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LITTON INDUSTRIES ANNUAL REPORT 1965

**THE ANNUAL REPORT
OF LITTON INDUSTRIES, INC.
FOR THE FISCAL YEAR ENDED
JULY 31, 1965**

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The Cover:

RESPONSIBILITY by the individual to the group was a keystone of endeavor for the merchants of the Hanseatic League. Because of the risk, seldom did a medieval ship sail as the account of a single merchant, but was built and provisioned by several shareholders. From the North German cities, the merchants of The Hanse sailed to search for foreign markets and to establish storehouses called the "steelyards" in distant ports abroad. The Merchant Gisze represents an early version of that entrepreneurial spirit which is important to the development of Litton Industries.

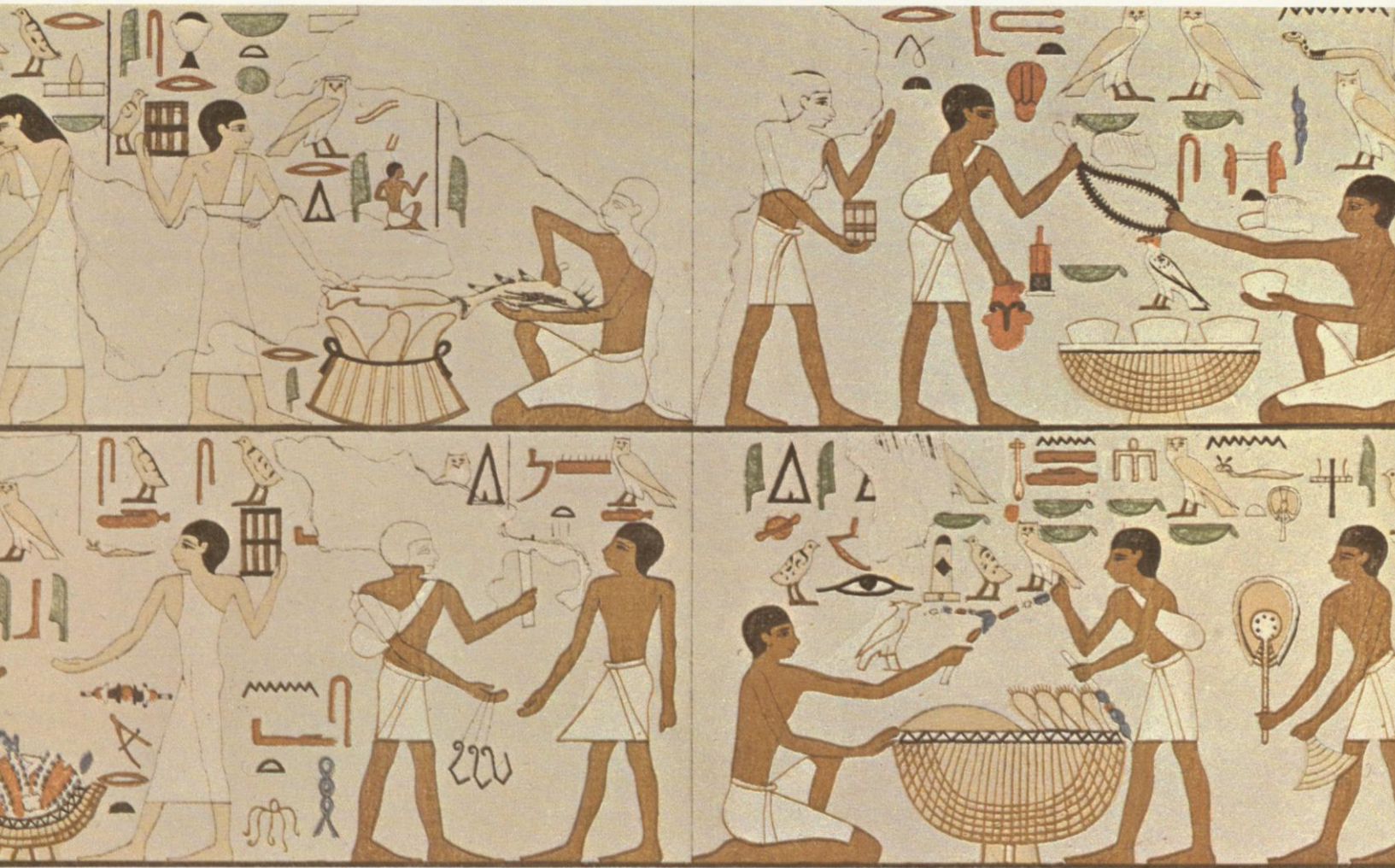
Hans Holbein, the younger, came to England to portray the leading personalities of the day. He found quarters adjoining the colony of the German Hanseatic Guild. Here, in 1532, he faithfully portrayed George Gisze, alderman of the steelyard; among his possessions and market wares; carpets, glass, metal objects, and the precision wonder of the day—the watch, or the renowned "Nurnberg Egg."

"THE MERCHANT GISZE," 1532.

Hans Holbein, the younger, 1497-1543; Staatliche Museen, Berlin-Dahlem.

THE IMMEMORIAL NEED OF MAN to seek commodities and services in exchange for dissimilar offerings is evident, even in the precapitalistic economies of antiquity. The ancient Egyptian agricultural and irrigation officialdoms rested on the imperial power of Pharaonic trade monopolies. But, through their art, they give evidence of accommodating this need by permitting limited production of necessities by large households for the market. Consequently, in an economy pre-dating universal coinage, need and reason evolved barter as an accepted practice which gave slow rise to the creation of an eventual marketplace.

Barter exchange, fragment, tomb fresco
Pyramids of Sakkarah. Old Kingdom, 4th Dynasty, c. 2550 B.C. As portrayed in Lepsius'
"DENKMAELER AUS AEGYPTEN UND AETHIOPIEN"
courtesy University of California at Los Angeles Art Library.



LEADERSHIP IN THE MARKET PLACE

Throughout history the market place has traditionally been the arena of resolve for the economic needs of man. Here the resourceful innovator brought his creations and produce before a critical and potentially receptive public. Here, man's awareness was kindled by an increasing array of goods and services which enhanced his welfare, and here he sought the satisfaction of his desires.

Though it is still the locale for gratifying his wants, man's market place has moved from the confines of the town square to the expansiveness of the free world; and it has grown from the fulfillment of household needs to the encompassment of his economic activities. Indeed, the market place of today is more important to man than ever before, and one of his great challenges is to assure its employment for his good. To do this, he needs to understand it and to relate himself to it; to study the lessons of the past and to combine them with the creative ideas of today.

The panorama of history reveals the ever-evolving nature of the market place. It discloses a spectrum of opportunities

and varying results. Those ideas which were launched with little else but enthusiasm burst forth on the scene with resplendence but, comet-like, soon disappeared; while those that were nurtured and attended remained to achieve acceptance beyond fondest expectation. The kaleidoscope of results records a hybrid development: It is a pattern of action and interaction, a rainbow of success and failure—a spiral of quest and reward. But above all, the history of the market place is dynamic; as dramatic as the history of man himself, for it was and is a vital part of his life.

Attesting to its importance throughout history are the paintings of great artists who down through years felt the impact of the market place and were moved to record it for posterity. The brushes of the masters portray eloquently the development of man's society and the commerce which made it possible. What better way to relate the story of the market place than through the art which it motivated?

Beyond the beauty of form and the exquisiteness of color, this great art discloses a message—that the market place, like life itself, is ever-changing. It is this change which has brought man's progress, and with it the hope that the future will hold even greater promise.

But the future is demanding: it does not bestow its bounty by accident. The future has ever been the province of those who planned for it. So it is in the markets of today, the future belongs to those who know the market place best and who act to accommodate its infinite variations. Here success gravitates to the vigorous, restless marketers who demonstrate the capability to anticipate the demands of the buyer and who diligently manage the opportunities which occur.

Leadership in the market place is earned by those who are alert to impending trends and who act to maximize profitable participation in them. Leadership is conferred upon those who recognize that enterprising, imaginative research is vital in the development of new products and who organize to utilize science and technology in bringing better products to market.

Leadership in the market place is hard won and stoutly defended. Those who have earned and retained it have contributed greatly to the improvement of man's standard of living and to the protection of his freedom.

The people of Litton cherish their leadership in the market arena and chart their course to assure its continuation in the service of mankind.

TO OUR SHAREHOLDERS:

Exacting care is applied to the preparation of Litton's financial statements to furnish you with an accurate report of the company's sales and profits, liabilities and assets. Yet accounting tradition understandably does not provide appropriate recognition for our greatest asset—the talented people who make up Litton Industries. They now number over 65,000, and with their families over 270,000. If all of these families lived in one place, they would populate a city bigger than Tulsa, Oklahoma, or almost as large as Venice, Italy.

Litton now ranks as one of the 30 largest employers among the industrial companies in the United States and as the 68th largest in the free world.

While it is gratifying to be listed among those distinguished companies providing meaningful employment for so many, we are more pleased with the individual and collective value of the capabilities which Litton employees offer to the market places of the world. More than 8,000 research scientists, engineers, and technicians in the company interrelate their skills with thousands of others engaged in the equally important functions of pro-

duction, quality control, sales, and collateral activities essential to the manufacture of more than 6,000 Litton products.

The company's profit is the hallmark of our employees' excellence, resulting from the efficient combination of their talents with the resources entrusted to them by you, the Litton shareholders.

This combination in the fiscal year of 1965 produced wages and salaries of \$391,376,000 for our employees, and a profit for Litton Industries' shareholders of \$39,752,000. This represents an increase of 33 per cent over the previous year's earnings of \$29,767,000. Sales for the fiscal year ended July 31, 1965, were \$915,573,000, which was also 33 per cent greater than the \$686,135,000 reported a year earlier.

Shortly after the close of the fiscal year, the board of directors for the seventh consecutive year voted a 2¹/₂ per cent common stock dividend. They also voted to split the common stock two-for-one, subject to your approval at the December 4, 1965, annual meeting.

In addition to the reported earnings, further cash was realized through depreciation charges of \$22,998,000, resulting in cash generation of \$62,750,000. These funds added to the available line of credit

from banks provide ample resources for the continued growth of Litton's worldwide activities.

During the year, over 465,000 square feet of new facilities were completed, and construction began on more than 440,000 square feet of new building. When these projects are completed, at an estimated total cost of \$12,000,000, including equipment, Litton's people will operate in 142 plants in 21 states and 12 foreign countries.

All three areas of Litton's interest, Business Equipment, Defense and Space Systems, and Industrial Products, expanded during the year by the broadening of market coverage and through the introduction of new products.

Business Equipment successes were led by dramatic increases in the sales of Monroe Sweda Data Registers and by the introduction of technologically advanced equipment in the fields of electronic calculators and computers.

The merger with Royal McBee Corporation complemented the Business Equipment product lines and added another group of competent, talented people. During the year, Royal was aligned into five operating divisions, substantially increasing efficiencies and enhancing marketing effectiveness. McBee Systems

was established as a separate division concentrating on the development, manufacture, and marketing of simplified equipment for accounting, data processing, and information storage and retrieval.

In the area of Defense and Space, successful flight tests were completed and follow-on production orders were received for inertial guidance on the tri-service F-111 jet fighter, and deliveries were begun on extremely accurate navigation systems utilizing stellar-inertial reference techniques. Litton also introduced an advanced microelectronic real-time computer, the smallest and lightest available on the market. It has already been found suitable for military and space command and control applications.

