



Spar Aerospace Limited  
Annual Report 1983



## Corporate profile

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■ Spar Aerospace Limited is a Canadian-owned company that provides products and services for space, communications, defence, aviation and advanced systems markets, and manufactures high quality gears and transmissions. The company employs over 2,000 people, including about 600 engineers and technicians - one of the largest technological groups in the private sector in Canada.

In 16 years, annual sales have grown from \$5 million to \$215 million and Spar has gained international recognition as a diversified technology company. More than 75% of Spar's sales are in international markets and about 17% are with the Canadian government.

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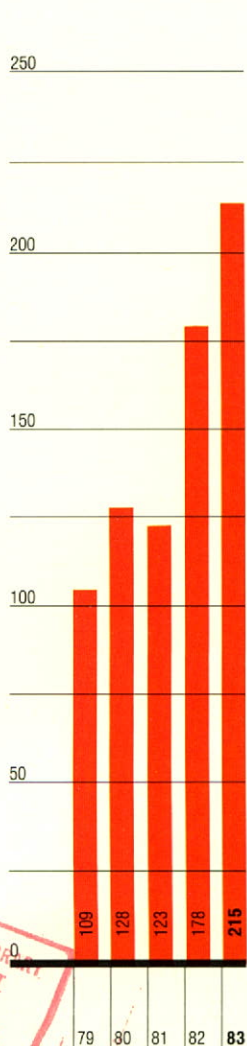
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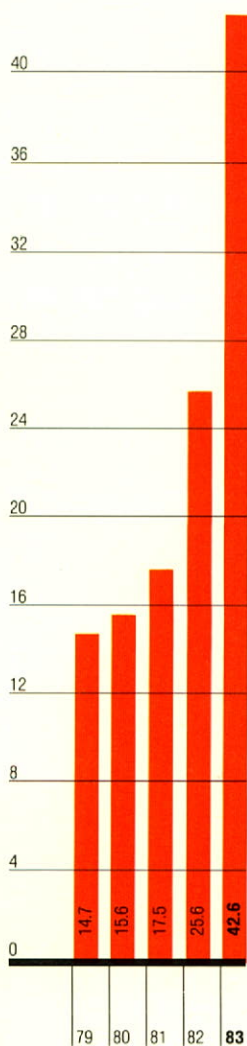
# Financial highlights

		1983	1982	% Change
(\$000s)	Revenues	\$214,871	\$177,775	+21
	Net income	10,423	8,580	+21
	Working capital from operations	15,533	11,731	+32
	Working capital	54,835	17,096	+221
	Long term debt	5,634	6,926	-19
	Convertible subordinated debentures	22,900	—	
	Cash dividends on			
	Subordinate voting shares	2,262	1,248	
	Preferred Shares — Series A	—	177	
Shareholders' equity	42,567	25,635	+66	
(in dollars)	Basic earnings per share	\$1.42	\$1.43	-1
	Fully diluted earnings per share	\$1.20	\$1.12	+7
	Shareholders' equity per subordinate voting share outstanding at year end	\$5.33	\$3.85	+38

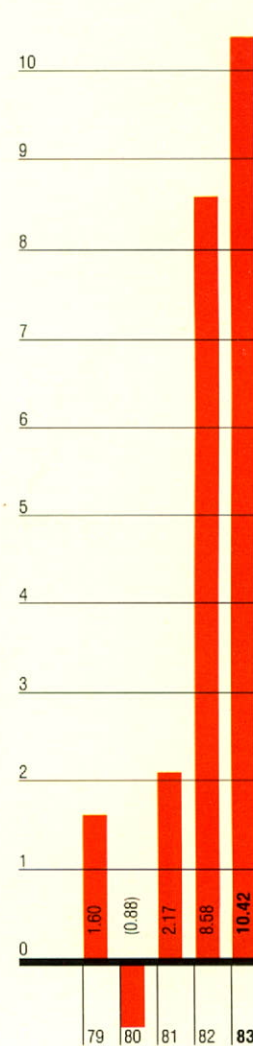
**Revenues**  
\$ millions



**Shareholders' equity**  
\$ millions



**Net income (loss)**  
\$ millions



HOWARD ROSS LIBRARY  
OF MANAGEMENT  
APR 5 1984  
MCGILL UNIVERSITY



Senior management from left: Larry D. Clarke, John D. MacNaughton, R. Don Pollock, George B. Gomes

### Results

■ For the year ended December 31, 1983 Spar's revenues were \$214.9 million compared to \$177.8 million in 1982, and net income was \$10.4 million (\$1.42 per share) compared to \$8.6 million (\$1.43 per share) a year earlier. Working capital at year-end was \$54.8 million and was \$17.1 million in 1982. Shareholders' equity was \$42.6 million compared to \$25.6 million the previous year. In 1983 capital expenditures amounted to \$4.8 million, \$2.3 million higher than in 1982.

The business segment comprising satellites, communications and advanced systems improved its profits over 1982, while profits from the segment comprising gears and transmissions, aviation and other services were somewhat reduced from the previous year. Results were adversely impacted by large development expenditures at the Gears and Transmissions, Communications and Astro Research operations. Northway-Gestalt's revenues were significantly below the level of 1982 due in part to the completion of a major international project, as well as weak public sector markets. In addition, delays in contract negotiations for the AN/SAR 8 infrared surveillance project resulted in the company having to absorb the heavy costs of maintaining the highly specialized engineering team required for the contract.

Spar spent \$19 million on research and development in 1983, including expenditures on behalf of and funded by customers. This amount represented 9% of revenues.

Shareholders at the last Annual and Special Meeting voted to subdivide the subordinate voting and Special Shares on the basis of two shares for each share held — a 2-for-1 split. The share subdivision, which went into effect June 1, 1983, has significantly increased the float of Spar's shares.

In May, Spar issued \$25 million of 8% subordinated debentures convertible into subordinate voting shares, on a subdivided basis, at a price of \$19.00 per share. These funds have strengthened the company's ability to compete for domestic and international prime contracts for communications satellite systems and other major advanced technology projects.

On October 17, 1983 Spar was one of 15 Canadian companies to be awarded the Canada Export Award by the Honorable Gerald Regan, Minister of State for International Trade. Export sales have been a significant part of Spar's business since the company's inception, comprising 25% of sales in the first ten years of its life and more than 40% over the past five years. In 1983 Spar sold products and services in international markets valued at \$165 million, or 77% of total revenues.

Following year-end, the company introduced its second employee share purchase plan in keeping with management's view that all Spar personnel should have the opportunity to share in the company's growth through equity ownership. In total, 1238 employees have undertaken to purchase 240,083 subordinate voting shares under the 1984 plan representing \$4.5 million in new equity capital.



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## Operations

■ For the third consecutive year space-related business was the major contributor to the company's success.

Work on the largest satellite communications project won by Spar, the \$125 million (US) prime contract to provide two satellites and a related ground control system for EMBRATEL — the Brazilian Government's telecommunications company, proceeded on schedule. As well, the company continued work on major satellite subcontracts, including the \$33 million project from Hughes Aircraft Company of California to supply subsystems for five *Intelsat VI* satellites with options for 11 more; the \$12 million contract with RCA's Astro Electronics Division to construct the antenna on the *GSTAR* satellite; and a \$62.5 million contract to develop solar arrays and communications amplifiers, as well as performing the final testing of the European Space Agency's powerful *Olympus* satellite. In April, the Federal Government's Department of Communications awarded Spar an \$8.5 million design definition contract for the proposed *MSAT* mobile communications satellite system designed to provide improved mobile radio and radio-telephone services to remote areas in North America.

