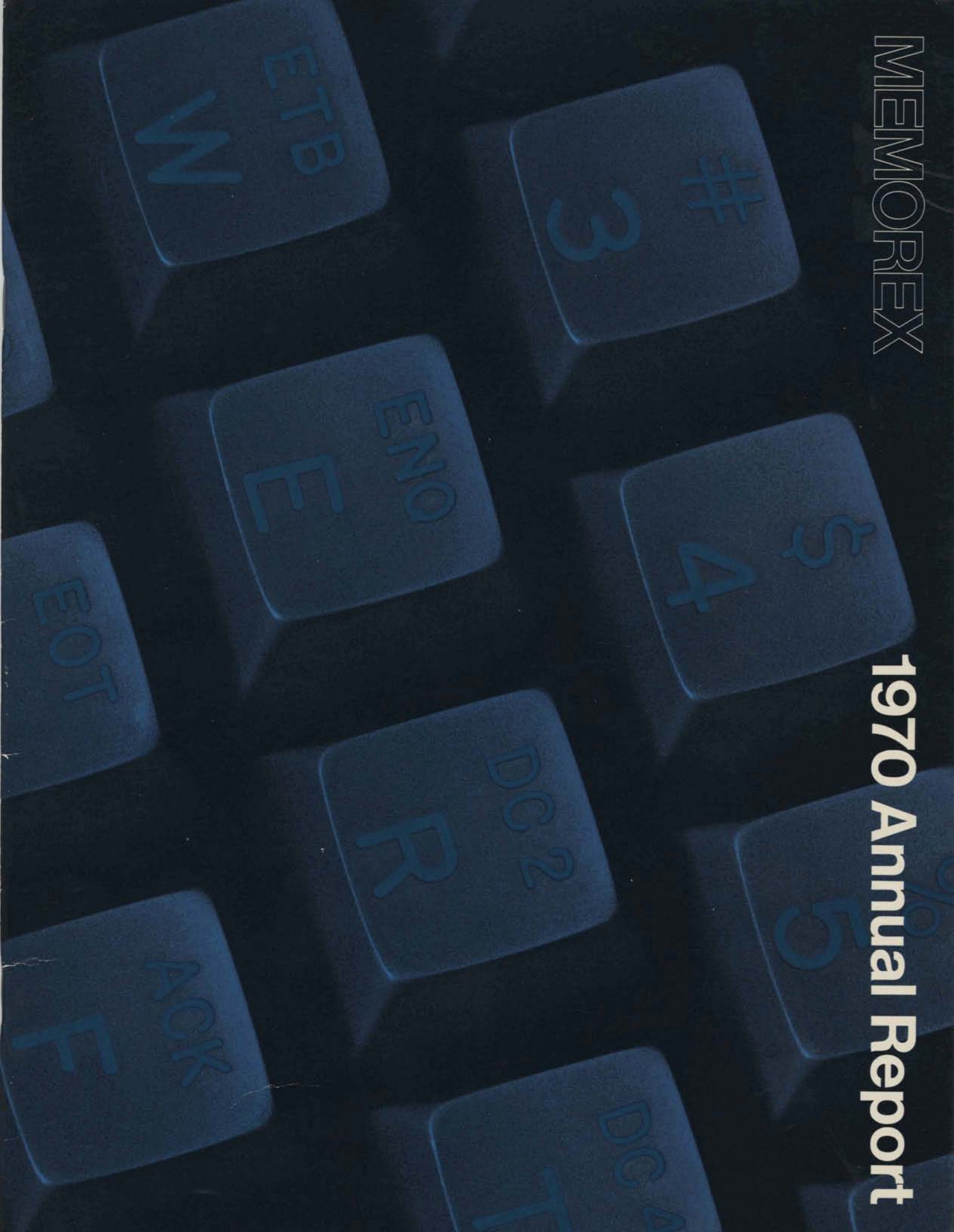


MEMMOREX

1970 Annual Report



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Cover: The Memorex 1240 Communication Terminal, a high speed input/output printing device for communication of information between terminal and computer, was the first of three new communication equipment products introduced in 1970.

Memorex Corporation

**Financial Highlights
for the years ended December 31, 1970 and 1969**

	1970 (1)	1969 (2)
Net sales and revenues (excluding \$42,345,000 billed to ILC in 1970)	\$ 78,997,000	\$74,067,000
Net income	3,183,000	6,902,000
Earnings per common share (3)83	1.85
Depreciation and amortization expense	11,314,000	5,860,000
Net additions to property, plant and equipment	36,987,000	11,901,000
Net additions of equipment for lease to others	37,901,000	7,441,000
Research and development expenditures:		
Expensed against net sales and revenues during the year (including amortization)	4,824,000	5,141,000
Capitalized as cost of equipment for lease to others (including amortization)	3,177,000	403,000
Subtotal: expenses and capitalized costs relating to products marketed	8,001,000	5,544,000
Capitalized as deferred research and development costs	8,141,000	3,683,000
Less: amortization of deferred research and development costs	(1,577,000)	(387,000)
Total research and development expenditures	14,565,000	8,840,000
 Financial Position:		
Working capital	35,355,000	16,127,000
Total assets	223,655,000	88,197,000
Long-term debt:		
ILC Peripherals Leasing Corporation	31,628,000	—
Memorex Corporation and Majority-Owned Subsidiaries —		
Bank credit and unsubordinated debt	26,873,000	22,354,000
Convertible subordinated debentures due 1990	75,040,000	65,000
Shareholders' equity	39,116,000	35,074,000
Average number of common shares outstanding	3,829,879	3,733,547
Number of employees at year's end	6,101	3,409
Number of shareholders at year's end	20,550	16,450

- (1) All information shown for 1970 is for Memorex Corporation and Majority-Owned Subsidiaries and ILC Peripherals Leasing Corporation as combined. Because of the transition of Memorex's business from one primarily engaged in the manufacture and sale of magnetic media products in 1969 to large-scale manufacturing and leasing of data processing equipment to computer users in 1970, prior year's data are not comparable.
- (2) 1969 adjusted to reflect consolidation of Memorex Leasing Corporation and acquisition of minority interests in subsidiaries as poolings of interests.
- (3) Based on weighted average number of shares outstanding.

Memorex experienced an excellent year of growth in 1970.

Growth was maximal in our computer peripheral equipment products business. This business is now the mainstay of Memorex and involves more manufacturing and marketing operations, more product development programs, and a larger application of financial resources than does Memorex's long established magnetic media products business.

Memorex's marketing of equipment products directly to computer users by leasing paced the growth of operations in 1970. Large scale leasing activity was made feasible by the organization and capitalization of ILC Peripherals Leasing Corporation ("ILC"), an independent leasing company which has contracted to purchase a major portion of the equipment-for-lease made and marketed in 1970-1972 by Memorex.

It is a consequence of Memorex's leasing activity that our growth of operations in 1970 is not measured by our accounting method or evident in our Statement of Income. Because of the startup of large-scale leasing activity and our use of "deferral accounting" for all of the equipment-for-lease business, I stress the following results for 1970 operations are not comparable to results for 1969 operations.

In 1970, combined (Memorex and ILC) net sales and revenues were \$79 million, excluding \$42 million billed to ILC for its purchases but including ILC's \$1.4 million rental revenue. Combined net income was \$3,183,000, or \$0.83 per Common Share. This result was based upon deferral accounting for most costs and expenses, as well as billings, in connection with ILC-owned equipment-for-lease (82% of all of the 1970 equipment-for-lease business), as well as for Memorex-owned equipment-for-lease (18%). None of the Company's interest

expense, including that allocated to facilities and operations relating to manufacture of equipment-for-lease, was deferred, thus diminishing the 1970 income result.

In 1969, Memorex's net sales and revenues were \$74 million. Net income was \$6,902,000, or \$1.85 per Common Share. In 1969, there was almost no computer peripheral equipment-for-lease business.

A comprehensive financial program is key to successful competition in the computer peripheral equipment industry. The compounding factors of the rapid growth projected for the industry and the large scale operations essential to profits make necessary our procurement of substantial external capital for expansion of facilities and working capital. Additionally, the equipment-for-lease must be financed either by Memorex's own capital investment or by sale of the equipment to a leasing company which has its own capitalization. In 1970, Memorex met both needs.

First, in April, Memorex tripled the amount of its permanently invested subordinated capital by public sale of \$75 million 5¼% Convertible Subordinated Debentures which mature in 1990. This financing provided funds for the investment in facilities, especially those relating to the product development and manufacturing operations of the Equipment Group, and for the working capital increases necessitated by the growth of operations.

Second, in December, Memorex and a group of commercial banks and institutional investors executed agreements pursuant to which ILC will be provided with \$142 million of capital in the years 1970-1972, inclusive. These capital funds, together with ILC's projected net cash flow from leasing, enable it to make purchases of computer equipment aggregating \$197 million from 1970 to 1972, inclusive. These purchases rep-

resent a steadily decreasing portion of all equipment-for-lease which Memorex plans to market in this timeframe.

Memorex's commitment to the capitalization of ILC is \$26.5 million, which includes the purchase of ILC common stock representing a minority equity interest. Details of the capitalization program and the various agreements between Memorex and the financial institutions and ILC are summarized in Note 2 to the Financial Statements and on page 12 of this Report.

