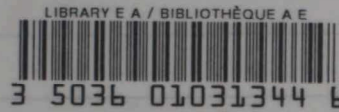


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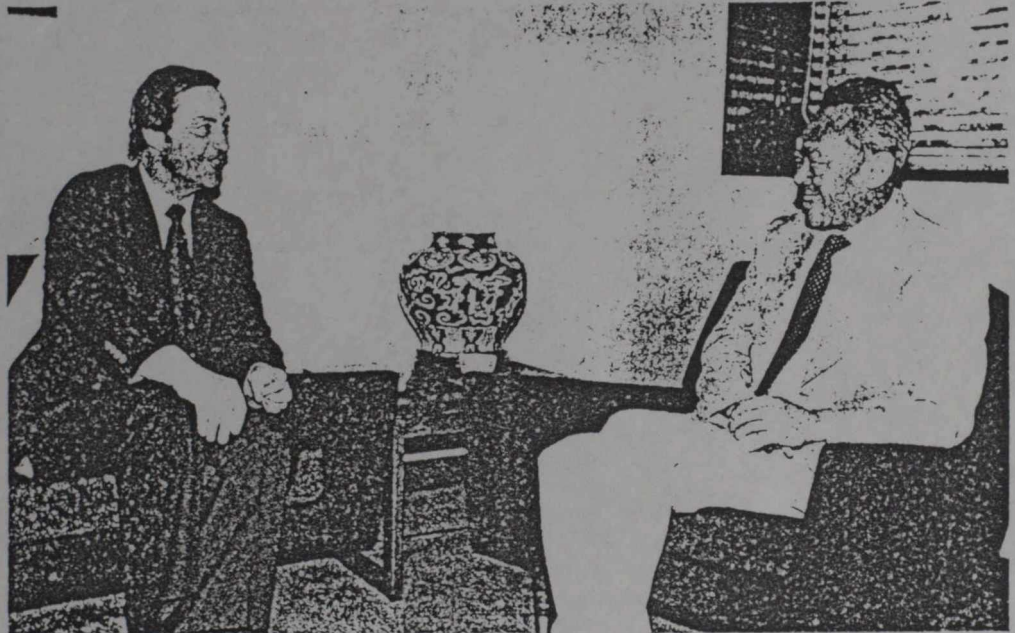
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Singapore's Prime Minister Lee Kuan Yew and Premier William Bennett of British Columbia discuss developments in the Pacific region during Premier Bennett's visit to ASEAN countries.

Pacific Province Premier Tours ASEAN

PREMIER William R. Bennett of British Columbia visited the ASEAN region for 12 days beginning February 13. Accompanying the Premier were the Minister for Industry and Small Business Development Don Phillips, and officials from the Premier's office and Mr. Phillips' ministry.

Situated on Canada's Pacific coast, the province of British Columbia has an economy based on a wealth of natural resources. Coal, oil and gas, hydroelectric power, forest products, mining, fishing, and agriculture have all played a significant role in the development of the province. Premier Bennett's visit to ASEAN was designed to increase a mutual awareness of trade and development opportunities between British Columbia and the region.

In Thailand the Premier met with Industry Minister Chatichai Choonhavan as well as senior government and banking officials. Discussions centred primarily on the mining and petroleum industries.

In both British Columbia and Thailand technology has been developed in the construction of undersea gas pipelines

and there appear to be many opportunities for technological exchange. It is anticipated that as part of this exchange further studies, including post-graduate training for Thai engineers, will be arranged in British Columbia.

To members of the Thai banking community Premier Bennett pointed out that British Columbia has led North America in the rate of economic growth during the past two years and therefore offers excellent potential for co-operation with the fast growing economies of ASEAN.

During Premier Bennett's three-day visit to Indonesia he met Vice President Adam Malik, and Piet Haryono, the President of Pertamina, as well as the Ministers for Mines and Energy, Environment and Development, and Trade and Co-operatives.

There are many similarities between Canada and Indonesia in that they are both major exporters of natural resources — particularly petroleum, nickel, coal, and forest products. Interest was shown by Indonesia in British Columbia's forest management procedures and an invitation

was extended to Dr. Emil Salim, Minister of Environment and Development, to visit British Columbia. Energy issues were examined, including the technical aspects of petroleum and LNG.

The Premier and his party toured the partly Canadian-financed Bukit Asam power project in South Sumatra while Industry and Small Business Development Minister Phillips flew to East Kalimantan to visit a British Columbia-supported forestry vocation training centre as well as oil and LNG export facilities.

The Canadians' visit to Indonesia will be reciprocated in late May when an Indonesian ministerial mission visits Canada.

Premier Bennett had an opportunity to discuss international and regional issues with Prime Minister Lee Kuan Yew while in Singapore for two days. The leaders discussed the future of the Pacific region, both agreeing that there would be a continued high level of economic development in the next decade.

When he met with Foreign Minister Dhanabalān, Premier Bennett explained that British Columbia, which had traditionally had strong trading links to Japan and Korea, was now interested in expanding economic and commercial activities to Southeast Asia. The Premier briefed Foreign Minister Dhanabalān on British Columbia's capability as a supplier of coal and related technology and on Vancouver's decision to proceed with the construction of a Canadian-designed mass rapid transit system. Both MRT and coal fired thermal power generating stations are projects of considerable interest in Singapore.

In separate meetings with Trade and Industry Minister Goh Chok Tong, Minister Phillips discussed possible joint ventures between Singaporean and British Columbia companies in areas where the province had considerable expertise—in coal and coal handling, aviation, and fish biology and culture. Minister Goh confirmed his ministry's intentions to conduct a trade mission to Canada later this year and agreed to consider participation in trade fairs in British Columbia.

In the Philippines Premier Bennett and his delegation met President Marcos and had meetings with the Ministers of Natural Resources, Trade, and Energy. He also visited areas of British Columbia investment in Zamboanga and Marinduque Island.

As a natural result of the considerable interest of both the Philippines and British Columbia in the energy sector, this topic was the focus of discussions.

The Premier provided a review of British Columbia's capability in coal supply, expertise in coal to oil conversion and opportunities for investment in the energy sector in the province. In addition, comprehensive discussions were held on Philippine thermal coal requirements.

The visitors from British Columbia were impressed by the strength and dynamism which are characteristic of

the ASEAN economies. Opportunities for closer, mutually beneficial economic and commercial co-operation between ASEAN and British Columbia are clearly considerable. Forthcoming trade missions from Indonesia and Singapore to British Columbia and other parts of Canada will help greatly in increasing awareness of the economic potential for co-operation in coming years.

Canada-ASEAN Developments

The Dialogue

AS PART OF the dialogue between Canada and the countries of ASEAN, meetings are held periodically in Ottawa between ASEAN heads of mission and Canadian senior officials to discuss ongoing aspects of the dialogue.

At its most recent meeting the ASEAN-Ottawa Committee (AOC) reviewed a number of political issues, including the situation in Indochina. The committee also touched upon the desirability of establishing a Canada-ASEAN businessmen's group and the central role that businessmen themselves would have to play. Canadian development assistance projects in ASEAN countries were also discussed.