*Anik D1*, the first communications satellite to be built by Spar as prime contractor, has performed to specification since its launch in 1982. It is providing services previously carried out by *Anik A1* and *Anik A2*, which went into operation in the early 1970s. *Anik D2*, the second of this series of 24-channel satellites, is scheduled to be launched in 1984.

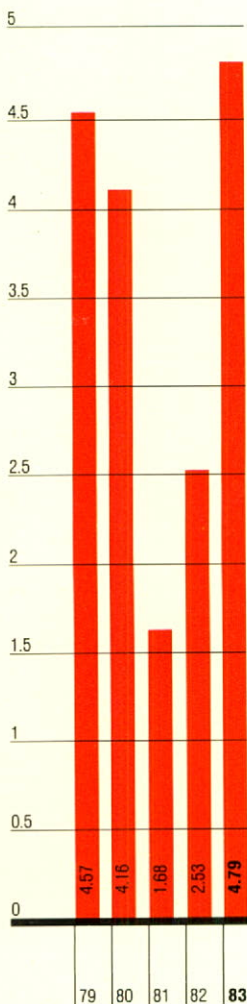
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Over the past 12 months Spar's remote manipulator system (RMS), the Canadarm, gave further evidence of its capabilities under rigorous test conditions. The Canadarm, on the 8th mission of the National Aeronautics and Space Administration's space shuttle in September, deployed and berthed the largest payload to date in space, a 3391 kg (7460 lb.) cylindrical-shaped payload flight test article (PFTA). Spar delivered the first two of three follow-on production manipulator systems to NASA in 1983; the remaining system is scheduled for delivery this year. In addition, in 1983 NASA contracted with Spar to design a Handling and Positioning Aid, a shorter version of the RMS, used to hold a spacecraft for in-orbit assembly and servicing, as well as for continuing engineering and technical support.

To date, the primary terrestrial application of Spar's unique RMS technology has been in the nuclear industry where the company is completing the final phase of a \$15 million preliminary design contract for Ontario Hydro to design a remote manipulator and control system to repair and replace fuel channel tubes in nuclear reactors.



**Capital expenditures  
(net of government grants)**  
\$ millions



The program of redirecting Spar's communications operations continued through 1983 and has started to produce results. In October, the company received a \$1.2 million contract from the Maritime Telegraph and Telephone Company Limited to supply two small satellite earth stations linking offshore oil rigs with the mainland. This new system is similar to the equipment covered by the contracts worth more than \$20 million signed with the People's Republic of China in January, 1984 and is evidence of a growing need in domestic and international markets for digital and analogue satellite telephony stations servicing remote locations. In addition, Spar completed the hardware development of the new Time Division Multiple Access/Digital Speech Interpolation (TDMA/DSI) system which is designed to improve the communications efficiency of the Intelsat satellite network. This microprocessor-controlled system, which contains hardware and software, will be delivered to our first customer, Teleglobe Canada, in 1984. Follow-on prospects are encouraging, particularly to those international customers who previously have purchased Spar Intelsat A and B terminals.

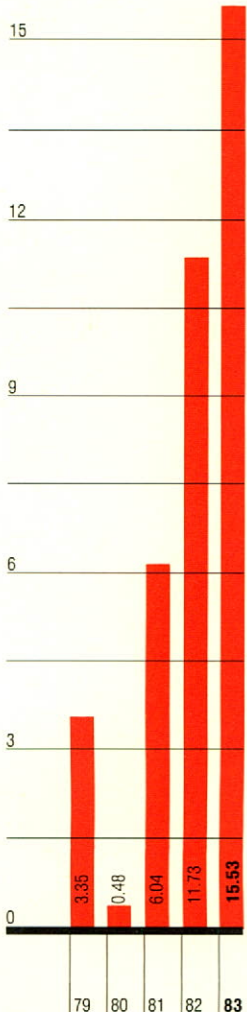
Two large contracts awarded to Spar's gears and transmissions operations over the past 15 months should lead to a substantial level of profitable business over the next decade. The signing of an initial \$8 million Black Hawk transmission contract with Sikorsky Aircraft in December, 1982 with options for

12 years was followed in July by the receipt of eight contracts valued at \$41.3 million (US) from General Electric Company for follow-on production of accessory gearboxes and other components for engines that power turboshaft helicopters and turboprop and turbojet aircraft. In view of these significant additions to its business base, the company, in 1983, committed to a major investment program covering development, re-equipment and plant modernization. This program will be implemented in phases over a three-year period and the company's expenditures in 1983 in this regard amounted to \$1.6 million.

Spar's aviation services operations, which service both fixed wing aircraft and helicopters, performed satisfactorily in 1983 in the face of weak markets for aircraft repair and overhaul. The company developed new customers in Central and Latin America and completed an in-depth evaluation of market potential in the Far East, which management believes could become a profitable source of new business. As a result of the economic recession, several North American airlines with in-house repair and overhaul facilities are considering transferring some of their work to outside contractors. This could benefit Spar, given the company's reputation for quality workmanship and efficient service.



**Working capital from operations**  
\$ millions



Governments and their agencies, which comprise the major portion of Northway-Gestalt's business, continued to restrict budgets for mapping services through 1983. This materially affected Northway-Gestalt's sales. This business has been substantially restructured and management remains confident that the demand for digital information services in North America will enable Northway-Gestalt to make a profitable contribution to Spar.

Union personnel at the company's Toronto facilities were on strike for two days in October. A three-year contract settlement was negotiated which fell within the Federal Government's anti-inflationary guidelines. Two agreements expire in the fourth quarter of this year.

**New appointments**

■ Mr. David R. Beatty of Toronto was elected to the Board of Directors in August. Mr. Beatty, who is a Director of several companies, brings a wide range of experience to the Board. Senior management was augmented by the appointment of five new executives, Mr. Charles Dannemann, Corporate Marketing Director; Mr. Thomas Mathers, Vice President, Human Resources; Mr. John Neville, Vice President and Treasurer; Mr. Richard Quigley, President, Astro Research Corporation, and Mr. Dirk Schillebeeckx, General Manager, Communications Systems. All bring to Spar extensive experience in their respective fields and broaden the company's capability to undertake further expansion.

**The Canadian Institute for Advanced Research**

■ In May, Spar announced that it would make an annual grant of \$250,000 together with technical assistance to The Canadian Institute for Advanced Research for a three-year period commencing July 1, 1983. This grant and assistance will support a scientific research program in artificial intelligence, an area of significance to Spar's future work in advanced teleoperator systems. The Institute was founded in 1981 as a non-profit corporation with the objective of supporting interdisciplinary research in selected fields important to Canada's future. It is Spar's hope that other Canadian companies will support The Institute's objectives, as they address themselves to the country's future as an advanced industrial nation.



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**Corporate affairs**

■ The 1983 John H. Chapman Memorial Prize for outstanding performance in final year communications studies was awarded by Spar to engineering students selected by the faculty of 11 Canadian universities at ceremonies held at Ottawa, Montreal and Toronto. The \$1000 prize, which honors the memory of the late Dr. Chapman who pioneered Canada's space program, is designed to encourage excellence in aerospace studies to ensure the future of Canada's world class position in the field.

In October a team consisting of the National Research Council of Canada, Telesat Canada and Spar, with the assistance of Canada Post Corporation, *The Globe and Mail*, Canadian Broadcasting Corporation, CKO National Radio and *Le Droit*, announced the first Canada-wide Getaway Special competition. Secondary school students, university scholars and the general public have been invited to submit experiments that will examine the effects of the environment of space on payloads on board three future flights of the United States space shuttle. Ideas will be evaluated by a panel of scientists and judged on the basis of their imagination, feasibility and affordability. A poster sent to all entrants is included with this Annual Report.

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**Outlook**

■ The company anticipates a continuation of the trend to higher after-tax earnings that was experienced in 1982 and 1983.