In its agreements with ILC and with the institutions which own a majority equity interest in ILC, Memorex has achieved two prime financial objectives. It has developed cash flow from ILC's purchases (although Memorex's profits are deferred) to supplement cash flow from other net sales and revenues, which together should finance a substantial part of the projected growth of Memorex's operations. It has also obtained an option to acquire the majority equity interest in 1974, which, if exercised, will constitute ILC a wholly-owned subsidiary of Memorex. Obtaining this option is highly desirable, because Memorex's long term goal is to build its own base of installed equipment-for-lease whose rentals will cumulate to produce cash flow sufficient to meet the Company's ongoing capital needs for leasing without disposing of ownership of leased equipment.

Particularly noteworthy were the following accomplishments of 1970 operations: (1) Several new equipment products were completed in product development programs and brought into production. Initial customer shipments of the 1600 Computer Output Microfilm System commenced in April. Initial shipments of the 661 Disc File Storage Controller were made in June. During December, the first units of the 1240 Communication Terminal were manufactured and shipped.



(2) The value of computer equipment shipped in the fourth quarter was approximately five times greater than shipments in the first quarter of 1970, indicating the tremendous expansion of manufacturing operations which took place during the year. For the entire year, the value of physical output of computer equipment products was approximately \$60 million which, added to \$63 million of magnetic media products, brought the total physical output to approximately \$120 million. By comparison, the physical volume in 1969 was \$74 million and in 1968 \$53 million.

(3) Field sales and service capabilities grew at an even higher rate than manufacturing. At year-end 1970, our domestic marketing organization for computer equipment products exceeded 500 people, or seven times its size at year-end 1969. Salesmen and customer service engineers were located in the largest 34 metropolitan areas of the United States in which computer users are concentrated. In international markets, approximately 160 sales and service people were marketing equipment products in every country of West Europe, Japan, Canada, Australia, and Latin America. The combined marketing organizations for equipment and media products at year-end exceeded 1,400 on a world-wide count, an increase of about 300% over the year-earlier number.

(4) New facilities were constructed in a maximal program to support current

and future growth of operations. The Equipment Group's manufacturing, development, and administrative activities were consolidated in new facilities in Santa Clara, constructed at a cost of about \$15 million. Reductions achieved in unit costs of equipment products during 1970 were especially remarkable considering these relocations were also accompanied by expansions in output and employment. Smaller satellite manufacturing plants were placed in operation in Eau Claire, Wisconsin, and Nogales, Mexico.

This record of planned and well executed growth is a matter of pride to Memorex people because it was achieved in a year of a recessionary economy when many companies faltered.

The downturn of the United States economy did adversely affect sales of the 1600 Computer Output Microfilm System. The less-than-expected volume of orders in 1970, however, did not result from loss of business to competitors. Indeed, we estimate that we received one-half of all orders for COM equipment placed in the computer market. We continue to expect a high rate of long term growth for our COM product line, and we regard 1970's less-than-expected growth as due to a lack of budgets in data processing departments for new and supplementary systems for data storage.

The 1970 economic downturn also adversely affected our magnetic media business. Many U.S. customers postponed purchases of supplies and an excess of production capacity impelled price erosion of almost all products, especially during the last six months of the year. Hence, expected domestic sales growth did not occur. Increased sales in international markets were also affected by generally lower prices. As a result, net sales and revenues of media products in 1970 climbed modestly to \$63 million from \$59 million in 1969, and operating profits of media products were materially lower than in 1969.

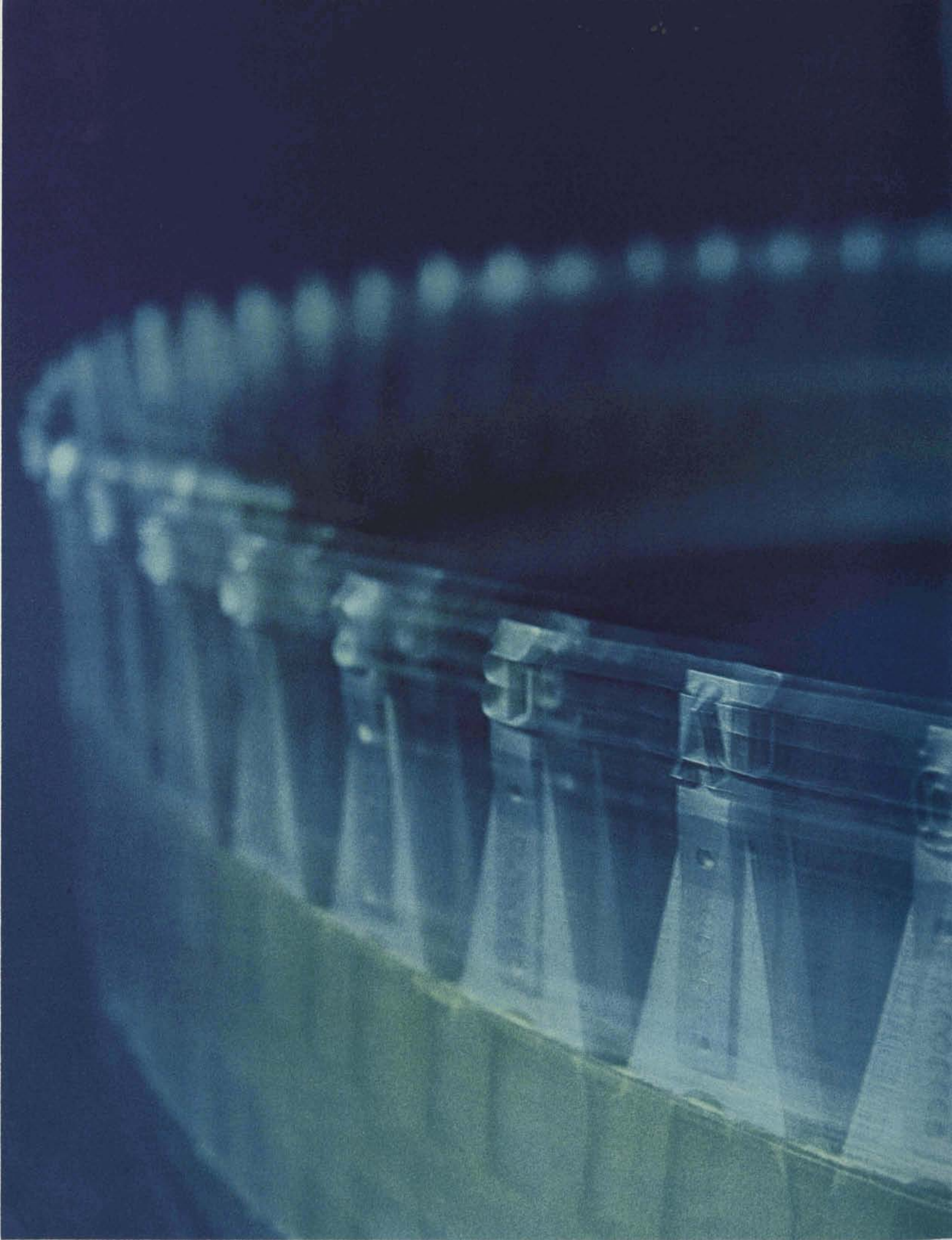
A new member of the Board of Directors was elected: Benno C. Schmidt, managing partner of J. H. Whitney & Co., New York. Mr. Schmidt brings to our Board a wide experience in law, government, and business.

The hard work and creativity of more than 6,000 Memorex employees—a substantial increase over the year-earlier number of 3,400—produced these accomplishments of 1970. As the Company now progresses in a new phase of corporate development, with its manufacturing and marketing strengths and its resources of facilities and capital also substantially increased, we look to this spirited organization to continue the growth of Memorex.

Sincerely,

Laurence L. Spitters
President

April 14, 1971.



Since 1967, Memorex has emphasized corporate development programs to build its computer equipment products business. Superior opportunities for Memorex are predicated upon inherent growth in the demand for "computerization." The industry's continued growth is underpinned by the ever accumulating volume of information in every area and by man's ever increasing ability to apply computer technology to this "data base" to do his work.

In its corporate development, Memorex has used the advantages of its well established magnetic media products business: worldwide coverage of markets, reputation among users for high quality, and ample external sources of capital.

Our equipment products business has also been built by extensive use of majority-owned entrepreneurial subsidiaries. The outstanding technologists employed by each such subsidiary own a minority interest in the subsidiary. In general, upon successful completion of a program, the subsidiary becomes wholly-owned as the minority interest is converted into Memorex Common Stock reflecting the success attained relative to the subsidiary's objectives. This incentive-related corporate development continues to foster economy and expedition in research and development of new products.

In the first phase of development of our equipment business, in 1968 and 1969, we sold disc drive products to a limited number of customers, original equipment manufacturers ("OEMs") and others who purchased the equipment for incorporation into their own disc storage systems. This was an opportunistic business entry

The 1240 Communication Terminal has 94 printable graphics and a 120-character printing line. Through the use of an endless-chain character belt and a unique hammer bank, the 1240 offers the remote computer user the combination of high printing speeds and quiet operation.

strategy, and its viability was limited to the period during which OEM customers were establishing their own internal product development and manufacturing. Moreover, Memorex was isolated from the end users of its products and the users' demand was not subject to our initiative.

In the second phase of development, implemented in mid-1970, Memorex started production of the 661 Disc Storage Control Unit which links the Company's 660 Disc Drives to System 360 computers. Two other peripheral products were also placed in production: the 1600 Computer Output Microfilm System and the 1240 Communication Terminal. These three product lines provided the economic justification for a direct sales and service organization, which was undoubtedly Memorex's principal corporate development activity during the year. Its success is evident. During the last six months of 1970, this organization negotiated more than 90% of our equipment business directly with computer users and created a customer base of approximately 600 users of Memorex equipment.

