

CAPABILITY: The Contract Instrumentation Division of Scintrex began developing monitoring instrumentation in 1974 for CANDU nuclear power plants. Since then, the company has manufactured tritium monitors, reactivity control logic cabinets, shut-off rod logic modules, high radiation hand-held monitors and logic panels for safety shut-down systems. CANDU reactor operators in Ontario, Quebec, New Brunswick, Korea, and Argentina use this equipment.

The Exploration and Analytical Equipment Divisions of Scintrex are a major part of its business. They include the design, development and manufacture of geophysical and geochemical instruments for the mining industry, and analytical instruments for chemical laboratories. Over the years, geophysics has become the key exploration tool for discovering new mineral deposits. The steady depletion of surface ore bodies and consequent need to detect buried deposits have produced a growing dependence on geophysical methods. Scintrex is a leader in the design, development and manufacture of mining exploration equipment. Its products, services and skills have contributed directly to numerous major mineral discoveries in different parts of the world. Out of this experience, there is an expertise in developing portable analytical equipment for remote, on site chemical analyses.

The Systems Engineering Group of Scintrex is highly experienced in the installation of sensing systems in aircraft, helicopters and vehicles for mobile applications. Many magnetic, electromagnetic, radiometric and laser installations have been made, operated and serviced.

Ruggedized, portable gas chromatographs have been developed which are optimized for detecting various vapors of interest to defense forces, including those arising from explosives and torpedo fuel, to date. Detectors for illicit drugs are being currently developed using similar principles.

AVERAGE WORK FORCE: Electronic Engineers - 12
Mechanical Engineers - 2
Chemists - 5
Geophysicists - 3
Physicists - 4
Technicians - 40
Machinists - 20
Sales, Office Staff & Others - 83

GROSS SALES: 1986 - \$12.1M
1987 - \$11.5M (Est'd)

PLANT SIZE: 70,000 Sq Ft

EXPERIENCE: Scintrex has had experience with the US Army and Navy (contracted to build nuclear radiation monitoring systems and explosive ordnance detectors); Ontario Hydro (contracted to supply hand-held radiation dosimeters for nuclear power plants); and other CANDU reactor users (contracted to build a variety of radiation monitoring devices) and the Canadian Department of National Defence (development and supply of PGDN and radiation monitors).

KEYWORDS: Atomic Absorption Spectrophotometers; Beta Ray Monitors; Dosimeters; Drug Detection; Electromagnetics; Gamma Ray Monitors; Geochemical Equipment; Geophysical Equipment; Gravity Sensors; Hazardous Gas Detection; Magnetic Sensors; Ordnance Detectors; Radiation Monitoring Systems; Remote Sensing; Toxic Gas Detectors; Trace Gas Detection; Tritium Monitors; Ultraviolet Fluorescence Systems.

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SED SYSTEMS Inc

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HISTORY: SED Systems Inc is an advanced technology systems engineering and production company located in Saskatoon, Saskatchewan, Canada. They evolved from the Space Engineering Division of the University of Saskatchewan. Originally, their activities consisted of the design and construction of rocket payloads for upper atmospheric research. Since their incorporation as a private company, SED has pursued a development policy which has led them increasingly into commercial markets with innovative products derived from aerospace technology. SED was incorporated in 1972.

CAPABILITY: SED supplies systems engineering and custom manufacturing in space and communications advanced technology. The major products and services offered are:

- Communications systems engineering, custom satellite communications earth stations, complete satellite telemetry tracking and command earth stations, satellite ground control equipment, customized telemetry and tracking systems, sounding rocket payloads, and scientific instrumentation for use on the space shuttle.
- Two-way, voice and data satellite communications system, SKY SWITCH™, for private networks; and TVRO systems and subsystems for satellite earth stations.

Diversification is one of SED's major strengths. An assessment of the range of the company's products and services shows that they are based on a relatively narrow range of technologies that have been developed in depth. The specific technologies are highly complementary which allows the penetration of highly diversified markets with innovative products resulting from knowledge acquired in other fields. Complementary technologies have also strengthened SED by permitting staff mobility in response to market fluctuations and to facilitate employee development.

AVERAGE WORK FORCE: Professional - 120
Technical - 240

GROSS SALES: 1986 - \$19.0M
1987 - \$25.0M

PLANT SIZE: 125,000 Sq Ft

EQUIPMENT: SED has a variety of specialized facilities including computer systems, earth stations and payload integration facilities; Class 1000 clean room; a medium volume PCB production facility with QA to military specifications; and a vacuum chamber.

EXPERIENCE: SED experience in the space and defense areas include:

- **SPACE:**
 - Payloads - Sounding rocket and balloon payloads (1965-present) (produced over 64, Canadian National Research Council); Firewheel sub-satellite (1980 launch on Ariane), NRC (Max Planck Institute - Germany); and Wide Angle Michelson Doppler Imaging Interferometer - Atmospheric Test Instrument (1980-present-NRC).
 - Mission Planning and Support - Communications Technology Satellite - CTS or Hermes (1970-1976) [planned attitude acquisition phase, designed ground control station and developed software, Canadian Department of Communications (DOC)].
 - Satellite Telemetry, Tracking and Command Stations - ANIK A (TAC station for A2 (1972), Telesat Canada); ANIK C/ANIK D (transportable tracking station - located in Guam (1982), Hughes Aircraft Co); and LANDSAT/GOES (1972-present) [Canadian tracking station, Canadian Center for Remote Sensing (CCRS)]; and Brazil Telecommunications Satellite System Satellite Control Facility (1982-1985).
 - Ground Control Equipment - ANIK C, ANIK D, and SBS (1978-1982) (variety of equipment (50) including command generators and upconverters and telemetry displays, Hughes Aircraft Co).