Meanwhile, in Manila, the ASEAN Standing Committee has formally approved two Canadian projects designed to assist in the development of ASEAN forestry and fisheries industries. The first, a tree seed centre to be established in Bangkok, will provide ASEAN forestry experts with facilities for research and training on tropical tree seed varieties. The second, a fisheries post-harvest technology project that will be undertaken in all five ASEAN member countries, will concentrate on post-harvest problems particular to each national fishing industry. Formal signing ceremonies for the projects are expected to take place shortly in Bangkok and Manila.

CANADA'S Secretary of State for External Affairs Dr. Mark MacGuigan will hold discussions with his ASEAN counterparts following the annual meeting of ASEAN foreign ministers scheduled for June 17-18 in Manila.

Foreign ministers from other ASEAN dialogue partner countries—Australia, New Zealand, Japan, the European

Economic Community, and the United States of America—are also expected to attend.

CIDA Stages Joint-Venture Show

UNDER its Industrial Co-operation Program, the Canadian International Development Agency (CIDA) has employed several innovative approaches in responding to the development priorities of the countries in ASEAN.

One such approach is a trade show featuring joint venture and transfer of technology aspects of economic co-operation to be held in Singapore from May 11-13 at the Century Park Sheraton hotel.

Sixteen Canadian companies that have indicated a willingness and capacity to establish operations in ASEAN will attend the show. The companies represent a wide range of Canadian expertise in technologies as varied as aquaculture, alternative energy powered alcohol plants, education, construction and fabrication, solar energy, and wind turbines.

In order for the Canadian companies' representatives to meet potential joint-venture partners within ASEAN, officials from the various industrial development authorities in ASEAN capitals, as well as up to five indigenous entrepreneurs, will be sponsored to attend the exhibition in Singapore. There they will have an opportunity of explaining their countries' economic policies and industrial strategies with a view to encouraging Canadian joint-venture participation and investment.

This show is the first of its kind CIDA has sponsored in Asia and reflects the growing Canadian interest in developing closer business ties with ASEAN countries.

Trade Management Seminar Held in Bangkok

A SEMINAR on foreign trade management was held in Bangkok for two weeks from March 30. It was jointly sponsored by the Foundation for International Training (FIT), based in Toronto, Canada, and the Economic and Social Commission for Asia and the Pacific (ESCAP). It focussed on training in export management and import procurement skills. Some 15 senior officials from government agencies and private sector organizations in the ASEAN region attended the seminar.

The seminar is part of a program the foundation has conducted in the ASEAN region over the past year. Previous activities have included workshops on engineering consulting practice in Malaysia and Indonesia, training of extension workers for low-income housing in the Philippines and Indonesia, and a seminar on distance education, which was held in co-operation with the Asian Institute for Broadcast Development in Kuala Lumpur.

A series of follow-up seminars is planned throughout 1981 and some new areas of training, such as joint venture negotiations, licensing of foreign technology, and development banking, are being explored.

An international non-governmental organization with a multinational board of governors, staff and a cadre of trainers/consultants, FIT is beginning to make a contribution to the strengthening of human resource capabilities and institution building in the developing countries.

FIT co-operates with both public and private sector organizations in offering short-term, intensive training programs. Projects have included the development of skills in areas such as small business management, financial administration, planning and production management, international trade skills, and management and engineering consultancy practice, with emphasis on the practical, the training of trainers and strengthening of the host agency's institutional framework. An essential part of this process has been the provision of appropriate training manuals that are field tested and adapted for use by host agencies.

Financial support for FIT's programs is provided principally by the Canadian International Development Agency (CIDA) with some of its activities being funded by technical co-operation agencies in the United Nations' system.

BSAM Program to be Biannual Event

FOLLOWING on the success of the Management Development Program conducted at the Banff School of Advanced Management (BSAM), Banff, Alberta, the Canadian International Development Agency (CIDA), which funded the course through its Industrial Co-operation Program, has decided that similar programs will now be held twice a year.

The Management Development Program of six weeks, plus an across-Canada orientation tour of two weeks, is designed to instruct mature executives at the middle-management level of both the

Impressive Increase in Canada-ASEAN Trade

IN THE PERIOD 1975 to 1980 two-way trade between Canada and the ASEAN countries more than trebled in value from \$352 million to \$1,142 million. Canada's exports rose from \$206 million to \$754 million while imports from ASEAN reached \$388 million in 1980 compared with \$146 million in 1975.

In terms of volume, total trade increased by about eight per cent a year in the early 1970s but, as trade relations developed, trade accelerated in the second half of the 1970s by 16 per cent annually — a doubling of the momentum. Throughout the 1970s growth in Canadian exports to the ASEAN group of countries was greater than that to the rest of the world. The real growth rate of exports to the ASEAN countries was eight per cent from 1970 to 1975 and 19 per cent in the second half of the decade. In comparison, the growth rate of Canadian exports to the rest of the world was two per cent and six per cent over the same periods. Canada's imports from ASEAN increased by between nine per cent to 10 per cent in the second half of the 1970s, while the figure for the rest of the world was three per cent.

Canada's trade with Indonesia amounted to \$242 million in 1980 (exports \$213 million/imports \$29 million), the main Canadian exports being aluminum, textile fabrics, woodpulp and paperboard, asbestos, newsprint, plastic materials, wheat, and sulphur. Rubber, coconut oil, tea, coffee, woven fabrics, and tin headed the list of imports from Indonesia.

Canadian-Malaysian trade reached \$176 million in 1980 (exports \$93 million/imports \$83 million). The total figure would be around \$50 million higher if

private and public sector in modern management concepts and techniques. It has been specially adapted with ASEAN participants in mind.

The participants from ASEAN in the February program included Param Ajeet Singh Pal, deputy secretary (finance and administration) at the Singapore Broadcasting Corporation (SBC); Wan Hilal bin Haji A. Rahman, district officer in Malaysia's Negeri Sembilan state; Mrs. Leticia Villanao-Competente, acting assistance director, Civil Service Regional Office in Southern Tagalong, Philippines; and Willem D. W. Loesi, who heads the Indonesian government's Tax Facilities Division, Investment Co-ordinating Board (BKPM), Jakarta.

material (especially rubber) trans-shipped via Singapore were included. Major Canadian exports were asbestos, aluminum, telecommunications equipment, newsprint, steel, drilling and mining machinery, and paperboard. Malaysian exports included rubber, palm oil, wood products, fabrics and textile apparel, and electronic components.

With the Philippines two-way trade moved up to \$209 million in 1980 (exports \$108 million/imports \$101 million) having expanded at an impressive annual rate of 10 per cent between 1975 and 1980. Leading Canadian exports were zinc, plastic materials, mining machinery, fertilizers, woodpulp, iron ore and telecommunications equipment. Principal Philippine exports were coconut oil, textile apparel, nuts, canned fruits, wood products, footwear, and tropical furniture.

