



ANNUAL REPORT 1991

SPAR AEROSPACE LIMITED

512/413

The illustration on the cover signifies Spar's continued quest in outer space. The compass represents the great explorers of yesteryear and Spar continues their journey into the future with a clear vision and purpose. Our vision is to reach for the stars and beyond while discovering and developing new technologies for the betterment of humankind.

Spar is a Canadian shareholder-owned company and has gained an international reputation in the areas of space, robotics, communications, remote sensing, electro-optics and aviation markets. As Canada's premier space company, Spar will celebrate it's 25th anniversary in 1992.

Spar represents one of the largest technological groups in the private sector with approximately 2,900 employees including 1,200 engineers and technicians at locations in Canada, the United States and Great Britain. A substantial portion of Spar's sales are in international markets. Research and development activity, including cooperative programs with several Canadian universities represents approximately 50% of Spar's revenues.

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CHAIRMAN'S REMARKS

Your Board is pleased to report that the 1991 results continued the trend set in 1990.

Management has made good use of the increased workload arising from the three major projects within the Canadian space program to improve substantially Spar's operational effectiveness. This bodes well for the future.

Last year, in my report to shareholders, I looked back over Spar's first 23 years, as we pursued our vision to become Canada's leading industrial participant in the area of space-related activities. With sales approaching half a billion dollars, and with broad involvement in space-based communications, remote sensing, and robotic markets, both nationally and internationally, Spar has achieved a critical mass of interrelated projects which augers well for continued profitable growth.

There are three elements within this strategy that will continue to play as vital a role in the future as in the past. They are: the attraction and development of outstanding personnel; a dedication to participation in the international marketplace; and, the wise employment of entrepreneurial initiative.

The work that has been undertaken during the past two years in the area of training and development across the company, which will increase in intensity during 1992, takes cognizance of these three vital elements of Spar's strategic thrust in pursuit of its continuing long term vision. John MacNaughton, in his remarks, will give you more detailed information as to the way in which Spar will continue its drive to meet your Board's objectives for its shareholders.

Our successes to date, and our hopes for the future, are dependent upon support from our employees, suppliers, customers and governments, as well as our bankers and shareholders. All of us at Spar are acutely conscious of this reality.

On behalf of your Board of Directors, I would like to express our deep appreciation for this support.

Larry D. Clarke

Chairman of the Board



John MacNaughton (front right) leads the Spar management team. He is joined by Tony Anderson (front left), Wes Terryberry (centre), and (left to right) Ken Perry, Bryan Held, Charlie Dannemann, Dave Stapley and Bill Fitzgerald

PRESIDENT'S REMARKS

1991 closed with Spar continuing on its path toward normal levels of profitability. Record revenues of \$467 million generated net income of \$11.2 million (\$0.98 per share basic). Research and development activity represents about 50% of these revenues.

The new corporate structure implemented in 1990, combined with a renewal program based on continuous improvement methodologies, has made Spar more competitive and efficient. This is reflected in the encouraging 1991 results.

During the year, both Anik E satellites entered service with Telesat Canada. Solving the complex deployment anomaly and bringing the first satellite on stream was a remarkable feat of engineering detective work. The MSAT and Radarsat programs proceeded on course for launches in 1994 and the preliminary design of the mobile servicing system (MSS) for space station Freedom moved ahead on schedule. Canadarm celebrated its 10th anniversary in space; export orders for Canadarm and its spin-offs now exceed \$300 million. The AN/SAR -8 surveillance system successfully completed sea trials.

Spar completed the integration of certain assets of Leigh Instruments into its Ottawa Valley operations, and deliveries of NODLR observation devices and SHINCOM shipboard communications systems continued through the year.

The world around us has entered a period of unprecedented change and upheaval. At home we have our own economic and unity issues, which, more than ever before, underscore the importance of the Canadian space program, not only in terms of its economic and technological benefits to the country, but more particularly as a symbol of uniting our land from coast to coast to coast.

These challenges provide opportunities for Spar as we move toward an increased thrust into software system orientation and end-to-end systems.

Canada must remain a nation of exporters and Spar is a leader in this regard. In 1991, export revenues of more than \$160 million were derived from many overseas markets including earth stations to the People's Republic of China, communications networks to Mexico, night observation devices to Korea, flight

recorders to the United States, robotic expertise to Japan and satellite equipment to France.

Alliances in the many countries where we are active, including Canada, have been a way of life at Spar since its inception. These alliances have given us access to new technologies and markets.

These markets can be described as clusters of activities involving designing, building and operating systems. Spar is at the threshold of these emerging markets

These new markets include:

- A communications cluster, comprising Spar satellites and earth stations with Comtel terminals, and network systems architecture design, to provide a range of services to the telecommunications market.
- A remote sensing cluster, where data observed in space by Radarsat will be processed by MacDonald Dettwiler for distribution through Radarsat International to world markets.
- A peace and security cluster, where Spar's capabilities in communications, surveillance and remote sensing will be used to meet a variety of needs for peace, security and transportation.
- A space infrastructure cluster, built on Spar's skills in robotics and remote handling and applied to major manned space projects.

1992 should see further improvements in Spar's financial performance.

Your company is dependent for its success on our 2,900 employees, our customers and shareholders, our industrial associates and vendors, and Canada's policymakers. I thank all of them for their continued support.

John D. MacNaughton
President & Chief Executive Officer





ADVANCED TECHNOLOGY SYSTEMS GROUP

1991 was the tenth anniversary of the first
Canadarm flight. This year also saw Spar
export revenues derived from that program
exceed the \$300M mark as a result of manned
space activities for NASA (U.S.), Matra
(France) and Toshiba (Japan).

Looking to the future, Spar has teamed with Rockwell International to perform initial studies on returning humankind to the moon and onwards to the exploration of Mars.

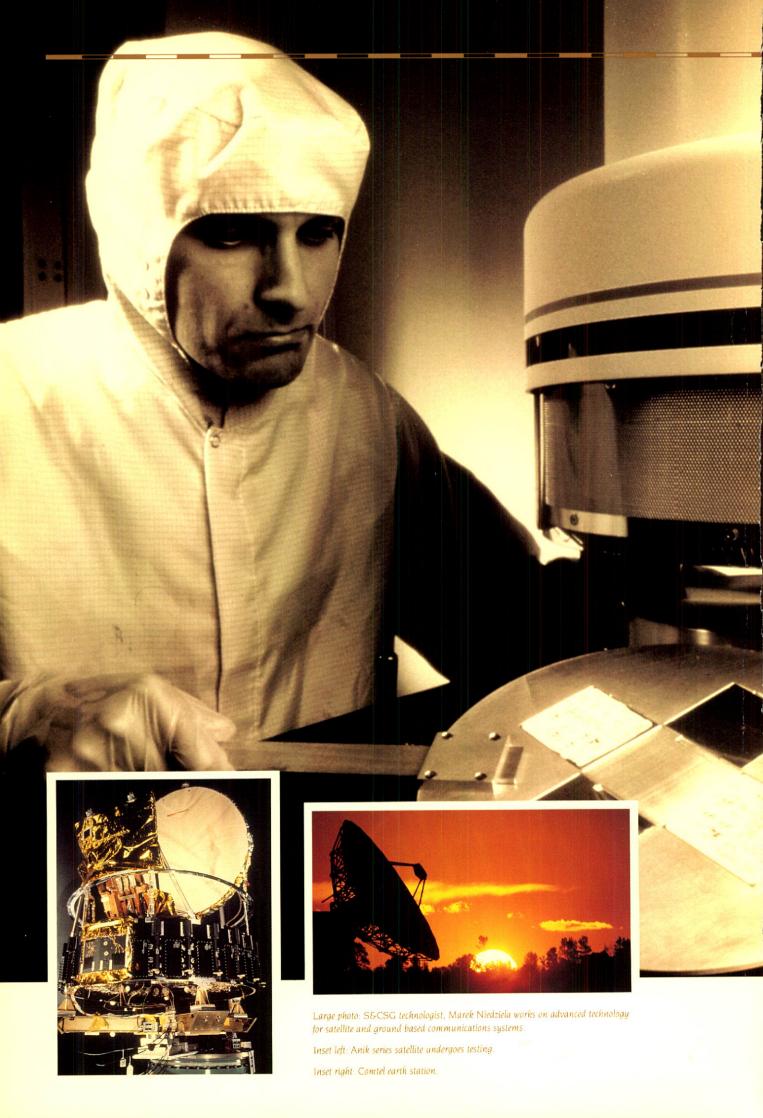
Spar continues to apply remote handling technologies to the nuclear power industry, both in support of fusion research in the U.S., Germany and the United Kingdom, and in the area of cleaning up the environment. During 1991 Spar received a contract from the U.S. Department of Energy to develop and demonstrate environmental clean up techniques.

Spar's competitive position in space robotics was further enhanced as the mobile servicing system for the Canadian Space Agency moved into the detailed design and manufacturing phases. Streamlining processes and procedures, increasing operating efficiencies and establishing high performance teams to conduct difficult and complex tasks will contribute to long-term competitiveness in the international field of space robotics.

The AN/SAR-8 infra-red search and track designation system successfully completed sea trials aboard USS Kinkaid in mid-1991.

During this year, Spar concentrated efforts to extend the program towards production. The Gulf War heightened the value of infra-red surveillance for use against the growing threat of low flying missiles. During its intensive test program AN/SAR-8 demonstrated its effectiveness.

