### CANADIAN MARCONI COMPANY

SE MANAGEMENT

JUL 20 1987

McGILL UNIVERSITY

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In the global theatre of high technology electronics, the successful players are those whose resources and skills permit them to anticipate and quickly answer the needs of a sophisticated and very demanding marketplace. This is the field of activity in which Canadian Marconi Company (CMC) has earned a reputation for innovation and quality. CMC's communications and electronics equipment, radar systems and specialized components have found markets in 138 nations.

As one of Canada's major high technology exporters, the Company produces products and systems for armed forces, civil authorities and commercial institutions throughout the world.

CMC's operations are divided into two major segments. The Communications Group includes the Defence Communications Division, the Special Services Division and a wholly-owned U.S. based subsidiary, CMC Electronics, Inc. The Electronics Group comprises the Avionics, Components, DataComm Products and Radar Divisions. The Company's executive offices and major manufacturing operations are located in Montreal, Quebec. as are four of the six Divisions. The DataComm Products and Radar Divisions and selected avionics development programs operate from CMC's facilities in Kanata, Ontario.

Canadian Marconi Company is a publicly held Canadian corporation. Its common shares are traded on the Montreal, Toronto and American stock exchanges. The General Electric Company, p.l.c. of England holds 51.6% of CMC's outstanding shares.

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Pour obtenir une copie française de notre rapport annuel, prière d'adresser votre demande au Secrétaire de la Société.

The Annual General Meeting of Shareholders will be held at Canadian Marconi Company 90 Trenton Avenue (corner Aberdare and Trenton) on Thursday, August 13, 1987 at 11 o'clock.

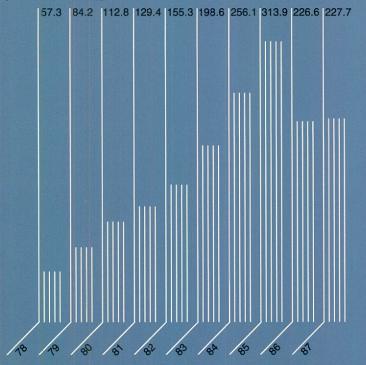
# FINANCIAL HIGHLIGHTS Year ended March 31

	1987	1986
(in thousands of dollars, except as otherwise stat	ed)	
Sales and other revenues	\$227,722	\$226,634
Income before special charge	26,836	26,630
Net income	26,836	25,841
Dividends	6,656	6,894
Shareholders' equity	216,853	196,673
Working capital	190,566	176,132
Number of shares (in thousands)*	23,773	23,773
Per share data (in dollars)		
Income before special charge	1.13	1.12
Net income	1.13	1.09
Dividends	0.28	0.29
Shareholders' equity	9.12	8.27

<sup>\*</sup>Number of shares and per share data have been restated to reflect adjustment for the four-for-one stock split which became effective on September 2, 1983.

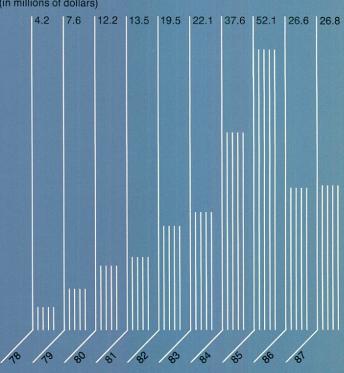
### SALES AND OTHER REVENUES

(in millions of dollars)

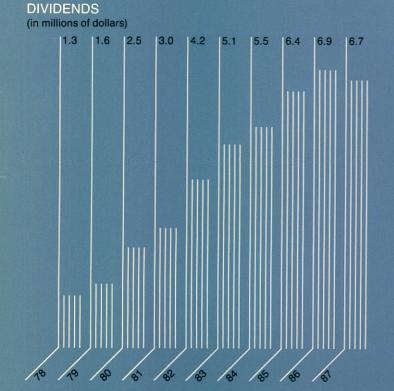


### INCOME BEFORE SPECIAL CHARGE

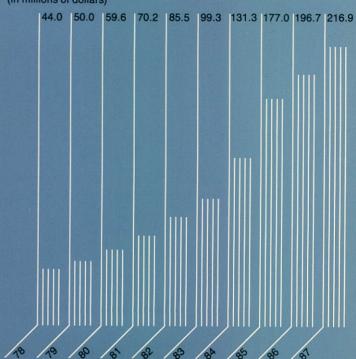
(in millions of dollars)



1978	1979	1980	1981	1982	1983	1984	1985
\$57,252	\$84,223	\$112,830	\$129,417	\$155,268	\$198,627	\$256,131	\$313,925
4,184	7,603	12,170	13,547	19,463	22,093	37,568	52,088
4,184	7,603	12,170	13,547	19,463	18,790	37,568	52,088
1,263	1,575	2,526	2,971	4,160	5,052	5,527	6,419
43,973	50,001	59,645	70,221	85,524	99,262	131,303	176,972
42,977	47,823	55,212	62,832	74,153	83,391	114,784	155,766
23,773	23,773	23,773	23,773	23,773	23,773	23,773	23,773
0.18	0.32	0.51	0.57	0.82	0.93	1.58	2.19
0.18	0.32	0.51	0.57	0.82	0.79	1.58	2.19
0.0531	0.066	0.106	0.125	0.175	0.213	0.233	0.27
1.85	2.10	2.51	2.95	3.60	4.18	5.52	7.44
				SEASON OF THE OWNER, SANS			



### SHAREHOLDERS' EQUITY (in millions of dollars)



### REPORT TO SHAREHOLDERS



Philip E. Wheatley President

### REVIEW OF THE FISCAL YEAR

Despite little change in the volume of sales from that of the previous fiscal year, profit excluding investment income and income taxes increased by 24 per cent to nearly \$25 million. The improvement in the operating results was due primarily to actions initiated in the prior year to dispose of unprofitable product lines that management did not consider capable of making a satisfactory contribution in the foreseeable future.

The recovery in operating profit was not evident in the reported net income, which improved only marginally. Investment income declined by more than \$2 million, due mainly to the sharp reduction in interest yields during the fiscal year. More significantly, the provision for income taxes increased, primarily because of the less favourable treatment now accorded by the Canadian Government to research and development expenditures. As a result, net income per share was \$1.13, compared with \$1.12 before a special charge in the previous fiscal year.

The downturn in export sales of defence communications equipment, noted in last year's Annual Report, continued in the year in review, and will not be reversed until the 1988-89 period, when the first large deliveries to the U.S. Army are scheduled to begin under the Mobile Subscriber Equipment (MSE) program. However, the effect was offset by higher sales of avionics equipment to both the commercial and military markets, and by increasing penetration of the U.S. market for hybrid microcircuits and other

advanced electronic components. It is encouraging that we are achieving a better balance of sales and profitability across our range of operations, and are much less dependent on the volatile international market for defence communications systems than we have been for most of the past decade.

