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Artist's rendition of a magnified and abstracted sliver-size portion of channelization and interconnect of the Motorola MC68000 16-bit microprocessor.

Motorola, Inc., one of the world's leading manufacturers of electronic equipment and components, is engaged in the design, manufacture and sale, principally under the Motorola brand, of a diversified line of products. These products include two-way radios and other forms of electronic communications systems; semiconductors, including integrated circuits, discrete semiconductors and microprocessor units; electronic equipment for military and aerospace use; electronic engine controls; digital appliance controls; automobile radios; citizens band radios and other automotive and industrial electronic equipment; and information systems products such as distributed data processing equipment, high-speed modems, multiplexers and network processors. Motorola's products are manufactured for both United States and international markets.

(Amounts in thousands, except per share data)	1981	1980	1979
Sales and Other Revenues	\$3,335,868	\$3,086,439	\$2,700,063
Earnings before Special Charge and Income Taxes	251,784	287,086	269,606
% to Sales	7.5%	9.3%	10.0%
Income Taxes on Earnings before Special Charge	76,794	103,351	107,428
Special Charge	—	13,031	10,286
Income Tax Credit on Special Charge	—	15,377	2,404
Net Earnings	174,990	186,081	154,296
% to Sales	5.3%	6.0%	5.7%
Net Earnings per Share before Special Charge	5.56	5.89	5.21
Net Earnings per Share	5.56	5.96	4.96
Research and Development	229,000	200,000	167,000
Fixed Asset Expenditures	317,287	301,091	265,072
Depreciation	173,123	144,790	110,827
Working Capital	772,699	742,916	708,551
Current Ratio	2.25:1	2.42:1	2.35:1
Return on Average Invested Capital (stockholders' equity plus long- and short-term debt, net of short-term investments)	11.9%	13.9%	13.5%
% of Total Debt (long-term and short-term) to Total Debt plus Equity	22.5%	22.8%	23.0%
% of Total Debt less Marketable Securities to Total Debt less Marketable Securities plus Equity	16.8%	17.6%	17.6%
Book Value per Common Share	40.80	36.74	32.22
Year-end Employment (approximate)	76,300	71,500	75,000

Annual Meeting of Stockholders

The annual meeting will be held on Monday, May 3, 1982. A notice of the meeting, together with a form of proxy and a proxy statement, will be mailed to stockholders on or about March 25, 1982, at which time proxies will be solicited by the Board of Directors.

Form 10-K

At the close of each fiscal year, Motorola submits a report on Form 10-K to the Securities and Exchange Commission containing certain additional information concerning its business. A copy of this report may be obtained by addressing your request to the Secretary, Motorola, Inc., Corporate Offices, Motorola Center, 1303 E. Algonquin Road, Schaumburg, Ill. 60196.

Transfer Agents and Registrars

Harris Trust and Savings Bank
111 W. Monroe Street
Chicago, Ill. 60690

Citibank, N.A.
111 Wall Street
New York, N.Y. 10015

Auditors

Peat, Marwick, Mitchell & Co.
303 E. Wacker Drive
Chicago, Ill. 60601

Although 1981 was a year of world recession with certain segments of the electronics industry particularly hard hit, Motorola grew modestly in sales and demonstrated recession-resistant strength considerably better than many major competitors.

It has also been a year marked by the fine effort of our people to reduce costs, improve productivity and quality, and generally manage our assets well enough to afford and sustain modest growth in a poor economic climate.

Sales and other revenue for 1981 were \$3.3 billion, up 8.1 percent from the \$3.1 billion a year ago. Earnings for the year were \$175 million, or \$5.56 per share, down from the \$186 million, or \$5.96 per share, posted a year ago. The 1980 earnings included a special charge and related tax credit which improved results by seven cents per share.

Net margin on sales was 5.3 percent compared with 6.0 percent in 1980.

Motorola's return on invested capital (stockholders' equity plus long- and short-term debt, net of marketable securities) was 11.9 percent compared with 13.9 percent in 1980.

Acquisition

Late in 1981, Motorola announced the proposed acquisition of Four-Phase Systems, Inc. of Cupertino, California. The acquisition was consummated following the favorable vote by stockholders of Four-Phase in early March. Footnotes to this year's financial statement provide the details of the transaction (page 23, Note 2).

The acquisition of Four-Phase represents a major strategic thrust for the '80s and beyond, and one which we believe we are importantly qualified to pursue.

Four-Phase is a participant in distributed data processing (DDP) and a more recent entrant in the office automation portions of the information

industry. Those markets are expected to be among the fastest growing segments of the information industry for the next decade.

Organization

During the year we announced a new management structure for the company's communications and semiconductor organizations, the two largest operations within Motorola. Both of these organizations were elevated to sector status, reflecting the company's practice of converting operating units to sector, group and division levels as their size, complexity, or operational requirements dictate. This practice encourages development of an effective management team with broad experience and depth in all parts of the organization as Motorola's businesses continue to grow.

In January 1982, we announced the elevation of the data communications and government electronics organizations to group status. The new name change reflects new responsibilities and directions for the Data Communications organization, which now includes Four-Phase and is called the Information Systems Group.

Each of these organizations is headed by experienced managers with many years of service to Motorola.

(Each elected officer who has assumed a new position or advanced in rank in 1981 is noted with an asterisk on page 36.)

Operations Overview

The Communications Sector increased sales by more than 13.2 percent from a year earlier. Operating profit margin remained approximately level. New equipment orders rose 17.4 percent from a year ago. Backlog at year end also was improved over 1980.

1981 was eventful in terms of the sector's product introductions and progress in specific markets, including Japan's telecommunications industry and the cellular radio field.

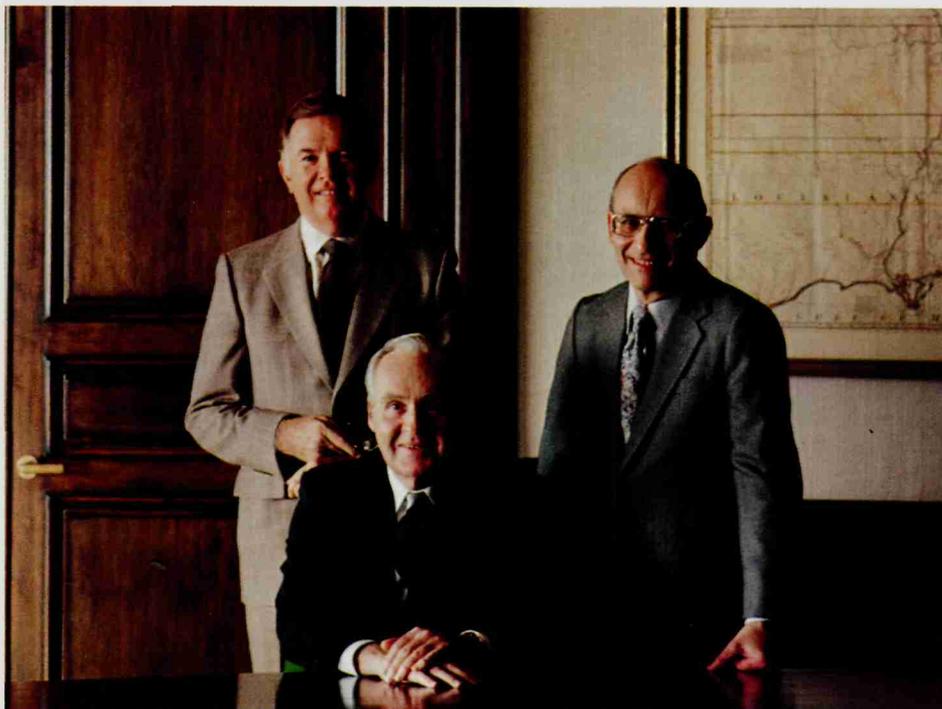
The Semiconductor Products Sector's sales rose about 5.7 percent from a year earlier, but operating profit margin declined because of adverse economic conditions in the marketplace and increased competition within the industry. New order bookings were about equal with 1980 results, but backlog was down approximately 14.9 percent. The sector made significant progress in the markets for microprocessors and microsystems, discrete devices and bipolar integrated circuits.

The Information Systems Group recorded another excellent performance in 1981 as revenues rose 35 percent, new order entry grew 64 percent, and backlog more than doubled the 1980 year-end level. Operating profit margin was level for the full year.

The Automotive and Industrial Electronics Group's sales approximated year-ago results and the group posted an operating profit for the year compared with an operating loss a year ago. Backlog at year end was slightly lower, but certain products—alternators, engine electronics, instruments and controls, and radio products—had excellent customer acceptance.

The Government Electronics Group recorded increased sales, up 6.1 percent, and improved operating profit margin. New orders were above year-earlier levels as backlog increased moderately at year end.

The corporation's Participative Management Program (PMP), and renewed emphasis on quality and productivity notably enhanced Motorola's worldwide operations last year.



Left to right: John F. Mitchell, Robert W. Galvin, William J. Weisz

Fixed Asset Expenditures

Investments were continued at a high level—\$317 million in 1981, up from \$301 million in 1980. As discussed elsewhere in this report, expansion of several major facilities was started, in progress or completed.

Research and Development

Despite adverse economic conditions and heightened competitive pressures, strategic investment in research and development, exclusive of government-funded work, increased 14.5 percent to \$229 million. Among the projects that benefited from this outlay were R&D in cellular radiotelephone systems, bubble memory devices, speech processing, and computer-aided design for integrated circuits.

Japan

Reflecting increased emphasis on operations in Japan, in January '82, we combined Motorola's wholly-owned subsidiaries into a new company, known as Nippon Motorola, Ltd., and created a new post at corporate headquarters with responsibilities for all the company's activities in Japan, including Motorola's interest in the joint venture with Toko, Inc. to manufacture semiconductor products.

We have continued to aggressively pursue entry into the Japanese telecommunications equipment marketplace, and, in early February '82, officially qualified as a radio pager supplier to Nippon Telegraph & Telephone Public Corp. (NTT).

These actions are part of the strategy developed by Motorola in the late '70s to make a major effort, despite significant obstacles, to serve

the Japanese marketplace. In the U.S., and around the world, we have also concentrated on improving, in all respects, our own operations to meet that challenge everywhere in the world.

To external audiences, a highly visible part of the Motorola's "Meeting Japan's Challenge" program is the corporation's advertising and public relations effort, directed at airing issues on the challenge from Japan.

Outlook

We believe the current recession will continue at least through the first half of 1982 and may well result in unfavorable performance comparisons year to year. We continue to be concerned and cautious about the economic environment, and have taken steps wherever prudent to reduce costs.

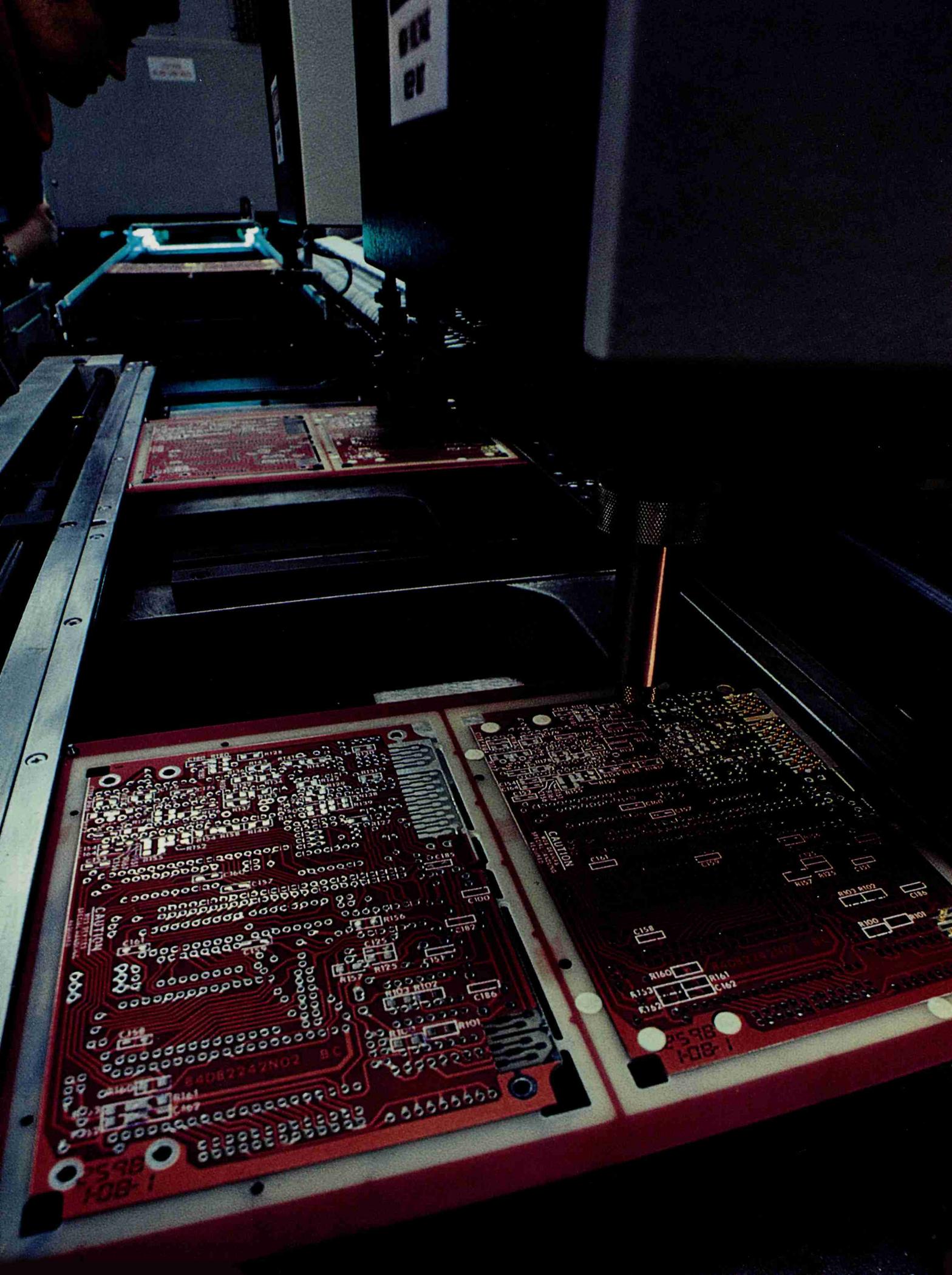
We are optimistic about Motorola's prospects for continued profitable growth. Dedicated to innovation and the improvement of quality in our performance, products and services, we will continue to make major strategic investments for the future.

Yours very truly,

Robert W. Galvin,
Chairman

William J. Weisz,
Vice Chairman

John F. Mitchell,
President



The sector recorded an increase in sales of more than 13.2 percent from 1980 and operating profit margin remained approximately level. Backlog at year end also was improved over 1980.

