

**CAPABILITY:** The company designs, engineers and fabricates aircraft components and other allied and support items for the aerospace industry in both aluminum and composites. They maintain a design and engineering office capable of producing products to stated performance specifications and military specifications. They specialize in the design and manufacture of aircraft structures, tools and jigs, support equipment-ground, ancillary equipment-air, cargo handling equipment, aircraft modifications, and aircraft systems.

Modifications to aircraft include the design and installation of additional fuel systems, seats, engine replacement, and structure changes. They have also conducted analyses relative to aircraft/airport compatibility.

**AVERAGE WORK FORCE:** Total - 160

**GROSS SALES:** 1986 - \$12.0M  
1987 - \$18.0M

**PLANT SIZE:** 100,000 Sq Ft

**EQUIPMENT:** Forming capability (3,000 ton rubber bed press), heat treating capability (3x4x18 ft gas-fired oven with water quench) and supporting services. NC milling machines, a composite facility that includes an oven (8x8x10 ft) and an autoclave (5x15 ft).

**EXPERIENCE:** Canadian Aircraft Products Ltd has a long background of capability and expertise in repair, overhaul, manufacture and fabrication, as well as design and test of aircraft structures and components. They have designed, manufactured and repaired structures and components of a similar nature such as large aluminum boats, air cushion vehicles, etc. They have produced sheet metal fabricated parts for civil and military application. One such contract was for ammunition boxes for Kaiser Aluminum. They produce wing floats for the Canadair CL-215 water bomber and the floats for the deHavilland Twin Otter aircraft. The company has built and structurally tested the complete airframe of the Trident Aircraft Ltd Trigull aircraft. Other contracts include the horizontal stabilizer and auxiliary fuel tanks for the Canadair CL-600 aircraft, control surfaces and airstair door for the DeHavilland Dash 7 STOL airliner, the horn assembly for the McDonnell Douglas DC-9, Sabliner detail parts for N. A. Rockwell, and the design, engineering and production of the horizontal stabilizer, elevators and rudders for the deHavilland Dash 8 commuter aircraft.

**KEYWORDS:** Airframe Components; Airframe Structures; Aluminum Components; Cargo Handling Equipment; Composite Components; Flaps; Helicopter Subsystems; Jig Fabrication; Machining; Modification (Aircraft); R&O (Aircraft Components); Rudder Assemblies; Software Services; Structural Analysis; Structural Design; Tooling.

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## CANADIAN ASTRONAUTICS Ltd

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**HISTORY:** Canadian Astronautics is a rapidly growing, wholly-owned Canadian company incorporated in 1974. There are no Canadian divisions and no US subsidiaries.

CAL is primarily a systems level contractor with interests in four principal business areas - Space Systems, Radar Systems, Advanced Systems, and Defense Electronics. In addition to these development and manufacturing activities, the company performs engineering design/study work in all four areas.

**CAPABILITY:** As previously mentioned, Canadian Astronautics is divided into four business areas with capabilities as follows:

- Space Systems - CAL has an excellent capability in development and manufacture of spacecraft equipment and subsystems. Particular examples include antennas, RF subsys-

tems, electro-optical equipment, battery management systems (NiCd and NiH2), and power converters (high voltage and high efficiency).

- Radar Systems - CAL designs and manufactures airborne SAR and SLAR equipment and has a development capability for radar of all types, particularly those involving complex signal processing. CAL additionally has capabilities in phased arrays, having developed airborne planar arrays and MLS ground antennas, along with specialized thin film microstrip components, such as precision phase shifters, corporate feeds and radiating elements.

- Defense Electronics - EW and advanced military communications are the main activities of this division. In EW, the company has developed the Tactical Signal Simulator (TASS), which is a fully programmable dynamic scenario stimulator for ESM receiver evaluation and operator training. Technology developments include fast tuning millimeter wave VCO's for ECM and simulator applications. In MILCOM, CAL has designed and built a Spread Spectrum Radio Simulator which generates a multiplicity of voice/data spread spectrum RF signals.

- Advanced Systems - The main activity of this division is the supply of Search and Rescue Satellite (SARSAT) ground stations. CAL provides a full capability station including processing channels for 121.5, 243, 406 MHz, capable of remote/unattended fully automatic operation. Other activities include custom software development, typically for real time signal or data processing applications. Experience is available in many high level languages, including Ada, and CAL has the capability to develop software to MIL SPEC 1679. The Advanced Systems Group also performs acoustic studies for Anti-Submarine Warfare (ASW) applications.

**AVERAGE WORK FORCE:** Scientists & Engineers - 190  
Others - 85

**GROSS SALES:** 1986 - \$22.0M  
1987 - \$23.0M

**PLANT SIZE:** 52,000 Sq Ft Corporate Headquarters includes clean rooms, development laboratories, antenna range, military secure area with TEMPEST shielded room, and CAD facility.

30,000 sq ft Manufacturing facility includes inventory controlled stores, and production equipment.

**EXPERIENCE:** CAL has developed an excellent reputation for performing challenging programs, in a professional, reliable manner. The company's record with respect to schedule and budgets is excellent. Contracts are typically divided between the Canadian Government (60%), NASA (20%) and others (20%). Canadian Government departments include Communications; National Defense; Environment; Energy, Mines and Resources; and National Research Council. Private customers include Telesat Canada, Atomic Energy of Canada, Marconi Space and Defense Systems (UK), MEL (Phillips, UK) European Space Agency, Intelsat, Bell Canada, and others. CAL has no direct contracts with the USAF, but are heavily involved via the SARSAT Program and Space Based Radar. One of the four SARSAT ground stations provided to NASA is located at Scott AFB, IL. CAL has supplied EW equipment to US Naval Air Test Center. CAL can perform to military specifications.

**KEYWORDS:** Antennas; Battery Management Systems; C3 Systems; Communications; Computers; Data Reduction; Electro-Optics; Electromechanical Design; ECM; Electronic Warfare; Environmental Testing; Ground Stations; Image Processing; Microprocessors; Navigation; Phased Array; Planar Array; Power Converters; RF Subsystems; Rad-Hardened Microprocessors; Radar; Remote Sensing; SAR; Satellite Electronics; Search & Rescue Equipment; Side-Looking Airborne Radar; Signal Processing; Simulators; Software Services; Solid State Devices; Space Based Radar; Space Systems; Structural Analysis; Structural Design; Synthetic Aperture Radar; Systems Studies; Tactical Signal Simulator; Test Rigs; Testing/Test Equipment; Ultra Violet Imagers.

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