

carried in 1967 & 1970 (1970-1972); and (4) P&WC is currently contracted with the US Army at Ft Eustis for a advanced 15:1 Pressure Ratio Single Centrifugal Compressor and to date has met or exceeded all the original program goals.

- United States Navy – (1) P&WC was a subcontractor to P&W, Commercial Products Division (CPD), on a demonstration of a regenerative, small turboprop engine based on the PT6 – P&W designed the regenerator, while P&WC designed the ducting, organized hardware fabrication, and demonstrated the concept (1964-1966); (2) P&WC won a contract to provide a twinned helicopter engine (T400/402 Twin Pac R) to the US Navy for Bell Aerospace helicopters where 1032 units have been supplied – also 2218 units in a civil version (PT6T3/6) have been produced to date and (3) P&WC has also performed as a subcontractor to P&W, CPD, on a demonstration of single crystal turbine blades for gas turbine operation.

- Environmental Protection Agency – (1) P&WC carried out a combustion research program for small, single can, highly loaded combustors for automotive application with good performance and low emissions (1973-1974); (2) P&WC was subcontractor to United Technologies Research Center (UTRC) on a study of the automotive application of gas turbines – carried out a series of cycle studies and supported experimental work on combustion (early 1970s); and (3) P&WC also supported the Environmental Protection Agency (EPA) (Triangle Park) on studies of the carcinogenic effect of small gas turbine emissions (1977-1978).

- National Aeronautical Space Administration (NASA) – (1) P&WC was subcontractor to P&W (CPD), on a turbofan core noise program at NASA Ames carried out on a NASA owned P&WC JT15D engine – P&WC designed and fabricated an alternate fan core stator to increase the axial spacing between rotor and stator, and the number of stator vanes (1977); (2) P&WC was subcontractor to P&W (CPD), on a program of nose cone telemetry for NASA Lewis Research Center as applied to a NASA JT15D turbofan – P&WC designed a transmitter to operate within the nose of a JT15D to study the difference between ground and flight noise measurements (1978-1980); (3) P&WC was also subcontractor to P&W (CPD), on a program to supply NASA Langley with copies of the telemetry units from item #2 for flight use with stringent manufacturing requirements (1979-1980); and (4) P&WC was also subcontractor to United Technologies Research Center on a Combustor soot program – all combustor hardware was designed and fabricated by P&WC, while United Technologies Research Center assembled the rig and carried out all testing (1980-1981).

KEYWORDS: Alternate Fuels Research; Auxiliary Power Units; Combustion Research; Compressors (GT Engines); Engine Components; Engine Emission Research; Engine Research; Engine Systems; Engines; Fuel Research; Fuel Systems Research; Gas Turbine Engines; Helicopter Subsystems; R&O (Engines); Roller Bearings; Small Gas Turbine Engines; Test Instrumentation; Testing/Test Equipment; Turbine Engines.

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PRECI SYSTEMS INTERNATIONAL Inc

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HISTORY: Preci Systems International Inc (PSI) was formed in December 1986 to design, develop and manufacture aircraft hydraulic, hydro-mechanical, electro-mechanical, electronic-hydro-mechanical an electronic-hydraulic control systems and components.

Preci Tech Ltee, a wholly owned manufacturing subsidiary, is a producer of highly precision components for the aerospace, electronic

and space industries. It was acquired by PSI in December 1986 as an initial manufacturing facility. In February 1987, PSI commenced the establishment of a flight control system engineering department and engineering test facilities. Engineering and manufacturing facilities will expand to match market projections.

Ownership of PSI is 100% Canadian, with the major shareholder being Lambert Somec Inc, a Quebec City based company, listed on the Montreal Stock Exchange (LAMSO.INC).

CAPABILITY: Preci Systems International Inc is involved in the sub-contract machining of precision machine components to customer specifications. In collaboration with the customer, they also engage in design, engineering, development and manufacture of flight controls, servo valves, shuttle valves and electro & hydro-mechanical systems.

AVERAGE WORK FORCE: Engineers – 6
Quality Control – 7
Production – 47
Supervisory – 10
Others – 18

GROSS SALES: 1986 – \$2.5M
1987 – \$3.0M

PLANT SIZE: 28,000 Sq Ft

EQUIPMENT: Preci Systems International Inc's equipment includes numerous CNC turning centers, CNC machining centers, EDM centers, NC jib boring, grinding & honing, drills & presses and conventional turning, milling & jig boring, hydraulic test stands, temperature test chamber, humidity-temperature chamber, QC/QA gages and measuring machines, IBM-PC based design/analysis/engineering support systems, and IBM-PC data base management systems. A detailed facilities list is available upon request.

EXPERIENCE: Preci Systems International Inc's customer list includes Canadair Inc (Montreal), E-Systems Inc (Florida), Canadian Vickers Ltd (Montreal), Pratt & Whitney Canada Ltd (Montreal), United States Surgical Corp (Connecticut), Rolls Royce Canada (Montreal), Warner Robbins AFB (Georgia), and Spar Aerospace Ltd (Ontario).

KEYWORDS: Machining; Precision Machining; Flight Controls; Solenoid Valves; Shuttle Valves; Electro & Hydro-Mechanical Systems; R&O (Components).

REVISED: March 88

PRICE & KNOTT MANUFACTURING COMPANY Ltd

ADDRESS: 655 Finley Avenue
Ajax, Ontario, Canada
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HISTORY: Price & Knott was formed in 1954 to supply job shop expertise to local aerospace and defense companies. The company is currently operating as an autonomous division of Werner Dahnz Ltd of Toronto, and is a public company traded on the Toronto stock exchange.

CAPABILITY: Price & Knott is currently involved in made to print mechanical assemblies and components using the facilities of their precision sheet metal and machining departments. The facility is supported by, in house, welders approved to weld per MIL-W-8604 and MIL-W-8611 specifications. In addition, they have a complete assembly area for part markings, of all description, and hardware assembly. Their expertise in finishing to MIL Std's includes chromate conversion to MIL-C-5541, anodize to MIL-A-8625, type 2 class 1 & 2 and passivating to QQP-35 Type 1 to 6. The entire operation has been certified to AQAP 4 and MIL-I-45208A quality standards by numerous prime contractors and the Canadian Department of National Defence.