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CANADA - UNITED STATES

# Partners in Defence

# Defence Economic Cooperation

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Indal Technologies

*Indal Technologies' helicopter recovery assist, securing and traversing (RAST) system enables pilots to land and take off safely at night and in rough weather.*

For almost 50 years Canada and the United States have shared responsibility for the defence of North America. Their joint defence of the continent is supported by an integrated, dispersed industrial base, which took shape during World War II.

The full integration of defence production is a logical result of the long and close cooperation between the Canadian and American armed forces and industries. It has strengthened military security and provided economic benefits to both countries.

The comprehensive network of existing arrangements on defence production and trade that exists today originated during the Second World War when the two governments decided to pool industrial resources to increase the effectiveness of the Allied war effort. In 1940 Prime Minister Mackenzie

King and President Roosevelt met at Ogdensburg, N.Y., and established the Permanent Joint Board on Defence (PJBD), the senior advisory group on North American security. A year later they issued the Hyde Park Declaration which focused specifically on defence production for the war effort. The two countries expanded cooperation in research, development and production. Two major agreements were signed, the Defence Production Sharing Arrangement on joint contracting in 1956, and the Defence Development Sharing Program on research and development in 1963.

Canada-U.S. defence economic cooperation is reinforced by frequent high-level consultations, including meetings between the prime minister and the president. The spe-

cial defence production relationship was reaffirmed at a recent summit, when leaders of the two countries made the following commitment:

"To provide for an effective use of resources and to aid both our countries in bearing our share of the Allied defence burden, we reaffirm the Canada/United States Defence Development and Production Sharing Arrangements and agree to strengthen our North American defence industrial base. Recognizing the importance of access to, and participation of Canadian firms in the U.S. defence market, we will work to reduce barriers, and to stimulate the flow in defence goods. . . . We will also undertake to establish a freer exchange between both countries of technical knowledge and skills involved in defence production, in order to facilitate defence economic and trade cooperation and joint participation in major defence programs."

## The Integration Of Production

The U.S. Department of Defense treats Canada as part of the North American industrial base. It defines industrial base as "that part of the total privately-owned and government-owned, industrial production and maintenance capacity of the United States, its territories and possessions, *as well as capacity located in Canada, expected to be available during emergencies to manufacture and repair items required by the military services.*"

Canadian firms are registered as "planned producers" in DOD's Industrial Preparedness Production Program, providing a supplement to the capability of U.S. industry to produce critical items during periods of national emergency.

Competition by Canadian and U.S. firms for defence contracts on the basis of price, quality and delivery, keeps costs under control. The quality and delivery of Canadian defence products are guaranteed by the Canadian Commercial Corporation, a government agency.

The integration of defence production is cost-effective and efficient. It means that:

- Both countries have responsibilities in research and development and production.
- Military equipment used by the U.S. and Canadian armed forces is standardized, where appropriate.
- Supplemental supply sources are main-



Charles Bryant, de Havilland Aircraft of Canada

De Havilland produces short takeoff and landing (STOL) aircraft such as the Dash 7 and Dash 8.

tained and production facilities dispersed.  
 ■ There is a greater flow of defence supplies and equipment between the two countries.

This highly productive and cost-efficient exchange has brought specific economic benefits to the United States:

■ The United States maintains a surplus in the defence trade, selling one and one-half times the amount it buys from Canada. The total U.S. surplus in defence trade since 1959 amounts to some (U.S.) \$2.21 billion.

■ Canada is the largest U.S. export market for defence products and is often the first foreign market for new U.S. defence exporters.

■ Canadian sales are in large part U.S. sales since most Canadian defence products contain substantial U.S. content.