New domestic orders increased 17 percent with particular strength demonstrated in the subscriber paging, utility and energy markets. The government markets experienced their best rate of growth in the past several years, despite reductions in federal funding. Commercial markets' sales also increased from 1980, despite lower farm income, a depressed construction industry, and high interest rates.

In the sector's international markets, new orders rose 18 percent. Significant gains were registered in nearly all markets with Mexico and areas of Latin America turning in excellent results. Markets in Australia and Israel also improved for the year, while results in Canada and Europe (reflecting the impact of currency fluctuations) were off year-earlier levels.

NTT Qualifies Motorola

Nippon Telegraph & Telephone, Japan's largest communications company, officially qualified Motorola as a supplier of the NTT Pocket Bell pager. Motorola estimates the volume of orders received from NTT for the fiscal year 1982 will be over 45,000 units, worth more than \$9 million. This achievement resulted from more than two years' work in concert with NTT's technical personnel to develop the pager to NTT specifications, including delivery of prototypes for field and performance tests.

It was an eventful year for progress in the cellular radio field. Motorola's Dyna T•A•C® system was implemented in the Baltimore/Washington, D.C., area. American Radio Telephone Service (ARTS), the radio common carrier testing this revolutionary system, was granted authority by the Federal Communications Commission to provide equipment and service on a developmental basis for up to 2,500 subscribers in a market trial.

One of the main purposes of the trial, which initially involves 200 subscribers, is to demonstrate the use of cellular mobile communications and, in particular, Motorola's new portable telephone, first of its kind in the 800 MHz market. The sector anticipates that the FCC will accept applications from common carriers for this new service sometime in 1982. It is also anticipated that once licenses are granted—having endured the test of the regulatory process—there will be several cities seeking this service within a two-year period.

A test similar to that of ARTS has been conducted in Chicago by Illinois Bell Telephone. Unlike the Baltimore/Washington system, the Chicago trial market does not include portable telephone service. Both systems have proven highly successful to date, substantiating the value and viability of this new generation of two-way radio communications.

In major metropolitan areas where radio spectrum is limited, trunked systems are becoming the primary product offering. Because competition is increasing in this field among the traditional land mobile suppliers, the sector's sales coverage has been increased nationally (in selected geographic areas) to improve competitiveness and better serve customers.

New products are the lifeline of the communications business and, in 1981, the sector introduced 32 products in a program designed to expand existing markets, open new ones, and in either case help improve the company's technological leadership and competitive edge.

Display Pagers Developed

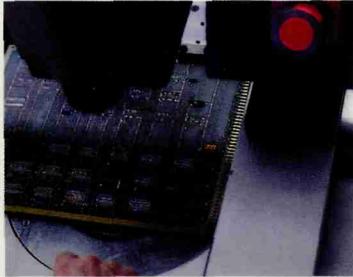
One of the major products was the versatile Optrx™ display pager, which represents a new generation of paging systems. One model in this line shows messages on an alphanumeric display screen and stores in its memory as many as four messages—up to 40 characters per message. The Optrx also functions with conventional tone-alert or voice-message beepers.

GROUPS:
Communications Distribution
Communications International
Fixed & Mobile
Portable/Paging/Systems
DIVISIONS:
Commercial Markets
Distribution Service
European
Fixed
Government Markets
Mobile
Paging
Portable
Special Markets
Systems



(Left) Recently installed computerized automated system improves manufacturing quality and reduces workhours in the precise placement of electronic components on high-density printed circuit boards for cellular and data communications equipment.

(Right) The medical industry, one market among many, will profit from the latest state-of-the-art OPTRX™ alphanumeric display radio pager which receives, stores and displays detailed information.



Another paging product unveiled in 1981 was the BPR2000™, which includes both numeric display and five-tone dual-function paging. In this product, a screen displays messages of up to 24 characters; it has memory capability for two messages. This product is designed for highly demanding requirements and noisy environments.

The Handie-Talkie® portable radio family, which has been a popular line for four decades, was given a fresh look in 1981 with several new models. The MX300-S, a synthesized version of the MX300 portable, offers improved communications' flexibility with up to 48-channel capability and unique features that make it a communications system more than just a portable. Two products, the HT90™ and the more sophisticated HT440™, called the "affordable portable" series, demonstrate high quality in relatively low-priced products. Both models are ruggedly designed and provide multiple-frequency-range flexibility.

State-of-the-art technology was key to the development of the synthesized MCX100™ mobile two-way radio. This product, designed primarily for international applications, features a broadband receiver and transmitter, a microprocessor-controlled signaling system, and a frequency synthesizer. This combination of features covers the broadest range of spectrum and signaling on the market.

Innovations Cut Product Costs

The innovative Syntor X® mobile radio line also was broadened with a 150 MHz model that applies the latest integrated circuitry, crystal filter devices and synthesizers, all of which eliminate other more costly components. The markets for this product include public safety and governmental agencies, such as departments for police, fire, transportation, public works, highway maintenance, utilities, and a wide variety of interagency and commercial applications.

A new product that the sector believes to be an industry first is the Vehicular Speaker Phone (V.S.P.), which is made for hand-free communications convenience in automobiles. Users of the V.S.P. mobile telephone can place or receive calls, and engage in

two-way conversation without lifting the handset; it is designed to enhance user safety as well as convenience.

There were many other important products introduced during 1981, but the ones cited above were perhaps interesting to more customers in more markets and, therefore, make them standouts in an outstanding year for innovation.

The Communications Sector will invest strategically wherever and whenever possible to build or sustain technological leadership through product design, manufacturing, distribution, quality and productivity. In 1981, for example, this commitment led to productivity gains that were largely the result of the company's Participative Management Program (PMP); there was a 58 percent increase in the number of sector participants, with more than 58,000 hours of training devoted to newcomers and, in some cases, to veterans in the program who graduated to new levels.

Quality Yardsticks Increase

In line with the sector's unyielding commitment to satisfy the customer, 30 key quality measurements were identified and tracked in 1981. These efforts to improve quality are paying off, making good an investment in environmental testing equipment, automatic testing equipment, and process mechanization.

In conjunction with Motorola's restructure from groups to sectors, the Communications Sector now operates with four groups: Distribution; Portable/Paging/Systems; International; and Fixed & Mobile.

In the International Group, the European Division's headquarters was relocated during the year, from West Germany to the United Kingdom, the change made to facilitate the coordination of autonomous operations in other European countries.

Another example of the sector's growth in 1981 was the near completion of a new headquarters building on the Schaumburg campus. This facility will add 350,000 square feet of office space. With its completion and occupancy, additional space will be made available for manufacturing assembly and research and development.

(Left) New projector technology beams image to indicate placement position of various size components on circuit boards for cellular and mobile radiotelephone products, increasing manufacturing quality and productivity.

(Right) Functional testing the recently introduced MÖTRAR™ trunked mobile/control station radio with new computer systems is now accomplished in approximately five minutes.





Difficult as 1981 was for the semiconductor industry, Motorola's worldwide sales rose 5.7 percent from a year earlier and new order bookings were about equal to the 1980 level.

Operating profit was under pressure from the depressed condition of the European semiconductor markets, along with eroding prices brought on by excess industry capacity and intensified competition, most notably in the memory markets. Year-end backlog was down 14.9 percent from a year earlier.

The sector continued to expand its product families in virtually all of the key technology areas. It also continued a high level of capital investment in equipment, automation, plant and technology, considered vital to future growth. Several important successes in both geographic and product markets were also achieved.

Having channeled strategic resources into the automotive, data processing and personal computing markets in recent years, the sector achieved substantial sales growth in these U.S. markets in 1981. Gains also were registered through a distribution system that set in motion several aggressive marketing programs.

Market Strength Evident

Significant progress in terms of bookings and billings was achieved in the increasingly competitive microprocessor and microsystems markets. These successes were attributable to excellent product offerings, aggressive market programs, and a highly efficient distribution network.

In discrete semiconductors, the company continued to improve its industry-leading position and is following a product development and investment strategy that should ensure future prominence in this business. Capital and research-and-development expenditures both were increased in 1981 from the previous year.

The focus of this investment was on automation and yield-enhancement programs designed to further reduce production costs, improve quality and service to customers, and develop new or improved discrete technologies with products such as CATV components and modules—high efficiency

gallium arsenide opto emitters for fiber optic applications, and ultra-fast Switchmode power transistors for innovations in power supply applications.

The Bipolar Integrated Circuits Group realized record shipments of product in 1981, improving its position in both domestic and international markets. A variety of products was introduced to take advantage of new opportunities in the consumer, custom communications, computer and telecommunications markets. Included among the new products were the Monomax™ single-chip black-and-white TV signal processor, additions to several high-speed digital logic and memory families, and large-scale integration (LSI) memory products.

The large-scale gate array product line represents an exciting growth opportunity in the decade ahead. The proprietary Macrocell array is a customer-programmable product that can replace scores of medium-scale and small-scale IC components in computers, industrial equipment, telecommunications and electronic games. In addition, it provides the customer with unique circuit features in higher or more complex forms, it lowers costs, and it requires less development time than earlier designs. The strategy is to further develop this product line to support the next generation of products in these key markets and establish a number of remotely located array centers to offer complete computer-aided-design facilities to customers. The first of these centers was opened in San Jose, California, early in 1981.

Burn-in Capacity Expanded

Of major importance in the bipolar IC business was the expanded "burn-in" capacity developed for the production of high reliability or military products. Plans are to expand this capacity further in 1982 so that the company can participate more effectively in this market segment. A new 185,000-square-foot support and manufacturing site in Tempe, Arizona, is currently being prepared to meet these objectives. Occupancy is scheduled for later this year.

GROUPS:

Bipolar Integrated Circuits

Discrete Semiconductor

Internal Operations

International Semiconductor

MOS Integrated Circuits

DIVISIONS:

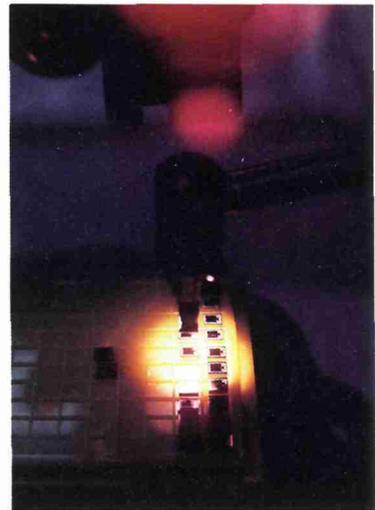
European Semiconductor

High Frequency and Optical Products

Linear and Military Products

Microprocessor

Power Products



(Left) At the logic and special functions operations, design engineers study a backlit Mono-circuit graph, one of the newest telecommunications products designed to increase communications efficiency.

(Right) One of the first steps in fabrication of discrete devices is the diebonding process, attaching a chip to its frame.



The MOS (Metal Oxide Silicon) Integrated Circuits Group also had several key product introductions in 1981. Helping to offset intensified Japanese competition and price pressure was the sector's introduction of a second-generation 64K dynamic RAM (random access memory) in the fourth quarter. This product provides increased operating speed and possesses more soft-error immunity than its first-generation predecessor. Also presented late in the year was Motorola's first high-performance HCMOS static RAM, the first in a new family of low-power memory devices.

In microprocessors, the first 10 and 12 megahertz 16-bit MPUs (microcomputers) were shipped. They represented an enhancement of the highly successful M68000 family. This, coupled with a number of new peripheral circuits now in the sampling stage, is allowing the sector to win a large number of customer "design-ins" in the market. Other introductions were a CMOS single-chip microprocessor and a family of high-speed HCMOS logic components. A new CMOS gate-array technology was developed, which will be the forerunner of a 4800 gate array planned for later in 1982.

The MOS IC Group continued its strong commitment to the systems business in 1981 with the purchase of a 135,000-square-foot production plant in Tempe, Arizona. It will house the microsystems organization.

Short-term Backlog Improves

In the international arena, the strength of the U.S. dollar relative to local currencies, along with a widespread recession in Europe, adversely affected performance in 1981. Prices in the European market continued to decline, especially in MOS memories. Short-term backlog in this market has shown some modest improvement in the past several months. This is a positive sign. The sector continues to enjoy excellent success with products designed specifically for the European market by its design center in Geneva, Switzerland. In addition, the sector is trying to build stronger interest in advanced Motorola products, such as microprocessors and sensors, in the European auto industry.

In both the Japan and Asia/Pacific regions, the year just ended was one of growth for sales and profits. The Aizu-Toko joint venture in Japan, formed in 1980, is in the mainstream of Japan's semiconductor industry, producing Motorola memory and CMOS silicon wafers in increasing volume. There was a noticeable increase in the degree of interest and acceptance of the company's microprocessor products in Japan this past year, especially in the home-and-office computer, electronic games and automotive market segments. Interest also developed for the company's new high-speed CMOS logic family.