Our equipment products business is now predominantly based upon "plug compatible" disc storage products. The business has provided the essential economy of scale to achieve low cost, profitable manufacturing operations, and it continues to have a favorable outlook. But, its inherent shortcoming is that "plug compatible" products must be interchangeable with the products of computer system manufacturers which control their specifications, price, and product life cycle.

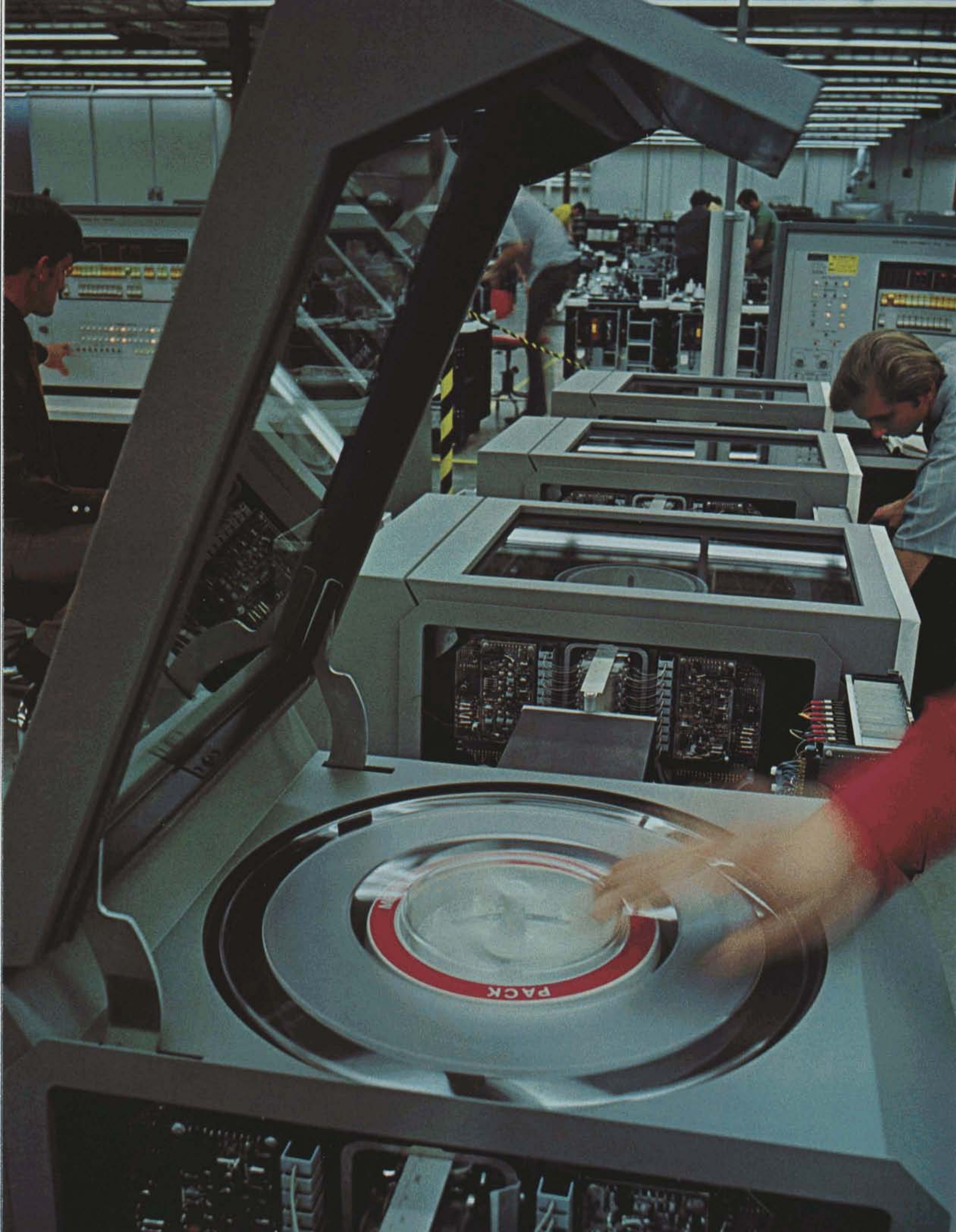
For this reason, Memorex is now embarked upon the third phase development of our equipment business: to develop products whose price, product life and profit potential will be determined by Memorex's initiatives.

A product program to fill this need is the computer system now being developed by our subsidiary, Midwest Systems Corporation. This is the largest business development program ever pursued by Memorex and will involve an investment of approximately \$10 million prior to its introduction to market. The scheduled date of introduction and the specific description of this system product have not been publicized. However, it will be a logical extension of our present peripheral product lines, emphasizing large disc files, data communications, and terminals.

Memorex's media products business remains a very important part, but smaller fraction, of our operations. It provides economy in obtaining market coverage. Its R&D activities are complementary to equipment product developments, e.g. disc packs and disc files, microfilm supplies and COM equipment. It is an important contributor to our cash-flow and enhances our credit.

During 1970, our computer magnetic media business was pursued in an optimization, rather than expansion, mode. A leveling of demand, price erosion, and lower profit margins did not encourage additional investment. Hence, major development programs lie outside the computer supplies area. They include the Micrographic Products Program, which has developed microfilm supplies products; the Business Products Program, based upon a line of high-technology office supplies products; and the Consumer Products Division's audio tape cassette program, which was launched in late 1970.

These media product development programs will not contribute to Memorex's profits until 1972 at the earliest. Indeed, they will reduce profits in the interim. In Memorex's media business, as in its equipment products business, our emphasis is upon the building of a target company in the 1973-1975 timeframe.



The integration of several programs relating to different product lines into a unified equipment products business was Memorex's accomplishment of 1969. The extraordinary growth of that business was the accomplishment of 1970.

During the year, employment of the Equipment Group grew to more than 3,000 from 1,400 at year-end 1969*. Facilities more than doubled to approximately 700,000 square feet. Production for domestic and international marketing exceeded \$60 million (stated at sales value of products shipped to customers), or four times the output of 1969.

Concurrent with growth was the Company's transition from a reliance upon OEM customers (original equipment manufacturers) to an equipment products business based upon marketing to computer users. In 1969 and early 1970, an insignificant volume of products had been marketed to users. In the second half of 1970, approximately 90% of production was shipped to computer users.

This transition was effected by the Company's product development success making Memorex in 1970 a multi-product equipment manufacturer and by the Company's success in establishing field sales and customer service capabilities.

Three product developments of entrepreneurial subsidiaries formed in prior years enabled the transition to an end-user business. In April 1970, the first production unit of the 1600 Computer Output Microfilm System was shipped. In June, the 661 Disc File Control Unit, which interfaces the 660 Disc File equipment and the System 360, was first shipped. In December, the first production run of the 1240 Communication Terminal was completed and initial evaluation units shipped to customers. This diversity of product lines now affords a balance of opportunities of different segments of the peripheral equipment market and affords the larger scale of operations essential to low cost manufacturing and economical market coverage by sales and service organizations.

By year-end 1970, the Equipment Group's domestic sales and service were established in 34 principal cities of the United States which provided coverage of about 60% of the domestic market's purchasing capacity. This program involved the organization of the field management and administrative structure and the recruitment of more than 500 sales and service personnel. During 1971, Memorex will leverage the increased experience and product knowledge of this organization and the Company's ability to expand field manpower without an equivalent increase in administrative overhead costs.

Reliability of equipment is dependent upon timely and efficient service to customers in the field no less than upon the thoroughness of product design and its quality control in manufacturing. Hence, Memorex has set standards for customer



service which are exceeded by no other computer manufacturer's, and we have developed an excellent reputation for our service. Contributing to this capability is the Company's extensive training of service personnel in all product lines.

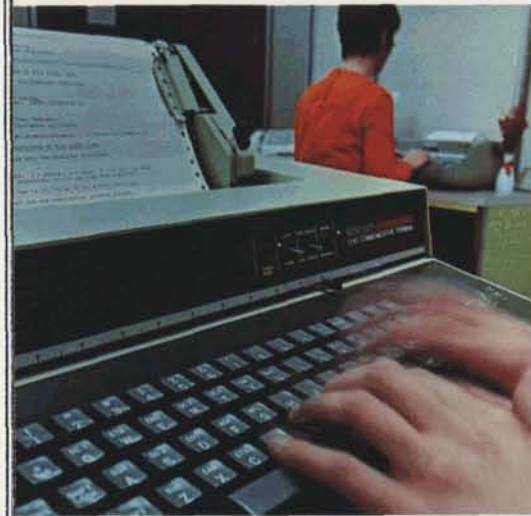
Expansion of Memorex's field service organization paralleled the buildup of shipments. While the initial means of expansion was recruitment of experienced field engineers whose training requirements were minimal, it was accelerated in the second half of 1970 by a comprehensive training program for electronics technicians. The latter trainees were enrolled in a rigorous six months' course which graduated fully qualified Field Support Representatives (FSR). The special training facility for the course provided almost 80,000 student-hours of instruction during 1970, and has doubled its training capacity for 1971.

During the year, in anticipation of first shipments of the 1240 Communication Terminal, the Company's customer service organization installed in Santa Clara a service center for remote diagnosis and service of communication products. Memorex customers can now phone the Diagnostic Center and be connected directly to a computer for diagnosis of their difficulties, which frequently eliminates the need for a service call by a Memorex FSR.

