

- Automated through transmission, water jet scanning ultrasonic system with C-scan data acquisition (10 ft x 30 ft part size capacity).
- Assorted ultrasonic bond, thickness and flaw detection equipment.
- A McLean Anderson, Explorer Model D, Filament Winding Machine, capable of producing a part approximately 150 inches long and nine (9) inches in diameter.
- 4-axis Entech NC Filament Winding Machine (20 ft length x 4 ft diameter capacity).

EXPERIENCE: Boeing-Winnipeg produces composite components for the majority of all Boeing commercial aircraft. Significant contracts for graphite composites for Satcom and Anik D satellite programs and missile components for AVCO have been secured. A technology transfer program, including establishment of a tool design group and upgrading of tooling and part fabrication capability, was initiated in preparation for increased graphite and hybrid work on the new Boeing 757/767 aircraft programs. Major sub-assembly work packages include the 747 wing-to-body fairing and 767 engine strut packages.

Some of Boeing-Winnipeg customers include:

- Pratt & Whitney – composite air inlets for turbine engines.
- deHavilland – panels, fairings, DHC-8 nose equipment bay and tail cone.
- SPAR Aerospace – graphite epoxy plates, and waveguides & satellite components.
- Boeing Vertol – 737 flap track fairings.
- Boeing – 707, 727, 737, 747, 757, and 767.
- Dept of National Defence – design & development of fixed & rotary wing, towed and rocket boosted aerial target systems, and sea/land surface targets.
- US Army – aerial target systems.

KEYWORDS: Advanced Composites; Aerial Targets; Airframe Components; Airframe Structures; Composite Components; Fiberglass Filament Winding; Components (Aircraft); Graphite Epoxy Components; Laminates (Solid & Sandwich); Materials Development; RPV; Systems Engineering; Sandwich Components; Space Systems (Composites).

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BOLRIET TECHNOLOGIES Inc

ADDRESS: P. O. Box 53 – 150 Mill Street
Carleton Place, Ontario, Canada
K7C 3P3

CONTACT: Dr Andrew Nellestyn, Vice President, Marketing & Gov't Relations (613) 257-7131

HISTORY: BTI is a Canadian owned high-technology microwave electronics company founded in 1982, with another office located at 13873 Park Center Rd, Suite #160, Herndon, VA, (703) 437-9400.

CAPABILITY: BTI produces an extensive array of passive and active microwave and millimeter wave components. The company's proprietary, state-of-the-art technique for metallizing soft substrates coupled with developments in thin film/soft substrate technology and surface deposition of thin film resistors, capacitors, etc., directly onto microwave and millimeter wave circuits, has positioned it as a major supplier to the defense industry. Recent developments in the metallization of light weight composites as well as developments in stripline/microstrip transitions, have solidified BTI's reputation as a competitive, reliable, and innovative R&D and production facility. The company's activities have been directed successfully to programs such

as GPS/NAVSTAR, EHF/SatCom, Olympus, MILSTAR, PGMs, Airborne and Space-Based Phased Array Radars, etc. In addition to the design, development and manufacturing of systems, subsystems and components, BTI also offers design and custom manufacturing services.

AVERAGE WORK FORCE: PhD – 6
Engineers – 6
Others – 34

GROSS SALES: 1987 – \$1.5M
1988 – \$3.0M

PLANT SIZE: 20,000 Sq Ft

EQUIPMENT: Most modern microwave and millimeter wave equipment including an HP 8510 Network Analyzer with millimeter wave extenders up to 75 GHz.

EXPERIENCE: Present customers include various industries and governments in both Canada and the US, including most US prime contractors.

KEYWORDS: Microwave Components; Millimeter Wave Components; Antennas; Radomes; Planar Circuits; Power Dividers; Filters; Phase Shifters; Couplers; Thin Film Resistors; Electronic Warfare; Airborne Radars; Satellite Communications; Composite Structures; Waveguide Structures; Microwave Substrates; Microwave Packaging; Phased Array Radar; High Speed Digital Circuitry; Microwave Printed Circuits.

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BRISTOL AEROSPACE Ltd

ADDRESS: 660 Berry St
P. O. Box 874
Winnipeg, Manitoba, Canada
R3C 2S4

Rockwood Propellant Plant
Stony Mountain, Manitoba, Canada (20 miles from main plant)

CONTACT: Mr Keith Burrows, Marketing VP – (204) 775-8331

HISTORY: Bristol was founded in 1930 and incorporated in Canada in early 1947. It is a wholly owned subsidiary of Rolls Royce Holdings Canada Ltd. Bristol owns and operates the Rockwood Propellant Plant at Stony Mountain, Manitoba.

CAPABILITY: Since inception in 1930, Bristol has moved from manufacturing and repairing seaplane floats (1930-1943) to a company with many distinct products and areas:

- Bristol manufactures "Hot End" gas turbine components and remanufactures afterburner assemblies under contract to General Electric, Pratt & Whitney, Rolls Royce, and AVCO Lycoming.
- Bristol manufactures light alloy aircraft structures for major aircraft such as DHC-7, DHC-8, 767 & the P3/CP140. They also manufacture small structures including the Wire Strike Protection System for helicopters.
- Bristol offers repair and overhaul of military and commercial fixed wing and rotary wing aircraft.
- CANDU nuclear in-core reactor components are produced at Bristol.
- Engineered products manufactured by Bristol include rocket engines and propellants, electronic data instrumentation for payloads and satellites, and electronic data instrumentation for remote site applications. They also provide services in mechanical, electrical, aeronautical and propulsion design and development engineering. Other services include precision weldments of high temperature stainless steel alloys, titanium and corrosion resistant materials, and a helicopter component test cell for transmissions and gear boxes.