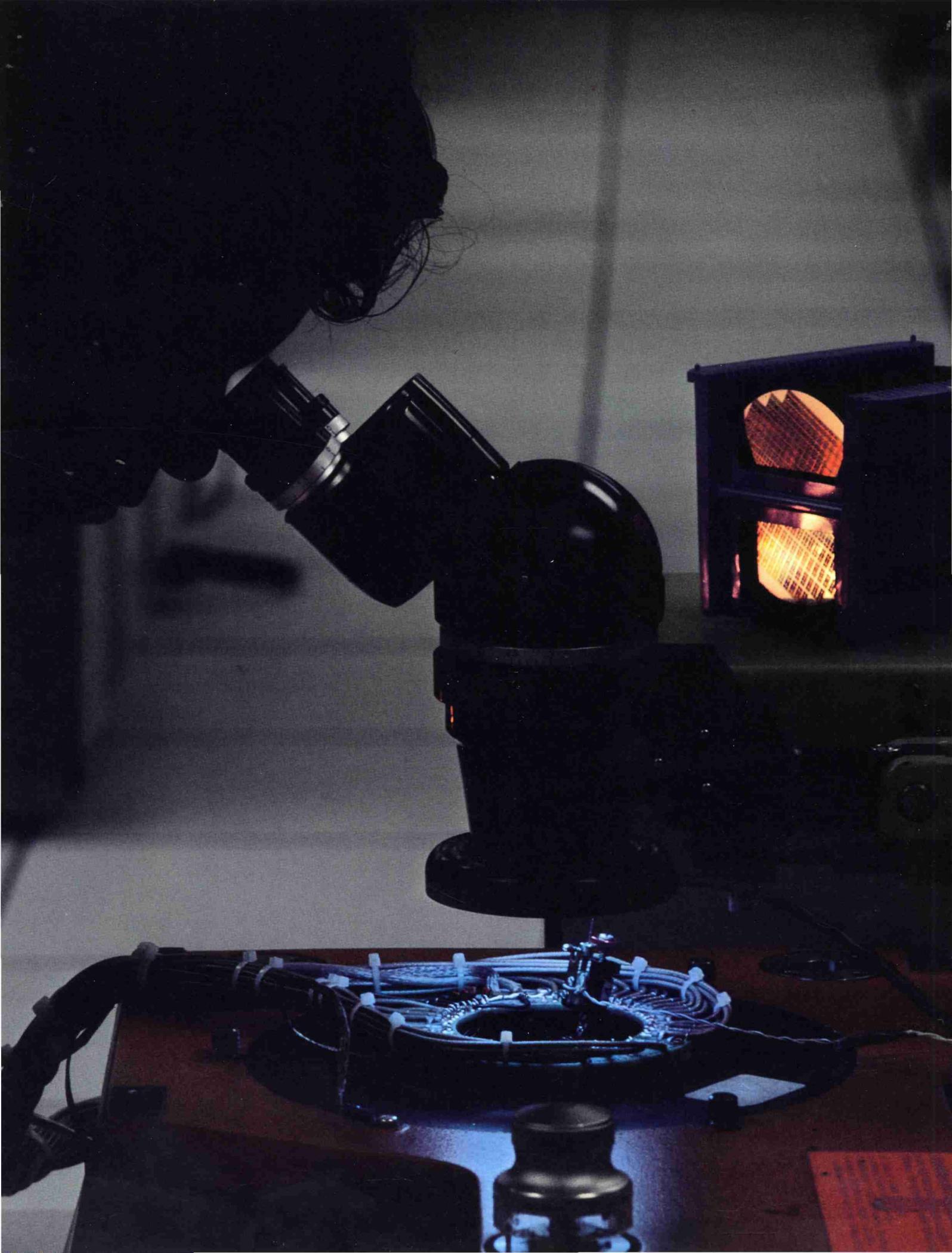
PMP Proves Valuable

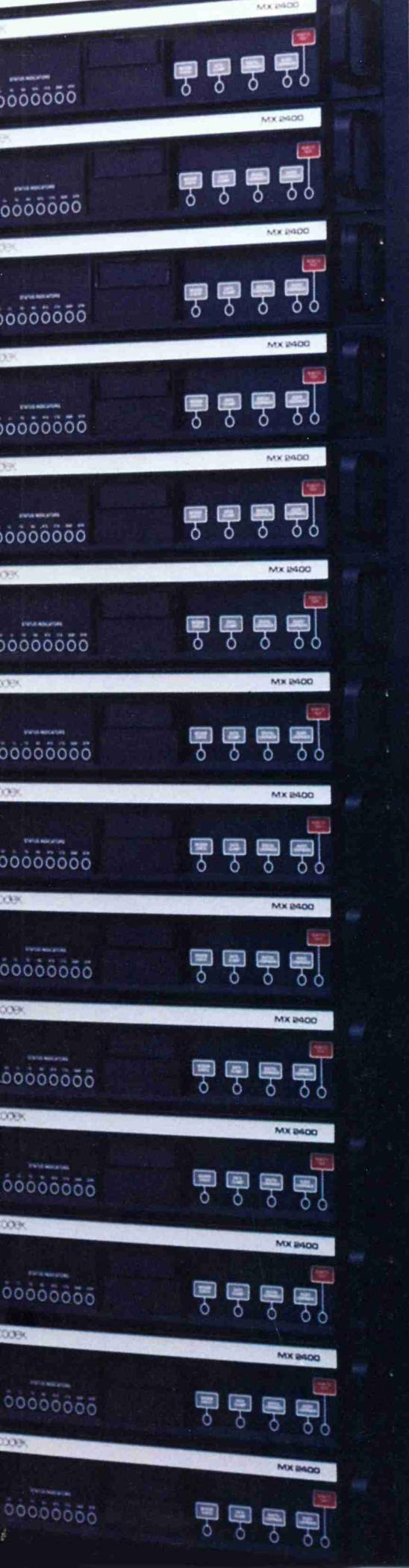
Two of the most significant issues that have confronted the sector in the past and will do so in the future are improving productivity and producing products of superior quality and reliability. Toward this end, the Participative Management Program (PMP) is a key element. At present, about 60 percent of the sector's domestic population is involved with PMP. The goal for the sector is to have all of its employees within the program in the next few years. PMP has proven itself as a means of developing greater effort and pride, which in turn earns rewards for both the employee and company. Establishing a "quality culture" is based on the premise that product quality is only half of the objective; the other half is the realization that quality must be inherent in all aspects of the workday performance.

The quality issue, encompassing both the sector's product and performance, drew greater attention in 1981 than ever before, even though quality was already high by historic standards. This commitment, in some cases, is requiring the continued investment in new or improved production equipment. Those investments are being made. More important, however, is the fact that the sector continues its concentration on maintaining a quality culture type of environment that is fully acknowledged and appreciated by all employees.

(Left) Staff engineer fine-tunes a high-speed memory array module which utilizes 64K dynamic RAM technology in the System 3000 general purpose memory system.

(Right) Staff technician carefully examines silicon wafers to retrieve the highest-yielding dies in 64K dynamic RAM production.





Excellent performance marked 1981 as revenues and new order entry rose 35 percent and 64 percent, respectively, over year-earlier results. Operating profit margin improved noticeably in the fourth quarter compared with the similar period of 1980 and was level for the full year. Year-end backlog was more than double the 1980 level.

The Information Systems Group's sales and revenue growth continued to surpass the rate of the telecommunications industry, which in recent years has run close to 20 percent annually. Strong gains in 1981 were registered in both the domestic and international markets. Codex and Universal Data Systems each exceeded operational plan for the year, the same holding true for ESE Limited in Canada.

Elsewhere in the international market, a direct sales and service operation was established in West Germany, joining the Codex team in Belgium and the United Kingdom.

At year end, Codex opened its fifth facility in the Mansfield, Massachusetts, complex, adding another 25,000 square feet to the more than 400,000 square feet already under roof.

Four-Phase Joins Group

In early 1982, the Data Communications organization was restructured into the Information Systems Group. In March 1982, when action by the stockholders of Four-Phase Systems, Inc. approved that company's acquisition by Motorola, Four-Phase, now a wholly-owned subsidiary of Motorola, became part of the Information Systems Group.* The new group structure will permit rapid development of the combined information-processing experiences of Four-Phase and the networking capabilities of the Datacomm organization.

The aggressive expansion of the information systems' product portfolio was continued in support of the group's goal of being the premier full-line supplier of networking equipment. Toward this end, there were several significant product innovations that allowed the group to market modems offering both higher and lower speeds than were previously produced. For example, a new high-speed modem—the SP14.4—was designed to transmit data over ordinary telephone lines at 14,400 bits per second; in the low-speed range of transmission (300-to-1,200 bits per second), five products were announced in 1981. Also developed was a new mid-range

modem that handles 4,800 bits per second and expands an existing product group. This product has had excellent customer acceptance. Codex introduced two network control systems in 1981, making available a complete family of upward-compatible common-user interface systems, providing customers the capability to control and manage increasingly complex networks.

New Family of Switches

At year end, the group introduced a family of microprocessor-based electronic data switches that connect and switch data paths in much the same way a voice PBX routes telephone calls. Other product developments were made in the group's line of intelligent terminals, multiplexers, and test equipment.

These product developments increased market penetration and contributed to a gain in more large systems business in 1981 than in any previous year. Included in these gains were the winning of multi-million-dollar contracts from the Social Security Administration, the National Bank of Greece, Bancomer (Mexico's largest banking institution), the Australian PTT (Postal Telephone and Telegraph), and Consolidated Freightways. And, later in the year, the group received contracts from the Computer Communications Group of Bell Canada, and from E-Systems, Inc., of Texas, for a large network for the Federal Aviation Administration.

Concurrent with these developments was the institution of new, more aggressive quality control and product efficiency programs. Product quality is key to the performance in the day-to-day operations of information systems' customers, and equipment failure in a network can mean lost dollars when transactions cannot be processed, inventory logged, or computations performed.

In 1981, a major "Quality Awareness" campaign was launched to heighten employee sensitivity to the critical role the group's products play in customer networks. Complementing this quality campaign was the installation in the group of the Participative Management Program. It was phased in at Codex's Mansfield, Massachusetts, complex during the year and contributed to improvements in product efficiency and quality by year end.

*Operating results of Four-Phase will first be consolidated into Motorola's results for the first quarter of 1982. Accordingly, the Information Systems Group comments herein do not reflect Four-Phase operations.

ORGANIZATIONS:

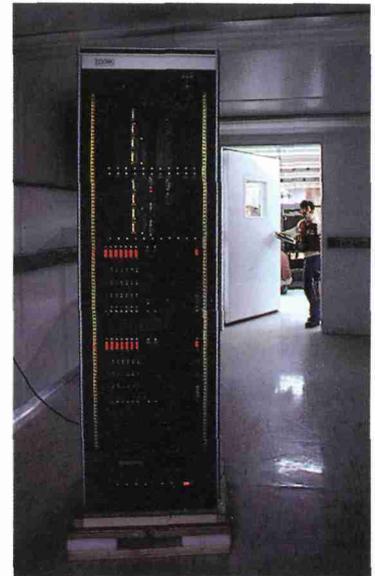
Codex Corporation

Four-Phase Systems, Inc.

Intelligent Terminal Systems Operation

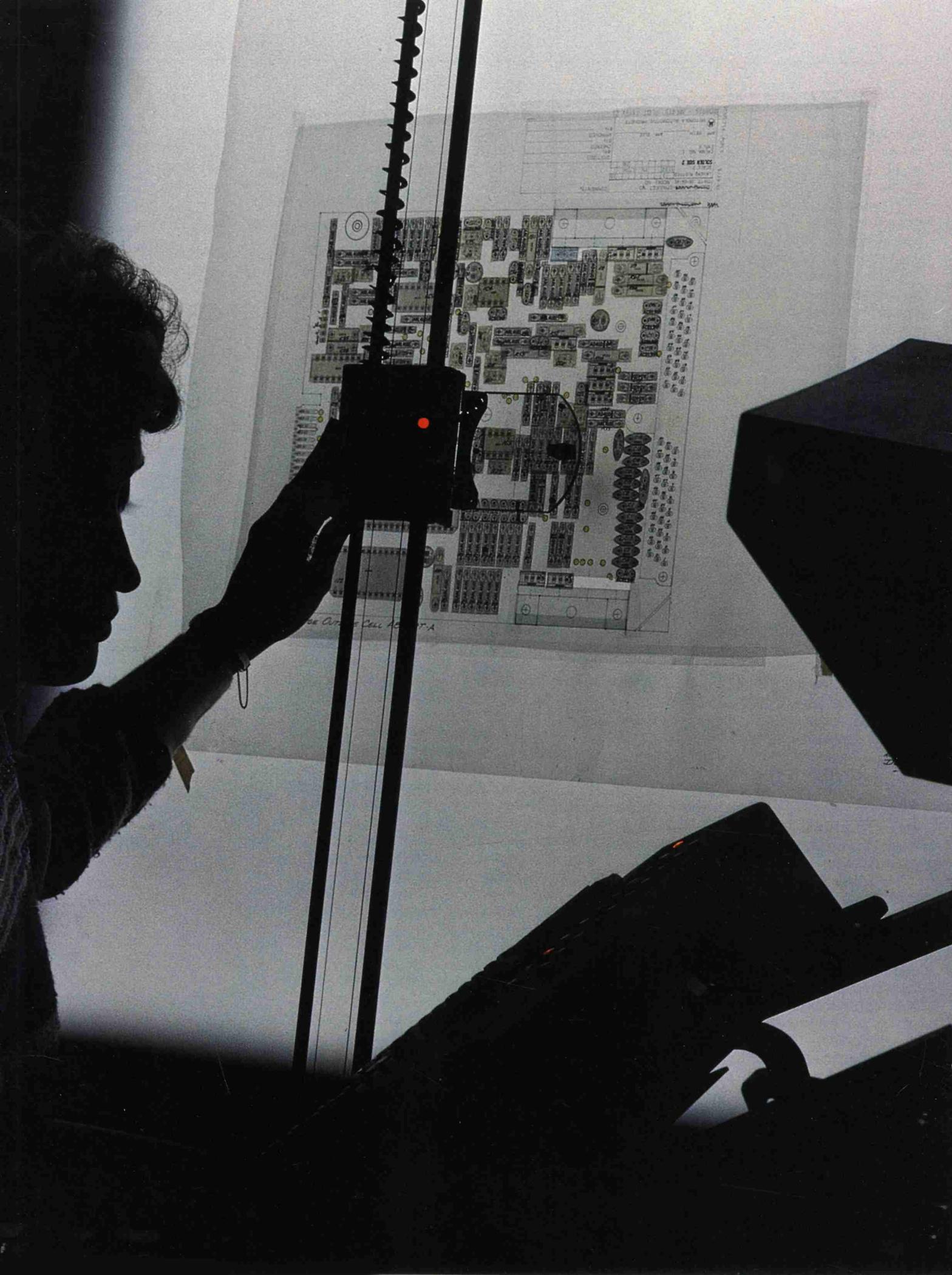
International Division

Universal Data Systems



(Left) Production supervisors inspect the 6000 Intelligent Network Processor and a rack of MX2400 modems prior to shipment.

(Right) The IMS 7700, representing one of the newest applications of electronic switch technology, receives thermal testing in an environmental laboratory chamber.



The group's performance improved in 1981 from the previous year even though the economy was particularly harsh on the domestic automotive industry. Sales were approximately level for the year. The group posted a modest operating profit compared with an operating loss a year earlier. The improved performance can, in large measure, be attributed to the stringent cost control program instituted a year ago and to continued strong emphasis on product quality. Backlog at year end was lower than a year ago.

Domestic alternator business again met expectations in 1981. In Europe, however, the business continued to suffer from economic conditions, but showed a profit in the fourth quarter.

Engine electronics had another year of significant sales and earnings growth, while the instruments and controls business generated profits on sales that exceeded expectations.

Display systems turned in poorer results than had been anticipated. Domestic radio products' sales improved and the operating loss of 1980 was sharply reduced, while in Europe the radio business was profitable for the entire year.

High Quality Recognized

An important positive aspect of the group's performance this past year was the quality standard of its products and service. For the second year in a row, General Electric designated the group as one of its top 100 suppliers. Ford Motor Company's tractor operation recognized the group as its number one supplier in 1981, with no quality defects reported for the past three years. These awards are symbolic of the group's product quality.

The group continued to improve through the strategic realignment of its business operations. In 1981, the closed-circuit television manufacturing operations were sold as a result of strategic analysis directed at improving the family of products. This sale came

on the heels of the 1980 disposition of the group's domestic aftermarket autosound business and the Italian firm, Autovox S.p.A. Both actions represent strategic fine-tuning of the overall business focus of the group.