Helping to accelerate the U. S. defense effort, the Ingalls Division has under construction eight Navy vessels. These include four nuclear submarines, an amphibious assault ship, a Polaris submarine supply ship, and two amphibious transport dock vessels. The amphibious assault ship, the USS Tripoli, is especially important for today's military posture because it is used in the new vertical envelopment tactics which are being increasingly employed in limited warfare situations.

The people of many divisions of Litton

contributed to the continued expansion of the world's industrial base. Our work included introduction of new products in such fields as industrial microwave, medical electronic instrumentation, oil and mineral exploration, and commercial marine construction.

Additional areas of Industrial interest unfolded when Hewitt-Robins, Inc. joined Litton Industries, bringing with it people of outstanding skills in materials conveying, processing, and control. Among its accomplishments during the year, the Hewitt-Robins Division completed a new facility for the Duquesne Light Company of Pittsburgh. The conveyance system for this Pennsylvania public utility transports thousands of tons of coal daily from the mine to a preparation plant six and one-half miles away.

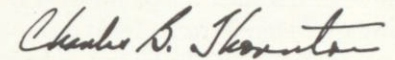
Hewitt-Robins people are active in many other fields too—a few of which include production of mobile plants for raw material processing in road construction, flexible flow lines for liquids and gases, mobile conveyance systems for mining, vibrating equipment, and precision gears and speed reduction for power transmission.

Naturally, in a report of this length, we can deal with only a few of the achieve-

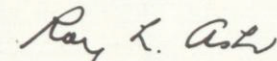
ments of Litton's people. Their scientific and technological expertise is vast and would require volumes to present adequately. But as you review the accomplishments of the past year, one which closed with Litton products and services being delivered at the annual rate of over a billion dollars, we hope that you share our expectations for the potential in the years ahead.

The people of Litton are trained, energetic, and enthusiastic; they are members of an organization with balanced competence in research, production, and marketing. Theirs is the desire to continue Litton's success and growth; and so they rededicate their efforts and talents to the demands and the opportunities of the market economy—today and for the future.

Sincerely yours,



Charles B. Thornton,
Chairman of the Board of Directors



Roy L. Ash, President

BUSINESS EQUIPMENT

In antiquity, the market place was simply the site at which buyer met seller and conducted a transaction. As the Phoenicians and Greeks led man from barter to the development of coinage, the nature of transactions became correspondingly more elaborate.

Two thousand years ago a Roman completed his purchase in the presence of five other citizens by placing pieces of brass in a balance and declaring, "This is mine by the law of the Romans. I have bought it with this brass duly weighed." Thus the bargain was struck and the transaction recorded in men's minds.

Through the centuries, the market place has grown incomparably more intricate, requiring sophisticated procedures and equipment to handle transactions which now encompass the economic environment of civilization.

Today's market place establishes challenging requirements and sets high standards of performance, standards which are willingly met by Litton Industries whose business products record, display, compute and calculate.

The 1965 fiscal year was an outstanding one in the history of Litton's Business

Equipment activities. Sales rose sharply to a new peak. A number of technologically advanced new products with high sales potential were introduced. The already broad product line was further expanded and complemented by the merger with Royal McBee Corporation. And major facility additions were made to the production capacity of a number of divisions.

The company's Monroe division widened its technological lead in the printing calculator market during the year with the introduction of the EPIC 2000, which out-performs any other machine on the market today. It computes faster than any competitor and it provides a printed record of its computations, a feature found in no stored-program memory system, which enables it to conduct a series of similar calculations automatically after the steps are performed initially by a human operator.

Introduction of the EPIC 2000 evoked widespread interest which resulted in quantity orders being placed by industry, universities and research centers.

Fiscal 1965 was the first full year of market availability for the Monroe division's PC 1421 electromechanical printing calculator, and sales of this versatile new product were particularly gratify-



Top • The PC 1421 printing calculator incorporates many automatic features missing in competing machines.

Center • The EPIC 2000 electronic printing calculator provides results faster than any other calculator available in today's market.

Bottom • The 1Q-10-213 calculator offers more value per dollar than any other rotary machine available.



FORESIGHT enabled the merchants of Venice to create the first great commercial metropolis of the medieval world. From the Levant the members of this mighty merchant republic brought the technique of entrepreneurial finance and industry, and through the Venetian public warehouses which served as headquarters for foreign merchants, this Adriatic port funneled into Europe the appeals and rewards of foreign markets.

Though towns as an art subject began intriguing artists only in the late Middle Ages, Antonio Canal, an artist unexcelled in precise painting of architecture in careful perspective, made the townscape a notable type of painting with his scenes of Venice.

"VENICE"
Canaletto, 1697-1768. National Gallery of Art, Washington, D.C. Widener Collection.



EFFICIENCY has replaced self-sufficiency as one of the goals of economic endeavor. As the castle culture arose, a manorial industry sought to organize peasant labor around the ideal of a self-sufficient economy within the shadow of castle walls. Future centuries were to reveal that a family neither could create all the goods it desired nor supply them as well as a craftsman specializing in production for a market.

The brother of a king of France invited the Flemish Limbourg brothers, Pol, Hennequin, and Herman de Pol, to illustrate a luxurious book of the hours. In a series of miniatures depicting man and nature throughout the months of the year they created a panorama of castle life in an age when the potential of markets was dawning on man.

LES TRES RICHES HEURES DU DUC DE BERRY, 1413-16.

Chateau du Saumer, Septembre — Les Vendanges.

The Limbourg Brothers, Musee Conde, Chantilly, France, Photographic Giraudon.

ing. Introduced in the previous fiscal year, this calculator was responsible for a marked increase in the division's printing calculator sales, and it is expected to become one of the most successful products ever developed by Monroe. The PC 1421, the fastest electromechanical printing calculator on the market, has a number of automatic features not found in competing products. Printing units constitute the most rapidly growing segment of the world calculator market, and this machine is expected to command a large share of this business.

In the field of rotary calculators which display their results on dials, the Monroe name has meant leadership and excellence for decades. During the year Monroe further broadened and improved its already extensive line with the introduction of a new, fully automatic model designated the IQ-10-213. This new model is especially well suited for persons with little or no experience in business machine operation. Each key is imprinted with instructions to explain its function, greatly simplifying the task of learning to operate the machine. The new rotary model also is a highly versatile general purpose calculator, combining many features never before incorporated in a machine in its price





range. As a result, the IQ-10-213 offers more specific use per dollar than any other rotary machine on the market.

The strong world-wide demand for Monroe calculators during the year resulted in the establishment of new production records at the division's two primary production facilities, located in Bristol, Virginia, and Amsterdam, Holland. The continuing upward sales trend and the introduction of new models led Monroe to add plants in Clifton, New Jersey and Pomezia, Italy for calculator and computer production.

The Monroe Sweda division also achieved marked sales increases in 1965, with the result that new production records for sales registers were set at the division's main plant in Stockholm, Sweden. A sizable share of this increase was in Dataregisters, the compact sales control registers which provide more separate self-contained totals for merchandise classification than any competing product. Sales of Dataregisters are expected to grow further as an increasing number of retailers seek equipment to provide more detailed records of sales by departments.

Important gains also were made in sales of the Monroe Sweda division's versatile punched tape sales registers.

Top · Litton's Monroe division develops and produces a full line of calculators for broad business applications.

Bottom · Important gains were achieved during fiscal 1965 in sales of the Monroe Sweda division's Dataregisters.

Using a two-step input procedure, up to 9,999,999 separate classifications can be recorded by these machines and a detailed record for use in sales analysis and inventory control can be produced.

Complementing its existing capabilities in the field of data automation, Monroe Sweda in May introduced a new series of optical printing sales registers. These produce a printed sales record which can be read rapidly by optical scanning devices linked to computers, thus introducing a retail data processing system to provide high operating speeds for those applications where it is required.

The variety of office equipment and supplies offered by Litton was further broadened during the year when Royal McBee Corporation joined the company.

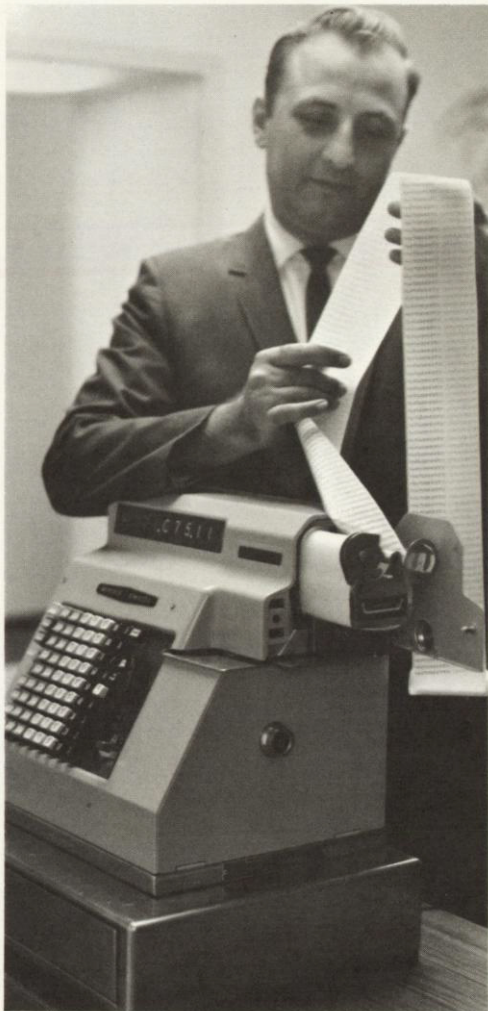
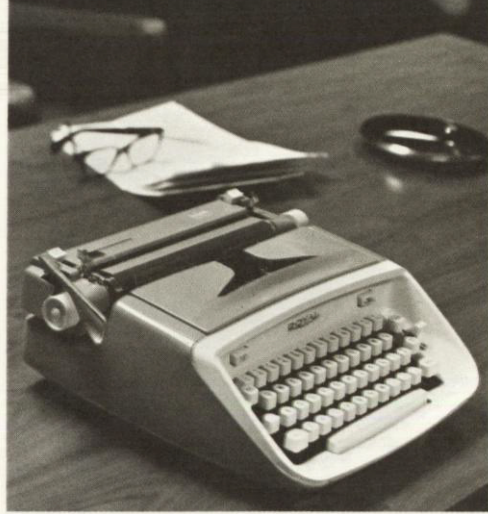
By the end of the fiscal year, both the Royal division and McBee division had strengthened their organizational structure and accelerated marketing, manufacturing, and product development programs. As an additional step to implement growth plans and profit objectives, Royal was expanded into five operating divisions. This alignment substantially improved production and distribution techniques and increased marketing effectiveness.

Royal, one of the world's leading manufacturers of typewriters, offers the most complete variety of typing equipment available. Its product line includes manual and electric models for the office and school, portable machines for the home, automated typewriters, supplies, and input-output equipment for electronic computers. These products are marketed through 8,000 Royal outlets throughout the world.

Demand for the typewriter, the basic machine in any office, continues to grow as the free world's business community expands. New developments by Royal have concentrated on advanced products which will economically speed the flow of information in the business community.