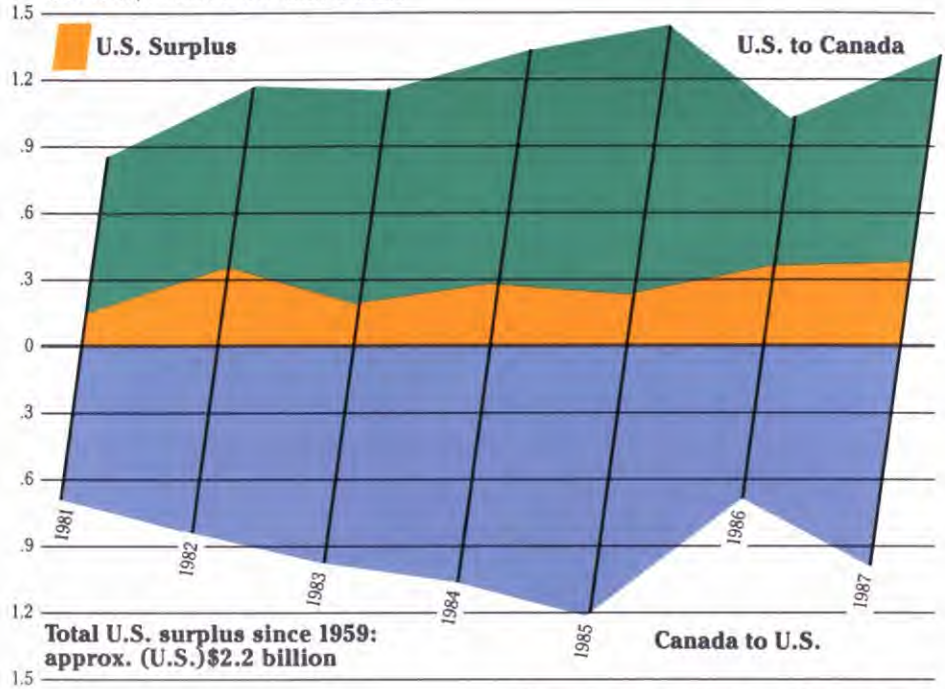
## Joint Development

Under the 1963 Defence Development Sharing Program, many defence development projects in Canada are funded jointly by the United States and Canada, and both countries share in the benefits. Under this program Canadian Marconi, for example, developed the AN/GRC-103 tactical radio, and Indal Technologies developed a recovery assist, securing and traversing (RAST) system for landing helicopters on destroyers and frigates. Both systems are now standard

MacDonald Dettwiler

## U.S. CANADA DEFENCE TRADE

1981-1987, In Billions of U.S. Dollars



Source: Department of Supply and Services Canada

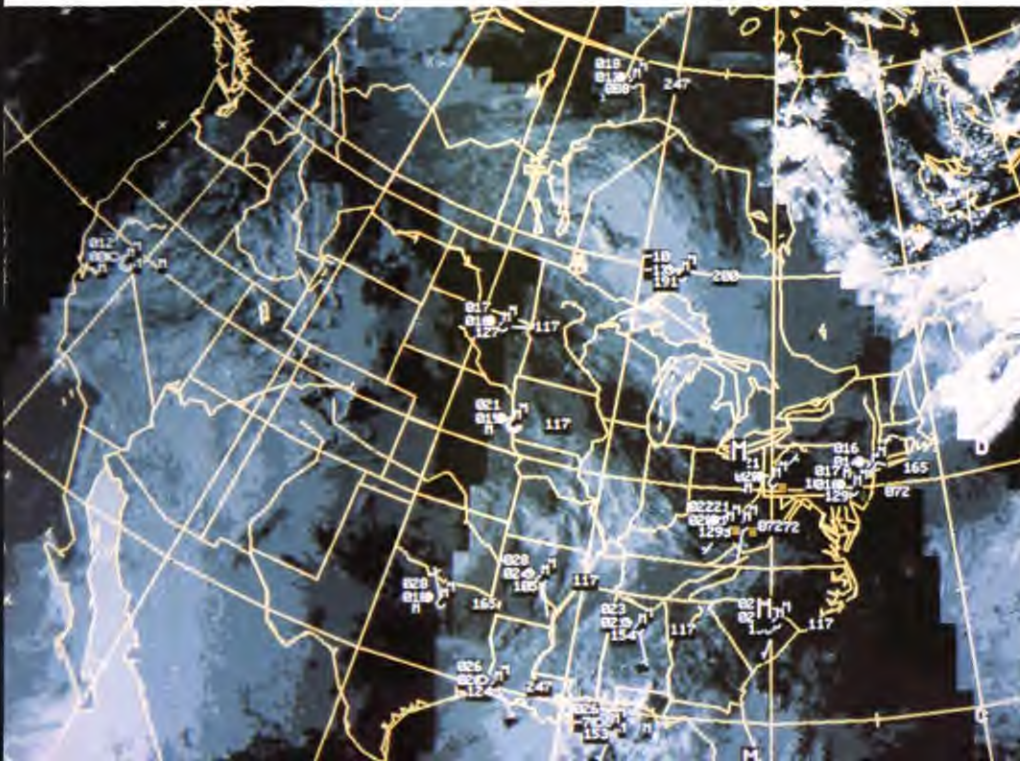
in the United States and many allied Armed Forces.