*The employment of the Company includes former IBM employees. In December 1970, IBM brought suit against Memorex, with general allegations which named no individuals and alleged no specific wrongful acts, which charged Memorex with inducing these employees to breach their obligations to IBM and misappropriate trade secrets for Memorex's benefit. In the opinion of legal counsel for the Company, IBM's suit is without merit and will be successfully defended. In a cross-complaint, Memorex has charged IBM with abuse of legal process and unfair business practices in the computer industry.

Final assembly of the Memorex 660 Disc Drive is followed by a series of rigorous inspections and operating tests to ensure superior product performance.

Operating speeds up to 60 characters per second—two to six times the speed of other commonly used terminals—make the Memorex 1240 Communication Terminal ideal for a wide spectrum of time-sharing applications.



The strength of Memorex's sales and service capabilities is evident in the volume of equipment business obtained in 1970. Total orders received for equipment products from domestic and international customers exceeded \$100 million (stated at sales value). After 1970's shipments valued at about \$60 million, the Company's year-end backlog exceeded \$50 million.

The number and diversity of equipment customers in 1970 are no less significant. Approximately 600 customers in domestic and international markets were using Memorex equipment in data processing operations at the end of the year. The typical computer customer is generally receptive to upgrading existing products or procurement of new products from the equipment manufacturer which has provided the desired cost/performance of equipment and customer service. The marketing results of 1970 go far in the building of a customer base which Memorex will seek to protect and expand in its future new product programs.

Disc Storage Products

The Memorex 3660 Disc Storage System is the Company's principal equipment product line. Its shipments to domestic and international customers reached a volume of approximately \$40 million (stated at sales value) in 1970, an especially noteworthy result in light of the fact that the first unit was not shipped until mid-year.

The 3660 System consists of from one to nine 660 Disc Drives and a 661 Disc Drive Control Unit. The 661 interfaces with System 360 computers and requires no hardware or software modification to replace the IBM 2314 Disc Storage System. The 3660 provides the computer with faster access to the computer's stored data, greater system throughput, higher reliability and cost savings.

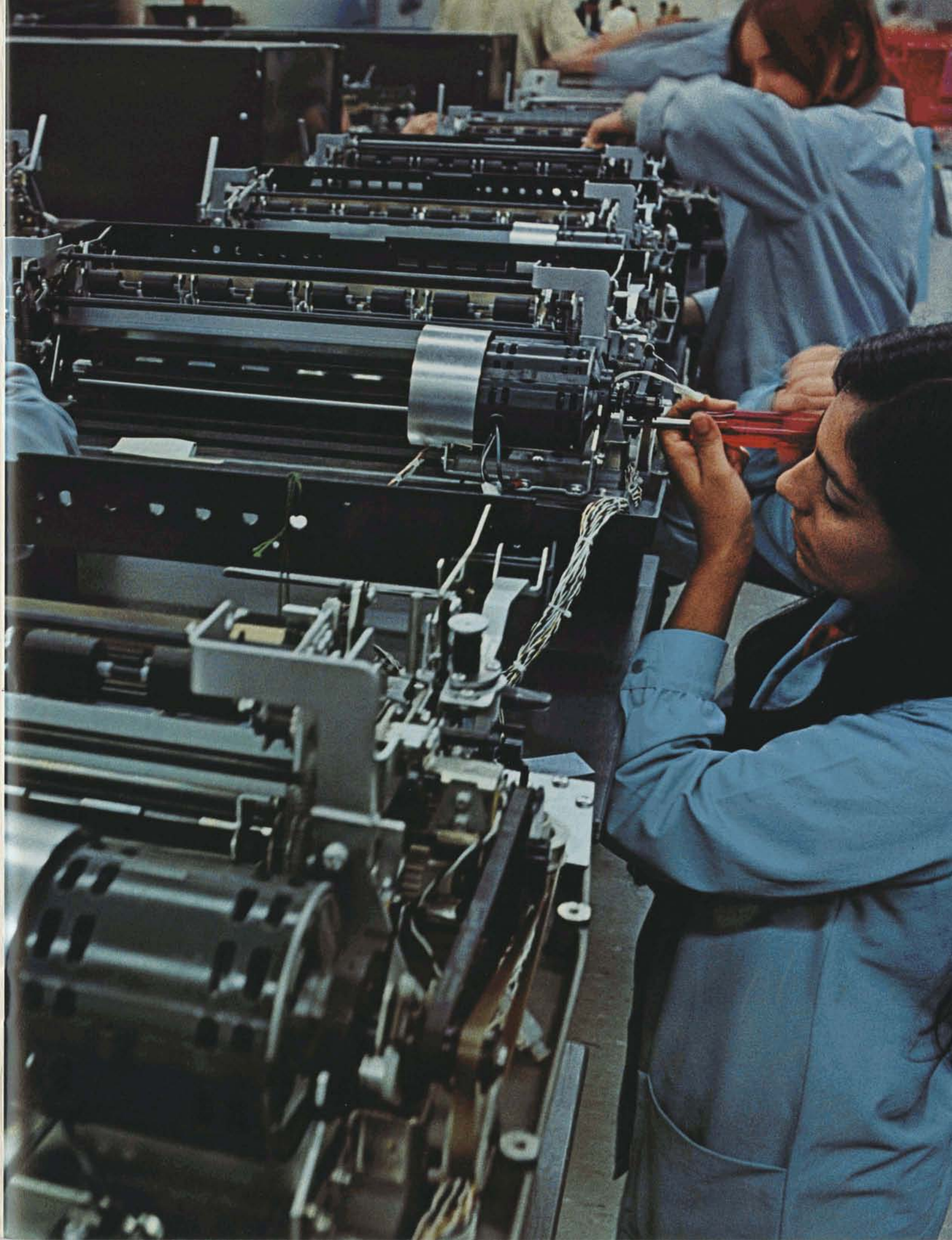
Memorex was in the vanguard of independent peripheral equipment manufacturers whose disc storage products made market inroads by providing significant rental cost savings to computer users. These substantial cost savings were a strong inducement to computer users to procure Memorex equipment when data processing departments experienced budget cutbacks during the 1970 recession. In September 1970, IBM announced a reconfigured 2314-type disc drive product, the 2319, for use with its new System 370 computers. In December the use of the 2319 was extended to System 360. This product effectively reduced the rentals for 2314-type disc storage equipment. In turn, Memorex lowered its 3660 monthly rental in early 1971.

The net effect of these rental reductions is a narrowed differential between Memorex's and IBM's monthly rentals for disc storage equipment. This lesser price advantage increases the effort required to market Memorex's equipment, but our subsequent orders received for the 3660 have demonstrated that it is sufficient to

enable us to protect our installed business and to develop additional business. Our success reflects the performance advantages of the 3660 relative to competitive equipment and Memorex's reputation for reliability and customer service. As a consequence of the reduced rental, Memorex's price to ILC for disc storage systems was reduced by about 10%. The adverse effect upon this product line's profit margin was lessened by manufacturing cost improvements.

In June 1970, the first System 370 products were announced for delivery in mid-1971. Specific models of the System 370, announced during the second half of 1970 and in early 1971, established that the new computer family's principal direct access storage system will be the 3330 Disc File System, including its external disc storage control unit. The cost/performance characteristics of these products represent an improvement over present generation equipment, and it will require an important advance in Memorex's technology to develop products of equivalent performance. The Company has underway an advanced disc file development program, and our expectation is that Memorex will be among the first independent manufacturers to deliver next generation equipment.

Achievement of consistent quality in volume production of the 1240 Communication Terminal derives from Memorex's depth of manufacturing planning, resources and experience.



In many varied business applications Memorex's 1600 COM System provides microfilm records of computer output which correspond exactly to pages of paper records traditionally printed by the computer.

Laurence M. Wilson, Vice President—Manufacturing and Alan F. Shugart, Vice President—Development, Equipment Group

Computer Output Microfilm Products

The Memorex 1600 Computer Output Microfilm ("COM") System is based upon the 1603 COM Printer, a device which photographs directly on microfilm the computer output which is normally printed on paper. The 1603 is compatible with System 360 and 370 computers and its operation is indistinguishable from paper line-printers. Its use involves no changes in the computer's hardware or software. The product line was first announced in October 1969 and initial deliveries were made in the second quarter of 1970.

In addition to the 1603, the Company markets a full line of ancillary COM System products, including all microfilm media and chemical supplies. The ancillary equipment includes the microfilm developer, film duplicators, viewers, and a viewer-printer capable of electrostatically producing full-sized paper copies from the microfilm. All of the equipment is manufactured by Memorex with the exception of the viewer-printer and the duplicator which are made under contract by an outside vendor.

The 1600 COM System provides the computer user with a means by which computer output can be recorded more rapidly, copied inexpensively, and distributed and stored more efficiently. The 1603 records the output data at ten times the speed of the typical paper printer and produces a man-readable record of the output (unlike magnetic tape) which reduces by 98% the bulk of the alternative paper record. Its promising future rests upon its low cost and its ability to produce an archival record of a computer's output simultaneously, or on-line, as the output is generated. The monthly rental of the 1603 is approximately one-half the rental of most COM devices.

The recession of the domestic economy did adversely affect the 1970 marketing of the 1600 COM System. The general lack of budgets of computer installation man-

agers to increase their equipment rentals during the year made difficult the selling of a new system for data recording and storage. On the other hand, inquiries received from prospective users in response to advertising and publicity were far more numerous for the 1600 COM System than for any other Memorex product, and we believe that this high interest level is indicative of a large but postponed demand.