Canada-Singapore trade totalled \$348 million in 1980 (exports \$198 million/imports \$150 million), with trade growing in recent years at a rate of over 20 per cent per annum. Canadian exports included fertilizers (mostly for trans-shipment in the Asia-Pacific region), petroleum products, newsprint and paperboard, plastics, telecommunications equipment, and tools. Singapore's principal exports were rubber (originating mostly from Malaysia), televisions, radios and phonographs, compressors, air conditioners, office machines, clothing and textiles, and electrical toys and games.

Canadian trade with Thailand grew significantly in the late 1970s, especially on the export side. In 1980 total trade

All figures in this publication are in Canadian dollars unless otherwise specified.

CANADIAN TRADE WITH ASEAN

\$ Millions

1980

	Exports	Imports	TOTAL
Indonesia	212.9	28.8	241.7
Malaysia	93.0	83.4	176.4
Philippines	107.9	101.3	209.2
Singapore*	198.2	149.6	347.8
Thailand	141.8	24.8	116.6
	753.6	387.7	1,141.7

*Although it is difficult to be precise, it is estimated that approximately \$90 million is in trans-shipment items, leaving a net two-way trade figure of about \$258 million (exports \$170 million/imports \$88 million).

amounted to \$167 million (exports \$142 million/imports \$25 million). Major Canadian exports included aluminum, steel, asbestos, textile fibres, woodpulp, and zinc. Thailand's exports were led by textile fabrics and apparel, fruits, sugar, fish products, lumber, tin, and gems.

Trade and Investment Framework

Access to the Canadian market for ASEAN members is provided for under the General Preferential Tariff (GPT) for developing countries or under the Most Favoured Nation (MFN) tariff, whichever is lower. Over 90 per cent of all ASEAN exports to Canada receive GPT treatment or already have access duty-free on an MFN basis. In the case of Singapore and Malaysia, as members of the Commonwealth they also benefit from the British Preferential Tariff (BPT) should this prove to be a lower rate than the GPT or MFN.

While Canada provides assistance to members of ASEAN through bilateral and multilateral assistance channels, it is the financial activities of Canada's chartered banks and, to a lesser extent, the export financing activities of the Export Development Corporation (EDC), the Crown corporation which finances the export of Canadian goods and services, which comprise the principal elements of Canada's direct financial relationship with the countries of ASEAN.

The five major Canadian chartered banks (The Royal Bank of Canada, Bank of Montreal, Canadian Imperial Bank of Commerce, The Bank of Nova Scotia, and The Toronto Dominion Bank) are all active in the ASEAN countries. The Bank of British Columbia and the National

Bank recently opened offices in Hong Kong to cover Asia and are now pursuing business in the ASEAN region.

Canada has bilateral foreign investment insurance agreements in force with Indonesia, Malaysia and Singapore and double taxation agreements are in effect with Indonesia, Malaysia, Philippines and Singapore. ASEAN member countries maintain their own individual laws, regulations and incentives governing foreign investment.

Canadian investment in the ASEAN

region derives mainly from the larger multinational corporations such as: Alcan, Bata, Bow Valley, Brascan, Cominco, Dennison Mines, Husky Oil, Falconbridge, Inco, McMillan-Bloedel, Northern Telecom, Placer, Sherritt-Gordon, Sun Life and Thomson Newspapers.

The next issue of *CANADA-ASEAN* will carry items on market prospects in each ASEAN country, as well as information on the Canadian market for ASEAN exporters.

Canadian Banks in ASEAN Countries

SINCE THE establishment of the Association of Southeast Asian Nations (ASEAN) the ASEAN economies have shown substantial GDP growth rates approximating seven per cent per annum on a compounded basis. The realization of this growth and the future potential has attracted many foreign banks to the region. Canadian banks have been represented in the ASEAN region since the early 1970s and are today, as a national group of banks, operating at a highly active level.

Financing the development of the ASEAN countries was initially achieved through international agencies such as the World Bank, the Asian Development Bank, bilateral aid and loan programs, and from the domestic capital markets of

the individual countries. The types and amounts of financing which were required exceeded the capabilities and capacities of the domestic markets, and the expansion of the London euro-currency market in the late 1960s provided major borrowers in the region with additional sources of loan funds.

Specialization and familiarity with credit risks in the region led to increasing activity by foreign banks, and initiatives taken by monetary authorities both in Singapore and Hong Kong resulted in the emergence of regionally based international capital markets. In addition, both centres are geographically placed to bridge the market time differences between the other major financial centres in North America, Europe, and Japan.

	INDONESIA	MALAYSIA	PHILIPPINES	SINGAPORE	THAILAND
BM	Representative Office	Covered from Singapore	Representative Office	Offshore Bank Merchant Bank Asia-Pacific Division Headquarters	Covered from Singapore
BNS	Representative Office	Branch	Offshore Banking Unit Pacific Regional Office	Offshore Bank Merchant Bank	Representative Office
CIBC	Covered from Singapore	Covered from Singapore	Covered from Hong Kong	Offshore Bank Merchant Bank	Covered from Singapore
RBC	Covered from Singapore	Covered from Hong Kong	Covered from Hong Kong	Offshore Bank Merchant Bank	Covered from Hong Kong
TD	Representative Office	Covered from Singapore	Covered from Hong Kong	Offshore Bank Merchant Bank	Representative Office
BBC	All ASEAN countries are covered from Hong Kong				
NBC	All ASEAN countries are covered from Hong Kong				
BBC	Bank of British Columbia		NBC - National Bank of Canada		
BM	Bank of Montreal		RBC - The Royal Bank of Canada		
BNS	The Bank of Nova Scotia		TD - The Toronto Dominion Bank		
	CIBC - Canadian Imperial Bank of Commerce				

All these factors combined to provide the impetus to establish what is now known as the Asian Dollar Market. From a modest start in 1968, total assets of banks in the form of Asian dollars in Singapore's Asian dollar market rose from a mere US\$30.5 million at the end of 1968 to approximately US\$45 billion at the end of 1980. The region was also caught up in the simultaneous growth of world trade, creating a need for the development of sophisticated trade financing capabilities and techniques, especially foreign exchange.

The five largest Canadian banks, namely Bank of Montreal, The Bank of Nova Scotia, Canadian Imperial Bank of Commerce, The Royal Bank of Canada and The Toronto Dominion Bank participated in this dynamic growth. With few exceptions, mainly due to Canada's own historic trade patterns, non-bank Canadian investors have tended not to play a prominent role. This is, of course,

a direct result of the vast majority of Canada's trade having been developed among fellow Northern Hemisphere partners, i.e., the United States, Europe and Japan.

Each Canadian bank has developed its own philosophy of lending in the ASEAN countries. The banks also have their own policies as to limits of lending within each country, the types and amounts of business they will do, and whether each bank will join a syndicate or group of lenders or lend direct on a commercial basis. The banks also maintain their own network of arrangements with indigenous banks, commonly referred to as correspondent banks. Some of the types of business in which the Canadian banks participate in ASEAN are as follows: general purpose loans; project financing, including resource development and infrastructure projects; trade and trade related finance; foreign exchange; guarantees; and performance bonds.