An engineering design breakthrough in typewriter technology was responsible for Royal's introduction of the Electress, a low-cost, full-featured electric typewriter for the office. Through a computer approach to development, Royal was able to market this machine at a price substantially lower than competing products.

Sales of electric models continue to increase sharply. For fiscal 1965, volume was 15 percent ahead of the preceding year and exceeded year-earlier levels in



Top • The popular Safari model is part of a complete line of portable typewriters produced by the new Royal division.

Bottom • Monroe Sweda's new optical printing sales register produces a sales record compatible with high-speed data processing systems.

Right • The full-featured Electress model contributed substantially to the marked increases achieved in sales of Royal electric typewriters in 1965.



each of the three major market areas—commercial, school and government.

Royal maintained its role as a leading manufacturer of manual models for office use, and during the year strengthened its position in sales of manuals to both the commercial and school markets. In school typing classrooms, where brand loyalty usually is formed, about one-half of all typewriters carry the Royal name.

Royal is an important factor in the fast-growing portable market. Last year, U. S. sales for all portables rose to 1,400,000 units, twice the number sold a decade earlier. The trend was reflected in the sales of Royal portable typewriters in fiscal 1965, with the full-featured Safari model leading the line.

During the year the Royal Consumer Products division, which produces all Royal portable typewriters, completed the development of an advanced electric model, which will be introduced in fiscal 1966. The Consumer Products division is developing other new products for the home market to complement its present line.

Royal was among the first to meet the needs for automatic typing of personalized form letters. The Royaltper division, which produces programmable units for repetitive typing, has intro-

THE VALUE OF EXPERIENCE to be gained from the study of once-great civilizations is of inestimable value to men seeking success in the economic world. The genius of the Roman Empire in social and political organization is well known. The collapse of that Empire may be attributed to many causes of varying influence, among which could be the sobering observation that Rome failed to nurture business enterprise with the promise that success in the market place was tantamount to greatness in public service.

As mid-nineteenth century America pondered the course of the Ancient World, artist Albert Bierstadt achieved popular recognition by reflecting in art the values of current interest. One such subject was a contemporary fish market in front of an aging and partially stuccoed arch.

"THE ARCH OF OCTAVIUS, ROME," 1858.

Albert Bierstadt, 1830-1902. Museum of Fine Arts, Boston.





duced a number of innovations. A recent model, designated the Filetape Royaltper, makes possible the continuous feeding of a deck of individual file tapes and the automatic selection of four pieces of coded material from each tape. The combination of the multi-tape feeding and electronic selection meets the demands of flexible system applications. The addition of this new Royaltper model has strengthened Royal's position in this field and enables it to participate extensively in the growth of the special-purpose market.

Through its Roytype Supplies division the Royal organization markets a complete line of typewriter and office supplies, including carbon paper, typewriter ribbons, and specially-designed ribbons for use in high-speed computers. In fiscal 1965, the Roytype division introduced a patented innovation which for the first time makes a ribbon change on an electric typewriter almost automatic. With Reddi-Pak, the ribbon is enclosed in a plastic cartridge and is automatically fed into the typewriter.

Complementing the Roytype line of supplies is a line of electrofax papers introduced in 1965 by the Fitchburg Specialty Paper division. These new papers, used in electrostatic office copy-

ing machines, are expected to become increasingly important contributors to Fitchburg's steadily rising sales.

In related areas of its operations, Litton is applying its broad range of skills to the development of advanced information handling and data processing equipment based on the new technologies. For example, the company's Monroe Computer Systems division during 1965 completed the development of an electronic business machine which incorporates a number of unique features. The new Monroe 1201, now being marketed in Europe and soon to be introduced in the United States, is the first low-cost business machine to offer automatic input and output in punched paper tape form along with a logical decision-making capability, a combination never before available at its price. The Monroe 1201 has a computer's ability to process both alphabetic and numeric data, and it is equipped with a keyboard for operator input as well as a printer for automatic output.

In another area of activity, the Monroe Computer Systems division received orders from large national concerns for sizable quantities of the low-cost, desk-size Monrobot XI, and major gains were made in sales to smaller busi-

Top - Programmable typewriter units for repetitive typing tasks are manufactured by the Royaltper division.

Bottom - The Monroe division introduced its new 1201 electronic business machine which provides unique alpha-numeric capability with keyboard input by the operator.

nesses as a result of a merchandising program directed especially to this segment of the market. In this new merchandising concept Monroe's "packaged programs," tailored for these types of small businesses, relieve the computer user of the need to prepare his own computer programming.

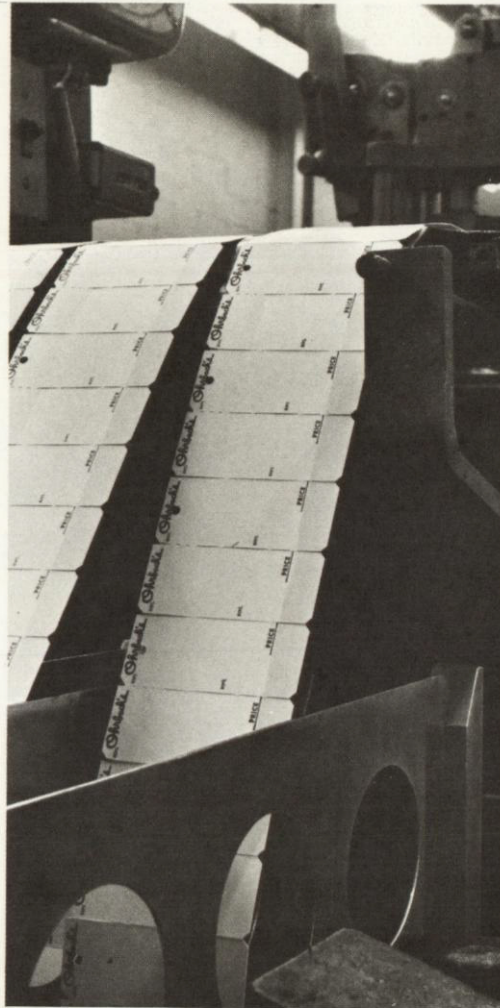
Another new Litton product for the fast-growing data handling and processing field is the MC 4000, an ultra-high-speed digital printer which records 192,000 characters per minute on photosensitive paper. Introduced by the Monroe Data/Log division in May, the MC 4000 is designed for applications in which extremely rapid printout of computer data is required. For example, the printer can be used in tracking a missile or satellite to provide reports on the flight path at split-second intervals, or it can be integrated into the control system of petroleum processing or steel plants to provide continuous, instantaneous reports on production processes.

Litton's data automation capabilities were substantially broadened when the McBee Systems division joined the company. McBee develops, manufactures, and markets simplified equipment for accounting, data processing, information storage and information retrieval. Its

products are marketed and serviced in nearly 100 countries throughout the free world. This division, which brings the accounting techniques of progressive management within the reach of all businesses, no matter how small, is an important segment of Litton's expanding operations in the field of data processing systems.

McBee's products are utilized in a broad range of industrial, service and professional organizations. Manufacturers, particularly those with 30 to 500 employees, have benefited from systems custom-designed and installed by McBee to provide more accurate job costs, better plant-wide scheduling, more precise distribution of labor costs by department or work center, and other essential information. Large-size business and service organizations also employ McBee machines and techniques to supplement their own data processing operations.

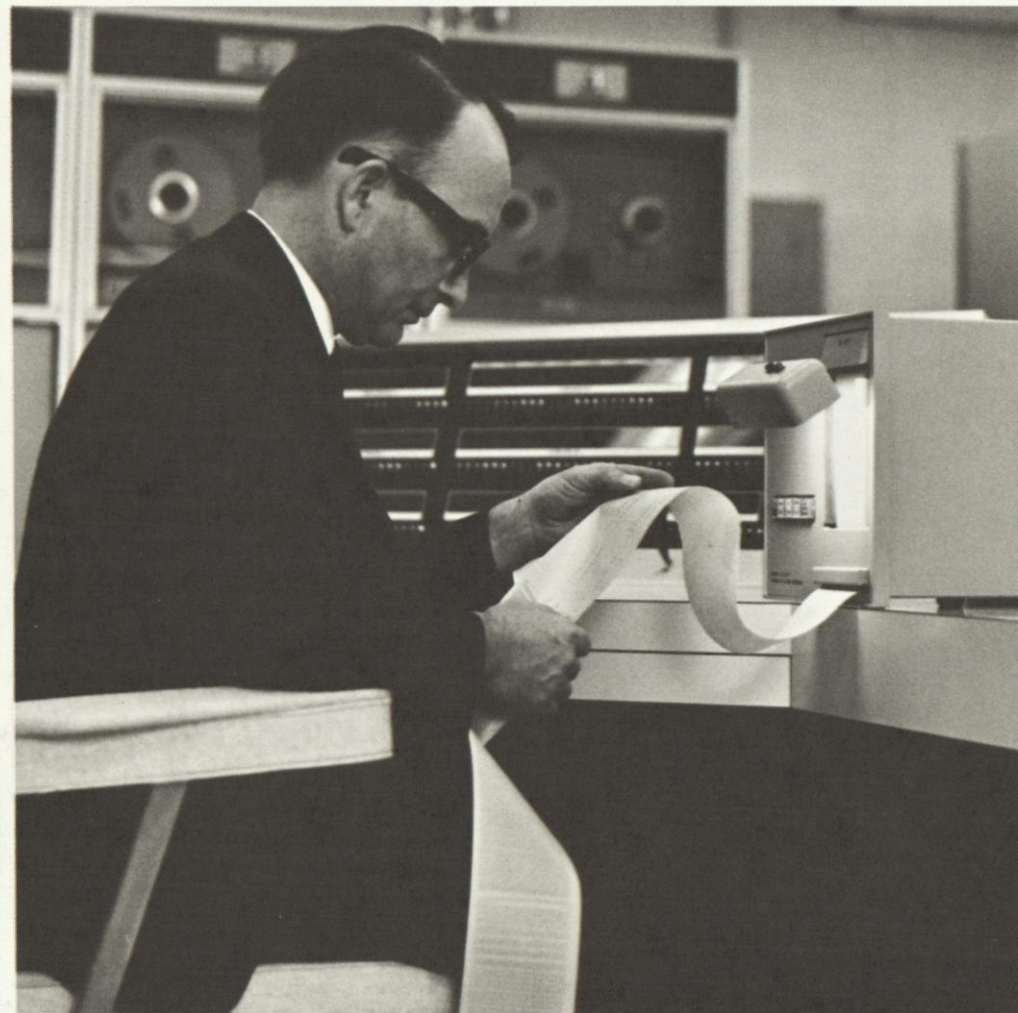
The company believes there is large potential for growth in the market for McBee products and techniques. The number of small-to-medium size manufacturing, hospital, school and other organizations is constantly growing; and much of this market has not yet been penetrated.



Top • Litton's Kimball division is a world leader in production of merchandise tags designed to be processed electronically.

Bottom • Kimball punched merchandise tags simplify the task of sales analysis and inventory control.

Right • The MC 4000 ultra-high speed digital printer records 192,000 characters per minute.



The Royal organization supplements Litton's broad participation in the data processing field through the development and manufacture of precision, high-speed paper tape punches and readers for electronic data processing systems. New models introduced in fiscal 1965 include punch and reader units with speeds of 75 characters per second. Royal's Industrial Products division has developed a strong field sales engineering organization, and this area of the company's activity is expected to show significant growth.

