

Fairchild Camera and Instrument Corporation Annual Report

"To Our Shareholders:

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1972

Three-Year Highlights

	1972	1971	1970
For the year:			
Net sales	\$223,896,000	\$193,088,000	\$219,138,000
Income (loss) before extraordinary credit	7,726,000	(7,841,000)	(19,309,000)
Extraordinary credit	3,300,000	—	—
Net income (loss)	11,026,000	(7,841,000)	(19,309,000)
Average number of common and common equivalent shares outstanding	4,877,184	4,385,120	4,385,715
End of year:			
Working capital	\$ 75,833,000	\$ 46,583,000	\$ 49,115,000
Shareholders' equity	86,691,000	57,798,000	65,619,000
Number of employees	18,866	15,144	14,074
Number of shareholders	11,836	14,486	15,795
Shares issued	4,979,476	4,387,620	4,387,620
Per share statistics:			
Income (loss) before extraordinary credit	\$1.58	\$(1.79)	\$(4.40)
Extraordinary credit	.68	—	—
Net income (loss)	2.26	(1.79)	(4.40)
Shareholders' equity	17.41	13.17	14.96

To Our Shareholders:

It was a good year for Fairchild. The company resumed profitable operations in the first quarter and increased both sales and earnings with each successive period. This performance reflected greater operating efficiency as well as higher sales, which climbed 16 percent over 1971. Total costs and expenses rose only \$10 million during the year while sales increased \$30.8 million, resulting in a substantial earnings turnaround for the company.

Backlog at the end of 1972 was significantly above the level of a year ago. A considerable portion consisted of orders from new customers and for new applications, evidence of the widening market base for Fairchild's products and technologies.

Net income in 1972 was \$11,026,000, equal to \$2.26 per share, on sales of \$223,896,000. This compares with a 1971 loss of \$7,841,000, or \$1.79 per share, on sales of \$193,088,000. Results for 1972 included an extraordinary item of \$3,300,000, or 68 cents per share, due to a tax credit from carryforward of prior years' operating losses.

Fourth quarter net income was \$5,234,000, or \$1.01 per share, on sales of \$65,359,000. Net income included an extraordinary tax credit of \$1,945,000, or 38 cents per share.

Last year signaled a strong renewal of growth in our electronics markets. The domestic recovery which began in late 1971 continued throughout the year, coupled with a sharp upturn in foreign business.

During this period, Fairchild's Semiconductor Components divisions realized major sales gains and now account for more than 70 percent of total corporate volume. Sales in the Commercial Systems area also grew, led by our electronic test, aircraft and audio/visual equipment. Shipments by the Federal Systems Group declined, due chiefly to a planned reduction in ordnance-related business.

The company continued to improve operational and financial controls in 1972. Systems have been instituted which provide better measurement and forecasting, and monitor business trends both in the general economy and our specific markets.

The corporation's balance sheet was strengthened last year to assure a sound base for anticipated growth. In June the

company issued 500,000 additional shares of common stock, providing net proceeds of \$15.9 million. Shareholders' equity at the end of 1972 was \$86.7 million, against \$57.8 million a year earlier. Working capital increased to \$75.8 million, compared to \$46.6 million at the close of 1971. While the company had \$9.5 million in foreign bank borrowings at year end, its \$25 million line of domestic bank credit remains unused.

In addition to these fiscal improvements, the company expanded worldwide operations in 1972. Employment rose from 15,100 to approximately 18,900 persons. Fairchild was largely able to respond to last year's rapid sales buildup by utilizing available manufacturing capacity. Continued growth will require that we accelerate our rate of investment in new plant and equipment this year, on a controlled basis, commensurate with forecasted demand.

The capital program for 1973 includes a new plant for processing silicon, the basic semiconductor material, and added facilities for fabricating silicon wafers at our factories in California, Maine and West Germany. The company's offshore assembly capacity in Korea, Hong Kong and Singapore will also be enlarged during the current year.