Over the next five years the company is well positioned to benefit from growth in its markets, particularly for satellite communications systems and electro-optical surveillance systems.

Spar's gears and transmissions operation should also make an increasing contribution to the company's sales and profits as it continues to broaden its penetration into the jet engine and helicopter markets.

On behalf of the Board, we would like to thank our employees, customers, investors, suppliers and bankers for their support in 1983.



L. D. Clarke  
Chairman of the Board  
and Chief Executive Officer



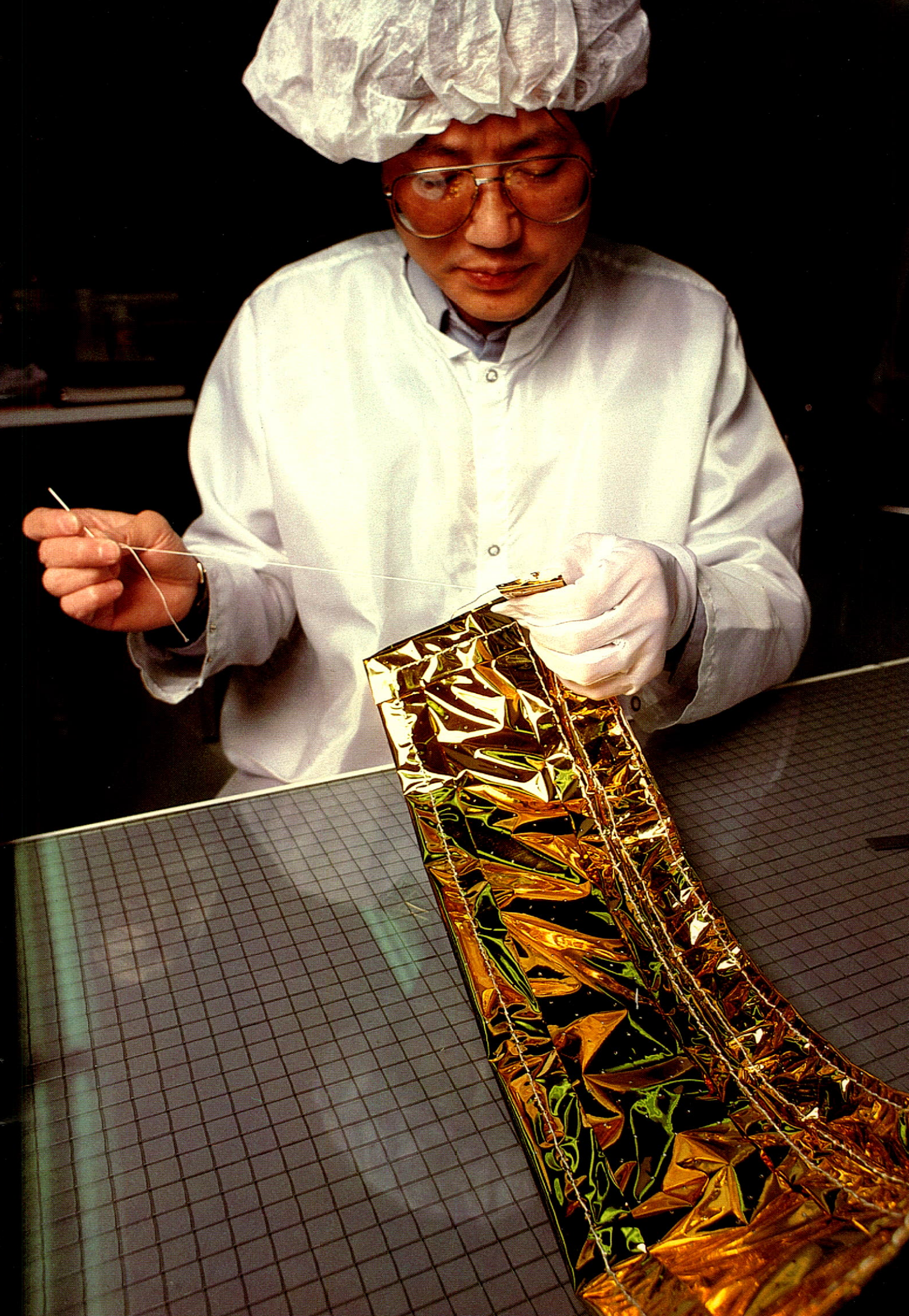
R. B. Dodwell  
Vice Chairman of the Board

March 8, 1984

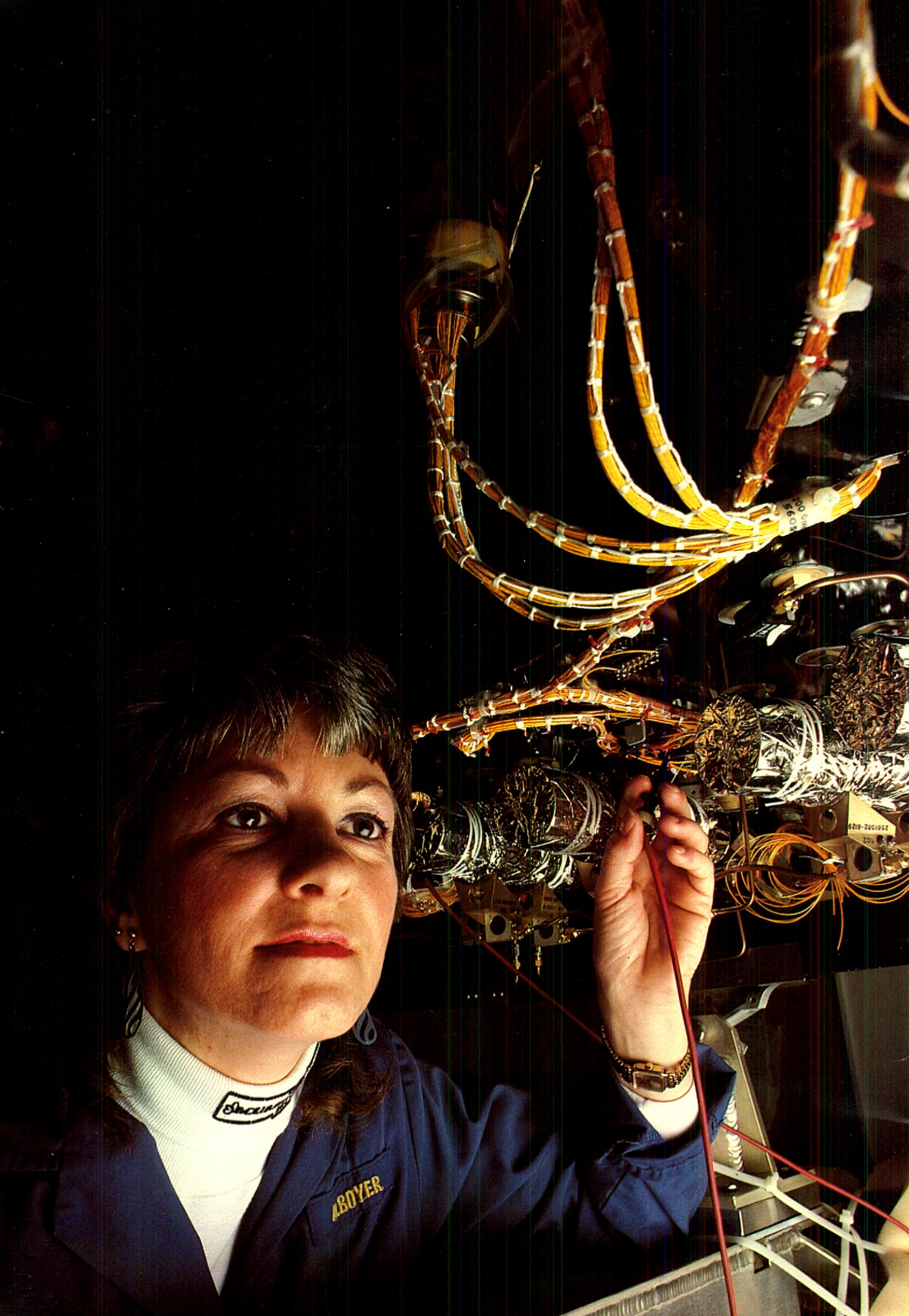
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*Custom stitching of insulation material for European satellite Olympus.*











## Description of operations

### Satellite and Aerospace Systems Division

**Vice President and General Manager** J. Ron McCullough  
**Location** Ste-Anne-de-Bellevue, Quebec  
**Employees** 610



■ Designs, develops, manufactures and markets satellite communications systems, including complete satellites, satellite subsystems and components such as antennas, transponders, power supply electronics, satellite hardware and electronic equipment for domestic and international markets.

