Fairchild Camera and Instrument Corporation

Annual Report 1969

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Cover: "Electronic Flower," a painting by New York artist Werner Pfeiffer, symbolizes the growing application of semiconductor technology to the company's many divisions and activities. As Fairchild Camera and Instrument Corporation advances, it will be through the creative utilization–in new markets and products–of its leadership in the solid-state field, represented by the embossed integrated circuit on the cover.

Contents

Divisional Structure of Fairchild Camera and Instrument Corporation

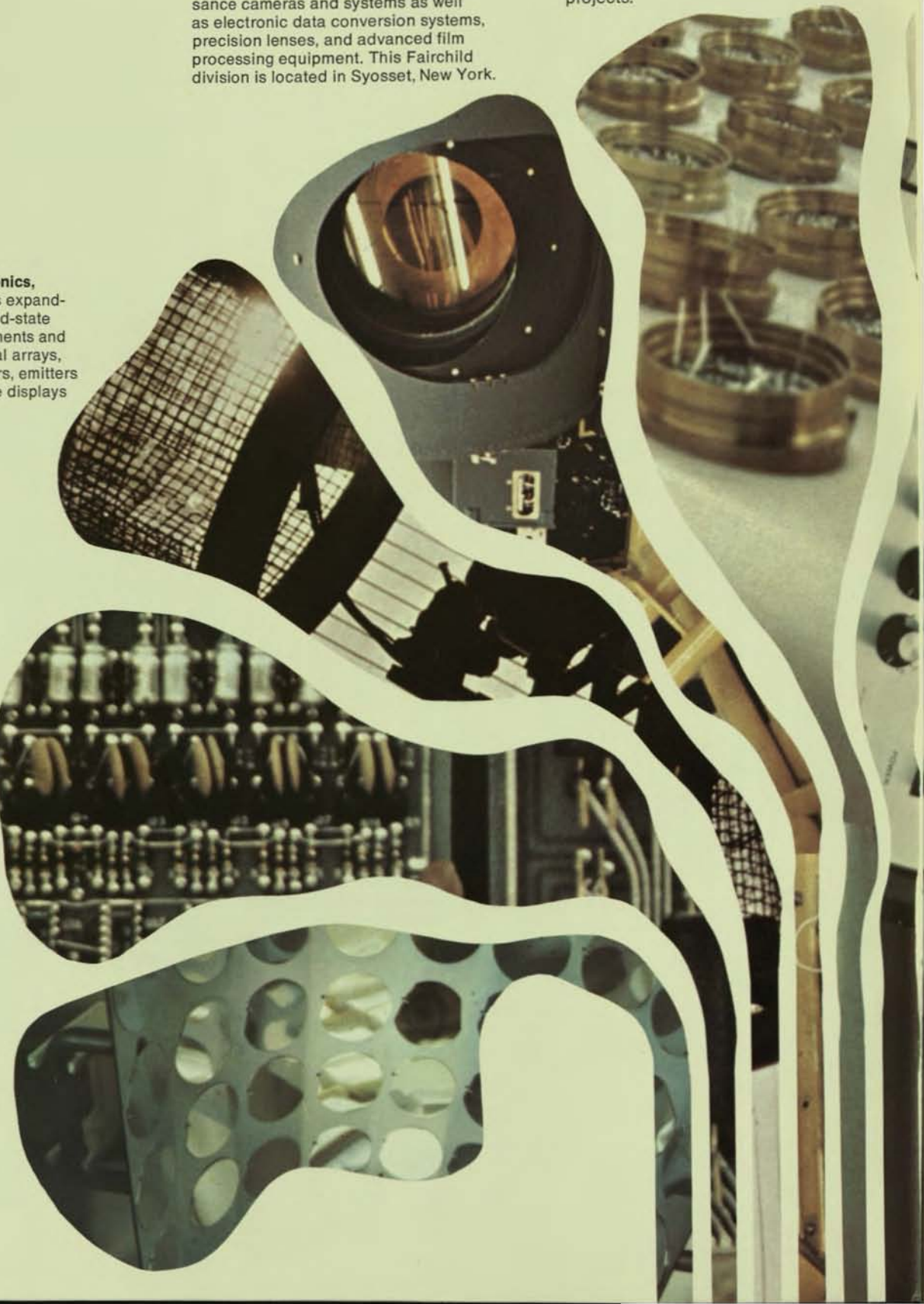
Defense Products, headquartered in Copiague, New York, produces rocket, missile and artillery fuzes; timing, fuzing, safety and arming devices for various government space and defense projects.

Space and Defense Systems manufactures precision aerial reconnaissance cameras and systems as well as electronic data conversion systems, precision lenses, and advanced film processing equipment. This Fairchild division is located in Syosset, New York.

Microwave and Optoelectronics, located in Mountain View, is expanding Fairchild's efforts in solid-state microwave devices, components and subsystems, complex optical arrays, optoelectronic photo sensors, emitters and devices; and solid-state displays and detectors.

Systems Technology, formerly known as Instrumentation, is concentrating on the development of data systems equipment—computer peripherals and semiconductor test systems—in a total systems approach for its customers. The division is headquartered in Sunnyvale, California.

Fairchild **Semiconductor,** headquartered in Mountain View, California, manufactures a wide variety of silicon Planar transistors, diodes, integrated circuits and complex arrays, including power transistors, small signal devices, LSI, MSI, CCSL, MOS, TTL, hybrids and memories.



Graphic Equipment, located in Plainview, New York, manufactures typesetting systems for automatic linecasting. These include a typesetting computer called Comp/Set 330-1, the teletypesetter (TTS) and phototextsetter (PTS), Scan-A-Plate and Scan-A-Color, and electronic engravers.

The **Controls** division, located in Hicksville, New York, manufactures pressure sensors and transducers, potentiometers, industrial trimmers, operational amplifiers, aircraft weight and balance systems, and industrial control systems.

The Industrial Products division, Plainview, New York, has a range of products including cockpit voice recorders, flight data recorders, music and announcement systems for aircraft, and Mark IV rear-screen projectors.

DuMont Electron Tubes, Clifton, New Jersey, is an industry leader in the design and production of display devices which include cathode ray tubes, direct-view storage tubes, photomultiplier tubes and power tubes.

Electro-Metrics, located in Amsterdam, New York, manufactures a line of radio frequency interference analyzers and spectrum surveillance equipment, tunable rejection filters, RF and Microwave components, and other devices.

The Company's **Research and Development** lab, located in Palo Alto, California, is responsible for innovation—making possible the improvement of existing products and creation of new ones. R & D is playing a major part in the company's interchange of technologies among all divisions.

Three - Year Highlights

For the Year:	1969	1968	1967
Net sales	**$250,659,000**	$198,470,000	$196,952,000
Income (loss) from continuing operations	**985,000**	(3,493,000)	4,622,000
(Losses) from activities being discontinued	**—**	(832,000)	(5,091,000)
Income (loss) before extraordinary items	**985,000**	(4,325,000)	(469,000)
Extraordinary items	**1,711,000**	4,898,000	(7,078,000)
Net income (loss)	**2,696,000**	573,000	(7,547,000)
Dividends paid	**2,188,000**	2,169,000	2,152,000
Average number of shares outstanding	**4,363,192**	4,327,578	4,303,147
At December 31:			
Working capital	**$ 75,545,000**	$ 57,257,000	$ 52,359,000
Shareholders' equity	**84,794,000**	83,496,000	84,301,000
Number of employees	**23,125**	20,867	19,385
Number of shareholders	**11,381**	13,736	12,985
Shares outstanding	**4,376,373**	4,348,221	4,304,490
Per Share Statistics:			
Income (loss) from continuing operations	**$ .23**	$ (.81)	$ 1.07
(Losses) from activities being discontinued	**—**	(.19)	(1.18)
Income (loss) before extraordinary items	**.23**	(1.00)	(.11)
Extraordinary items	**.39**	1.13	(1.64)
Net income (loss)	**.62**	.13	(1.75)
Shareholders' equity	**19.38**	19.20	19.58

1969 was a year of substantial progress and new beginnings for the Company. In every high technology firm, change is a basic fact of corporate life. At Fairchild Camera and Instrument Corporation, now entering its second half-century, the dynamics and scale of change in 1969 created a new shape which will define the Company's role in the decade of the 70's.

The year saw a decisive reversal of the lagging trend in sales and profits which had checked our growth since 1966. It also saw continued implementation of the rebuilding program launched in 1968 to vitalize the Corporation at all levels—people, products and plant—and to assure profitable future expansion.

Finally, it saw Fairchild move aggressively in the direction of a worldwide, multi-product electronics firm, geared to capitalize fully on its long-standing leadership in semiconductor technology.

Sales for the year reached the all-time high of $250,659,000, an increase of 26 percent over the $198,470,000 sales in 1968. A large part of the improvement was due to the performance of the Semiconductor division, whose sales rose 32 percent above the previous year, twice the growth of the U.S. semiconductor industry overall. The Defense divisions of the Company also showed significant increases during the year.

Net income for 1969 rose to $2,696,000, equal to 62¢ per share, compared with $573,000 or 13¢ per share in 1968. Income before extraordinary items amounted to $985,000, equal to 23¢ per share, compared with a loss of $4,325,000 or $1.00 per share in the previous year.

Extraordinary income of $1,711,000 in 1969 was realized principally on the sale of the bench instrument and printing press product lines, exchange gain on the revaluation of the German mark, and the recovery of excess reserves established in prior years. Extraordinary income in the previous year amounted to $4,898,000, resulting primarily from the sale of the Corporation's equity in Societa Generale Semiconduttori, S.p.A. in Italy.

The Company entered the 70's in a sound position to move forward on a vigorous program of growth. Our corporate plan is oriented toward solid-state technology—the axis of today's electronics revolution and foundation of one of the fastest-growing markets in modern business history. Carried to new levels of complexity, this technology will alter not only the character of the industry but of the society it serves.

Fairchild has been a prime innovator in this field for over a decade. The reservoir of talent from which innumerable advances have flowed—beginning with the basic Planar* process of semiconductor manufacture—is our strongest resource today.

We are now diffusing this seed technology throughout the Company. By applying a core of semiconductor expertise to our other product lines, particularly systems and equipment hardware, we expect in the future to penetrate new markets and to gain significant competitive advantage in the industry.

In meeting these objectives, we have marshalled the total competence of all our 10 divisions. One division, Fairchild Semiconductor—which represents over 60 percent of company sales and almost four-fifths of worldwide employment—has the critical responsibility.

Over a year ago Semiconductor faced an array of operating problems—related to inventory, productivity, yield and cost—which demanded positive action for recovery. The steps taken since then have produced impressive results. By year's end, the division found itself in the strongest position that it has been in for several years.

Fundamental to our strategy has been a coupling of our technology lead with the most efficient and productive factory in existence—a goal on which viable leadership of the industry absolutely depends.

In the fall of 1968, we initiated a massive capital improvement program to update and enlarge our domestic semiconductor factories for high-volume, low-cost production. Our new multi-million-dollar wafer fabrication facility typifies the result. It will significantly increase integrated circuit yields in 1970. Newly-completed mechanized transistor lines, soon to be extended to ICs, utilize equipment and production philosophies which are the most advanced in our industry.

During 1969, a new semiconductor assembly plant was dedicated on the Navajo Indian Reservation in Shiprock, New Mexico. We recently announced plans for the development of Sherman Fairchild Park in San Diego, Calif., a multi-plant complex to be built on 68 acres, which will serve the Semiconductor and other divisions of the Company.

On a global scale, the Semiconductor division greatly strengthened its management control system and increased inventories substantially, both to meet customer commitments and to achieve more sensibly scheduled production lines around the world.

Operations in the Far East were expanded during the year, highlighted by the completion of a new plant in Singapore for integrated circuit assembly, and enlargement of our

*Planar is a patented process of Fairchild Camera and Instrument Corporation

facilities in Hong Kong and Seoul, South Korea.

In addition, the government of the Ryukyu Islands in late 1969 granted Fairchild a license to manufacture in Okinawa. This operation, underway for several months, will produce and ship semiconductor and possible other products directly to the Far East, as well as to Europe.

To exploit the semiconductor market in Europe—currently growing at more than twice the U.S. rate—we established a full-scale marketing staff abroad with offices in London, Paris, Stockholm, Milan and Wiesbaden, West Germany. Headquarters for the European activity will be the new Fairchild Semiconductor plant in Wiesbaden, now under construction. In November, we signed a technical exchange agreement with N. V. Philips Gloeilampenfabrieken of Holland covering semiconductor technology.

Fairchild continued to demonstrate technical leadership in the industry's prime growth segments—integrated circuits, medium scale integration (MSI) and large scale integration (LSI). We have also become a major producer of IC devices for the computer memory market, which has high potential for the 70's, and have a large effort underway in the metal oxide silicon (MOS) field. Recently we began volume production of transistor-transistor logic (TTL) devices, largest and fastest-growing of the major bi-polar integrated circuit families.

To build a dynamic organization entails the commitment of large sums of money, far beyond the normal requirements of our industry. In 1970 we are continuing to invest heavily in new plant and equipment, vigorous product development and the expansion of our sales base worldwide—because this holds the key to profitable dominance in our industry.

To secure funds for this program, we placed $30,000,000 in convertible subordinated notes in late 1969, bearing an interest rate of 5¾ percent. These notes, which mature in 1989, are convertible into common stock of the Corporation at $84 per share.

We recognize also the need to enter product areas other than semiconductor devices, and will continue to supply vital capital resources to our operating divisions to support their growth. Heavy expenditures will be made in 1970, for example, in the Microwave and Optoelectronics and Systems Technology divisions, both of which are carrying forward advanced programs of solid-state product development. In 1969, we began construction of an 80,000 square foot plant in Palo Alto, Calif., to house the expanding Microwave and Optoelectronics activity.

Management took steps in 1969 to improve the profitability of our other divisions through reorganization, tighter cost control and new performance measurement procedures.

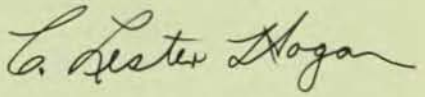
Space and Defense, a leader in the aerial reconnaissance field, was restructured internally and its ordnance devices section established as the Defense Products division. Graphic Equipment enlarged facilities and introduced a new line of computerized composition systems. The DuMont Electron Tubes, Industrial Products and Controls divisions all maintained satisfactory profit levels and a broadening of markets during the year.

One of our top 1969 priorities was the infusion of fresh professional management throughout the organization. We have succeeded in putting together a strong team, headed by seasoned and goal-disciplined executives at the corporate level.

Elected Group Vice President and Director of the Corporation was Alan J. Grant, former president of Lockheed Electronics Company. Other officers elected by the board were Dr. James M. Early, world-recognized semiconductor technologist from Bell Telephone Laboratories, as Vice President and Director of Research; Dr. M. M. Atalla, responsible for the basic patent on the MOS transistor, as Vice President and General Manager, Microwave and Optoelectronics division; Warren J. Bowles, Vice President—Industrial Relations; Thomas D. Hinkelman, Vice President—Planning; Frederick M. Hoar, Vice President—Communications, and Robert L. Keith, Treasurer.

F. Joseph Van Poppelen, formerly President of ITT Semiconductor and Vice President—Marketing for Fairchild, became head of our Semiconductor division in July. Additional general manager appointments were Louis Pighi, Space and Defense Systems; Richard Robinson, Graphic Equipment; Robert Draghi, Defense Products; and Robert Schreiner, Systems Technology.

As we move into the new decade, I am convinced the cumulative talents and resources of Fairchild are poised to make a profound impact on our industry's future. The growth momentum we have attained, coupled with the enthusiasm and energy of our people around the world, give me full confidence that 1970 will be a year of meaningful improvement in both sales and earnings for the Corporation.



C. Lester Hogan
President and
Chief Executive Officer

Massive capital expenditures to maximize **Semiconductor's** potential. Result: An expanded line of products–discretes and ICs, memories, MOS, LSI, MSI, TTL–with production capacity to turn them into building blocks of the corporation.

The Semiconductor division, keystone of Fairchild's plans for the future, ended 1969 in its strongest operating and technological posture in several years.

In the fall of 1968 this division lagged seriously in volume production capability, market coverage and service to its customers.

Today, the changes made in the Semiconductor division have transformed its operation significantly. The division has enlarged and updated its facilities worldwide, introduced mechanized, high-yield production techniques, and raised inventories to a level commensurate with market demand. It has translated its long-standing technological leadership into reliable products, deliverable to the customer in high volume.

The marketing organization was completely restructured during the year to encompass worldwide operations and expand the division's customer base. The domestic sales force was increased by 25 percent, and a complete European marketing and sales organization was established.

Shipment rates of integrated circuits and discrete devices increased significantly during 1969. This progress was due in part to a capital improvement and expansion program initiated in late 1968 and continued throughout 1969. It involved the building of new facilities and equipment for automated, high volume/low cost production, as well as aggressive penetration of new markets. Investment to date in this program has been over $20 million.

The plant building and expansion program in 1969 included plans for a new 120,000 square foot facility in Wiesbaden, West Germany, whose initial section will be operative in late 1970; a new 40,000 square foot facility in Singapore, which opened in November; a 30,000 square foot increase in the Hong Kong facility; and a doubling of the size of the division's installation in Seoul, Korea.

Domestically, Semiconductor moved into a custom-designed 33,000 square foot building leased from the Navajo Tribal Council in Shiprock, New Mexico. The facility employs over 1000 Navajos, making Fairchild the country's largest private employer of American Indians.