Still another Litton division contributing to the growth in the data processing and automation industries is Fitchburg Specialty Papers. During fiscal 1965 Fitchburg introduced several types of electrosensitive papers for these markets, including Timefax NDH, used in highly specialized equipment which guides automated production processes, programs analog computers, and controls laboratory tests. New characteristics of the paper enable this function to be performed simply by drawing the required program on the paper.

The company's Monroe Data Processing division further improved its service during fiscal 1965 by developing a new, high-speed data transmission procedure

utilizing the nationwide facilities of Litton's LITCOM system of leased telephone circuits. Customers of Monroe Data Processing throughout the U. S. now may transmit sales and other accounting information directly to the division's computer-equipped data processing centers. Under this system, the MDP client feeds punched tapes from cash registers or adding machines into high-speed data transmission devices linked to telephones. The new system thus provides processing of accounting information at speeds faster than previously available to those small businesses which have had to rely on mail communication with data processing centers.

For a number of years Litton's Kimball Identification Systems division has been known throughout the world as a producer of punch-marked merchandise tags which, when electronically processed, provide the retailer with extensive information that would require many times as long to compile by other means. During fiscal 1965 Kimball inaugurated two promising programs in this area. One of the new systems, called the Kimball Source Marking program, involves the attachment of punch-marked tags to merchandise on the manufacturer's production line,

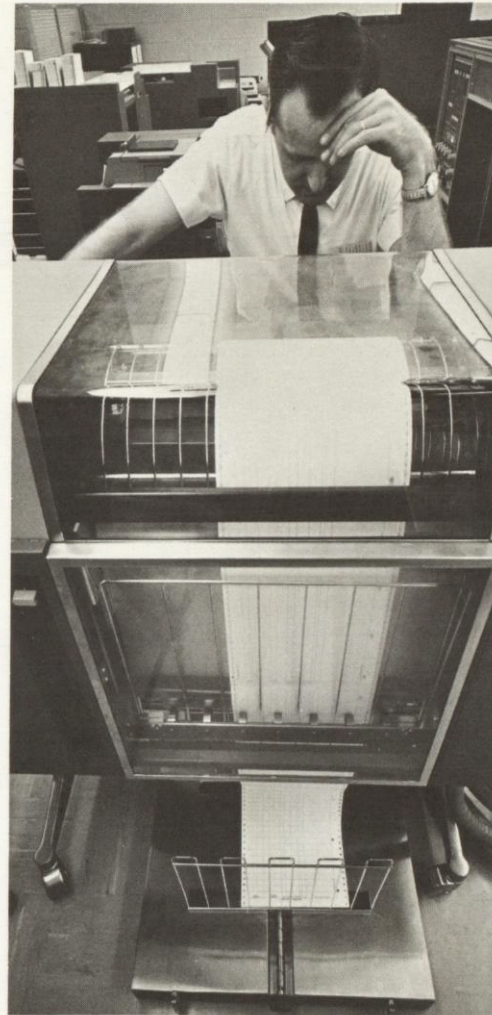
relieving the retailer of this time-consuming task.

The other Kimball program, called Datatag, is an adaptation for industrial users of the punched tag system widely applied in retailing. Manufacturers as well as retailers have found a need for improved methods of sales analysis and inventory control.

During the year Kimball made major additions to its production capacity and obtained a capability for the manufacture of printed plastic products. These products, ranging from credit cards to price tags used in mass merchandising centers, are finding increased use in product and service identification.

Litton's Eureka division, long a leading graphic arts producer, enhanced its versatility during the year with the installation of additional modern printing equipment. The company further expanded its range in this field by adding the business and skills of A. Carlisle & Co., a producer of package and product identification materials. Since joining Litton, Carlisle has made major additions to its facilities to increase its effectiveness in this extensive and promising area.

During the past two decades, competition for the consumer's dollar has grown more intense as additional prod-



Above • New data transmission methods enable the Monroe Data Processing division to serve customers more rapidly.

Top right • One of the mass merchandising centers planned and designed by the Streater division.

Right center • Supervisory personnel at the Carlisle division check proofs of the fine art reproduced in this year's Litton annual report.

Far right • Computer-programmed equipment is utilized for the production of magnetic encoded checks at the Carlisle division.

IDEALS of commercial activity during the medieval period were often those occupational tasks which could claim a Biblical equivalent. Merchants and tradesmen playing roles in the morality plays of the day chose religious characterizations akin to their professions.

"The Campin Altarpiece" boldly departed from the tradition of religious art by portraying the Annunciation as occurring in a contemporary Flemish domestic household.

"St. Joseph in his Workshop," a panel from the altarpiece, depicts the humble carpenter manufacturing mousetraps — one in the open window, another on the workbench. The symbolism typical of "late Gothic" painting may derive from St. Augustine's admonition, "the Cross of the Lord was the devil's mousetrap." Later merchant-craftsmen envisioned luring the world's path to market as a consequence of better mousetraps. Modern marketers, however, observe that the path must be beaten to the doorstep of the customer; and his loyalty must be won with service and responsibility for products before and after sale.

"ST. JOSEPH IN HIS WORKSHOP," from "The Campin Altarpiece," after 1425. The Master of Flémalle, probably Robert Campin, 1375-1444. The Metropolitan Museum of Art, New York. The Cloisters Collection, Purchase.

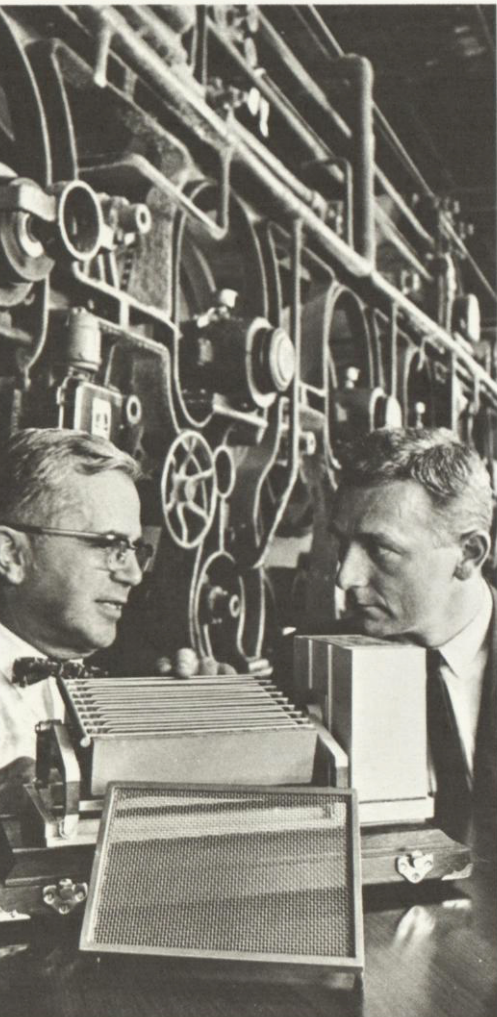


CENTRAL AND COMPREHENSIVE describe locations and services of the growing markets. Retailing became the most influential factor in trade. As production evolved toward market specialization, fixed times and places were established for exchange. The market square grew, and the itinerant trader settled here, where the buyer and seller could meet conveniently.

Bruges probably originated around a market town. Emphasizing characteristic Bruges' architecture with its predominance of the vertical line, a mighty market square was erected. At one time, it accommodated in residence merchants from seventeen countries.

BRUGES, LA GRAND PLACE, 17th Century.
Jan Baptist van Meuninxhove, active 1638-1704.
Communal Museums, Bruges.





Above · A model of the equipment used in the Fitchburg division's new paper production process is examined at Fitchburg's main production facility.

ucts and retailers have entered the market place. As a result there is a strong and continuing demand for the scientific planning and designing of mass merchandising centers and specialty stores alike. Litton, through its Streater division, is a technological leader in this growing field. Streater merchandising specialists employ the techniques of human engineering to develop for each individual client the optimum in traffic flow patterns, load factors and product display. Its highly regarded capability enabled Streater to achieve major sales gains during the year.

The Office Furnishings division achieved record sales during fiscal 1965 as a result of several developments. The division began offering a prestige line of wood furniture to complement the wide variety of popular steel furniture bearing the division's Cole label. The Cole line itself was further broadened with the introduction of a new series of contemporary office chairs. Concurrently, the division attained important competitive advantages through the introduction of additional advanced automation techniques throughout its manufacturing processes. Aggressive marketing, along with automated manufacturing, enabled the division to realize a significant

increase in sales to the school, contract and government markets.

To stay abreast of its continuously rising production requirements, the Office Furnishings division completed plans during the year for an extensive facilities expansion program. In York, Pennsylvania, 300,000 square feet under construction will be completed in fiscal 1966. An addition to the division's plant in Scarborough, Ontario doubled the size of the Canadian plant to 150,000 square feet, and construction was begun on a 50,000 square foot plant in Oviedo, Spain. The Oviedo plant, to be operated as a joint venture of Cole and a group of Spanish industrialists, is scheduled to begin production early in fiscal 1966.

During the year the Fitchburg Specialty Paper division added substantial new manufacturing capacity for specialty imprinted papers used in laminate form as the surface for office, school and institutional furniture. The market for such papers is growing at the rate of approximately 15 per cent annually, and Fitchburg has become a leading producer for this market through its ability to assure fidelity of wood grain reproduction and uniformity of quality.

Fitchburg also expanded its production capacity abroad, complementing its

QUALITY IN QUANTITY may have been achieved first by the early armorers' shops. These isolated ateliers were forerunners of later factories as they devised the means of producing by the dozens elaborate and intricate breastplates and gauntlets, shields and helmets. The increasing availability of metals, a developing mechanical ingenuity, the demands of security, and the aspirations of customers contributed to a market that motivated the early steel garment trade. Today, quality in quantity is a goal which Litton achieves, not only in producing for defense needs, but in all products for the public market.