### Communications Systems Division

**General Manager** Dirk Schillebeeckx  
**Location** Ste-Anne-de-Bellevue, Quebec  
**Employees** 182



■ Designs and builds satellite earth station subsystems and components for domestic and international markets. Current activities include Time Division Multiple Access/Digital Speech Interpolation systems designed to improve the communications efficiency of the Intelsat network as well as communications projects in China, Ghana and Canada.

### Remote Manipulator Systems Division

**Vice President and General Manager** Eric R. Grimshaw  
**Location** Toronto, Ontario  
**Employees** 277



■ Designs, develops and builds remote manipulator systems for both space and terrestrial applications as well as large complex electromechanical space systems such as the *Olympus* satellite solar array.

### Defence Systems Division

**Vice President and General Manager** John E. Lockyer  
**Location** Kanata and Toronto, Ontario  
**Employees** 196



■ Specializes in remote heat sensing technology for defence and navigational applications — the AN/SAR 8 infrared surveillance project. Other activities include the development of electro-optical defence products, production of electronic assemblies for satellites and the manufacture and marketing of combat equipment to the Canadian Armed Forces.

*Inspection of despun components of the satellite destined for Brazil.*



## Description of operations

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### Gears and Transmissions Division

**Vice President and General Manager** W. B. (Bill) Simpson  
**Location** Toronto, Ontario  
**Employees** 383



■ Manufactures and assembles lightweight, high-speed, high-torque power transmission systems and equipment for gas turbine engines and fixed and rotary wing aircraft, as well as the complex, ultra-high precision gears for the remote manipulator system.

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### Aviation Services Division

**General Manager** Gordon A. Epp  
**Location** Toronto, Ontario; Calgary, Alberta  
**Employees** 163

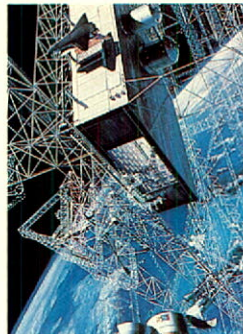


■ Repairs and services aircraft components, markets aviation products and accessories and overhauls helicopters. Services cover engine and flight instruments; components of electrical, oxygen, navigational and autopilot systems; constant speed drives; accessory gearboxes, and components for flight control and heating systems for military and commercial operators in North, Central and South America.

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### Astro Research Corporation

**President** R. B. (Dick) Quigley  
**Location** Carpinteria, California  
**Employees** 34



■ Designs and develops lightweight deployable structures for space and ground applications, including the patented STEM product line and Astromast structures which are used on spacecraft to deploy antennas, experiment packages and solar arrays.

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### Northway-Gestalt Corporation

**Acting President** R. Don Pollock  
**Location** Toronto, Ontario; Dartmouth, Nova Scotia, and Denver, Colorado  
**Employees** 124



■ Produces digital and conventional maps, provides referenced information systems for municipal and facilities management applications, and operates orthophoto service centers in Denver and Toronto; also owns world patent rights to the Gestalt Photo Mapper (GPM).

*Oil spray jet installation in the main rotor head of the Sea King helicopter.*





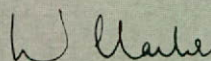


## Consolidated balance sheet

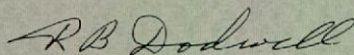
		1983	1982
December 31, 1983 (\$000s)	<b>Assets</b>		
	Current:		
	Cash and short term notes	\$ 2,738	\$ 35,208
	Marketable securities (note 2)	<b>38,901</b>	
	Accounts receivable	<b>35,502</b>	34,612
	Inventories (note 3)	<b>27,714</b>	28,588
	Prepaid expenses	<b>1,194</b>	1,498
	<b>Total current assets</b>	<b>106,049</b>	99,906
	Accrued incentive revenue (note 4)	<b>699</b>	1,038
	Fixed, at cost:		
	Building and leasehold improvements	<b>2,635</b>	1,958
	Machinery, tooling and equipment	<b>27,743</b>	24,347
		<b>30,378</b>	26,305
	Less accumulated depreciation and amortization	<b>15,803</b>	13,053
	<b>Net fixed assets</b>	<b>14,575</b>	13,252
	Goodwill, at cost less accumulated amortization (note 1(e))	<b>3,161</b>	3,952
	Deferred costs less accumulated amortization	<b>1,497</b>	310
		<b>\$125,981</b>	<b>\$118,458</b>

(See accompanying notes to consolidated financial statements)

On behalf of the Board:



Director



Director



	1983	1982
December 31, 1983 (\$000s)		
<b>Liabilities</b>		
Current:		
Accounts payable and accrued charges	\$ 28,342	\$ 25,715
Income and other taxes payable (note 5)	2,868	4,182
Dividend payable	794	497
Current deferred income taxes (note 5)	2,235	2,788
Current portion of long term debt (note 7)	1,262	1,330
Customer advance payments (note 3)	15,713	48,298
Total current liabilities	51,214	82,810
Long term debt (note 7)	5,634	6,926
Deferred income taxes (note 5)	3,666	3,087
Convertible subordinated debentures (note 6)	22,900	
<b>Shareholders' equity</b>		
Share capital (note 8):		
Junior Preferred Shares, Second Series		34
Special Shares	157	76
Subordinate voting shares	23,356	14,632
	23,513	14,742
Retained earnings	19,054	10,893
Total shareholders' equity	42,567	25,635
	\$125,981	\$118,458

### Auditors' report

To the Shareholders of  
Spar Aerospace Limited:

■ We have examined the consolidated balance sheet of Spar Aerospace Limited as at December 31, 1983 and the consolidated statements of income and retained earnings and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of the company as at December 31, 1983 and the results of its operations

and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Canada  
February 10, 1984

*C. Clarkson Gordon*

Chartered Accountants



**Consolidated statement of income  
and retained earnings**

	1983	1982
For the year ended December 31, 1983 (\$000s)		
<b>Revenues</b>	<b>\$214,871</b>	<b>\$177,775</b>
Cost of sales including all expenses except items shown below (note 5)	165,205	132,310
Administrative and selling expenses	25,207	21,827
Research and development costs (note 5)	4,774	2,459
Depreciation and amortization	3,760	2,981
Interest on long term debt	2,480	1,798
Other interest (income) expense (net)	(4,391)	591
Amortization of goodwill (note 1(e))	792	229
	<b>197,827</b>	<b>162,195</b>
Income before income taxes	<b>17,044</b>	<b>15,580</b>
Income tax expense (note 5)		
— current	6,595	3,219
— deferred	26	3,781
	<b>6,621</b>	<b>7,000</b>
<b>Net income for the year</b>	<b>10,423</b>	<b>8,580</b>
Retained earnings, beginning of year	<b>10,893</b>	<b>3,738</b>
	<b>21,316</b>	<b>12,318</b>
Dividends on:		
Subordinate voting shares	(2,262)	(1,248)
Preferred Shares — Series A		(177)
<b>Retained earnings, end of year</b>	<b>\$ 19,054</b>	<b>\$ 10,893</b>
Earnings per subordinate voting share (in dollars)		
— basic	\$ 1.42	\$ 1.43
— adjusted basic		\$ 1.33
— fully diluted	\$ 1.20	\$ 1.12

(See accompanying notes to consolidated financial statements)

■ Basic earnings per subordinate voting share are calculated on net income (after deducting dividends on Preferred Shares in 1982) divided by 7,329,200 shares being the weighted average number of subordinate voting shares outstanding during the year (1982 — 5,852,480).