Stress Product Uniqueness

This past year, the group reinforced its investment-strategy philosophy. That philosophy is based on the precept that investments should be made only if products can be marketed that are distinctively better than what the competition offers, are convincingly beneficial to customers, and can be produced at an adequate profit. This long-term strategic program is important to the future of the group because it gives direction to manufacturing and technological considerations that must be made to meet planned business objectives.

Among the noteworthy products introduced in 1981 were a line of heavy-duty alternators called The Load Handler™, a line of speedometers and tachometers, and a new hourmeter (for tracking engine time) for heavy-duty trucks, agricultural and construction equipment.

Other new products and/or systems included the following: a high-power radio line for a major domestic agricultural equipment customer; an ignition system for a large European automotive manufacturer; a seven-inch CRT (cathode ray tube) display module for the portable data terminal market; a midline microwave oven control and a combination convection oven/microwave oven control; a line of microprocessor-based instruments for farm tractors; a garage door control system; ignition systems for the replacement parts market; and, a new multiplex radio.

The Participative Management Program introduced at the Seguin, Texas, plant significantly contributed to the group's performance. Because of this success, the group has begun the introduction of PMP at its plants in Joplin, Missouri, and Arcade, New York.

BUSINESSES:

Alternators

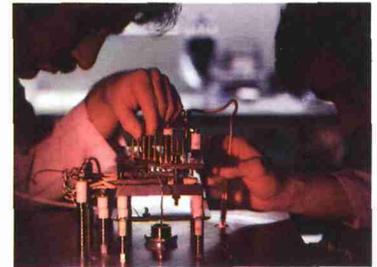
Display Systems

Engine Electronics

Instruments and Controls

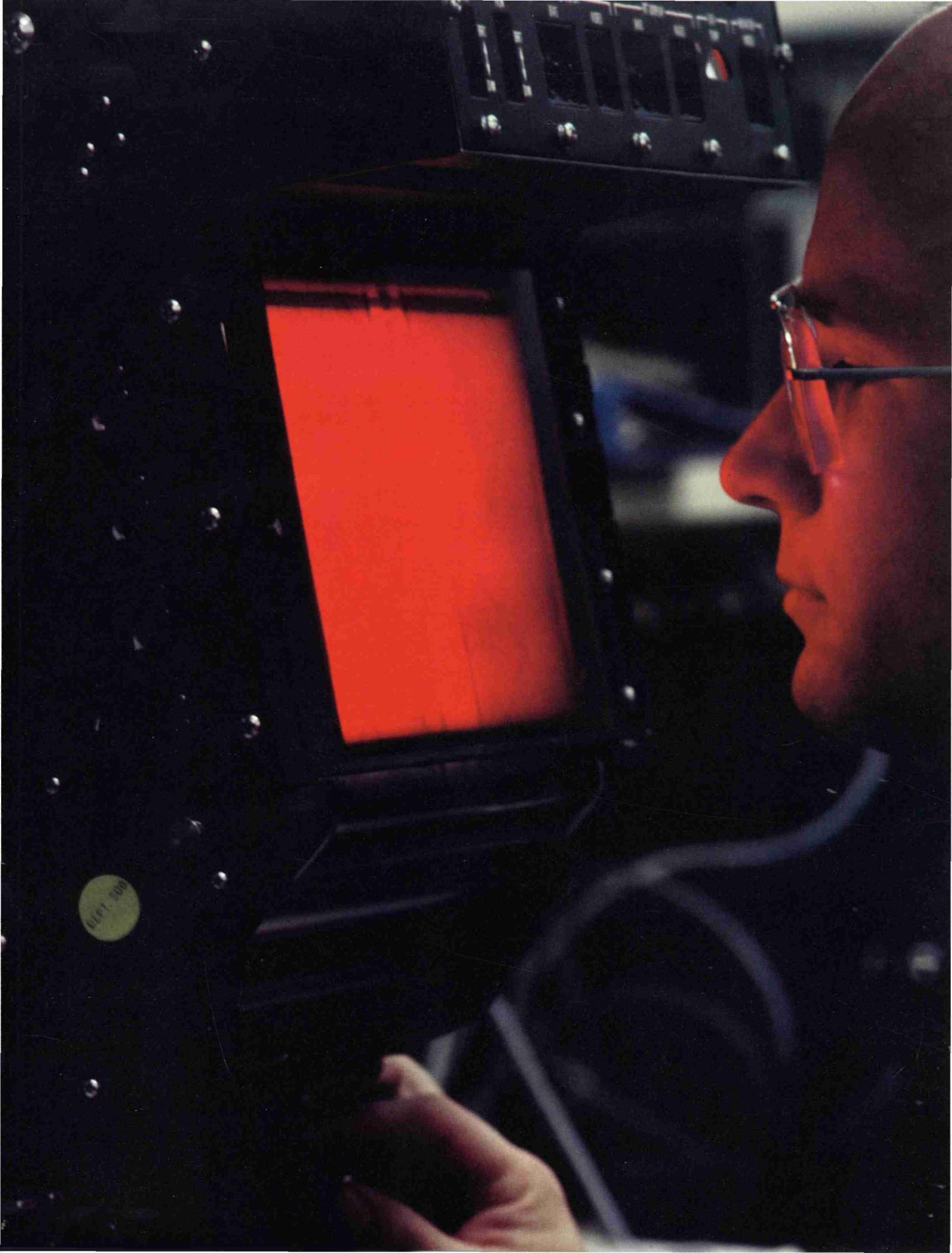
International

Radio Products



(Left) Computer-aided design is integral to the development of electronic circuitry and this new EEC IV engine control module.

(Right) Sophisticated bonding process utilizes new lab equipment, increasing the manufacturing capacity in production of pressure sensor elements.



The group recorded an increase in sales of 6.1 percent and improved operating margin. New orders showed a healthy gain.

Backlog increased moderately in 1981 despite the U.S. government's decision to discontinue funding for the multi-million-dollar Stand-Off Target Acquisition System (SOTAS) program.

Continuing problems at the Specialized Production Center, which put significant pressure on operating results early in the year, influenced the decision to close this unit and shift management of its ongoing contracts to the group's other production organizations.

High-Tech Diversity

The group's longstanding strategy of maintaining diverse operations in high-technology businesses brought tangible rewards in 1981 as it pursued work in the domestic defense and space markets, the international market, and selected opportunities in the commercial marketplace where advanced technology is needed and sought.

The Portable Emergency Transceiver, for example, was originally developed for the international air traffic control market. During the past year, it was accepted for several overseas applications by the U.S. Department of Defense, exemplifying this commercial product's high quality. As a rule, this government agency employs only equipment that is developed to its own requirements and specifications.

Another development was the introduction of a Satellite Survey System that augments the Mini-Ranger® product line of electronic position location equipment. This system operates in conjunction with existing transit satellites that provide geodetic positional accuracy of a few meters. The group continued production of a Communication System Test Set for the two-way radio marketplace served by Motorola's Communications Sector. This product received excellent customer acceptance.

The group's commitment to high quality and reliability was rewarded by a number of major contract awards in 1981. Among them were a \$6 million order from the U.S. Navy for dual tracker Integrated Target Control System ground stations, and an additional \$20 million in follow-on funding to manufacture and test target-detection devices for the Navy's Standard Missile. In the artillery fuze business, sales and bookings increased over 1980 levels.

Included in the increased bookings in 1981 was a \$9.4 million contract from the U.S. Army for proximity fuzes. A \$2.75 million award for artillery-delivered expendable jammers also was received, augmenting the group's electronic counter-measures business.

Two international contracts valued in excess of \$20 million were awarded to the group for its Side-Looking Airborne Modular Multi-mission Radar (SLAMMR™) system. This equipment is utilized for all-weather radar-mapping surveillance of national borders, natural resource exploration, and other similar purposes.

During 1981, the group established the first phase of its Participative Management Program (PMP) by developing performance measurement criteria on six specific programs. Evaluation of the performance of these programs against established criteria is planned for 1982. More than 1,000 employees received PMP training in 1981.

Four Flawless Years in Space

An example of the group's emphasis on high quality was evidenced by the performance of the space-borne communications links between the Voyager-series spacecraft and Earth, links that have operated flawlessly during their four-year exposure to deep space environment.

The group continued to expand its plant facilities in Arizona. A 180,000-square-foot building for certain radar operations is being completed in Tempe; when finished, the group's Arizona facilities will total more than 1,250,000 square feet.

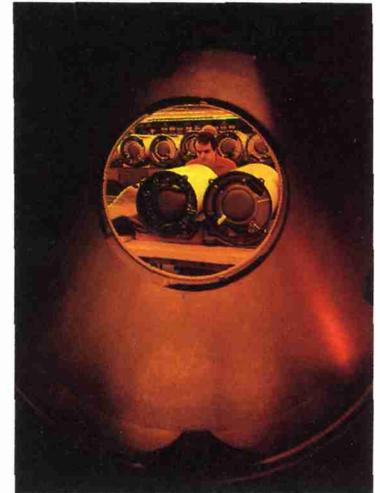
DIVISIONS:

Communications

OPERATIONS:

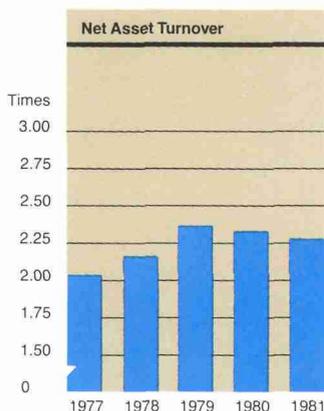
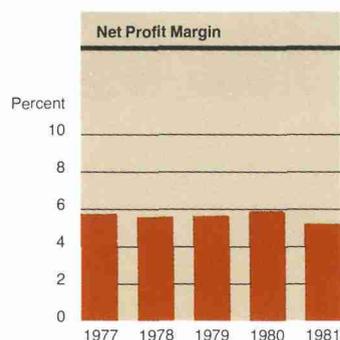
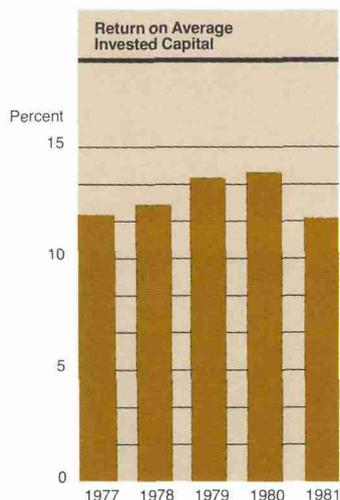
Radar

Tactical Electronics



(Left) Side-looking airborne modular multi-mission radar (SLAMMR™) system which is used in a wide variety of surveillance activities ranging from monitoring shipping traffic, oil slicks and icebergs to forest surveys, mapping, search and rescue missions, demands exacting calibration and testing.

(Right) Production assembler prepares for shipping radar target detection devices used by the U.S. Navy Standard Missile.



Financial Strength

Motorola ended 1981 in excellent financial condition, consistent with our fundamental policy of maintaining a strong balance sheet allowing maximum financial flexibility to withstand difficult times or to take advantage of developing opportunities.

As reported elsewhere herein, net margin was lower than the average of recent years and net asset turnover was down slightly as compared to the last two years. We are disappointed that we did not make continued progress in these two important financial measurement areas. However, when we take into consideration the general economic environment and the strong recessionary and/or competitive pressures in some of our major markets, the year's results appear less disappointing. We have also maintained an increasing strategic investment in research and development, i.e. \$229 million in 1981 as compared to \$200 million for 1980, and fixed asset expenditures, i.e. \$317 million in 1981, compared to \$301 million in 1980, which should continue to prepare us well for the future.

During 1981, total debt increased from \$341 million to \$375 million. Stockholders' equity increased from \$1,152 million to \$1,288 million. Year-end borrowings as a percentage of borrowings plus stockholders' equity was 22.5 percent compared to 22.8 percent at year-end 1980. If marketable securities of \$114 million are netted out of the debt, the ratio would be 16.8 percent at year-end 1981 compared to 17.6 percent a year ago. At year end, the current ratio was 2.25, slightly lower than a year ago. These ratios continue to be within our policy guidelines, and, we believe, are also within the levels of acceptable debt for the maintenance of our strong AA credit rating.

The specifics of the total debt are detailed further in Note 6 to the Financial Statements. In summary, short-term debt at year end totaled \$23 million and long-term debt was \$352 million. Included in the long-term debt was \$220 million of U.S. commercial paper and foreign currency borrowings that have been reclassified to long term because they were fully supported by the revolving credit commitment which is also described in Note

6. Worldwide bank credit facilities backing up our commercial paper and other borrowings were \$586 million at year end, including the \$220 million revolving credit facility mentioned above. \$330 million of these facilities were not being used. It should be noted that in certain countries extending lines of credit is somewhat less formal than in the U.S.

At year end, \$120 million of the total debt was fixed rate. The balance, or \$255 million, was floating rate debt. In spite of high and volatile short-term interest rates, we do not consider this level of floating rate debt excessive because, to a significant extent, i.e. \$114 million, it is financing a high quality portfolio of marketable securities, principally in Puerto Rico, which is also invested at floating rates, with a significant positive after-tax spread over short-term borrowing costs. Most of the balance of the floating rate debt, or \$141 million, consists of foreign currency borrowings which are incurred primarily for the purpose of balancing our foreign exchange exposure around the world, where the flexibility offered by short-term debt provides a significant advantage in managing our various foreign exchange positions. As explained in Note 8, during 1981 \$9 million of interest was capitalized as required by Statement of Financial Accounting Standards No. 34, *Capitalization of Interest*. The capitalized interest relates to the financing of major buildings under development during 1981. Interest expense, net of interest income, and net of capitalized interest in 1981 only, was \$28 million for 1981 compared to \$37 million in 1980.

Quality of Earnings

During 1981, we continued our previously stated policy of causing appropriate provisions to be made for potential losses from accounts receivable, identifiable future liabilities and inventory valuation. We continue to believe that the portion of our reported earnings caused by inventory holding gains and/or inadequate (replacement cost) depreciation is not significant. In 1981, we adopted a more definitive actuarial calculation for our pension fund, while still retaining our interest

and wage rate assumptions. This made it possible for us to lower our pension fund contribution while continuing to maintain the strong funding of our pension liabilities, as detailed in Note 12. We therefore conclude the quality of Motorola's reported earnings remains high.

Inflation

In spite of the above, we are still concerned about the persistent high level of inflation. The highlights of our efforts in this area in 1981 were:

1. We continue to emphasize productivity improvements throughout the corporation to offset the rising cost of payroll and other expenses.
2. After extensive analysis and review, we have revised our internal earnings and performance standards which now call for higher nominal returns on investments and, therefore, a better "real" return.
3. We have extended the excellent progress of the past several years and further reduced accounts receivable to 7.8 weeks at year-end 1981 compared to 8.1 weeks at the end of 1980. Through the year 1981 receivables averaged 7.9 weeks vs. 8.6 for 1980.