*Armorer's shop, 14th Century.
Manesse Manuscript, 14th Century.
Universitätsbibliothek, Heidelberg.*

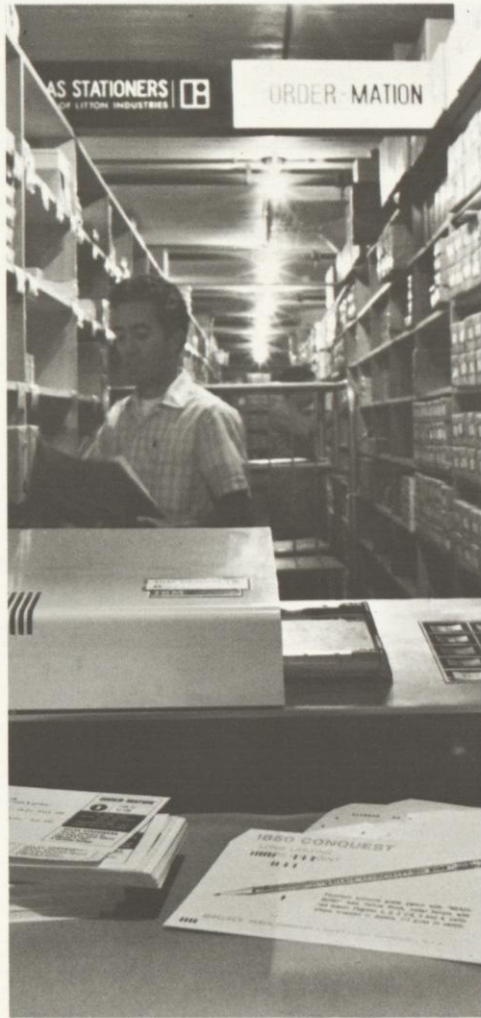
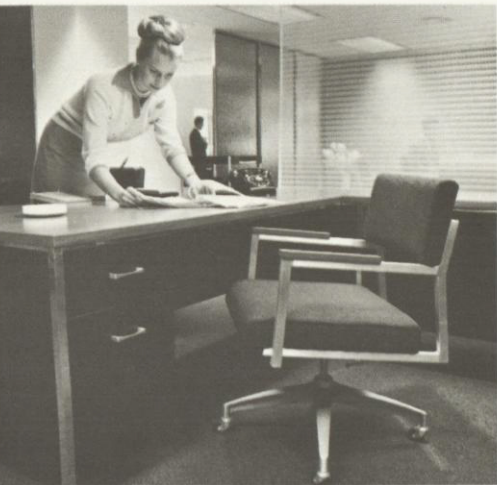
operations in Belgium with the addition of a plant in Geneva, Switzerland. The already substantial Geneva plant will be further enlarged to enable it to produce many of the products now made for the growing European market by Fitchburg plants in the United States.

In another important 1965 development Fitchburg introduced a special process for the drying and coating phases of paper manufacturing. The new process, dielectric drying, has proved successful both in increasing production markedly and in improving product quality. The company believes this exclusive process will prove valuable in the manufacture of a number of other products, such as leather goods, textiles and photographic film.

Under a plan to coordinate and increase sales of business equipment, the company formed a marketing group designated as the Business Equipment Centers division. The new division will implement a Litton-developed concept for marketing business machines, computers, office furniture, stationery and office supplies through branches located at strategic points throughout the United States.

As initial steps in this program, the company began operating four industrial





and retail office supply outlets in the northeast United States and added a new capability in a system for automated supply of office products. The new system, "Order-Mation," utilizes the latest data processing and transmission techniques to provide swift and efficient customer service.

In addition, it reduces the customer's capital investment and salary costs because Litton performs the inventorying and stock handling functions, almost automatically. A subscriber to the "Order-Mation" service simply marks and mails pre-punched requisition cards or uses the data-phone for emergency requirements. The central Litton warehouse obtains the supplies from its stock and delivers immediately.

To provide more efficient service to customers who choose to rent or lease Litton products rather than purchase them, the company in July assigned the responsibility for these services to Litton Industries Credit Corporation, a new division which will provide lease financing and time payment plans for Litton products. Litton Industries Credit Corporation is headquartered in New York and has regional offices in Stamford, Connecticut; Elmhurst, Illinois; Palo Alto, California; and Atlanta, Georgia.

Top • The Office Furnishings division introduced a new line of contemporary chairs during fiscal 1965.

Bottom • Fine new group settings for business office decor are provided by the Office Furniture division's Cole line.

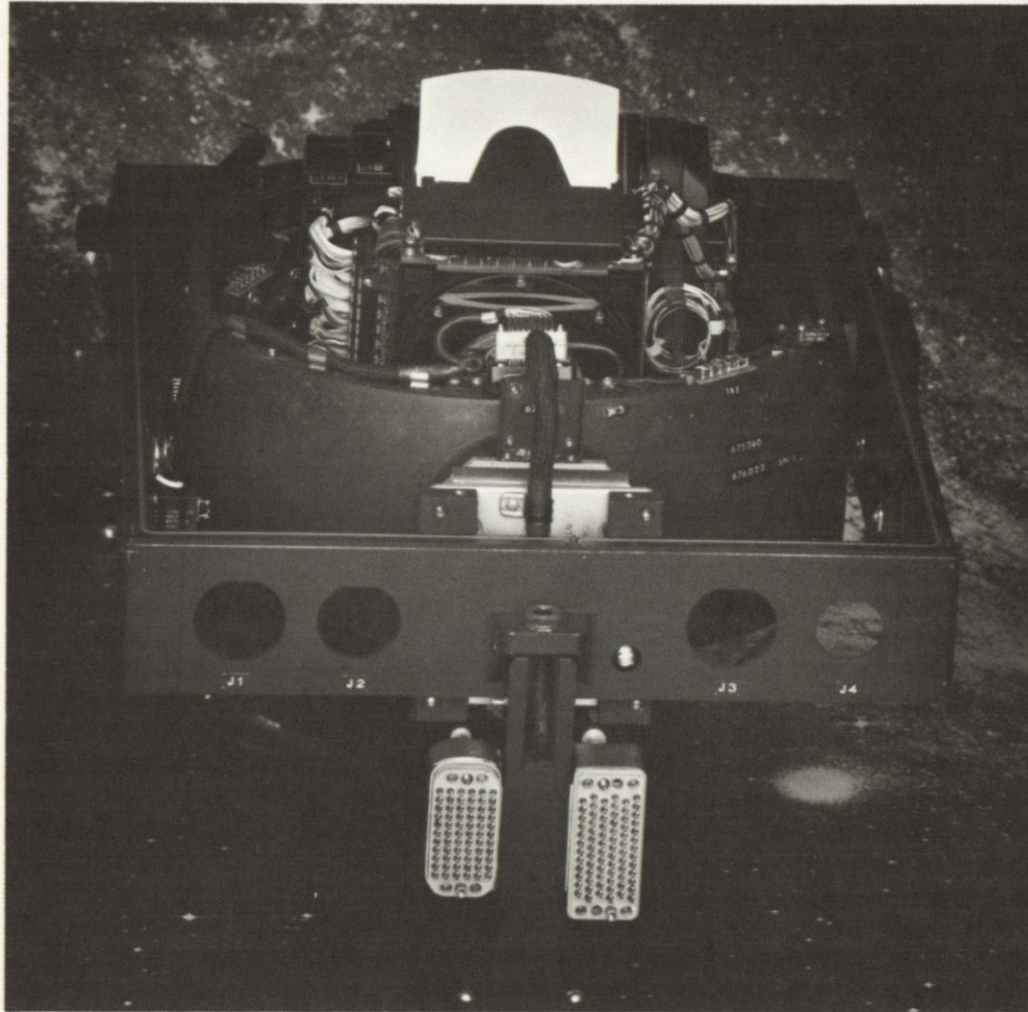
Right • Techniques of automation are utilized by the Business Equipment Centers division to fill orders for office supplies.

DEFENSE AND SPACE

Men, markets, and nations change, but there is one constant—the need “to provide for the common defense”—the need to protect the substance of past achievements and the means for future accomplishments. Throughout the centuries, a strong industrial base and an able defense organization have been inseparable partners in the establishment of a flourishing economy.

Litton takes pride in its contribution to our country's military posture. We continue to expand our economic base in the private sector while accelerating business in defense products and research. Thus, Litton stands ready to meet emergency military requirements while generating new techniques and equipment for use in the preservation of freedom and the exploration of space.

The Guidance and Control Systems division demonstrated anew in 1965 its leadership in inertial navigation systems for manned aircraft. The division delivered large quantities of these systems for a number of aircraft active in the defense of the free world, and made further advances in technology under its continuing research and development





Left - A star-tracking unit is a key element of the company's new Stellar-Inertial-Doppler navigation system.

Above - A major follow-on contract was received during 1965 for production of inertial navigation systems for the F-111 jet fighter aircraft.

programs during fiscal 1965.

During the year the division continued deliveries of inertial systems for the F4D fighter-bomber, the Air Force's version of the versatile Navy F4C. The company believes it is noteworthy that Litton inertial systems were flown in combat during the past year. The next aircraft in this series, the F4E, also will be equipped with a Litton automatic navigator.

Volume deliveries of inertial systems were continued in F-104G and CF-104 Starfighter programs of the NATO countries and Canada, and in a related program, the division began extensive updating of the systems installed on the early F-104G fighters delivered under the NATO program.

Litton inertial systems developed for the new tri-service F-111 fighter performed successfully in early flight tests of the aircraft, and a major follow-on production order was later received. Litton is building this advanced equipment for both the Air Force and the Navy's version of the F-111.

In the fourth quarter of the fiscal year the Air Force accepted delivery of a new navigation system combining the essential features of three types of navigators currently in use. Called the Stellar-Inertial-Doppler System, or SIDS, it will

provide round-the-clock guidance with accuracy to a degree previously unattainable in a lightweight system.

The heart of SIDS is an inertial subsystem which automatically and continuously indicates the aircraft's heading and the distance to its destination without reliance on any external references. A doppler radar subsystem provides data on the aircraft's velocity, increasing the long-range accuracy of the inertial unit, and an astro-tracker subsystem provides star fixes as an additional check.

Two SIDS systems were delivered during fiscal 1965, with two remaining to be delivered under the development contract with the Air Force Research and Technology division. In initial laboratory tests SIDS exceeded design specifications and the company is confident it will receive substantial production orders for a variety of military applications.

During the fiscal year the Guidance and Control Systems division completed the development of still another highly promising type of inertial navigation system. The LN-15 incorporates Litton-developed basic components of markedly improved design and makes extensive use of microcircuitry. As a result of the use of microcircuitry and strict application of cost effectiveness measures, the

unit is smaller, lighter and less expensive to build than similar systems now in use. Interest in the potential of the LN-15 for use in military aircraft has been expressed by the U. S. Armed Forces and by the governments of other free world countries. The company believes the relatively low cost of the LN-15 system also will make it attractive for use in commercial aircraft, including supersonic transports.

A new product area for the division, and one for which significant production contracts have been received, is the application of computers to aircraft weapons control. The division's first product of this type, a Weapons Release Computer Set (WRCS), was developed during 1965 to enhance the effectiveness of the Air Force's F4D fighter-bombers. Linked to the aircraft's inertial navigation and radar systems, the computer is constantly aware of the plane's position in relation to a target. Thus for any of five types of approaches to a target, from a dive to a horizontal sweep, the computer set is able to determine instantaneously the precise moment bombs or missiles should be released to strike the target.

Six WRCS production prototype units were completed during the year at the

Toronto facilities of the Litton Systems (Canada) division. Volume production will begin there during fiscal 1966.

The Data Systems division continues in its role as a major supplier of Command and Control Systems. During 1965 the division increased its use of modern digital techniques to increase capabilities while reducing the size of complete systems for controlling the flight operations of aircraft. These systems are capable of processing and displaying information used in decision making by controller personnel, and then implementing their instructions. Information is supplied by radar, radio communications and other sources. The capability offered by this division covers the complete life of the system from analysis, design, development and production through installation, training, operations, and service for use on a world-wide basis.

The Data Systems division made major progress during the year in its TRESI program. TRESI (Target Recognition by Extraction of Statistical Invariants) has as its ultimate objective the development of a computer-based system capable of recognizing enemy submarines by their sounds as detected on sonar equipment. Litton is a technological leader in this area, which is of great



Top · The extremely compact L-304 computer is capable of performing real-time data processing tasks.

Bottom · LN-12 inertial navigation systems for the Navy's F4 series of fighter aircraft undergo testing.