The New Canadian Bank Act and Foreign Banks

THE Canadian Parliament recently passed the Banks and Banking Law Revision Act, 1980, which establishes the legislative framework for Canada's banking system until 1991. An important aspect of the legislation is the treatment it accords to foreign banks carrying on business in Canada, the main features being:

- Establishment: foreign banks will be allowed to establish banking subsidiaries in Canada under certain conditions, an essential one being that the parent country of a foreign bank offers reciprocal arrangements to Canadian banks;
- Branches: the number of branches which a foreign bank subsidiary may establish in Canada is limited to one, but additional branches can be opened with the approval of the Minister of Finance;
- Directors: at least half the directors of a foreign bank subsidiary are required to be Canadian citizens ordinarily resident in Canada;
- Representative Offices: foreign banks can maintain representative offices in Canada but these must be registered with the Inspector General of Banks;
- Assets: the domestic assets of a foreign bank subsidiary may not exceed 20 times authorized capital, while the total domestic assets of all foreign bank subsidiaries as a group are limited to a maximum of eight per cent of the total domestic assets of all banks in Canada;
- Capital Funds: banks are given flexibility similar to other corporations in raising capital funds;
- Other: banks will not be able to own more than 10 per cent of the voting stock of a non-financial corporation.

The Canadian Energy Scene

CANADA POSSESSES a very strong energy resource base having access to enviable quantities of natural gas, uranium, coal, hydro, both conventional and heavy crude oil resources, as well as a variety of renewable energy resources. Domestic energy supply outweighs demand resulting in the export of sizeable quantities of natural gas, electricity, coal and uranium.

The energy sector is one of the most dynamic and rapidly expanding areas of Canada's economy. It is comprised of four principal industries, namely: oil and natural gas production, refining and marketing; transportation and gas distribution; electrical generation and transmission; and coal and uranium mining.

The total energy production value at the primary level amounts to more than \$15.2 billion, with petroleum and natural gas accounting for the largest portion.

The production of electric, thermal and fossil fuel power, and atomic energy, along with its network of high-voltage transmission systems, ranks Canada as one of the world's leading power and energy producers today.

The experience of Canadians in meeting their own challenges has resulted in the ability of Canada to provide the expertise so essential today in achieving greater power and energy potential in many countries — including the developing nations where the efficient use of power is doubly important.

An increasing number of nations are depending on Canadian engineers, consultants, contractors and other experts in the field. More importantly, they gain from the dependability of Canadian-made equipment designed to withstand the most rigorous conditions and, at the same time, produce the maximum power from the available resources.

Canadian firms and personnel working with Canadian-made equipment are engaged in team efforts with local industries and experts on power-site locations in South America, Europe, the Middle East, and Southeast Asia.

Emphasis on research has added to the stature of the Canadian power and energy industry, creating greater efficiency in the use of all forms of energy.

The following are examples of successful Canadian programs which have worldwide applications.



The Shawinigan Engineering Company supplied Canadian expertise to develop the Temangor hydroelectric project – currently Malaysia's largest, generating 340 megawatts of power – on the Upper Perak River, Perak.

Electric Power

Within Canada electric power generation is efficient and highly reliable. Hydroelectric generation alone accounts for an output capability in excess of 34 million kilowatts. Fossil-fuelled thermal and nuclear power plants, with a significant contribution from gas turbine stations, add an additional output capacity of some 20 million kilowatts to Canadian power systems.

The advanced designs and techniques used to achieve this production at the best possible cost-benefit relationship are now being used to advantage in more than 30 countries throughout the world. As a result, Canada is today among the leaders in the design and construction of power stations, turbines, generators and auxiliary equipment, as well as in electrical transmission and distribution systems.

Extra High Voltage Transmission Systems

Canadian electrical engineers were among the first to develop the use of increasingly higher voltages in primary transmission lines.

As the development of hydroelectric power sites moved further and further north into the more remote areas of Canada, the question of how best to transmit electric power over long distances became an important one. Canadian engineers, manufacturers and contractors were forced to pioneer tech-

niques in both alternating current (AC) and direct current (DC) high voltage transmission.

The size of northern hydro developments, their distance from load centres and the solutions found to the problems of inaccessibility, terrain and environment have put Canada at the forefront of transmission line design and construction methods.

Tar Sands

Canada has enormous reserves – amounting to several Saudi Arabias – of crude oil in the form of tar sands and heavy oils. These reserves are found in northern Alberta, at Athabasca and Cold Lake.

Canada is one of the world leaders in tar-sands technology. With the completion of the second commercial processing facility in the Athabasca tar sands (the Syncrude plant), Canada now produces 170,000 barrels of synthetic crude oil per day, that is, approximately 20 per cent of current Canadian oil imports.

Nuclear Energy

Canada possesses approximately one-fifth of the world's known uranium resources, and is a major exporter of this commodity. Nuclear power has the potential of becoming a major supplier of domestic energy.

The Canadian designed and built CANDU reactor has proven to be a safe, dependable and low-cost source of electricity. Currently, CANDU supplies

3.5 percent of the nation's electricity and reactors have been exported to countries such as South Korea, Argentina and Rumania.

The unique "on-load" refuelling feature of the system and its ability to use uranium that does not require enrichment prior to use, make the CANDU system particularly suited to minimising operating costs in a world of constantly increasing energy prices.

According to recent figures prepared by the province of Ontario's Hydro Authority, its large CANDU reactors, which averaged a performance rating of 88.5 per cent, were found to be more reliable than any of the 110 other large power reactors in the world.

Thermal and Fossil Fuel Power

In the future, domestic coal resources will play an increasingly important role within the energy economy. In the short-term coal will be used in the conventional forms, within the steel industry for non-energy utilization, and in the generation of electrical power. In the long-term, however, it will be used to produce synthetic gaseous and liquid fuels. For example, the direct hydrogeneration of coal can produce synthetic petroleum products such as fuel oils, transportation fuels and chemical feedstocks. Coal gasification can produce substitute natural gas and synthetic gas which can be used for the manufacture of ammonia, methanol and replacement petroleum products. Extensive research in these various areas is underway.

The oil-rich province of Alberta has large resources of mineable sub-bituminous coal. Consequently, the province has opted to develop this low-cost resource as a fuel for thermal power stations, and most new thermal capacity in the province to the end of the century will likely be based on coal.

Small Gas Turbine Generators

Not all Canadian projects are of mammoth size. To meet the need for smaller units that can produce power quickly during load-peaking periods, the Canadian industry has developed a variety of small gas turbine generators.

These units, which can often be supplied on relatively short delivery schedules, are finding a ready market in many countries because they can provide an ideal source of low-cost power for communities in remote areas. These systems are now in service in China, Mexico, the Middle East, South America, Africa and Asia.

Canada's Energy Bus Speeds Savings

ONE OF THE MOST effective innovations in Canada's energy conservation program is the Energy Audit Vehicle or Energy Bus, which was pioneered in the province of Ontario.

Each vehicle carries energy experts and computerised specialist equipment, as well as demonstration materials and video units, to companies interested in having on-site energy audits conducted to help find the fastest and cheapest ways of saving energy at plant level.

The federal government's overall long-term objective with this widely accepted and successful, low-cost/high-profile program is to reduce annual energy consumption increases to two per cent or less nationwide.