The company continues to emphasize participation in foreign markets, particularly Europe and Japan, where semiconductor consumption is now rising faster than in the United States. The semiconductor business today is a growing, worldwide enterprise. Multinational companies with overseas plants, such as Fairchild, have been able to meet foreign competition both at home and abroad, stimulating domestic employment and favorably influencing the United States balance of trade.

Last summer we took an important further step in multinational activities, concluding an agreement with TDK Electronics, Ltd., of Tokyo to establish a joint company which will produce and market semiconductors in Japan. Ownership of the firm, which incorporated Fairchild's existing facility on Okinawa, is equally shared by the partners. Plans currently are under way for the joint venture to establish another assembly plant in the Far East.

Within the semiconductor industry two other trends could be detected in 1972.

First was the emerging dominance of integrated circuits, a product category whose U.S. sales overtook those of discrete devices for the first time last year. This rapidly growing sector has for several years comprised the largest share of Fairchild's semiconductor business.

The second trend relates to increasing semiconductor penetration in a host of end-product markets—including automobiles, cameras, calculators, color television sets and watches. These evolving applications complement the established computer and aerospace markets, and are a potential source of sustained, long-term demand.

Fairchild is well positioned to capitalize on these industry directions. Our research and development activity has generated new products and technologies, such as the Isoplanar process for increased circuit density, which have steadily won market acceptance. Last year, over one-third of our semiconductor sales involved devices introduced since 1970. In late 1972, after an extensive joint development effort, Fairchild obtained a major order from the Polaroid Corporation to provide electronic modules for the new SX-70 instant-picture camera. Comparable programs are under way in the automotive and other fields.

Within the Commercial Systems area, demand for our Sentry Series of semiconductor test systems remained strong. This equipment successfully entered a promising new market last year, the testing of printed circuit boards in avionic systems. Shipments of audio/visual equipment and aircraft products also increased during the year.

The Federal Systems divisions in 1972 introduced a number of advanced electronic products in the fields of data conversion, reconnaissance photography and radio spectrum surveillance. Federal Systems acquired significant new orders under both government and non-defense contracts, in the United States and abroad.

A research highlight of potentially far-reaching significance for both our components and systems businesses was Fairchild's progress in the field of charge-coupled devices. This developing technology, utilizing electrical charges for information transfer, is applicable to future photosensing, imaging and computer memory systems.



C. Lester Hogan, seated
Walter Burke

On March 15, 1973, Fairchild and the General Electric Company announced they have agreed in principle to the acquisition by Fairchild of General Electric's process automation business, involving the GE-PAC and GE-TAC trademarked products. Sales of these products, which are sold to electric utility and industrial users, exceeded \$27 million last year. Terms call for a new company to be formed in Phoenix, Arizona, in which Fairchild will have an 81 percent interest for approximately \$8 million, subject to post closing adjustments. General Electric will retain a 19 percent interest for a period of up to five years. The transaction is subject to execution of a definitive contract and approval by our respective boards of directors.

The past year provided positive momentum for the company and a foundation for growth. The 1973 outlook is for continuing strength in our electronics markets, both domestic and foreign.