EXPEDITING THE ECONOMY, and furthering of man's economic welfare, has been the contribution of many professions in the market. Among those innovators who effected key transitions in commercial history were those who transformed money as a means of payment into a general medium of exchange.

Quentin Metsys, whose careful and elaborate execution of paintings marked the close of the early Flemish school, portrayed such a business entrepreneur at that moment coincident with history when the lender of emergency credit was becoming the banker initiating the deposit banking business for a public gradually accumulating an increased purchasing power. The painter Rubens, a subsequent owner of the picture, noted the nearness of the religious book counterpoised with the articles of wealth and placed the painting in a frame bearing the admonition, *Statura justa et aequa sint pondera* ("Let the scales be true and the weights equal.")

"THE BANKER AND HIS WIFE" 1518.
Quentin Metsys, born before 1460, died 1530.
The Louvre, Paris. Photographie Giraudon.



interest to the U. S. Navy. Soon after the close of the fiscal year the Data Systems division introduced the first in a new series of microelectronic general purpose computers especially suited for military use. The initial model, the L-304, is the smallest and lightest computer available with a capability for performing data processing assignments. This real-time capability makes the L-304 especially well-suited for military command and control tasks and for intelligence applications in which speed in processing information is essential. The company's Applied Science division, under a contract from the Army, began development of a system to shelter combat and support troops from chemical and biological agents. The unit will incorporate equipment to supply uncontaminated air, making it safely habitable for long periods and thus suitable for a number of field applications. Another program in the same field involved the development of an experimental model for the Navy of a detector for airborne bacteria. Rapid detection of changes in the bacterial population of the air is essential for early warning of contamination. A new detection method was developed in which minute quantities

CAPABILITY has often been attributed to the smith, one of the earliest examples of a specialized craftsman and a class of entrepreneur who worked for the democratization of luxury. As the purchasing power of the mass improved, craftsmen such as the smith supplemented wage-work for the privileged with price-work for the public.

In keeping with the spirit of a developing age, the LeNain brothers painted village activity, familiar objects, and incidents. The figures gathered around the forge seem to have paused for the brush of Louis LeNain to record their life for the benefit of generations yet to come.

"THE FORGE"

Louis LeNain, 1593-1648. The Louvre, Paris. Photographie Giraudon.

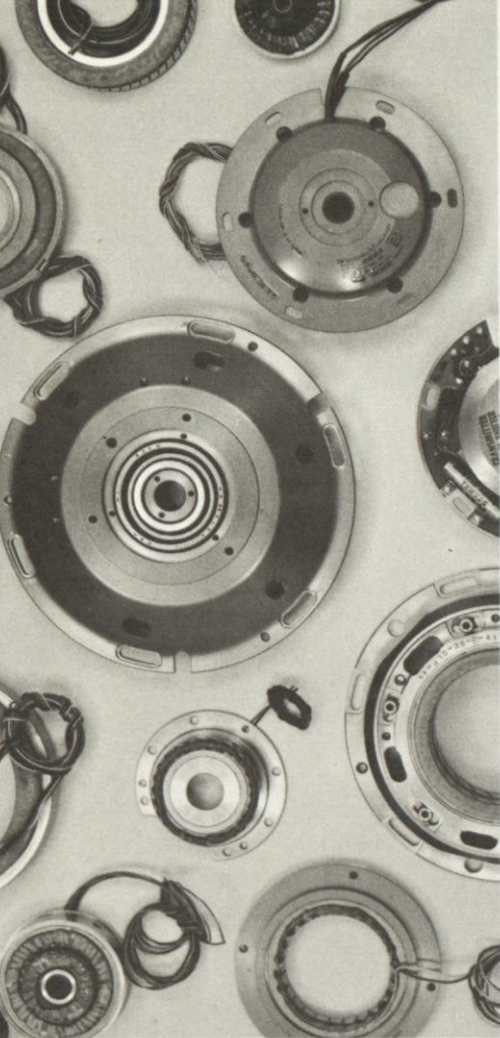
of a biochemical component of bacteria are measured by special techniques and instrumentation.

Complementing Litton's system capability is its broad participation in the components business. Advanced military systems very often are made possible by the emergence of improved components. To assure its continued technological leadership, Litton devotes a major effort to the development of higher performance and more reliable components.

A significant addition to the USECO division's line of precision electromechanical products was a new pushbutton multi-circuit switch suitable for a wide range of military and commercial applications. This proprietary product has many exclusive and patentable features, and is smaller than any competing product designed for the same purpose. Such economy of space is a highly sought-after advantage in components for electronic control panels, in applications ranging from missile ground support equipment to steel mill production monitors.

During 1965 customers of the Potentiometer division again designed the company's precision multi-turn potentiometers into advanced applications of space and aircraft guidance systems.





Recently these potentiometers were the first to qualify under specifications recognized as representing the most rigid criteria of the U. S. Defense Department. These standards include severe tests of the product's ability to withstand vibration, shock, humidity, acceleration, salt spray and temperature extremes.

Sales of conductive film potentiometers, used in special-purpose applications in which long life is an essential characteristic, increased markedly during 1965 and now constitute a substantial part of the division's backlog. Because of accelerated Defense Department emphasis on reliability, the division has enjoyed increased environmental test revenue from government contractor customers required to prove out components in laboratory tests.

Three new products were introduced by the Encoder division during the year: a neo-magnetic encoder occupying one-fifth the space of most similar competitive devices, a solid-state optical shaft encoder with a high degree of reliability and ability to survive severe environmental conditions, and a pin contact encoder with a lifetime and reliability factor up to 14 times greater than is found in conventional brush encoder units. Significant orders have been

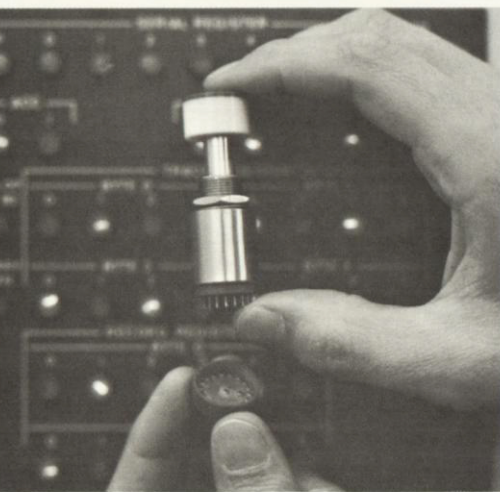
received for each product. The Litton encoders receive data from aircraft systems such as radar or inertial navigation equipment and translate this information into computer language.

The Clifton Precision Products division enhanced its competitive position in an important segment of the rotary components field during 1965 with the introduction of markedly improved servo motor tachometers. The performance and quality of these components resulted in follow-on orders contributing to a record backlog for the division's rapidly growing motor product line.

Clifton also realized sales gains in synchros, components used to transmit data on the movements or position of parts in aircraft, missiles and other electromechanical systems.

At the Poly-Scientific division, significant sales increases were realized in aircraft, missile and space vehicle slip ring capsules.

Litton is also participating in a number of nationally important research programs. During the year, for example, the Electron Tube division received a major production order for pulse klystrons to be used at the new Stanford Linear Accelerator Center at Palo Alto, California. The Center, operating under the auspices of



Top · The rotary components line of the Clifton Precision Products division holds a high competitive position in this technology.

Center · The USECO division's new multi-circuit switch has a wide variety of military and commercial applications.

Bottom · The Encoder division introduced solid-state optical, neomagnetic, and pin contact encoders during the year.



the Atomic Energy Commission to study high energy particle reaction, will utilize 950 klystrons over its two-mile-length.

The Electron Tube division substantially broadened its product line in fiscal 1965 through the acquisition of the Microwave Devices division of Sylvania Electric Products. This organization added to our technology in the areas of co-axial microwave tubes for airborne radar systems; reflex klystrons for radar receivers; and rocket tubes and planar triodes for signal generators, transponders and beacons.

Litton components have been used in every major space vehicle launched by the United States.

Litton also serves the nation's defense needs through its ship construction program for the U. S. Navy. At our Ingalls division keels were laid for the nuclear attack submarines USS Aspro and USS Puffer, increasing to four the number of such vessels now under construction at the Pascagoula facility. Four similar submarines were delivered prior to fiscal 1965, making the Litton division one of the most experienced builders of such ships. Present nuclear attack submarine contracts continue through 1968.

In another Navy program, Ingalls began construction last winter of two

vessels designed to implement a new approach to moving troops and equipment into position for amphibious assaults. The new ships, the USS Cleveland and the USS Dubuque, are amphibious transport dock vessels which will combine the functions of the conventional attack transport and attack cargo ship.

On the last day of the fiscal year Ingalls launched another assault vessel of advanced design. Designated the USS Tripoli, this amphibious assault ship is the first of its class to be constructed at a private shipyard. The Tripoli and its sister ships will enable U. S. defense forces to implement the new vertical envelopment strategy, in which a complete assault force is lifted by helicopter from the ship to engage an enemy behind his line of defense.

In a more advanced stage of construction at year end was the USS Canopus, one of the specialized ships providing supply and support for Polaris submarines patrolling the seas throughout the world. The 643-foot-long Canopus, to be delivered in October, 1965, will become the fourth such vessel in the Navy's fleet and the second to be built by Ingalls. A similar vessel, the USS Holland, was delivered by the Ingalls division in 1964.



Top • The two-mile-long Stanford Linear Particle Accelerator Center utilizes pulse klystrons developed and produced by the Electron Tube division.

Bottom • Four nuclear attack submarines are under construction at the company's Ingalls division.

Right • The Litton 500 microwave oven is more economical to operate than any competing electronic oven designed for commercial or institutional use.



INDUSTRIAL PRODUCTS AND SERVICES

Egyptian Pharaohs laid the foundation for an industrial market place when they permitted large households to produce a surplus for barter. Next came craftsmanship and the production of items for another's use in return for wages or a price. Thereafter developed the guilds, and ultimately the small manufacturers.

Research, ingenuity, and technical innovation became the hallmarks of business organizations whose success was measured by their acceptance in this burgeoning multiple market arena.

Today competition continually intensifies the need for leadership-oriented companies to provide industrial and professional competence across a vast spectrum of interacting disciplines.

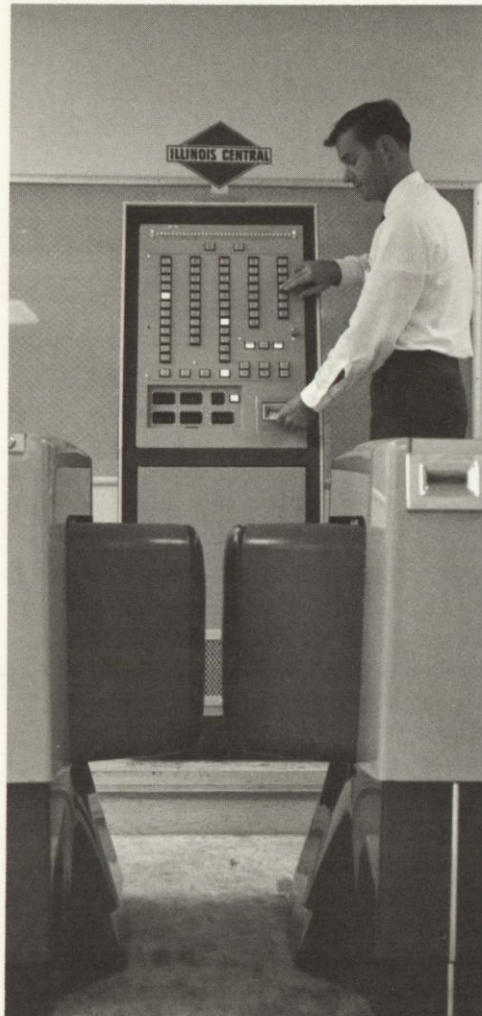
In addition to its activities in the fields of business equipment and defense, Litton develops and manufactures products and systems to fulfill a wide range of needs for industry.