The Automated Weather Distribution System was developed for the U.S. Air Force by MacDonald Dettwiler and Associates of Richmond, B.C. and Harris Corp. of Melbourne, Florida. The system provides forecasts and alerts and other weather data to all USAF bases, flight crews and operations personnel.

After 20 years of joint research, Spar Aerospace Ltd., of Toronto, which built the remote manipulator arm for the U.S. space shuttle, is the prime contractor to develop an Infrared Search and Target Designation System for the U.S. Navy and the Canadian Department of National Defence.



Canadian Marconi's AN/GRC-103 tactical radio.



## A Reliable Supplier Of Critical Items

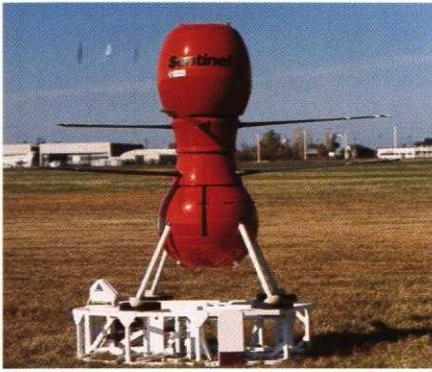
The Canadian defence industry is much smaller and less diversified than that of the U.S.—in 1986 total purchases from Canada accounted for less than one percent of total DOD procurement, including items supplied through subcontracts. Canadian defence producers, however, complement U.S. manufacturers in important areas.

Canadian companies have developed technology and expertise in product areas vital to joint defence needs, such as military radios, navigation systems, short takeoff and landing (STOL) aircraft, reconnaissance drones, anti-submarine warfare systems, flight simulators, remote sensing, ballistic computers, and equipment suited for use in Arctic conditions.

According to a recent study by a joint U.S.-Canada task force, Canadian industry

*This composite satellite image of cloud systems over North America was derived from the Automated Weather Distribution System, developed by MacDonald Dettwiler and Harris Corp.*

Canadair



Canada has developed expertise in producing reconnaissance drones such as Canadair's CL-227 Sentinel.

### A HIGH-TECH SUPPLIER

Canada is an important source of specialized equipment for the U.S. Armed Forces.

In recent years the U.S. Marine Corps has bought (U.S.)\$700 million worth of Light Armoured Vehicles (LAV-25) from General Motors Canada and the U.S. Army has purchased \$700 million worth of AN/GRC radio systems from Canadian Marconi.

The U.S. cruise missile program uses an inertial navigation system provided by Litton Systems Canada.

Matrox Electronic Systems Ltd., of Dorval, Quebec, which manufactures high-performance computer display boards and systems, has a contract with the U.S. Army to sell, over five years, 50,000 electronic delivery systems for use in training.

The Martin Marietta ADATS low-level air defence system selected by the U.S. Army is another example of the close integration of the U.S. and Canadian defence industries. The ADATS system has also been selected for the Canadian Forces and is co-produced by Martin Marietta and Oerlikon Aerospace of Canada. Litton Systems Canada Ltd., a major sub-contractor to Oerlikon Aerospace for the Canadian ADATS, will open a new plant to produce radar systems for the ADATS.

has the potential to manufacture more than 80 percent of the components considered critical to the surge production needs of precision-guided munitions. A related analysis of the M1A1 Abrams tank determined that for all but one of the 129 subsystems studied, the necessary technology for production exists in Canada.

Canada is a major source of many strategic metals imported by the United States. For example, it supplies 54 percent of the aluminium imports (used in air frames), 53 percent of the zinc (brass ammunition and corrosion coating), 44 percent of the cadmium (metal plating and coating), 43 percent of the nickel (alloys for jet engines, missiles), and 28 percent of the silver (electrical and electronic components).

It is also an important supplier of energy—in 1987 Canada provided about 14 percent of the U.S. crude oil imports and 6 percent of its natural gas demand.

Oerlikon Aerospace



The ADATS missile system, shown mounted on a Bradley M3 vehicle.

