self-propelled artillery. This system is currently undergoing field trials and will be released to production in the near future.

Supporting the design engineering group is a large manufacturing operation equipped with the most modern 3- & 4-axis machining centers both horizontal and vertical, as well as fully automatic and/or programmable high precision cylindrical and internal grinders. As many components used in the Aviation Electric fuel control system must be machined to tolerances of 50 millionths of an inch or less, Aviation Electric is recognized in the industry as a highly reliable supplier of subcontract precision machining capability. Currently, several programs requiring extremely close tolerance machined parts are being undertaken for a number of selected US companies.

In addition to its high performance machining and design capabilities, Aviation Electric Ltd also operates one of the largest repair and overhaul facilities in Canada. In its shops, aircraft instruments, wheels, brakes, aircraft accessories, navigation aids, and airborne radars, produced by more than 300 different manufacturers are repaired, overhauled or modified for over 300 customers in 35 countries. The company also operates a large variety of test stands where the fuel control systems following overhaul are subjected to extensive testing to simulate actual flight conditions.

To supplement its line of aerospace products, Aviation Electric Ltd is the exclusive sales and service representative for a number of high technology electronic systems. These include automatic test equipment, liquid and gas chromatographs, marine and air traffic control radar simulators, and air pollution monitoring instruments.

The company is also a leader in quality assurance and is one of the first Canadian aerospace companies to institute the "Quality Circle" concept. Its quality assurance system meets the requirements of Canadian Government Specification DND 1015 and US Government Specification MIL-Q-9858, and it is also approved by the Department of Transport, the Federal Aviation Administration, and NATO.

Average Work Force: Engineering – 50
Production – 425
Marketing – 40
Others – 335

Gross Sales: 1980 – $63M
1981 – $66M
1982 – $70M
1983 – $60M (Est)

Plant Size: 220,000 sq ft

Experience: Aviation Electric Ltd's present customers include: Department of National Defense – repair and overhaul of aircraft instruments, accessories, navigation aids and airborne radar; Pratt and Whitney Canada – engine fuel control systems; Air Canada – wheel and brake parts and instruments; deHavilland –avionics equipment, flight and engine instruments and accessories; Canadair – electrical connectors, drone alignment systems and aircraft accessories; and General Electric (USA) – engine fuel control systems.

Keywords: 1 = Aircraft; 3 = Avionics; 7 = Electronics; 12 = Machining; 15 = Radar; 20 = Miscellaneous; Repair & Overhaul = 1, 3, 15; Engine Fuel Control Systems = 1; Compass Systems = 20; Navigation Systems = 1; Artillery Alignment and Control Systems = 20; Precision Machining = 1, 12; Design = 1; Design to Requirements = 1; Wheel Parts = 1, 12; Brake Parts = 1, 12; Instruments = 1; Avionics Equipment = 3; Connectors = 7; Drone Alignment Systems = 1; Accessories = 1.

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AVTECH ELECTROSYSTEMS Ltd

Code: AVT

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Nepean, Ontario, Canada K2G 0G3

Contact: Dr. W J Chudobiak, President – (613) 226-5772

History: Avtech Electrosystems Ltd is a small, private Canadian, high technology company incorporated in 1975. There are no other branches or affiliates in Canada or the US. The company is represented in France, W. Germany, Japan, Austria, the UK, and Italy.

Capability: Avtech was established for the purpose of designing and marketing nanosecond waveform instrumentation. Since its start, it has become recognized as a leading supplier of nanosecond waveform generators and accessories with over 100 models. Their product line includes pulse generators, impulse generators, monocycle generators, pulse amplifiers, transformers, power splitters, bias insertion units, and scope probes.

The all solid-state waveform generators are available as stand alone lab instruments, or as miniature DC powered modules. The amplitude and the voltage rate of rise for some of their units are at least an order of magnitude higher than those provided by standard tunnel diode pulse generators. The combination of some aspects of microwave integrated circuit technology with ultra-fast semiconductor device switching technology (including SRD, hot carrier diodes, avalanche, VMOS and bipolar switches), has yielded 100 psec rise and fall times, PRF beyond 250 MHz, amplitude to 350 volts, peak currents to 100 amperes, and single cycles of RF to 1500 MHz. They can design, develop and build to customer requirements.

Avtech's inverting and impedance transformers are designed to be used with general purpose laboratory pulse generators, with subnanosecond risetime pulse generators and circuits, and other units. They provide inverted output pulse with a magnitude equal to the input signal magnitude, and can match to other impedance levels or can obtain higher output currents.

Avtech's power splitters provide two outputs which are either both in phase (non-inverted) with the input signal, or with one output non-inverted and with one inverted. They are designed for use with nanosecond speed laboratory pulse generators, with CW signals, or with other units to frequencies as high as 1.0 GHz. Their bias insertion unit is designed for both CW and subnanosecond risetime baseband pulse applications. The scope probe was designed to be used with a 50 ohm sampling oscilloscope, to allow probing of test points in microstrip structures and in discrete RF circuits and subnanosecond pulse circuits, operating at frequencies as high as 5 GHz and with risetimes as low as 100 psec.

Average Work Force: Total – 5

Gross Sales: 1981 – $320K
1982 – $450K
1983 – $600K
1984 – $720K (Projected)

Plant Size: 3,000 sq ft

Experience: Approximately 98% of Avtech's sales are export. Their products have been supplied worldwide to companies, universities and government agencies, e.g., USAF, Harry Diamond Laboratories, Los Alamos Scientific