At Mountain View major construction of a new, advanced wafer fabrication area was completed, which will greatly increase integrated circuit yields during 1970. Production capability has also been enhanced by completion of fully mechanized lines. Like the division's computer-aided design capability, these lines should have a far-reaching impact on the character of semiconductor fabrication and assembly.

Management installed new procedures in cost control, overhauled its reporting methods and initiated a system of self-measurement against written, time-planned goals and objectives. It is expected that these changes will provide the division with timely visibility into its rapidly expanding operations during the 70's.

In the last half of 1969, the rate of new product introduction—which had been necessarily slowed during the period of major divisional reorganization—began to accelerate. In

Silicon wafers emerge from a diffusion furnace ready for additional processing on their way to becoming solid-state semiconductor devices.

addition, the division's expanded production capacity and cost-saving modernization enabled it to aggressively enter the second source marketplace and compete effectively in high-volume price and delivery situations.

Fairchild products moved into new sectors of the market in 1969, especially in the computer/instrumentation field. Manufacturers of both large and small systems continued to design Fairchild logic into their machines. The division's position in this field also rose with further penetration of Semiconductor devices into the explosively growing market for computer peripheral equipment.

One of the most significant achievements in 1969 was Fairchild's development of the first all semiconductor memory system for a major computer. The system, based on a Fairchild-developed 256-bit bi-polar memory element, was produced for the ILLIAC IV Computer being built by Burroughs Corporation for the University of Illinois. The success of this development places Fairchild in a strong position for entry into the semiconductor memory market, predicted to be the fastest-growing segment of the industry in the 70's.

Medium scale integration (MSI), an advanced Fairchild technique, made new inroads in mini-computers, desk-top calculators, and digital instrumentation systems. Many of these complex devices, as well as large scale integration (LSI) and memory units, were designed in Fairchild's multi-million dollar Computer Aided Design (CAD) facility. In a procedure that is believed ahead of all competitors, Fairchild engineers are able to design a new product completely, test it for electrical soundness, and make pre-production masks in a fraction of the time once required for this intricate process.

Fairchild also developed a wide range of "space-age" devices for the Apollo program. Discrete devices and ICs were designed into the guidance equipment of the lunar module, the main capsule computer, the instrumentation unit that regulated the rocket system, and various support systems.

Semiconductor products also met major human needs during the year, through incorporation into heart pacers and other medical instruments. Entertainment manufacturers utilized Fairchild devices both for current and newly-designed products. In radios, high-fidelity systems, televisions, and tape recorders, all kinds of Fairchild linear devices were used. In the new Boeing 747 miles of cable and many pounds of valuable weight were saved by using a Fairchild-designed multiplexing system for its in-flight entertainment network.

Although new IC product introductions highlighted the year, the discrete market was firmly re-established during 1969 and a general upgrading of discrete production facilities took place. The average shipping rate of silicon metal can units doubled during the year, and Fairchild became a leader in the production of silicon diode assemblies. Diode production averaged over one million per day.

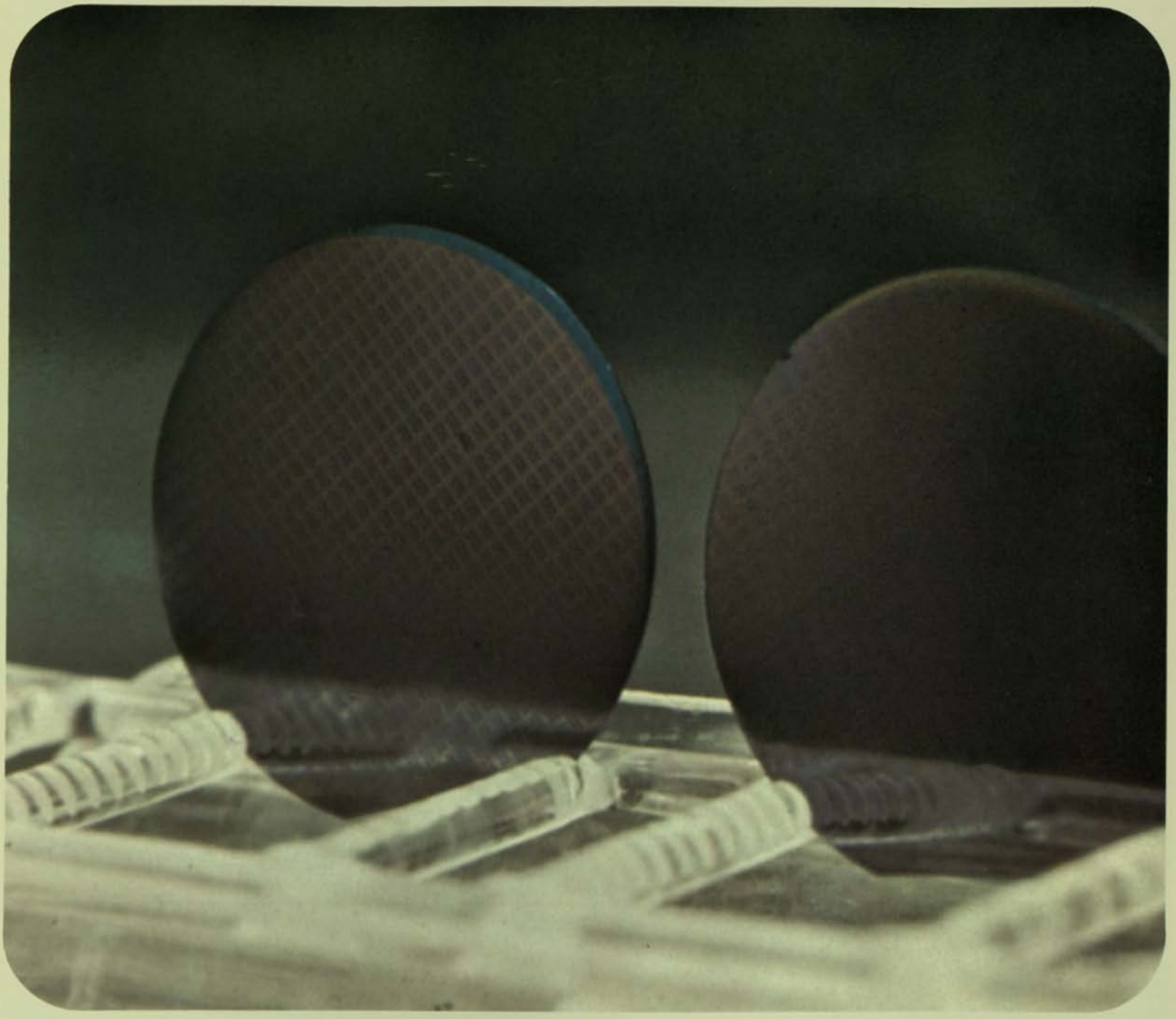
By December, the capital expansion program had begun to pay off. Inventories had reached satisfactory levels, and a management control system was taking effect to give Semiconductor managers clear worldwide visibility for planning and product scheduling.

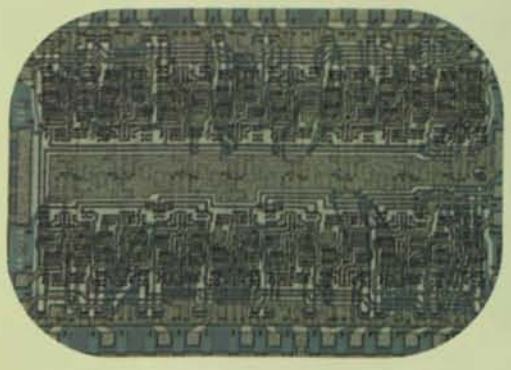
Lastly, the division had dramatically increased its market penetration —particularly in Europe and the Far East—to take advantage of a broad range of growing markets. At year-end, Fairchild Semiconductor looked ahead to sustained and vigorous growth in 1970 and the new decade.

above: Fairchild Semiconductor's manufacturing capability in the Far East enables the division to meet the fast-growing demands of these electronic markets.

right: Optical inspection, performed many times during the production of semiconductor devices, assures built-in quality and reliability.

far right: A single completed silicon wafer contains hundreds of tiny semiconductor chips no larger than the head of a pin. Under microscope, this 4800 chip, a two-layer metal LSI custom-array, reveals the remarkable complexity of its design.





Already a leading manufacturer of semiconductor test equipment, **Systems Technology** is rapidly developing data systems equipment. The new SENTRY 400 system demonstrates the division's ability to do both.

The Systems Technology division —formerly Instrumentation—underwent a dynamic shift in product emphasis during 1969. The decision was made to broaden its test systems product line to include advanced electronic data systems equipment. In mid-year the bench instruments line was sold as a reflection of this new product strategy.

Major stress is now being placed on the development of total test systems, which include hardware and services for semiconductor manufacturers and users in all markets—computer, commercial, military, industrial and consumer. As a result of this effort, Systems Technology introduced the first MOS-LSI test system, SENTRY 400. The system incorporates as its control unit a Fairchild midi-computer specially designed for the SENTRY 400.

The division also marketed one of the first computer controlled IC test systems, the 5000C, in 1969. This unit is capable of greatly increased through-put rates due to a high speed analog-to-digital converter, the use of computer control and a complete and versatile software package. The 5000C has already gained wide acceptance with more than 35 installed with customers throughout the United States.

In addition to providing total hardware systems, the division offers a spectrum of customer services—installation and system check-out, training, special software development, and maintenance of specified system reliability.

The total systems-and-service approach, when combined with the division's semiconductor expertise, is expected to give Systems Technology an advantage over competing equipment manufacturers.

Investment in new product development for this division will be substantial in 1970, to support its program of growth in newly-emerging markets.

A new division with new technologies–a sound and light "spectacular," **Microwave and Optoelectronics** will combine technological accomplishments in the fields of microwave and photo devices to capitalize on its broad capabilities in each area.

Fairchild went "mod" in May, 1969, with the formation of the Microwave and Optoelectronics division, headquartered in Mountain View. The MOD group combines the complex optical array and photodevice departments of the Semiconductor division with the microwave products group which had been part of Systems Technology.

MOD plans to capitalize on the fusion of these technologies in a broad range of products at the high frequency region of the electromagnetic spectrum—solid-state microwave devices, components and sub-systems; optoelectronic photo sensors, emitters and devices; and complex optical arrays.

MOD devices may one day make possible hand-held radar, collision avoidance systems for automobiles and microminiature transceivers that will enable the blind to "see."

The tele-communications field is, in itself, a large market for microwave solid-state sources currently being manufactured by MOD. Above the microwave region and into the visible spectrum, the division's light emitting devices and light sensing devices can be used virtually anywhere eyes are needed. They require very low voltage, work easily with integrated circuitry, and offer a long life span.

By utilizing the gallium arsenide phosphide (III-V) compound, the division will offer a new product line of solid-state devices which emit radiation in the visible spectrum and thus can be used as numeric readouts. Built reliably and inexpensively, with all decoding on the same substrate as the display, these devices may one day replace conventional numeric displays.

MOD plans to build individual detectors that will form the substance of a new class of vidicon tubes. In addition, the division hopes to move into the microwave systems area, using component parts from its own advanced technology.

One of the key strengths in the planned growth of the MOD division is the ready access to and use of advanced technology. Fairchild Research and Development is currently devoting about one-third of its current efforts to optoelectronics. Cooperation between these R & D efforts and new research conducted by MOD will enable the division to expand its existing product lines to at least six during 1970.

To handle this growth, an 80,000

above: On its way to completion at Systems Technology, a 600 C automatic computer-controlled semiconductor test system receives a thorough inspection to meet customer specifications.

far right: Amid a rainbow of color an employee performs intricate wire harness fabrication designed for a test system manufactured by Systems Technology.

right: Fairchild's newest division, Microwave and Optoelectronics, is building its future on the development of tiny photo devices and complex optical arrays as well as solid-state microwave devices and systems.

square foot building is now under construction on a 17.5 acre site in Stanford Industrial Park, Palo Alto. Ground was broken for the new building in November, with the projected occupancy date set for January 1971.

Cameras to map the Earth and planets, a lens to catch man's first steps on the moon, solid-state eyes that may one day replace film cameras– these, backed by 50 years of experience in the aerial camera business, are the ways the Fairchild **Space and Defense Systems** is meeting tomorrow's challenges today.

When NASA needed special cameras to map the moon, Fairchild Space and Defense Systems division was asked to build them. When man first stepped onto the lunar surface, millions on earth watched live history in the making through a Fairchild lens system, part of the black and white television camera specially built for Apollo 11 by Westinghouse.

Today, the division's research program looks further into the future—toward the development of a solid-state imaging camera system utilizing advanced phototransistor devices developed by the Semiconductor division. This solid-state "eye" could eventually replace electron imaging and certain film cameras.

Such projects are indicative of Space and Defense Systems' long-term commitment to creating new products and ideas to meet space-age needs.

Backed by 50 years' experience in the development of precision cameras for tactical and strategic use, the division is today a leading supplier of film cameras, TV view finders and photo reconnaissance systems, as well as electronic data conversion systems. The heart of its product line is a wide variety of low-altitude aerial panoramic reconnaissance and strike cameras.

In connection with the NASA Earth Resources Technology program, the division is conducting an automatic data correlation study to develop technology for correlating image and non-image data obtained from various airborne sensors. Lens systems have been supplied to RCA for sensors going aboard ERT satellites. In the area of electronic data converters, Space and Defense Systems is engaged in a design effort for Grumman A6E and EA6B programs to develop an analog-to-digital, digital-to-analog converter for use in the avionics systems of aircraft.

In 1969, the division's ordnance operation was made a separate division of the corporation—Defense Products—so that each group could more effectively serve its own markets.

Today Space and Defense Systems is carrying forward plans to meet the demanding system needs of the '70's, which include real time and near real time data acquisition at low light levels and high resolution. New developments in long focal length recon cameras and new electro-optical cameras are expected to fulfill some of those needs.

In reconnaissance and electronic command systems, developments are under way toward continued participation in imagery interpretation equipment systems and automatic data annotation systems, employing Microwave and Optoelectronic division's light emitting diodes, converters, and photographic translation equipment. The continued growth and profitability of Fairchild Space and Defense Systems is a priority item on the company's agenda for the '70's.

New division status for a growing Fairchild group, **Defense Products;** its management talent and manufacturing expertise insure a strong competitive thrust in the ordnance devices field.

By mid-1969 the ordnance products line of Space and Defense Systems had grown in importance to the point that it was established as a separate division within the corporation, called Defense Products.

The division is involved in the high-volume, low-cost production of rocket, missile and artillery fuzes and safety, arming, and timing devices. Its high-volume testing techniques make the plant an exceptional operation in the ordnance field, and a leader in efficiency output.

above right: Space and Defense Systems engineers prepare a Fairchild aerial camera for rigorous environmental tests to assure its future reliability.

right: An employee at Microwave and Optoelectronics records valuable test data on microwave devices before they are shipped to the customer.

far right: Rows of housings await high-production ordnance devices manufactured by the Defense Products division.

Continual expansion has seen the department's original 20,000 square feet grow to a division currently occupying 105,000 square feet of space. A new production facility was opened in Belleport, New York, in 1969, and the division enlarged its facility in Amityville, New York.

The division's primary strength lies in its R & D talents, production engineering, and automated production abilities. The technological trend of its current product line points to a future growth area in the application of solid-state devices to electronic fuzing systems.

Complete computer-controlled typesetting and composition systems are among the advanced products under development by Fairchild **Graphic Equipment.** It's all in how you blend years of typesetting know-how with the latest semiconductor technology.

Turnaround was the 1969 keynote at the Graphic Equipment division as its managers took important steps to change the product mix and concentrate on one vital growth area—total electronic typesetting. This approach provides a framework for applying Fairchild's technical strengths to a market of huge future potential.

In mid-1969, the division's printing press product line was sold in view of its inability to utilize electronics technology for continuing growth. Manufacturing activities were subsequently moved from Joplin, Missouri, to the division's headquarters in Plainview, Long Island, where domestic manufacturing is currently concentrated. The division also maintains manufacturing and sales activities in The Netherlands, and a sales office in London, England.

Starting with a strong product base—the teletypesetter (TTS), phototextsetter (PTS), and electronic engravers—the division programmed a new product effort in 1969 to make maximum use of integrated circuit technology.

Graphic Equipment introduced the Comp/Set 330-I typesetting computer, one of the most advanced systems of its kind and capable of six different configurations—including disc storage, cathode-ray tube terminals, various readouts, and several simultaneous inputs. The division will provide complete software, or programming, for the Comp/Set 330-I, without which a total typesetting system concept is not possible.

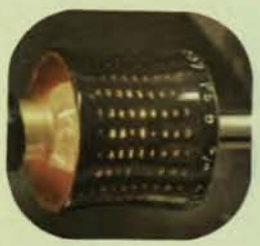
Graphic Equipment is now directing its product plans towards computerized typesetting as an entire enterprise, including keyboards, computers, disc storage, phototypesetters and linecasting machine operating units. Future products may include cathode-ray tube typesetting units, computer printers and terminals, a line of electronic keyboards, and new phototypesetting techniques. Ultimately the division anticipates branching out into other communications-related technologies.

Pressure sensors and measurement devices, done electronically to take the worry out of it all; for Fairchild **Controls** the move is into complete systems during the '70's.