The Spar Advanced Technology Systems
Group has established itself as a world leader
in space robotics. This heritage of excellence
that began with Canadarm has led to
international export contracts that will ensure
the continued growth of the group.





Both Anik E telecommunications satellites built by Spar, were successfully launched in 1991 and are fully operational. Following an unexplainable in-orbit anomoly, Spar, along with its customer Telesat Canada and subcontractor GE, received worldwide recognition for the rescue of Anik E2.

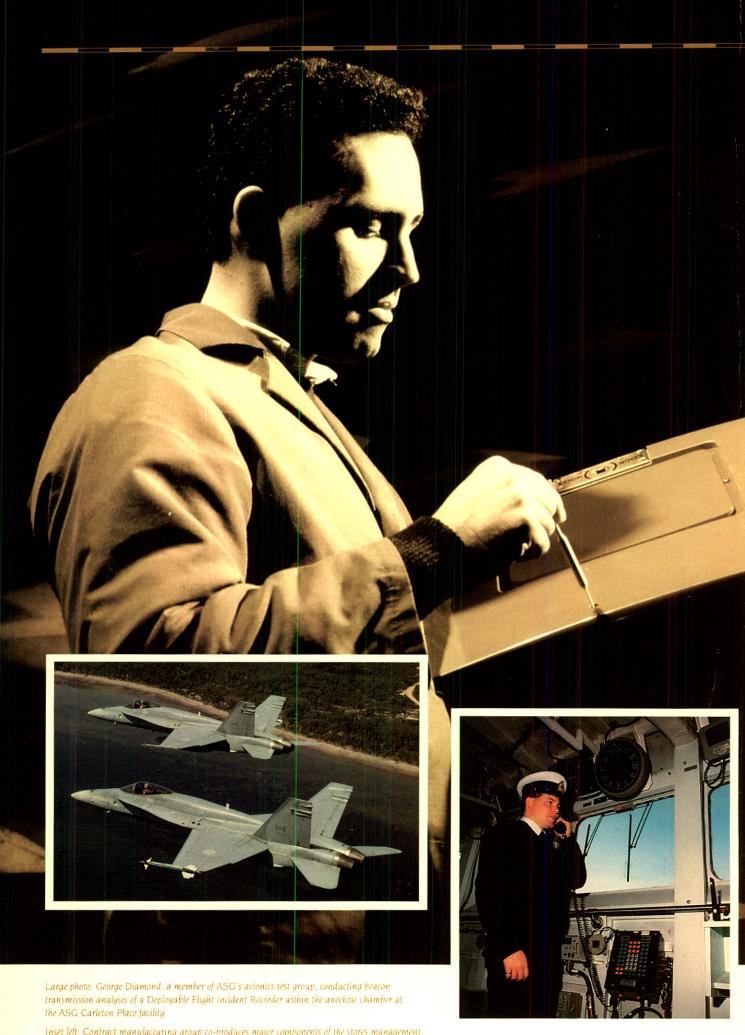
In 1991, Spar communications networks were sold to Indonesia, Mexico, China and more recently to African countries. Equipment and antennas for space-based communications were built and delivered for Spain's first Hispasat satellite, and launched on Telecom II and Inmarsat. Spar also supplied data link equipment for the European remote sensing satellite ERS-1, launched in 1991.

While concentrating efforts internally on major programs such as MSAT, a commercial mobile telecommunications satellite, and Radarsat, Canada's state-of-the-art remote sensing satellite, the group is actively pursuing opportunities in international markets for its products and systems.

In 1991, the group developed and implemented an internal operational effectiveness program to increase competitiveness.

The group's challenge for the 1990s is to become an international supplier of end-to-end systems, to secure and enhance its leadership role on the world market in telecommunications and remote sensing. The company is seeking strategic alliance opportunities with important national and international aerospace companies, which will allow the group to benefit from increased access to international space programs.





Inset left: Contract manufacturing group co-produces major components of the stores management and communication control equipment for all variants of the F/A-18 aircraft.

Inset right: Integrated digital communications system on board a Canadian Navy patrol frigate



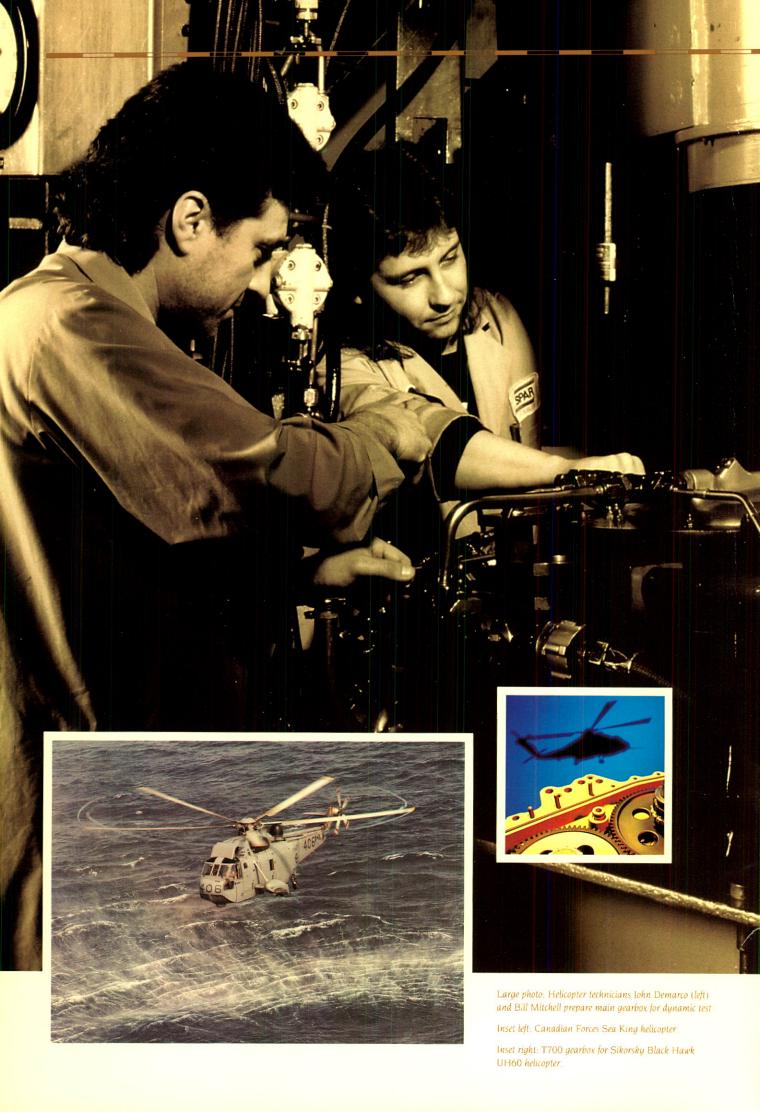
The Applied Systems Group (ASG) continued to expand its international customer base through sales of a wide range of products including electro-optics, space manufacturing, shipborne communications, land-based air navigation, aircraft avionics and instrumentation, aerospace repair and overhaul, and contract manufacturing.

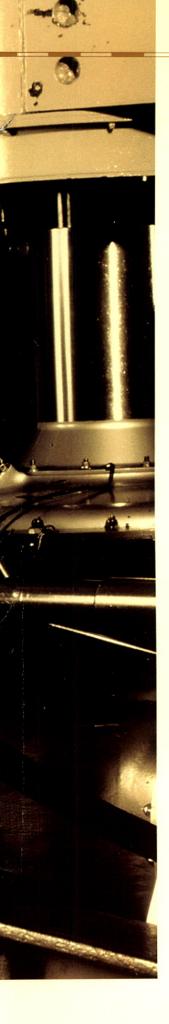
Final delivery of night observation device long range (NODLR) systems to the Canadian Forces will be completed early in 1992. Several of these systems have already been deployed to support Canada's peacekeeping operations abroad. Significant new multi-year opportunities for contract manufacturing are under review. Space manufacturing continued to prove its viability with the announcement by Hughes Aircraft that ASG has been selected as their preferred supplier of travelling wave tube amplifiers (TWTA) for all HS601 satellite programs.

Finalization of a contract to provide shipboard integrated interior communications (SHINCOM) systems for the Canadian Patrol Frigate program was well advanced and efforts continue in marketing this system with enhancements to the U.S. Navy. The Phase II contract for the completion of tactical air navigation (TACAN) systems for the Canadian Forces was awarded and is scheduled for completion in 1992.

The development contract with McDonnell Douglas Corporation for a deployable flight incident recorder system (DFIRS) for current and future F/A-18 aircraft neared completion. The initial production contract for 206 of these systems was received. Interest in the DFIRS and crash position locator/flight data recorder systems has been expressed by other military aircraft fleet managers. Retrofit possibilities as well as fitment to additional aircraft types are being pursued aggressively.

Spar Aerospace (U.K.) Limited was formed in January 1991 to facilitate the manufacture and servicing of Applied Systems Group products and systems for the aerospace industry in Europe as well as to provide marketing support of Canadian-manufactured products for Spar.





AVIATION GROUP

The markets in which Aviation Group operates came under pressure in 1991. The commercial airline industry struggled to achieve even modest profitability throughout the period. And the airlines are seeking the lowest prices from suppliers. Both the defence industry and the government sector in general, have seen major cutbacks in programs.