Continued progress is being made in diversifying into new product lines and introducing them to the market-place. Initial orders have been obtained for CMA-2000 Microlander airborne Microwave Landing System (MLS) receivers, and we are now addressing a number of major international requirements for this product. In August 1986, a contract was obtained from the U.S. Army for the supply of 41 AN/TRC-180(V) radio terminal systems, our first major order for the equipment, valued at \$8.3 million U.S.

### **OUTLOOK**

Order backlog at the end of the fiscal year totalled just over \$200 million, compared with \$210 million in March 1986. During the past year, the Company has been awarded a number of important development contracts, the full potential value of which is not reflected in the order book. Also, bids are outstanding or are in preparation in respect of several major U.S. and Canadian Government projects that are expected to materialize within the next year. We are therefore optimistic that the new fiscal year should see an increase in the order book, leading to a resumption of the upward trend of sales and earnings in 1988-89 and beyond. With the increasing diversification of the Company's activities in both commercial and defence markets, a broader base has been established for future expansion.

However, most of the Company's business is related to capital spending by governments or governmental agencies, whether directed to improving the safety and efficiency of air transportation, to increasing the capacity and effectiveness of public communications services or to upgrading and maintaining defence systems. We are unable to control the timing of such projects, which are often delayed or cancelled as a result of budgetary pressures. As the scope of our products and operations broadens, and as larger opportunities are addressed, we are also facing more powerful worldwide competition than ever before. Within the past several months, a further uncertainty has developed as a result of the instability in international exchange rates. As most of our sales are made in U.S. funds, the recent strength of the Canadian dollar against U.S. currency has put pressure on our competitiveness and has tended to narrow our profit

Despite the difficulties and uncertainties the Company is facing, your management is confident that the wide range of advanced product developments now in progress and nearing completion, as outlined elsewhere in the Annual Report, will lead to renewed growth of revenues by the end of this decade.

#### DIVIDENDS

The Directors have declared a dividend of 14 cents per share, payable June 15, 1987, to shareholders of record as at May 26, 1987.

### **DIRECTORS AND OFFICERS**

Mr. Sidney Dobb has informed the Board of his intention to retire as a director in August 1987. Mr. Dobb has rendered outstanding service since he was first elected in 1971, both as a director and as a member of the Audit Committee, which he has served since its inception in 1974. Mr. David Powell will be nominated for election to the Board at the forthcoming Annual Meeting of Shareholders.

J. Joseph Bedford and Alexander H. Grant, who are responsible respectively for DataComm Products Division and Special Services Division, have been appointed Vice Presidents of the Corporation. In December 1986, Frank B. Driscoll, Vice President – Radar Division, resigned. Radar Division is now headed by C. David Clark. In May 1987, André Massicotte was appointed Vice President, Human Resources and Administration.

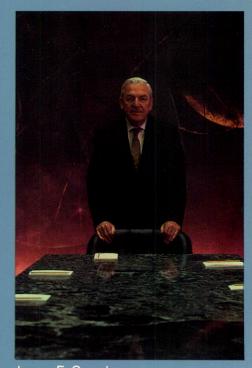
### TRIBUTE TO EMPLOYEES

The Board wishes to record its appreciation for the contribution of all of the Corporation's employees to the achievements of the past year.

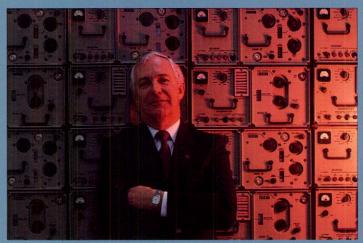
P.E. Wheatley President

J.F. Grandy Chairman

May 14, 1987



James F. Grandy Chairman of the Board



Claude St. Arnaud Executive Vice President Communications Group

To achieve and sustain commercial success in the field of tactical communications requires the introduction of state-of-the-art products for today's market. At the same time, you must anticipate tomorrow's needs and actively develop products to meet them.

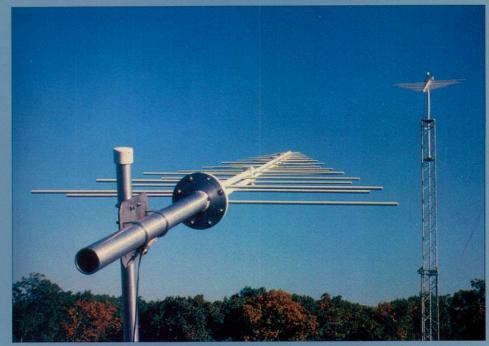
This has certainly been the experience of CMC's Defence Communications Division. Its line-of-sight tactical radio, the AN/GRC-103, became the most widely used radio of its class in the world, enjoying exclusive use by the U.S. Army and filling 70% of global requirements. Now, the Division is proceeding with the U.S. Army's order to design and develop the "next generation" tactical radio, known as DUER. This, together with another major contract for the U.S. Army's Mobile Subscriber Equipment (MSE) program, will keep Canadian Marconi Company at the forefront of the defence communications field into the 1990s.

The Company's policy of continuous development activity will play an increasingly important role in future success. An example of this activity is the Defence Communications Division's new mobile communications shelter. The AN/TRC-180 was developed in anticipation of the need for shelterized radio terminal systems of greater capacity, smaller size and simplicity of operation. This year, in compliance with "non development item" procurement policy, the U.S. Army ordered 41 of these units.

The Defence Communications Division employs an elite corps of engineers with expertise in Radio Frequency design. Further strength was added during the year with the addition of 25 scientific personnel and the acquisition of greater Computer Aided Design (CAD) facilities. These added engineering capabilities, together with the advent of new products, enabled the Division to launch CMACS, a tactical area communications system providing an integrated voice/data network tailored to the requirements of land forces throughout the world.

Continuing Department of National Defence contracts virtually assure the base business of the Special Services Division, whose principal activities are technical maintenance, calibration and testing, and repair and overhaul of precision instruments and electronic equipment and systems. The Division also markets and services a broad range of electronic instruments and marine and land communications equipment for commercial use in Canada.

Providing an invaluable strategic presence in CMC's largest market, the U.S., is a wholly-owned subsidiary, CMC Electronics, Inc. (CMCE). CMCE's considerable skills in R&D related to avionics and tactical communications have resulted in increased business during the year, and future growth seems assured. CMCE has carried out



much of the systems architecture for CMC products including the new DUER radio. CMCE is also a marketing arm in the U.S.A. for the Avionics Division.

The markets for the Communications Group's products and services, both those newly introduced and those under development, are massive. The group's research and development programs are supported by the most up-to-date computerized equipment, and are executed by the highest calibre of engineers and technical staff. Production and quality assurance personnel strive to manufacture and deliver electronic goods and services that consistently meet or exceed the world's highest quality control standards. These factors make the future look very bright.

Antenna testing is performed on CMCE's rooftop antenna range. CMCE is developing a variety of UHF antennas under subcontract to the Defence Communications Division.

The Defence Communications Division's prominence in the field of military Command, Control and Communications (C³) systems is assured for the future as it now prepares to introduce tomorrow's technology to the multi-billion dollar marketplace for secure military tactical communications.