This experience and our study of the market potential support our objective to be the principal COM equipment supplier to the computer market. Memorex's receipt of orders during 1970 represented approximately one-half of the total of orders placed with all COM manufacturers, and loss of orders to competitors was not a problem. Additionally, the range of our COM customers to date—in banking, finance, insurance, manufacturing, retailing, data processing service, and transportation companies—indicates that the 1600 COM System has a potential application in virtually every computer center. Hence, given an improvement in the economy and a relaxation of budget constraints among computer users, our outlook is for considerable growth in this product line.

Communication Equipment

With shipment of the first 1240 Communication Terminals in December 1970, Memorex began delivering its third product line to the data processing equipment market. Like the 3660 Disc Storage System and the 1600 COM System, the 1240 is aimed directly at the end-user market. Customer response has been enthusiastic and the market potential is large.

The 1240 is designed for use with computer systems which have communications capability. The majority of the computer systems currently being delivered for commercial data processing applications have this capability.



The Memorex 1240 transmits data to, and receives data from, a centrally located computer over telephone lines. The product is designed for commercial data processing applications where input/output capability is needed at remote locations.

The 1240 offers the terminal user a number of capabilities which provide superior price/performance. The 1240 will produce high quality printed output on six-part (original plus five copies) continuous forms. The terminal operates at 10, 15, 30, or 60 characters per second (CPS), and

The small number of moving parts and an all-digital character generating system which never requires adjustment provide performance reliability in the 1603 Computer Output Microfilm Printer.



To supplement the core of Memorex marketing people who have experience in computers and peripheral equipment products, newly recruited salesmen are schooled extensively in all phases of customer service.

is the only commercially available terminal with both upper case and lower case characters that prints at 60 CPS.

Memorex announced the 1270 Communication Terminal Control Unit in July of 1970. This controller, whose first shipment was made in the first quarter of 1971, is designed to interface the 1240 terminal directly with System 360 and 370 computers. The principal competitor's communication controller supports operation of terminal devices at only 10 characters per second. The Memorex 1270 supports the operation of the 1240 at its maximum printing speed of 60 CPS. The 1270 is thus a key addition to the Memorex communication products line, and it effects a major increase in the market potential for 1240 terminals.

Additional products were recently announced to support our communication equipment product line, including a series of modems (signal modulating/demodulating units) scheduled for first delivery in second quarter 1971, and the 1280 cassette terminal, basically a 1240 terminal with the added feature of a magnetic tape cassette unit integrally connected. First customer shipment of the 1280 is scheduled during the fourth quarter of 1971.

System Development Program

Memorex has a major development program whose objective is a data processing system which emphasizes the use of large disc files, data communication devices and communication terminals. Its purposes are, first, to extend the market for the peripheral products now manufactured by the Company, and, second, to provide an important new product line whose life cycle and profitability will be determined primarily by Memorex's initiatives.

Work in systems design, hardware and software development is being pursued by



our entrepreneurial subsidiary, Midwest Systems Corporation, located in Minneapolis, and by the Systems Division in Santa Clara. Progress has been satisfactory. The program employed approximately 150 professional and technical personnel at year-end 1970. Pursuant to the Company's policy relating to investments in business diversification, expenses of the program are capitalized as Deferred Research and Development Costs. The amount of the total deferred costs allocable to the system program at year-end 1970 was approximately \$1.7 million.

ILC Peripherals Leasing Corporation

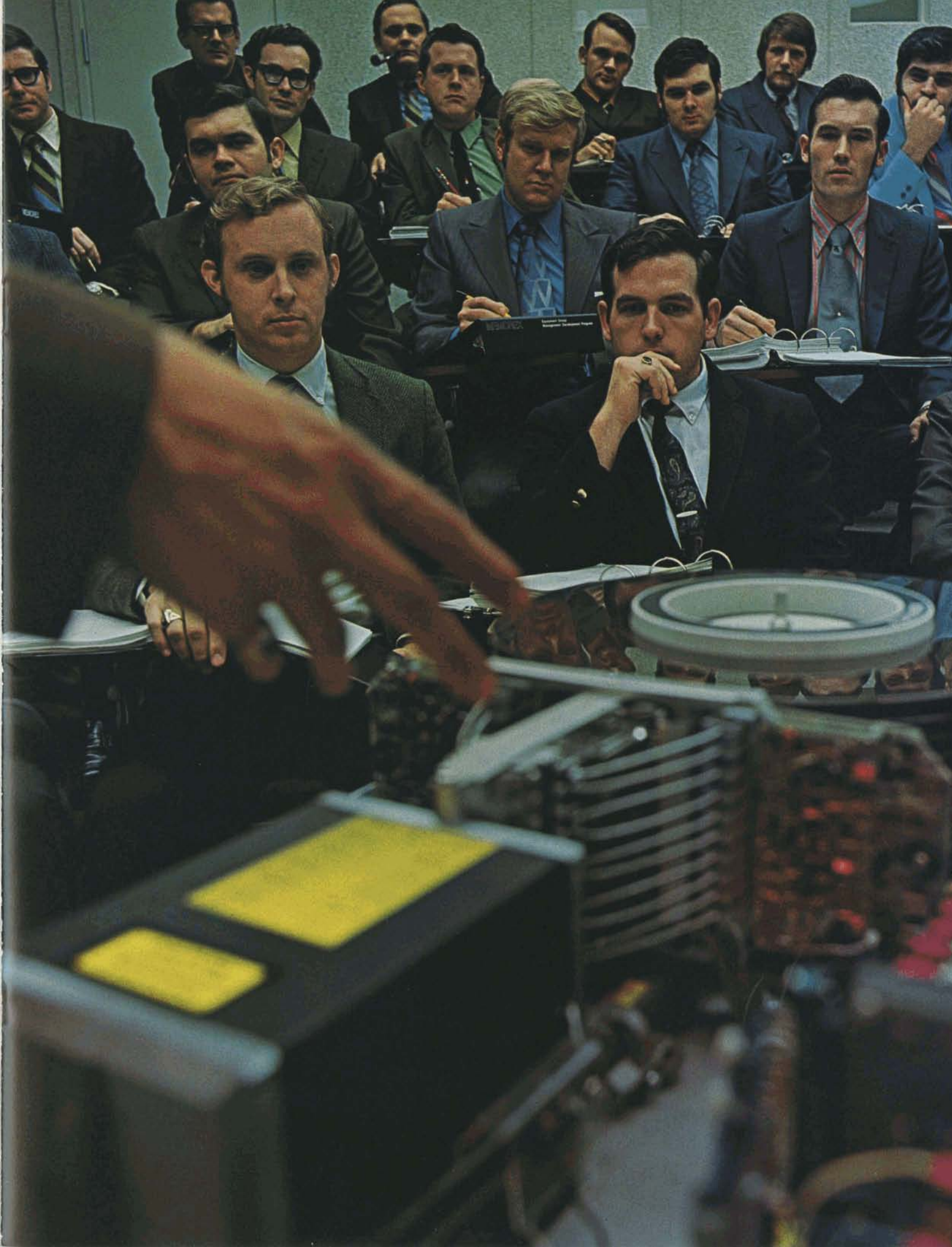
Memorex's transition to marketing equipment products by leasing to computer users was made possible by its affiliation with ILC Peripherals Leasing Corporation ("ILC") which it organized and capitalized in 1970.

This affiliation with ILC is made necessary by the pattern of short term leasing of equipment in the computer industry.

That is, short-term or "non-payout" leases typically provide for the recovery of costs to the manufacturer over a much longer period of years than the fixed term of his leases. At the customer's insistence, Memorex's equipment must be marketed under short-term leases to permit the future upgrading of his equipment to take place. Because the non-payout lease is not an acceptable basis for credit from traditional sources of customer credit—banks, finance companies, and other institutional lenders and lessors—Memorex required an affiliation with a leasing company which would purchase the equipment subject to short term leases. (Memorex needs to be paid for the major portion of its equipment-for-lease to meet its costs of manufacture, marketing and other operating expenses. The Company could not itself remain the owner and lessor of more than a fraction of its equipment-for-lease—18% in 1970—because our volume and growth would result in too great a cash investment in equipment-for-lease.)

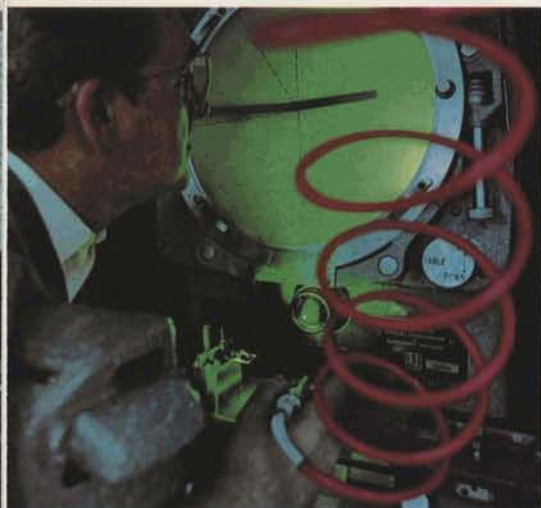
In late 1970, Memorex and a group of commercial banks and institutional investors executed agreements for the capitalization of ILC, an independent leasing company organized for the purpose of purchasing equipment-for-lease from Memorex. The capital contributions to ILC, in the years 1970-1972, inclusive, from the banks and investors will aggregate \$116 million and Memorex's contribution will amount to \$26.5 million, for a total capitalization of \$142 million. These capital contributions and the cash flow from ILC's leasing business are projected to enable it to purchase \$197 million of equipment pursuant to a Master Sales and Maintenance Agreement between ILC and Memorex. Of that agree-

Memorex's commitment to trouble-free system performance is strengthened by a network of field engineers located in key cities around the world. Each man is schooled in all phases of preventive maintenance as well as in Memorex peripherals technology.