Despite this environment, good progress was made by both divisions within Aviation Group.

Gears and Transmissions Division (G&TD) has been well positioned for the future through the acquisition of new equipment and the highest number of projects ever on the order book. Most notably, the installation of a state-of-the-art Phoenix precision grinding machine has placed this division amongst the most advanced gear production facilities in North America.

In 1991 G&TD undertook qualification programs with Boeing Helicopter for the U.S. Navy CH 46 helicopter and with Kaman Aerospace for the SH2G helicopter. Successful qualification will provide long term contract work for the division. Follow-on production is also expected for Sikorsky Aircraft on the UH60 Blackhawk and other key gearbox programs for General Electric.

Improvements in efficiency, productivity and competitiveness of the Aviation Services Division resulted in the securing of important contracts for both fixed and rotary wing aircraft in the U.S. and Pacific Rim and we expect to extend this into South America.

Spar Aviation Services Division is a partner in a multi-national company called International Aircraft Management Company (IAMCO) in Italy. As prime contractor to NATO, its responsibility is to manage the depot level maintenance program on 18 E3-A early warning aircraft, and three transport aircraft. This contract will generate significant work for the division and, as important, serves as an excellent window to the European marketplace.

Although the marketplace for service and production undertaken by the group has been difficult, the divisions continued to win competitive export contracts during the period and the future holds great promise.

MANAGEMENT'S DISCUSSION AND ANALYSIS

RESULTS OF OPERATIONS

Net operating revenues increased by \$131 million in 1991, 39% over previous year levels, to set a new record high. The 1991 revenue gain surpassed the 1990 increase of \$103 million. Gains in revenue continue to be generated by the Systems segment, which accounted for 97% and 93% of 1991 and 1990 increases, respectively. High levels of activity on the space station and Radarsat programs beginning in 1990 have been further augmented by the mobile satellite (MSAT) program and additional volume flowing from the late 1990 acquisition of certain assets and contract work of Leigh Instruments. Revenue in 1991 includes \$227 million of customer-funded research and development, up from \$126 million in 1990, with the increase due largely to the development effort directed to the Radarsat program.

Gross margin improved in 1991 by \$25 million, compared to the 1990 increase of \$19 million. Gross margin as a percent of revenue in 1991 was 19.9%, down 0.4% from 1990, due to the heavier weighting of cost reimbursable major contracts which historically carry a lower gross margin. Most of the 1991 increase in gross margin was generated by revenue volume increase in the Systems segment.

Administrative and selling expenses increased 19% over 1990 to \$48.5 million. The acquired operations of Leigh Instruments added \$3.1 million in expenses to the Ottawa-based Applied Systems Group, with much of the remaining increase due to volume growth and inflation. Expenses as a percent of revenue in 1991, were 10.4% down from 12.2% in 1990.

In 1991, company-funded investment in research and development rose by 42% over 1990, and, was concentrated in support of Systems segment technology advancement. Expenditures in 1991 of \$8 million, net of government assistance (see note 10, page 28) were directed to manned space robotics, satellite communications, remote sensing applications and ground communication systems.

Income tax expense as a percentage of pre-tax profit declined to 40.3% from 44.2% in 1990, largely due to a lower combined basic Canadian and U.S. statutory

income tax rate and reduced impact of the 'large corporation tax' as a percentage of pre-tax profit.

Net income in 1991 increased fourfold from 1990 to \$11.2 million, representing basic earnings per share of \$0.98, up from \$0.24 in 1990. Net income as a return on average shareholders' equity increased to 12% from 3% in 1990.

Liquidity and Capital Resources

The company's \$2.1 million cash balance at the end of 1991 is a \$16.6 million improvement from the bank indebtedness of \$14.5 million the previous year, and more than a \$20 million improvement from 1989. Investments in capital assets of \$26 million in 1991 and \$27 million in 1990 continue to be funded largely from current operating cash flow. Major capital projects in 1991 included a \$4 million compact antenna range designed to test the functioning of large and complex antennas for the Radarsat and MSAT programs. A further \$9 million has been invested for improved testing facilities and computers to improve the effectiveness of engineers and management knowledge workers. Investments of \$2 million in advanced machine tools and \$1.2 million in deferred development expenditures are positioning the Aviation segment's Gears & Transmissions Division for new programs.

Major contracts in the Systems segment include support by subcontractors whose activity is billed progressively, both by the subcontractor and the company. Accounts receivable at \$101.6 million and accounts payable at \$98.6 million are up 45% and 24% respectively, over 1990, reflecting primarily the timing of invoicing under these programs.

Favourably negotiated milestone payments on contracts resulted in an increase in customer advance payments of \$17.7 million in 1991. This benefit, combined with significant improvement in cash flow from operations, contributed to the improved cash position at the end of 1991. Working capital has increased by \$10.5 million in the year, with an improvement in current ratio 1.2:1 in 1991, up from 1.1:1 in 1990.

SYSTEMS SEGMENTS revenues at a glance (S millions)



Liquidity Discussion

The company has over the last several years financed its fixed asset, deferred development and working capital investments out of operating cash flow, employee stock issues and short-term bank borrowing, while maintaining minimal long-term debt. The nature of the company's contracting is such that programs are largely financed by customer progress payments based on costs incurred or on achieved milestones. The quality of the government and commercial customer base is such that the credit risk to the company is low. These factors allow the company to operate on lower working capital levels relative to the volume of revenues. Temporary increases in the levels of receivables or inventories, when experienced due to delayed receipts or milestones, may be financed by short-term bank borrowing. The company has arrangements with its bankers for credit facilities to supplement periodic operating cash flow requirements.

Dividends paid in 1991 were the same as 1990 at 12 cents per share. The latest quarterly dividend declared in November 1991 and payable in January 1992, was 3 cents per share.

BUSINESS SEGMENTS (note 12, page 29)

| 33.8 | \$34.0 |
|--------|---------|
| \$23.1 | \$19.3 |
| | |
| | |
| | |
| | |
| | 64% 36% |
| 0% 40% | 1 |

AVIATION SEGMENTS revenues at a glance

(S millions)

| Systems Segment | | | | |
|--------------------------|---------|------|---------|------|
| (\$ millions) | 1991 | % | 1990 | % |
| Satellite and ground | | | | |
| communications | \$211 | 51 | \$134 | 47 |
| Space robotics | 155 | 37 | 114 | 40 |
| Other | 49 | 12 | 37 | 13 |
| Total Segment revenue | \$415 | 100 | \$285 | 100 |
| Segment operating profit | \$ 32.0 | 7.7% | \$ 19.1 | 6.7% |
| Assets | 175.2 | | 151.0 | |
| Capital expenditure | 22.6 | | 18.8 | |
| Depreciation and | | | | |
| amortization | 12.6 | | 10.6 | |

Each element contributed to increased revenues in the Systems segment. Radarsat and MSAT contracts were the main contributors to the increase in the communications systems revenues, with the space station Freedom program accounting for increased revenues in robotic systems. An increase in revenues from shipboard communications and avionics contracts associated with the acquisition of certain assets of Leigh Instruments, more than offset a decrease in electro-optical defence-related activity in 1991.

The segment's revenues from exports, predominately to US markets, were approximately \$125 million and \$112 million in 1991 and 1990 respectively.

Operating income increased in line with volume and improved performance of the restructured Applied Systems Group.

| A 121/2 | 1/3 55 | 500 | ment | |
|---------|--------|-----|------|--|
| | | | | |
| | | | | |

| (\$ millions) | 1991 | % | 1990 | % |
|--------------------------|--------|------|--------|------|
| | | | | |
| Gears and | | | | |
| transmissions | \$34 | 60 | \$34 | 64 |
| Repair and overhaul | 23 | 40 | 19 | 36 |
| Total Segment revenue | \$57 | 100 | \$53 | 100 |
| Segment operating profit | \$ 3.4 | 6.0% | \$ 2.9 | 5.5% |
| Assets | 49.8 | | 42.6 | |
| Capital expenditure | 2.2 | | 6.1 | |
| Deferred development | | | | |
| expenditure | 1.2 | | | |
| Depreciation and | | | | |
| amortization | 2.1 | | 2.2 | |

Revenues increased modestly from 1990. Export revenues, mainly from U.S. aerospace markets accounted for more than 70% of total revenues in 1991 and 1990.

Operating profit resulted from increased revenue complemented by improved margin performance, due to productivity improvement initiatives in both divisions.

OTHER DISCUSSION AND COMMENT

Backlog of unrecognized revenue on uncompleted contracts as at December 31, 1991 with comparative figures for 1990 were as follows:

| (\$ millions) | 1991 | % | 1990 | % |
|------------------|-------|-----|-------|-----|
| Systems segment | \$550 | 92 | \$464 | 88 |
| Aviation segment | 47 | 8 | 61 | 12 |
| Total | \$597 | 100 | \$525 | 100 |

In 1991, \$547 million of orders were received, 91% of which were in the Systems segment. The major awards in 1991 included, Phase II of Radarsat – \$230 million from the Canadian Space Agency; satellite network – \$36 million from the People's Republic of China; EOS-A satellite antenna – \$30 million from GE Astro Space; CFM-56 aviation gearing – \$17 million from the General Electric Company; antennas for the Hispasat satellites – \$13 million from Matra Espace of France; and, mission and engineering support for Canadarm – \$10 million from NASA.