Sixteen years after its introduction of the world standard AN/GRC-103 lineof-sight radio, CMC was awarded a contract by the U.S. Army to develop the "next generation" radio for the 1990s and beyond. The new radio, called DUER (Digital Ultra-high frequency Electronic counter counter measure Radio), will encompass new technology such as spread spectrum, forward error correction and null steering antenna. These features enable the radio to operate in the presence of severe electronic interference. The DUER will become the U.S. Army's front line tactical communications link. The

Defence Communications Division's progress on the DUER program during the year met the full satisfaction of both sponsors, the Canadian and U.S. governments.

As a team member with GTE Government Systems Corporation of the U.S., CMC participated in the bidding for the Mobile Subscriber Equipment (MSE) program, a field communications system to be used by the U.S. Army. GTE was selected as the prime contractor for the program and has contracted CMC to supply the AN/GRC-226 multi-channel radio equipment. Deliveries of some 7,000 radios will begin in mid 1987 and continue into 1993.

An important breakthrough was made this year with the first major sale of the Company's AN/TRC-180 tactical communications shelter. Following the purchase of two evaluation models last year, the U.S. Army has issued an order for 41 units. The AN/TRC-180 is a complete radio terminal system for voice and data communication, mounted in a mobile shelter to provide a central relay point for communications in the field. The new unit solves many of the space and weight problems associated with mobile shelters, while offering twice the communications capacity of the models it is designed to replace. A very important aspect of this contract is the parallel sale of 140 TD-5064 multiplexers that are part of the equipment provided in the shelters. This is the first large sale of these multiplexers to the U.S. armed forces and



The Defence Communications Division's Subscriber Access Radio Telephone (SART) allows combat net radio subscribers direct communication with each other and with military and civilian telephone networks.



U.S. Army shelter-mounted communications systems are upgraded to become CMC's AN/TRC-180. The radio terminal system, mounted on the back of a truck, provides a central relay point for communications in the field.

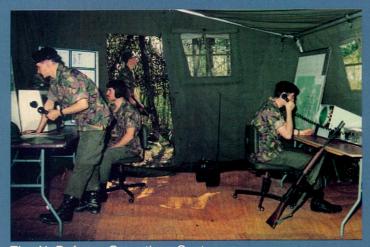
it increases considerably the market potential for this equipment. Other contracts for this multiplexer were received during the year from several Far Eastern countries.

CMC's AN/GRC-103 radio has now been supplied to 27 nations and continues to be the most widely used of its kind in the world. This year, CMC was awarded a multi-million dollar U.S. Army contract for the AN/GRC-103 Band IV radio, covering requirements over a five-year period.

The Defence Communications Division has introduced a new product called SART (Subscriber Access Radio Telephone). The product is designed to provide combat net radio users with direct and immediate connection to the military/civilian telephone network, and selective calling capability to other subscribers without operator intervention. SART received enthusiastic response at the Defendory military exhibition last October in Athens and the 1987 Middle East Communications show in Bahrain.

The Division has been active during the year developing ancillary equipment to complement the AN/GRC-103 radio and enable entry into the area communications system marketplace.

The Canadian Marconi Area Communications System (CMACS) is a highly decentralized tactical nodal communications system for integrated command, control and intelligence. It provides full multi-channel voice and data communications to an army corps in an area of up to several thousand square miles, including mobile users in combat radio nets. CMACS was first demonstrated at the Asiandex '86 exhibition in Beijing, China, and has elicited great interest in other overseas markets.



The Air Defence Operations Centre communications system integrates communications among early warning radar stations.

With technical personnel in locations throughout Canada and in Lahr, West Germany, the Special Services Division specializes in technical maintenance, calibration, testing, and repair and overhaul of precision instruments and electronic equipment. In addition, it offers sales and service of specialized instruments, marine navigation and commercial communications products.

Among its long-term contracts are the operation and maintenance of the United States Air Force ionospheric observatory in Labrador, and ongoing contracts from the Department of Na-

Canadian Marconi's standards facility is known as the finest in Canada's private sector.

tional Defence (DND) covering calibration and repair of precision measuring equipment used by the Canadian Forces. The Special Services Division supports all electronics involved in the physical engine testing of Canadian Forces CF-18 aircraft in West Germany. Another DND contract covers inspection, maintenance and major overhaul of all the Department's antenna systems in Canada and West Germany.

The Division's Standards Lab is the finest in Canada's private sector and many leading companies send their equipment to CMC's facility for calibration. Among such customers are de Havilland Aircraft of Canada, Rolls Royce Canada, Telesat Canada, RCA and Canadian Marconi Company itself.

The Special Services Division is expanding its area of expertise. One such area is systems integration. In collaboration with the Defence Communications Division, it has developed a capability in tactical communications shelter integration, which it has actively begun to market.

With sales and service representation across Canada, the Division also markets a complete line of sophisticated electronic test instruments, marine electronics (radar, radios, depth sounders, fish finders and navigation equipment) and HF/SSB, UHF and VHF communications systems produced by leading international manufacturers. New agreements with suppliers are expected to result in broadened product lines.



Major customers for CMC's resale line of marine electronics and communications equipment include Canadian fishing fleets.



Reprogramming and testing are performed on the memory processor assembly of a Canadian Marconi CMA-771 Omega navigation system.

Through its U.S. subsidiary, CMC Electronics, Inc. (CMCE), Canadian Marconi Company keeps a finger on the pulse of the all-important U.S. market. CMCE's activities include research and development of military communications and electronics products; repair and overhaul of military and commercial avionics and radar equipment; and the U.S. marketing of CMC's avionics and military communications products. CMCE's laboratories and offices in Eatontown, New Jersey currently house 60 employees.

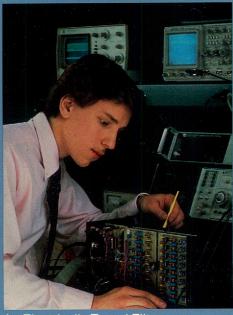
A new contract, awarded this year by the U.S. Army Communications-Electronics Command, calls for the design, manufacture and test of the Automated Antenna Alignment System (A\*S). The system will be used to correct undesired mast motion which adversely affects the operation of microwave and millimeter wave communications systems. The 12-month program covers work on two prototype models and it is expected that this initial order will lead to a systems production contract.

Another recent contract was awarded by SCS Telecom Inc. of Sands Point, New York, for a Cosite Interference Reduction Applique for use with the U.S. Army's Single Channel Ground Airborne Radio System (SINCGARS). The contract calls for the design, production and test of a filter to reduce interference between VHF radios. CMCE will produce four prototype models in the 24-month program.

Following delivery of 310 User Readout Simulators (UROS) to the U.S. Army and Marine Corps, CMCE has received another contract from the U.S. Army Communications-Electronics Command. The UROS was designed as a unit training device which simulates message transmission within the Position Locating Reporting System (PLRS). Under the new contract, CMCE will develop new software for 130 User Readout Simulators to incorporate the additional messages which will be transmitted by the U.S. Army's Enhanced PLRS System (EPLRS).