Whether it is a pressure sensor used in clothes driers, an aircraft weight and balance system aboard the Presidential Fleet of Boeing 707's, precision potentiometers in the Apollo Fuel Control System, or the newly introduced glossmeter for paper quality control, Fairchild Controls is the name on each.

In 1969, the division announced a new line of conductive plastic precision synchro potentiometers for use in control transformers and control transmitters. It is currently involved in the Air Force Galaxy C-5 program, supplying specialized potentiometers and a new pressure subsystem for use in the MADAR (Malfunction Detection Analysis and Recording) system. Fairchild Controls also has a contract with the U.S. Air Force to supply the STAN Integral Weight and Balance System for the Caribou C-7A Evaluation test. The STAN system is the only operational system in use by the airlines today. A simplified version, called AccuMAC, was developed by Controls in 1969 to aid operators of small aircraft.

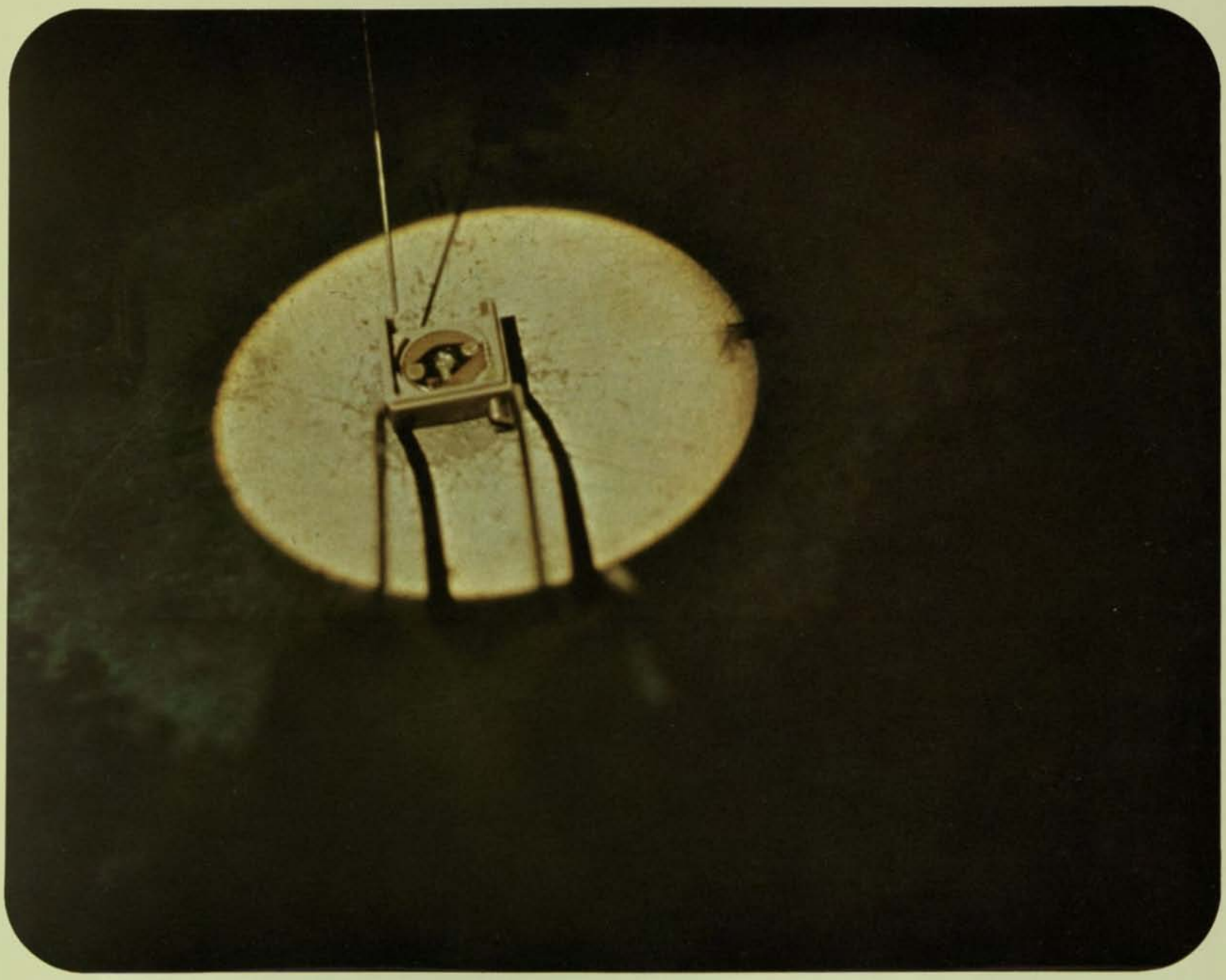
In addition to manufacturing pressure transducers and potentiometers which convert physical parameters into electrical signals, Controls produces a line of modular products which include power

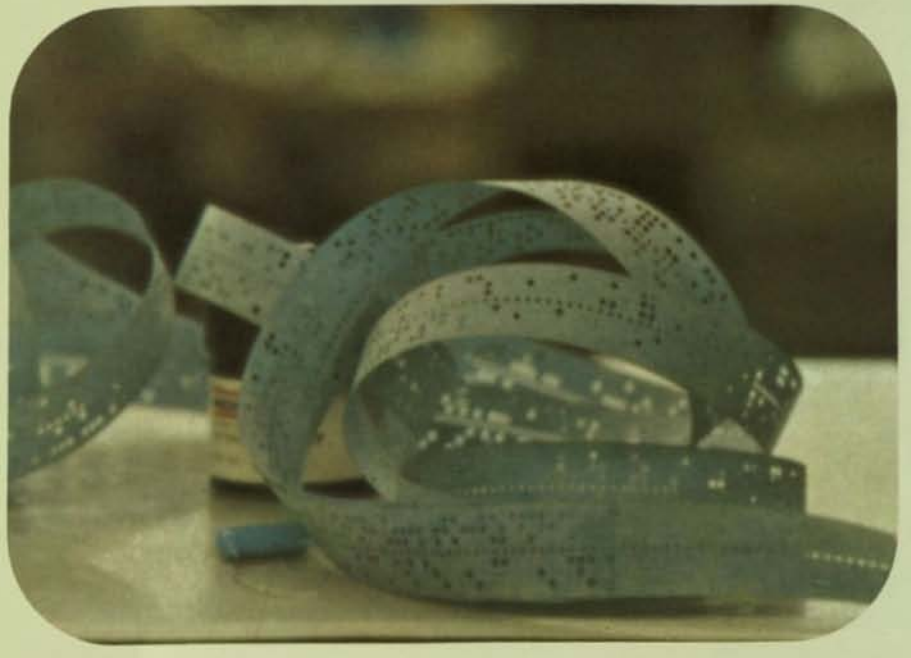


above: 'Round and 'round it goes—one of many type font arrays designed by Graphic Equipment for use in its Phototextsetter.

above right: Under microscope, this solid-state pressure transducer made by Fairchild Controls is inspected closely to meet parameters set to insure quality performance.

right: Special computer tape prepared by Fairchild Graphic Equipment perforator is used in the division's Phototextsetter and Teletypesetter systems.





supplies, operational and DC amplifiers, and special products using advanced integrated circuit technology.

Working closely with the Semiconductor division, Controls has plans to expand this latter product line during the '70's. In mid-year, the division acquired a line of operational amplifiers from Union Carbide to complement its existing range of amplifiers and other modular products. Work in this area is now leading to the development of specialized systems for industrial control, including a new system to control electrical current in the process of making aluminum.

In the expanding market for trimmer potentiometers, Controls is a leader in the new film and cermet types of units, used largely in computers and other digital electronics systems. Pressure sensor applications in different industrial control problems are expected to result in continuing growth for the division.

Introduction of the new Seventy Series represented standardization of 8mm film format for the first time–typical of **Industrial Products'** new product development approach. When IPD designs products, they become standards for their industries.

The past year set the tone of the '70's for Fairchild's Industrial Products division, which introduced the Seventy Series film cassettes and projectors, providing standardization in the 8mm field for the first time.

Heavy investments in development and retooling were made by the division during the year to support the Seventy Series' introduction early in 1970. This new line of 8mm film cartridges and projectors is keyed to magnetic sound, super 8mm film with a plus-18 image-to-sound separation. The standard is identical to the format adopted by Eastman Kodak in the U.S. and Eumig of Austria, Europe's largest producer of 8mm sound film systems. In mid-1969 a licensing agreement was signed with Eumig authorizing Fairchild to distribute its line of projectors.

The Fairchild Mark IV rear-screen projector continues as an integral part of Industrial Products' line. More than 30,000 standard Mark IV projectors are in use throughout the world—in education, industry, medicine, government and other fields.

Products for the aviation market include cockpit voice recorders (CVR), flight data recorders (FDR), and music announcement reproducer systems (MARS). Most major airlines are customers for all three products, with Fairchild commanding a substantial position in the CVR and FDR markets. MARS units—as well as CVR's—will be in the Boeing 747's purchased by TWA, Eastern and American Airlines.

The division's wholly-owned subsidiary, World Magnetics, which recently moved into a new plant in Traverse City, Michigan, manufactures heads and pick-up devices for magnetic film storage, with the bulk of its effort in digital retrieval. Its greatest growth area is in computerized retrieval of stored data by banks.

IPD recently moved into a new 40,000 square-foot building designed to its specification in Commack, Long Island, consolidating its East Coast manufacturing, engineering, management, and warehousing operations under one roof.

Future growth for the Industrial Products division lies in the audio-visual field, with its current trend toward 8mm standardization opening up many new markets. The division's technological strength resides in the magnetic recording and playback of analog (sound) and digital (data) information, both covered with broad product lines.

By combining advanced designs already in laboratory development—including digital flight recorders using integrated circuit technology to feed directly into computers—the division looks forward to innovation in both fields during the '70's.

A glass menagerie of electron tubes–cathode-ray tubes, direct-view storage tubes, photomultiplier tubes, and power tubes–and an eye toward applications in computer peripherals: that's what **DuMont Electron Tubes** is thinking about.

Worldwide shipping navigates from a signal transmitted by a DuMont power tube, the final output amplifier in the Loran System. DuMont's photomultiplier tubes are used in optical readers to instantaneously

right: Industrial Products' Mark IV rear-screen projectors are used widely by schools, industry, and the medical profession.

above far right: A sealing operation is being performed on this DuMont electron tube during its production cycle.

far right: These cockpit voice recorders manufactured by the Industrial Products division have been tested and inspected and are ready to be shipped to an airline customer.


3001
FAIRCHILD
COCKPIT VOICE RECORDER
3003
COCKPIT VOICE RECORDER
TEST
ALL

convert printed matter into computer language without the intermediate use of punched cards or printed tape. Several of the division's cathode-ray and storage tubes have been incorporated in medical radiological equipment and various medical instruments, such as blood analyzers, and cardio-vascular and intensive care patient monitors.

Whether in sonar equipment used by commercial fishing fleets, computer terminals for airlines' reservation and schedule information, or weather radar systems, DuMont Electron Tubes plays a key part in things that are shaping the '70's.

This Fairchild division, located in Clifton, New Jersey, has four major product lines—cathode-ray tubes, direct-view storage tubes, photomultiplier tubes, and power tubes.

DuMont marked a significant milestone in 1969 with the completion of a unique, ruggedized, projection-type cathode-ray tube which will ultimately be incorporated into the Air Force A-7 aircraft. This high-performance tube projects navigation and fire control symbology on a combining or "see through" glass located behind the aircraft's windshield, enabling the pilot to read the data while he looks at the outside world. Developing this technique, which is expected to be incorporated in future commercial and military aircraft, places the division in a strong position to penetrate a new and important market.

Among other significant orders received during 1969 were two large government contracts for DuMont direct-view storage tubes used in the Nike-H missile and aircraft defense systems.

Through its increased emphasis on research, the division plans to introduce semiconductor technology in the development of new and more sophisticated products. These include solid-state vidicons and scan converters, diode array feedback devices for precision display cathode-ray tubes, diode array electron multipliers and electrostatic printing tubes.

above far right: This high-frequency circuit board assembly is one of many component parts of the computer-controlled Spectrum Surveillance Systems manufactured by Electro-Metrics.

above right: Intricate electrical assembly work is required to meet the rigid high specifications of Electro-Metrics' electronic spectrum measurement systems.

right: From start to finish, DuMont electron tubes undergo continuous inspection during their manufacture.

An advanced technological operation, **Electro-Metrics** is currently expanding research and marketing activities in the important spectrum surveillance field.

Since its beginning in 1965, Electro-Metrics has developed advanced products used in automated and digital computer-controlled systems designed for electronic spectrum measurement. Its systems have been a significant factor in advancing the technology of the entire electronics industry. However, in late 1968 and early 1969, Electro-Metrics was heavily hit by government expenditure cutbacks.

In 1969, the division announced its new Computer Controlled Spectrum Surveillance System, FSS-250/2116B, in March—a system which reflects Electro-Metrics' advanced technology. The division's Radio Frequency Interference and Electromagnetic Compatibility (RFI/EMC) instrumentation utilizes advanced semiconductor technology, which has enabled two products—the EMC-10 and EMC-25—to capture 70-80% of their markets.

Electro-Metrics also manufactures the automated Spectrum Surveillance System, FSS-250, incorporating such newly developed peripheral equipment as an automatic programmer, an oscilloscope display unit, and an X-Y plotter. Currently, the engineering department has in development two new basic RFI/EMC receiving instruments and numerous peripheral instruments and systems, to enhance the versatility of the present product line.

Leader in solid-state research, originator of the Planar* process, Fairchild's **Research and Development** laboratory deals in innovation–new products and new technologies–to keep the company at the forefront of the electronics industry.

The continuing growth and leadership of a multi-division corporation such as Fairchild Camera and Instrument depends to a large extent on advances originating in its Research and Development facility, as well as a technological exchange among divisions. In Fairchild's case semiconductor innovation is the key to new growth, and its R & D laboratories have led the industry for years.

R & D's wide range of interests includes both new product development and basic research. New product areas cover complex digital and linear integrated circuits, microwave transistors and diodes, and optoelectronic discrete devices and device arrays. To support these product areas, research is carried on in device physics, processing technology and semiconductor materials, dielectrics, plastics and glasses.

During 1969, several dramatic R & D developments occurred in those areas. The explosive growth of the computer and a concomitant growth in semiconductor active memories necessitated R & D's development of a bipolar integrated circuit device which contains 256 bits of active memory. This silicon chip represents state-of-the-art accomplishments in semiconductor processing and integrated circuit design capability. In its critical development all processes in the fabrication technology of this device had to be thoroughly understood and critically controlled to attain the desired memory function. This included not only attaining precise silicon epitaxial layer thicknesses, diffusion depths, optical masking alignments and metallizations, but completing the development without the introduction of even the tiniest defect. A single defect, as small as one-ten thousandth percent of the silicon chip area, would have resulted in loss of function.

In advanced MOS devices, Fairchild maintained its leadership by introducing the new silicon gate MOS technology employed in products such as the new 8-channel multiplexer switch, the 3708. The use of such technology provides advantages over conventional MOS device fabrication, including a reduction in threshold voltage and parasitic capacitances, with greater switching speeds than standard MOS devices. Devices made this way will play an important role in applications such as telemetry, telephone switching and computer data terminals.

Technology breakthroughs in linear integrated circuits were exemplified by the three-stage micropower operational amplifier, the μA735. The device combines a variety of recent discoveries which overcome basic limitations to present linear circuits. Low noise and high current gain permit operation from a high source impedance, with essentially constant current gain over an extremely wide range of collector currents. With the use of thin film resistors, higher maximum resistance is possible. Furthermore, excellent matching of resistor values and minimal resistance changes are now available. Newly developed silicon nitride dielectric films contribute to device stability and the attainment of high reliabilities.

In the area of advanced semiconductor material development, research is being conducted not only on silicon but also on compound semiconductors such as gallium arsenide and gallium arsenide phosphide. From these materials devices are being made which will emit light, either visible or infra-red when a voltage is applied to them.

All of these products make use of new technologies which over the next few years will form the basis for entirely new families of devices that will preserve Fairchild's continuing leadership in technical innovation.

above: The silicon wafer in this alignment jig is being studied by Fairchild's research and development lab to improve wafer fabrication techniques.

right: R & D personnel also work on new product development. Here, an employee cuts a set of art work for a complex semiconductor device on a rubylith in preparation for mask-making.

*Planar is a patented process of Fairchild Camera and Instrument Corporation

Fairchild Camera and Instrument Corporation and Subsidiaries

Consolidated Balance Sheet

December 31, 1969 With Comparative Figures For 1968

Assets	1969	1968
Current assets:		
Cash and short-term securities	**$ 25,192,000**	$ 12,678,000
Accounts and notes receivable (including installments of $4,017,000 in 1969 and $2,848,000 in 1968 due after one year), less provision for doubtful accounts and allowances of $3,802,000 in 1969 and $4,108,000 in 1968	**43,259,000**	36,312,000
Estimated income tax refund	**590,000**	4,820,000
Inventories, at the lower of cost (principally first-in, first-out) or market:		
U.S. Government contracts and other work-in-process, less progress payments of $3,761,000 in 1969 and $10,298,000 in 1968	**23,211,000**	17,770,000
Raw materials and parts	**11,102,000**	9,847,000
Finished goods	**9,878,000**	7,269,000
Deferred income taxes and other current assets	**1,475,000**	1,717,000
Assets related to discontinued activities, at estimated realizable value	**—**	1,193,000
Total current assets	**114,707,000**	91,606,000
Property, plant and equipment, at cost:		
Land	**3,670,000**	1,886,000
Buildings and improvements	**45,541,000**	40,559,000
Machinery and equipment	**51,604,000**	41,782,000
	100,815,000	84,227,000
Less accumulated depreciation and amortization	**34,065,000**	30,020,000
Net property, plant and equipment	**66,750,000**	54,207,000
Deferred income taxes and other deferred charges	**643,000**	114,000
	$182,100,000	$145,927,000

See accompanying notes to financial statements.