A significant benefit is the Statistical Data Base Information and Retrieval System. During an energy audit extensive data are recorded in the computers as a prerequisite to calculating energy use patterns and areas of energy waste upon which energy reduction opportunities are identified. Before the program this information was

either unavailable or obtained through costly one-time surveys.

From the information collected it is possible to develop a profile which enables industry and commerce to measure their energy efficiency. The data base can also be used to measure the effectiveness of various federal/provincial programs and determine the impact of present and future programs.

In a summary of some 1,200 bus visits potential savings of close to \$12 million were identified from energy bills totalling \$79 million. These could be realized by industry and commerce at minimum or no capital cost with the implementation of efficient conservation practices. This averages out to 15 per cent identified potential savings per visit, with savings of .20 per cent to 30 per cent, and even 50 per cent.

The Canadian program has generated a great deal of interest from the International Energy Authority and countries of the European Economic Community. As a result, The Netherlands, Germany, Luxembourg, Belgium and Italy are implementing similar programs.

Telidon's Technology is Tops

IN THE VIDEOTEX technology popularity stakes, Telidon continues to be a winner. In the month of February alone, the second-generation videotex or two-way television system developed by the Canadian Department of Communications was chosen by three very large communication companies for the development of ultra-modern services.

It is understandable that Teleglobe Canada might favour the Canadian product for its major international data base project, estimated to cost \$4.1 million and start in mid-1981. It will provide services via interactive video terminals distributed throughout the world and normal telecommunications channels. The terminals and software for the three-year project are being supplied under a \$1-million contract by Infomart, a Toronto-based Canadian joint-venture electronic publishing-communications company that is licensed by the government to promote and develop the commercial potential of Telidon worldwide.

The two U.S. buyers, however, were looking only at the quality and versatility of the product. Time Inc. of New York determined that, compared to competing French and British systems, the Telidon system offers greater editorial flexibility and superior graphics. Time Inc. will be introducing the first national multi-channel, satellite-delivered teletex service designed for non-stop, general in-home use at the end of this year.

The Times Mirror Company, headquartered in the second largest television market in the United States, selected Telidon for a major videotex field trial in the Los Angeles area. It will also start at the end of 1981. The initial contract for a complete turnkey system is worth more than \$1 million. A unique aspect of the Times Mirror videotex system is that it will operate simultaneously over both telephone and two-way cable networks.

In March Telidon won a major international award for design excellence and technical superiority over competing systems. The New Perspectives Awards are presented annually by Touche Ross and Company of New York, the accounting and management specialists.

This month the world's first commercial Telidon service actually goes into action. On Project Grassroots, Infomart worked with the province of Manitoba's government to offer the 30,000 agricultural producers in the area

Sun Pumps from Ottawa for Low-Cost Irrigation

AN OTTAWA, Ontario, firm specializing in alternative energy systems is moving into developing countries with Canada's first sun-powered water pumps.

Officials of Canadian Energy Development Systems International (CEDSI) say the six-month-old consulting company has begun a drive to sell sun pumps to some of the world's poorest farmers, who cannot afford the fast-rising costs of traditional irrigation systems.

The system being marketed by CEDSI is deceptively simple: a few dozen photovoltaic (solar) cells are mounted on a sturdy aluminum frame and connected by cable to a submersible pump.

When the sun is shining, a unit with seven panels of cells produces up to 250 watts of power, easily pumping water from depths of up to 4.6 metres.

By using the pump to draw water from nearby streams or from shallow wells, a farmer can double his crop.

CEDSI's staff of six economists and



A demonstration of the sun-powered water pump developed in Canada.

engineers is also looking for markets for a similar pump which will be capable of drawing drinking water from depths of more than 30.5 metres. It should be ready within the next few months.

Solar power is not the company's only interest. It also sells consulting services on wind power and small-scale hydroelectric operations which can provide enough energy for small villages.

direct access to up-to-the-minute data on such vital subjects as current market prices, feed costs, grain futures and other variables. It is available through 25 free-user Telidon terminals located in places where farm business is conducted or discussed.

To ensure Telidon's continued momentum in building a commercially viable videotex industry with capabilities to compete in export markets, the Canadian government recently committed an extra \$27.5 million in funding to the program. ♦

Around the Region

Canadian Activities in ASEAN Countries

INDONESIA

THE Republic of Indonesia chose Canadian surveying expertise and facilities to carry out the two-year geodetic survey phase of its national resource evaluation program scheduled for completion this year. McElhanney Surveying and Engineering Limited of Vancouver, British Columbia, was awarded Phase I of the project—to establish a 230-station geodetic control network throughout the large islands of Kalimantan and Sulawesi.

Referred to as the Resource Evaluation Aerial Photography (REAP) Project, the \$21-million, multi-phase program was designed to set up an institutional and physical capability to handle an accelerated program of forest and mineral resource portrayal, inventory, and development.

The program is funded through a Canadian International Development Agency (CIDA) loan agreement and administered by the Indonesia National Co-ordination Agency for Surveys and Mapping (BAKOSURTANAL).

Implementation of the survey required extensive and methodical planning, as well as close co-operation and considerable assistance from BAKOSURTANAL. Nine tonnes of equipment and supplies were air freighted 8,000 miles (12,875 km.) from Canada to Kalimantan, where the survey personnel established their project headquarters at Balikpapan.

With the completion of the fieldwork, the McElhanney survey personnel are withdrawing and all satellite receivers, conventional survey equipment, and data documentation passes to the Indonesian authorities. This operational capability combined with earlier on-site training will advance their surveying technology into the satellite era.

MALAYSIA

As part of its long term expansion

program that started in 1977-78, the Aluminium Company of Malaysia Berhad (Alcom), a member of the Canadian Alcan Aluminium Limited Group of Companies, is to invest in its most ambitious project so far. Alcom plans to build a new aluminium sheet rolling facility and to install an aluminium foil mill plant which together are expected to cost \$55 million.

The up-to-date facilities will have a rated annual capacity of 24,000 tonnes of aluminium sheet products while the foil plant will be able to produce 6,000 tonnes of products a year. The project will be carried out on a new site at Bukit Raja, Kelang, Selangor, by a team of project engineers from the Indian Aluminium Co., Ltd. (Indal), an Alcan subsidiary which owns and operates a fully integrated aluminium industry in India.

After Alcom's new plant comes on stream in 1982-83 its present sheet rolling facilities at Petaling Jaya near Kuala Lumpur will be phased out and the plant developed as a fully-integrated aluminium extrusion and anodising plant. Alcom's head office will remain at Petaling Jaya but the new operation at Kelang will be developed as a self-contained sheet and foil business centre.

With this expansion Alcom will be consolidating its position as the leading aluminium semi-fabricator in Malaysia and will become one of the largest in the region.

Alcom is the largest of Alcan's three operating plants in Southeast Asia, the others being an extrusion plant in Bangkok, and an extrusion, roofing and fabricating plant in Jakarta. Alcan also has its area management office in Hong Kong and international sales offices in Singapore, Hong Kong and Tokyo, as well as a network of agents and distributors throughout the region.

Alcom, like its sister Alcan companies in the region, draws the bulk of its metal supply from Alcan's aluminium smelter at Kitimat, British Columbia, Canada.