MARKET OUTLOOK

Systems Segment

The space station Freedom program was restructured by NASA to meet U.S. budget limitations and received congressional endorsement in 1991. While further debate may be anticipated in the 1992-1993 U.S. budget process, it is not expected to materially affect the program. The next phase of the contract for the mobile servicing system, Canada's contribution to the program, is expected in the third quarter of 1992.

A substantial five year program management and product support contract for the Shuttle remote manipulator system is anticipated in the first quarter of 1992. Opportunities exist for further contracts in support of the Japanese experimental module and the European Hermes space plan programs.

With continuing emphasis on the environment, the U.S. Department of Energy plan to reduce a number of its sites essentially to "greenfield" condition offers attractive opportunities for Spar remote handling systems capabilities.

With redefinition in 1991 of the mobile transporter for space station Freedom, a long-term program is in place for Astro Aerospace Corporation. Opportunities also exist for additional MILSTAR solar array deployer assemblies built by Astro.

Testing of the AN/SAR-8 Infra-red search and track designation system onboard USS Kinkaid was completed during the summer of 1991. Results from a wide range of target trials under varying weather conditions met expectations. It is anticipated that a program of sensor integration with combat systems will be required before production commences.

The company is well positioned in the field of satellite and ground communications systems. Several major communications satellite systems will be awarded in the near future, including Intelsat VII FOS, GTD Spacenet, Asiasat II and Europesat, for which Spar has the potential to play a major role. The company is optimistic about further commitments by the Canadian Government to future earth observation programs where opportunities also exist in export markets.

The introduction of the FONE CLUB and VSATPlus adds to the ground systems product line including, the world's smallest earth terminal for telephony, computer and video for a host of advanced business services. A solid reputation in network solutions and total systems capabilities is strengthened by new customers and existing ground network expansion in China, Mexico and Indonesia.

Prospects for naval communications systems are positive with significant contracts expected for deliveries to the Canadian Patrol Frigate. Considerable interest for similar systems has been shown by the U.S. Navy.

Markets for avionic products are excellent. Production contracts have been received for DFIRS, Crash Position Locator/Flight Data Recorder Systems and strong interest in these systems is being expressed by other military and civilian aircraft fleet managers. Retrofit and fitment to additional aircraft types are being



pursued. Interest in other avionic products remains buoyant.

The segment has secured a good base level of business for its defence electronic build-to-print group and is actively pursuing new multi-year contract prospects.

Systems segment revenues have doubled in the two years since 1989 and more modest revenue growth should be anticipated in 1992.

Aviation Segment

The competitive position of the gears and transmissions products, which predominantly service United States aerospace markets, is eroded by the high level of the Canadian dollar and by underutilized capacity of North American gear manufacturers. Significant productivity improvements combined with prudent investment in automation has maintained market share despite these pressures.

Oualification programs were undertaken with Boeing Helicopter for the US Navy CH46 helicopter and with Kaman Aerospace for the SH2G helicopter. Successful qualification should provide long-term contract awards.

Follow-on activity is expected for Sikorsky Aircraft on the UH60 Blackhawk and other key gearbox programs including T700, CT7 and CFM56 for General Electric.

The market for repair and overhaul services looks promising. Recent restructuring of the repair and overhaul business development organization, the establishment of a European-based logistics company and the development of several proposals to international companies and the U.S. Department of Defense are directed to address expanded market opportunities.

Alliances and Acquisitions

The company continues to consider forging alliances with major members of the international space industry. The objective of such arrangements include expanding access to markets and technology and to enhance the company's specialized skills.

In Canada, Spar continues to work closely with aerospace companies as part of its commitment to regional development, and to build stronger commercial relationships to improve its competitive position.

The company is currently negotiating to acquire a majority interest in Prior Data Sciences of Ottawa. Prior, with more than 14 years in advanced real time system software applications, is positioned to meet the needs of a growing market for software in air traffic control, space, industrial, and command and control systems. This acquisition will further support the strategy to become a major software intensive company.

The company in a consortium with Telecom Canada, formed Alouette Telecommunications Inc. with the intent to purchase the Government of Canada's common shares in Telesat Canada. If the proposal is accepted, the company will play a leading role in Alouette's research and development and international marketing efforts. Acceptance will further the strategy to become an end-to-end communications via satellite systems company.

Estimates used in Revenue and Margin Recognition

As referred to in the Summary of Accounting Policies, page 24, note 1(a), the company recognizes revenue and margin on projects using the percentage of completion method. This method relies on regularly prepared estimates of the costs required to complete the project. The nature of much of the work is such that estimates cannot be precise and are regularly revised based on past experience and anticipated performance.

Should cost estimates to complete the work increase beyond the original estimated cost level (including allowance contingencies) the impact on operating results is dependent on the nature of the contract:

Cost Reimbursable Contract with Fixed Fee
Cost overruns are reimbursed by the customer,
revenues and costs are higher than expected and,
although the fee as a percentage of revenue drops, the

actual dollar fee remains fixed. There is normally little financial risk assumed by the company but statistical performance (percentage return on revenue) will deteriorate if an overrun is significant.

Fixed price Contracts

Cost overruns (not caused or contributed to by the customer) are not reimbursed and must be absorbed by the company. Cost overruns impact margins dollar for dollar and, even when modest compared to a cost reimbursable contract, affect both income and returns as a percentage of revenue.

Some cost reimbursable and fixed price contracts contain incentive clauses which may result in fee enhancement or deterioration relative to performance targets.

In 1991, cost reimbursable contracts accounted for approximately 69% of revenue, mainly in the Systems segment, compared to 60% in 1990.

Penalties and incentives

Some contracts contain incentive and/or penalty provisions which may vary but usually include incentives for performance beyond specified levels and/or penalties for late delivery or performance below specified levels. Incentive and penalty provisions are normal to the company's business. The company has historically been able to avoid significant penalty impacts. The company may endeavour to obtain insurance to cover penalty or incentive risk associated with major contracts based on the degree of risk, availability and cost of coverage.

Exchange Rate Fluctuations

Normally revenues are contracted in Canadian or U.S. dollars and the bulk of costs are in the same currencies. The company follows a policy of not speculating on exchange rates. It endeavours to minimize net foreign currency exposures in contracts

by negotiating clauses that provide for price adjustment resulting from significant exchange rate changes and/or enters into exchange futures contracts designed to protect margins anticipated at the time of contract award, as summarized on note 1(i), page 25. The potential for significant losses or gains due to exchange rate variations is reduced by these methods as well as by the relatively high mix of cost reimbursable business.

The current high level of the Canadian dollar detracts from the company's competitive position in the U.S. markets.

Inflation Protection

Economic inflation factors are estimated and applied to costs in the contract bidding stage. In the case of cost reimbursable contracts, actual costs are reimbursed. In the case of fixed price contracts, if the actual inflation rate is higher than that used in the bidding process, profits deteriorate relative to those originally anticipated, and, conversely, profits improve if the actual rate of inflation is lower. Longer duration unit delivery prices may also include provision for "economic price adjustment", dependent on various published cost indices, to provide inflation protection.

Considering current rates of inflation in North America, inflation does not pose a serious risk to competitiveness in either markets or operations.

Other issues

The company's largest current programs are with Government agencies. Such programs generally run for longer than three years.

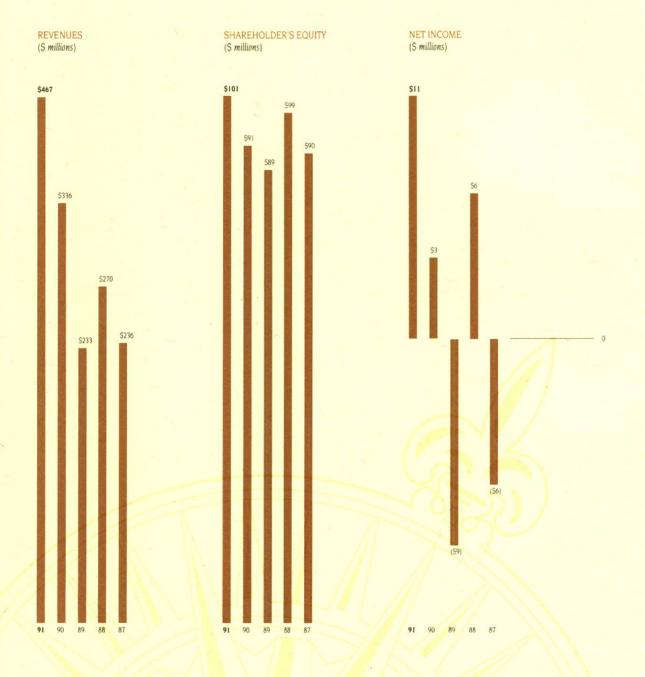
The skilled technical staff required by the company for its 1992 operations is largely in place.

BUSINESS HIGHLIGHTS

- January 1991 \$195 million contract signed with the Canadian Space Agency for detailed design work on the space station Freedom mobile servicing system.
- April 1991 the first of Canada's two Anik E newgeneration series of domestic telecommunications satellites successfully launched.
- May 1991 Spar awarded US\$3.6 million contract by McDonnell Douglas Corporation to develop a deployable flight incident recorder for the F/A-18 aircraft.
- May 1991 Spar remains the major supplier of China's satellite communications earth stations with a \$36 million contract to expand and upgrade their existing network.
- June 1991 a significant step in Spar's strategy to supply remote handling systems for environmental clean-up was taken with the leasing of the remote manipulator system to the U.S. Department of Energy.
- June 1991 Spar receives \$17 million contract to supply inlet gearboxes and bevel gears for General Electric's CFM56 program.
- June 1991 Spar joins the Rockwell International space exploration initiative program team for the human exploration of space.
- June 1991 a \$1.5 million contract for research and development of rigid panel solar arrays awarded by the Canadian government for use on space satellites and platforms.