Walter Burke
Chairman of the Board

C. Lester Hogan
President and Chief Executive Officer

March 15, 1973

Operations Review

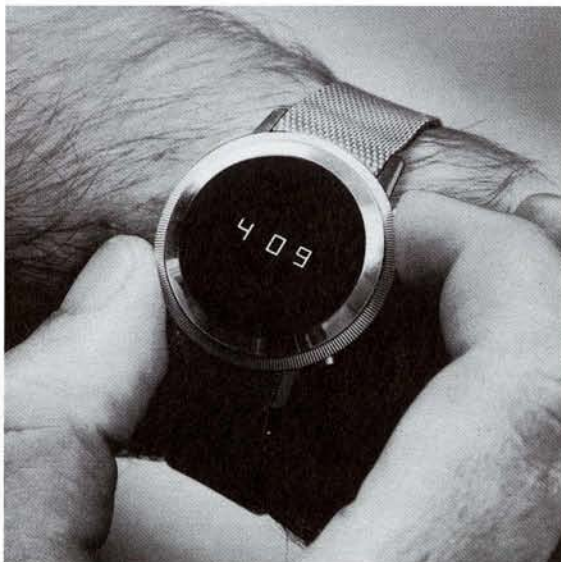
Semiconductor Components

Semiconductor sales by U.S. manufacturers last year totaled a record \$1.45 billion, up 25 percent over 1971. With solid-state technology continuing to permeate the industrialized world, 1973 forecasts call for U.S. shipments of approximately \$1.70 billion, up 17 percent over last year.

Shifts in order patterns during 1972 suggest a fundamental transition in semiconductor markets. Growth in orders booked ranged across the market spectrum, with no single segment dominating, and a large percentage carried long-term delivery dates, signifying user confidence in future requirements. Equally significant was the increase in customers ordering semiconductors for the first time, indicating many manufacturers are converting electromechanical functions to solid-state technology. Last year's growth in consumer applications, such as home entertainment equipment, automobiles and cameras, also is beginning to offset the industry's dependence on the computer and related markets.

Other shifts in direction were evident in 1972. The sales balance between the major semiconductor categories—integrated circuits and discrete devices—continued to move toward ICs, which for the first time last year accounted for more than half of U.S. consumption. And projections call for IC sales to surpass discrete devices on a worldwide basis by 1974. This is favorable to Fairchild because more than 60 percent of the company's semiconductor production

Fairchild provides the light-emitting-diode display for this Uranus watch as well as for other brands. The brilliant red numerals are readable under a wide range of ambient-light and temperature conditions.



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already falls in the faster-growing integrated circuit sector.

Also noteworthy was the increasing rate of foreign semiconductor consumption. Projections now call for non-U.S. markets to increase to 52 percent of worldwide sales by 1976, compared to 43 percent last year, illustrating the potential of the company's operations in Europe and Japan.

Fairchild's Performance

Semiconductor sales in 1972 were the highest in Fairchild's history, accounting for more than 70 percent of the company's volume. All operating units in Semiconductor Components increased shipment levels, with particular strength in the digital, discrete and linear product lines.