The Shawinigan group, international energy consultants with roots in the early history of Canadian hydroelectric development, continues its 17 years of involvement in Malaysia's power development with a new government contract to carry out a feasibility study, with engineering design and costing, of 41 mini-hydro projects in the Western Malaysia.

A team of eight Shawinigan specialists, working in association with support staff from Minconsult, a local consulting engineering company, have set up offices in Ipoh and Alor Star to execute the assignment.

More recently still, other government agencies and the private sector have approached Shawinigan to submit proposals on other similar undertakings in Malaysia. (See "Energy Scene" pg. 5)

PHILIPPINES

Canada is the second largest non-regional shareholder of the Asian Development Bank (ADB), headquartered in Manila, and it is the fourth largest contributor to the Asian Development Fund. Many projects throughout Asia are thus financed with Canadian contributions, although this may not be apparent always as the use of ADB loans is not tied to procurement from any particular country.

Canada and the ADB co-operate in many ways in their common objective of helping to develop the area's lower and middle income countries. A continuing dialogue on development programs and policies between the Canadian International Development Agency (CIDA) and the ADB facilitates the effective planning of both agencies. Both Canada and ADB are members of the various consultative or aid groups, including those for the various ASEAN countries.

*

Mar Fishing, the joint-venture company of a Canadian packing firm and a partly Canadian-owned mining corporation in the Philippines, inaugurated its \$10-million tuna loining and canning plant in Zamboanga City, Philippines, on February 11, with the Philippine Minister of Natural Resources Jose J. Leido as the guest of honour.

The initial capacity of the plant is rated at 50 metric tons of raw tuna per day, but this can be increased to 150 tons per day by installing additional processing equipment. This would place Mar Fishing as one of Asia's most modern and largest tuna processors.

The plant will produce approximately 750,000 cases annually of premium canned tuna for export to Europe and North America. Fish meal, a by-product of tuna processing, will be sold locally as a protein source for animal feeds.

It is estimated that the plant will employ some 500 local workers and provide families in the community with about \$1.3 million annually in salaries and fringe benefits. The business will also generate approximately \$23 million annually in foreign exchange earnings for the Philippines.

*

The sixth Philippines-Canada World Youth Exchange was successfully concluded on January 15 when the Filipino and Canadian participants bade fond farewells at Manila International Airport before departing for their homes in Canada and the Philippines.

Canada World Youth (CWY) is an exchange program which gives Canadian and non-Canadian participants exposure to development problems and the various methods by which they are tackled. The program, which has been funded by the Canadian International Development Agency (CIDA) since 1974, includes group involvement in social and economic development projects both in Canada and overseas.

The 32 Filipino participants, who were all members of the Future Farmers of the Philippines and Future Agricultural Homemakers of the Philippines organizations, left for Canada in July, 1980, to meet their Canadian counterparts. The entire group of both Filipinos and Canadians stayed with families in various communities in Saskatchewan from July to October.

In October the group travelled to the Philippines where it was divided into four mixed groups of youths who went to live for three months with families in Lagangilang, Abra province; Lobo in Camarines Norte; Dingle, Iloilo province; and Tiwi in Albay.

*

A five-member Canadian Parliamentary Task Force on North-South relations made a tour of three Asian countries in February to gain first-hand experience of the range of problems facing developing countries.

While in the Philippines, their first port of call, the Task Force members exchanged views on the developmental process with prominent government officials and members of international non-governmental organizations. They

visited the Asian Development Bank, an irrigation and a group education project, both Canadian funded, in the farming community of Santa Rita as well as the International Rice Research Institute (IRRI), Southeast Asian Research Centre for Agriculture (SEARCA), and the University of the Philippines, Los Banos. IRRI and SEARCA have received funding from the Canadian International Development Agency (CIDA) and Canada's International Development Research Centre (IDRC).

SINGAPORE

The members of the Canadian Parliamentary Task Force had discussions on Singapore's education, economic and industrial development strategies with Foreign Minister Dhanabalan and Education Minister Dr. Tony Tan. They also spoke with officials of the Economic Development Board, the Singapore Institute of Standards and Industrial Research (SISIR), and the Science Council of Singapore.

A practical appreciation of Singapore's progress in the agricultural sector was gained by a visit to a fish culture project operated by the Primary Production Department at Changi. This project has received over \$460,000 in direct financial support from IDRC, whose Asia regional office is located in Singapore.

The parliamentarians also met with officials of Technonet-Asia which is funded jointly by IDRC and CIDA.

The group returned to Canada via Bangladesh.

*

I.P. Sharp Associates Limited, one of Canada's largest software and computer service organizations, will extend its operations to Asia in the next couple of months.

Mr. K. Walter Keirstead, who is the managing director of the new division to be headquartered in Singapore, says the Canadian government-sponsored trade mission to the area last December, in which he participated, played a major role in the company's decision to establish offices in Singapore and Hong Kong.

The Singapore office will open its doors in May and will be managed by Mr. Hugh Hyndman, while the Hong Kong office, under the direction of Mr. James Sinclair, will start up towards the end of June, 1981.

The Far East Division will allow faster,

more effective communication for international banking, insurance, aviation, and energy industries — critical communications formerly effected by telephone or by mail, will become virtually instantaneous using the I. P. Sharp services.

Users of the services will not only have access to international data but will also be able to access local private and public data. The computing environment, data base management systems, and application programs will be available via the computing network or on Far East-based computers.

With branch offices in 51 cities in four continents and local dial access to over 280 cities worldwide, I. P. Sharp Associates offers more international locations than any other company in the Applied Programming Language (APL) computer time-sharing business.

The company is also negotiating a joint venture with a South Korean multinational, searching for a joint-venture partner or agent in Japan, and planning to study business and investment opportunities in China. The present expansion program follows on the heels of a similar undertaking in 1978 in Australia, where a third office has just opened in Canberra.

*

One important aspect of the Canadian International Development Agency's (CIDA) Industrial Co-operation Program is the transfer of technology through the formation of joint ventures between Canadian industries and their counterparts in developing countries.

Technonet-Asia, as part of its special relationship with CIDA, is co-operating in this respect by virtue of its knowledge and close contact with Asian industries.

Recently arrangements were made by Technonet for one of its council members, Dr. Lee Kum Tatt, the chairman of the Singapore Institute of Standards and Industrial Research (SISIR), and his staff to meet with Canadian Commercial Counsellor Jim Ganderton, who presented an overview of Canadian industries and technologies that are available for co-operative arrangements in Singapore. This meeting was useful in fostering a working relationship with SISIR's staff who are in direct contact with the local industries.

Mr. Ganderton gave a second presentation on February 21 to the Singapore National Productivity Board, and arrangements are being made to organize similar meetings between the staff of

Technonet's participating organizations and the Canadian commercial counsellors in other Asian countries.

*

Singapore's long-awaited world-class indoor stadium may soon begin to grow on a plot of land in Kallang, but its roots are in Canada. Two of the three directors of the firm of developers, Coliseum Company (Singapore) Pte. Ltd., are Canadians and financial backing for the project is to be provided by a Canadian-based finance group.