Litton's Atherton division, established little more than two years ago, emerged during the 1965 fiscal year as a leader in the rapidly growing field of micro-

wave cooking and heating. Atherton bypassed its competitors in the commercial microwave oven market during the year, achieving its growth as a result of several developments. The division introduced three new commercial microwave ovens, a special microwave unit for airliners, and a new high-power infrared oven utilizing quartz plate as a heat generating element. In addition, the division continued the development of microwave equipment for several industrial processing applications, including the drying of potato chips and inhibition of bread mold.

During the third quarter the division delivered specially designed prototype microwave cooking units to TWA for installation on its jet aircraft. The new equipment, the first to be installed on airliners, reduces cooking time for meals from 20 minutes to only four minutes, enabling TWA to provide a more varied menu and making it possible to serve each passenger when he desires his meal. As Litton's 1965 fiscal year ended TWA was flight testing its first microwave ovens with highly satisfactory results.

Soon after the close of the year Atherton introduced still another microwave unit for commercial and institutional food heating. Designated the



Above • Litton's automatic fare collection system includes revenue control gates and electronic ticket scanner.

Above right • The Utrad division supplies microwave oven manufacturers with complete electronic power packages.

Below right • The Electron Tube division is a leading producer of magnetrons to provide power for electronic ovens.



INGENUITY was a prerequisite to success in the market place as it evolved out of the Middle Ages. By then, the guilds had established a dominant position for their exclusive membership by controlling products from inception to delivery. However, innovators began to appear who challenged the guilds' artificially imposed scarcity. These entrepreneurs obtained unfinished goods and materials, added their own labor, and delivered a finished product to the customer. Such were the tailors of England who worked to satisfy an individual's desire and earn his loyalty. Thus did these masters of the apparel art hasten the disintegration of the guilds. Not until centuries later, with the advent of quantity production, did as lucrative a market relationship occur as that which existed between the tailor and his customer.

"THE TAILOR"
Giambattista Moroni c. 1525-1578. National Gallery, London.



Litton 500, it features a low-cost, compact design and operates more economically and efficiently than any oven previously available for commercial and institutional use. The company believes the Litton 500 will be used widely in all types of food service locations, from drive-in restaurants to schools, because of its many advantages. For example, two of the new Litton ovens can be installed in the space required for a single conventional unit, and the light weight—less than half that of competing equipment—gives it mobility.

Further increases in the sale of magnetrons for the growing electronic cooking market were realized in 1965 by the Electron Tube division. The division has established itself as the major supplier of these tubes which furnish microwave energy for heating and cooking. Through cooperation with other Litton divisions, a complete microwave power package is sold to equipment manufacturers. Known as the Microtron package, the power unit contains magnetrons, transformers and electromagnets.

The Advance Data Systems division, widely recognized as a leader in the field of automatic revenue control, contracted in November 1964 to design, develop and build the equipment for an auto-

matic fare collection system for the Illinois Central Railroad. The Illinois Central will thus feature one of the first fully operational automatic fare collection systems, consisting of automatic gates with electronic ticket readers, magnetic ticket vendors, encoders for ticket agents' use, and automatic change-makers.

The railroad will begin operation of the new system before the end of calendar 1965.

During the year Advance Data Systems also was awarded a contract for development of prototype automatic fare collection equipment for the San Francisco Bay Area Rapid Transit District.

An area of industrial activity offering particularly broad opportunities for further improvement is the conveying and precise combining and transforming of bulk materials in massive quantities. Litton responded to an opportunity to enter this field by merging in February with Hewitt-Robins, Inc., a widely experienced and innovative leader in materials conveyance, processing, and control. Litton believes the combination of its capabilities and Hewitt-Robins' proven conveyance skills will lead to the creation of highly adaptable and efficient new industrial systems.



Top · The Hewitt-Robins organization designs, manufactures and installs complete systems for materials conveyance and control.

Bottom · The Hewitt-Robins division designed and installed the complete materials handling system for this electric power generating plant now operating in Nevada.

CONVENIENCE of availability long preceded the attractiveness of packaging that has marked the modern era of marketing. Market stalls initially gained their reputation as a location where wares of a particular category were readily found, whether staples or clothing, vegetables or hardware.

Willem van Mieris, an artist who observed and recorded activities in and around Leyden, is best known for his subjects of ordinary life in which every minute object is painstakingly depicted.

"INTERIOR OF A GROCERY SHOP"
Willem van Mieris, 1662-1747. Mauritshuis, The Hague.



An outstanding example of Hewitt-Robins' performance in designing, manufacturing, and installing a complete conveying system is a new facility completed in May for Duquesne Light Company of Pittsburgh, Pennsylvania. This installation consists of conveyance systems which move thousands of tons of coal daily from a Duquesne mine southeast of Pittsburgh to the utility's coal preparation plant six-and-one-half miles away. The initial segment is a two-mile-long underground continuous conveyor, which ultimately ascends to feed coal to surface stockpiles. A second segment conveys as much as 800 tons an hour four-and-one-half miles overland to the preparation plant. Hewitt-Robins' responsibility at the Duquesne location also included such ancillary facilities as roadways, foundations, and preliminary site surveys.

Hewitt-Robins also produces an extensive range of equipment used to select, separate, combine, and prepare raw materials for their ultimate use. For example, the division is widely experienced in the technique of blending varying grades of raw material, such as alumina, cement, iron ore, or coal into one uniform grade. Conversely, Hewitt-Robins equipment is widely employed

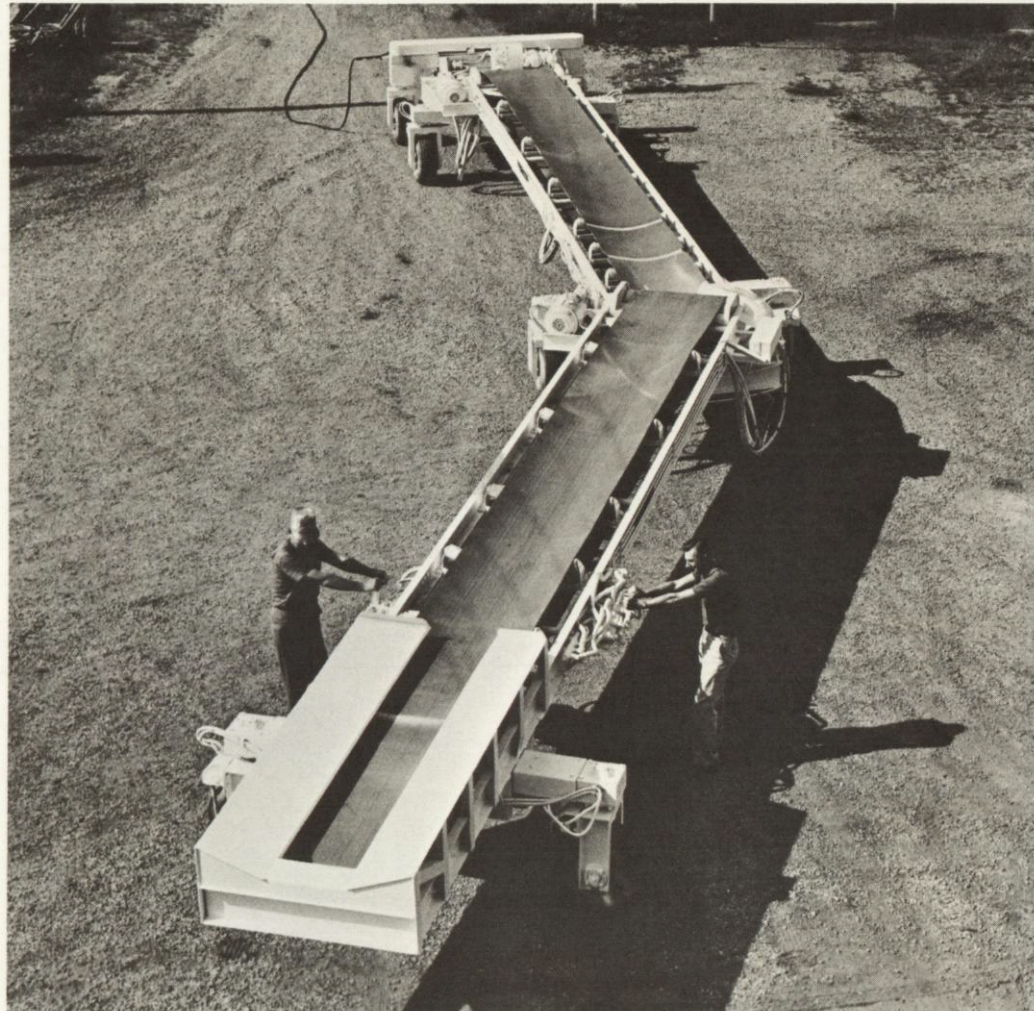
where the objective is to separate materials by size or by other economic criteria. Other products of the division are employed in reducing extracted products to sizes which are uniform, transportable, or processable.

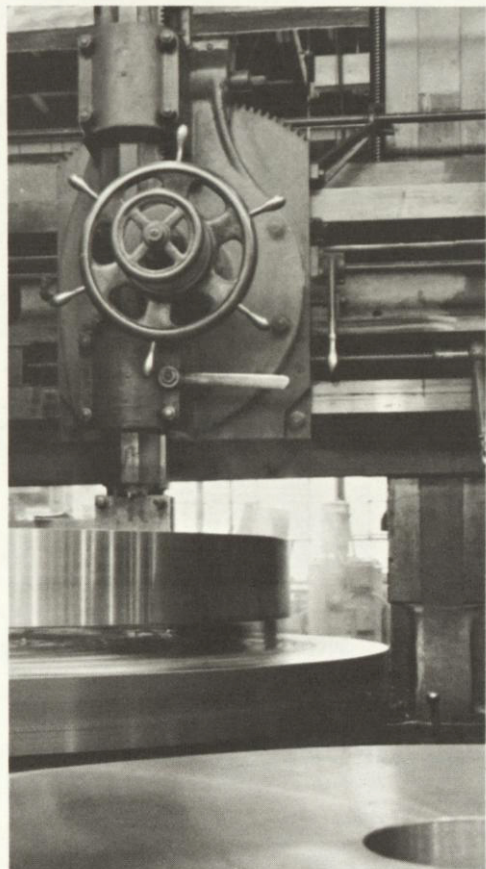
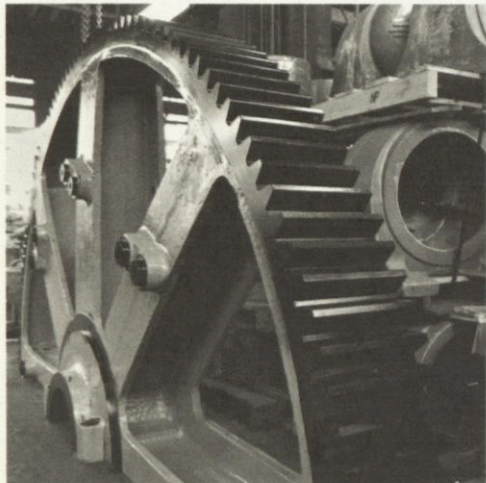
Still other areas of activity for the new Litton organization are the design and manufacture of mobile plants for the processing of raw materials used in road construction, and of equipment used to complete the casting process for automobile parts, such as engine blocks and brake drums.