Liabilities and Shareholders' Equity	1969	1968
Current liabilities:		
Notes payable to banks	**$ 3,736,000**	$ 4,099,000
Current installments of long-term debt	**1,666,000**	1,678,000
Accounts payable	**15,128,000**	11,628,000
Accrued compensation and employee benefits	**8,801,000**	7,733,000
Other accrued liabilities	**7,914,000**	7,428,000
Estimated income taxes payable	**1,917,000**	1,783,000
Total current liabilities	**39,162,000**	34,349,000
Deferred income taxes	**—**	165,000
Vested benefits—unfunded pension plans	**1,419,000**	1,224,000
Long-term debt:		
Convertible subordinated notes	**30,000,000**	—
Note payable to insurance company	**22,500,000**	23,750,000
Mortgages and other long-term liabilities	**4,225,000**	2,943,000
Total long-term debt	**56,725,000**	26,693,000
Shareholders' equity:		
Common stock, $1 par value, authorized 6,000,000 shares; issued 1969—4,376,373 shares, 1968—4,348,221 shares	**4,376,000**	4,348,000
Additional paid-in capital	**47,786,000**	47,024,000
Retained earnings	**32,632,000**	32,124,000
Total shareholders' equity	**84,794,000**	83,496,000
Contingencies and commitments		
	$182,100,000	$145,927,000

Fairchild Camera and Instrument Corporation and Subsidiaries

Consolidated Statement of Income and Retained Earnings

Year ended December 31, 1969 with comparative figures for 1968

	1969	1968
Net sales	**$250,659,000**	$198,470,000
Royalties and other income	**7,993,000**	6,248,000
	258,652,000	204,718,000
Cost of sales	**189,301,000**	156,625,000
Administrative and selling expenses	**44,040,000**	34,925,000
Research and development expenses	**20,388,000**	19,290,000
Interest and debt expenses	**3,136,000**	2,687,000
	256,865,000	213,527,000
	1,787,000	(8,809,000)
Provision for (recovery of) income taxes	**802,000**	(5,316,000)
Income (loss) from continuing operations	**985,000**	(3,493,000)
Operating loss of discontinued activities less income tax benefit of $760,000	**—**	(832,000)
Income (loss) before extraordinary items	**985,000**	(4,325,000)
Extraordinary items, less income taxes of $760,000 in 1969 and $3,245,000 in 1968	**1,711,000**	4,898,000
Net income	**2,696,000**	573,000
Retained earnings, beginning of year	**32,124,000**	33,720,000
Cash dividends—$.50 per share in 1969 and 1968	**(2,188,000)**	(2,169,000)
Retained earnings, end of year	**$ 32,632,000**	$ 32,124,000
Per share of common stock (based on average shares outstanding):		
Income (loss) before extraordinary items, including loss of $.19 per share in 1968 applicable to discontinued activities	**$ .23**	$ (1.00)
Extraordinary items	**.39**	1.13
Net income	**$ .62**	$ .13

See accompanying notes to financial statements.

Consolidated Statement of Additional Paid-In Capital

Year ended December 31, 1969 with comparative figures for 1968

	1969	1968
Balance, beginning of year	**$47,024,000**	$46,277,000
Excess of proceeds over par value of common stock sold under stock option and restricted stock plans	**344,000**	758,000
Amortization of excess of market value over selling price of restricted stock sold	**418,000**	—
Charge in connection with issuance of common stock in pooling transaction	**—**	(11,000)
Balance, end of year	**$47,786,000**	$47,024,000

Consolidated Statement of Source and Application of Funds

Year ended December 31, 1969 with comparative figures for 1968

	1969	1968
Source of funds:		
Net income	**$ 2,696,000**	$ 573,000
Depreciation and amortization of plant and equipment	**10,989,000**	10,966,000
Proceeds of convertible subordinated notes	**30,000,000**	—
Sale of common stock	**372,000**	801,000
Decrease in investment in foreign affiliated company	**—**	1,268,000
	44,057,000	13,608,000
Application of funds:		
Additions to property, plant and equipment	**23,532,000**	4,947,000
Cash dividends—$.50 per share	**2,188,000**	2,169,000
Decrease in long-term debt	**—**	1,680,000
Other, net	**49,000**	(86,000)
	25,769,000	8,710,000
Increase in working capital	**$18,288,000**	$ 4,898,000

See accompanying notes to financial statements.

Notes to Consolidated Financial Statements

1. **Principles of consolidation:** The consolidated financial statements include the accounts of the company and its domestic and foreign subsidiaries, all of which are wholly owned.

   The accounts of foreign subsidiaries have been translated into United States dollars at appropriate rates of exchange. Net current assets and total net assets of foreign subsidiaries included in the consolidated balance sheet at December 31, 1969 amounted to $9,444,000 and $15,248,000, respectively. Undistributed earnings of foreign subsidiaries at December 31, 1969 amounted to $9,363,000. No provision has been made for United States income taxes which would be payable if undistributed earnings of the foreign subsidiaries were paid to the parent company since it is the company's present intention to utilize such earnings in its foreign operations.

2. **Depreciation:** Prior to 1969, for financial accounting purposes the company used accelerated methods of computing depreciation on substantially all additions to plant and equipment acquired since 1953. As of January 1, 1969, the company changed to the straight-line method of computing depreciation on certain 1969 additions to plant and equipment. Net income for 1969 increased approximately $350,000 as a result of this change. The company continues to use accelerated methods of computing depreciation on other 1969 additions and the straight-line method on property acquired prior to 1954.

3. **Extraordinary items:**

	1969	1968
Gain on sales of discontinued activities and, in 1968, equity in an affiliated foreign company, less related income taxes of $442,000 in 1969 and $1,392,000 in 1968	**$ 954,000**	$2,895,000
Prior years' provision for estimated losses on disposition of discontinued activities no longer required, less related income taxes of $318,000 in 1969 and $2,386,000 in 1968	**347,000**	2,580,000
Foreign exchange gain from revaluation of German Mark	**410,000**	—
Provision for estimated losses on disposition of activities or product lines being discontinued, less related income taxes of $533,000	—	(577,000)
	$1,711,000	$4,898,000
Income taxes included in the above extraordinary items are summarized as follows:		
Current	**$ 604,000**	$ 362,000
Deferred	**156,000**	2,883,000
	$ 760,000	$3,245,000

4. **Income taxes:** In prior years, amounts reported in the financial statements as deferred income taxes related only to the difference between accelerated amortization on certificate of necessity facilities deducted for income tax purposes and depreciation recorded for financial accounting purposes. The accumulated income tax effects of other temporary differences between taxable and financial income were reported as reductions of the related asset or liability accounts. The 1969 financial statements include these assets and liabilities at their gross amounts and the related tax effects are shown as deferred income taxes. The 1968 financial statements have been restated to conform to this method of presentation with no effect on net income for that year.

   The provisions for income taxes are equivalent to income taxes currently payable (recoverable) after credit for deferred income taxes of $618,000 in 1969 and $24,000 in 1968 resulting primarily from differences in reporting depreciation and pension and other compensation costs for financial and tax purposes. See Note 3 for deferred income taxes applicable to extraordinary items.

5. **Pension plans:** The company has several pension plans covering substantially all of its domestic employees. The total pension expense was $2,202,000 in 1969 and $2,294,000 in 1968 which includes, in 1969, amortization of prior service cost over a 25-year period. The company's policy is to fund or to provide for funding of pension costs accrued. The pension fund assets and balance sheet accrual exceed the actuarially computed value of vested benefits.

   In 1969 the company commenced amortization of prior service costs and made certain other changes in actuarial and interest rate assumptions. The net effect of these changes on pension plan expense was not material.

6. **Long-term debt:** The 5¾% convertible subordinated notes sold in November 1969 are convertible into common stock at the rate of $84 per share, at any time until their maturity in 1989. Commencing in 1979 the company will be required to redeem 6% of the outstanding principal balance annually and may, at its option, prepay all or any part of the notes beginning November 1, 1972 at premiums decreasing from 4⅝% to zero.

   The note payable to an insurance company bears interest at 5½% per annum, and requires annual principal payments as follows:

1970 - 1972	$1,250,000
1973 - 1979	1,750,000
1980	7,750,000

   The company is required under the provisions of the loan agreements to maintain certain working capital levels and is restricted as to the payment of cash dividends and purchase of its stock. Under the most restrictive covenant no further dividends may be paid without permission from the lenders until consolidated net income from United States and Canadian operations subsequent to December 31, 1969 exceeds approximately $19,000,000. Approval was obtained for the payment of dividends in 1969 and 1968.

7. **Common stock and stock options:** Changes in stock options under the company's stock option plan were as follows:

	Shares Available For Options	Shares under Option: Price Per Share (Market Value at Grant Dates)	Shares under Option: Number of Shares
Balance, beginning of year	252,270	$15.67 to 131.38	449,377
Granted	(243,525)	58.38 to 98.88	243,525
Exercised	—	15.67 to 86.50	(3,152)
Canceled	104,455	57.07 to 128.09	(104,455)
Balance, end of year	113,200	$27.88 to 131.38	585,295

At December 31, 1969 options for 50,241 shares were exercisable at prices ranging from $27.88 to $131.38 per share.

In addition to the shares reserved for stock options, 357,143 shares of authorized common stock are reserved for future conversion of the convertible subordinated notes.

In 1969 the stockholders approved the sale of 35,000 shares of common stock to the President and certain other executives of the company at $10 per share (of which 10,000 shares were sold in 1968 subject to obtaining stockholder approval). The agreements under which the stock was sold provide certain restrictions on resale of the stock by the employee and give the company the right to repurchase all or part of the stock at $10 per share upon termination of employment, other than by death or disability, before expiration of periods of from three to five years as specified in related employment agreements. The excess of the market value over the selling price is being charged to expense and credited to paid-in capital over the employment periods.

8. **Contingencies and commitments:** The company occupies various facilities under long-term leases expiring between 1973 and 1984 requiring minimum annual rentals aggregating approximately $1,600,000. Total rent expense was $1,960,000 in 1969 and $1,749,000 in 1968.

The company is a party to various litigation which in the opinion of management will not have a material adverse effect on its financial position at December 31, 1969.

Opinion of Independent Accountants

Price Waterhouse & Co.

555 California Street
San Francisco 94104

February 27, 1970

To the Shareholders and Board of Directors of Fairchild Camera and Instrument Corporation

In our opinion, the accompanying consolidated balance sheet, the related consolidated statements of income and retained earnings, additional paid-in capital and source and application of funds present fairly the financial position of Fairchild Camera and Instrument Corporation and its subsidiaries at December 31, 1969, the results of their operations and the supplementary information on funds for the year, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year, except for the change, which we approve, in the method of computing depreciation as described in Note 2 of the notes to consolidated financial statements. Our examination of these statements was 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.

The consolidated financial statements of Fairchild Camera and Instrument Corporation for the year 1968 were examined by other independent accountants.

Price Waterhouse & Co.

Board of Directors

Sherman M. Fairchild Founder; Chairman of the Board of the Corporation and Chairman of the Board of Fairchild Hiller Corporation
C. Lester Hogan President and Chief Executive Officer
Walter Burke Financial Advisor to Sherman M. Fairchild
William C. Franklin Consultant
Roswell L. Gilpatric Lawyer; Member of the firm of Cravath, Swaine & Moore
Alan J. Grant Group Vice President
Louis F. Polk, Jr. Chairman, Executive Committee, Leisure Dynamics Inc.
William A. Stenson Executive Vice President, the Bank of New York
J. Bradford Wharton, Jr. Management Consultant; President of the Wealdon Company, Investments and Farming

Officers

C. Lester Hogan President and Chief Executive Officer
Alan J. Grant Group Vice President—Equipment Divisions
George T. Pfifer Vice President—Finance
Nelson Stone Vice President, General Counsel and Secretary
Warren J. Bowles Vice President—Industrial Relations
Frederick M. Hoar Vice President—Communications
Thomas D. Hinkelman Vice President—Planning
James M. Early Vice President and Director of Research
Leo E. Dwork Vice President and Chief Technology Officer
F. Joseph Van Poppelen Jr. Vice President and General Manager, Semiconductor
M. M. Atalla Vice President and General Manager, Microwave & Optoelectronics
Raymond G. Hennessey Vice President and General Manager, Industrial Products
Frederick Walzer Vice President and General Manager, DuMont Electron Tubes
Robert L. Keith Treasurer
John J. Giblin Assistant Controller
Philip Haas Jr. Assistant Secretary & Tax Director
Richard Franklin Assistant Secretary (Attesting)
Stuart Josefsberg Assistant Secretary (Attesting)

General Counsel Cravath, Swaine & Moore, New York
Independent Certified Public Accountants Price Waterhouse & Co.
Transfer Agent The Bank of New York
Registrar First National City Bank of New York

Design, Sheldon Seidler Associates

Fairchild Camera and Instrument Corporation 464 Ellis Street, Mountain View, California 94040

FAIRCHILD
CAMERA AND INSTRUMENT
CORPORATION

ANNUAL REPORT 1963

FAIRCHILD

CAMERA AND INSTRUMENT CORPORATION

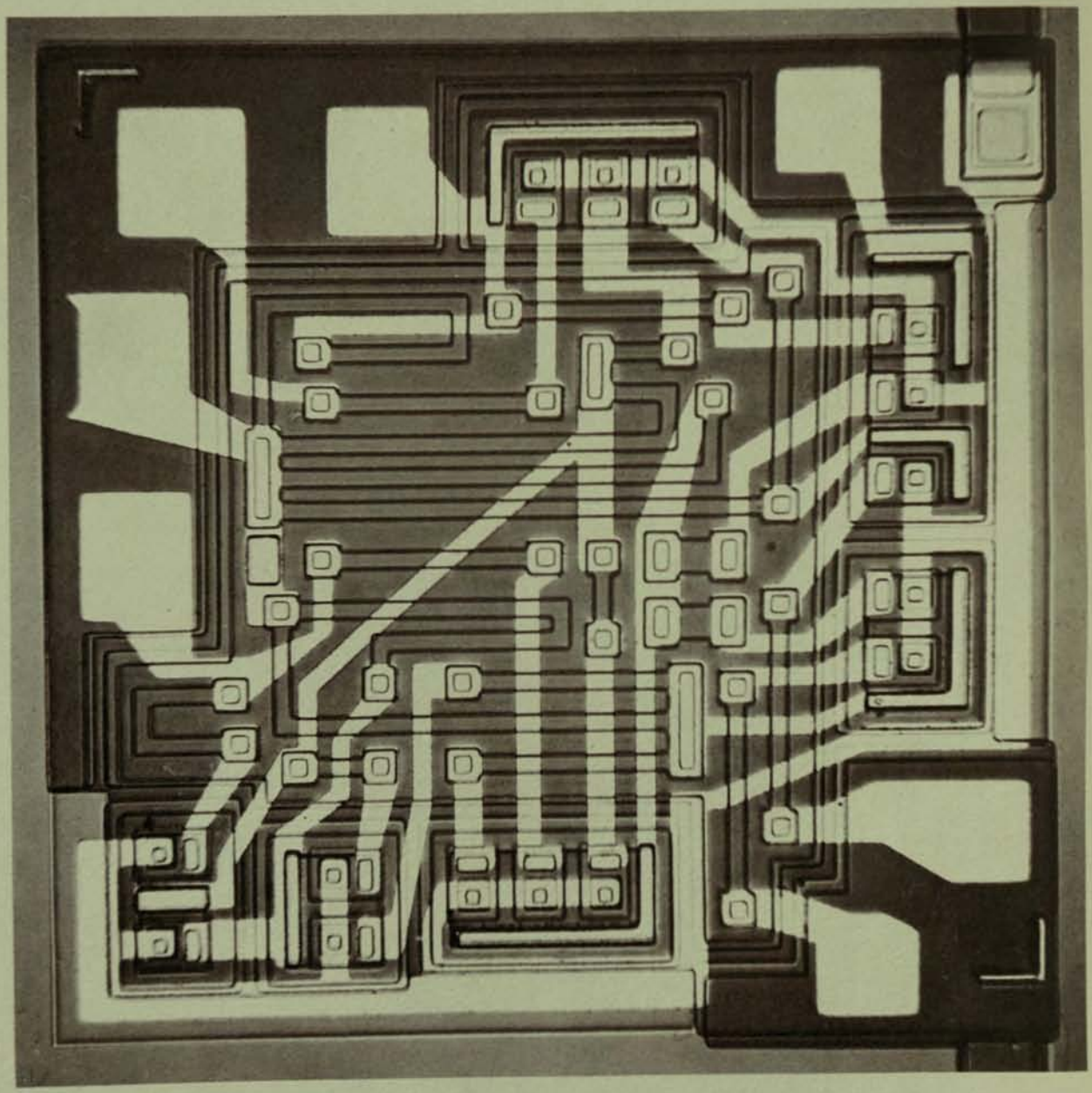
ON THE COVER: *This striking 180° view of the New York City area taken during test flight of new Space and Defense Systems Division panoramic reconnaissance camera illustrates Fairchild's continuing leadership in the design of advanced aerial photographic equipment. The Corporation, through a number of its divisions, is contributing state-of-the-art devices for the acquisition, transmission, processing, display, interpretation, reproduction, storage and retrieval of graphic information in the defense, industrial and consumer markets.*

FAIRCHILD

CAMERA AND INSTRUMENT
CORPORATION

ANNUAL REPORT FOR THE YEAR ENDED DECEMBER 31, 1963

Enlarged photo of epitaxial full shift register of new low-power Micrologic family of integrated microcircuits produced by Fairchild Semiconductor. Actual size is only 1/16 inch square. ■



CONTENTS

FAIRCHILD

CAMERA AND INSTRUMENT CORPORATION

EXECUTIVE OFFICES:
300 ROBBINS LANE, SYOSSET, L. I., NEW YORK

DIVISIONS

AERIAL SURVEYS
224 E. Eleventh St., Los Angeles, Calif.