Estimated to cost \$57 million, the proposed multi-purpose, air-conditioned stadium, to be called Lion City Coliseum, will have a seating capacity of 18,500. It will take about three years to complete. When it is operational, the coliseum is expected to have at least 120 days a year, or 10 days each month, scheduled for international and regional sporting, cultural, musical and other events.

*

The Canadian Alumni Singapore is holding its first Annual General Meeting for 1981 on Saturday, April 25 at 4.30 p.m. in the Staff House, National University of Singapore, Bukit Timah Campus.

The buffet dinner that follows the meeting is the second social gathering organized by the Alumni. The first was a cocktail party held at the Canadian High Commissioner's residence where the members welcomed the visiting principal of McGill University, Montreal.

At its inaugural meeting on November 15, 1980, the Alumni launched a drive for members and set out the group's main objectives. As well as providing facilities - social and otherwise - for graduates of Canadian educational institutions to meet together, the Alumni will assist students intending to study in Canada, and promote goodwill between Singapore and Canada.

The president of the Alumni is Mr. Lim Hoy Pick, Director of Extramural Studies, National University of Singapore. His office is at 13 Dalvey Estate, Singapore 1025. Tel: 251-9168.

*

Three ships - Kootenay, Gatineau, and Provider - of the Second Canadian Destroyer Squadron sailed into Singapore on April 1 for a six-day goodwill tour.

The squadron operates out of the Pacific coast naval base in Esquimalt, British Columbia, Canada. Both HMCS Kootenay and HMCS Gatineau are Canadian built and are used principally for anti-submarine activities. Prior to their Singapore visit the ships were



HMCS Kootenay sails into Singapore.

involved in joint exercises with the United States' Navy in the Pacific. Hong Kong is the squadron's next port of call.

HMCS Gatineau and Kootenay are part of the Improved Restigouche class and have been modernized to incorporate the most advanced detection equipment and anti-submarine weapons systems. They have also been designed to protect crews from nuclear fall-out since provision has been made for a minimum number of personnel to work in exposed areas. HMCS Provider is the Squadron's supply vessel.

*

Export Furniture Canada, a group of 20-25 manufacturers, has written orders for \$350,000 to \$500,000 from furniture buyers for outlets in Singapore and Australia and follow-up sales during the year could amount to another \$5 million.

The buyers were among the 25 overseas store representatives invited under the sponsorship of Canada's Department of Industry, Trade and Commerce to the Toronto Furniture Show held on January 12 and 13. The invitations were made possible by the department's Promotional Projects Program, which sponsors industrial missions to and from Europe, Asia, and North America.

The biggest event of its kind in Canada, the Toronto Furniture Show, which this year attracted more than 10,000 trade representatives, provides a national shop

window for the latest products of 200 exhibitors. Orders placed at the show represent an estimated 20 per cent of the Canadian furniture industry's annual turnover of approximately \$2 billion.

*

The Canadian Labour Congress (CLC) is assisting trade unions in Asia to develop socio-economic projects through the International Confederation of Free Trade Unions-Asian Regional Organization (ICFTU-ARO).

The ARO, which was founded in 1952 and has its regional office in Singapore, concentrates on complementing the traditional trade union concerns of its affiliates, the largest trade unions in Asia. Hence the adoption of projects such as those managed by Alan Amey, whose secondment from the CLC to the ICFTU-ARO was partially sponsored by the Canadian International Development Agency (CIDA).

Mr. Amey is currently concerned with a health insurance scheme and an integrated rural development project in Indonesia, a vocational training project in Malaysia, and a supermarket scheme in Papua-New Guinea.

The future plans of the CLC's international department, which has expanded considerably in the last two years, include the education of trade unionists in the concerns highlighted by the North-South dialogue.

THAILAND

Two representatives of a Canadian firm that has developed an unconventional fuel alcohol plant spent a week in Bangkok in February exploring market possibilities. Dr. John Hughes and Mr. Kirk Lawrie of Stanfer Manufacturing Limited of Montreal, Quebec, held discussions with Khun Tanoo Vicharangsarn, secretary of the Power Alcohol Committee in the Ministry of Industry, and other senior Thai officials, and potential investors.

Stanfer Manufacturing's new technology substantially reduces the conversion time from raw materials to alcohol. Regular machinery requires 72 hours for this process, but the Stanfer method takes only 12 hours. The key is a non-enzymatic method.

Much of the delay in establishing an alcohol factory in Thailand has been caused by the uncertain supply of enzyme chemical from abroad. By adopting the Stanfer method Thailand could be self-sufficient in all process and raw materials for the production of alcohol. Dr. Hughes estimates that one litre of alcohol could be produced for 25 cents worth of cassava, which would be the raw material used in Thailand.

As well as reducing the conversion time, the non-enzymatic method reduces the capital outlay required. A factory with an annual capacity of 38 million litres would cost about \$17.75 million and would require only 1,000 square metres in area, thus reducing the capital cost by 30 per cent to 40 per cent from methods presently in use. In addition, the start-up time for a Stanfer factory is only six months to eight months, as opposed to 18 months to 24 months for the conventional method.

A full-scale technical seminar will be organized, with the support of the Canadian Embassy, for local business and government officials when Dr. Hughes and Mr. Lawrie return to Thailand.

*

In early February the first of four buildings which will house the Christian Home of Education for the Blind near Khon Kaen, north-eastern Thailand, was dedicated by the Canadian Ambassador to Thailand, Fred Bild, on behalf of the donor governments and organizations.

The school for the blind is co-ordinated by Khun Prayat Punongong and is not only a remarkable endeavour because of its success to date but all the more so because Khun Prayat himself is

blind. His dedication to the cause of improving the well-being and education of blind children has caught the interest of national and international organizations and also foreign governments.

The project began when four acres of land were donated by Thai businessmen five kilometres outside Khon Kaen. A gift from the Christoffel Blindenmission of Germany has provided funds for the construction of the first of four units, which will eventually provide accommodation and training for more than 100 blind children plus staff.

The Canadian Embassy, through its Mission Assisted Fund (MAF) program, has provided funds for land fill, fencing, electrical and water installation along with an access road. A Khon Kaen university architect donated his services in preparing the plans for the school complex.

Prior to the commencement of the new facility, the Canadian province of Alberta's international assistance program assisted in providing classroom, dining, and craft centre facilities to serve students at the present school. With this aid Khun Prayat has been able to teach blind people to read and write in Braille and to learn trades for their future support.

Other supporters and helpers include the Bangkok Association for the Blind, the Foundation for the Blind in Australia, World Vision of Thailand, the Evangelical Church of Bangkok, a Swedish missionary, Mr. George Heckendorf, director of the Christian Bible School, and Mrs. Rose Lim, the director of orphanages in Bangret (Nonburi) and Mae Sai (Chiang Rai).

Films from the National Film Board (NFB) of Canada are being featured exclusively in a documentary film series on Bangkok's Channel 9 television station. The 30-minute-long program, screened at 10.00 a.m. on Saturdays, is produced and hosted by noted Thai film star and producer Khun Patravadi Sritrairatana. She has chosen films from light animation to serious and probing documentaries using varied techniques, including even computer animation.

