Automatic Measurement Systems = 7, 17; Signal Processing = 16, 17; Applied Physics = 20; Dive Support Instruments = 20; Cryogenic Liquid Containers = 20; Dewars = 20; Super Conducting Quantum Interference Device = 16; Digital Squid Control Module = 16; Magnetic Anomaly Detection = 3, 16; Metal Evaluation = 19; MAGLEV = 20; Superconducting Magnets = 20; Cryocoolers = 20.

Revised: Dec 83

DAF INDAL Ltd

Code: DAF

Address: 3570 Hawkestone Road
Mississauga, Ontario, Canada L5C 2V8

Contact: Mr. Frank Davenport, Director of Marketing – (416) 275-5300

History: DAF was originally incorporated under the name Dominion Aluminum Fabricating Ltd in 1951. The company became a member of the Toronto based Indal Group of companies in 1968 and changed its name to DAF Indal Ltd in 1977. Indal is a diversified industrial holding company with 23 operating subsidiaries and divisions in Canada and 17 in the US.

Capability: Since its incorporation, DAF Indal has grown steadily through the development of facilities which provide a speciality range of engineered products. DAF Indal maintains a large engineering department staffed by professional engineers of many disciplines, including mechanical, electrical, structural, aerodynamics and hydraulic engineering. The company is engaged in many activities involving one or more of these disciplines, and those related to the aerospace industry area are listed below:

- *Specialty Fabrication Work* – DAF Indal has the reputation of being an acknowledged expert in the field of specialized aluminum structural fabrication work, and has been certified by the Canadian Welding Bureau as meeting the requirements of CSA Standard W47.2 "Aluminum Welding Qualification Code". Typical of the specialized structural design and fabrication work undertaken by DAF is a frangible ILS localizer support structure. This 112 ft long modular aluminum structure is designed to break away on impact and is now a designated fit where certain conditions prevail at Canadian airports. Other work for Transport Canada has included the design and fabrication of a 100 ft telescopic mobile monitoring tower, design of a frangible glide path monitoring antenna mast and range towers for coastal navigation. Other work performed by DAF in this field includes the design and fabrication of other antenna support towers, the fabrication of radar reflectors, radomes and space frame hangar systems.

- *Shipboard Helicopter Support Systems* – DAF is a world leader in the development and supply of shipboard helicopter support systems as employed on helicopter carrying ships operated by navies and coast guards world-wide. The helicopter recovery assist systems built by DAF Indal were originally developed in conjunction with the Department of National Defense for use on board Canadian Navy vessels. Variants of the systems are now employed on vessels operated by the Navies of the US, Japan, India, and Argentina – being a directed fit in many cases. These systems include any or all of the following – visual landing aids (including horizon reference system), firefighting systems, fueling systems, helicopter recovery assist and transversing systems, and telescopic hangars and hangar doors. The DAF Indal RAST (Recovery Assist, Secure and Traverse) system was selected as a key element of the US Navy's LAMPS III program where it is intended to equip over 100 ships with this system to operate in conjunction with the new Sikorsky SH-60B Sea Hawk helicopter. DAF Indal is the originator of the unique telescopic helicopter hangar that is employed on many navy and coast guard vessels that have flight deck space limitations. Over 160 such hangars have been built and are in service with numerous agencies, principally the US Navy, US Coast Guard and Canadian Coast Guard.

- *Vertical Axis Wind Turbines* – DAF Indal has been a world leader in the design and manufacture of Vertical Axis Wind Turbines for over 10 years. The DAF Indal 50 kW unit is the most technically advanced and proven VAWT in the world today. A 500 kW machine modeled on a previous design of 230 kW VAWT built by DAF Indal is now in production and is gaining acceptance as a very viable source of alternate energy. The company has also pioneered the development of a hybrid wind turbine/diesel power generation system for use in remote areas.

- *Program Management and Quality Control* – DAF Indal has developed the appropriate project management control systems to administer large military contracts and is fully familiar with all aspects of government contracting. Their quality assurance procedures are maintained in accordance with CSA Standard Z.299.2 and DND 1015 requirements (equivalent to MIL-Q-9858A) are also met. There is a resident DND inspector staff based at the DAF Indal plant and the Department of Supply and Services Canada maintains an office adjacent to the DAF Indal facility to monitor ongoing domestic and international contracts. Production scheduling, material requirements and financial analyses are all controlled by a computer based system which is capable of handling the work in progress at any one time.

Average Work Force: Engineering – 50
Production – 160
Administration – 130

Gross Sales: 1981 – $17M
1982 – $38M
1983 – $43M

Export sales represent more than 90% of DAF Indal's annual sales of which a large percentage is for the US military, principally the US Navy.

Plant Size: 120,000 sq ft (Manufacturing Plant)
30,000 sq ft (Office Complex)

The bays in the manufacturing plant have a headroom of 35' plus and are served by overhead gantry cranes. It is anticipated that more space will be added in 1984 to meet increased requirements.

Experience: DAF Indal serves many industries and their customers are invariably the leaders of those industries. The majority of their sales are made to government customers, either directly or through a third party subcontract. Principal customers include Navies and Coast Guards of Canada, the US, Japan, India, other NATO countries, Latin America, Australia, and New Zealand.

Keywords: 1 = Aircraft; 5 = Communications; 7 = Electronics; 8 = Energy; 12 = Machining; 15 = Radar; 20 = Miscellaneous; Shipboard Support Systems = 1; Hangars = 1; Helicopter Recovery Assist & Traversing Systems = 1; Antenna Support Structures = 5; Radar Reflectors = 5, 15; Control Systems = 7; Wind Turbines = 8; Specialized Fabrication = 12; Radomes = 15; Aluminum Fabrication = 12, 20.

Revised: Dec 83