In support of the Defence Communications Division's DUER radio program, CMCE is undertaking systems analysis and the development of a basic Band A radio, conventional antennas in three bands and an error protection capability.

At its repair and overhaul facility in East Rutherford, N.J., CMCE carried out substantial support activity during the year ranging from software modifications to Omega long-range navigation computers to the overhaul of fibre optic engine instruments and Doppler radar systems. Primary customers included the U.S. Navy, the U.S. Coast Guard, Douglas Aircraft, United Air Lines, Varig Air Lines and Pan American Airways.



An Electrically Tuned Filter (ETF) undergoes performance testing. ETFs provide greater selectivity and noise reduction to UHF and VHF frequency hopping radios.

One of the obvious business advantages enjoyed by the Electronics Group is the very wide range of products manufactured by its Divisions. This diversity of products, and the markets which they address, helps to maintain steady growth in spite of fluctuations that may occur in individual sectors.

Some of the highlights of this year's activity reflect the dedication and entrepreneurial spirit of our engineering and scientific staff, resulting in the creation of new products with world-wide appeal. The Avionics Division's efforts to produce an airborne receiver for the multi-billion dollar Microwave Landing System (MLS) market have been dramatically successful. In the process of being given full approval by both Transport Canada and the U.S. Federal Aviation Administration, CMC's CMA-2000 Microlander MLS

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John H. Simons Executive Vice President Electronics Group

receiver was awarded the world's first qualification to the "critical" software system level, indicating the highest possible level of reliability. Then, in February 1987, the CMA-2000 was selected for use on two Boeing 747 Air Force One U.S. Presidential aircraft.

The CMA-882 Avionics Management System is CMC's first product to integrate technology developed for advanced cockpit display systems, with computing and system management technology derived from our navigation systems expertise. A highly flexible product, the CMA-882 can be used for such diverse tasks as communication, navigation and identification, flight information and stores management. Production for several customers is under way.

While the products and business activities of this group are widely diverse, there is a synergy of ideas and solutions that is often invaluable to each Division as it develops new products for the marketplace. The microcircuits, printed circuit boards and other components manufactured by the Components Division, primarily for use by leading aerospace and defence contractors, are often the result of previous design needs of the Avionics Division.

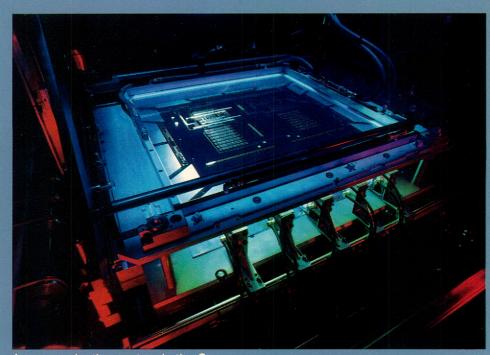
While the Components Division secured its largest contract this year from Hazeltine Corporation of New York to supply power systems for 178 MLS ground stations, probably the most important event was the massive upgrading of its production facilities. To conform to recently introduced requirements for hybrid microcircuit production, and thereby increase business opportunities, a new "clean room" was completed in August 1986. The production area was made even more competitive by the addition of the very latest process equipment.

The DataComm Products Division has developed considerable system development capabilities and the future will see increased use of these skills by CMC Divisions and customers

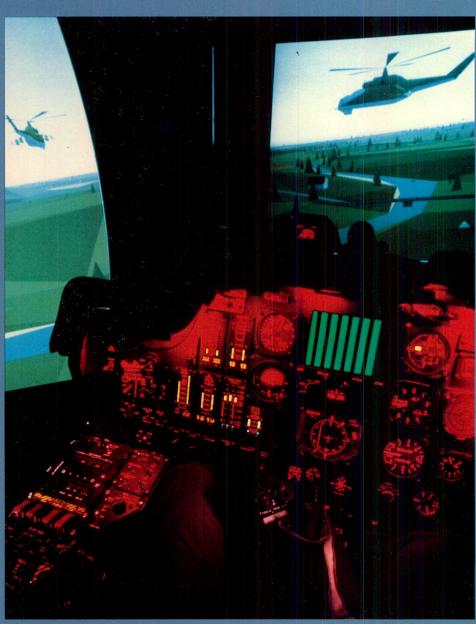
outside the telex field.

Work continued on several projects at the Radar Division's Kanata, Ontario facility. Progressing through manufacturing are five dual fire control systems for Canadian Patrol Frigates. Activity continues on the Division's AN/SPS-503 surveillance radar systems which form part of the Canadian Navy's DELEX (Destroyer Life Extension) program. Deliveries of the LN-66 surface search radar were made during the year to the United States Armed Forces.

The strengths of the Electronics Group continue to lie in intensive study of the world marketplace and accurate assessment of its future needs. And from this base, creative ideas and innovative solutions result in saleable products and steady growth of all its Divisions.



A new production system in the Components Division's printed circuit board group increases accuracy and doubles manufacturing speed and capacity.



Canadian Marconi's opto-electronic engine instruments are standard equipment on board most U.S. military helicopter programs, including the AH-64 Apache. Shown is an AH-64 flight simulator used in a Synthetic Flight Training System program.

The Avionics Division is poised to address the huge Microwave Landing System (MLS) market and it does so with impeccable credentials. Canadian Marconi's CMA-2000 Microlander airborne receiver is the first in the world to achieve Canadian and U.S. approval to the "critical" software system level. Last year, the Avionics Division received the world's first order for military MLS receivers for the Italian Air Force. And in February 1987, a contract was received for the supply of Microlanders for use on two Boeing 747-200B Air Force One Presidential aircraft.

Microwave Landing System receivers will become standard equipment on board commercial and military aircraft as the aviation community switches to MLS from ILS (Instrument Landing System). The worldwide conversion is scheduled to be completed in the 1990s.

Included in MLS development activities is a proposal to supply a modified version of the Microlander to the U.S. Air Force, which requires more than 1,000 receivers for transport aircraft. As well, the Avionics Division has teamed with Rockwell International to bid for the joint development of a high reliability militarized MLS/ILS receiver for USAF tactical aircraft. The USAF will ultimately require 5,000 to 20,000 receivers.

Under an agreement with the Hazeltine Corporation of New York, CMC manufactures MLS ground stations for Canadian and other international markets. The first two systems

manufactured by CMC were delivered this year to provincial airports at High Level and Fort Chipewyan in Alberta.

The year has been an active one in the ground-based navigation field. In January, CMC and Micronav Ltd. of Sydney, Nova Scotia, announced the formation of a team to produce CMC's Very High Frequency Omni-directional Range (VOR) equipment, a system that transmits navigation information to en route aircraft. The team will pursue domestic and export markets. Transport Canada has issued a requirement for some 60 new systems.