Fully diluted earnings per subordinate voting share are based on 9,925,900 shares assuming (1) the conversion of all issued Special Shares on the basis of 50 Special Shares for each subordinate voting share, (2) the exercise of all outstanding warrants and options on the basis of two subordinate voting shares for each warrant and one subordinate voting share for each option, (3) the effect of unissued shares to employees participating in the 1982 employee share purchase plan, (4) the impact of the conversion of all outstanding subordinated debentures at May 10, 1983 on the basis of

\$19.00 for each subordinate voting share, and (5) the recognition of imputed earnings after tax at the rate of 5.7% (\$1,438,000) on cash that would have been received therefrom.

Adjusted basic earnings per subordinate voting share assumes the conversion at the beginning of 1982 of all issued Preferred Shares — Series A. All such shares were converted or redeemed on or prior to July 2, 1982.

Earnings per share and the numbers of shares for 1982 have been recalculated on a basis consistent with 1983 and reflect the June 1, 1983 subdivision of the subordinate voting shares and Special Shares — a 2 for 1 split.



**Consolidated statement of changes  
in financial position**

	1983	1982
For the year ended December 31, 1983 (\$000s)		
<b>Working capital was provided by:</b>		
Operations —		
Net income for the year	<b>\$10,423</b>	\$ 8,580
Items not affecting working capital		
Amortization of goodwill (note 1(e))	<b>792</b>	229
Depreciation and amortization	<b>3,760</b>	2,981
Deferred income taxes	<b>579</b>	1,162
Accrued incentive revenue		(1,038)
Other	<b>(21)</b>	(183)
	<b>15,533</b>	11,731
Issue of convertible subordinated debentures (note 6)	<b>25,000</b>	
Issue of subordinate voting shares and Special Shares (note 8)	<b>6,705</b>	1,067
Long term debt (note 7)		2,138
Other	<b>517</b>	305
<b>Total working capital provided</b>	<b>47,755</b>	15,241
<b>Working capital was applied to:</b>		
Purchase of machinery and equipment, net of government grants and investment tax credits (1983 — \$1,472; 1982 — \$128)	<b>4,788</b>	2,525
Long term debt repayments and provision for current instalments (note 7)	<b>1,292</b>	5,867
Deferred costs	<b>1,640</b>	36
Redemption of Junior Preferred and Preferred Shares (note 8)	<b>34</b>	50
Dividends	<b>2,262</b>	1,425
Conversion of subordinated debentures (note 6)	<b>2,100</b>	
Less subordinate voting shares issued on conversion	<b>(2,100)</b>	
<b>Total working capital applied</b>	<b>10,016</b>	9,903
Increase in working capital	<b>37,739</b>	5,338
Working capital, beginning of year	<b>17,096</b>	11,758
<b>Working capital, end of year</b>	<b>\$54,835</b>	\$17,096
<b>Changes in working capital components:</b>		
Increase (decrease) in current assets —		
Cash, short term notes and marketable securities	<b>\$ 6,431</b>	\$44,547
Accounts receivable	<b>890</b>	9,585
Inventories and prepaid expenses	<b>(1,178)</b>	8,581
	<b>6,143</b>	62,713
Increase (decrease) in current liabilities —		
Taxes (including current deferred income taxes)	<b>(1,867)</b>	3,569
Customer advance payments	<b>(32,585)</b>	44,016
Accounts payable and other current liabilities	<b>2,856</b>	9,790
	<b>(31,596)</b>	57,375
<b>Increase in working capital</b>	<b>\$37,739</b>	\$ 5,338

(See accompanying notes to consolidated financial statements)



(tabular amounts are  
in thousands of dollars)

### 1. Summary of accounting policies

■ The accompanying financial statements consolidate the accounts of the company and its subsidiaries and have been prepared by management in accordance with generally accepted accounting principles consistently applied. Because a precise determination of many assets and liabilities depends on future events, the preparation of financial statements for a period necessarily involves the use of estimates and approximations. The financial statements have, in management's opinion, been properly prepared within reasonable limits of materiality and within the framework of the accounting policies summarized below.

#### (a) Revenue recognition

Revenue is accrued under the percentage of completion method as the work is performed and provision is made for any anticipated losses where the estimate of total costs on a contract indicates a loss. As some contracts extend over one or more years, any revisions in cost and profit estimates made during the course of the work are reflected in the accounting period in which the facts indicating a need for the revision become known. Some contracts contain incentive and/or penalty provisions based on performance relative to established targets. Such awards or penalties are included in revenue or cost estimates when such amounts can reasonably be determined.

#### (b) Research and development costs

The company expenses all research and development expenditures as incurred with the exception of:

- (i) costs related to special purpose test facilities and equipment for development purposes which are capitalized and included as machinery, tooling and equipment.
- (ii) certain development costs related to the initial manufacture of new products which are deferred and amortized over a period of five years commencing in the year in which the cost is incurred. Should the company determine that no future benefit will accrue on a program, the unamortized deferred cost will be totally written off at that time. Development costs are claimed for income tax purposes as incurred.

#### (c) Inventories

Inventories of raw materials and finished goods are valued at the lower of cost, applied on a moving average basis, and market value determined as the lesser of replacement cost or net realizable value. Contracts in process are valued at estimated sales value calculated on the percentage completion basis where the work has advanced sufficiently to warrant such valuation and contracts in the initial stages are valued at cost.

#### (d) Fixed assets

Additions to fixed assets are recorded at cost after deducting investment tax credits and government grants. Depreciation and amortization is provided by the straight line method on a basis estimated to amortize the cost of the assets over their useful lives as follows:

Machinery and fixtures	10% to 20%
Tooling	33 $\frac{1}{3}$ %
Buildings	10%
Special purpose test facilities	12 $\frac{1}{2}$ % to 33 $\frac{1}{3}$ %
Leasehold improvements	Term of the lease plus renewable option if applicable

#### (e) Goodwill

In prior years, goodwill acquired was amortized over a 20-year period. The balance of goodwill unamortized at December 31, 1982 is being amortized over five years. This amortization period reflects management's current expectation of the remaining life of the technologies acquired.

#### (f) Foreign exchange

Transactions in foreign currencies are translated into Canadian dollars at the approximate rate prevailing at the time of the transactions. Assets and liabilities in foreign currencies are translated at rates prevailing at the year-end. Foreign exchange gains and losses are included in income for the year.



## 2. Marketable securities

■ The company's marketable securities portfolio is carried at cost (with market values as at December 31, 1983) and is comprised of:

(\$000s)	1983	1982
Retractable Preferred Shares (market value — \$10,732)	\$10,465	\$
Canadian Government Bonds (market value — \$10,973)	11,022	
Corporate Bonds (market value \$17,445)	17,414	
	<b>\$38,901</b>	\$ Nil

## 3. Inventories

■ Inventories are classified as follows:

(\$000s)	1983	1982
Contract costs and estimated earnings	\$261,048	\$144,096
Less customer advance payments	237,446	118,819
	<b>23,602</b>	25,277
Raw materials, parts and supplies	3,571	2,312
Finished goods	541	999
	<b>\$ 27,714</b>	\$ 28,588

Customer advance payments in excess of contract costs and estimated earnings of \$15,713,000 (1982 - \$48,298,000) are included in current liabilities.