- June 1991 Spar selected by Matra Espace of France to design and manufacture three antenna systems valued at \$12.9 million for the Spanish Hispasat satellites.
- June 1991 continued mission and engineering support to NASA for the remote manipulator system is secured with a \$10.5 million contract from the Canadian Commercial Corporation.
- July 1991 the Canadian Space Agency awards \$230 million contract for the final design and construction phase of the Radarsat sub-systems.
- September 1991 the second Anik E telecommunications satellite successfully launched from Kourou, French Guiana.
- September 1991 Spar was awarded a \$30 million contract by General Electric Company's Astro-Space Division to supply the high gain antenna system for NASA's first earth observation system.
- November 1991 an exciting milestone is celebrated with the Canadarm providing ten years of successful service to NASA space shuttle project.
- November 1991 Spar signs a letter of intent to form an alliance with Prior Data Sciences in the business and technologies of software.
- December 1991 Spar wins \$6 million contract from McDonnell Douglas to supply deployable flight incident recorders for the US F/A-18 aircraft.

FINANCIAL HIGHLIGHTS



MANAGEMENT REPORT ON RESPONSIBILITY FOR FINANCIAL REPORTING

The management of Spar Aerospace Limited and its subsidiaries is responsible for preparing the accompanying consolidated financial statements and for their integrity and objectivity. The statements were prepared in accordance with generally accepted accounting principles applied on a consistent basis and are to the best of our knowledge and belief fairly stated. The consolidated financial statements include amounts that are based on management's best estimates and judgements. Management prepared all the information in the annual report and is responsible for its accuracy and consistency with the financial statements.

Management maintains a system of internal control that provides reasonable assurance as to the integrity and reliability of the consolidated financial statements, the protection of assets from unauthorized use or disposition, and the prevention and detection of fraudulent financial reporting. The system of internal control provides for appropriate division of responsibility and is documented by written policies and procedures that are communicated to employees who have a significant role in the financial reporting process. Management has established procedures to monitor the activities of the company to ensure compliance with the system of internal control.

The company has an Audit Committee of the Board of Directors. At the request of the Committee, management attends its meetings to review matters relating to the financial reporting process.

The accompanying consolidated financial statements have been audited by Ernst & Young, who were appointed as the

company's external auditors by the shareholders at the last annual meeting. Management has made available to the external auditors all financial records and related data. Furthermore, management believes that all representations made to the external auditors during their audit were valid.

The company maintains an internal audit program that independently assesses the effectiveness of internal controls and recommends improvements. In addition, as part of the financial statements' audit, the external auditors review the company's internal controls to establish a basis for determining the nature, timing, and extent of audit tests to be applied. Management has considered the internal and external auditors' recommendations concerning the system of internal control and has taken actions which it believes are cost-effective to respond appropriately to these recommendations. Management believes that as of December 31, 1991, the company's system of internal control was adequate to accomplish these objectives.

Management also recognizes its responsibility for ensuring that the company's business is conducted with integrity. This responsibility is reflected in a business conduct policy to which designated employees are required to make a commitment. The business conduct policy addresses relationships with customers, suppliers and competitors; potential conflicts of interest; compliance with the law and confidentiality of company information. Management reviews this policy with employees annually and has procedures in place to assess compliance with the policy.

John D. MacNaughton
President and Chief Executive Officer

Anthony L. Anderson

Chief Financial Officer and Executive Vice President

the leder

March 5, 1992

AUDIT COMMITTE REPORT

The Audit Committee of the Board of Directors is composed of a minimum of three and a maximum of five directors who are not employees of the company. The Committee meets at least quarterly to oversee, on behalf of the Board of Directors, the company's financial reporting process.

In fulfilling its responsibilities during the past year, the Committee:

- Reviewed the overall scope and plans for audits by the internal and external auditors;
- Reviewed the actions taken by management with respect to the recommendations made by the internal and external auditors;

Earl H. Orser
Audit Committee Chairman

March 5, 1992

- Met with the external auditors, without management present, to discuss the results of their audit, their evaluation of the company's internal controls, and the overall quality of the company's financial reporting and internal audit process;
- Reviewed the accounting principles and policies adopted by the company and discussed the interim and annual financial statements issued by the company to its shareholders;
- Recommended to the Board of Directors the reappointment of Ernst & Young as the company's external auditors.

AUDITORS' REPORT

To the Shareholders of Spar Aerospace Limited:

We have audited the consolidated balance sheets of Spar Aerospace Limited as at December 31, 1991 and 1990 and the consolidated statements of income, retained earnings and cash flow for the years then ended. These financial statements are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material

misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these consolidated financial statements present fairly, in all material respects, the financial position of the company as at December 31, 1991 and 1990 and the results of its operations and the changes in its financial position for the years then ended in accordance with generally accepted accounting principles.

Ernst & Young

Chartered Accountants

Mississauga, Canada

February 24, 1992



CONSOLIDATED STATEMENTS OF INCOME

For the years ended December 31, 1991 and 1990

| (\$000s) | 1991 | 1990 |
|--|-----------|-----------|
| Revenues | \$466,798 | \$335,691 |
| Actendes | 71001.20 | 0,,,,,,, |
| | | |
| Cost of revenues including all expenses except items shown below | 374 004 | 267.500 |
| (note 6) | 374,096 | 267,590 |
| | | |
| Gross margin, before depreciation | 92,702 | 68,101 |
| | | |
| Administrative and selling expenses (note 10) | 48,506 | 40,780 |
| Research and development costs (notes 6 and 10) | 8,014 | 5,640 |
| Depreciation and amortization | 14,521 | 13,121 |
| Interest and other expenses, net | 2,816 | 3,695 |
| | | |
| | 73,857 | 63,236 |
| | | |
| Income before income taxes | 18,845 | 4,865 |
| Income tax expense (note 6) | (7,600) | (2,150 |
| | | |
| Net income | \$ 11,245 | \$ 2,715 |
| | | |
| Earnings per subordinate voting share (in dollars) | | |
| Earlings per substantial rolling shall (in definite) | | |
| Pagin | \$ 0.98 | \$ 0.24 |
| Basic | 3 0.76 | Ų 0.2· |
| | A 0.05 | ć 0.2 |
| Fully Diluted | \$ 0.97 | \$ 0.24 |

CONSOLIDATED STATEMENTS OF RETAINED EARNINGS

For the years ended December 31, 1991 and 1990

| (\$000s) | 1991 | 1990 |
|---|--------------------------------|-----------------------------|
| Retained earnings, beginning of year Net income Dividends declared on subordinate voting shares | \$ 17,569 11,245 (1,372) | \$ 16,218 2,715 1,364 |
| Retained earnings, end of year | \$ 27,442 | \$ 17,569 |

(See accompanying notes to consolidated financial statements)

CONSOLIDATED BALANCE SHEETS

December 31, 1991 and 1990

| (\$000s) | 1991 | 1990 |
|--|---------------------------------|---|
| | | |
| Assets Current assets: | | |
| Cash | \$ 2,148 | \$ - |
| Accounts receivable | 101,602 | 70,259 |
| Inventories (note 2) | 31,439 | 39,072 |
| Prepaid expenses and other | 2,422 | 2,521 |
| Current deferred income taxes | 6,866 | \\\\ |
| | | |
| Total current assets | 144,477 | 111,852 |
| Accrued incentive revenue | 16,226 | 16,654 |
| Fixed assets (note 3) | 63,332 | 51,820 |
| Other long term assets (note 10) | 2,402 | 2,345 |
| Long term investments (note 4) | 2,151 | 2,032 |
| Deferred pension costs | 6,854 | 9,135 |
| Deferred development costs (note 10) | 7,298 | 6,150 |
| Total Assets | \$242,740 | \$199,988 |
| Bank indebtedness Accounts payable and accrued charges Customer advance payments (note 2) Current portion of long term debt (note 5) Current deferred income taxes | \$ - 98,564 25,719 100 | \$ 14,526 79,493 8,040 30 145 |
| Total current liabilities | 124,383 | 102,234 |
| Long term debt (notes 5 and 10) | 11,213 | 7,204 |
| | | |
| Deferred income taxes | 5,868 | |
| Shareholders' equity | | |
| Share capital (note 7) | 73,834 | 72,981 |
| Retained earnings | 27,442 | 17,569 |
| Total shareholders' equity | 101,276 | 90,550 |
| | | 1/ 0 |
| Total Liabilities and Shareholders' Equity | \$242,740 | \$199,988 |
| | | |

(See accompanying notes to consolidated financial statements)

On behalf of the Board:

DIRECTOR Spar Aerospace Limited DIRECTOR
Spar Aerospace Limited

CONSOLIDATED STATEMENTS OF CASH FLOW

For the years ended December 31, 1991 and 1990

| \$000s) | 1991 | 199 |
|--|-----------|----------|
| | | |
| perating activities | | |
| Net income | \$ 11,245 | \$ 2,71 |
| Add (deduct) items not involving cash | | |
| Depreciation - | 14,488 | 11,85 |
| Amortization of deferred development costs | 33 | 1,26 |
| Deferred income taxes | (1,143) | (1,57 |
| Accrued incentive revenue | 428 | 37 |
| Deferred pension costs | 2,281 | 1,20 |
| Equity loss on investments | 370 | 41 |
| | 27,702 | 16,25 |
| Net change in non-cash working capital items related to operations | 13,136 | 13,33 |
| | | 7 1 |
| Net cash from operating activities | 40,838 | 29,59 |
| inancing activities | | |
| ssue of subordinate voting shares | 853 | 61 |
| Other long term assets | (57) | (2 |
| ncrease in long term debt | 4.109 | 2.01 |
| ong term debt repayments | (30) | (18 |
| Dividends paid | (1,369) | (1,36 |
| | 2.50/ | 1.05 |
| Net cash from financing activities | 3,506 | 1,05 |
| nvesting activities | | |
| Additions to fixed assets | (26,016) | (26,80 |
| Proceeds on disposition of fixed assets | 16 | 25 |
| Deferred development expenditures | (1,181) | |
| ong term investment | (489) | (19 |
| let cash used in investing activities | (27,670) | (26,74 |
| | 7/ /84 | 0.00 |
| ncrease in cash | 16,674 | 3,89 |
| ndebtedness, beginning of year | (14,526) | (18,42 |
| Cash (indebtedness), end of year | \$ 2,148 | \$(14,52 |

Cash (indebtedness) consists of cash less short term borrowing.

(See accompanying notes to consolidated financial statements)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 1991

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 within the framework of the accounting policies summarized below. 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 management's estimate and approximations.

(a) Revenue recognition

Revenue is accrued using the percentage of completion method as the work is performed and provision is made for the total anticipated loss when 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 need for the revision becomes 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, after deducting scientific research and development tax credits and government assistance, as incurred with the exception of certain development costs incurred prior to commencement of or during initial commercial production of new products, which are deferred.

Deferred development costs are amortized in proportion to projected revenue of related products commencing in the year of initial commercial production. Should the company determine that the unamortized balance of deferred costs is in excess of amounts that can be reasonably recovered from the benefits of future sales, such excess is written off at that time.

(c) Income taxes

The company provides for income taxes based on income included in the financial statements regardless of when such income is subject to payment of taxes under the tax laws.

(d) Inventories

Inventories of raw materials and finished goods are valued at the lower of cost, on a moving average basis, and market value, being replacement cost for raw materials and net realizable value for finished goods. Contracts in process are valued at estimated sales value calculated on the percentage of completion basis.

(e) Accrued incentive revenue

Accrued incentive revenue relates to satellite contracts and represents the non-current portion of the present value of cash payments that the company estimates it will receive, net of allowances for performance failures.

(f) Fixed assets

Additions to fixed assets are recorded at cost after deducting investment tax credits and government assistance.

Depreciation and amortization are provided on the straight-line method on a basis estimated to amortize the cost of the assets over their useful lives as follows:

Buildings 59

Leasehold improvements Term of the lease plus

renewal option, if applicable

Machinery and equipment 10% to 331/3%

(g) Long term investments

Investments in companies where the company has the ability to exercise significant influence are accounted for by the equity method. Other long term investments are carried at cost.

(h) Pension costs and obligations

Current service costs under the company's pension plans are charged to operations as services are rendered, based on annual actuarial valuations calculated using the projected benefit method prorated on services and management's best estimate assumptions of the rate of return on pension plan assets, rate of salary increases and various other factors including mortality rates, terminations, and retirement ages. The valuation of pension fund assets is based on market-related values, which spread unrealized gains and losses over five years.

The excess of the value of pension fund assets over the actuarially-computed present value of accrued pension obligations as at January 1, 1987, and any adjustments to pension costs arising from plan amendments, experience gains and losses, and changes to assumptions since that date are amortized, on a diminishing balance basis, over the expected average remaining service lives of the employee groups covered by the plans.

(i) Foreign exchange

Transactions in foreign currencies are translated into Canadian dollars at the approximate rate prevailing at the time of the transactions. Monetary assets and liabilities in foreign currencies are translated at rates prevailing at the year end. Non-monetary assets and liabilities, and related income

statement charges, are translated at historical rates. Foreign exchange gains and losses are included in income for the year, except those which relate to long term monetary items which are deferred and amortized over the term of the related asset or liability.

2. Inventories

Inventories consist of the following:

| 1991 | 1990 |
|----------------------|--|
| \$483,931 457,351 | \$408,186 374,605 |
| 26,580 | 33,581 |
| 4,552 307 | 5,130 361 |
| \$ 31,439 | \$ 39,072 |
| | \$483,931 457,351 26,580 4,552 307 |

Customer advance payments in excess of contract costs and related profit margins of \$25,719,000 (1990 – \$8,040,000) are included in current liabilities.

3. Fixed assets

Fixed assets consist of the following:

| in the second second | | 1991 | | 1990 |
|--|-----------------------------|--|----------------------------|----------------------------|
| (\$000s) | Cost | Accumulated Depreciation Net Book and Amortization Value | | |
| Cost: Land Building and leasehold improvements Machinery and equipment | \$ 500 21,150 121,623 | 5,459 74,482 | \$ 500 15,691 47,141 | \$ 500 12,500 38,820 |
| | \$143,273 | \$ 79,941 | \$ 63,332 | \$ 51,820 |

4. Long term investments

| (\$000s) | | 1991 | 1990 |
|---|------|-----------------------------|-----------------------------|
| MacDonald <mark>, Det</mark> twiler and Associates Ltd., at on Other equity investments Equity loss on other equity investments | cost | \$ 2,032 684 (565) | \$ 2,032 195 (195) |
| | | \$ 2,151 | \$ 2,032 |

5. Long term debt

The company's long term debt consists of the following:

| (\$000s) | 1991 | 1990 |
|--|---------------|----------------|
| Unsecured interest free loans repayable over 10 years starting in 1992 Term loans at10.625% | \$ 11,313 | \$ 7,204 30 |
| Less: amount included in current liabilities | 11,313 100 | 7,234 30 |
| | \$ 11,213 | \$ 7,204 |

Long term debt is repayable as follows:

| (\$000s) | | | Total |
|--------------|---|------|----------------|
| 1992 1993 | 4 | \$ | 100 947 |
| 1994 1995 | | | 1,267 1,776 |
| 1996 | | | 1,878 |
| Future years | | | 5,345 |
| | | \$ 1 | 1,313 |

6. Income taxes

Research and development tax credits

Scientific research and development tax credits earned have been applied to reduce the cost of the related expenditures as follows:

| (\$000s) | | 1991 | | 1990 |
|--|----|------------|----|--------------|
| Research and development costs Cost of revenues | \$ | 749 751 | Ş | 763 1,137 |
| | \$ | 1,500 | \$ | 1,900 |

Effective income tax rate

The company's income tax provision consists of the following:

| 1991 | 1990 |
|---------------------------------|--|
| 39.0% | 40.9% |
| \$ 7,350 (470) 250 470 | \$ 1,990 (47) 300 (93) |
| \$ 7,600 | \$ 2,150 |
| | 39.0% \$ 7,350 (470) 250 470 |

Share capital
 A summary of changes to issued share capital for the years ended December 31, 1991 and 1990 is as follows:

| (S000s) | Subordinate | voting | Specia | | Total |
|---|---------------------------|------------|------------|-------|------------------|
| | Shares | \$ | Shares | \$ | \$ |
| Issued and outstanding December 31, 1989 | 11,325,938 | 72,221 | 1,068,973 | 150 | 72,371 |
| a) Issues of subordinate voting shares for cash under employee share purchase plan b) Exercise of options for cash c) Conversion of Special Shares to subordinate voting shares | 39,998 12,000 | 572 38 | (27,200) | (4) | 572 - 38 - |
| Issued and outstanding December 31, 1990 | 11,378,480 | 72,835 | 1,041, 773 | 146 | 72,981 |
| a) Issue of subordinate voting shares for cash under employee share purchase plan b) Exercise of options for cash Conversion of Special Shares to subordinate voting shares | 36,906 49,000 2,278 | 526 327 | (113,998) | (16) | 526 327 |
| Issued and outstanding December 31, 1991 | 11,466,664 | 73,704 | 927,775 | 130 | 73,834 |
| Authorized, December 31, 1991 and 1990 | unlimited | | 12,000,000 | 1.4 3 | . 5 |

PREFERRED SHARES AND JUNIOR PREFERRED SHARES

Such classes of shares may be issued in one or more series with such designations, preferences, rights, privileges, restrictions, and conditions attached as may be determined by the directors.