To assure high performance for its 3660 Disc Storage Systems, Memorex fabricates many of the equipment's component parts which require precision manufacturing technology.

J. Garrett Fitzgibbons, Vice President—Marketing; William F. Emmons, Jr., Vice President—Sales; and John R. Eastling, Vice President—Systems, Equipment Group



gate purchase obligation, ILC purchased \$42 million in 1970 and will purchase the balance of \$155 million in 1971 and 1972.

The Master Sales and Maintenance Agreement specifies the types of equipment (disc drives, controllers, COM printers, and terminals) which ILC must purchase

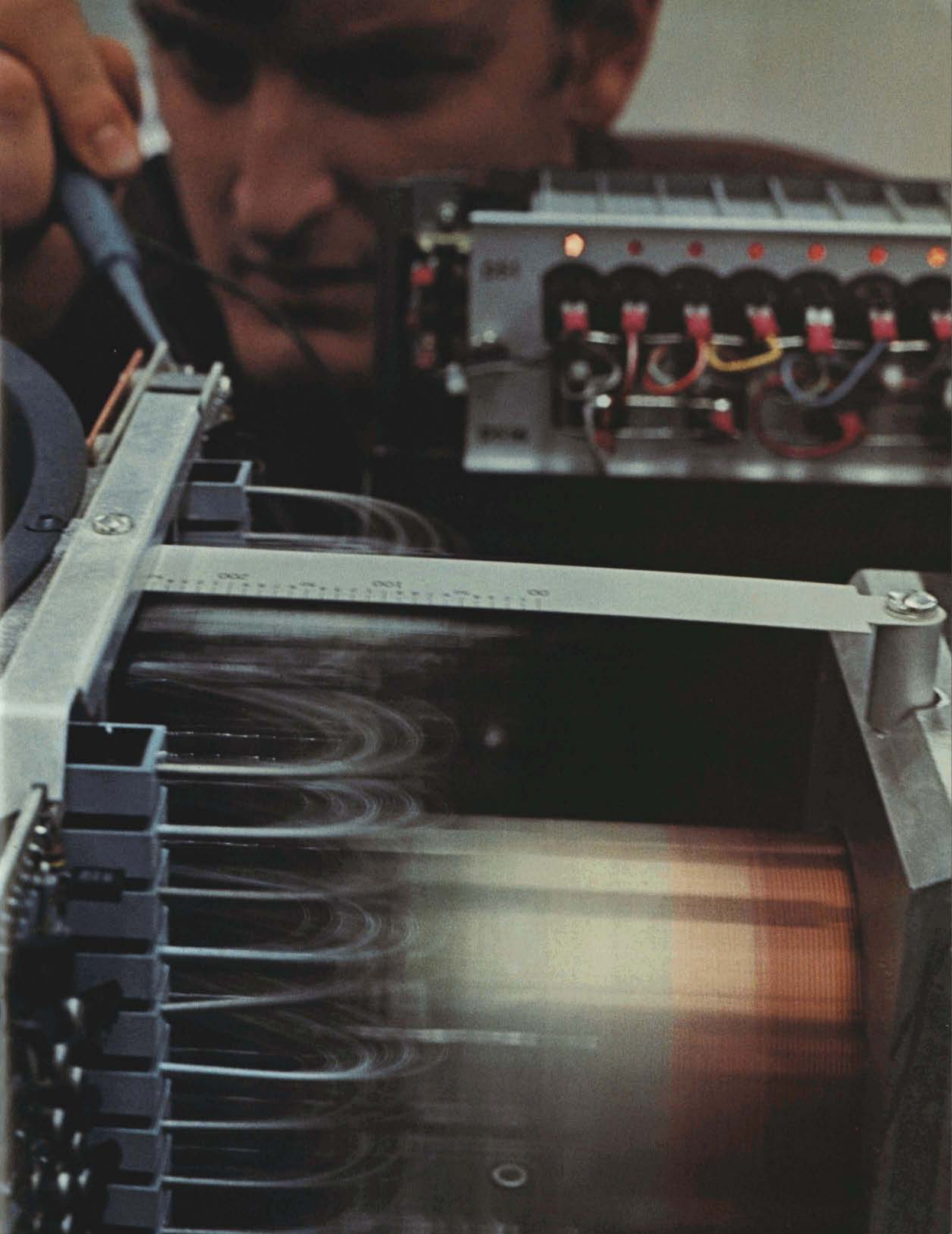
from Memorex, the prices paid by ILC, and the provisions for price adjustments in relation to the equipment's initial monthly rentals and end-user sales prices. Under the Agreement, ILC purchases only equipment which is the subject of an executed lease. Upon delivery of the equipment to a user, Memorex receives full payment of its purchase price.

Memorex is liable for income taxes on the profit of the transaction, just as on conventional sales, and is unrestricted in its use of the proceeds of sale. ILC is the owner and lessor of the equipment and rentals paid by the user are ILC's and not Memorex's. (The accounting policy adopted by Memorex for these transactions with ILC is to defer the revenue, costs and expenses applicable to its billings to ILC and to subsequently reflect them in the Company's statement of income over the ensuing 48 months.)

Memorex owns a minority interest in ILC's equity and the institutional investors own the majority interest. Memorex also holds an option, exercisable in 1974, to acquire all of the majority interest. This option was obtained to advance the Company's long term goal of owning a base of equipment-for-lease whose cash flow at a future date will fund the cash drain of the then manufacturing and leasing of new equipment. The exercise of this option will depend upon our assessment, in 1974, of the then expected revenue-producing life of ILC's assets relative to the option's exercise price. The price will be \$12.2 million cash, or, in the event the then market price of Memorex Common Stock is less than \$135 per share, \$12.2 million cash and warrants for 90,178 shares of Memorex Common Stock (the exercise price of which is fixed to return the cash payment to Memorex). The institutional investors also hold the option, exercisable from 1973 through 1977, to exchange their majority interest in ILC for 90,178 shares of Memorex Common Stock. Memorex has agreed to assume the obligations of ILC to the investors and

lenders in the event that Memorex obtains sufficient ILC stock to elect a majority of the ILC Board of Directors. (A more detailed description of the terms of the Master Sales and Maintenance Agreement and the agreements between Memorex and investors in ILC is summarized in Note 2 to the Financial Statements.)

Memorex's linear drive motor moves read/write heads across disc surfaces to select positions of recorded data in less than 35/1000ths of a second for the average of access times.





Memorex's magnetic media business increased its domestic and international physical volume by more than 15% in 1970, but sales and rental revenue increased only 6% because of general price erosion. In 1970, sales and rental revenues for worldwide media operations were \$63 million, compared to \$59 million in 1969.

Domestic markets for computer tape, disc packs and video tapes were depressed in the second half of 1970 as customers' demands slackened because of cost-cutting and postponement of purchases, market factors attributable to the economy's downturn. The lower market demand and the burden of excess production capacity in the industry caused severe price competition which reduced the average price level about 15% for all magnetic media products. Hence, although Memorex increased its domestic market coverage and significantly increased its physical volume, our domestic media business produced sales and rental revenue about equal to 1969's. Lower prices and higher costs resulted in unsatisfactory profit margins. In the first quarter of 1971, employment was reduced in tape and disc pack operations in Santa Clara to bring costs into line and improve operating profits.

International markets for magnetic media products continued to grow in 1970 but were also adversely affected by price erosion of approximately 10%. Memorex fully participated in this growth by its extensive coverage of international markets, and, as a result, achieved for the Company the year's modest increase in total sales and revenue of media products.

Master rolls automatically feed audio tape to loading stations where it is wound into various length cassettes ready for consumer recording.

Profits from overseas marketing of media products were less satisfactory than in 1969, notwithstanding cost reductions in our European manufacturing, because of the lower prices.

The disc pack product line accounted for most of the sales and revenue growth of media products. Price erosion of packs was also severe, as manufacturers marked down monthly rental rates to re-lease packs which had come off lease or to extend leases of prior years' products. The disc pack market was also distressed due to customers' upgrading their disc storage systems which necessitated replacement of the 10-surface low density pack by the 20-surface high density pack. In mid-1970, Memorex ceased the manufacture of Mark I packs for lease in the domestic market and production has since been limited to the 20-surface Mark VI pack, for which demand is steadily increasing in the United States and international markets. Declining prices for packs were also offset to a large extent by substantial manufacturing cost reductions in Santa Clara and in Europe.

The next generation disc pack product for the System 370, announced in 1970, represents a market opportunity which will be substantial. This high-performance disc pack product will have storage capacity for 100 million bytes of information, or more than three times the capacity of the current generation. It is apparent from its announced performance specifications that the comparable Memorex product will require a considerable advance in the technology over the present generation product line. Its development will be inextricable from that of the advanced disc drive system which Memorex's Equipment Group has under development. Our confidence is that Memorex will be among the first independent disc pack manufacturers to market this product.