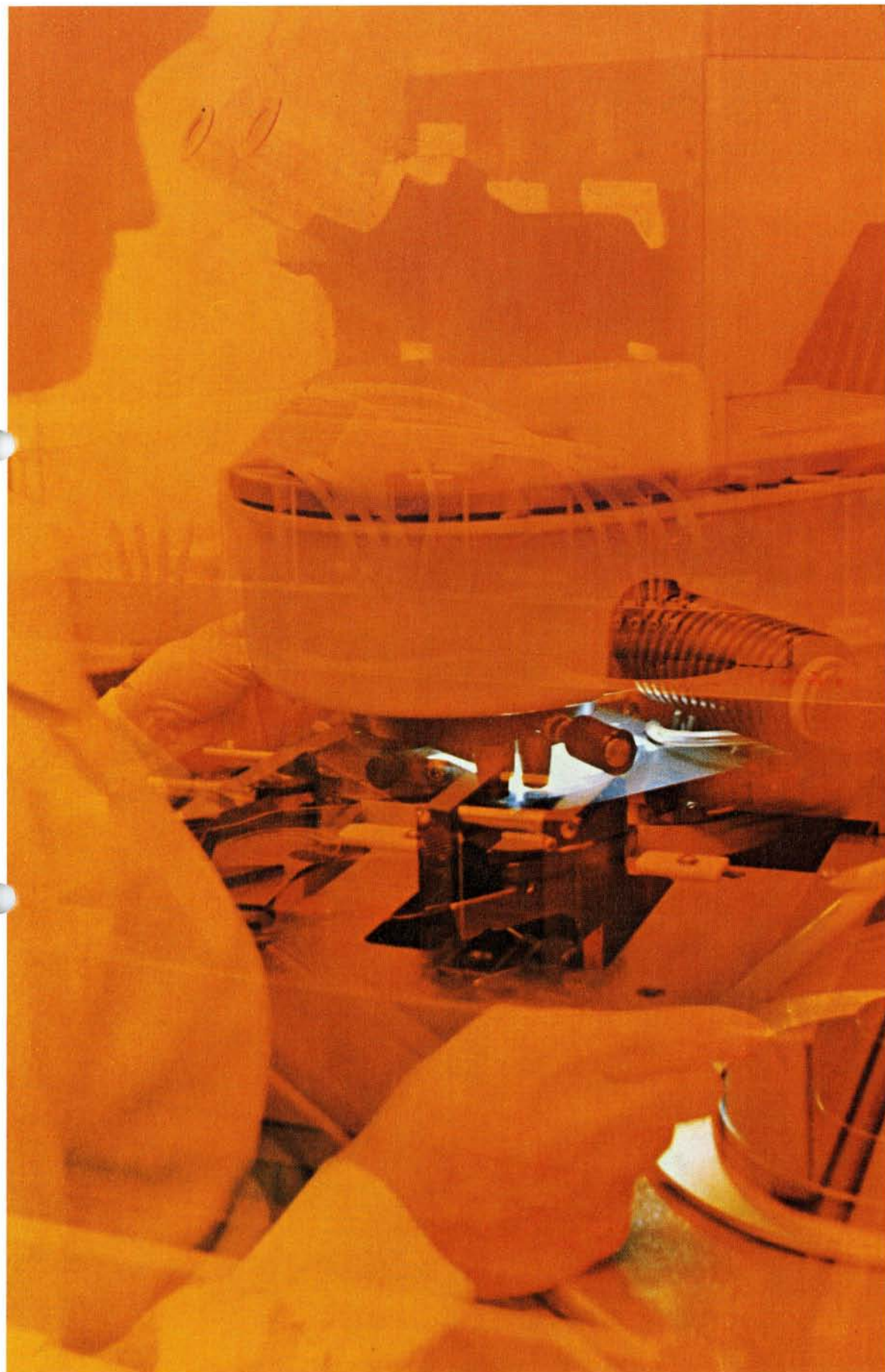
Last year a three-pronged market strategy was implemented to capitalize on developing opportunities. Company operations are being vigorously expanded in Europe and the Far East. Heavy emphasis also is being placed on carefully selected joint development programs with mass producers of consumer products, such as autos and cameras. At the same time, the customer base was broadened and diversified.

In 1970 Fairchild served some 600 individual semiconductor customers, with major concentration in computer applications. By last year the company had increased its sales base to more than 2000 customers, with a significant portion unrelated to the computer industry, though this market continues to be important to Fairchild. To a greater degree than in previous years, sales attention was devoted to small customers with attractive growth prospects.

Multinational Operations

The company last year stepped up its multinational operations in response to growing foreign semiconductor demand. Most significant was establishment of TDK-Fairchild Corporation, a 50/50 joint venture with TDK Electronics, Ltd., of Tokyo, a leading Japanese electronics company. Founded in 1935, TDK produces magnetic recording tape, ferrite materials, memory cores, ceramic capacitors and coil components.

The joint company will manufacture and distribute semiconductor products in Japan, utilizing the Okinawa plant as its initial manufacturing facility. Production of



Yellow light required in semiconductor production areas dominates this composite photo. The yellow portion of the spectrum does not affect the photosensitive materials, but after the mask (or circuit pattern) is in place, the technician exposes the wafer to ultraviolet light, visible at center, which solidifies a protective coating where desired. Seven such steps, interspersed with diffusion of compounds into openings created by masking, are required to complete this Isoplanar process. Introduced by Fairchild in 1971, Isoplanar has become a leading technology for high-volume production of computer memory circuits.

light-emitting-diode displays began early in 1973, and future plans call for a manufacturing plant in the Far East.