Authorized – 10,000,000 Preferred Shares and 20,000,000 Junior Preferred Shares;

Issued and outstanding - none

SPECIAL SHARES

The articles of the company provide that, subject to the Canada Business Corporations Act, Special Shares are:

- (i) not transferable except in certain limited circumstances;
- ranked, as to payment of dividends and repayment of capital, junior to all other existing shares of the company;
- (iii) limited as to repayment of capital to the amount paid up thereon;
- (iv) not entitled to dividends except in a year in which dividends of at least \$0.375 have been paid on the subordinate voting shares and then payable subject to prescribed limits;
- (v) entitled to 10 votes per share at a meeting of shareholders:
- (vi) only redeemable on or after June 30, 1991 at the redemption price of \$0.075 per share;
- (vii) purchasable by the company at any time;
- (viii) convertible by the holder 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 purchase newly issued Special Shares in proportion to such shareholders' holdings of Special Shares. On the 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

Each subordinate voting share entitles the holder to:

- (i) one vote per share;
- (ii) receive dividends when declared;
- (iii) receive, on dissolution of the company, subject to the prior rights of the holders of Preferred and Junior Preferred Shares but in priority to the rights of the holders of Special Shares, the amount paid up thereon together with any declared and unpaid dividends and, after payment to the holders of Special Shares of the amount paid up on such Special Shares, to receive any

declared and unpaid dividends thereon together with the remaining property of the company.

EMPLOYEE STOCK OPTIONS

In 1991, the company granted 185,000 options to full-time employees, 49,000 options on subordinate voting shares were exercised, and 30,000 options expired.

At December 31, 1991, 558,500 subordinate voting shares were reserved for issuance upon the exercise of options granted, including 420,000 to officers of the company, at prices ranging from \$8.375 to \$24.00 per share and averaging \$12.30 per share. These options may be exercised at various periods to the year 2001.

EMPLOYEE SHARE PURCHASE PLAN

In 1991, the company introduced a share purchase plan for employees. Under the plan, employee contributions of between 4% and 10% of the employees' annualized base earnings are held by a trustee and are used to purchase shares of the company at current market price. Employees remaining in the plan at the end of the following plan year will receive a bonus equal to 12% of the employee's contribution.

SHARES REQUIRED FOR FUTURE USE

At December 31, 1991, a total of 582,056 subordinate voting shares may be required for future issue as follows: 18,556 for conversion of the Special Shares, 558,500 for exercise of stock options and 5,000 for the employee share purchase plan.

8. Commitments

The future minimum payments under operating leases are \$100,530,881 with payments for the next five years as follows:

| (\$000s) | Annual rental |
|-------------------|---------------|
| 1992 | \$ 6,438 |
| 1993 | 6,596 |
| 1994 | 6,340 |
| 1995 | 6,346 |
| 1996 | 5,538 |
| 5 year commitment | \$31,258 |

At December 31, 1991, the company has entered into foreign exchange contracts as hedges against identified transactions. Under such contracts Spar is committed to sell \$54,913,035 U.S. dollars at an average rate of \$1.17 Canadian, and is committed to buy \$11,809,000 U.S. dollars at an average rate of \$1.16 Canadian. These contracts mature on various dates through 1994.

9. Pension and retirement plans

The company has several defined benefit pension plans, both contributory and non-contributory, which cover substantially all employees. The plans are funded by the company in accordance with independent actuarial valuations. The plan assets are invested primarily in publicly traded equity and fixed income securities. Retirement benefits are based on various factors including remuneration and the employees' years of service.

Based on actuarial valuations dated January 1, 1991, the present value of accrued pension obligations as at December 31, 1991 was \$59,711,000 (1990 – \$57,248,000) and the market value of the fund assets available to discharge these obligations was \$65,588,000 (1990 – \$56,637,000).

The net expense in respect of all pension and retirement plans was \$6,093,000 (1990 – \$4,822,000).

10. Government assistance

On February 14, 1986 the Federal Government executed a Memorandum of Understanding (MOU) under which the Government will share (to a maximum of \$130 million or 43.6% of the total investment by the company) the costs of research and development and capital expenditures with the company over the period 1986 to 1992.

Government assistance received and receivable from the Federal Government related to research and development activities and capital expenditures in 1991 totalled \$11,816,000 (1990 – \$7,499,000). This assistance normally takes the form of grants which may be repayable in the form of royalties based on future sales levels related to the projects funded, or the company's ability to meet certain investment targets as specified in the agreements. At December 31, 1991 no provision for repayment has been recorded with respect to contributions received and receivable. Such amounts, if any, that may be repayable will be accounted for in the period in which conditions arise that will cause repayment. Government assistance with determined repayment requirements is recorded as a liability when received.

Government assistance received and receivable at yearend has been applied to reduce the cost of the related expenditures or recorded as a liability as follows:

| (\$000s) | 1991 | 1990 |
|---|----------|---------|
| Research and development costs | \$ 4,506 | \$4,664 |
| Administrative and selling expenses Deferred development and other | 816 | 819 |
| long term assets | 2,385 | _ |
| Long term debt | 4,109 | 2,016 |
| | \$11,816 | \$7,499 |

11. Comparative financial statements

Certain comparative 1990 figures have been reclassified to conform with the presentation adopted in 1991.

12. Industry seament information

The company's operations 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.

| Aviation | Segment | Systems | Systems Segment | | ations | Consolidated | | |
|--------------------|--|----------------------|---|--|--|--|---|--|
| 1991 | 1990 | 1991 | 1990 | 1991 | 1990 | 1991 | 1990 | |
| \$ 51,789 5,176 | \$ 50,396 2,916 | \$415,009 | \$285,295 | \$ (5,176) | \$ (2,927) | \$466,798 | \$335,691 | |
| \$ 56,965 | \$ 53,312 | \$415,009 | \$285,306 | \$ (5,176) | \$ (2,927) | \$466,798 | \$335,691 | |
| \$ 3,366 | \$ 2,896 | \$ 31,956 | \$ 19,125 | \$ (707) | \$ (449) | \$ 34,615 | \$ 21,572 | |
| | | - // | | | | (12,954) (2,816) (7,600) \$ 11,245 | (13,012) (3,695) (2,150) \$ 2,715 | |
| \$ 49,800 | \$ 42,635 | \$175,243 | \$150,951 | | //6 | \$225,043 17,697 | \$193,586 6,402 | |
| | | 11 | | 74 | 1 | \$242,740 | \$199,988 | |
| \$ 2,184 | \$ 6,058 | \$ 22,562 | \$ 18,846 | | 21 | | a. | |
| \$ 2,070 | \$ 2,247 | \$ 12,641 | \$ 10,587 | The same | (50) | | | |
| | \$ 51,789 5,176 \$ 56,965 \$ 3,366 \$ 49,800 | \$ 51,789 \$ 50,396 | 1991 1990 1991 \$ 51,789 \$ 50,396 \$415,009 5,176 2,916 - \$ 56,965 \$ 53,312 \$415,009 \$ 3,366 \$ 2,896 \$ 31,956 \$ 49,800 \$ 42,635 \$175,243 | 1991 1990 1991 1990 \$ 51,789 \$ 50,396 \$415,009 \$285,295 5,176 2,916 - 11 \$ 56,965 \$ 53,312 \$415,009 \$285,306 \$ 3,366 \$ 2,896 \$ 31,956 \$ 19,125 \$ 49,800 \$ 42,635 \$175,243 \$150,951 \$ 2,184 \$ 6,058 \$ 22,562 \$ 18,846 | 1991 1990 1991 1990 1991 \$ 51,789 \$ 50,396 \$415,009 \$285,295 11 \$ (5,176) \$ 56,965 \$ 53,312 \$415,009 \$285,306 \$ (5,176) \$ 3,366 \$ 2,896 \$ 31,956 \$ 19,125 \$ (707) \$ 49,800 \$ 42,635 \$175,243 \$150,951 \$ 2,184 \$ 6,058 \$ 22,562 \$ 18,846 | 1991 1990 1991 1990 1991 1990 \$ 51,789 \$ 50,396 \$415,009 \$285,295 \$11 \$ (5,176) \$ (2,927) \$ 56,965 \$ 53,312 \$415,009 \$285,306 \$ (5,176) \$ (2,927) \$ 3,366 \$ 2,896 \$ 31,956 \$ 19,125 \$ (707) \$ (449) \$ 49,800 \$ 42,635 \$175,243 \$150,951 \$ 2,184 \$ 6,058 \$ 22,562 \$ 18,846 | 1991 1990 1991 1990 1991 1990 1991 \$ 51,789 \$ 50,396 \$415,009 \$285,295 \$466,798 \$ 51,76 2,916 - 11 \$ (5,176) \$ (2,927) \$466,798 \$ 56,965 \$ 53,312 \$415,009 \$285,306 \$ (5,176) \$ (2,927) \$466,798 \$ 3,366 \$ 2,896 \$ 31,956 \$ 19,125 \$ (707) \$ (449) \$ 34,615 (12,954) (2,816) (7,600) \$ 11,245 \$ 49,800 \$ 42,635 \$175,243 \$150,951 \$ 225,043 \$ 17,697 \$ 242,740 \$ 2,184 \$ 6,058 \$ 22,562 \$ 18,846 | |

- > The company operates principally in Canada.
- ➤ The company's revenues from export markets were approximately \$163,000,000 in 1991 (1990 – \$141,160,000).
- 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.

Aviation Segment 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.

Systems Segment includes: (i) satellite systems and subsystems and ground-based satellite communications systems; (ii) space robotic systems for space and terrestrial applications; (iii) electro-optics systems; and (iv) shipboard communication systems and navigation and tracking aids.