Funding Growth

It remains Motorola's objective, over the long term, to "fund" its growth in sales revenue. In our lexicon this means to earn an adequate margin and achieve asset turnover at levels which will provide a reasonable dividend to the stockholders and limit additional borrowings to an appropriate portion of retained earnings growth thereby keeping the debt/debt-plus-equity ratio under a reasonably conservative limit. Funding our growth is a key part of our fundamental policy of maintaining financial strength as described above. 1981's improvement in working capital turnover enabled us to again satisfy this objective despite slightly lower margin on sales and a continued high level of fixed asset expenditures.

We recognize that the 11.9 percent return on invested capital (stockholders' equity plus long- and short-term debt, net of marketable securities) achieved in 1981 would not have enabled us to fund growth at

a more normally higher rate of growth in sales, and that net margin improvement and additional gains in asset turnover are required. We are striving to accomplish same.

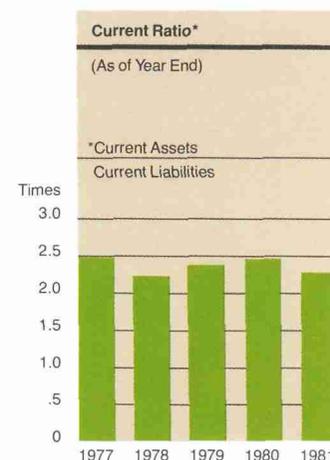
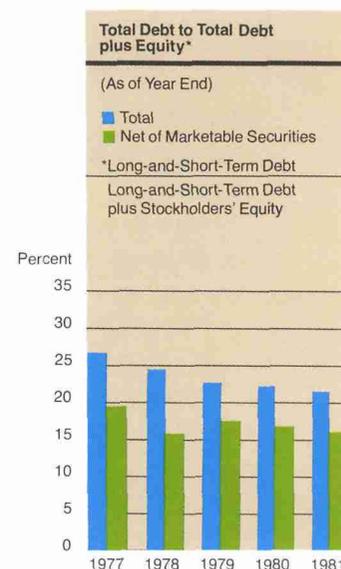
Foreign Currencies

We have discussed in prior annual reports our foreign exchange exposure management system which takes into consideration after-tax foreign currency gains and losses, as well as management's estimate of the gains or losses realized during each year and to be realized in subsequent years as non-U.S. inventories flow through the cost of sales. As further detailed in Note 4, we believe our efforts in this area in 1981 were noteworthy. During the latter part of 1980 and early 1981, we made significant shifts in our borrowings to a variety of non-U.S. currencies. As a result, when the dollar strengthened dramatically in 1981, we had translation gains on this debt which largely offset losses on inventories and other current assets. As a net result, in 1981, the total impact of 1981 foreign currency rate changes on Motorola's earnings was not significant.

However, in spite of our success in the management of foreign exchange balance sheet exposure, a relatively strong dollar has made it very difficult to maintain acceptable profit margins on large parts of our non-U.S. business, as we have been unable to sufficiently raise local currency selling prices on U.S. dollar sourced products because of the general economic softness and extreme competitiveness in some of our major world markets, particularly Europe.

Tax Rate

Motorola's effective tax rate in 1981 was 30.5 percent compared to 32.1 percent (36.0 percent before the effect of the Special Charge) in 1980. The lower rate reflects the research and development tax credit provided in the Economic Recovery Tax Act of 1981, and an increased proportion of Investment Tax Credit. Earnings of our tax-holiday subsidiaries accounted for a somewhat higher share of total company earnings and, therefore, also contributed to the lower tax rate.



Consolidated Balance Sheets

Motorola, Inc., and Subsidiaries, as of December 31

Assets	(Dollars in thousands)	1981	1980
Current Assets:			
Cash		\$ 7,315	\$ 10,640
Short-term investments, at cost (approximating market)		113,702	94,155
Accounts receivable, less allowance for doubtful accounts (1981, \$26,679; 1980, \$32,380)		516,007	488,247
Inventories:			
Finished goods		165,768	156,946
Work in process and production materials		445,369	381,193
Future income tax benefits		74,218	62,712
Other current assets		70,273	73,864
Total Current Assets		1,392,652	1,267,757
Property, Plant and Equipment:			
Land		36,473	27,062
Buildings		511,426	427,754
Machinery and equipment		931,102	768,073
Accumulated depreciation		(547,444)	(442,759)
Property, Plant and Equipment, Net		931,557	780,130
Equipment leased to others, net		46,576	33,490
Sundry Assets		28,614	30,584
Total Assets		\$2,399,399	\$2,111,961
Liabilities and Stockholders' Equity			
Current Liabilities:			
Current maturities of long-term debt		\$ 5,484	\$ 4,767
Notes payable		16,936	—
Accounts payable		237,901	216,968
Accrued liabilities		292,995	254,147
Income taxes payable		66,637	48,959
Total Current Liabilities		619,953	524,841
Long-term debt		352,092	335,748
Noncurrent deferred taxes		83,829	63,331
Other noncurrent liabilities		55,513	36,082
Stockholders' Equity:			
Common stock, \$3.00 par value			
Authorized: 40,000,000 shares			
Outstanding: 1981—31,565,781 shares; 1980—31,355,264 shares		94,698	94,066
Preferred stock, \$100.00 par value issuable in series			
Authorized: 500,000 (none issued)		—	—
Additional paid-in capital		176,705	165,853
Retained earnings		1,016,609	892,040
Total Stockholders' Equity		1,288,012	1,151,959
Total Liabilities and Stockholders' Equity		\$2,399,399	\$2,111,961

See accompanying notes to consolidated financial statements

Statements of Consolidated Earnings and Retained Earnings

Motorola, Inc., and Subsidiaries, Years Ended December 31

(Dollars in thousands, except per share data)

	1981	1980	1979
Sales and Other Revenues	\$3,335,868	\$3,086,439	\$2,700,063
Manufacturing and other costs of sales	2,028,431	1,845,111	1,624,966
Selling, general and administrative expense	855,022	772,788	672,282
Depreciation of plant and equipment	173,123	144,790	110,827
Interest expense, net	27,508	36,664	22,382
Special charge (see Note 3)	—	13,031	10,286
Total Costs and Other Expenses	3,084,084	2,812,384	2,440,743
Earnings before income taxes	251,784	274,055	259,320
Income taxes	76,794	87,974	105,024
Net Earnings	174,990	186,081	154,296
Retained earnings at beginning of year	892,040	751,299	635,906
Cash dividends declared (per common share: 1981, \$1.60; 1980, \$1.45; 1979, \$1.25)	(50,421)	(45,340)	(38,903)
Retained earnings at end of year	\$1,016,609	\$ 892,040	\$ 751,299
Net Earnings Per Share			
based on average daily shares outstanding (see Note 3)	\$ 5.56	\$ 5.96	\$ 4.96
Average shares outstanding (in thousands)	31,489	31,244	31,112

Statements of Consolidated Additional Paid-in Capital

Motorola, Inc., and Subsidiaries, as of December 31

(Dollars in thousands)

	1981	1980	1979
Balance at beginning of year	\$ 165,853	\$ 159,104	\$ 156,376
Share option plans	9,247	5,922	1,847
Conversion of 4½% convertible guaranteed debentures	1,605	827	881
Balance at end of year	\$ 176,705	\$ 165,853	\$ 159,104

See accompanying notes to consolidated financial statements

Statements of Consolidated Changes in Financial Position

Motorola, Inc., and Subsidiaries, Years Ended December 31

(Dollars in thousands)	1981	1980	1979
Sources of Funds			
Net earnings from operations	\$174,990	\$186,081	\$154,296
Add (deduct) non-cash items:			
Depreciation	173,123	144,790	110,827
Amortization of deferred debentures discount, expense and premium	275	159	167
Change in deferred taxes	8,992	(2,261)	14,771
Funds provided from operations	357,380	328,769	280,061
Increase in accounts payable	20,933	—	46,894
Increase in accrued liabilities	38,848	18,717	43,528
Increase in notes payable and current maturities of long-term debt	17,653	1,218	—
Disposals and other changes of plant and equipment, net	17,677	20,111	19,330
Issuance of common stock	11,484	7,342	2,945
Increase in income taxes payable	17,678	—	—
Increase in long-term debt	16,344	40,120	97,537
Decrease in inventories	—	9,573	—
Decrease in sundry assets	1,695	—	1,554
Increase in other noncurrent liabilities	19,431	296	9,819
Decrease in receivables	—	3,610	—
Other sources, net	3,591	—	—
Total Sources of Funds	522,714	429,756	501,668
Uses of Funds			
Increase in receivables	27,760	—	37,612
Increase in inventories	72,998	—	108,871
Fixed asset expenditures	317,287	301,091	265,072
Interest capitalized on fixed asset additions	9,062	—	—
Expenditures for equipment leased to others	28,964	23,689	15,029
Investment in affiliate, 50% owned	—	2,914	—
Decrease in accounts payable	—	13,265	—
Increase in sundry assets	—	11,782	—
Decrease in notes payable and current maturities of long-term debt	—	—	79,414
Dividends	50,421	45,340	38,903
Decrease in income taxes payable	—	1,588	9,835
Other uses, net	—	24,922	4,707
Total Uses of Funds	506,492	424,591	559,443
Net Increase/(Decrease) of Funds	16,222	5,165	(57,775)
Cash and short-term investments beginning of period	104,795	99,630	157,405
Cash and short-term investments end of period	\$121,017	\$104,795	\$ 99,630

See accompanying notes to consolidated financial statements

The Board of Directors and Stockholders
of Motorola, Inc.:

We have examined the consolidated balance sheets of Motorola, Inc., and subsidiaries as of December 31, 1981 and 1980, and the related statements of consolidated earnings and retained earnings, additional paid-in capital and changes in financial position for each of the years in the three-year period ended December 31, 1981. Our examinations were made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned consolidated financial statements present fairly the financial position of Motorola, Inc., and subsidiaries at December 31, 1981 and 1980, and the results of their operations and changes in their financial position for each of the years in the three-year period ended December 31, 1981, in conformity with generally accepted accounting principles applied on a consistent basis.

Peat, Marwick, Mitchell & Co.

Chicago, Illinois
February 10, 1982

1. Accounting Policies: Following is a summary of significant accounting policies used in the preparation of these consolidated financial statements.

Consolidation: The consolidated financial statements include the accounts of the company and all majority-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

Inventories: Inventories are valued at the lower of average cost (which approximates computation on a first-in, first-out basis) or market (i.e. net realizable value or replacement cost.).

Investment Tax Credits: Investment tax credits are recorded as a reduction of income tax expense in the year in which the related assets are placed in service.

Property, Plant and Equipment: Property, plant and equipment is stated at cost. The cost of buildings, machinery and equipment is depreciated generally by the declining balance method over the estimated useful lives of such assets, as follows: buildings and building equipment, 5-50 years, machinery and equipment, 2-12 years.

Reclassification: Interest income, previously included in sales and other revenue, has been netted against interest expense. Accordingly, amounts presented for prior years have been restated.

2. Merger with Four-Phase Systems, Inc.: On December 21, 1981, an agreement was signed between the company and the Board of Directors of Four-Phase Systems, Inc. (Four-Phase) for the proposed merger of Four-Phase into the company. This agreement is subject to approval by the shareholders of Four-Phase at a meeting to be held on March 2, 1982. The proposed merger would be consummated through an exchange of stock, whereby Four-Phase shareholders will receive a maximum of .763 share or a minimum of .634 share of the company's common stock for each share of Four-Phase's common stock. The proposed merger would be accounted for under the pooling-of-interests method.

3. Special Charge: During the second quarter of 1980, the company disposed of certain assets of its U.S. aftermarket autosound business and of its investment in Autovox, S.p.A., an Italian corporation. As a result of the foregoing and including anticipated future costs, a special charge against operations of \$13,031,000 was recorded before an applicable income tax credit of \$15,377,000. The income tax credit principally reflects certain tax benefits not previously recognized in the company's net earnings from accumulated losses of the Autovox operation. The resulting after-tax credit to net earnings amounted to \$.07 per share.

During 1979, the company decided to terminate operations in its electronic timepiece components business as well as certain other peripheral activities of the semiconductor products sector. A special charge was recorded during the year of \$10,286,000 before an applicable income tax credit of \$2,404,000 for termination of these operations. The effect on earnings per share of this special charge was a reduction of \$.25.

4. Foreign Exchange: It is the company's policy to attempt to neutralize its exposure to exchange rate fluctuations, including the value of non-U.S. inventory destined for sale in foreign currencies, where it is both practical and economically justified to do so. Under Statement of Financial Accounting Standard No. 8 (SFAS-8), sales and other revenue are translated from other currencies into U.S. dollars at prevailing exchange rates while inventory must be translated at the rates in effect at the time of purchase. The inventory gain (loss) separately indicated below reflect management's best estimates of the impact of currency rate changes on manufacturing and other cost of sales. The effects of foreign currency exchange rate changes, after applicable income taxes, occurring in 1981, 1980 and 1979 were as follows:

(Dollars in thousands)	1981	1980	1979
Exchange gain (loss) included in earnings from operations before income taxes	\$13,403	\$ 3,839	\$(3,573)
Related income taxes	(211)	1,139	236
Gain (loss) included in net earnings as determined in accordance with SFAS-8	13,192	4,978	(3,337)
Management's estimate of the gain (loss) on non-U.S. inventories due to exchange rate changes arising only in the respective years (unaudited):			
Estimated amount realized during the year included in manufacturing and other costs of sales	(15,059)	(483)	2,091
Estimated amount to be realized in the subsequent year in manufacturing and other costs of sales	959	(3,585)	1,308
Total estimated gain (loss) (unaudited)	(14,100)	(4,068)	3,399
Result of the company's foreign currency exposure management (unaudited)	\$ (908)	\$ 910	\$ 62

5. International Operations: The net earnings from non-U.S. subsidiaries included in earnings from operations are \$24,673,000, \$41,808,000 and \$25,824,000 for 1981, 1980 and 1979, respectively.

The company's equity in net assets of non-U.S. subsidiaries at December 31 consisted of the following:

(Dollars in thousands)	1981	1980
Current assets	\$360,338	\$ 325,408
Property, plant and equipment, net	186,373	174,207
Current liabilities	(106,469)	(78,843)
Other assets (liabilities), net	(108,861)	(126,434)
Equity in net assets of non-U.S. subsidiaries	\$331,381	\$ 294,338

The company's equity in undistributed earnings of profitable non-U.S. subsidiaries at December 31, 1981, amounted to \$215,912,000 (\$181,243,000 at December 31, 1980).

