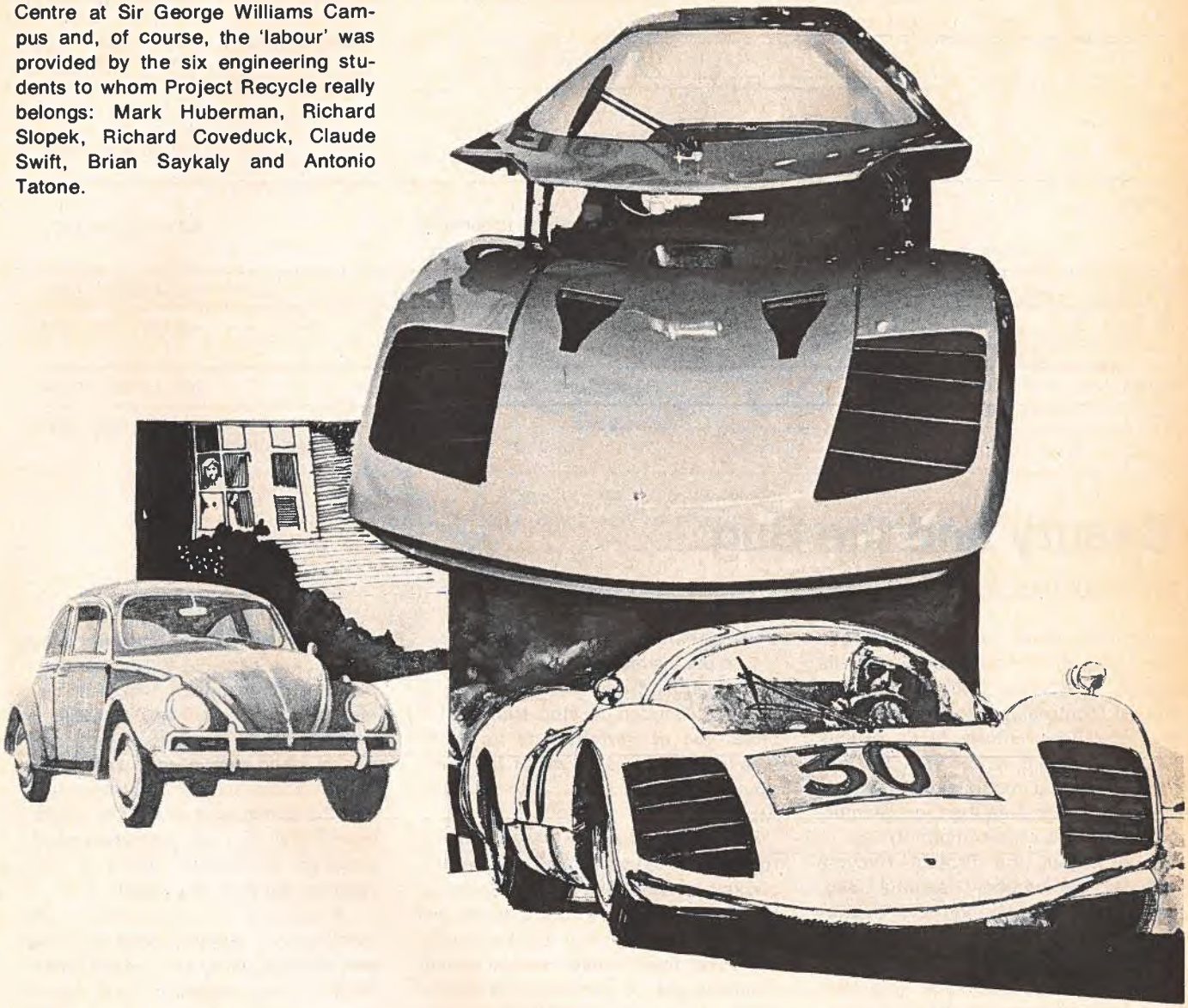
Another major innovation is an air compressor which, as Dr. Kwok says, "is about the size of your fist." The compressor uses very little power and produces 120 pounds per square inch of pressure. It operates the canopy and makes possible two other major design innovations: venetian-blind louvres covering the headlights, which make for an aerodynamic design when closed and, when opened, eliminate scattering of light rays; and the elimination of a bulky manual handbrake — the compressed-air-powered emergency brake is activated by the flick of a switch.

According to Dr. Kwok, the compressor, manufactured by Webster Manufacturing Limited of London, Ontario, has sparked a great deal of interest in the motor industry. Applications for the device are almost limitless — it can operate air horns, windshield wipers and squirters, jacks and tire-inflators, to name only a few possibilities.

The cost of producing the Beautiful Bug has been estimated at about $5,000 — peanuts compared to the usual cost of preparing a prototype. The wrecked Volks cost a "few hundred dollars," the body kit, $2,000 and the rest of the equipment was donated by Canadian companies such as Webster (compressor), Dupont (paint), Joseph Lucas and Robert Bosch (instruments and wiring), and Francesco Romanelli (Romanelli Motors) who donated his time and

expertise.

Much assistance and encouragement was provided by Concordia University and the Fluid Control Centre at Sir George Williams Campus and, of course, the 'labour' was provided by the six engineering students to whom Project Recycle really belongs: Mark Huberman, Richard Slopek, Richard Coveduck, Claude Swift, Brian Saykaly and Antonio Tatone.



Wix waxes enthusiastic over export potential

A $50,000 order has been obtained by Eco-Tec Limited, a subsidiary of Toronto-based Wix Corporation Limited, for the supply of two pollution control systems to a Belgian plating plant. The order came through the firm's Belgian distributors, Societe Anonyme DONCK, of Antwerp.

Eco-Tec Limited has undertaken a new export drive, with the target being increased sales in Europe. A recently-appointed network of distributors in Europe includes W. Canning Company Limited of Britain, Harshaw Chemie B. V. of Holland and Wolfgang Petzold of West Germany, in addition to Societe Anonyme DONCK. It is expected that more distributors will be appointed soon.

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