## 4. Accrued incentive revenue

■ Accrued incentive revenue represents the present value of cash payments, net of direct costs, that the company will receive relating to the *Anik D1* satellite launched in 1982.

## 5. Income taxes

■ Investment tax credits earned on scientific research expenditures have been reclassified from income tax expense to reduce the cost of the related expenditures as follows:

(\$000s)	1983	1982
Cost of sales	\$2,800	\$2,000
Research and development costs	1,000	300
	<b>\$3,800</b>	\$2,300

The company's income tax provision is made up as follows:

(\$000s)	1983	1982
Combined basic Canadian Federal and Provincial income tax rate	47.3%	49.4%
Income tax expense prior to the following (reductions) increases	\$8,060	\$7,700
— Manufacturing and processing deduction	(1,100)	(1,000)
— All other items (net)	(339)	300
	<b>\$6,621</b>	\$7,000



(note 5 continued)

As a result of timing differences in the reporting of certain revenue and expense items for income tax purposes, income taxes have been deferred. Current deferred income taxes result primarily from differences in the valuation of contracts in process inventory. The balance of deferred income taxes arises primarily from claiming depreciation in excess of that charged in the accounts plus the deferral of incentive income for income tax purposes.

As at December 31, 1983 one of the subsidiaries of the company had accumulated losses for income tax purposes in the amount of \$4,000,000, which are available to reduce the future years' income taxes. The losses and their respective years of expiry are as follows:

Expiry	Loss (\$000s)
1985	\$ 200
1986	1,200
1987	100
1988	1,700
1989 and beyond	800

In addition, the company has investment tax credits available to be carried forward to future years to reduce

income tax expense for which potential recovery has not been recognized in the accounts. These credits expire as follows:

	(\$000s)
1986	\$ 200
1987	2,500
1988	1,400
	\$4,100

#### 6. Convertible subordinated debentures

■ On May 10, 1983 the company issued \$25,000,000 of 8% convertible subordinated debentures due May 1, 1988. At the option of the holder, debentures may be converted into subordinate voting shares at the rate of \$19.00 for each subordinate voting share at any time prior to maturity and prior to the day fixed by the company for redemption or conversion. At any time after April 30, 1986, the company, at its option, may redeem the debentures in whole or in part at the redemption price of 108% of the principal amount or convert the debentures in whole or in part into one Preferred Share, First Series for each \$100.00 principal amount. On November 14 and 17, 1983, \$2,100,000 of debentures were converted into 110,526 subordinate voting shares.

#### 7. Long term debt

(\$000s)	Total liability	Portion due in 1984 shown in current liabilities	Long term
Bank term loan bearing interest at 15.9% repayable in annual instalments of \$500 (U.S. funds) to April 30, 1985 and the balance of \$3,000 (U.S. funds) by April 30, 1986	\$4,980	\$ 622	\$4,358
Bank term loan bearing interest at 17.7% repayable in semi-annual instalments of \$175 (U.S. funds) to January 31, 1987	1,525	436	1,089
Other	391	204	187
	\$6,896	\$1,262	\$5,634

Collateral security for the bank term loans includes:

- a general assignment of accounts receivable;
- an assignment of inventory; and
- floating charge demand debentures of \$40,000,000 on all the assets of Spar Aerospace Limited and \$4,000,000 on all the assets of its subsidiary Northway-Gestalt Corporation subject to prior charges of non-bank indebtedness. The company has agreed to maintain certain minimum levels of working capital.

Long term debt is repayable as follows:	(\$000s)
1984	\$1,262
1985	1,228
1986	4,189
1987	217
	\$6,896



## 8. Share capital

■ A summary of changes to issued share capital for the year ended December 31, 1983 is as follows:

(\$000s)	Subordinate voting		Special		Junior Preferred Second Series		Total
	Shares	\$	Shares	\$	Shares	\$	\$
Issued and outstanding, December 31, 1982	6,628,998	14,632	791,426	76	3,444,848	34	14,742
(a) Exercise of warrants for cash	661,526	4,457					4,457
(b) Conversion of subordinated debentures to subordinate voting shares	110,526	2,100					2,100
(c) Issue of subordinate voting shares for cash under employee share purchase plan	432,841	1,703					1,703
(d) Exercise of options for cash	122,000	462					462
(e) Issue of Special Shares for cash			341,049	83			83
(f) Redemption of Junior Preferred Shares					(3,444,848)	(34)	(34)
(g) Conversion of Special Shares to subordinate voting shares	282	2	(14,100)	(2)			
Issued and outstanding, December 31, 1983	7,956,173	\$23,356	1,118,375	\$157			\$23,513

Authorized, December 31, 1983

Class	Unlimited	12,000,000	20,000,000
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At the Annual and Special Meeting on May 17, 1983, shareholders voted to subdivide the Common and Special Shares on the basis of two shares for each Common and Special Share — a 2 for 1 split — effective June 1, 1983. In addition the company's Common shares were redesignated as "subordinate voting shares" to comply with the requirements of the Ontario Securities Commission Policy Statement No. 1.3 and the Toronto Stock Exchange's Policy Statement on Restricted Shares.

### Preferred Shares

Preferred Shares (authorized 10,000,000 shares) may be issued in one or more series with such designation, preferences, rights, privileges, restrictions and conditions attached as may be determined by the directors.

In connection with the issue of the convertible subordinated debentures (note 6) 250,000 Preferred Shares of a new series have been designated as Non-cumulative Redeemable Preferred Shares, First Series. None of the Preferred Shares, First Series were issued in 1983.

The holders of the Preferred Shares, First Series are entitled to fixed non-cumulative preferential cash dividends, as and when declared by the directors, at the rate of \$7.00 per share per annum payable quarterly on such dates as the directors may determine.

The company may, upon giving notice, redeem at any time the whole, or from time to time any part of the then outstanding Preferred Shares, First Series on the basis of \$100.00 plus all declared but unpaid non-cumulative preferential dividends for each share.

### Junior Preferred Shares

The Junior Preferred Shares may be issued in one or more series with such designation, preferences, rights, privileges, restrictions and conditions attached as may be determined by the directors.

### Special Shares

Special Shares are not transferable except in certain limited circumstances. Such shares rank, as to payment of dividends and repayment of capital, junior to all other existing shares of the company and are not entitled to receive, in the case of repayment of capital, any amounts in addition to the amount paid up thereon.



(note 8 continued)

The Special Shares are not entitled to dividends except in a year for which dividends of at least \$0.375 have been paid on the subordinate voting shares, in which case dividends may be paid, subject to certain prescribed limits. Each Special Share entitles the holder to 10 votes at a meeting of shareholders. The Special Shares are not redeemable on or prior to June 30, 1991 (but may be redeemable thereafter at \$0.075 per share), are purchasable by the company at any time and are convertible into subordinate voting shares at any time on the basis of one subordinate voting share for 50 Special Shares. The Special Shares carry a preemptive right entitling the holders to receive newly issued Special Shares in proportion to such shareholders' holdings of Special Shares. On any issue of additional subordinate voting shares (except in certain circumstances) or on the issue of any security convertible into subordinate voting shares, the company is required to offer to the Special shareholders, at a specified price, sufficient additional Special Shares in proportion to their holdings of Special Shares to bring the number of Special Shares to be outstanding thereafter up to 10% of the number of subordinate voting shares outstanding on a fully diluted basis. Neither Special Shares nor subordinate voting shares are to be subdivided or consolidated without the other being subdivided or consolidated on the same basis.