6. Long-Term Debt: Long-term debt at December 31 consisted of the following:

(Dollars in thousands)	1981	1980
Debt outside the United States:		
Commercial paper supported by revolving credit commitments from banks	\$ 8,500	\$ 9,231
Notes supported by revolving credit commitments from banks (generally at prevailing prime rates)	86,736	107,549
Notes payable (generally at prevailing prime rates) due in installments to 1991	20,171	25,581
4½% convertible guaranteed debentures due July 1, 1983	1,846	3,598
Debt in the United States:		
Commercial paper supported by revolving credit commitments from banks	95,528	46,475
Notes supported by revolving credit commitments from banks (generally at prevailing prime rates)	29,236	32,375
Other notes payable (at interest rates from 7% to 14%) due in installments to 2007	5,764	5,884
4¾% debentures due April 1, 1986 (net of debentures held by the company for sinking fund payments, \$5,448 at December 31, 1981; \$6,911 at December 31, 1980)	10,052	10,089
8% sinking fund debentures due October 1, 2007	99,743	99,733
	357,576	340,515
Less current maturities, included in current liabilities	5,484	4,767
Long-term debt	\$352,092	\$335,748

The 4½% convertible guaranteed debentures (issued by Motorola International Development Corporation) are convertible into common stock of Motorola, Inc., at the rate of 25.2 shares for each one thousand dollar principal amount, subject to adjustment in certain events, and are guaranteed as to the payment of principal and interest by Motorola, Inc. The debentures are redeemable at 100% of the principal amount with at least 30 days' notice. For the year ended December 31, 1981, \$1,752,000 in debentures (\$942,000 for the year ended December 31, 1980), were converted into 44,142 shares (23,726 in 1980). At December 31, 1981, there were 46,637 shares (90,779 at December 31, 1980) of Motorola, Inc., common stock reserved for issuance upon conversion of these debentures.

The 8% sinking fund debentures due October 1, 2007, are redeemable at various dates at redemption prices reducing from 106.8% to 100% of the principal amount thereof. Annual sinking fund payments are required beginning October 1, 1988, in installments of \$5 million, which are sufficient to retire 95% of the issue prior to maturity.

The foreign borrowings included above have been undertaken principally for foreign exchange exposure management considerations or as a result of favorable interest rates. Repayment of these loans is not subject to domestic or foreign exchange control limitations.

Under the terms of the revolving credit agreement, as amended in 1981, the full amount of the agreement (\$220 million) extends through December 31, 1984, with \$31 million in equal semiannual reductions thereafter. Any borrowings through June 30, 1984, will be at the prevailing prime commercial rate of interest, for the next two years at the prevailing prime commercial rate of interest plus ¼% and for the last one and one-half years at the prevailing prime commercial rate of interest plus ½%. Under the revolving credit agreement, Motorola has agreed to pay a commitment fee of ⅜% of the unused credit plus maintain a compensating balance of 5% of outstanding borrowings. It is the intention of the company to maintain the availability of the revolving credit agreement during 1982, and therefore, certain notes and commercial paper, both domestic and foreign, which would be classified as short-term absent this agreement, are classified as long-term as follows at December 31:

(Dollars in thousands)	1981	1980
Banks and other	\$132,908	\$ 139,924
Commercial paper	104,028	55,706
Subtotal	236,936	195,630
Amount reclassified to long-term debt	(220,000)	(195,630)
Amount classified as short-term	\$ 16,936	\$ —

The revolving credit agreement restricts retained earnings available for payment of cash dividends. At December 31, 1981, approximately \$713 million (\$587 million at December 31, 1980) of retained earnings were not restricted for dividend payments. The revolving credit agreement also requires the company to maintain a ratio of consolidated current assets to consolidated current liabilities of not less than 1.75:1 (actual was 2.25:1 at December 31, 1981) and consolidated net working capital (as defined) of not less than \$325 million (actual was \$773 million at December 31, 1981).

The aggregate maturities and sinking fund requirements for long-term debt during the next five years are as follows:

1982	1983	1984	1985	1986
\$ 5,484	\$ 8,358	\$ 4,086	\$66,823	\$71,292

In 1985 and 1986 maturities and sinking fund requirements include \$62 million of commercial paper and foreign notes payable supported by revolving credit commitments.

7. Lines of Credit: Including the \$220 million revolving credit agreement mentioned in Note 6, Motorola had lines of credit in the U.S. totaling \$354 million at December 31, 1981. Borrowings in the U.S. on December 31, 1981 were \$124.8 million, leaving \$229.2 million of unused credit facilities (\$258.6 million at December 31, 1980). Additionally, the revolving credit was used to reclassify certain short-term borrowings. The banks are compensated by fees of from ¼% to ⅜% or by compensating balances generally of 3% of the commitment. Any borrowings under these commitments require additional compensating balances of 3% to 10% of the borrowings. The lines mature on varying dates in 1982 but can be withdrawn at any time at the option of the banks. The lines largely support U.S. commercial paper borrowings.

In addition to the domestic lines of credit, Motorola, Inc. has unused credit facilities available from banks outside the U.S. which total approximately \$102 million at December 31, 1981 (\$115 million at December 31, 1980). These credit facilities support short-term borrowings and also can be withdrawn at the option of the banks.

8. Interest Expense: The components of net interest are as follows:

(Dollars in thousands)	1981	1980	1979
Interest expense	\$ 55,888	\$ 48,988	\$ 36,114
Interest income	(19,318)	(12,324)	(13,732)
Interest capitalized	(9,062)	—	—
Net interest	\$ 27,508	\$ 36,664	\$ 22,382

Interest capitalized in 1981 relates to major buildings under development.

9. Income Taxes: The company provides for income taxes based on earnings reported for financial statement purposes. Income tax expense differs from amounts currently payable because of timing differences in the recognition of certain income and expense items for tax and financial statement purposes.

The components of income before income tax expense are:

(Dollars in thousands)	1981	1980	1979
U.S. and U.S. possessions	\$219,834	\$216,885	\$217,942
Other nations	31,950	57,170	41,378
Total	\$251,784	\$274,055	\$259,320

The components of the provision for income taxes are as follows:

(Dollars in thousands)	1981	1980	1979
Taxes currently payable:			
United States	\$ 52,514	\$ 64,422	\$ 60,815
Other nations	5,412	16,498	19,798
State income taxes (U.S.)	9,876	9,315	9,640
Total currently payable	67,802	90,235	90,253
Total change in deferred taxes	8,992	(2,261)	14,771
Total income tax expense	\$ 76,794	\$ 87,974	\$105,024

A reconciliation of the statutory U.S. Federal corporate income tax rate with the financial statement effective income tax rate is as follows:

	1981	1980	1979
Statutory U.S. Federal corporate income tax rate	46.0%	46.0%	46.0%
Increase (decrease) in tax rate resulting from:			
Taxes on earnings in other nations and U.S. possessions	(9.0)	(5.9)	(4.8)
Investment tax credit	(8.2)	(6.3)	(5.5)
Qualified research and development tax credit	(1.2)	—	—
Special charge (see Note 3)	—	(3.4)	.9
State income taxes	2.1	1.9	2.0
Other	.8	(.2)	1.9
Effective tax rate	30.5%	32.1%	40.5%

Income taxes have been provided on aggregate earnings of the company's Domestic International Sales Corporations. Income taxes have been provided on that portion of the company's undistributed earnings of subsidiaries that is anticipated to be repatriated in the future. Income taxes have not been provided on the company's undistributed earnings of subsidiaries (\$140,073,000, \$129,354,000 and \$105,078,000 at December 31, 1981, 1980 and 1979, respectively), where it is intended these earnings will be permanently invested in operations outside the United States. Should these earnings be distributed, foreign tax credits would reduce the additional U.S. income tax which would be payable.

At December 31, 1981, certain non-U.S. subsidiaries had loss carryforwards of approximately \$19 million.

The company's Federal income tax returns have been examined and settled through 1975 with the Internal Revenue Service.

An analysis of the current year changes in deferred taxes is as follows:

(Dollars in thousands)	1981	1980	1979
Difference between depreciation recorded for income tax purposes and financial statement purposes	\$ 2,933	\$ 3,492	\$ 4,096
Income tax on profits of Domestic International Sales Corporations	4,545	6,416	5,848
Withholding tax on Puerto Rico earnings anticipated to be repatriated in the future	3,033	4,718	8,938
Earnings of foreign subsidiaries anticipated to be repatriated in the future	6,128	6,033	4,179
IRS audit adjustments expected to reverse in subsequent years	—	(3,596)	—
(Increase) decrease in:			
Future warranty obligations	314	(101)	(799)
Inventory valuations	(4,842)	(7,423)	(2,634)
Future employee benefits	(4,194)	(4,514)	(1,639)
Allowance for doubtful accounts	2,816	(822)	(1,859)
Other nations	1,866	(3,651)	(1,269)
Other, net	(3,607)	(2,813)	(90)
Total change in deferred taxes	\$ 8,992	\$(2,261)	\$14,771

10. Contingencies: The company is one of 22 defendants in a lawsuit commenced on September 20, 1974, by Zenith Radio Corporation ("Zenith") in the United States District Court for the Eastern District of Pennsylvania. Zenith's complaint alleged conspiracies and other violations of the United States antitrust and antidumping laws.

The complaint also challenges, under the U.S. antitrust laws, the purchase by subsidiaries of Matsushita Electric Industrial Co., Ltd., of Japan (collectively with such subsidiaries, "MEI") of certain of the assets and business of Motorola's former home television receiver business. Prior to the consummation of such purchase, the U.S. Department of Justice, at the request of Motorola and MEI, investigated the antitrust implications of the transaction. During such investigation, the Department of Justice took no legal action to prevent the sale.

For all such alleged violations, Zenith claims monetary damages in the aggregate of more than \$300 million (and the trebling of that amount). It seeks a judgment against the defendants jointly and individually in that amount plus costs and plaintiff's attorneys' fees. It also seeks divestiture by MEI of the assets purchased from Motorola.

In the event a divestiture is ordered or litigation damages are assessed against MEI arising out of such purchase, Motorola has agreed to share to a limited extent the loss, if any, incurred by MEI. The maximum loss for which Motorola could be responsible to MEI under this agreement is \$20 million. Management believes that the company has acted properly throughout and has denied any conspiracy or other violation of law alleged by Zenith.

In March 1981, the District Court granted the company's motion for summary judgment and dismissed all charges against the company and the other defendants named in the lawsuit. Zenith has filed an appeal of that decision in the United States Court of Appeals, Third Circuit.

The company has been defending four class action lawsuits in Northern Illinois which were brought by private plaintiffs and the Equal Employment Opportunity Commission alleging discrimination in certain aspects of employment. On September 23, 1980, the parties of those suits reached a settlement agreement, which is still subject to judicial approval. The company has provided for the anticipated costs under this settlement, which, in the opinion of management, did not have a material adverse effect on the company's results of operations.

The company is a defendant in various other suits and claims which arise in the normal course of business and is obligated under repurchase and other agreements principally in connection with the financing of sales.

In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on the business or financial position of the company.

11. Share Option Plans: Under the company's employee share option plans, shares of common stock have been made available for grant to key employees of the company and certain subsidiaries. The exercise price of options granted may not be less than 100% of market value on the date of grant. Shares subject to option under these plans during 1981 and 1980 are as follows:

	1981	1980
Options outstanding beginning of year (shares)	1,349,614	1,565,043
Additional options granted	503,585	4,150
Options exercised	(233,049)	(173,819)
Options terminated, cancelled or expired	(26,409)	(45,760)
Options outstanding at end of year	1,593,741	1,349,614
Shares reserved for possible future options grants	52,441	530,912
Total shares reserved	1,646,182	1,880,526
Total options exercisable	850,255	879,108

Options exercised during both 1981 and 1980 were at per share prices of \$21.00 to \$51.88. Options outstanding at December 31, 1981, were at per share prices of \$34.19 to \$77.75.

12. Employee Benefit Plans: The company may provide up to 7% of its annual consolidated pretax earnings, as defined in the Motorola Executive Incentive Plan, for the payment of cash incentive awards to key employees. Amounts of \$10,889,000 in 1981, \$13,064,000 in 1980, and \$12,171,000 in 1979 were provided for incentive awards for those years.

The company and certain subsidiaries have contributory profit sharing plans in which all eligible employees participate. The contributions to profit sharing funds in the United States and other nations, which are generally based upon percentages of pretax earnings from those operations, as defined, were \$35,898,000 in 1981, \$42,880,000 in 1980 and \$39,954,000 in 1979.

The company has a noncontributory pension plan covering substantially all domestic employees after one year of service. The company's policy is to fund pension costs as accrued. Expense for the plan under the aggregate cost valuation method was \$12,341,000 in 1981, \$13,860,000 in 1980 and \$16,579,000 in 1979. As of January 1, 1981, the company began utilizing the multiple decrement approach of calculating its pension cost, which is preferred by its actuaries. In connection with the change to the more precise multiple decrement approach, some revised assumptions were made, including employee turnover changes. The effect of these changes was a reduction in the company's pension cost of \$3,900,000. As of January 1, 1980, the company changed certain of its actuarial assumptions, which had the effect of reducing 1980's pension cost by \$4,900,000. On January 1, 1981, the date of the latest actuarial valuation, net plan assets available to pay benefits were \$185,000,000 while the total actuarial present value of accumulated plan benefits was \$91,000,000 (of which \$15,400,000 were nonvested). On January 1, 1980, the net plan assets available to pay benefits were \$134,000,000 while the total actuarial present value of accumulated plan benefits was \$74,000,000 (of which \$8,400,000 were nonvested). The company has assumed a 6% rate of return in the present value of those accumulated plan benefits.

The company also has a supplementary unfunded retirement plan for all officers elected by the Board of Directors. The company is accruing for the actuarial cost of this plan on a current basis. Certain foreign subsidiaries have varying types of retirement plans providing benefits for substantially all of their employees. Essentially all of the cost of these plans is borne by the company. Amounts charged to earnings for these plans were \$3,214,000 in 1981, \$3,611,000 in 1980 and \$2,818,000 in 1979.