Video tape production problems persisted throughout 1970 and resulted in reduced sales of this high technology product line. Yields of broadcast video tape were unsatisfactory and raised production costs and limited the availability of the product for marketing. During the year, development of a new broadcast tape was aimed at a product which could be more easily controlled in its manufacturing processes to effect higher yields. At the close of 1970, the new product was introduced to the European market.

The Company's closed-circuit television tape products were also improved during 1970 and supplemented late in the year with new back-coated products. (A back-coated tape has a thin layer of carbon-based coating applied to its reverse side to improve the tape's handling characteristics.) These developments will permit Memorex to maintain a leading position in the rapid growth of this video recording tape market.

1. Roland Jang, Vice President—Manufacturing and Robert Jaunich II, Vice President—Marketing, Consumer Products
2. James J. McNabb, Vice President—New Products and Dr. John A. Perri, Vice President—Technology, Information Media Group
3. Richard D. Boucher, Vice President—Computer Media and Hillard P. Tavrow, Vice President—Operations (Video Products), Information Media Group



1



2



3

This supplies product line provides the complete needs of users of Memorex's 1600 COM System. In the fourth quarter, the Consumer Products Division introduced a new product line of cassette and open reel audio tape for consumer tape recorders. Test market results have been excellent and we are confident of success in the national marketing program which ensued in early 1971. Memorex organized its Business Products Division also late in 1970 to market non-computer office supplies products based upon magnetic materials technology. Initial products of this line include magnetic tape cartridges and cards for automatic typewriters and cards for dictating machines.

The outlook for Memorex precision magnetic media products business in 1971 is for improvement of last year's results. The reduced operating expense levels in Santa Clara operations, expanded production of video tape products, and the forecast of better economic climate in the domestic marketplace should improve sales volume and profit margins. As start-up sales increase, the micrographics supplies, audio tape products, and business products will add to the growth of the Company's media business, although these new lines will reduce profits in 1971.

In 1970 Memorex entered into a joint venture, CMX Systems Inc., with Columbia Broadcasting System, Inc., to develop an editing system for use in production of television programs. The system employs disc drives for storage of television materials which are retrieved and compiled by an associated computer at the instruction of the editor-operator. A prototype system was substantially completed at year-end 1970, and production and marketing of the product are anticipated in early 1971. CMX Systems is located in Sunnyvale, California, and employs forty technical, marketing and administrative personnel.

The slowed growth and profits of Memorex's magnetic media business in 1970 emphasize the importance of the Company's diversification in equipment products. Concurrently, Memorex has also launched three programs to establish major media product lines which exploit our technology in magnetic materials and precision coating and which exploit our marketing capability.

The Micrographics Division introduced microfilm supplies products in 1970.

Introduction of Memorex's audio tape cassettes was accompanied by extensive advertising and promotion efforts, including full-page messages in national consumer and special-interest magazines.

**Introducing Memorex
Cassette Recording Tape.
The tape that
can shatter glass.**

Here Memorex Cassette Tape can shatter glass because it records and plays back with exacting precision. Memorex Cassette Tape records every note, every pitch, every harmonic, every nuance of music. And plays them back the same way they sounded live.

Quite a claim.
Quite a tape.

We found a singer who could maintain the exact pitch necessary to shatter glass and projected his voice with enough volume to shatter a glass to its shatter point. At the same time, we recorded that pitch on Memorex Cassette Tape.

Then we played our tape back. Bam! Shattered glass.

Because we can capture and play back a voice with such exacting precision, you can record and play back your favorite music with the same exacting precision. You'll hear.

MEMOREX Recording Tape
Reproduction so true it can shatter glass.

The Memorex audio cassette, first introduced in 1970, incorporates important performance and design advantages to improve home-recorded music.



MEMOREX
90

1

40 minutes each side

TAPE PUSHER



The multi-national character of markets for media and equipment products brought about Memorex's earliest international marketing in 1965. Current international operations, extensively carried on in Europe, Canada, Latin America, the Far East, and Australia, are vital to our business. Overseas revenues and profits provide economic justification for many programs which could not be based solely upon United States markets. Also, international business conditions frequently are counter-cyclical to recession of the U.S. economy, as was the case in 1970, and, in West Europe in which our overseas business is concentrated, the demand for Memorex's products has a higher growth factor. For example, West Europe's demand for computer equipment rose 20% in 1970, compared to a reduction of shipments in the United States. Use of computers in West Europe lags that in the United States—with almost twice the population and three-quarters of the GNP of the U.S.—West Europe has only 40% of its computer population. Hence, the rate of growth of demand in West Europe is expected to continue to exceed the rate of U.S. market growth for the foreseeable future.

Memorex's international business in 1970 experienced growth and change paralleling U.S. operations. A 60% expansion of organization and employment, initial marketing of equipment products to computer users, extended marketing coverage to new geographical areas, and increased European manufacture of media products were implemented.

At year-end, nearly 1,000 Memorex employees—99% local citizens—were engaged in these activities, including approximately 160 sales and customer service employees for computer equip-

ment products who were recruited during 1970.

In 1970, the first year of international marketing of equipment products, approximately \$6 million of equipment (stated at sales value) was marketed to computer users, which was about 10% of the output of Santa Clara equipment manufacturing operations. International sales and revenues of media products amounted to approximately \$30 million, a 20% year-to-year increase. Total international volume for all products (equipment stated at sales value) amounted to \$36 million, a 43% increase over international volume in 1969. Measured in physical volume, approximately 30% of the Company's business was obtained in international markets during 1970. Actual sales and rental revenues were \$31 million.

The first overseas installations of 620 and 630 Disc Drives were made in Europe in January 1970. Customers were thoroughly satisfied with the equipment's performance and Memorex's service, and the combination of these favorable references and the strong interest of other computer users to obtain Memorex equipment's cost savings by replacement of IBM drives resulted in a steady growth of business during the first half. With the availability of the 3660 Disc Storage System after mid-year, this growth accelerated. By year-end, Memorex had installed more than 550 units of equipment in approximately 160 customer locations, including the principal countries of West Europe, Canada, and Japan.

International marketing emphasized the immediate growth of our equipment business during 1970 and its activities were principally directed to disc storage products. A program for the 1600 COM System was inaugurated late in the second half and, in December, the 1240 Communication Terminal was introduced overseas. During 1971, international business



will be diversified among these other product lines, and with a backlog of orders and sales and service organizations in place, sizeable growth is expected.

International marketing of media products produced mixed results in 1970. Unit volume of tape and disc packs increased by about 30%, but price erosion in computer tape limited revenue growth. New product introductions also partially offset the lowering of media profit margins. Astron, the computer tape with a conductive back coating, was successfully introduced overseas, as were a new back-coated broadcast television tape and an improved video tape for slow-speed helical scan recording. The demand for disc packs remained strong in international markets, and rental rates were generally stable. During 1970, a worldwide inventory control of leased packs was installed to assure the integrated management of Memorex's packs leased by international and U.S. customers.

A major expansion of the Liege, Belgium, manufacturing plant will permit inauguration of peripheral equipment assembly operations in support of Memorex's international business.



The transition of Memorex's international business from media to equipment products marketing is evident in the changed makeup of our field organizations. At the beginning of 1970, field sales activity for equipment products was carried on by less than a dozen people. At year-end, a majority of the approximately 300 field sales and customer service personnel were engaged in marketing equipment products.

Overseas facilities were widely augmented during the year. Equipment service centers and parts depots were established in every major computer market in West Europe, Canada, Japan, Latin America, and Australia. Nine new offices were opened — in Hamburg, Rome, Manchester, Ottawa, Calgary, Hiroshima, Taipei, Sydney, and Melbourne. European headquarters operations in London were enlarged and relocated. Latin American headquarters were established in Caracas. In Australia, a sales subsidiary was organized to engage in direct marketing of Memorex products in Australia

and New Zealand, an area formerly served by a distributor.

A change in marketing in the Japanese market was also implemented in 1970. Headquarters for Memorex operations serving Japan, the Far East, and Southeast Asia are located in Tokyo, but marketing in Japan had been carried on by a 50%-owned sales and service company, Memorex Japan Ltd. In December, the Japanese government granted approval to Memorex's agreement to purchase the outstanding ownership in the company. This alignment of Memorex Japan Ltd. as a wholly-owned subsidiary facilitates expansion of its organization and positions Memorex for marketing equipment products in Japan.