The Division's Navaids group designs and manufactures ILS, DME (Distance Measuring Equipment) and VOR equipment. A contract was awarded in December 1986 for the supply of three ILS systems to the Department of National Defence. These will be installed at Canadian Forces bases in Cold Lake, Alberta, Bagotville, Quebec, and Lahr, West Germany. Contracts were

also received during the year to supply VOR/DME systems to the Caribbean islands of Curaçao, St. Maarten and St. Lucia.

There was a substantial increase in sales of Omega navigation systems during the year. A major order was received from Douglas Aircraft for CMA-771 Alpha Omega systems to be used in MD-80 aircraft. Among many orders received directly from MD-80 operators was one from Ansett Airlines of Australia, the Division's first major sale in that country. The Brazilian Air Force and the Brazilian airframe manufacturer, Embraer, continue to be important customers for several CMC Omega products. To date CMC has sold more than 2,500 Omega systems. These are operated in more than 80 countries by 40 military agencies and 70 commercial carriers.

The new CMA-764 Omega sensor, developed last year to satisfy a contract from Rockwell International, is



Aircraft approaching the runway in adverse conditions such as poor weather and mountainous terrain will benefit from Canadian Marconi's Microwave Landing System technology.

rapidly gaining international recognition as the most advanced Omega sensor available. Orders were received this year for some 160 sets. Development work is well under way on a CMA-764 derivative, the CMA-900 navigation and management system. This system is based on an advanced multi-line colour CRT display unit.

The Avionics Division has developed a self-contained, multi-purpose high brightness colour CRT display system. The design meets the ruggedness requirements of the military market while achieving low cost, power and weight. This single unit system contains all the required electronics processing and interface circuitry and is capable of displaying both colour and monochrome video inputs with graphics overlays.

The Avionics Division received an order for CMA-786 Global Positioning System (GPS) receivers from Lockheed Aircraft Company of California. These satellite navigation receivers will be used by Lockheed to verify the accuracy of an integrated navigation system on special application C-130 aircraft.

During flight testing this year, the CMA-786 class C GPS receiver was accurate to 30 metres. This receiver has also been sold to Canada's Atmospheric Environment Service for use in ice reconnaissance aircraft. GPS is a satellite navigation system allowing users to compute position fixes by receiving signals from satellites, five of which are now in orbit. The full constellation of 18 satellites is scheduled to be in operation by the 1990s.

Sales of Doppler velocity sensors remained at a high level this year with contracts from Italy, Portugal, Indonesia, Japan, South America and the U.S. Considerable development work is in progress on new technology including Doppler miniaturization and both Doppler/GPS and Omega/GPS combinations.

CMC's recently developed CMA-882 Avionics Management System has gained rapid acceptance from major U.S. aerospace companies for use in helicopters and fixed-wing aircraft. Five contracts were received this year. The CMA-882 integrates several control and display functions and uses electroluminescent display technology to effect considerable space and weight savings and provide optimum visibility under all light conditions.

Sales of CMC's vertical-scale instruments remained high this year with orders from the U.S. Armed Forces and aerospace companies for such ongoing programs as the U.S. Army SH-60A Black Hawk, the U.S. Navy SH-60B Sea Hawk, and the U.S. Army AH-64A Apache helicopters, and for a new application on the U.S. Navy E-2C Hawkeye carrier-based Electronic Warfare aircraft. Development work continues on the new line of liquid crystal display (LCD) instruments.



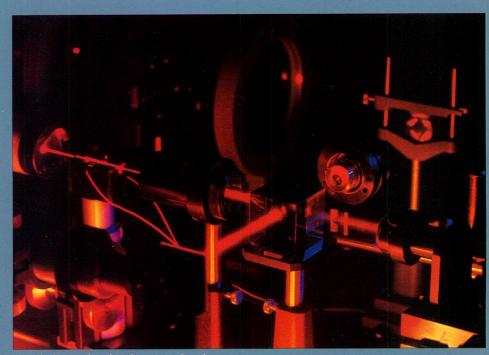
CMC has supplied the Canadian Armed Forces with new generation Doppler velocity sensors for the Sea King helicopter and with radar systems for the Destroyer Life Extension (DELEX) program.

DND, Halifax

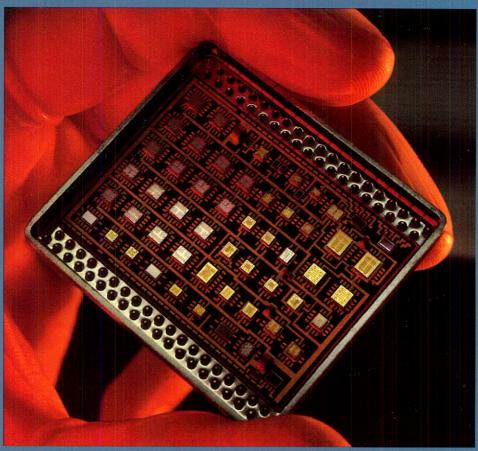
A contract was received this year for CMA-874 TOW/Hellfire Control and Display Sub-systems for the U.S. Marine Corps' SuperCobra helicopters. The CMA-874 is a weapons management system and will be standard equipment on all U.S. Marine Corps helicopters.

The Avionics Division Engine Instruments Lab recently completed the first Night Vision Goggle (NVG) compatible cockpit lighting system on a Canadian Forces CH-135 helicopter. The conversion enables the pilot to see his instruments while wearing Aviator's Night Vision Imaging System (ANVIS) goggles necessary for night flying. Modifications involved the redesign and fabrication of integrally lit panels, replacement of existing lighting systems and the application of special filters to various other light sources to minimize infrared emissions. The conversion was flight tested with excellent results. Some 120 Canadian Forces helicopters are slated for conversion.

The Avionics Division has set up a systems engineering group to expand смс's capability in the design, integration, production, testing and supply of complex avionics/electronics systems for military and other governmental agencies. During the past year, several system engineering study programs were awarded to CMC by the Department of National Defence. In February 1987. Phase I of a two-phase contract for the New Shipborne Aircraft (NSA) Helicopter Integrated Processing and Display System (HINPADS) was awarded by DND to the consortium consisting of Canadian Marconi Company, Litton Systems Canada and Computing Devices Company.



CMC is investigating laser technology in the development of fibre optic sensors for aircraft. The sensors are to be used to detect electric fields such as those produced by lightning and clouds that are electrically charged.



A memory backup controller for aerospace applications. Production of this hybrid microcircuit involves some 1200 wire bonds.

Function, speed and size that would have been impossible yesterday are today's standards in electronic equipment and systems. And for those engineers and scientists who pursue tomorrow's technology, there will, without doubt, be components and sub-systems to answer their needs.

The Components Division's customers include leading aerospace and defence companies in North America and throughout the world. Its products are used in communications systems, avionics, airborne early warning and guidance systems and strategic naval and ground equipment. The Division produces multilayer printed circuit boards, hybrid microcircuits, power conversion systems, illuminated Night Vision Goggle (NVG) compatible displays, electronic components, magnetic devices and complex machined and plastic injection moulded parts. It is also involved in the design and manufacture of a wide range of customized components for both military and commercial applications.