CABLE
Junge Blvd. and Maiden Lane, Joplin Mo.

CONTROLS
225 Park Ave., Hicksville, L. I., N. Y.

DAVIDSON
5004 E. Jericho Turnpike, Commack, L. I., N. Y.

DU MONT LABORATORIES
750 Bloomfield Ave., Clifton, N. J.

GRAPHIC EQUIPMENT
221 Fairchild Ave., Plainview, L. I., N. Y.

INDUSTRIAL PRODUCTS
221 Fairchild Ave., Plainview, L. I., N. Y.

INTERNATIONAL
515 Madison Ave., New York, N. Y.

PRECISION METAL PRODUCTS
1700 North Johnson Ave., El Cajon, Calif.

SEMICONDUCTOR
313 Fairchild Drive, Mountain View, Calif.

SPACE AND DEFENSE SYSTEMS
300 Robbins Lane, Syosset, L. I., N. Y.

SUBSIDIARIES

ELECTRO-METRICS CORPORATION
88 Church St., Amsterdam, N. Y.

WINSTON RESEARCH CORPORATION
6711 S. Sepulveda Blvd., Los Angeles, Calif.

FIVE YEAR HIGHLIGHTS

(COMPARATIVE FIGURES FOR THE FIVE YEARS ENDING DECEMBER 31, 1963)

FOR THE YEAR	1963	1962	1961	1960	1959
NET SALES AND MACHINE RENTALS	$116,404,000	$101,538,000	$92,254,000	$67,940,000	$43,442,000
NET EARNINGS	1,931,000	4,335,000	3,819,000	3,410,000	2,071,000
SPECIAL CREDIT (Federal income tax benefits resulting from losses incurred by Allen B. Du Mont Laboratories, Inc. prior to merger)	737,000	1,655,000	1,433,000	345,000	—
NET EARNINGS AND SPECIAL CREDIT	2,668,000	5,990,000	5,252,000	3,755,000	2,071,000
DIVIDENDS PAID	1,275,328	1,266,791	1,249,136	611,084	518,270
PAYROLL	52,500,000	45,441,000	36,806,000	28,352,000	22,368,000
AT DECEMBER 31					
WORKING CAPITAL	26,693,000	20,704,000	17,754,000	14,822,000	7,738,000
SHAREHOLDERS' EQUITY	39,484,000	38,081,000	32,877,000	28,697,000	14,376,000
NUMBER OF EMPLOYEES	8,107	7,369	5,493	5,424	3,577
NUMBER OF STOCKHOLDERS	10,857	11,606	10,997	12,859	3,174
SHARES OUTSTANDING (Two-for-one split in 1961 & 1959)	2,550,657	2,535,083	2,498,272	1,222,168	1,036,890
BACKLOG	50,255,000	40,443,000	29,357,000	33,591,000	19,823,000
PER SHARE STATISTICS (Based on 2,550,657 shares outstanding at December 31, 1963):					
NET EARNINGS AND SPECIAL CREDIT	$ 1.05	$ 2.35	$ 2.06	$ 1.47	$ .81
WORKING CAPITAL	10.47	8.12	6.96	5.81	3.03
SHAREHOLDERS' EQUITY	15.48	14.93	12.89	11.25	5.64

BOARD OF DIRECTORS

John Carter
Chairman of the Board and Chief Executive Officer of Fairchild Camera and Instrument Corporation

Sherman M. Fairchild
Founder; Chairman of the Executive Committee of Fairchild Camera and Instrument Corporation

Richard Hodgson
President of Fairchild Camera and Instrument Corporation

Walter Burke
President of the Fairchild Foundation, Inc.

Charles H. Colvin
Engineering Consultant

William C. Franklin
President of Royal Crown Bottling Co.

William B. Scarborough*
Consultant; Director of Metropolitan Fire Assurance Co.

Joseph B. Wharton, Jr.
President of the Wealden Company

***William B. Scarborough**
1890-1964

William B. Scarborough, who served as a member of the Board of Directors of Fairchild Camera and Instrument Corporation from 1930, passed away on February 9, 1964.

He will be missed as a valued counselor and friend of the Corporation, its directors and its officers.

FAIRCHILD
CAMERA AND INSTRUMENT
CORPORATION

OFFICERS

JOHN CARTER ..... *Chairman of the Board and Chief Executive Officer*

RICHARD HODGSON ..... *President*

E. S. HILL ..... *Vice President and Comptroller*

K. P. McNAUGHTON ..... *Vice President*

R. N. NOYCE ..... *Vice President*

G. J. WADE ..... *Secretary and Treasurer*

S. I. ROSS ..... *Assistant Comptroller*

PHILIP HAAS, JR. ..... *Assistant Secretary*

NELSON STONE ..... *Assistant Secretary*

GENERAL COUNSEL ..... *Cravath, Swaine & Moore, New York*

INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS *Peat, Marwick, Mitchell & Co.*

TRANSFER AGENT ..... *The Bank of New York*

REGISTRAR ..... *First National City Bank of New York*

DEAR STOCKHOLDER:

Presented herewith is management's report on operations for the year 1963.

While sales again hit a record high of $116,000,000, profitability was penalized by a number of factors which affected several of our divisions.

During the first half of the year, we continued to feel the effects of the substantial decrease and postponement in military procurement which first became evident in the last half of 1962.

At the same time, we were hit by a number of extraordinary and non-recurring expenses in several divisions in the nature of start-up, re-training and facility rearrangement costs.

There were continuing costs in equipping and staffing the new solid state research and development laboratories in Palo Alto, California. However, the results already achieved from these expanded programs have resulted in a management decision to again double the size of this facility in 1964. This move is expected to enhance new product development and product application not only in the Semiconductor Division, but in a number of our other divisions now moving into solid state instruments and other products employing transistorized circuits and microcircuitry.

There were also continuing costs in equipping and getting into operation our new plants in Portland, Maine, and Commack, Long Island.

Furthermore, during the first part of the year it became evident that the rapidly increasing demand for Micrologic circuits and other specialized microcircuitry would necessitate the acceleration of microcircuit production in first quarter rather than over an originally anticipated five quarters. This required setting up of new production lines and the necessary accelerated training to man them.

In February, it was decided to merge the Business Machines Division into the Davidson Division, under a single management. This involved closing down of the Cleveland facility, relocating, termination and re-training costs, consolidation of branch offices and distributors. Also involved was the write-off of certain product lines of the Business Machines Division which were not retained. This write-off was completed in December, 1963.

Certain top-level management changes were made in the Davidson Division, which are expected to result in a more efficient and competitive sales force and decreased production and sales costs. A continued, aggressive sales training program will be necessary through 1964.

Operating profits did show improvement during third quarter and there were indications that certain important military programs were being funded and were nearing award. However, several of these important new programs are reflected only in the increased fourth quarter backlog – $50,000,000 overall as compared to $40,443,000 at year-end 1962 – and profits from these will not be realized until later in 1964.

Company-sponsored research and development continued at an accelerated pace, reaching an all-time high of $10,076,000, an increase of 42% over 1962. We consider this type of expenditure essential to the continued growth of the Company.

The substantial improvement anticipated in the Du Mont and the Davidson Divisions by fourth quarter did not materialize, making it necessary to substantially lower earnings forecasts for that period.

In the problem areas outlined, management feels that the necessary steps are being taken toward correcting them. While the "turn-around" is taking longer than originally anticipated, we do feel that the divisions are "showing improvement" and moving toward profitable operations.

On the other hand, there is much progress to be reported in all of our divisions in the areas of growth,

new product development and new markets for our products. These accomplishments are discussed in further detail in the "Reports on Operating Divisions" section of this report.

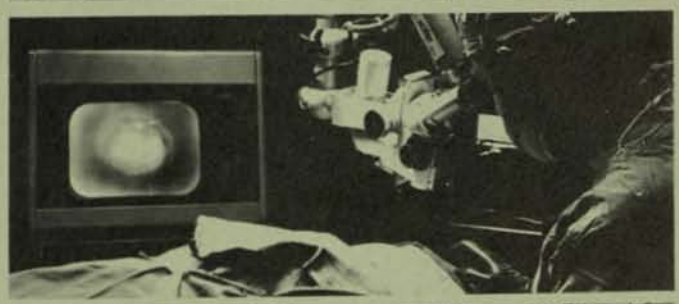
A 50-cent cash dividend was paid on the Corporation's outstanding shares, representing the 26th consecutive year in which cash dividends have been paid.

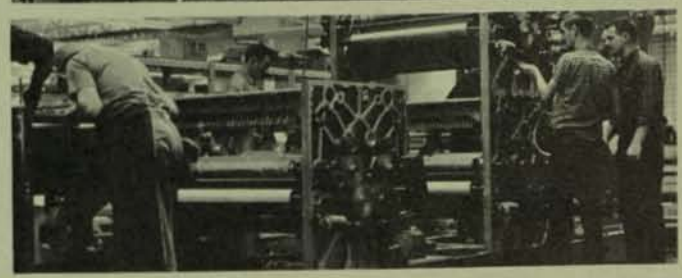
During the year, the Corporation acquired certain assets and products of the Berman Laboratories, including the Berman Metal Locator for locating foreign objects in the human body. This acquisition was for cash and the product line has been assigned to the Du Mont Division's Medical Instrument Department. Later in the year, negotiations were completed for the acquisition, for stock, of Electro-Sensitive Products, Inc. of Amsterdam, New York. It became a wholly-owned subsidiary on January 31, 1964 and will operate under the name of Electro-Metrics Corporation. This Company manufactures radio frequency interference monitoring and control instruments for both military and commercial broadcasting use. It represents a new product area for the Corporation.

Operations in 1963, therefore, were materially affected by problems and necessary costs which penalized earnings, despite record sales. We have started 1964 with a substantially increased back-log and a continuing uptrend in sales. We feel that proper corrective measures are being taken in problem areas and that, therefore, we can look for improvement during 1964.

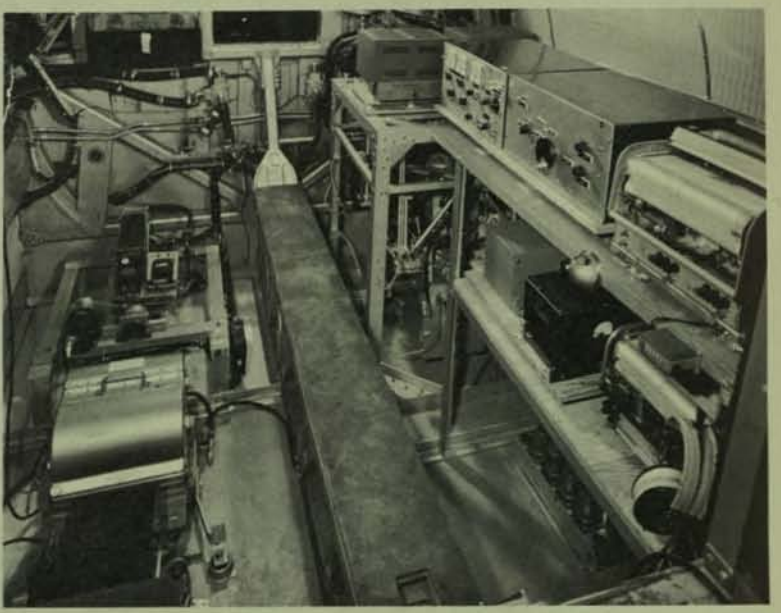
Sincerely,

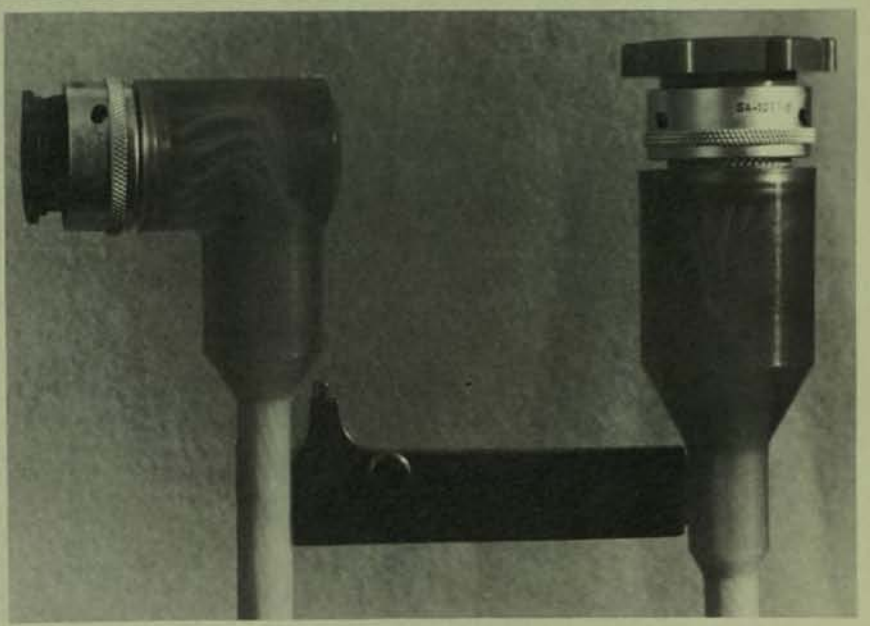
CHAIRMAN OF THE BOARD AND CHIEF EXECUTIVE OFFICER





THEN and NOW – *Aerial camera and intervalometer was only equipment used in typical aerial photographic mapping mission of the early 1930's (left). Compared to this photo-plane interior, today's photo-plane (right) is a veritable flying laboratory, with its precision mapping camera and associated electronic controls, computers, and data gathering equipment.*





Above at left – *Because of the highly critical applications in which Fairchild cables are used, each must undergo a series of minute inspection procedures both during and after assembly. At right is shown a sample of new polyurethane cable jacketing on prototype of cable developed for Atomic Energy Commission.*

REPORTS ON THE OPERATING DIVISIONS

(Note: Divisions are reported on in alphabetical order)

FAIRCHILD
CAMERA AND INSTRUMENT
CORPORATION

AERIAL SURVEYS Despite continuing worldwide competition, the Aerial Surveys Division was able to hold to approximately the same level of activity as in the year previous.

During the year, a trend toward more negotiated contracts, with emphasis on quality, became evident. This should ultimately result in better prices and the elimination of marginal competition.

Overhead was substantially reduced, and at the same time the sales force was increased to afford greater coverage at the professional engineering level.

Twenty-four airborne geophysical surveys were undertaken, totalling 137,600 lineal miles, for ten major oil companies and three governmental agencies. In the field of aeromagnetic surveys, projects were completed in five states, the North Sea area, Algeria and Mauretania. At year-end, two United States projects and one in Japan were underway.

The fleet of specially modified and equipped aircraft was modernized with the addition of new aircraft and the liquidating of World War II surplus aircraft.

Aerial Surveys continued its leadership in the highly specialized field of photogrammetric mapping with new automated techniques of map compilation and the use of new airborne techniques such as infrared sensors.

Continued progress was made in a development project utilizing helicopters for the location of microwave tower heights for optimum reception. A new service – electronic computation of transmission line tower spotting and tower requirements – was added and proved out during the year and should generate substantial new business in 1964.

A natural resources inventory mapping program in Chile is nearing completion and a similar survey for Peru is under negotiation.

One of the largest single mapping projects ever undertaken by a private mapping concern was started by an Aerial Surveys crew in November, 1963. This involves the mapping of the entire state of Texas, an area of 267,339 square miles, which will require approximately 5,800 9″ x 9″ aerial photographs at a scale of approximately 1:100,000. These photographs will be assembled into photomap mosaics for use of the several clients participating, and will also be available on a resale basis to the general public.

CABLE The Cable Division, which supplies specialized cable and cable assemblies for both airborne and ground support equipment in the nation's major missile programs, achieved significant breakthroughs in two areas during 1963.

The application of polyurethane as a jacketing material for cables provides advantages in weight, tensile

strength and production economy, with the attendant competitive advantages in the expanded missile market. This material, one of the new plastics with unusual characteristics, functions better under extremes of cold temperature than any jacketing material ever tested by Fairchild, and despite unfavorable environmental characteristics, remains more flexible and more abrasion resistant than other compounds with thicker walls.

The Division has also perfected improved molding process techniques which have opened up new markets in areas where weight-saving is a factor. Utilizing a new Du Pont molding material, this new molding is being marketed to defense contractors under the trade name of "Fair-A" molding. The new cable jacketing is marketed under the trade name "Fair-M."