13. Information by Industry Segment and Geographic Region. Information about the company's operations in different industry segments is summarized below (dollars in thousands):

	TOTAL SALES AND OTHER REVENUES For the years ended December 31			OPERATING PROFIT For the years ended December 31		
	1981	1980	1979	1981	1980	1979
Communications products	\$1,422,280	\$1,256,521	\$1,118,392	\$162,017	\$144,370	\$139,685
Semiconductor products	1,278,047	1,208,782	990,509	131,289	186,680	170,082
Other products	718,074	688,407	652,231	50,073	26,992	14,371
Adjustments and eliminations	(82,533)	(67,271)	(61,069)	(4,472)	2,476	(3,246)
Industry Totals	\$3,335,868	\$3,086,439	\$2,700,063	338,907	360,518	320,892
General corporate expenses				(56,299)	(36,768)	(28,904)
Interest expense, net				(27,508)	(36,664)	(22,382)
Equity in net loss of 50% owned affiliate				(2,286)	—	—
Adjustment to comply with Statement of Financial Accounting Standard No. 8				(1,030)	—	—
Special charge				—	(13,031)	(10,286)
Consolidated earnings before income taxes				\$251,784	\$274,055	\$259,320
	ASSETS For the years ended December 31			PROPERTY, PLANT AND EQUIPMENT For the years ended December 31 Fixed Asset Expenditures		
	1981	1980	1979	1981	1980	1979
Communications products	\$ 852,909	\$ 735,396	\$ 678,033	\$ 88,240	\$ 78,187	\$ 57,110
Semiconductor products	922,297	814,270	643,726	184,460	176,536	158,751
Other products	468,499	409,339	449,422			
Adjustments and eliminations	(8,500)	(8,695)	(8,044)			
Industry Totals	2,235,205	1,950,310	1,763,137			
General corporate assets	163,997	158,737	140,359			
Equity in net assets of 50% owned affiliate	197	2,914	—			
Consolidated Totals	\$2,399,399	\$2,111,961	\$1,903,496			
				Depreciation		
				1981	1980	1979
Communications products				\$ 42,053	\$ 35,778	\$ 31,602
Semiconductor products				86,922	71,687	50,387

Information about the company's operations in different geographic regions is summarized below:

	TOTAL SALES AND OTHER REVENUES For the years ended December 31			OPERATING PROFIT For the years ended December 31		
	1981	1980	1979	1981	1980	1979
United States	\$3,151,437	\$2,819,402	\$2,436,260	\$297,190	\$299,628	\$267,731
Non U.S.	1,212,783	1,180,834	1,056,054	57,697	76,189	65,368
Adjustments and eliminations	(1,028,352)	(913,797)	(792,251)	(15,980)	(15,299)	(12,207)
Geographic Totals	\$3,335,868	\$3,086,439	\$2,700,063	338,907	360,518	320,892
General corporate expenses				(56,299)	(36,768)	(28,904)
Interest expense				(27,508)	(36,664)	(22,382)
Equity in net loss of 50% owned affiliate				(2,286)	—	—
Adjustment to comply with Statement of Financial Accounting Standard No. 8				(1,030)	—	—
Special charge				—	(13,031)	(10,286)
Consolidated earnings before income taxes				\$251,784	\$274,055	\$259,320

	ASSETS For the years ended December 31		
	1981	1980	1979
United States	\$1,719,059	\$1,455,304	\$1,279,776
Non U.S.	603,321	568,221	541,736
Adjustments and eliminations	(87,175)	(73,215)	(58,375)
Geographic Totals	2,235,205	1,950,310	1,763,137
General corporate assets	163,997	158,737	140,359
Equity in net assets of 50% owned affiliate	197	2,914	—
Consolidated Totals	\$2,399,399	\$2,111,961	\$1,903,496

Motorola operates predominately in one industry, electronic equipment and components. Operations involve the design, manufacture and sale of a diversified line of electronic products, which includes, but is not limited to, two-way radio and communications systems; semiconductors, including integrated circuits and microprocessor units; data communication equipment and systems; electronic components and designs for the U.S. government; automotive electronic equipment and industrial electronic products. For the three years of industry segments presented above, communications and semiconductor products represent the company's

significant industry segments. The company operates manufacturing and distribution facilities outside the United States. No single country outside the United States accounts for more than 10% of consolidated sales and other revenues or total assets.

Operating profit was computed as total revenues less operating expenses. In computing operating profit, none of the following items have been included: general corporate expenses (including specific corporate strategic programs), net interest, income taxes, and a special charge for termination of certain operations in 1980 and in 1979 (see Note 3). During 1981, the company began adjusting its segments' reported operating profits for the impact of foreign currency rate changes in a manner consistent with that described in Note 4. The company has not restated prior periods as the resulting change is not considered material. Also, during 1981, the company changed its method of classifying interest income, previously included in sales and other revenue, which has now been netted against interest expense. Accordingly, amounts presented for prior years have been restated. Identifiable assets are those assets of the company that are identified to classes of similar products or operations in each geographical area, excluding internal receivables. Certain interest-bearing securities, previously reported in the communications products segment's identifiable assets, have been reclassified as corporate assets to be consistent with the company's current method of reporting interest expense net of interest

income and not as a component of operating profits. Corporate assets are principally cash and marketable securities, the corporate administrative headquarters, and future income tax benefits. Intersegment sales were principally semiconductor components, which amounted to \$57,520,000 for 1981, \$38,793,000 for 1980 and \$48,641,000 for 1979. Intersegment and intergeographic transfers are accounted for on an arm's length pricing basis and are consistent with rules and regulations of domestic and foreign taxing authorities.

Sales to United States federal government agencies aggregated \$380 million during 1981. No other single customer (or group of customers under common control) accounted for 10% or more of the company's sales.

14. Lease Commitments: Although the company owns most of its major facilities, it does lease certain office, factory and warehouse space, land, data processing and other sundry equipment.

Total rental expense (including taxes, insurance and maintenance when included in rent) for all non-capital leases (including those with terms of less than one year) reduced by sublease rental income (not considered to be material) was \$49,927,000 in 1981, \$39,133,000 in 1980 and \$32,836,000 in 1979.

Minimum future obligations on all noncancelable leases, net of minimum sublease rentals, with initial terms of one year or more in effect at December 31, 1981, are as follows for the periods ending December 31:

(Dollars in thousands)

1982	\$39,466
1983	22,161
1984	14,986
1985	9,770
1986	4,846
Later	30,115

Some of the leases contain renewal options for varying periods. Certain leases include options to purchase during or at the end of the lease term.

15. Quarterly Financial Data (unaudited): Selected unaudited quarterly financial data for 1981 and 1980 are as follows:

(Dollars in thousands, except per share data)

1981	April 4	July 4	Three Months Ended	
			Oct. 3	Dec. 31
Sales and other revenues (a)	\$807,164	\$844,012	\$817,432	\$867,260
Gross profit before depreciation (b)	\$325,397	\$335,324	\$305,049	\$341,667
Net earnings	\$ 45,151	\$ 48,511	\$ 39,598	\$ 41,730
Net earnings per share	\$ 1.44	\$ 1.54	\$ 1.26	\$ 1.32

1980	March 31	June 30	Three Months Ended	
			Sept. 27	Dec. 31
Sales and other revenues (a)	\$751,176	\$795,758	\$740,611	\$798,894
Gross profit before depreciation (b)	\$294,583	\$317,762	\$298,641	\$330,342
Net earnings (c)	\$ 41,972	\$ 48,405	\$ 46,562	\$ 49,142
Net earnings per share	\$ 1.35	\$ 1.55	\$ 1.49	\$ 1.57

(a) See Note 1 regarding restatement of previously reported amounts.

(b) Profit after manufacturing and other costs of sales exclusive of depreciation expense.

(c) See Note 3 for description of special credit to net earnings of \$2,346,000, or \$.07 per share, recorded during the second quarter.

16. Research and Development Expenditures: Company funded research and development expenditures, which are expensed as incurred, were \$229 million in 1981, \$200 million in 1980 and \$167 million in 1979.

17. Accrued Liabilities: Accrued liabilities consisted of the following at December 31:

(Dollars in thousands)	1981	1980
Taxes (other than income taxes)	\$ 39,367	\$ 31,339
Contribution to employees' profit sharing funds	35,425	42,286
Accrued compensation	72,270	69,375
Dividends payable	12,682	12,564
Other	133,251	98,583
Total accrued liabilities	\$292,995	\$254,147

Statement of Consolidated Earnings

Adjusted for Changing Prices

For the Year Ended December 31, 1981

18. Information on the Effects of Changing Prices (Unaudited):

The Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 33 (SFAS-33) requiring disclosure of selected information as describing certain effects of changing prices on companies' financial statements. For the current year, SFAS-33 prescribes presentation of certain information adjusted for the effects of specific price changes as adjusted for equivalent service potential of replacement assets (current cost method) and as adjusted for the effects of general inflation as measured by the United States Consumer Price Index for All Urban Consumers (CPI-U; constant dollar method).

For the constant dollar method, the effects of inflation were determined by adjusting the historical cost of inventories, property, plant and equipment, cost of sales and depreciation expense to average 1981 dollars based on the CPI-U. With respect to the current cost method, inventories were estimated based on quantities on hand at year end 1981 adjusted to reflect current replacement cost. Cost of sales, on a current cost basis, was estimated by adjusting the historical cost of sales to reflect a LIFO (last in-first out) inventory valuation. The current cost of property, plant and equipment was estimated by adjusting historical cost by externally generated industrial price indices relevant to the plant and equipment of Motorola. Depreciation expense, on a current cost basis, was computed assuming straight line depreciation using the same indices used to develop the estimated current cost of property, plant and equipment.

Motorola, like other companies, has experienced increases in the cost of its production resources. However, the electronic components and equipment industry (e.g. semiconductors and semiconductor based equipment) has been able to accomplish significant productivity gains in its manufacturing processes, which have reduced the cost of products sold beyond the increase in the costs of production resources. Thereby, over time, selling prices generally decrease. Productivity gains in Motorola's other business have reduced the effects of increased production resource costs, resulting in price increases over time at rates significantly less than general inflation.

In consideration of the two methods required to be used to portray the effects of changing prices, the company believes, with some reservations, the current cost method more appropriately represents the impact of inflation on the company, as it at least considers equipment related productivity. This method ignores, however, both productivity gains available from engineering and labor as well as inflationary pressures in selling, general and administrative costs. The required constant dollar method of presentation for this information contradicts the experience of the company, as it completely ignores the effects of productivity. Accordingly, management believes that the constant dollar information presented below and in the five year comparison afterwards, with the exception of the dividends declared per common share adjusted by the CPI-U, does not correctly describe the effects of changing prices on the operations of the company and is therefore misleading.

(In millions of dollars)	Historical Cost	Constant Dollar (ave. 1981 \$'s)	Current Cost
Sales and other revenues	\$3,336	\$3,336	\$3,336
Manufacturing and other costs of sales	2,028	2,081	2,024
Selling, general and administrative expense	855	855	855
Depreciation of plant and equipment	173	185	157
Interest, net	28	28	28
Income taxes	77	77	77
Total Costs and Expenses	3,161	3,226	3,141
Net Earnings	\$ 175	\$ 110	\$ 195
Gain from decline in purchasing power of net amounts owed		\$ 13	\$ 13
Increase in specific prices (current cost method) of inventories and property, plant, and equipment held during the year*			\$ 87
Increase in general price level (constant dollar method)			\$ 63
Excess of current cost method over constant dollar method			\$ 24

*At December 31, 1981, the current cost of inventories was \$612 million and the current cost of property, plant and equipment, net of accumulated depreciation, was \$1,475 million.

The company uses accelerated methods of depreciation in its historical cost financial statements in part to conservatively value earnings as a result of the increasing prices the company will have to pay to replace these assets. The depreciation expense above for both constant dollar and current cost is based on calculations made using the straight line method with asset lives grouped to approximate those used in historical cost presentation. Also, historical cost income tax expense has not been adjusted. Had depreciation expense under the current cost method been computed using accelerated methods, the depreciation charged would have approximated \$217 million for 1981.

Five-Year Comparison of Certain Supplementary Financial Data

Adjusted for the Effects of Changing Prices

Below is a five-year summary of selected information which has been denominated in dollars of average purchasing power for the year 1981.

(In millions of dollars except per share data)	1981	Years Ended December 31			
		1980	1979	1978	1977
Sales and other revenue	\$ 3,336	\$ 3,407	\$ 3,383	\$ 3,083	\$ 2,776
<i>Historical cost information adjusted by the constant dollar method:</i>					
Net earnings	\$ 110	\$ 115	\$ 121	—	—
Net earnings per common share	\$ 3.49	\$ 3.69	\$ 3.88	—	—
Net assets at year end	\$ 1,713	\$ 1,631	\$ 1,581	—	—
<i>Historical cost information adjusted by the current cost method:</i>					
Net earnings	\$ 195	\$ 201	\$ 202	—	—
Net earnings per common share	\$ 6.20	\$ 6.45	\$ 6.49	—	—
Net assets at year end	\$ 1,728	\$ 1,661	\$ 1,599	—	—
Other information:					
Excess of current cost method over constant dollar method for inventory and property, plant and equipment, net	\$ 24	\$ (116)	\$ 48	—	—
Gain from decline in purchasing power of net amounts owed	\$ 13	\$ 19	\$ 8	—	—
Cash dividends declared per common share	\$ 1.60	\$ 1.60	\$ 1.57	\$ 1.46	\$ 1.32
Market price per common share at year end	\$ 55.71	\$ 76.10	\$ 60.14	\$ 53.30	\$ 53.46
Average consumer price index	272.4	246.8	217.4	195.4	181.5

Major Trends: Over the last three years, the company has reported an average annual growth rate in sales of 17% and in earnings of 13%. With respect to the growth rate in earnings, Note 3 to the consolidated financial statements describes the effect on earnings of special charges recorded for termination of certain operations of the company in both 1979 and 1980. The company is engaged in the design, manufacture and sale of a diversified line of electronic equipment and components, principally serving the industrial and commercial markets. A significant aspect in the development of the company and its current competitive position is the synergistic relationship between the technology of the company's semiconductor operations and the company's other products, which utilizes microelectronic components. The rapid growth of semiconductor science has provided other operations of the company with a technological base to further expand and develop their product offerings.

Operations: The company's principal operations are in the semiconductor products and communications products segments. Note 13 to the consolidated financial statements indicates these segments' contribution to the company's overall growth in sales and operating profit for the last three years.

Sales in the communications segment have increased by an average of 16% in the last three years and accounted for over 40% of the company's sales growth over that period. Operating profit also grew during this period but not as rapidly as the growth in sales, and thus operating profit margins have experienced some erosion. Operating profit margins in 1980 and 1981 were approximately equal, but down from the profit margin of 1979. The slippage in margin in 1980 was principally the result of capital and operating investment increases to improve quality and future productivity and develop new products, which increased investment continued in 1981.

The sales growth and operating profit margins of the semiconductor segment are down from previous years. Sales for the segment were up only marginally over 1980 results (5.7%) but have increased an average of 26% over the last three years and accounted for 50% of the company's sales growth over that period. Operating profit margin in 1981 was reduced from the margins of 1979 and 1980. The lower margin was caused by the depressed European semiconductor market, which was aggravated by the strengthening U.S. dollar and the general deterioration of prices in certain products in the semiconductor industry. The segment has continued to make strategic investments in fixed assets (14% of sales in 1981) and research to improve quality and productivity and develop new and more technologically advanced products.