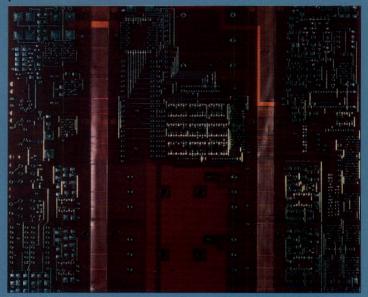
The Division's services to customers include initial design, environmental testing, volume production and total support. It offers a build-to-print and test capability for electronic sub-

systems and microwave components. The Components Division's manufacturing facilities are among the finest and most modern in the world and meet all applicable U.S. and Canadian military standards.

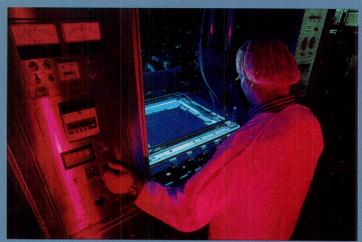
Among the Division's customers are the various Divisions of CMC itself and indeed many of the products it offers on world markets are the direct result of a CMC design requirement.

Major contracts were received this year from leading aerospace firms. Ongoing development programs include microwave and surface mount technology and electroluminescent information displays.

This year saw the opening of a clean room for hybrid microcircuit production. The six million dollar reno-



Born of the need for increased capacity and decreased size and weight is the rigid-flex printed circuit board, which can be folded. CMC's rigid-flex boards are supplied to such strategic programs as the F-16 aircraft.



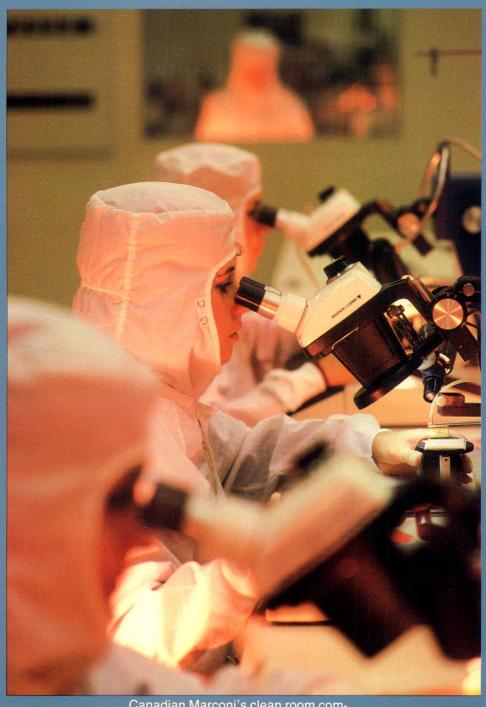
A sophisticated photographic process allows extremely fine resolution of printed circuitry – lines and spaces a mere three-thousandths of an inch wide.

vation of the microcircuit production facility included new state-of-the-art production equipment.

The "class 10,000" facility was constructed to conform to the stringent U.S. military standard MIL-STD-1772 for environmental conditions and manufacturing. Compliance with this standard will ensure that the Division retains its top ranking position as a supplier of strategic products to U.S., Canadian and other NATO defence contractors. As its designation implies, the class 10,000 clean room must contain no more than 10,000 dust particles larger than 1/2 micron in diameter per cubic foot. Air quality, flow, temperature and humidity are monitored by computer and logged every half-hour.

Also completed this year was a two and a half million dollar upgrading of the printed circuit board facility, which includes a highly advanced automatic production system. The computer controlled "in-line" system eliminates five handling steps, improves accuracy and doubles production capacity. The new facilities are housed in a class 50,000 clean room. The dust count in a "normal" atmosphere ranges from 700,000 to several million.

This year's facilities upgrade will continue to ensure the highest quality and competitiveness, increased capacity and a wider range of products.



Canadian Marconi's clean room complies with new military specifications for hybrid microcircuit manufacturing.



State-of-the-art technology used in the latest DataComm Products' disk drives (foreground) means they have three to four times greater storage capacity than their much larger predecessors.

Based in Kanata, Ontario, the DataComm Products Division is engaged in the design, manufacture and world-wide marketing of a line of advanced Stored Program Controlled (SPC) telex switching systems and related communications products.

The latest addition to the DataComm product line is the CMA-755PC exchange. Developed from highly successful CMA-755 technology, the CMA-755PC represents a new approach in switching equipment designed for customers whose networks are smaller, and thus not efficiently served by the much larger CMA-755 system. The unique aspect of this new technology is the use of an industry-standard personal computer (PC) to control and monitor all exchange functions. The use of a PC has allowed Canadian Marconi to create a system which is very cost effective in networks as small as 64 lines and as large as 5,000 lines, without sacrificing any of the advanced performance features which have gained Canadian Marconi a world-wide reputation for excellence in the field. Another major advantage of the CMA-755PC is that the

Front End Processor and the TDMA switch (which comprise the majority of the hardware) are identical to that used in the larger CMA-755. Hence, upgrades to the more powerful exchange are facilitated.

The technology used in the CMA-755PC has already proven its place in the market by being selected by Teleglobe Canada for an international gateway facility in Toronto, Canada, with a requirement for 1,024 lines of switching.

During the year, the Division was given a contract for the supply of additional CMA-755 equipment by British Telecom. In the past year, the 10 exchanges installed throughout the United Kingdom have performed with outstanding reliability. An eleventh exchange, Oval, with a size of 12,000 telex terminations, was added at the Keybridge site in London and introduced to service in April 1987. A further expansion contract for an additional 12,660 terminations implemented with R.111 Time Division Multiplex line-interface equipment is in progress to allow for growth at seven of the more heavily used exchanges. When installation of this new equipment is completed in early 1988, the result will be a total of 37,000 CMA-755 system terminations for the London area alone, and a total for the United Kingdom of more than 87,000 terminations.

As part of the Division's ongoing product enhancement program, the expansion contract will include the introduction of new low-power circuitry. Higher packaging densities are achieved together with greatly reduced power consumption and cooling requirements, resulting in lower operating costs and floor-space requirements for telex administrations, along with significantly reduced cost per telex circuit.

In March 1987, the DataComm Products Division acquired the time division multiplexer, loop adaptor and voice frequency telegraph product lines of Intercontinental Data Control Corporation (Interdaco), of Ottawa, Ontario.

The DataComm Products Division has commenced aggressive new marketing initiatives in places such as Africa, the Far East and South America in addition to continental North America. Long-term efforts in China have continued with participation at a major trade show and in a technical seminar presentation series in China sponsored by the Canadian government.



Increased cost efficiency makes the CMA-755PC telex exchange attractive to smaller markets. A personal computer equipped with DataComm Products' software performs all routing and billing functions.

The Radar Division's AN/SPS-503 surveillance radar system is designed for use on tactical sea-going vessels or for coastal, land-based operation. It provides unambiguous and reliable air and surface target detection in hostile electronic warfare and in heavy land, sea and weather clutter environments. The system's modern signal processing techniques ensure detection, even in severe clutter conditions, of small surface vessels and sea-skimming missiles out to the horizon and up to high altitudes. The compact, modular design AN/SPS-503 is available in various configurations. In its sea-going configuration, it forms part of the Canadian Navy's DELEX (Destroyer Life Extension) program.