CONTROLS Fairchild Controls manufactures a line of precision components, primarily for military and space programs. Included in the line are precision potentiometers, pressure transducers, sub-miniature rate gyros and accelerometers.

Sales of all these components increased in 1963 with the exception of precision potentiometers. Demand for these devices was considerably reduced due to the lower procurement of manned aircraft which was one of the major markets for these devices. On the other hand, sales of Fairchild conductive plastic potentiometers increased considerably due to the many advantages of this type of unit, and a further increase is foreseen in 1964, partially offsetting the decline in requirements for wirewound potentiometers.

During 1963 Fairchild Controls received orders for potentiometer-type pressure transducers to perform twelve separate functions aboard Gemini spacecraft. The Division also furnished six different types of semiconductor strain gauge pressure transducers for the Titan II launch vehicle for Gemini. Fairchild silicon semiconductor strain gauge pressure transducers were also used in a system developed by Pan American World Airways for measuring total take-off gross weight and aircraft center of gravity. Completion of three months of extensive flight testing, during which the system functioned

Converting non-conductive plastic into conductive function elements for precision potentiometers requires special equipment and techniques perfected by Fairchild Controls. Here a technician is placing a capsule containing a "raw" element into heat press where conductive "track" will be integrally co-molded into the non-conductive base.

Davidson Division introduced several new offset machines during 1963. In photograph at bottom, girl is operating two machines simultaneously – a Dual-A-Matic 560 and Dual-A-Matic 760 – to demonstrate ease of operation. Upper photo shows Dual-A-Matic 560 with Norfin 300 Bookmaker Collator. This combination of automated offset press and collator will print, count and "book" up to 8,000 impressions per hour.

perfectly without maintenance, indicates possible application to all cargo aircraft.

Another interesting application of the Fairchild strain gauge transducer is in the Sikorsky Skycrane helicopters. Here three of the transducers are used as load cells to provide a direct measurement of engine torque on both engines and load on the winch. Because of their excellent performance in this application, additional orders have been placed for engine torque measuring systems for Sikorsky's CH54A helicopters, the Army version of the S-64 Skycrane.

Rate gyros and gyro/accelerometer packages gained additional acceptance during the year with continuation of production contracts for use in the Mark 46 Torpedo and Minuteman. Additional orders were also received for rate switch packages used to protect the inertial guidance gyros in the Polaris weapons system. In addition, several new and interesting packaged sub-systems have been supplied for classified projects.

A European office has been opened, staffed by an executive engineer, to provide closer liaison with the growing European market for the Division's products. Arrangements have been made to license Elliott Brothers, Ltd. to manufacture Fairchild precision potentiometers in England for sale in the United Kingdom. In addition a licensing agreement has been concluded with Japan Servo Co., Ltd. for the manufacture of Fairchild precision potentiometers in Japan for the Far Eastern market. In return, Fairchild has exclusive rights to distribute potentiometers manufactured by Japan Servo Co., Ltd. outside of the Far East. It is anticipated that some semi-precision types, used primarily in the industrial market, which are not presently made by Fairchild Controls, will be made by Japan Servo for sale by Fairchild.

DAVIDSON The Davidson Division, acquired in late 1962 from Mergenthaler Linotype Company, markets several lines of offset printing machines, supplies, collators, folding machines and mail and document sorting machines.

In February, 1963, the Business Machines Division

was merged into the Davidson Division, necessitating the consolidation costs and training programs described in the Chairman's letter.

As a result of the merger of these two divisions, a sales organization has been built which includes fourteen Davidson branch offices and forty-three distributors located in major marketing centers throughout the United States.

A number of significant product introductions enhanced the Division's position in the graphic arts and business machines markets.

The Dual-A-Matic, fully automated small offset printing press, was introduced at the end of the first quarter. Depressing a single button causes this machine to automatically ink and dampen the plate, start the ink flow, feed paper, print and count copies, clean the blanket and stop itself.

The Dualith 700, with sheet size acceptance of 15" x 18", was also introduced together with a number of important product and attachment improvements for the Dualith 500 series of presses and other existing Dualith models.

During the year promotional efforts were increased to create broad interest for new and existing products. The Division was represented at most of the major graphic arts and business equipment trade shows.

The new Dualith 600 offset machine, a competitively priced machine, together with two different fully automated models and a new Auto-Etcher, were shown for the first time nationally at a major business show during fourth quarter. The Auto-Etcher is designed to pre-wet paper masters automatically, in sequence with the Dual-A-Matic automated machines.

The Division is now in a position to offer a complete line of small offset equipment to the industry, from manually operated to semi-automated to fully automated machines.

Product improvements were also made on the 2102 Collator and it is anticipated that the folding machine line will also contribute materially to sales volume in 1964.

Greater emphasis is being placed on the sale of supplies to increase volume and further broaden the Division's position in the market in 1964.

Program planning for 1964 places considerable emphasis on sales and technical training. At the same time, product improvements and expansion in the basic business, industry and government markets are planned for all product categories.

DU MONT LABORATORIES Primary effort in 1963 at Du Mont Laboratories was directed at product development and marketing. A new sales oriented management had the opportunity to increase orders booked and to develop an overall backlog position larger than a year ago, and 52% higher in commercial products. Emphasis in 1964 will be placed on cost reduction, production efficiency, and profit selectivity in contracts and orders solicited. A total marketing effort will be continued for major product lines.

Electronics Division Orders booked in this Division during 1963 were 50% above the order intake for 1962, reflecting new product design and development together with intensified sales effort and a broad program of advertising and sales promotion.

Refinements to the 765 series of transistorized, high-frequency oscilloscopes included a high brightness version and additional plug-in units that add versatility to the instruments and increase their capability. The new 765H series are being utilized in an increasing number of missile systems, and large volume purchases have been made by leading computer manufacturers for use in the factory and in the field. New low-frequency instruments of advanced design have also been introduced, and new oscilloscope cameras have helped the Division's position in this field. Manufacturing order backlog for instruments has climbed substantially, providing a stable platform for production planning in 1964.

In the Communications Department a two-pronged approach was taken to increase the Company's percentage of volume in the $100 million two-way mobile radio market. A strong marketing base was established for a true national sales organization. At the same time new product developments were undertaken to enable

Upper left – *Screen phosphors for Fairchild-Du Mont cathode-ray tubes being added to glass tube envelopes which have been scrupulously cleaned.*

Upper right – *Fairchild-Du Mont closed-circuit TV is used by British Overseas Airways Corporation at Kennedy International Airport to transmit arrival information to ticket counter and other points.*

Photograph at bottom *shows a portion of Du Mont Divisions' Instrument assembly area with partially completed Model 766H high-frequency transistorized oscilloscopes in the foreground.*

Fairchild to introduce a technically advanced line of equipment in 1964. Orders received in 1963 showed a 15% increase over the previous year.

In military communications the Division is working under contract on an advanced photo transmission system program as well as contract work on electronic countermeasures and radar.

The Electro-Visual Department is concerned with all systems, military and commercial, which use television in any way as a means of transmitting data or information. Television boresighting for radar on missile-equipped Navy vessels is an example of particular capability and contract performance. In 1963 television boresighting equipment was produced and delivered under a multi-million dollar program with an extensive follow-on potential in 1964. Commercial closed-circuit television has benefited from additional engineering and development of highest quality systems.

Electronic Tube Division The Electronic Tube Division has continued to expand in terms of order intake and backlog (up 18%) and to diversify its products in market potential.

During 1963 investment was made in equipment to further improve product quality and to effect cost reductions.

Continued development added new, sophisticated types of industrial and special purpose cathode ray tubes to the Du Mont line. These included tubes with high resolution, high deflection sensitivity and tubes with unusually high writing speeds. Advances have also been made in tubes for oscilloscopes and other instrumentation. Radar bright display, character display, scanning and specialized fiber-optic faceplate tubes for direct printing and other specialized end uses have also undergone major development programs.

Continued growth has been experienced in the storage tube product line, scan converter read-out storage tubes and direct view storage tubes. Development of new photomultiplier tubes has been continued in order to satisfy the need for increased applications being found for these tubes. A complete new line of photomultiplier tubes is under development to augment the present line.

During 1963 the power tube operation was completely integrated into the Clifton facility, and the product line expanded.

GRAPHIC EQUIPMENT The growth pattern of the Graphic Equipment Division continued throughout 1963 with the introduction of a number of new products and the opening of a new manufacturing plant.

Continuing to exploit the growth of automated tape operation of linecasting machines, three new Teletypesetter products were introduced to the printing industry. A new operating unit makes it possible to now utilize the Teletypesetter® system to operate photo-typesetting machines. This new unit was designed specifically for the new Intertype Fotomatic and acceptance to date has been very encouraging.

During 1963 a significant new trend in typesetting became evident – the utilization of electronic computers in the tape operation of linecasting machines. A variety of computers for this purpose became available, all requiring tape perforators and tape-operated linecasting machines. To capitalize on this trend, the Division introduced a new perforator, designed for this application. It is anticipated that the use of computers will accelerate the sales of Fairchild TTS® operating units designed specifically for high speed linecasting machines.

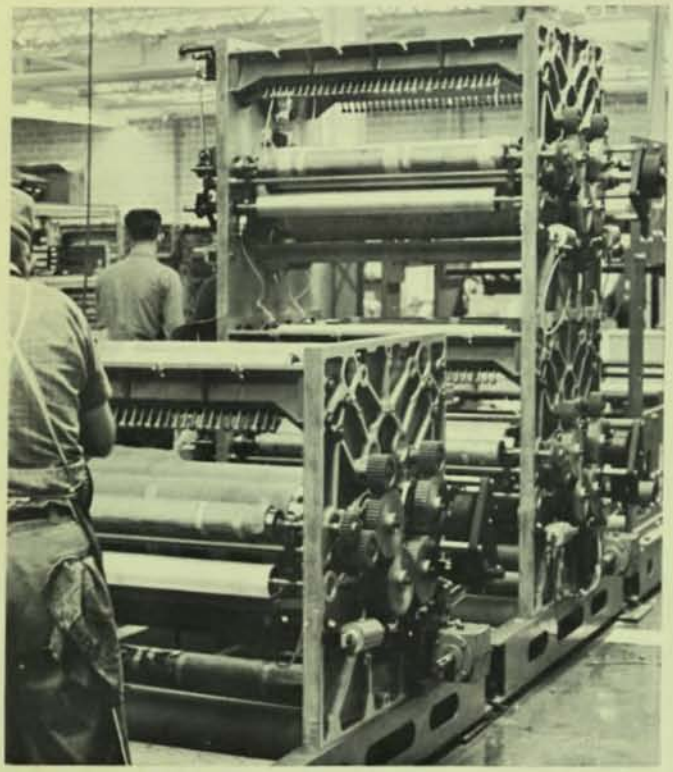
Fairchild has always presented Teletypesetter to the industry as a complete system. To maintain this position, the Division has negotiated an agreement with a leading computer manufacturer to market their computer as part of the system. By the same token, Fairchild TTS equipment can be used with any other computer system designed to automate typesetting by tape.

As the use of web offset perfecting presses and the sales of Fairchild Color King® have grown, it became evident that a press designed for smaller newspapers would find a ready and growing market. During 1963 a new press – the News King® – was designed, field tested and introduced to the industry in October. Response has been excellent, and a substantial backlog is already on hand and the press is in production.

The Color King press is now firmly established. The

Fairchild Graphic Equipment Division introduced the new News King® perfecting web offset press in late October 1963. Photo below shows News King being assembled at Graphic's Joplin, Mo. plant.

Teletypesetter® equipment has now been adapted to operate photo-composing machines from tape. Bottom photo shows TTS® Operating Unit on Intertype Fotomatic photo-composing machine.



Fairchild Teletypesetter Perforator installation at the N. Y. Times. Copy and tape handling are mechanized to further speed production of type. Conveyor between rows of perforators carries copy to operators as soon as each is ready to accept a new "take". At left of each perforator is transmission unit which converts punched codes in the tape to electrical impulses and transmits them directly to linecasting machines.

number of presses now in operation exceeds 100. With this number of Color King presses in service and the introduction of the News King, Fairchild Graphic is now an established and recognized producer of web offset perfecting presses.

During 1963 the Scan-A-Color® electronic color separation machine reached commercial status. In addition to adding several leased installations in the United States, six machines were sold in Japan and two in Europe. These units were installed by Division specialists and are now producing color separations commercially.

During the latter part of 1963 all press production was moved to a new 52,000 square foot manufacturing facility added to the existing plant in Joplin, Missouri. All operations at the plant in Los Angeles, where the presses were formerly produced, were discontinued.

This move, in addition to providing adequate facilities for present and future production of presses, has the further advantage of consolidating the production of all the Division's products in one central location. Considerable savings in production and distribution costs will result. The entire Joplin plant now totals 120,000 square feet.

The Scan-A-Graver® and Scan-A-Sizer® electronic engraving machines held their position of leadership among newspapers using the letterpress process. The Division also realized an encouraging growth in the sale of Du Pont Dycril® processing equipment during the year.

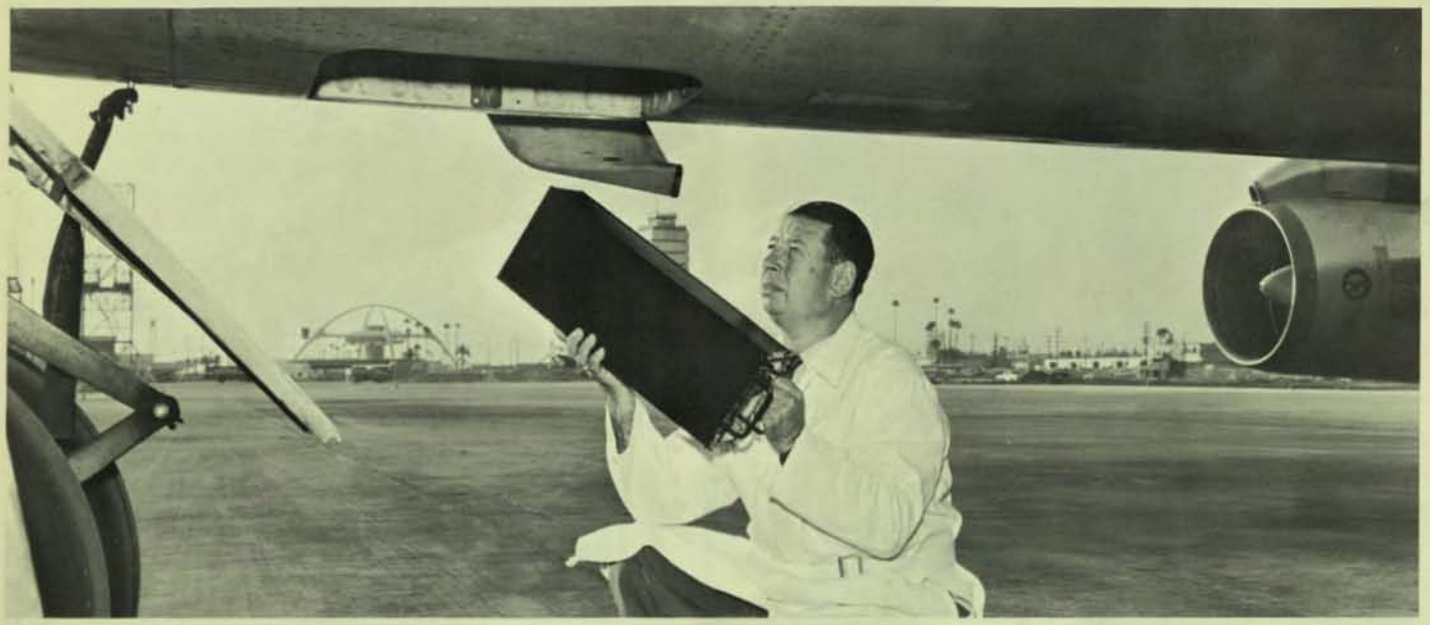
INDUSTRIAL PRODUCTS During 1963 the Industrial Products Division continued to improve its position in the areas of airborne recording devices, audio-visual equipment, consumer and industrial photo instrumentation. The significant customer areas involved civil and military aviation, industrial and retail distributors, health and educational government agencies.

The 1962 military contract for an initial quantity of Fairchild Flight Data Recorders was successfully executed and resulted in a 1963 follow-on contract for several hundred of these devices. As a result, the Fairchild recorder, already in use by over 50% of the international airlines on commercial jet aircraft, will now be standard in the military transport vehicles as well. Late in the year, in a move reflecting this increased activity, the production facility responsible for the product line moved into new quarters offering additional advantages in manufacturing and quality control.

The Division continued a development program with the Federal Aviation Authority involving cockpit voice recorders intended to survive accident damage and provide a record of cockpit conversation for crash analysis. The activity, during 1963, expanded to include testing and coordination with the Air Transport Association as well as FAA. The Fairchild unit was flown and used in domestic commercial aircraft quite satisfactorily during this period. The FAA has announced that it intends to make this type of equipment mandatory by June of 1965, indicating initial procurement by airlines in 1964.