Semiconductor sales in Europe improved markedly after nearly two years of down-trend. The company increased market share last year, with digital devices for computers and linear circuits for consumer products in heaviest demand. The factory in Wiesbaden, West Germany, which also is Fairchild's European headquarters, is scheduled to become the company's first foreign location with wafer fabrication capability, and its testing and warehouse facilities are being expanded.

Manufacturing Facilities

Manufacturing capacity in other locations also was increased last year. A recently purchased facility in Seoul, Korea, now being equipped for assembly and testing, will double capacity in that location, and production space also was added in Hong Kong. During 1972 a new MOS facility equipped for wafer fabrication, ion-implantation and R&D was completed in Mountain View. In San Rafael installation was begun on a new line for linear IC fabrication, which will occupy 5,000 square feet, and is scheduled to be fully operational in June.

Technology

At the forefront of Semiconductor Components' technical progress last year were two programs of long-term significance. New bipolar memory circuits utilizing Fairchild's Isoplanar process were introduced, and adaptation of this cell reduction technique to MOS products proceeded as scheduled. The development of charge-coupled device (CCD) technology also moved rapidly ahead. Potential CCD products include analog and digital circuits applicable in systems ranging from video photography to facsimile copying. The charge-coupled program was a joint endeavor of the semiconductor R&D laboratories and the Space & Defense Systems Division.

Digital Products

More than 85 new circuits were introduced by the Digital Products Division, whose product line encompasses all major logic types, and is the broadest in the indus-

try. Semiconductor memory capability was extended with the addition of 1,024-bit circuits in both TTL and ECL variations. Processed with Fairchild's Isoplanar technology, they were the industry's first production quantities of bipolar memories with this high-bit capacity. Memory circuit sales grew appreciably in 1972, but are not expected to reach full potential until 1975.

A new family of ECL circuits, compensated for temperature and voltage variations, was introduced, fully compatible and price competitive with conventional uncompensated circuits. Temperature and voltage compensation simplify design of end-use equipment, increase immunity to "noise" within the system and are inherently more reliable.

Other highlights were the introduction of Schottky-barrier TTL medium-scale-integration devices, and increased shipments of plastic-packaged TTL circuits, complementing the division's traditional strength in ceramic-packaged devices of this type. In 1972 TTL accounted for approximately half the industry's total bipolar IC market, and its percentage is growing.

MOS Products

A greater portion of the MOS Products Division's resources was concentrated on the development of standard products last year, to balance its former emphasis on custom designs. Standard devices introduced include a single-chip circuit combining all digital voltmeter functions; a "first-in, first-out" memory; and a set of building block integrated circuits which can be linked into a wide variety of digital signal processing systems.

Development work continued in the application of the Isoplanar process to the division's products, a program expected to result in third generation MOS devices with improved performance, reliability and cost effectiveness. Scheduled for production by mid-1973, general purpose logic circuits incorporating Isoplanar will require 25-to-40 percent less cell area than those utilizing current silicon-gate techniques.

Discrete Products

Major efforts of the Discrete Products Group were concentrated on plastic small-signal and power transistors, rectifiers, numeric displays, light-emitting diodes and

Development of electronic ignition systems, shown here, is one of the joint programs Fairchild is conducting with automobile manufacturers. The company also is working on semiconductor devices for fuel injection, voltage regulation, emission control, seat-belt interlock, anti-skid and collision-avoidance systems.



portions of the microwave field where Fairchild has strong technical leadership.

New products included a power amplifier with a broad range of switching applications, among them automotive electronic systems, and three microwave hybrid amplifier circuits with improved performance and reliability. In the display area, the major introduction was a Superdigit™ light-emitting device, which provides a one-quarter-inch numeral, twice the size of earlier units, and features a new design which reduces both material and labor costs.