## The United States' Largest Export Market

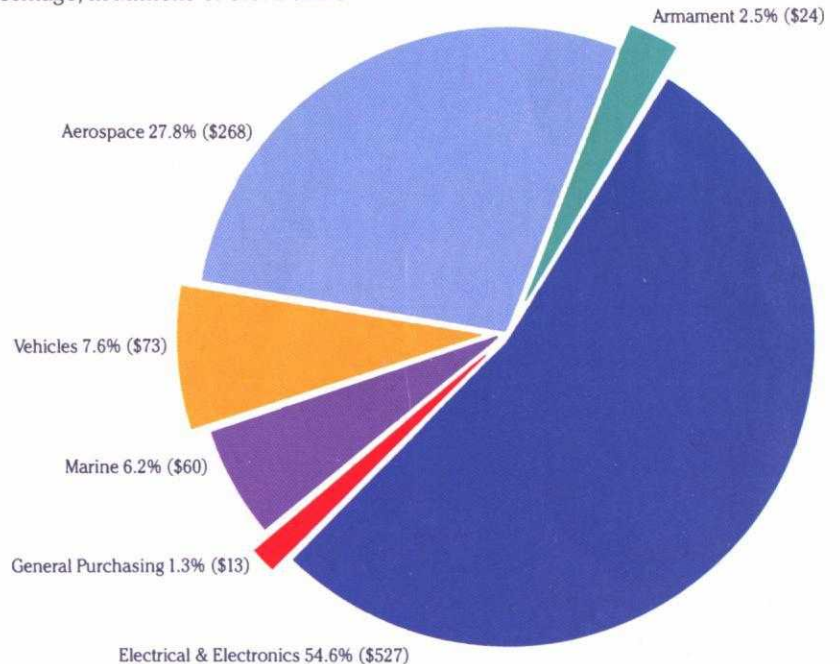
Among the NATO allies, Canada is the largest buyer of U.S. defence equipment. According to the U.S. Defense Department, Canada bought (U.S.)\$1.226 billion worth of U.S. equipment in FY1986—equal to more than one-third of total purchases by all European NATO countries. In 1987 U.S. firms exported (U.S.)\$721 million worth of defence items directly to Canada, 64 percent

more than the United States bought. U.S. firms received another \$618 million in sub-contracts.

Canadian procurement policy has favoured the purchase of major weapons systems from the United States since 1959, when the Canadian government decided it would no longer develop and produce major weapons systems in Canada. In return, the U.S. agreed to treat Canadian companies as national suppliers and to maintain a long-term balance in bilateral defence trade.

### U.S. DEFENCE PURCHASES IN CANADA

1987, By Industry Sector  
By Percentage, In Millions of U.S. Dollars



**Total U.S. defence purchases in Canada: (U.S.) \$965 million**

Source: Department of Supply and Services Canada

Canadian Marconi

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## A GOOD CUSTOMER

In recent years Canada has purchased 18 Lockheed Long-Range Aurora Patrol aircraft for (U.S.)\$1 billion and 138 F-18 fighter aircraft from McDonnell Douglas for \$3.2 billion. Its new frigates will be armed with anti-ship missiles supplied by McDonnell Douglas and anti-air missiles built by Raytheon. The Tribal destroyers will have updated missiles from General Dynamics, fired from the Martin Marietta Mk41 vertical launch system.

## U.S. Content In Canadian Products

American firms contribute significantly to the content of the supplies and equipment purchased by the United States from Canadian firms. More than 50 percent of all materials and supplies purchased by Canadian firms comes from U.S. sources.

For example, in the case of the Boeing/de Havilland Buffalo transport aircraft, 89 percent of the material content comes from plants in 19 American states.

Other examples include:

- Canadair aircraft and reconnaissance drone systems, 60 percent of materials from U.S. sources;
- de Havilland aircraft, 35.9 percent;
- Menasco landing gear systems, 38 percent;
- CAE flight simulators, 67.4 percent;
- avionics and electronics components from Computing Devices of Canada, Canadian Marconi and Litton Systems Canada, 65.5 percent.



Martin Marietta

*Martin Marietta's Mk41 vertical launch system will be used on Canada's updated destroyers.*



de Havilland Aircraft of Canada

*The de Havilland Buffalo transport.*

Given the high U.S. content in Canadian defence products, sales by Canadian firms to the Canadian and U.S. governments and to third countries are in large part sales of U.S.-made components and subsystems. In 1986, Canadian defence exports to countries other than the United States contained more than (U.S.)\$252 million U.S. content.

Many of the top Canadian aerospace and defence electronics firms (a sector which constitutes 70 percent of the Canadian defence industry) are subsidiaries of U.S. firms.



# Canada

Canadian Embassy/Ambassade du Canada