The Fairchild Mark IV automatic cartridge projector, developed in 1962, was completed in production engineering with deliveries started in the last quarter of 1963. The initial response to the marketing program of this fully automatic loading machine has been good in industrial sales, governmental and educational areas. The ability of completely untrained personnel to load and unload the cartridge-contained 8mm sound film, offers a significant advantage over any previously existing projector. Current applications involve the use of the Mark IV in medical institutions, point of sale demonstrations, laboratory and classroom study, and teacher training. In the educational areas the Mark IV machine and certain existing film programs will be offered as a package both by Fairchild and other organizations already established in educational film distribution. Governmental sales are being handled directly by the Division.

Consumer marketing through retail dealers continued with the product-improved 8mm zoom sound movie camera and its companion zoom sound projector, still at a premium price, with growing consumer acceptance. Engineering programs for future product and accessory development of this line continued, with major emphasis on simplification of 8mm single system sound movie making.



Fairchild Flight Data Recorders like the one being installed in a commercial jet plane (top photo) *are now used by more than 50% of the international airlines.*

At left above – *Cartridge-loading of film, simplicity of operation and automatic shut-off contribute to growing popularity of the Fairchild Mark IV 8mm sound film projector in audio-visual instruction.*

At right – *Fairchild Model HS-401 highspeed Motion Analysis Camera (MAC) is teamed with industrial X-ray unit to probe interiors of sealed missile and spacecraft parts at operating speeds. This installation is used at Astronautics Division of General Dynamics Corporation.*

The Division continued its significant position in photo instrumentation and expansion. In carrying out a contract with NASA, optical system improvements resulted in greatly enhanced motion-stop quality in the 16-sided prism high speed camera. This unit is capable of taking 32,000 frames per second for analysis of high speed action.

During mid-year physical relocation from Yonkers to existing Fairchild facilities on Long Island reflected management's desire for increased operating efficiency.

Program planning for 1964 carries continued emphasis on 8mm magnetic sound for the audio-visual and consumer market. Additional product development and improvement in airborne recording devices is also viewed as a major effort.

PRECISION METAL PRODUCTS The Precision Metal Products Division continued to improve its position within the industry in 1963.

At the present time, the Division's products of custom precision flight hardware and ground support equipment are utilized for national defense and the space age industry. The addition of some commercial items to the line is currently under study. .

While the number of items made from exotic metals increased during the year, a large majority of the production units continue to be made of stainless steel. Typical products are metal bellows, high pressure flexible metal hoses, cryogenic lines, micronic filter elements and housings, heat exchangers, gimbals, manifolds, universal joints, valve bodies, compensators and ducting systems.

The Division has achieved wide participation in the aerospace programs and is currently supplying parts and subsystems for major missile systems and manned aircraft. Included are Titan, Atlas, Centaur, Thor, Saturn, Apollo, Agena D, the Nerva engine and the M-1 engine.

SEMICONDUCTOR The decision to concentrate on the use of silicon in the manufacture of semiconductor devices was made by Fairchild Semiconductor when the Division was formed in 1957.

The history of the Division has proven that decision to be a wise one.

At Precision Metal Products Division close quality control and advanced techniques are combined to assure maximum performance. In photo at top, fabrication of filter elements is accomplished by an advanced method of nickel and silver brazing in an inert atmosphere within a temperature and dust-controlled work area.

Lower photo shows inspector using an optical comparator to check thread depth, angle, pitch and dimensional conformity of precision part.

In 1963, silicon transistors and diodes, which had made inroads into the commercial computer market the year before, penetrated the market heavily. Higher reliability, increased switching speeds and lower cost were partly responsible for the increased use of silicon devices. The big news in computers in 1963 was a major new system built completely around Fairchild Semiconductor transistors – 550,000 transistors in one complete system.

The consumer television and high-fidelity market also began extensive use of silicon devices. Here particularly, reliability and low cost made penetration possible. One major TV manufacturer will market a completely transistorized television set in 1964, using all Fairchild transistors.

In addition, the Division has commitments for well over two million devices for use in UHF conversion units being built into 1964 model television sets alone.

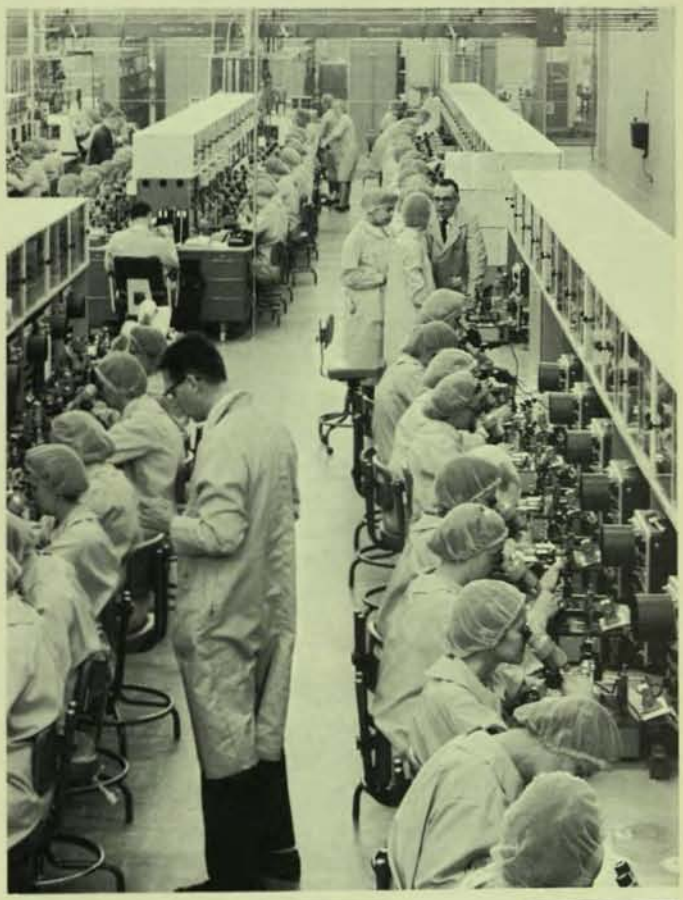
Integrated microcircuits have been fabricated exclusively from silicon since Fairchild first introduced this advanced technology with the Micrologic family in 1960. During 1963, microcircuits moved out of the prototype stage into production.

Advanced military computers for missile and space programs began using these devices at rates which virtually doubled quarterly. It is significant to note that during 1963, Fairchild shipped nearly half of all the integrated circuit units shipped by the entire industry.

The outlook for 1964 in this field calls for more complex circuits in continually increasing numbers. The Apollo manned-space flight program will use computers designed by Massachusetts Institute of Technology around Fairchild's proprietary Micrologic. This is only one of many such programs for which the Division supplies integrated circuits.

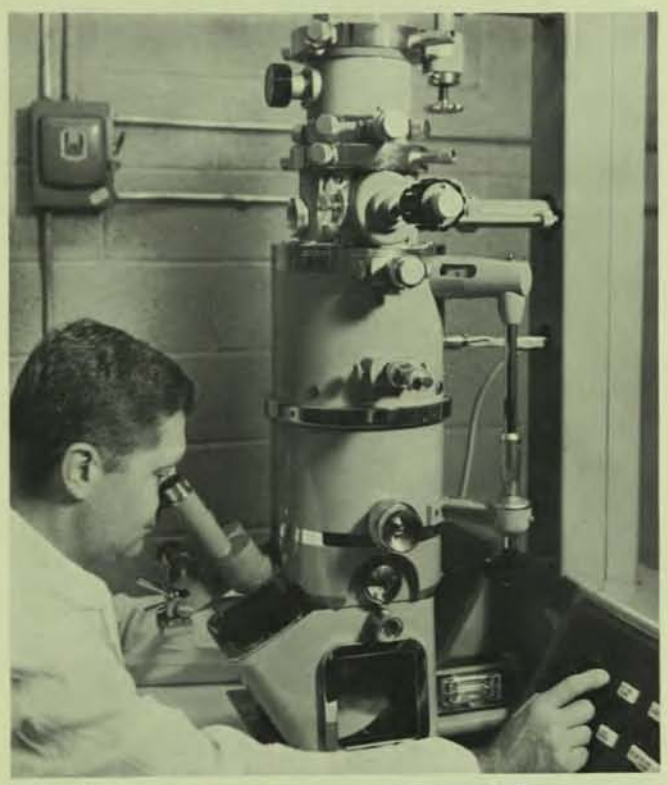
Silicon transistors and diodes have now been refined to where they can operate in the gigacycle (one billion cycles per second) frequency range. This development has led Fairchild to introduce a new solid-state microwave klystron and should pave the way for further microwave and high frequency television applications.

Below – General view of the die sort and die attach area of the Fairchild Semiconductor facility at South Portland, Maine. Lower photo shows examples of transistorized TV sets using Fairchild silicon transistors.



Powerful electron microscope (top) furnishing resolution of 5/100 millionths of an inch is one of the new instruments used in Space and Defense System's Basic Research Laboratory to explore structure of thin evaporated films.

Combination Viewer-Printer (below) displays enlarged aerial film negatives on rear projection screen and supplies positive prints for rapid analysis and interpretation of reconnaissance mission results.



conversion of photographic information of varying formats to a single standard size for ease of handling, storage and retrieval. This format standardization system also provides high resolution enlargement and reproduction of photographic intelligence for analysis, interpretation and distribution.

The Division also undertook the development of a unique space optical system for future planetary probes. The high acuity system will be used in obtaining direct optical electronic observation of the surfaces of planets such as Mars. Other contracts called for fabrication of reconnaissance lens systems and star tracker telescopes of new design.

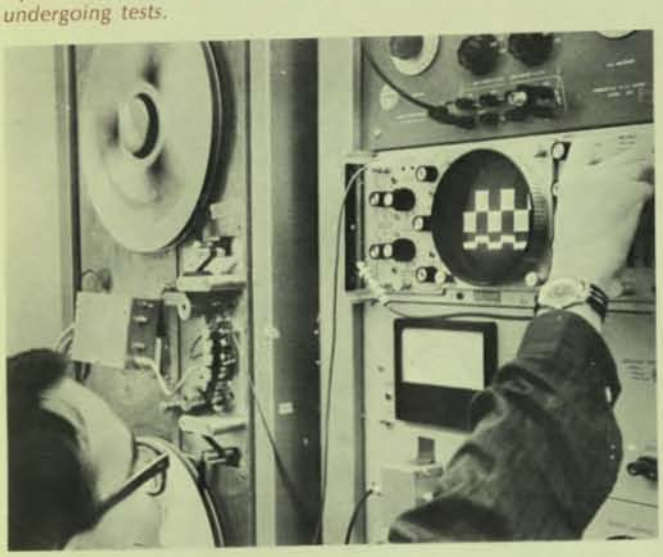
Research activities, including programs of a classified nature, were successfully pursued in the data acquisition, annotation, processing and control fields. Contracts for advanced imaging sensors, materials and interpretation equipment received high priority attention during the year. A number of these resulted in follow-on production which will continue into 1964 and beyond.

In concert with the Semiconductor Division, a family of integrated circuit elements known as milliwatt logic was developed from concept to production. Rapidly increasing interest is being shown in these devices for special purpose scientific and defense computers and data systems. Application of integrated circuit techniques in flight control systems and data converters for airborne and aerospace vehicles were explored. Success was also attained in new methods for assembly and high density packaging of integrated circuits.

Continued growth marked the Division's ordnance capability and performance. High frequency and self-starting mechanical timing devices of remarkable accuracy and reliability were fabricated for warhead arming and fuzing. Solid-state design was emphasized in control components for missile, rocket and satellite applications.

WINSTON RESEARCH Winston Research Corporation became a wholly-owned subsidiary of Fairchild Camera and Instrument Corporation on January 2, 1963. Progress has been substantial during its first year of operation.

Continuous research on magnetic heads conducted at Winston Research has resulted in new performance standards for magnetic tape recording. A group of magnetic head stacks is shown here undergoing tests.



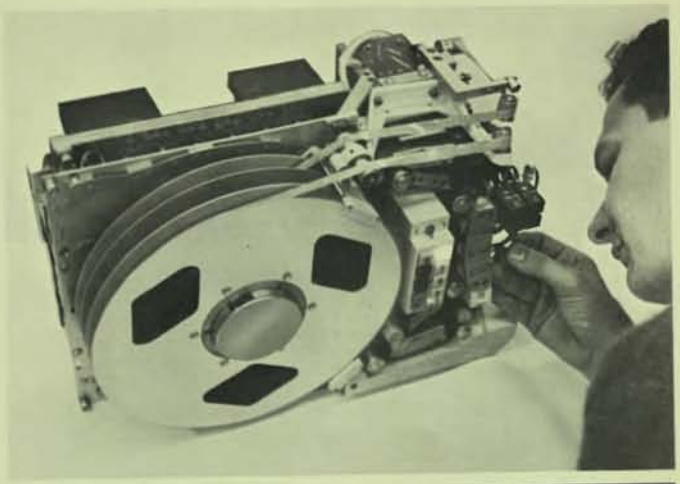
The backlog of funded projects has grown from four to eighteen. Plant facilities were more than doubled at mid-year when Winston moved to new quarters in Los Angeles. The personnel roster has more than tripled.

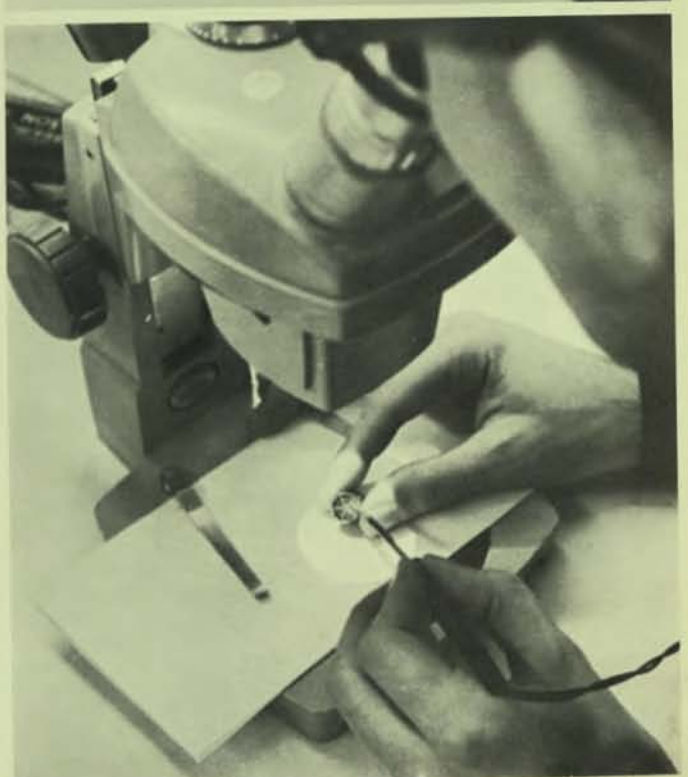
This growth is the result of growing recognition of Winston as a leader in the development of wideband, high performance instrumentation magnetic tape recorders.

The R and D phases of several recorder configurations will be completed early in 1964 enabling Winston to offer a comprehensive line of recorders with a very wide range in size, weight and bandwidth, with instruments suitable for a wide variety of applications. All models have met or exceeded design goals.

Concurrent with the recorder development, production was increased on the Fairchild-Winston Automatic Gain Control Amplifier. In addition to the current model, a solid-state unit has been developed for Winston by Fairchild Semiconductor.

Other systems on which research and development programs are underway include a supressed carrier frequency modulation transmission system, a noise reduction system for video transmission and a variety of video recorders for industry, education and consumer use.





New Winston P-400 Portable Instrumentation Recorder/Reproducer (shown at top) is significant break-through in recorder packaging density.

At Winston Research, miniaturization of circuits calls for miniaturized components, too. Above, the soldering of a tiny motor commutator is being performed under a microscope.

FAIRCHILD GLOSSARY

backlog – refers to the contracted value of all orders booked but not as yet delivered. Includes work in process, work scheduled and work yet to be scheduled.

collator – a machine for collecting individual sheets of printed material in numerical or other predetermined sequence.

conductive plastic potentiometer – a precision potentiometer in which the resistive element is comprised of a non-conductive base material with a conductive track co-molded under heat and pressure. The result is a component having superior performance characteristics.

cryogenic – the science of extremely low temperatures.

diode – a small component (literally half a transistor) having two electrodes, one being positive and the other negative. Principal function is in switching.

electronic countermeasure – an electronic device which generates signals to deter or deflect opposing signals. An example of an electronic countermeasure would be the "jamming" of radio signals.

fiber-optic faceplate – the flat surface of an electron tube comprised of millions of extremely small (8 micron) fibers which results in increased light output and improved optical resolution.

follow-on contract – a contract which is awarded following an initial contract for a given program or product.

geophysical survey – a survey which shows the physical geography of the earth.

linecasting machine – a machine which sets printing type in slugs or lines as opposed to other methods of setting type from individual characters. A "mixer" linecasting machine is one on which a variety of dissimilar types may be set. The type on this page is an example of "mixed" type.

load cell – a solid-state strain gauge which produces an electrical output as a function of mechanical tension or compression. It is, in effect, another form of transducer.

microcircuit – a miniaturized electrical or electronic circuit in which several components are combined into a single tiny unit. Fairchild "Micrologic" is an example of microcircuitry.

Micrologic – a new Fairchild technique combining the electronic components of a computer circuit into a single miniaturized transistor-like element.

micronic – pertains to extremely fine particles measured in microns (.001 millimeter).

net worth – the book value of the shareholders' investment in the corporation.

offset – a printing process by which the printed image is transferred from a positive plate to a rubber blanket and thence to the paper. The term derives from the fact that the printed image is "offset" from one medium (blanket) to another (paper).

oscilloscope – a test instrument using a cathode-ray tube (similar to TV tube) which produces visible wave forms of varying electrical currents or voltages.

photomultiplier tube – an electron tube that converts light into an electrical signal and then multiplies that signal as much as a million times.