#### Subordinate voting shares

The holders of subordinate voting shares are entitled to one vote per share at all meetings of shareholders (see Special Shares above) and to receive dividends when declared by the directors. Each subordinate voting share is equal to every other subordinate voting share and, in the event of the distribution of assets in connection with the dissolution of the company, the holders of subordinate voting shares are entitled, subject to the prior rights of the holders of Preferred Shares and Junior Preferred Shares but in priority to the rights of holders of Special Shares, to receive the amount paid up on such subordinate voting shares together with any declared and unpaid dividends. Thereafter in such event, and after payment to the holders of Special Shares of the amount paid up on such Special Shares together with any declared and unpaid dividends thereon, the holders of subordinate voting shares are entitled to receive the remaining property of the company.

#### Warrants

Each share purchase warrant entitles the holder to purchase two subordinate voting shares for each warrant held at \$7.00 per share if exercised on or prior to February 28, 1985. At December 31, 1983, 356,623 warrants remained outstanding.

#### Stock options

Under an incentive stock option plan, there are outstanding options to full-time officers and other

employees to purchase subordinate voting shares of the company. In 1983, 6,000 options were issued, 122,000 options were exercised and 44,000 options were forfeited on termination of employment.

At December 31, 1983, 306,000 subordinate voting shares were reserved for issuance upon the exercise of options, including 280,000 subordinate voting shares to officers of the company, at prices ranging from \$3.205 to \$4.25 per share. These options may be exercised at various periods to 1991.

#### Employee share purchase plan

In 1982 the company offered a subordinate voting share purchase plan to qualified employees. The plan allowed each qualifying employee, over a two-year period, to purchase subordinate voting shares of the company at a cost of \$3.935 per share. As part of the plan, the company agreed to pay a bonus to each participant equal to 40% of the employee's contribution to be used to purchase additional subordinate voting shares of the company. Certain officers, related to maximum participation in the plan, received interest-free loans from the company for a portion of their commitment. At December 31, 1983, outstanding loans amounted to \$141,000, repayable over the next three years and secured by subordinate voting shares purchased under the plan. In total, the plan will result in the purchase of approximately 864,500 shares at a total value of \$3,400,000 of which 432,841 shares at a value of \$1,703,000 were issued in 1983 and 235,526 shares at a value of \$927,000 were issued in 1982.

Subsequent to December 31, 1983, the company introduced the 1984 plan allowing each qualified employee to purchase on or about March 1, 1984 subordinate voting shares having an aggregate cost to the employee of 7½% of the employee's annualized base earnings as at February 9, 1984. The purchase price per share under this plan is \$18.73. The company will provide an interest-free loan to the full amount of the employee's commitment, repayable over three years and secured by subordinate voting shares purchased under the plan. At the end of each of these three years, the company will pay a bonus to each participant equal to 13⅓% of the employee's commitment to be used to purchase additional subordinate voting shares. In total, the plan will result in the purchase of 240,083 shares at a total value of \$4,497,000.

#### Shares required for future issue

At December 31, 1983, a total of 2,443,014 subordinate voting shares may be required for future issue as follows: 22,368 for conversion of the Special Shares, 713,246 for exercise of the warrants, 306,000 for exercise of stock options, 1,205,300 for conversion of subordinated debentures and approximately 196,100 for participants in the 1982 employee share purchase plan.



## 9. Lease commitments

Facility	Year of expiry	Annual rental (\$000s)
<b>Toronto</b>		
Caledonia Road	1989	\$ 341
Ormont Drive	1988	353
<b>Ottawa</b>		
Kanata	1985	372
<b>Montreal</b>		
Ste-Anne-de-Bellevue	1988	545
<b>Other</b>	1984-1988	766
		<b>\$2,377</b>

subordinate voting shares. Actuarial studies as of December 31, 1980 indicated an excess of fund assets over the actuarially computed current service obligations. The company's policy is to amortize such surplus or deficiency over three years and has included the final one-third of this surplus in income in 1983, which, after certain offsets and income taxes, increased net income in the year by approximately \$585,000 (1982 - \$480,000).

The amount charged to earnings (including payments to government pension plans) was \$1,205,000 (1982 - \$757,000) which includes amortization of prior service costs less amortization of the actuarially computed surplus.

Some of the company's pension plans were changed during the year to provide pension improvements. After giving effect to the changes, the past service liability unfunded or unrecorded in the accounts is estimated to be \$6,000,000 (1982 - \$1,900,000) and will be amortized and funded over a period of up to 15 years. Vested benefits unfunded or unrecorded in the accounts are estimated to be \$1,800,000 (1982 - \$300,000).

## 10. Pension plans

■ Pension contributions by employees together with those made by the company are deposited with trustees according to the terms of the plans. Pensions at retirement are related to various factors including remuneration, years of service and in the case of certain officers, the market value of the company's

## 11. Industry segment information

■ The company's operating divisions have been grouped into two industry segments.

It is the company's policy to price internal sales or transfer values for services, generally on an equivalent basis as that used for pricing externally. Certain of the 1982 comparative figures have been restated to conform with the presentation adopted in 1983.

(\$000s)	Gears and transmissions, aviation and other services		Satellites, communications and advanced systems		Eliminations		Consolidated	
	1983	1982	1983	1982	1983	1982	1983	1982
	External revenues	\$50,951	\$49,149	\$163,920	\$128,626			\$214,871
Intersegment revenues	3,139	6,543			\$(3,139)	\$(6,543)		
<b>Total revenue</b>	<b>\$54,090</b>	<b>\$55,692</b>	<b>\$163,920</b>	<b>\$128,626</b>	<b>\$(3,139)</b>	<b>\$(6,543)</b>	<b>\$214,871</b>	<b>\$177,775</b>
Segment operating profit	\$ 3,499	\$ 7,879	\$ 18,755	\$ 16,197	\$ (295)	\$ (384)	\$ 21,959	\$ 23,692
General corporate expenses							(6,826)	(5,723)
Interest on long term debt							(2,480)	(1,798)
Other interest income (expense) (net)							4,391	(591)
Income taxes							(6,621)	(7,000)
<b>Net income</b>							<b>\$ 10,423</b>	<b>\$ 8,580</b>
Identifiable assets	\$43,651	\$32,342	\$ 39,106	\$ 49,995			\$ 82,757	\$ 82,337
Corporate assets							43,224	36,121
<b>Total assets</b>							<b>\$125,981</b>	<b>\$118,458</b>
Capital expenditures	\$ 2,419	\$ 1,194	\$ 2,285	\$ 1,290				
Depreciation and amortization	\$ 1,707	\$ 808	\$ 1,849	\$ 2,131				
Amortization of goodwill	\$ 792	\$ 229						



(note 11 continued)

- The company operates principally in Canada.
- The company's revenues from export markets were approximately \$165,500,000 in 1983 (1982 - \$95,000,000).
- Due to the technological nature of the products and services provided, a significant portion of the company's business is with various branches and agencies of the Canadian government and crown corporations as well as with foreign government agencies.

Gears and transmissions, aviation and other services includes: (i) gears and transmission systems and equipment for gas turbine engines, fixed and rotary wing

aircraft and robotic applications; (ii) repair and overhaul of a wide range of commercial and military aircraft instrumentation and mechanical components and helicopter maintenance; and (iii) automated and conventional mapping services.

Satellites, communications and advanced systems includes (i) satellite systems and subsystems and ground-based satellite communications systems; (ii) remote manipulator systems for space and terrestrial applications; and (iii) electro-optical systems for sea and land-based applications.

### Supplemental information

(unaudited)

#### Reporting the effects of changing prices

■ Prolonged periods of inflation, though moderating in 1983, have resulted in an increased awareness of the limitations in conventional historical cost accounting to disclose the effect of changing prices on the operations of a business. To maintain its operating capability (i.e. its capacity to provide goods and services), it is assumed that an enterprise needs to hold a certain minimum quantity of inventory, property, plant and equipment and other assets. When the prices of those assets are rising, the dollar amount of the investment required to maintain operating capability increases. Historical cost financial statements typically match current revenues with original cost of assets overstating earnings during periods of inflation.