The Radar Division's contract with Hollandse Signaalapparaten BV of the Netherlands for Signaal Tracking and Illumination Radars (STIR), has made good progress during the year. The project involves the assembly, integration and testing of five dual STIR fire control systems with delivery beginning in 1987 for the Canadian Patrol Frigate program.

The LN-66 surface search radar system is designed to provide accurate data for target location and navigation as well as collision and adverse weather avoidance. Orders for this system were placed by the U.S. Armed Forces throughout the year. Development work is progressing on new LN-66 system capabilities which will be offered as modifications to the units currently in service.

Several projects funded by the Canadian government are under way for capability improvements to the AN/SPS-503. Some of these include the development of a Crossed Field Amplifier to increase output power, a plot extractor system and studies on advanced transmitter techniques.



Signaal STIR fire control radar directors destined for Canadian Patrol Frigates were assembled at CMC's Kanata facility.

# CONSOLIDATED FINANCIAL STATEMENTS March 31, 1987

CONSOLIDATED	BALANCE	SHEET
March 31		

March 31		
	1987	1986
	(in th	nousands)
Assets		
Current assets		
Cash and temporary investments, at cost, including accrued interest (approximates market)	\$166,848	\$157,961
Accounts receivable	44,341	40,824
Income taxes refundable		3,660
Inventories (Note 3)	35,054	33,252
Prepaid expenses	360	632
	246,603	236,329
Fixed assets, at cost, less accumulated depreciation (Note 4)	32,460	26,170
	\$279,063	\$262,499
Liabilities and shareholders' equity		
Current liabilities		
Accounts payable and accrued liabilities	\$ 52,097	\$ 56,059
Income taxes payable	3,940	4,138
	56,037	60,197
Deferred income taxes	3,347	2,776
Long-term debt (Note 5)	2,826	2,853
Shareholders' equity		
Stated capital – 23,772,768 common shares (Note 6)	10,216	10,216
Retained earnings (Note 10)	206,637	186,457
	216,853	196,673
	\$279,063	\$262,499

Approved by the Board:

J.F. Grandy, Director

P.E. Wheatley, Director

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# CONSOLIDATED STATEMENT OF INCOME Year ended March 31

	1987	1986
Revenue	(in th	ousands)
Electronic products	\$214,081	\$210,764
Income from temporary investments	13,641	15,870
	227,722	226,634
Operating costs and expenses		
Manufacturing, selling and administration	160,893	158,401
Research and development, net of government participation – \$3,331,000 (1986 – \$2,767,000)	19,187	21,895
Depreciation	8,878	9,217
Interest on long-term debt	180	351
	189,138	189,864
Income before income taxes and special charge	38,584	36,770
Provision for income taxes (Note 7)	11,748	10,140
Income before special charge	26,836	26,630
Special charge (Note 8)	<u> </u>	789
Net income	\$ 26,836	\$ 25,841
Earnings per common share (in dollars)		
Income before special charge	\$1.13	\$1.12
Net income	\$1.13	\$1.09

## CONSOLIDATED STATEMENT OF RETAINED EARNINGS Year ended March 31

	1987	1986
	(in th	nousands)
Retained earnings, beginning of year as restated (Note 10)	\$186,457	\$167,510
Net income	26,836	25,841
	213,293	193,351
Dividends – 28 cents per common share (1986 – 29 cents per common share)	6,656	6,894
Retained earnings, end of year	\$206,637	\$186,457

# CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION Year ended March 31

Cook provided by (variety)	1987	1986
Cash provided by (used in)	(in th	nousands)
Operating activities		
Income before special charge	\$ 26,836	\$ 26,630
Depreciation	8,878	9,217
Deferred income taxes	571	142
Net change in non-cash working capital balances	(5,547)	11,924
	30,738	47,913
Financing activities		
Reduction of long-term debt	(27)	(1,086)
Dividends	(6,656)	(6,894)
	(6,683)	(7,980)
Investment activities		
Additions to fixed assets, net	(15,247)	(10,018)
Proceeds from sale of fixed assets	79	227
	(15,168)	(9,791)
Special charge		
Proceeds and working capital deficit from disposition of subsidiary		1,394
		1,394
Net cash provided in year	8,887	31,536
Cash and temporary investments, beginning of year	157,961	126,425
Cash and temporary investments, end of year	\$166,848	\$157,961



### NOTES TO CONSOLIDATED FINANCIAL STATEMENTS March 31, 1987

### NOTE 1. OPERATIONS

The Company is engaged in substantially one class of business: the development, manufacture, and sale of electronic products. Export sales in the fiscal year amounted to \$165,809,000 (1986 - \$163,085,000).

### NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

a) Principles of consolidation

The consolidated financial statements include the financial statements of Canadian Marconi Company and those of its subsidiary companies, all of which are wholly-owned. All significant intercompany accounts and transactions have been eliminated.

#### b) Inventories

Raw materials and bought-out components, work in process, and finished products are valued at the lower of cost and estimated net realizable value. Deductions are made for progress payments received and any losses incurred or expected to be incurred on contracts not completed at the balance sheet date.

### c) Fixed assets and depreciation

Fixed assets retired or disposed of are eliminated from the asset and accumulated depreciation accounts. Gains and losses from disposals are included in income.

Depreciation is provided on the straight-line method at rates based on the estimated useful lives of depreciable assets.

### d) 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.

### e) Recognition of revenue

Sales are normally recognized when products are delivered to customers, however, revenue from major long-term contracts is recorded on the percentage of completion method based on the ratio of the incurred costs to date to the projected total cost of completing the contracts. There were no contracts accounted for as major long-term contracts in 1987 and 1986.

### NOTE 3. INVENTORIES

March 31	1987	1986
	(in	thousands)
Raw materials and bought-out components	\$ 9,521	\$13,505
Work in process	50,081	39,226
Finished products	8,664	7,157
	68,266	59,888
Progress payments	(33,212)	(26,636)
	\$35,054	\$33,252

#### NOTE 4 FIXED ASSETS

March 31			1987	1986
	Cost	Accumulated depreciation	Net	Net
		(in	thousands)	
Land	\$ 1,788	\$ -	\$ 1,788	\$ 1,788
Buildings	18,116	8,106	10,010	9,693
Plant, machinery and equipment	53,290	33,293	19,997	14,259
Equipment on rental	2,457	1,792	665	430
	\$75,651	\$43,191	\$32,460	\$26,170

The estimated useful lives of depreciable assets are as follows:

Buildings	25 to 50 years
Plant, machinery and equipment	up to 10 years
Equipment on rental	up to 4 years

Capital expenditures authorized and committed at March 31, 1987 were \$4,955,000.