The company's net earnings have increased from \$4.96 per share in 1979 to \$5.96 in 1980 and then declined to \$5.56 in 1981. The decline from 1980 is principally due to the profit erosion in the semiconductor segment and a general decline in the company's profitability in European locations which has been aggravated by the

strengthening U.S. dollar. The increase in profits in 1980 from 1979 is due to increased sales and operating profits of the communications and semiconductor product segments, disposition of several unprofitable operations, cost control programs and a decline in the company's effective tax rate.

Liquidity and Capital Resources: At December 31, 1981, total debt outstanding (see Note 6) was \$374.5 million, up from \$340.5 million in 1980, and represented 22.6% of the company debt plus stockholders' equity. (Down from 22.8% and 23.0% in 1980 and 1979, respectively). When calculated after deducting marketable securities the net debt represents 16.8% of net debt plus stockholders' equity, compared to 17.6% on a similar calculation in 1980. At December 31, 1981, the company had unused lines of credit available of approximately \$330 million and has short-term investments of more than \$113 million, principally at Puerto Rico subsidiaries, which are available for future repatriation.

At year end, the company's current ratio was 2.25, slightly lower than the previous two years, but still within the company's acceptable range. Working capital increased during the year to \$773 million from \$743 million a year earlier. The company has continued its emphasis on asset management, and accordingly, accounts receivable and inventory have increased 5% and 12% respectively since 1979 while sales have increased by 24%. At year end, accounts receivable represented 7.8 weeks of sales, compared with 8.1 weeks in 1980 and the 8.4 weeks in 1979.

The company's fixed asset expenditures in 1981 were \$317 million (an increase of \$52 million from 1979) and for the third consecutive year represent approximately 10% of sales. As noted in Note 13, for each of the last three years the semiconductor segment has accounted for approximately 59% of these expenditures. As of December 31, 1981, the company had outstanding commitments of approximately \$159 million for expansion of manufacturing facilities or equipment, which it expects to fund through operations, or, over the short term, commercial paper or other short-term borrowings. The company owns the majority of its manufacturing and productive resources and thus has only a minimal amount of such resources under lease.

*The five-year selected financial data required to be presented by the Securities and Exchange Commission is included in the company's ten-year financial summary and Note 18 to the consolidated financial statements.

Ten-Year Financial Summary

(Dollars in thousands, except per share data)

Operating Results from Continuing Operations (1)	1981	1980	1979
Sales and other revenues	\$3,335,868	\$3,086,439	\$2,700,063
Manufacturing and other costs of sales	2,028,431	1,845,111	1,624,966
Selling, general & administrative expense	855,022	772,788	672,282
Depreciation and amortization of plant and equipment	173,123	144,790	110,827
Interest expense, net of interest income	27,508	36,664	22,382
Special charge (3)	—	13,031	10,286
Total costs and other expenses	3,084,084	2,812,384	2,440,743
Earnings from continuing operations before income taxes	251,784	274,055	259,320
Income taxes	76,794	87,974	105,024
Earnings from continuing operations	174,990	186,081	154,296
Return on sales	5.3%	6.0%	5.7%
Discontinued operations—profit (loss)	—	—	—
Net earnings	\$ 174,990	\$ 186,081	\$ 154,296
Per Share Data (3)			
Earnings from continuing operations	\$ 5.56	\$ 5.96	\$ 4.96
Net earnings	5.56	5.96	4.96
Dividends declared (4)	1.60	1.45	1.25
Balance Sheet and Other Data (2)			
Total assets	\$2,399,399	\$2,111,961	\$1,903,496
Working capital	\$ 772,699	\$ 742,916	\$ 708,551
Current ratio	2.25:1	2.42:1	2.35:1
Short-term debt	\$ 22,420	\$ 4,767	\$ 3,549
Long-term debt	352,092	335,748	295,628
Stockholders' equity	1,288,012	1,151,959	1,003,876
Less short-term investments	113,702	94,155	84,141
Total invested capital	\$1,548,822	\$1,398,319	\$1,218,912
Return on average invested capital	11.9%	13.9%	13.5%
Return on average stockholders' equity from continuing operations	14.3%	17.3%	16.3%
Year-end employment (approximate)	76,300	71,500	75,000
Average shares outstanding (in thousands)	31,489	31,244	31,112

(1) In May 1974, Motorola sold its home television receiver business. Consequently, the 1972 and 1973 operating results have been adjusted to remove the effect of the television business.

(2) The 1972 and 1973 data have not been restated to exclude the home television receiver business.

(3) See Note 3 to the consolidated statements for a description of the special charge in 1979 and 1980 and the related effects on earnings per share.

(4) See Note 6 to the consolidated statements for discussion of dividend restrictions on retained earnings. Future dividend declarations will depend on operating results and capital requirements.

1978	1977	1976	1975	1974	1973	1972
\$2,211,601	\$1,849,713	\$1,534,108	\$1,336,158	\$1,384,127	\$1,211,214	\$ 905,410
1,339,806	1,139,877	940,389	859,035	886,556	759,920	609,810
548,667	426,304	354,602	319,401	289,153	242,859	168,233
83,340	72,770	57,916	52,947	44,564	33,825	28,665
19,398	19,142	13,542	18,107	22,384	13,834	8,850
—	—	—	—	—	—	—
1,991,211	1,658,093	1,366,449	1,249,490	1,242,657	1,050,438	815,558
220,390	191,620	167,659	86,668	141,470	160,776	89,852
95,208	84,669	75,661	41,484	64,222	72,689	41,187
125,182	106,951	91,998	45,184	77,248	88,087	48,665
5.7%	5.8%	6.0%	3.4%	5.6%	7.3%	5.4%
—	—	(2,470)	—	(2,184)	(3,477)	4,477
\$ 125,182	\$ 106,951	\$ 89,528	\$ 45,184	\$ 75,064	\$ 84,610	\$ 53,142
\$ 4.04	\$ 3.46	\$ 3.00	\$ 1.49	\$ 2.56	\$ 2.95	\$ 1.67
4.04	3.46	2.92	1.49	2.49	2.83	1.83
1.05	.88	.735	.70	.60	.45	.312
\$1,656,557	\$1,419,859	\$1,191,018	\$1,027,538	\$1,096,891	\$1,005,506	\$ 781,055
\$ 619,930	\$ 567,044	\$ 439,181	\$ 408,336	\$ 424,845	\$ 431,543	\$ 326,414
2.20:1	2.47:1	2.27:1	2.62:1	2.33:1	2.42:1	2.36:1
\$ 82,963	\$ 77,718	\$ 64,578	\$ 54,458	\$ 90,191	\$ 69,326	\$ 53,957
198,091	200,279	101,388	124,369	154,960	151,088	81,052
885,538	788,044	706,482	627,072	596,626	529,993	443,380
121,429	85,681	60,972	38,116	26,336	21,982	30,092
\$1,045,163	\$ 980,360	\$ 811,476	\$ 767,783	\$ 815,441	\$ 728,425	\$ 548,297
12.3%	11.8%	11.8%	5.7%	9.8%	13.8%	9.3%
15.0%	14.3%	13.9%	7.4%	13.6%	18.1%	12.0%
68,000	60,000	56,000	47,000	51,000	64,000	56,000
31,019	30,933	30,699	30,384	30,178	29,865	29,117

Stock Price and Dividend Data

The principal market for Motorola Common Stock is the New York Stock Exchange.

The table (right) sets forth the high and low sales price per share for Motorola Common Stock as reported by the Consolidated Tape Association and the dividends declared and paid for the periods indicated:

1981	Stock Prices		Dividends		1980	Stock Prices		Dividends	
	High	Low	Declared	Paid		High	Low	Declared	Paid
1st Quarter	\$73.25	\$56.88	\$.40	\$.40	1st Quarter	\$63.63	\$46.50	\$.35	\$.35
2nd Quarter	90.50	67.63	.40	.40	2nd Quarter	51.75	42.50	.35	.35
3rd Quarter	69.75	60.00	.40	.40	3rd Quarter	69.63	48.38	.35	.35
4th Quarter	73.88	55.75	.40	.40	4th Quarter	84.00	61.25	.40	.35
			\$1.60	\$1.60				\$1.45	\$1.40

The number of holders of record of Motorola Common Stock on January 18, 1982, was 9,256.

Directors

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 President, Intercal, Inc.,
 Management consulting firm

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JOHN F. MITCHELL

JOHN J. ANTALEK
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 TRW Inc.

JAMES W. BIRKENSTOCK
 President, Intercal, Inc.,
 Management consulting firm

JOHN T. HICKEY

M. JOSEPH LAMBERT
 Retired; formerly Senior Vice
 President and Chief Financial
 Officer, Kraft, Inc.

STEPHEN L. LEVY

HOMER L. MARRS
 Retired; formerly Senior Vice
 President and Assistant to the Chief
 Operating Office, Motorola, Inc.

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 Chairman of the Board and Chief
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 Company, Market research
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 Business consultant; formerly
 Commissioner, Federal
 Communications Commission,
 and Member, U.S. House of
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WILLIAM G. SALATICH
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ELMER H. SCHULZ
 Director Emeritus,
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WALTER B. SCOTT
 Retired; formerly Vice President,
 Motorola, Inc.

GARDINER L. TUCKER
 Vice President for
 Science and Technology,
 International Paper Company

B. KENNETH WEST
 President, Harris Bankcorp, Inc.,
 and Harris Trust and Savings Bank

DIRECTOR EMERITUS

ELMER H. WAVERING
 Formerly Vice Chairman and
 Chief Operating Officer,
 Motorola, Inc.

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Motorola, Inc.

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 John F. Mitchell *President and Assistant Chief Operating Officer*
 *Stephen L. Levy *Senior Vice President, Japanese Operations*
 *Joseph F. Miller, Jr. *Senior Vice President and Assistant to the Chief Executive Office*
 Ralph W. Elsner *Vice President and Deputy to the Chief Executive Office*
 *Levy Katzir *Vice President and General Manager, New Enterprises*

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 Donald R. Jones *Vice President and Assistant Chief Financial Officer*
 Kenneth J. Johnson *Vice President and Controller*
 William P. Meehan *Vice President and Treasurer*
 Richard H. Weise *Vice President, General Counsel and Secretary*

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 L. Curtis Foster *Vice President and Corporate Director of Engineering*
 *Jack Germain *Vice President and Director of Quality*
 Earl R. Gomersall *Vice President and Corporate Director of Operational Support*
 R. James Harring *Vice President and Corporate Director of Planning*
 C. Travis Marshall *Vice President and Corporate Director of Government Relations*
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 *James D. Burge *Vice President and Director of Personnel, United States*
 *James Donnelly *Vice President and Director of Personnel, International*

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 Communications International Group* 44 22
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 Mobile Division* 50 23
 R. LaVance Carson *Vice President and General Manager,
 Special Markets Division* 52 27
 *Gordon Comerford *Vice President and Sector Director
 Of Business Management* 45 7
 *George M. C. Fisher *Vice President and General Manager,
 Paging Division* 41 5
 Kenneth R. Hessler *Vice President and General Manager,
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 Systems Division* 45 8
 *Arthur P. Sundry *Vice President and General Manager,
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 *Morton L. Topfer *Vice President and General Manager,
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 Ira W. Walker *Vice President and General Manager,
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 *James A. Norling *Vice President and General Manager,
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 Automotive and Industrial Electronics Group* 52 14

GOVERNMENT ELECTRONICS GROUP

*James R. Lincicome *Vice President and General Manager,
 Government Electronics Group* 56 31

As of 12/31/81

Age Years of Service

*Assumed new position or advanced in rank in 1981.

Motorola Products

Communications Sector

Communications control centers
Component products
Electronic command and control systems
Emergency medical communications systems
Microwave communications systems
Mobile and portable data communications systems
Mobile and portable FM two-way radio communications systems
Mobile and portable radiotelephone systems
Precision instruments
Radio paging systems
Signaling and remote control systems

Semiconductor Products Sector

Add-in memory systems
Bipolar and MOS integrated circuits
Bipolar VLSI Macrocell arrays
Custom circuit design service
Custom MOS and bipolar circuits
Development system hardware and software
Electronic materials
Fiber optic devices
Field-effect transistors
Memory systems
Microcomputer board-level products
Microprocessor support systems
Microprocessors
Microwave components
NMOS, CMOS and bipolar memories
Optoelectronics
Power and small signal transistors
Pressure and temperature sensors
Rectifiers
RF modules
RF power and small signal transistors
Semiconductor chips
Single-board computers
Suppressors
Telecommunications digital switching
Thyristors
Triggers
Varactors
Zener and tuning diodes

Information Systems Group

Circuit access and test systems
Diagnostic and test equipment
Distributed data processing equipment
Electronic data switches
Front-end processors
Integral modems
Intelligent network processors
Intelligent terminal systems
Low-, medium- and high-speed modems
Multiplexers
Network control and management systems
Technical control facilities
Telephone line conditioning equalizers
Telephone traffic accounting and control systems
Voice digitizers

Automotive and Industrial

Electronics Group

Alternator charging systems
Automatic scoring systems for bowling
Automotive and industrial digital instrumentation (Tachometers, speedometers, odometers, hourmeters)
Automotive and industrial digital monitoring systems
Automotive sensors
Automotive stereo systems
Citizens band radios
CRT display modules (5" to 23")
Digital appliance controls
Electronic engine controls
Electronic engine governors
Electronic ignition systems
Electronic regulators
Engine management systems

Government Electronics Group

Advanced seeker systems
Antenna and microwave systems
Data security modules
Drone command and control systems
Electronic countermeasures systems
Electronic positioning and tracking systems
Fixed and satellite communications systems
Fuze systems
Intelligent display terminals and systems
Military radios
Missile and aircraft instrumentations
Missile guidance systems
Satellite survey and positioning systems
Satellite terminals
Secure communications
Space communications systems
Surveillance radar systems
Tracking and command transponder systems
Video processing systems and products

Other Businesses

Plasma processing systems

Motorola Worldwide

Major facilities in:

Australia Melbourne	United States Alabama Huntsville
Canada Ontario Rexdale Willowdale	Arizona Mesa Phoenix Scottsdale Tempe
Costa Rica San Jose	California Cupertino Novato
France Angers Toulouse	Florida Fort Lauderdale
Hong Kong Kowloon	Illinois Franklin Park Schaumburg
Israel Tel-Aviv	Iowa Mount Pleasant
Japan Shikawa Tokyo	Massachusetts Mansfield
Korea Seoul	Missouri Joplin
Malaysia Kuala Lumpur Penang Seremban	New Mexico Albuquerque New York Arcade
Mexico Guadalajara Mexico City	Texas Austin Fort Worth Seguin
Philippines Manila	West Germany Munich Taurusstein
Puerto Rico Vega Alta Vega Baja	
South Africa Johannesburg	
Switzerland Geneva	
United Kingdom Basingstoke East Kilbride Stotfold	



Corporate Offices
Motorola Center
1303 E. Algonquin Rd.
Schaumburg, Ill. 60196
Phone: (312) 397-5000

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