In recognition of this deficiency in historical cost financial statements, the CICA issued recommendations for reporting the effects of changing prices, effective for fiscal periods commencing on or after January 1, 1983. Relative to these recommendations, the following unaudited supplementary information is disclosed.

#### Inventories

■ The company's inventories substantially consist of contract costs and estimated earnings relative to incomplete contracts, and have either been largely financed by customers' advance payments or will be

subsequently paid for at their recorded values. Thus, the primary financial statements reflect the approximate current cost value of such inventory and, in the opinion of management, no material adjustment is required to finance their replacement in the normal course of business.

#### Fixed assets

■ The company estimates (by reference to Government published indices) that the current cost of replacing its fixed assets at current operating capability would approximate \$17,275,000, an increase of \$2,700,000 over the net book value of such assets in the primary financial statements.

#### Depreciation

■ The company estimates that on a current cost basis, the depreciation charge for the year would be \$3,707,000 an increase of \$400,000 over the \$3,307,000 recorded in the primary financial statements.

#### Income on a current cost basis

■ Income on a current cost basis for the year (as a result of the \$400,000 increase in depreciation) would be \$10,023,000 compared with \$10,423,000 reported on the historical cost basis in the primary financial statements.



## Ten-year review

(dollars in thousands, except per share figures)	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974
Earnings (loss) per share:***										
Basic net income (loss)	\$1.42	\$1.43	\$ .37	\$ (.28)	\$ .31	\$ .53	\$ .41	\$ .30	\$ .21	\$ .14
Fully diluted net income	\$1.20	1.12	.34*	**	.28	.40	.36	.28	.19	.13
Cash dividends paid per										
Subordinate voting share	\$ .35	.20		.15	.15	.11	.07	.07	.06	.04
Preferred Share		.54	1.08	1.08	1.08	1.06				
Deferred Share					.05	.03				
Shareholders' equity per										
subordinate voting share										
outstanding at year end	\$5.33	3.85	2.58	2.20	2.28	2.40	1.98	1.75	1.52	1.42
Revenues	\$214,871	177,775	122,567	127,729	108,813	91,869	70,089	37,347	28,716	26,444
Net income (loss)	\$ 10,423	8,580	2,167	(877)	1,605	2,184	1,311	956	638	419
Capital expenditures (net of government grants and tax credits)	\$ 4,788	2,525	1,678	4,155	4,567	2,851	4,000	751	664	898
Long term debt (including current portion)	\$ 29,796	8,256	12,198	7,000	945	710	1,272	2,280	2,538	2,565
Shareholders' equity	\$ 42,567	25,635	17,463	15,645	14,730	13,854	12,441	5,616	4,860	4,317
Working capital	\$ 54,835	17,096	11,758	3,227	6,089	7,979	7,621	4,759	4,248	3,862
Ratio of current assets to current liabilities	2.1	1.2	1.3	1.1	1.2	1.4	1.6	1.8	1.9	1.9
Number of employees	2,041	1,902	1,895	2,100	1,900	1,670	1,400	730	700	750
Number of shareholders										
Subordinate voting	3,489	2,800	2,930	2,970	2,690	2,150	2,060	2,120	2,150	2,170
Preferred and Special	57	64	620	675	780	744				

\* Does not include exercise of warrants which would be anti-dilutive.

\*\* Fully diluted not shown as effect would decrease loss per share.

\*\*\*All per share calculations were restated to reflect the June 1, 1983 subdivision of the subordinate voting shares — a 2 for 1 split.



## Directors

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**Robert A. Basil**

President  
RBI Inc.  
(Elected director 1981)

**David R. Beatty**

President  
Garbell Holdings Limited  
(Elected director 1983)

**David S. Beatty†**

President  
Beatinvest Limited  
(Elected director 1969)

**Larry D. Clarke\***

Chairman of the Board  
and Chief Executive Officer  
Spar Aerospace Limited  
(Elected director 1967)

**Camille A. Dagenais**

Chairman of the Board  
The SNC Group  
(Elected director 1980)

**Roland B. Dodwell\***

President  
R. B. Dodwell Ltd.  
(Elected director 1967)

**John D. Houlding**

President and Chief Executive Officer  
Polar Gas Project  
(Elected director 1977)

**William H. Jackson\***

Engineering Consultant  
(Elected director 1967)

**Philip A. Lapp\***

President  
Philip A. Lapp Limited  
(Elected director 1967)

**Earl H. Orser†**

President and Chief Executive Officer  
London Life Insurance Company  
(Elected director 1978)

**David A. B. Steel\***

Vice President and Director  
McLeod Young Weir Limited  
(Elected director 1967)

**Barbara L. Steele†**

Company Director  
(Elected director 1980)

## Officers

---

**Larry D. Clarke**

Chairman of the Board and  
Chief Executive Officer

**Roland B. Dodwell**

Vice Chairman of the Board

**R. Don Pollock**

Executive Vice President

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**E. Peter Birch**

Vice President, Administration

**David C. Cleland**

Vice President and  
Corporate Controller

**George B. Gomes**

Senior Vice President

**Eric R. Grimshaw**

Vice President and General Manager  
Remote Manipulator  
Systems Division

**John E. Lockyer**

Vice President and General Manager  
Defence Systems Division

**John D. MacNaughton**

Senior Vice President

**Thomas G. Mathers**

Vice President, Human Resources

**I. A. (Don) Mayson**

Vice President,  
Business Development

**J. Ron McCullough**

Vice President and General Manager  
Satellite and Aerospace  
Systems Division

**John Neville**

Vice President and Treasurer

**Ken J. Perry**

Vice President

**Sheldon Polansky**

Legal Advisor and Secretary

**William B. Simpson**

Vice President and General Manager  
Gears and Transmissions Division

**Christopher G. Trump**

Vice President and Assistant to  
the Chairman

†Member of the Audit Committee  
\*Member of the Executive Committee



## Corporate information

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### Executive Offices

Royal Bank Plaza, South Tower  
P.O. Box 83, Toronto, Canada  
M5J 2J2  
(416) 865-0480

### Corporate Office

6303 Airport Road, Suite 403  
Mississauga, Ontario L4V 1R8

### Government Relations Office

77 Metcalfe Street, Suite 200  
Ottawa, Ontario K1P 5L6

### Satellite and Aerospace Systems Division

21025 Trans Canada Highway  
Ste-Anne-de-Bellevue, Quebec  
H9X 3R2

### Remote Manipulator

**Systems Division**  
1700 Ormont Drive  
Weston, Ontario M9L 2W7

### Defence Systems Division

4100 Weston Road  
Weston, Ontario M9L 1W7  
P.O. Box 13050  
Kanata, Ontario K2K 1X3

### Communications Systems Division

21025 Trans Canada Highway  
Ste-Anne-de-Bellevue, Quebec  
H9X 3R2

### Gears and Transmissions Division

825 Caledonia Road  
Toronto, Ontario M6B 3X8

### Aviation Services Division

825 Caledonia Road  
Toronto, Ontario M6B 3X8

### The Copter Shop

1190 McTavish Road N.E.  
Calgary, Alberta T2E 7G6

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### Wholly-owned subsidiaries

#### Astro Research Corporation

6390 Cindy Lane  
Carpinteria, California 93013  
U.S.A.

#### Northway-Gestalt Corporation

1450 O'Connor Drive  
Toronto, Ontario M4B 2V2

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### Auditors

Clarkson Gordon

### Transfer Agents

Montreal Trust Company