#### NOTE 5. LONG-TERM DEBT

March 31	1987	1986
	(in thousands)	
5%% unsecured sinking fund debentures, Series A, due May 1, 1988	\$1,790	\$1,808
7% unsecured sinking fund debentures, Series B, due June 1, 1989	1,036	1,045
	\$2,826	\$2,853
***************************************		

The Series A and B debentures include sinking fund provisions which require payments aggregating \$475,000 in the fiscal year ending March 31, 1988, \$1,975,000 in the year 1989 and \$1,050,000 in the year 1990. Debentures have been purchased and surrendered for cancellation in advance of the current requirements of the sinking fund provisions.

#### NOTE 6. COMMON SHARES

The Company maintains a share option plan for officers and selected senior managers of the Company. At March 31, 1987 common shares totaling 750,000 had been authorized and reserved for the plan. Participants in the plan are granted options to purchase common shares in the Company at the market value on the date of the grant. These options are exercisable after three years and they expire seven years from the date of the grant.

Options granted to participants in the plan are as follows:

Year granted	Price per common share		standing at ch 31, 1987
1984	\$26.875	110,500	
1985	\$20.5625		113,000
1986	\$24.975		23,000
			246,500
NOTE 7. PROVISION FOR INC Year ended March 31	COME TAXES	1987	1986
		(in thousands)	
Provision for income taxes base	ed on a		
Federal income tax rate of 46		\$17,789	\$16,915
Increase (decrease) in taxes res	sulting from:		
Federal surtax		549	471
Federal abatement for provincome taxes	rincial	(0.00=1	
***************************************		(3,867)	(4,002)
Provincial income taxes		3,200	2,165
Manufacturing and process incentives	sing tax	(4.700)	(4.005)
Investment tax credits on re	search and	(1,722)	(1,825)
development expenses	Scarcii anu	(3,854)	(4,404)
Inventory allowance	1		(662)
Non-taxable dividends	•	(408)	(002)
Other items		61	1,482
		\$11,748	\$10,140
		411,710	Ψ10,140

### NOTE 8. DISPOSITION OF SUBSIDIARY

In March 1986, the Company sold the shares of its wholly-owned subsidiary, Sun World Circuits, Inc., for cash. The excess of the investment in this subsidiary over the cash proceeds has been recorded as a special charge in the consolidated statement of income. Details of the disposition are as follows:

(ir	thousands)
Fixed assets, net	\$3,002
Working capital deficit	(700)
Long-term debt	(819)
Net assets	1,483
Less: Proceeds on sale	694
Excess of net asset value over	
proceeds on sale	\$ 789

### NOTE 9. RELATED PARTY TRANSACTIONS

The General Electric Company, p.l.c. (GEC) of London, England, indirectly owns 51.6% of the outstanding common shares of the Company. During the fiscal year the Company's sales to GEC and its subsidiaries amounted to \$20,484,000 (1986 – \$18,768,000). The Company purchased goods and services from GEC and its subsidiaries amounting to \$7,498,000 (1986 – \$3,593,000). At March 31, 1987, the Company had accounts receivable and accounts payable with these associated companies amounting to \$3,596,000 (1986 – \$3,318,000) and \$1,393,000 (1986 – \$602,000), respectively. Terms for these transactions were essentially the same as those with unrelated parties.

### NOTE 10. PRIOR PERIOD ADJUSTMENT

On November 6, 1986 the Supreme Court of Canada rendered a decision in the Company's favour with respect to an income tax appeal case filed in 1978. The judgement resulted in the return of previously paid income taxes with interest totaling \$984,000, which net of current taxes, has been reflected in the consolidated financial statements as a \$754,000 increase in beginning retained earnings for the years ended March 31, 1987 and 1986.

#### NOTE 11. PENSION PLAN

At March 31, 1987, all vested past service benefits in the Company's pension plan were fully funded.

AUDITORS' REPORT May 14, 1987

To the Shareholders of Canadian Marconi Company

We have examined the consolidated balance sheet of Canadian Marconi Company as at March 31, 1987 and the consolidated statements of income, 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 March 31, 1987 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.

Price Waterhouse Chartered Accountants Montreal, Quebec

### DIRECTORS AND OFFICERS

	DIRECTORS	
*Roger O. Beauchemin	President, Arrowby Consultants Inc., Montreal, Canada	
*Sidney Dobb, F.C.A.	Corporate Director, Chelmsford, Essex, England	
**Thomas S. Dobson	Chairman, Easton United Securities Limited, Calgary, Canada	
James F. Grandy	President, Reisman & Grandy Limited, Ottawa, Canada	
Jack E. Pateman, C.B.E., F.Eng.	Managing Director, GEC Avionics Limited, Rochester, Kent, England	
Philip P. Ralph, F.C.A.	Director of Corporate Finance, The General Electric Company, p.l.c., London, England	
The Hon. Ian D. Sinclair, O.C., Q.C.	Senator, Ottawa, Canada	
William I. Mackenzie Turner, Jr. Philip E. Wheatley	Chairman and Chief Executive Officer, Consolidated-Bathurst Inc., Montreal, Canada	
Rhys J. Williams	President, Canadian Marconi Company, Montreal, Canada Chairman, The Marconi Company Ltd., The Grove, Warren Lane, Stanmore, England	
	*Member Audit Committee  **Chairman Audit Committee	
	OFFICERS	
J. Joseph Bedford	Vice President, DataComm Products Division, Kanata, Canada	
Claude Filiatrault	Vice President, General Counsel and Secretary, Montreal, Canada	
James F. Grandy	Chairman of the Board, Ottawa, Canada	
Alexander H. Grant	Vice President, Special Services Division, Montreal, Canada	
James J. Kelly John R. Killick	Vice President, Finance, Montreal, Canada	
Lionel Léveillé	Senior Vice President, Ottawa, Canada	
André Massicotte	Vice President, Avionics Division, Montreal, Canada Vice President, Human Resources and Administration, Montreal, Canada	
J. Gustave McInnes	Comptroller, Montreal, Canada	
Laurent Noël	Vice President, Defence Communications Division, Montreal, Canada	
Daniel Rosenthal	Vice President, Components Division, Montreal, Canada	
Claude St. Arnaud	Executive Vice President, Communications Group, Montreal, Canada	
John H. Simons	Executive Vice President, Electronics Group, Montreal, Canada	
Gerry Stuurop	Treasurer, Kanata, Canada	
Philip E. Wheatley	President, Montreal, Canada	
	EXECUTIVE OFFICES	
	2442 Trenton Avenue, Montreal, Canada H3P 1Y9, Tel. (514) 341-7630	
	SUBSIDIARY (U.S.A.)	
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	STOCK EXCHANGES	
The Toronto Stock Exchange	(CMW)	
The Montreal Exchange	(CMW)	
American Stock Exchange	(CMW)	
	TRANSFER AGENT & REGISTRAR	
Montreal Trust Company	777 Dorchester Boulevard West, Montreal, Canada H3B 4A5, Tel. (514) 397-7000	
	AUDITORS	
Price Waterhouse	1100 Dorchester Boulevard West, Montreal, Canada H3B 2G4	
	South and Trook, Montacat, Canada Tiob 204	



