Electronic Materials Division Production:

- *High Purity Metals* – 17 difference metals each in several degrees of high purity and shapes.

- *High Purity Arsenic* – 49 to 79 grade arsenic in various allotropic crystal forms and shapes. Largest plant of its kind in the world.

- *Semiconductors* – single crystal boules and polished wafers of gallium arsenide, indium antimonide, cadmium telluride, cadmium mercury telluride, gallium antimonide, and indium arsenide, germanium and epitaxial cadmium mercury telluride.

- *High Purity Metals Fabrication* – alloying, casting, rolling, extrusion, stamping and machinery operations to produce semiconductor processing and packaging materials e.g., evaporation charges, sputtering targets, solder preforms, bonding wires, and ribbons. A well equipped precision tool and die shop serves both Production and Development.

Electronic Materials Division Development:

R&D is directed toward new metal/metal compounds and semiconductor processes, product advancement, and production equipment.

Average Work Force: Whole Company – 10,797
Electronic Materials Div – 241

Electronic Materials Div
(Trail, British Columbia)
Engineers – 18
PhDs – 2
Machinists – 5
Others – 66

(Spokane, Washington)
Engineers – 5
PhDs – 4
Machinists – 7
Others – 134

Gross Sales: 1982 – $1,235M (Whole Company)
1982 – $37M (Electronic Materials Div)

Plant Size: Electronic Materials Division
(Trail, BC) – 80,000 sq ft
(Spokane, WA) – 80,000 sq ft

Equipment: Melbourn high pressure Czochralski Crystal Growers; custom built metal refining equipment; custom built crystal slicing, fabrication and polishing facilities; and high purity metals fabrication equipment.

Experience: Cominco has been in the electronic materials business since 1949 and has supplied materials to most major US electronic companies.

Keywords: 4 = Chemistry; 7 = Electronics; 20 = Miscellaneous; High Purity Metals = 4; Compound Semiconductor Wafers = 4, 7; Semiconductors = 4, 7; Infrared Materials = 7; Bonding Wire & Ribbons = 20; Sputtering Targets = 7; Solder Preforms = 7; Evaporation Charges = 4; Metallurgy = 4; Semiconductor Wafers = 4, 7.

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COMPUTING DEVICES COMPANY

Code: CDC

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History: Computing Devices is a high technology company that has been a division of Control Data Canada Ltd since 1969. The company was established in 1948. It is involved in the manufacture and supply of advanced electronic systems. The company maintains sales representatives in over twenty-three countries.

Capability: Computing Devices' technology areas include acoustic signal processing systems for ASW applications for airborne, shore and undersea vehicles; digital ballistic computer systems for vehicle & portable installations; air navigation display systems; electronic intrusion detection systems; command & control display systems for ships; and jet engine thrust measurement systems. Specifically, the company developed, and is manufacturing an acoustic data processor (Preselectable Mainband Processor, PMP-8). This ASW system is designed for monitoring omindirectional passive sonobuoys from aircraft. The company also has similar, but more complex, acoustic processing ASW equipment in airborne platforms with the Royal Air Force and the Royal Australian Air Force. Another system, the Standard Multi-Sensor Digital Display, is designed for the Canadian Navy use under the concept of Shipboard Integrated Processing and Display System. They have also developed and manufactured a Microprocessor Digital Computer System according to a Chrysler specification for the fire control system of the M-1 main battle tank. They have produced approximately 3000 systems at this time. Their Projected Map Display is for use in a variety of aircraft from tactical fighters and helicopters, to supersonic transports. This system has been used on the US Navy A-7 aircraft for over 8 years and has been accepted for the USAF Pavelow III Rescue Helicopter Program. They are currently involved in the shared development Ported Coaxial Cable Sensor Program with the BISS SPO at Electronics Systems Division (ESD). The program goal is to develop and test buried cable detection systems for outside security application. The program start date was mid-1976 and is currently in the FSED phase. Initial production deliveries for DOD requirements are scheduled for the 1983-89 time frame. The program has had many spinoffs. GUIDAR is their commercial product. They also developed a system (Thrust Computing System) to compute (from measured pressures) the gross thrust of afterburning turbojet and turbofan engines. The technology has been proven in NASA high altitude test cells on the J85, J79, TF30 and F100 engines, and on the T38/J85-5 system on the Edwards AFB thrust stand. A maintenance application of the technology has been adopted by the USAF for its Air Training Command T-38 fleet for installed engine trimming on the flightline called Thrust Computing Support Equipment (TCSE). NASA was also using the technology in the HIMAT program. This was also a shared development program between the USAF and the Canadian Government completed in late 1978. Their design, development and production capabilities have been effectively demonstrated. They perform to military specifications. Contract manufacturing (offset business) accounts for 20% of their business. This is currently accomplished for Hughes Aircraft Company for the joint Surveillance System.

Average Work Force: Professionals – 225
Total – 800

Gross Sales: $54M (Historically)
$62M (Current)
$80M (Projected)

Plant Size: 295,000 sq ft (three buildings)
400 acres (Stittsville Research Facility)

Experience: As seen under Capability Section, CDC has experience with the US military (approx 50% of their total sales). They have considerable production capability.

Keywords: 1 = Aircraft; 3 = Avionics; 6 = Computers; 7 = Electronics; 15 = Radar; 16 = Security & Safety;