Applied Research (SPAR) Division of The deHavilland Aircraft of Canada Ltd. The company developed by internal growth and through acquisitions including:

- 1969 – The assets of York Gears Ltd
- 1972 – Astro Research Corporation of California, now Astro Aerospace Corporation.
- 1977 – The assets of the Government and Commercial Systems Division of RCA Ltd and certain assets of the space electronics manufacturing unit of Northern Telecom Ltd.
- 1984 – COMTEL of California

CAPABILITY: Spar Aerospace Limited is a Canadian-owned company engaged in the design, development, manufacture and servicing of systems and products for the space, communications, defense, aviation and remote manipulator markets. The company employs more than 600 engineers and technicians, one of the largest technological groups in the private sector in Canada.

In twenty years of growth, Spar has gained international recognition as a diversified high technology company and has achieved financial stability by balancing the steady sales base of its gears and transmissions and aviation services operations with businesses serving the fast-growing markets of space, defence, communications, and telerobotics. Spar's areas of expertise are outlined below:

• SPACE – Spar's facility in Ste-Anne-de-Bellevue near Montreal is the principal supplier in Canada and a major international manufacturer of civilian and defence satellite communications (up to EHF) and surveillance systems, including satellites and satellite subsystems.

Spar and its predecessor companies have contributed to the design and manufacture of over 50 satellites and subsystems, including the fabrication of structures and payloads for all the Canadian and many international satellites. The company's contract from Telesat Canada in 1979 to supply two 24-channel *Anik* D communications satellites was the first such prime contract to be granted to a Canadian company. *Anik* D1 was successfully launched in August 1982 and *Anik* D2 was launched in 1984. Development of the *Anik* E series communications satellites is currently underway for launch in 1990.

In 1982, Spar was awarded a prime contract to provide two satellites and a related ground control system for EMBRATEL, the Brazilian government-owned telecommunications company. The project known as Sistema Brasiliero de Telecomunicacoes por Satellite (SBTS) was completed in 1985. This is the largest export satellite contract won by Spar and will be the first domestic communications satellite system in Latin America. In addition, Spar is working on the following major communications satellite projects – Intelsat VII Telecom II; Olympus; MSAT; and Radarsat, a remote sensing satellite to be employed by the department of Energy, Mines and Resources.

Spar's subsidiary Astro Aerospace Corporation, designs and develops lightweight deployable structures for space and ground applications. These include the patented STEM antenna product line and Astromast deployable structures used in many spacecraft to deploy antennas, experiments and solar arrays.

• COMMUNICATIONS – Spar designs and manufactures satellite earth stations and related projects. The development of the Time Division Multiple Access/Digital Speech Interpolation (TDMA/DSI) equipment was largely completed during 1983 and the first terminal was delivered to Teleglobe Canada in 1984. The system is also being offered in several international markets.

SPARCOM, the company's low cost telephony satellite earth terminal developed in conjunction with the Department of Communications, offers unique advantages to users in remote locations and in private networks, including improved communications with oil rigs operating off the east coast of Canada.

Spar's subsidiary, COMTEL, designs and builds light and medium rate earth station nets for such customers as Dow-Jones Inc, NASA and US Defense Department.

Spar has signed a multi-year joint development and technology transfer program with the People's Republic of China.

• DEFENSE – Spar develops and manufactures electro-optical, surveillance and telerobotics for the Canadian Armed Forces and international markets. It also provides technical support to the Forces, particularly systems engineering. Facilities include a manufacturing plant, optical, electronics and systems laboratories, and a dedicated computer for developing military software and the real-time processing and display of complex optical data.

Spar is a leader in the field of remote heat sensing technology, having worked for 18 years to develop the unique AN/SAR 8 infrared surveillance system for the passive detection of ships, missiles and aircraft for defense and navigation purposes. Following successful trials of the system by the Canadian and US Navies, a project agreement was signed by the two governments in 1983 to undertake, on a joint basis, the full scale engineering development of this equipment.

Spar is manufacturing the Forward Looking Infrared (FLIR) system for the Canadian Forces Low Level Air Defence System and in addition, provides several configurations of FLIR devices for land and airborne applications.

• AVIATION PRODUCTS – Spar is an industry leader in the production of high precision aerospace gears and transmissions. The company manufactures and assembles lightweight, high-speed, high-torque power transmission systems and equipment for gas turbine engines and fixed and rotary wing aircraft. This facility also manufactures, assembles and tests the joints of the Remote Manipulator System (RMS) for the Space Shuttle.

In 1982, Spar signed an initial contract with Sikorsky Aircraft to produce the main, intermediate and tail gearboxes for the Sikorsky H-60 series helicopter. As well, the company manufactures the tail rotor, intermediate gearboxes and main rotor shafts for the Sikorsky S-76 commercial helicopter. A contract has recently been received from Sikorsky Aircraft for the manufacture of 191 power input modules for Blackhawk helicopters.

In 1986, General Electric Company awarded Spar contracts for follow-on production of accessory gearboxes and other components for engines that power turboshaft helicopters and turboprop and turbojet aircraft. Spar produces accessory gearboxes for General Electric's J85-21 turbojet engine (used in the F-5E/F aircraft), the T700 turboshaft engine (used in the Black Hawk, Sea Hawk, Advanced Attack, and Bell 214ST helicopters), and the CT7 turboprop engine variants. Engine gearboxes are supplied for General Electric's new J79-17X engine development program, the CF6-80 commercial transport engine and for the CFM56 turbofan engine, a joint project of General Electric and SNECMA of France. Gearbox components are also manufactured for Avco Lycoming's T53, T55, and ALF 502 engines.

The company fabricates the transmission and components for the Boeing Vertol CH-46 helicopter, transmission gears for the Westland Lynx helicopter (UK) and gear box components for the Puma helicopter made by Aerospatiale of France.

• AVIATION SERVICES – Spar repairs and services aircraft components, sells aviation products and accessories, and overhauls helicopters.

Services cover engine and flight instruments; components of electrical, oxygen, navigational and autopilot systems; constant speed drives; accessory gearboxes; and components for flight control and heating systems. Customers are military and commercial operators in Canada, the US, Mexico, and Central and South America. A large part of Spar's business is with 17 aircraft equipment manufacturers in North America and Europe, which have appointed the company as a Canadian warranty and service station for their products. In 1986, Spar received a contract for repair and overhaul of a number of components for the NATO E3A AWACS fleet.

For helicopters, Spar provides an authorized customer service facility for Bell, Aerospatiale and Hughes. Services include the sale of parts and accessories, the repair and overhaul of mechanical, hydraulic and avionic components, rebuilding and maintaining airframes, and providing field service. Customers are located in Canada, the US, Mexico, Central and South America, and Indonesia.