Shipments of optoelectronic products more than doubled as the group became an important supplier to the growing calculator market. Orders also increased for numeric displays for watches and instrumentation of various types, as well as reflecting new applications for solid-state lamps and other light-emitting and sensing devices.

Expanded uses for standard transistors materialized in automobiles, data printers and appliances. Although consumption of diodes and transistors is growing at a slower rate than integrated circuits, this market remains a significant one for Fairchild Camera.

Analog Products

In the Analog Products Division, which produces linear and hybrid circuits, greatest achievements were in two rapidly growing market segments—the automotive and camera industries. Under a major contract from Polaroid Corporation, the division began deliveries of three electronic modules

for the new SX-70 instant-picture camera. The contract is the culmination of three years of joint development work with Polaroid, and calls for circuitry which controls the camera's exposure, flash-firing and motor functions. This program has produced some of the industry's most advanced linear circuits, combining new design, manufacturing and assembly techniques to meet unprecedented performance requirements.

Work commenced on a joint program with General Motors Corporation for the development of electronic ignition systems. Other automotive applications in which Fairchild is involved include emission control, seat-belt interlock, fuel injection, voltage regulation, anti-skid and collision-avoidance systems. Many of these functions, some being mandated by legislation, can be performed only by semiconductor devices.

Additional standardized products were introduced for the audio/home entertainment manufacturers, and shipments to TV producers increased, as conversion to solid-state designs continued. For industrial use, the division introduced components broadly applicable to data terminal communications equipment and process control systems.

Systems & Equipment Products

The Commercial Systems Group contributed significantly to Fairchild Camera's 1972 performance. Shipments ran sharply ahead of the previous year, and two of the group's four divisions established record sales. Order backlog continued to climb during the year.

The group also improved cost controls and manufacturing efficiency, and launched advanced technical and product development programs designed to broaden the scope of its existing business. In February of 1972, the Graphic Equipment Division was sold for cash. In a second cash transaction, the Systems Technology Division's facility in Sunnyvale, California, was disposed of, and the division's operations were relocated to a nearby Fairchild Camera plant in Palo Alto.

Sales volume in the Federal Systems Group stabilized in the second half of 1972, after declining significantly in the first six months. During the year two of the group's

Board of Directors

Walter Burke	Chairman of the Board of the Corporation
C. Lester Hogan	President and Chief Executive Officer
William C. Franklin	Consultant
Roswell L. Gilpatric	Presiding Partner, law firm of Cravath, Swaine & Moore
Lt. Gen. James B. Lampert (U.S. Army—Retired)	Vice President, Massachusetts Institute of Technology
Louis F. Polk, Jr.	Chairman and Founder, Leisure Dynamics, Inc. and Northstar Industries, Inc.
William A. Stenson	Partner, Spiegel & Stenson
J. Bradford Wharton, Jr.	Management Consultant; President of the Wealdon Company; Investments and Farming

Officers

Corporate Staff

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Warren J. Bowles	Vice President—Industrial Relations
Frederick M. Hoar	Vice President—Communications
Henry C. Montgomery	Vice President—Controller
Richard de J. Osborne	Vice President—Finance
Nelson Stone	Vice President, General Counsel and Secretary

Operations

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Eugene R. White	Vice President and General Manager—Systems & Equipment Products
Raymond G. Hennessey	Vice President and General Manager—Industrial Products Division
Thomas A. Longo	Vice President and General Manager—Digital Products Group
Louis H. Pighi	Vice President and General Manager—Federal Systems Group
Greg Reyes	Vice President and General Manager—Discrete Products Group
George M. Scalise	Vice President and General Manager—International Business Development

Richard Franklin	Assistant Secretary
John J. Giblin	Assistant Controller
Philip Haas, Jr.	Assistant Treasurer and Tax Director
Ralph S. Lee	Assistant Secretary
Stanley Winston	Assistant Secretary (Attesting)
Independent Certified Public Accountants Transfer Agent Registrar	Price Waterhouse & Co. The Bank of New York First National City Bank of New York