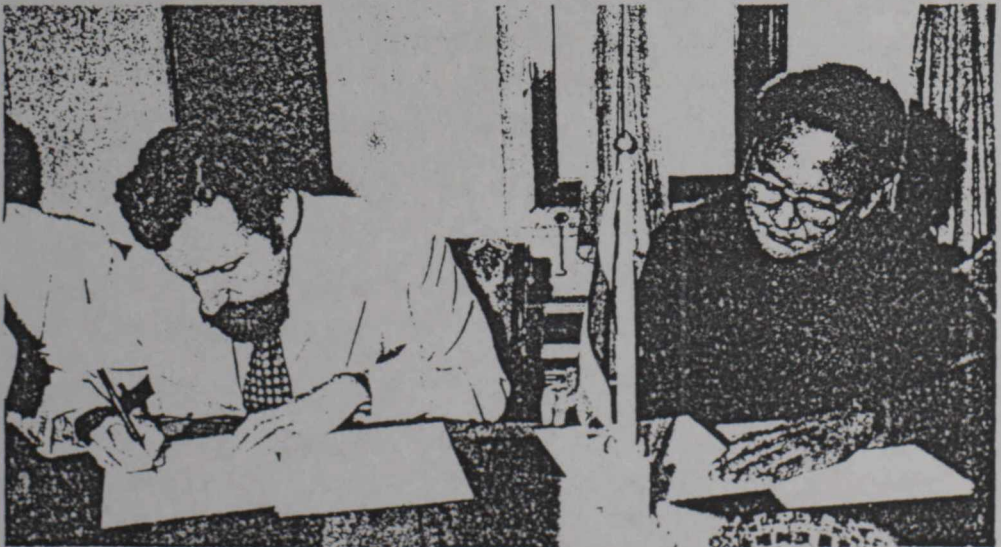
The NFB is an independent film production and distribution organization funded by the Canadian government to produce films about Canada and about our world as seen from a Canadian perspective.

*

Canadian Ambassador Fred Bild and Finance Minister Dr. Amnuay Viravan recently signed an agreement increasing Canada's contribution to the Provincial Electrical Authority's (PEA) accelerated rural electrification program by \$4 million. The total Canadian contribution to this program in Thailand since its inception now becomes \$14 million.

These additional funds made available by the Canadian International Development Agency (CIDA) will be used to purchase from Canada approximately 1,500 tonnes of aluminium ingots that will be transformed in Thailand into electrical cable for PEA's rural electrification program.

The total Canadian contribution of 7,300 tonnes of aluminum provides PEA with electric conductor cable required in its electrification program aimed principally at the 16 north-eastern provinces.



Thailand's Finance Minister Dr. Amnuay Viravan and Canadian Ambassador Fred Bild sign an agreement increasing Canada's contribution to the accelerated rural electrification program in Thailand.

News Briefs

Canada Signs Common Fund Agreement

Canada has signed the international agreement establishing a common fund for commodities, Secretary of State for External Affairs Mark MacGuigan and Minister of Industry, Trade and Commerce Herb Gray announced.

The \$750-million fund will be set up to finance international commodity agreements which have commodity buffer stocks to enhance market price stability. The fund will also finance commodity development measures, such as research and market promotion, with the aim of improving the long-term competitiveness of various commodities.

The Common Fund, the result of four years of negotiation, is regarded as a key element in the North-South dialogue, especially by the developing nations which view it as a test of the developed nations' commitment to international change. The signing of the agreement is an indication of Canada's support of the on-going process of the dialogue between developed and developing countries.

CIDA is Changing Course

Canada's foreign aid program has changed direction to better serve the social values of people in developing countries.

The new president of the Canadian International Development Agency (CIDA), Marcel Masse, believes in investing in things like technical schools, which will have an impact on the views, attitudes, and levels of education and management skills of people, instead of building an infrastructure of ports, dams and transport, which so often in the past has been inappropriate.

In recent years, CIDA has diverted increasing aid toward the poorest countries and away from the so-called middle-income countries, as well as directing more through multilateral agencies. Mr. Masse thinks both policies are sound but he wants more bilateral aid spent on projects helping people acquire skills and training while taking account of local traditions rather than importing western development concepts and values.

Assistance to Bangladesh Rail

A team of advisers from Canadian Pacific Consulting Services Limited of Montreal, Quebec, is providing technical assistance through a \$5.1 million CIDA-funded project aimed at helping Bangladesh Railways raise the service availability of

its diesel electric locomotives to about 85 per cent from the present 65 per cent.

Over the next five years, the team will provide a total of some 33 man years of services in close co-operation with counterparts in the railways to develop a program of preventative maintenance for the locomotives, help staff upgrade their skills, and extend the improved stores and inventory system already established with Canadian assistance at the railway's Dacca, workshop.

Korean Contract to Northern Telecom

Northern Telecom Canada Ltd. of Mississauga, Ontario, a subsidiary of Northern Telecom Ltd. of Montreal, has announced a contract for the sale of \$60 million worth of telecommunications equipment to South Korea.

The contract is for the provision of digital transmission equipment for the improvement and expansion of South Korea's telephone network. Deliveries are expected to span an 18-month period, starting before the end of 1981.

The equipment will be manufactured by Northern Telecom Canada in its Aylmer, Quebec, and Winnipeg, Manitoba, plants.

IDRC Turns Ten

A public lecture on "Rural Development: New Directions in Southeast Asia" was given to mark the 10th anniversary of the International Development Research Centre (IDRC) celebrated at its Asia Regional Office in Singapore on February 27. The speaker was Dr. Somsakdi Xuto, Minister attached to the Thailand Prime Minister's Office in Bangkok.

The Canadian-based IDRC, which was established by the Parliament of Canada, was the first organization ever set up specifically to support research projects that are identified, designed, conducted, and managed by researchers from and in developing countries, in terms of their own priorities.

Voice Box Made in Canada

An artificial voice box has been developed by Canadian medical researcher John Frederickson in conjunction with the University of Toronto Biomedical Instrumentation Development Unit.

It is a stainless steel disc that is implanted at the back of the throat. One of the faces of the disc, which is 3.5 centimetres in diameter, is as taut as a drumhead and vibrates in response to an externally generated electrical signal from a battery pack carried in the user's pocket. The vibrating disc sends a tone up the

user's throat to where the mouth shapes the sound in the usual way into comprehensible speech.

A year's testing of the device, which weighs about 30 grams and is only five millimetres thick, has begun though testing in 1978 of a larger prototype proved successful but for the drawback of its size.

Canada-Asean Bilateral Tax Treaties

Canadian Minister of Finance Allan MacEachen recently announced that bilateral tax treaties are now in force with Indonesia and Malaysia. Canada already had double taxation agreements with Singapore and the Philippines.

Help to Solve Oil Shortage

A new corporation, Petro-Canada International, will be created for the purpose of exploration in developing countries in an effort to help solve these countries' and the world's oil shortage problem. This initiative has been allocated \$250 million under Canada's National Energy Program.

For further information on material contained in this publication please contact the nearest Canadian diplomatic mission.

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