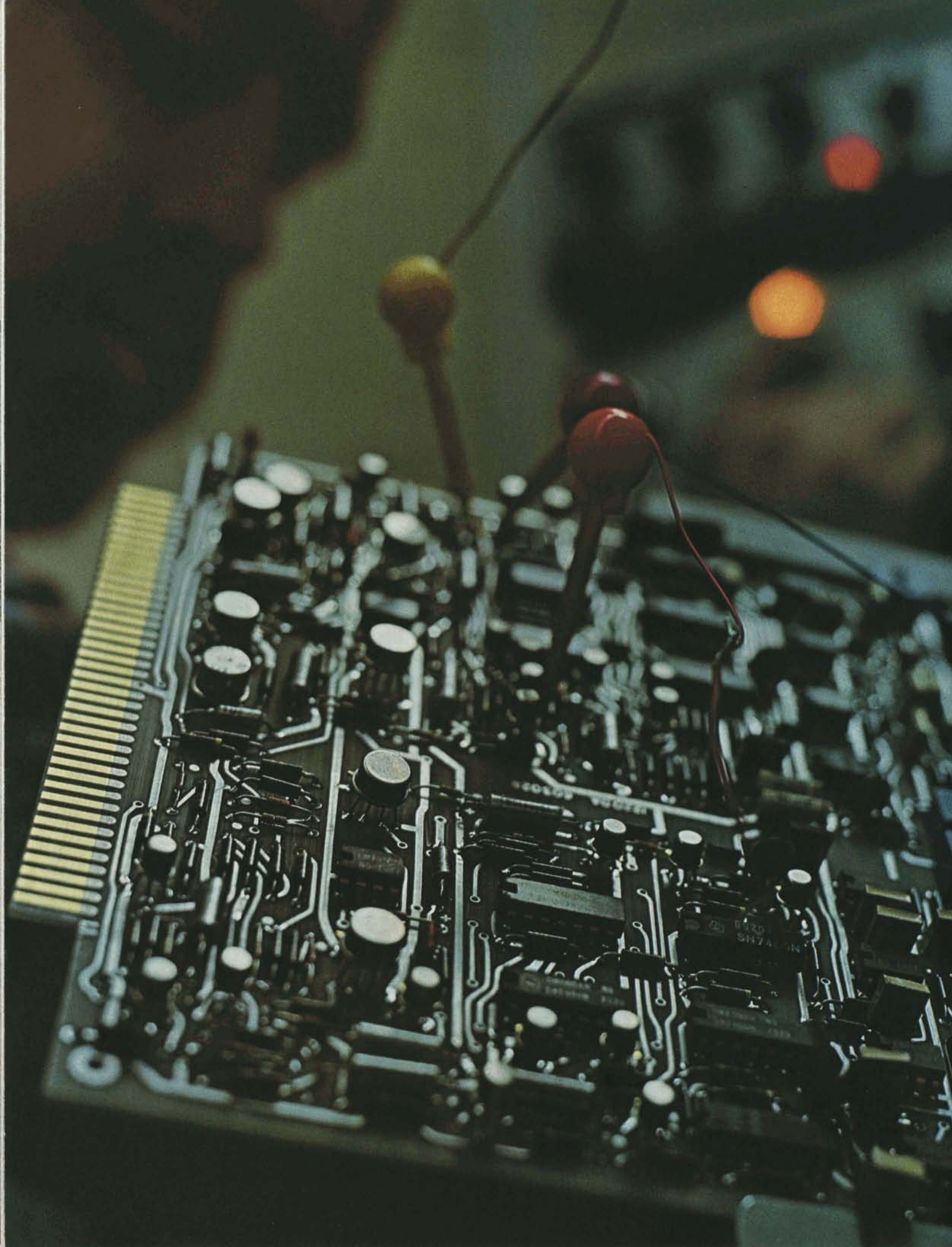
The manufacturing plant in Liege, Belgium, achieved our production output and cost objectives in 1970, completing its first full year of operations. During the year, production of the Mark VI Disc Pack was started and video tape production capacity was expanded. At year end, the Liege output of media products supplied essentially all of the needs of European, Middle East, and African customers.

In September, a 67,000 square foot expansion of the Liege facility was undertaken. When completed in 1971, the expansion will provide manufacturing space for assembly operations relating to a number of equipment products.

Management of international operations in the past has emphasized marketing capability. In 1970, a number of senior financial managers were added, both in Santa Clara and overseas, to support and provide controls for international operations. This maturation of our international organization should enable Memorex during 1971 to complete the transition of our business to a predominance of computer equipment products while sustaining and growing Memorex's excellent position in overseas media markets.

Under critically regulated clean-room conditions, the quality of each reel of computer tape is 100% certified on Memorex-designed equipment.





The fine leads of a "pigtail" when soldered to one of the 20 magnetic heads in the 660 Disc Drive transmit electromagnetic signals corresponding to information being recorded or read.

Memorex's equipment and media products have consistently maintained a high quality level measured by their price-to-performance ratios and reliability characteristics. The result is that Memorex enjoys a strong competitive position in markets where quality measures determine product differentiation. Willingness to invest in technology underlies this position.

The rewards of a continuous commitment of sizeable research and development expenditures are two-fold: first, our programs yield the new products essential to growth in revenues and profits; and, second, these activities strengthen Memorex's base of technology which contributes to more economical, expeditious, and innovative future developments.

For the tenth consecutive year, Memorex increased R&D expenditures in 1970. Total expenditures rose to \$14.6 million, compared to \$8.8 million in 1969. Significantly, R&D expenditures for new product programs in the Equipment Group more than doubled during the year while Information Media Group's product development activities were cut back. Technologists and engineers employed in R&D programs at year-end increased to more than 700 from approximately 400 a year earlier.

Of 1970's total R&D expenditures, \$4.8 million was charged against sales and revenues and \$3.2 million, including amortization, was charged to the costs of equipment-for-lease (both Memorex's and ILC's) marketed during the year. Thus, the combined amount of \$8.0 million related to products marketed of a combined value of approximately \$120 million produces a ratio of 6.7%. In 1969, the comparable figures were \$5.5 million and \$75 million, a ratio of 7.3%.

Integrated modem circuitry developed by Memorex technology is utilized by the 1270 Terminal Control Unit for interfacing with communications networks.



The remainder of 1970 R&D expenditures of \$8.1 million, after adjustment for amortization of \$1.6 million, was capitalized as Deferred Research and Development Costs. The net increase after amortization was \$6.5 million, and at year-end 1970, the cumulative net balance of 1970 and prior years' Deferred Research and Development Costs was \$12.1 million. These costs have been incurred in connection with a diversified group of eleven new products.

The Company's accounting policy is that when commercial production of any product begins, no additional development costs are deferred, and ongoing R&D activity for the product's improvement is expensed against its sales and revenues. Also, its past Deferred R&D Costs are amortized against its sales and revenues at a rate which represents a conservative estimate of the amortization period. Memorex's experience has been that the amortization rate fully eliminates the deferred costs in a period of about three years from the time commercial produc-

tion commences. The purpose of this policy is to match the costs of acquiring new product lines against their revenues.

Management of our R&D programs, including those relating to diversifications, is closely integrated with management of our financial and marketing programs. This integration is vital to an overall strategy for each product line, which assures that R&D programs will be managed toward market-oriented objectives and not advances of technology for which customers are unwilling to pay. Indeed, Memorex's customers are usually unable to distinguish our products' technology — their criteria, which are reflected in our R&D objectives, are our products' price-to-performance ratio and reliability advantages. Thus, the effective management of technology — rather than technology itself — is key to product success and corporate growth.

Management has concentrated our R&D activities in a limited number of areas in which Memorex's technical proficiency rivals or exceeds that of other competitors, including major computer system manufacturers. Memorex's full spectrum of capabilities — disc packs, disc file units, and controllers — contributes to the Company's leadership in disc file storage technology. In the technology of high-speed terminal printing devices and data communication equipment, Memorex has combined the disciplines of communications experts and computer engineers. Our terminal products and associated communication equipment are clearly superior to those of the largest manufacturers of communication equipment and computer systems. In the Computer Output Microfilm field, our advanced technology in character generation using fiber optics and in the precision transport of photographic film is unmatched by any competitor. In magnetic media technology, Memorex has long been recognized as one of the two technical leaders in the industry.

1. Carl A. Anderson, Secretary and David H. Elliott, Vice President—Administration
2. Edward J. Phillippe, Vice President and Controller
3. Gordon E. Pilcher, Vice President—Finance and Gordon O. Sheppard, Treasurer



The management structure at Memorex is dynamic as the changing character of our business necessitates. During 1970, the Company's peripheral equipment operations became our principal business. Reflecting this, in December the Board of Directors promoted D. James Guzy to executive vice president and general manager of the Equipment Group. Earlier in the year, two Equipment Group managers were elected vice presidents: William F. Emmons, Jr., and John R. Eastling. Mr. Emmons manages the Equipment Group's domestic field sales activities and Mr. Eastling is responsible for our newly established Systems Division.

The Equipment Group's organization includes both its large scale ongoing business and its several entrepreneurial subsidiaries. The first is organized functionally, with a vice president responsible for each of the activities of development, manufacturing, and marketing. Within each function, product line specialists focus emphasis upon individual product requirements. The general managers of entrepreneurial subsidiaries, whose purpose is diversification of our business by development of other product lines, are responsible to the vice president of development.

The Information Media Group, led by executive vice president John P. Del Favero, was restructured in 1970 to mirror its changing character. A New Products Division was formed for management of a program to develop business products and the CMX disc-recorder editing systems (in partnership with CBS). A Consumer Products Division was established with Roland Jang and Robert Jaunich elected vice presidents for manufacturing and marketing, respectively. Dr. John A. Perri was elected vice president, with responsibility for product development in the Media Group.

Two other officers were elected in 1970: Edward J. Phillippe, vice president and



corporate controller, and William S. McCalmont, vice president and managing director of European operations.

At year end, Memorex's principal operating management included 21 officers, 43 directors of divisions and major departments, and approximately 250 managers of smaller departments. These numbers represent an increase of 50% in management personnel over the past year and are indicative of actions to build the Company's management apace of its growing operations.

Memorex is also committed to a comprehensive program for manpower development at all levels of supervision. For its needs in 1970, we established an Education Center used for management seminars, sales training classes, and for a broad list of courses which helped provide more than 150,000 student-hours of instruction.

1. Prentis C. Hale, Alger Chaney and Fred M. van Eck, Directors
2. Benno C. Schmidt, Director
3. Dr. Theodore Vermeulen, Director
4. Dr. Alejandro Zaffaroni, Director
5. T. Robert Sandberg, Director