ELEVEN YEAR REVIEW

(dollars in thousands, except per share figures)

Earnings (loss) per subordinate voting share

Basic

- > income from continuing operations
- ➤ income (loss) before extraordinary item (3)
- ➤ net income (loss) (3)

Fully diluted

- ➤ income from continuing operations
- ➤ income (loss) before extraordinary item (3)
- > net income (loss) (3)

Dividends declared per

Subordinate voting share

Preferred share

Shareholders' equity per subordinate voting share outstanding at year end (3)

Revenues (1)

Income from continuing operations

Income (loss) before extraordinary item (3)

Net income (loss) (3)

Capital expenditures (net of government grants and tax credits) (2)

Long term debt (including current portion) (2)

Shareholders' equity (3)

Working capital (2), (3), and (4)

Ratio of current assets to current liabilities (2) and (3)

Number of employees (2) Number of shareholders Subordinate voting Preferred and Special

- Does not include exercise of warrants which would be anti-dilutive
- (1) Amounts reported are for continuing operations only. Years prior to 1984 have been restated to exclude discontinued operations.
- (2) Amounts reported for 1984 and prior years have not been restated; such years include historical amounts for discontinued operations.

 (3) The 1987 and 1986 amounts have been restated to reflect a prior period adjustment recorded in 1988
- (4) The 1990 and 1989 amounts have been reclassified to conform with the 1991 presentation

| 1991 | 1990 | 1989 | 1988 | 1987 | 1986 | 1985 | 1984 | 1983 | 1982 | 1981 |
|-----------|---------|----------|---------|---------|---------|---------|---------|---------|---------|--------|
| | | | | | | | | 5 T = F | | ry |
| | | | | | | | | | | |
| | | (1.05) | | 0.00 | | | 1.88 | 1.73 | 1.34 | 0.44 |
| 0 000 | 0.24 | (1.05) | 0.54 | 0.38 | 0.20 | 1.41 | 1.73 | 1.40 | 1 10 | 0.00 |
| \$ 0.98 | 0.24 | (0.82) | 0.56 | (0.53) | 0.39 | 1.41 | 1.26 | 1.42 | 1.43 | 0.3 |
| | | | | | | | 1.65 | 1.43 | 1.06 | 0.4 |
| | | (1.05) | | 0.38 | | | 1.52 | | | |
| \$ 0.97 | 0.24 | (0.82) | 0.56 | (0.53) | 0.39 | 1.33 | 1.15 | 1.20 | 1.12 | 0.3 |
| \$ 0.12 | 0.12 | 0.20 | 0.28 | 0.36 | 0.46 | 0.46 | 0.40 | 0.35 | 0.20 | |
| | | | | | | | | | 0.54 | 1.0 |
| \$ 8.82 | 7.95 | 7.81 | 8.79 | 8.29 | 9.14 | 8.16 | 6.45 | 5.33 | 3.85 | 2.5 |
| 7.5 | | | 2027202 | | | | | | | |
| \$466,798 | 335,691 | 233,163 | 269,967 | 236,121 | 191,018 | 223,278 | 190,031 | 209,321 | 169,121 | 113,10 |
| | | (11 010) | | | | | 15,916 | 12,709 | 8,049 | 2,55 |
| A | 2.715 | (11,818) | (100 | 4,037 | 4.100 | 10.000 | 14,597 | 1// | | 41 |
| \$ 11,245 | 2,715 | (9,218) | 6,189 | (5,763) | 4,122 | 13,070 | 10,661 | 10,423 | 8,580 | 2,16 |
| \$ 26,016 | 26,803 | 11,539 | 11,981 | 17,499 | 9,397 | 8,660 | 13,738 | 4,788 | 2,525 | 1,67 |
| \$ 11,313 | 7,234 | 5,404 | 3,199 | 1,408 | 2,418 | 22,786 | 31,381 | 29,796 | 8,256 | 12,19 |
| \$101,276 | 90,550 | 88,589 | 99,041 | 89,916 | 98,310 | 79,521 | 56,715 | 42,567 | 25,635 | 17,46 |
| \$ 20,094 | 9,618 | 15,997 | 27.844 | 30,582 | 48,203 | 58,561 | 54,662 | 54,835 | 17,096 | 11,75 |
| 1.2 | 1.1 | 1.1 | 1.2 | 1.2 | 1.4 | 1.9 | 2.1 | 2.1 | 1.2 | 1 |
| | - × | | | | | | | 2 | | |
| 2,903 | 2,550 | 2,114 | 2,107 | 2,122 | . 2,089 | 2,221 | 2,172 | 2,041 | 1,902 | 1,89 |
| 3,325 | 3,723 | 3,866 | 4,362 | 4,392 | 4,459 | 4,590 | 4,452 | 3,489 | 2,800 | 2,93 |
| 32 | 36 | 38 | 38 | 39 | 39 | 40 | 42 | 57 | 64 | 62 |

CORPORATE INFORMATION

DIRECTORS

DAVID R. BEATTY
President
Weston Foods
George Weston Limited
(Elected Director 1983)

LARRY D. CLARKE Chairman of the Board Spar Aerospace Limited (Elected Director 1967)

CAMILLE A. DAGENAIS Director The SNC Group (Elected Director 1980)

ALLAN A. HODGSON*
Vice President & Chief Financial Officer
Alcan Aluminium Limited
(Elected Director 1987)

PHILIP A. LAPP* President Philip A. Lapp Limited (Elected Director 1967)

JOHN D. MacNAUGHTON
President & Chief Executive Officer
Spar Aerospace Limited
(Elected Director 1989)

ROGER J. MAGGS
President
Metal Marketing and Recycling
Alcan Aluminium Limited
(Elected Director 1988)

EARL H. ORSER*
Chairman of the Board
London Life Insurance Company
(Elected Director 1978)

BARBARA L. STEELE* Company Director (Elected Director 1980)

*(Members of the Audit Committee)

DIRECTORS EMERITUS

DAVID S. BEATTY (Elected Director 1969) (Appointed Director Emeritus 1985)

ROLAND B. DODWELL (Elected Director 1967) (Appointed Director Emeritus 1986)

WILLIAM H. JACKSON (Elected Director 1967) (Appointed Director Emeritus 1985)

DAVID A. B. STEEL (Elected Director 1967) (Appointed Director Emeritus 1991)

OFFICERS

LARRY D. CLARKE Chairman of the Board

EARL H. ORSER Vice Chairman of the Board

JOHN D. MacNAUGHTON
President & Chief Executive Officer

ANTHONY L. ANDERSON Executive Vice President (President and Group Executive, Aviation Group)

GIL A. BRANCHFLOWER Vice President and . Advisor to the President

DAVID C. CLELAND Vice President

CHARLES J. DANNEMANN
Vice President
(President and Group Executive,
Advanced Technology Systems Group)

WILLIAM R. FITZGERALD
Vice President
(President & Group Executive, Satellite
& Communications Systems Group)

BRYAN H. HELD
Vice President
Finance & Administration Group

KEN J. PERRY
Vice President & General Manager
Satellite & Communications
Systems Division
(Assistant Group Executive, S&CS Group)

SHELDON POLANSKY Vice President, Legal Counsel & Secretary

DAVID W. STAPLEY
Vice President
Government Relations and Marketing

WESLEY S. TERRYBERRY Vice President Human Resources

KARSTEN J. WESTPHAL Vice President International Operations

AUDITORS

Ernst & Young

TRANSFER AGENTS

Montreal Trust Company of Canada

LISTED

Toronto Stock Exchange Montreal Exchange (Trading Symbol: SPZ)

SPAR LOCATIONS

CORPORATE OFFICE Suite 900, 5090 Explorer Drive Mississauga, ON L4W 4X6 Canada Tel. (416) 629-7727 Fax. (416) 629-0854

GOVERNMENT RELATIONS OFFICE Suite 402, 222 Queen Street Ottawa, ON KIP 5V9 Tel. (613) 563-0230 Fax. (613) 563-4284

AVIATION GROUP

AVIATION SERVICES DIVISION 7785 Tranmere Drive Mississauga, ON L5S 1W5 Tel. (416) 673-6000 Fax. (416) 671-5802

GEARS AND TRANSMISSIONS DIVISION 825 Caledonia Road Toronto, ON M6B 3X8 Tel. (416) 781-1571 Fax. (416) 781-2648 ADVANCED TECHNOLOGY SYSTEMS GROUP

9445 Airport Road Brampton, ON L6S 4J3 Tel. (416) 790-2800 Fax. (416) 790-4400

SATELLITE AND COMMUNICATIONS SYSTEMS GROUP

21025 Trans Canada Highway Ste. Anne de Bellevue, OU H9X 3R2 Tel. (514) 457-2150 Fax. (514) 457-2724

APPLIED SYSTEMS GROUP

365 March Road Kanata, ON K2K 1X3 Tel. (613) 592-3430 Fax. (613) 592-4486

115 Emily Street Carleton Place, ON K7C 4J5 Tel. (613) 253-3020 Fax. (613) 253-3033

302 Leggett Drive Kanata, ON K2K 1Y5 Tel. (613) 591-9959 Fax. (613) 591-9944

WHOLLY OWNED SUBSIDIARIES

SPAR AEROSPACE (U.S.) LIMITED Suite 550, 1001 Jefferson Street Wilmington, Delaware U.S.A. 19801 Tel. (302) 594-4413 Fax. (302) 594-4455

ASTRO AEROSPACE CORPORATION 6384 Via Real Carpinteria, California U.S.A. 93013-2993 Tel. (805) 684-6641 Fax. (805) 684-3372

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Spar Aerospace Limited