PoroMat – Fairchild's trade name for a system using a plastic web material impregnated with chemicals for in-flight processing of aerial film.

precision potentiometer – an extremely accurate variable resistor, or voltage divider. The volume control on your radio is one of its simpler forms. Fairchild Controls makes precision potentiometers for very specialized industrial and military applications.

prototype – usually the first working model of an instrument or machine from which future production units will be built.

solid-state – the physics of materials in their solid form. Examples of solid-state materials are: transistors, diodes, solid-state lasers, metals and alloys, etc.

storage tube – a cathode-ray tube that retains an image or trace on the tube face for a relatively long period of time as opposed to a momentary or transient image.

strain-gauge transducer – a miniaturized pressure sensing device using semiconductors as sensors.

Teletypesetter – a typewriter-like device that produces a perforated tape, which when fed into an attachment on a linecasting machine permits the latter to be operated automatically.

transducer – an electro-mechanical device that transforms one kind of energy into another. Fairchild Controls makes a pressure transducer which changes physical pressures into electrical energy.

transistor – a small semiconductor device no larger than the eraser in the end of a pencil, which performs the functions of a radio tube. Commonly used in miniaturized electronic devices.

web perfecting press – in this case an offset printing press in which a continuous roll of paper (web) is fed between two printing blankets which make a printed impression on both sides of the paper simultaneously. It is also referred to as a blanket-to-blanket press.

working capital – the excess of current assets over current liabilities available for use in the daily (and any unusual) operations of the corporation.

STATEMENT OF CHANGES IN WORKING CAPITAL

YEAR ENDED DECEMBER 31, 1963 WITH COMPARATIVE FIGURES FOR 1962

	1963	1962
WORKING CAPITAL AT BEGINNING OF YEAR	**$ 20,703,574**	**$ 17,754,166**
Adjustments caused by pooling of interests — Winston Research Corporation in 1963 and Cosmic Corporation in 1962	(130,082)	321,710
	20,573,492	**18,075,876**
ADDITIONS:		
Net earnings and special credit	2,667,555	5,989,940
Depreciation and amortization	4,392,729	3,758,564
Increase in long-term debt	7,294,515	1,514,417
Proceeds from sale of capital stock, less expenses	141,070	158,507
Increase in deferred Federal income taxes	—	47,219
Decrease in investments in and advances to affiliated companies and other assets	23,885	—
	14,519,754	**11,468,647**
	35,093,246	29,544,523
DEDUCTIONS:		
Cash dividend paid — 50c a share in 1963 and 1962	1,275,328	1,266,791
Net additions to property, plant and equipment	6,790,708	7,086,762
Decrease in deferred Federal income taxes	334,060	—
Increase in investments in and advances to affiliated companies and other assets	—	487,396
	8,400,096	**8,840,949**
WORKING CAPITAL AT END OF YEAR	**$ 26,693,150**	**$ 20,703,574**

CONSOLIDATED BALANCE SHEET / YEAR ENDED DECEMBER 31, 1963

ASSETS

	1963	1962
CURRENT ASSETS:		
Cash	$ 3,760,500	$ 3,039,873
Accounts and notes receivable, including $2,921,556 in 1963 and $1,762,579 in 1962 of instalment payment contracts due after one year, less provision for allowances and doubtful accounts — 1963, $1,104,637; 1962, $1,336,363	26,882,897	25,606,619
Inventories, at the lower of cost (principally first-in, first-out) or estimated realizable market:		
U. S. Government contracts and other work in process, less progress payments — 1963, $1,530,620; 1962, $1,077,336	12,975,414	9,171,356
Raw materials and parts	6,656,230	5,065,536
Finished goods	8,877,411	6,297,103
	28,509,055	20,533,995
Prepaid expenses	686,038	661,204
Total current assets	**59,838,490**	**49,841,691**
INVESTMENTS IN AND ADVANCES TO AFFILIATED COMPANIES (notes 1 and 7)	**1,794,953**	**1,745,217**
PROPERTY, PLANT AND EQUIPMENT, AT COST:		
Land	514,747	514,747
Buildings	8,660,361	7,576,877
Rental equipment	3,905,948	4,539,432
Machinery, furniture and fixtures and leasehold improvements	27,161,608	22,166,351
	40,242,664	34,797,407
Less accumulated depreciation and amortization	16,191,430	13,144,152
	24,051,234	**21,653,255**
DEFERRED CHARGES	**271,755**	**345,376**
GOODWILL	**1**	**1**
	$ 85,956,433	**$ 73,585,540**

See accompanying notes to consolidated financial statements.

WITH COMPARATIVE FIGURES FOR 1962

FAIRCHILD CAMERA AND INSTRUMENT CORPORATION

AND SUBSIDIARIES

LIABILITIES AND STOCKHOLDERS' EQUITY

	1963	1962
CURRENT LIABILITIES:		
Notes payable to banks — unsecured (note 2)	$ 14,500,000	$ 13,700,000
Current instalments of unsecured term loan payable (note 2)	2,000,000	—
Current instalments of mortgages payable	128,286	85,577
Accounts payable and accrued liabilities	13,741,325	10,930,211
Provision for Federal and other taxes on income (note 3)	2,775,729	4,422,329
Total current liabilities	**33,145,340**	**29,138,117**
LONG-TERM DEBT:		
Secured revolving credit (note 2)	4,500,000	4,500,000
Unsecured term loan, less current instalments (note 2)	7,000,000	—
4¾% to 6% mortgages payable, less current instalments	1,069,868	775,353
	12,569,868	**5,275,353**
DEFERRED FEDERAL INCOME TAXES AND INVESTMENT CREDIT (note 3)	**757,159**	**1,091,219**
STOCKHOLDERS' EQUITY:		
Common stock, $1 par value (note 4):		
Authorized, 4,000,000 shares,		
Issued and outstanding, 2,550,657 shares in 1963 and 2,535,083 shares in 1962	2,550,657	2,535,083
Additional paid-in capital	17,288,025	17,152,551
Retained earnings (note 2)	19,645,384	18,393,217
Total stockholders' equity	**39,484,066**	**38,080,851**
CONTINGENCIES AND COMMITMENTS (notes 5, 6 and 7).		
	$ 85,956,433	**$ 73,585,540**

STATEMENT OF CONSOLIDATED EARNINGS

YEAR ENDED DECEMBER 31, 1963 WITH COMPARATIVE FIGURES FOR 1962

	1963	1962
NET SALES AND MACHINE RENTALS	$116,404,392	$101,538,202
COST OF SALES AND OTHER OPERATING COSTS		
(Depreciation and amortization provided—1963, $4,392,729; 1962, $3,758,564):		
Cost of sales and machine rentals	86,991,668	71,440,591
Administrative and selling	24,729,341	20,631,373
	111,721,009	92,071,964
	4,683,383	9,466,238
OTHER INCOME	801,720	488,023
	5,485,103	9,954,261
LESS INTEREST PAID (1963, $1,260,204; 1962, $713,294) AND OTHER CHARGES	1,632,548	1,058,321
EARNINGS BEFORE FEDERAL TAXES ON INCOME	3,852,555	8,895,940
PROVISION FOR FEDERAL TAXES ON INCOME (note 3)	1,922,000	4,561,000
NET EARNINGS FOR YEAR	1,930,555	4,334,940
SPECIAL CREDIT — FEDERAL INCOME TAX BENEFITS RESULTING FROM LOSSES INCURRED BY ALLEN B. DU MONT LABORATORIES, INC. PRIOR TO MERGER	737,000	1,655,000
NET EARNINGS AND SPECIAL CREDIT	$ 2,667,555	$ 5,989,940

See accompanying notes to consolidated financial statements.

STATEMENTS OF CONSOLIDATED ADDITIONAL PAID-IN CAPITAL AND RETAINED EARNINGS YEAR ENDED DECEMBER 31, 1963 WITH COMPARATIVE FIGURES FOR 1962

	1963	1962
ADDITIONAL PAID-IN CAPITAL		
BALANCE AT BEGINNING OF YEAR	$ 17,152,551	$ 16,999,105
Excess of value of capital stock of Winston Research Corporation over par value of Fairchild stock issued therefor (note 1)	9,478	—
Additional paid-in capital of Cosmic Corporation at January 1, 1962, less expenses	—	15,943
Excess of proceeds from exercise of stock options over par value of shares issued, less expenses (note 4)	125,996	137,503
BALANCE AT END OF YEAR	**$ 17,288,025**	**$ 17,152,551**
RETAINED EARNINGS		
BALANCE AT BEGINNING OF YEAR	$ 18,393,217	$ 13,380,108
(Deficit) of Winston Research Corporation at January 1, 1963 (note 1)	(140,060)	—
Retained earnings of Cosmic Corporation at January 1, 1962	—	289,960
	18,253,157	13,670,068
Add net earnings and special credit	2,667,555	5,989,940
	20,920,712	19,660,008
Deduct cash dividends — 50c a share in 1963 and 1962	1,275,328	1,266,791
BALANCE AT END OF YEAR (note 2)	**$ 19,645,384**	**$ 18,393,217**

See accompanying notes to consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS/DECEMBER 31, 1963

(1) Basis of Accounts:

The consolidated financial statements include the accounts of all wholly-owned domestic and Canadian subsidiaries but exclude wholly-owned Dutch and Hong Kong subsidiaries.

The investment in and advances to the Dutch and Hong Kong subsidiaries are included in the balance sheet caption "Investments in and advances to affiliated companies." The company's share of the net earnings of affiliated companies for 1963, and its equity in such companies exceeded the investment therein at the end of the year by approximately $112,000.

In January 1963 the company acquired all the capital stock of Winston Research Corporation in exchange for 500 shares of the company's common stock. The company may also issue to the former Winston stockholders additional shares of common stock based on Winston earnings for each of the two years ending December 31, 1965 and 1967. This transaction has been treated for accounting purposes as a pooling of interests and the operations of Winston have been included in the consolidated financial statements from January 1, 1963. The omission of Winston from the 1962 consolidated financial statements has no significant effect upon the comparability of the statements.

(2) Bank Loans:

A credit and term loan agreement dated March 15, 1963 provides for (a) revolving credit borrowings up to a maximum amount of $15,000,000 to June 30, 1964 (on February 20, 1964 the maximum amount was increased by $3,000,000 for a 90-day period and on that date the company's borrowings under the revolving credit aggregated $18,000,000), and (b) a term loan of which $9,000,000 was outstanding at December 31, 1963 and is repayable in equal semiannual payments of $1,000,000 to March 15, 1968. The interest rate on borrowings under the revolving credit, which is fixed at ¼ of 1% above the prime rate (but not less than 4¼% nor more than 5¼%) was 4¾% at year end. The company is also obligated to pay a commitment fee of ½ of 1% per annum on the average daily unused but available portion of the revolving credit. The interest rate on the term loan is 5% per annum.

A secured revolving credit agreement, dated March 15, 1962, as amended, permits borrowings, which are based on the amount of rentals and contract payments assigned as security, up to a maximum of $5,000,000. The interest rate, which is fixed at ½ of 1% above the prime rate (but not less than 4½% nor more than 5½%) was 5% at year end. A commitment fee of ½ of 1% per annum on the average daily unused but available portion of the credit is also payable. The banks have the right to terminate this agreement upon six months' written notice. After receipt of such notice, the borrowings must be repaid in 36 equal monthly instalments commencing seven months from the notice date. As of March 2, 1964, no termination notification has been received, nor is any expected, and therefore borrowings under the secured revolving credit agreement have been classified as long-term. Should the banks decide to terminate this agreement immediately after March 2, 1964, the maximum amount of the loan outstanding at December 31, 1963 that would be payable by the end of 1964 would be $375,000.

Among the restrictive covenants contained in the credit and term loan agreement (which is the more restrictive of the agreements) is a requirement to maintain consolidated working capital of $25,000,000 and consolidated current assets of not less than 150% of consolidated current liabilities. There is also a restriction as to the payment of cash dividends and the purchase of stock (other than purchases from the proceeds of sale of stock) to 50% of consolidated net earnings from January 1, 1963. Unrestricted consolidated retained earnings at December 31, 1963 amounted to $58,450.

(3) Federal Taxes on Income:

The Federal income tax returns of the company for the years 1959 and 1960 are presently being examined. The Internal Revenue Service has examined the returns for the years 1952 to 1958 of Allen B. Du Mont Laboratories, Inc. (which was merged into Fairchild on July 5, 1960) and has asserted certain deficiencies, but the ultimate liability, if any, has not been finally determined. The company is of the opinion that the liability for Federal taxes on income has been adequately provided for in the accompanying financial statements.

The company has claimed accelerated amortization for income tax purposes on certain facilities acquired in 1952, 1953 and 1961 under certificates of necessity, but provisions for depreciation and Federal income taxes in the statement of consolidated earnings were based on the normal useful life of the facilities. The estimated tax on the difference between book and tax depreciation is now being restored to income as the book depreciation now exceeds tax depreciation. Further, the deferred Federal income taxes have been reduced in 1963 by the estimated future Federal income tax benefit that the company will realize through the operations of a subsidiary company.

In accordance with the Revenue Act of 1962 the company is entitled to "investment credit" against its Federal income taxes. The company is taking 48% of these credits into income over the productive lives of the assets to which they relate and is setting aside 52% as deferred Federal income taxes to offset the effect of reduced tax depreciation allowances arising from the credit. The investment credit amounted to $145,000 for 1963 and $185,000 for 1962 and the amount of such credits included in earnings was $26,700 in 1963 and $10,100 in 1962.

(4) Stock Options:

The following statement shows the changes during the year in the company's various stock option plans and agreements:

	Changes in shares available for options	Shares granted under options	
		Price per share (at 100% of market) at date of grant	No. of shares
Balance at beginning of year	146,800	$ 4.50 to $96.00	93,000
Granted during year:			
New options	(20,400)	35.19 to 53.75	20,400
Regrants of options cancelled	(4,300)	35.25 to 48.19	4,300
Cancelled	4,300	59.25 to 93.75	(4,300)
Exercised	—	4.50 to 29.36	(15,074)
Expired (a)	5,400	35.25 to 91.16	(5,566)
Balance at end of year	131,800	$ 6.13 to $96.00	92,760

(a) Stock options that expired on 166 shares are not available for regranting.

Options on 26,157 shares were exercisable at the beginning of the year, and options on 15,592 shares were exercisable at the end of the year.

(5) Pension Plans:

In 1963 the company's accrual for the payment to the trustees of the non-contributory pension plans amounted to $1,046,000 ($524,000 accrued in 1962). On the basis of the actuarial estimate, unfunded past service costs amounted to approximately $6,982,000 at December 31, 1963.

(6) Contingencies and Commitments:

There is a contingent liability of approximately $900,000 on notes receivable which were sold.

The company may be required to issue additional shares of its common stock to the former stockholders of Winston Research Corporation (see note 1) and Electro-Metrics Corporation (see note 7). The number of shares of common stock of the company to be issued is dependent on the earnings of Winston and Electro in future years.

At December 31, 1963 the company was obligated under twenty-seven long-term leases expiring between 1967 and 1978 with maximum annual rentals aggregating $1,282,000.

At December 31, 1963 the companies had plans for capital expenditures in 1964 of approximately $7,000,000.

(7) Subsequent Event:

On January 31, 1964, the company acquired all of the capital stock of Electro-Metrics Corporation in exchange for 100 shares of the company's common stock. The company may also issue to the former Electro stockholders additional shares of common stock based on Electro earnings for the period from 1965 to 1968. The company is also obligated to lend to Electro an aggregate of $100,000, of which, loans of $45,000 were advanced at December 31, 1963 and included in the balance sheet caption "Investments in and advances to affiliated companies." This transaction will be treated for accounting purposes in 1964 as a pooling of interests, and the omission of Electro, which commenced operations on August 30, 1963, from the 1963 consolidated financial statements, has no significant effect upon such statements.

ACCOUNTANTS' REPORT

PEAT, MARWICK, MITCHELL & CO.

CERTIFIED PUBLIC ACCOUNTANTS

SEVENTY PINE STREET

NEW YORK, NEW YORK 10005

The Board of Directors and Stockholders
Fairchild Camera and Instrument Corporation:

We have examined the consolidated balance sheet of Fairchild Camera and Instrument Corporation and subsidiaries as of December 31, 1963 and the related statements of earnings, additional paid-in capital and retained earnings for the year then ended. Our examination was 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. We were unable to confirm, by direct correspondence, certain of the accounts due from United States Government departments and agencies, but we satisfied ourselves as to such accounts by means of other auditing procedures.

In our opinion, the accompanying consolidated balance sheet and statements of consolidated earnings, additional paid-in capital and retained earnings present fairly the financial position of Fairchild Camera and Instrument Corporation and subsidiaries at December 31, 1963 and the results of their operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. Also, in our opinion, the accompanying statement of changes in working capital presents fairly the information shown therein.

Peat, Marwick, Mitchell & Co.

New York, N. Y.
March 2, 1964

FAIRCHILD

CAMERA AND INSTRUMENT
CORPORATION

300 ROBBINS LANE, SYOSSET, L. I., N. Y.

Peri Hadley
650-327-4224