There are countless instances in which the manufacturer's production problem becomes the innovator's opportunity. Hewitt-Robins manufactures systems for controlling the speed and power of electric motors and other prime movers. Such products range from gear complexes to accomplish an elementary mechanical task to specially designed systems capable of transmitting 10,000 horse power or 30 million pound-inches of torque.

Hewitt-Robins' experience in such systems makes it an important supplier of helicopter transmissions, aircraft accessory drives, and actuating systems for aircraft control surfaces.

Another area in which Hewitt-Robins has demonstrated a high degree of com-





petence is the conveyance of liquids through flexible flow lines of all kinds. Opportunities abound in this field for replacement of the traditional forms of piping with rubber and steel combinations which permit low cost installation and minimum site preparation in locations and applications where flexibility and high external and internal pressures are experienced.

Such equipment will have increasing usage in the transmission of liquids and gases to and from off-shore drilling platforms, undersea exploration vehicles, and across bodies of water hitherto inaccessible to conventional pipe and pipe laying.

In mining, Hewitt-Robins has developed a mobile bridge which allows direct transport of materials from the mining machine to the conveyance system. This new concept fills a gap between the mining machine and the conventional underground conveyance equipment, thus obsoleting the need for shuttle cars and extra handling of the mined materials.

Soon after the close of the year, Hewitt-Robins acted to strengthen its manufacturing and marketing program in Europe through the formation in January of a new company which will join its operations with Wilton-Fijenoord Bronswerk, N.V., an important Dutch

company in marine construction and metal fabricating.

The resulting merged company will conduct all activities pertaining to the design, sales and supplies of Hewitt-Robins processing equipment in Europe.

Hewitt-Robins also made major innovations in the science of self-unloading vessel systems which permit expedited direct unloading of ore ships at dockside by shortening the unloading time required and thus increasing the number of vessel trips.

In another marine area, at Pascagoula, Mississippi, Litton's Ingalls division during the past fiscal year expanded its commercial ship construction progress to record proportion. This division has seventeen major commercial vessels under construction, in conversion or under contract, with a backlog at a new peak.

The largest single commercial project at Ingalls during the year was a series of automated cargoliners constructed for Moore-McCormack Lines. All six of these vessels were completed and delivered during 1965. Among the most advanced ships in the U. S. Merchant Marine, these liners are the first ever designed to permit speed to be controlled directly from the bridge. A number of other automated control features,

Left • Hewitt-Robins' mobile bridge provides direct transport of materials from mining machinery to the conveyance system.

Top • Hewitt-Robins' gear capability includes systems handling tens of thousands of horse power and millions of pound-inches of torque.

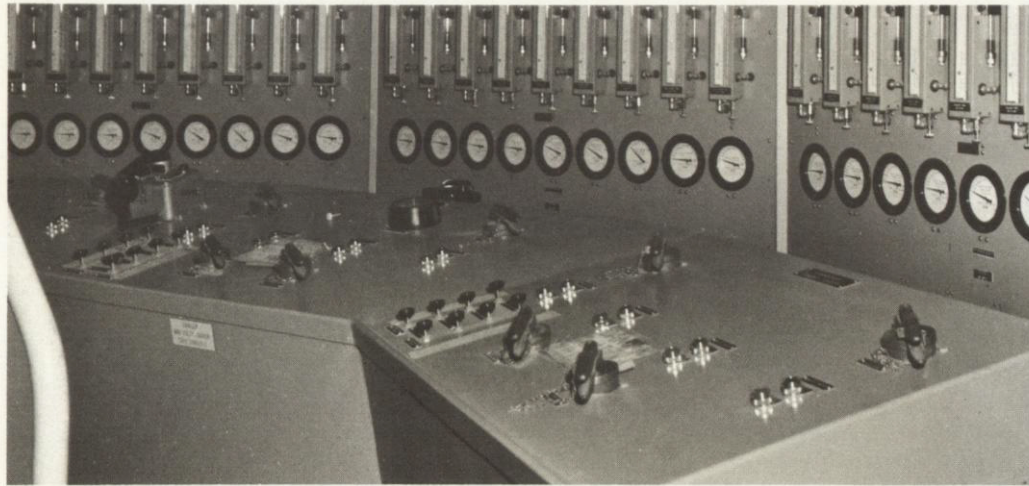
Bottom • Gear blanks are precision machined on a vertical boring mill at a Hewitt-Robins plant in Chicago, Illinois.

along with several design innovations, promise to make these ships considerably more economical to operate.

The capability demonstrated by Ingalls in this program led to the receipt of contracts for ten more vessels making use of electronic control features. For American President Lines, Ingalls will build five—to be named for Presidents Van Buren, Taft, Grant, Andrew Johnson and Fillmore—under a schedule specifying delivery during 1967. Five ships, as yet unnamed, will be constructed for Delta Steamship Lines for delivery late in 1967 and 1968.

Major advances were also made during the year in modifying cargo ships as container ships, so named because they are specially fitted to haul the container sections of tractor-trailer vans. The converted ships are leased to Sea-Land Service, a subsidiary of McLean Industries, Inc. The program also contemplates the construction of six new container ships for Sea-Land.

The conversion of the first of four conventional C-4 cargo ships to container vessels for Sea-Land began late in fiscal 1965. Through jumboizing, the adding of a new midbody to the original bow and stern sections, each vessel will be extended to carry 611 special purpose con-



Top - The automated cargoliner Mormacdraco and five sister ships were completed by the Ingalls division in fiscal 1965.

Bottom - Automatic ballast control consoles are designed and installed by the Ingalls division.

MOBILITY, and the opportunity to explore and create distant potential markets, requires intrepid, risk-taking entrepreneurs — whether the century be the 12th or the 20th. The markets of antiquity had been principally coastal. Seldom were other commercial centers more than a day's journey inland. Until the 13th century merchants were confined to regularly accompanying their wares within the protection of a pack train. But as the reliability of forwarders improved, conditions permitted the establishment of consignor-consignee relationships. Eventually the peace of the 14th and 15th Centuries induced the individual merchants and their pack animals to seek out purchasers intrigued by foreign wares. Sagas were to honor such resourceful merchants. 140 troubadours recalled 7,000 verses for posterity in a 13th Century version of Swabian poems. A 14th Century copy illustrating one of the sagas, depicted such a resourceful merchant captivating an admiring customer.

Merchant, 14th Century.
Manesse Manuscript, 14th Century. Universitätsbibliothek, Heidelberg.



tainers. In addition, work began on four C-2 cargo vessels for conversion to ships of 225 container capacity.

In June Ingalls signed a contract to construct a special-purpose research ship for the U. S. Department of Interior's Bureau of Commercial Fisheries. This highly-engineered vessel will be fitted with extensive electronic equipment for exploration and research in the areas of commercial fishing and oceanography.

Another Litton-developed vessel, the deep submergence vehicle named Alvin, dived to a depth of 6,000 feet in a test in July. This was the greatest depth ever reached by a manned, maneuverable vehicle. The dive represented a major scientific achievement by its builder, Litton's Applied Science division. Alvin is capable of mechanically controlled descent and ascent as well as forward or backward motion of about four knots while submerged, and it can hover with neutral buoyancy at any depth.

In the spring of 1965, Litton's Ingalls division completed and delivered the largest oil drilling platform capable of operating either while moored to the ocean floor near shore or while floating at anchor in deeper waters. The 9,000-ton rig is fitted with extensive equipment to support its drilling operations

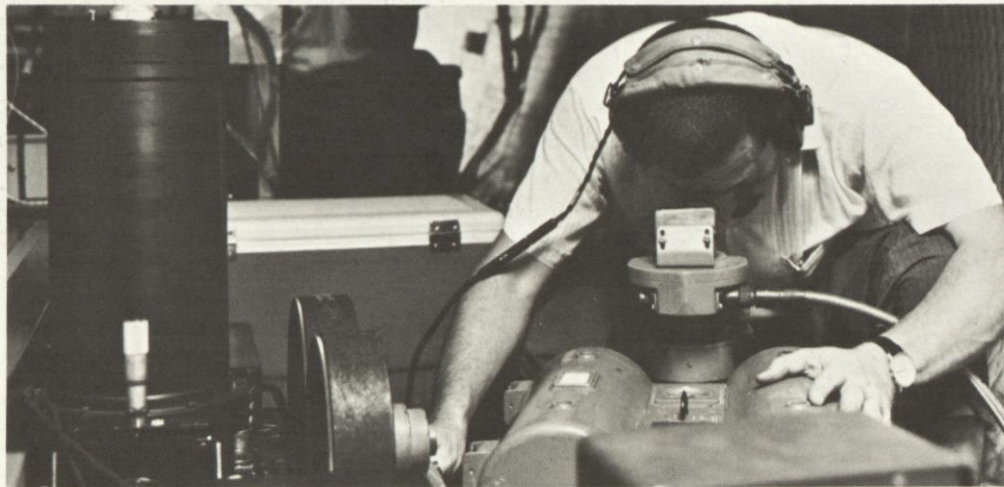
and has complete facilities for its crew, which must remain at sea for extended periods. The platform, constructed for Southeastern Drilling, Inc., is being operated in the Gulf of Mexico in search of new oil reserves.

At the present time Ingalls is prepared to construct in the U. S., or abroad, a similar but smaller oil drilling platform of its own design—called Trimaran—for sale by the division or for long term charter through Litton Leasing.

Litton's Western Geophysical division also made substantial additions to the equipment and facilities it uses in its global search for oil. On several of its seismic survey ships the division installed newly developed digital data acquisition systems which will be employed in conjunction with existing analog data equipment. The combination of analog and digital data acquired will enable Western Geophysical to produce displays of the earth's formation faster, clearer and more accurately than ever before, thus further improving the service the division renders.

Western Geophysical established a digital data reduction system at its Shreveport, Louisiana facility where it also expanded its analog data reduction system. New data reduction equipment





Far left • This huge Ingalls-built drilling rig can probe for oil equally efficiently in shallow or deep waters.

Top left • The Western Geophysical division added a digital data reduction system to augment analog equipment at its main data processing center.

Top right • The deep submergence vessel Alvin descended to a depth of 6,000 feet in a test during fiscal 1965.

Below • The Aero Service division successfully tested a new terrain profiler using laser techniques.

was put into operation in England.

The division markedly expanded its oceangoing capabilities, adding six seismic survey ships to its fleet. Western Geophysical now operates 42 vessels in the oceans of the world.

The Aero Service division added two new instruments incorporating the latest scientific advances to the array of complex equipment it uses in its aerial mapping and exploration projects throughout the world.

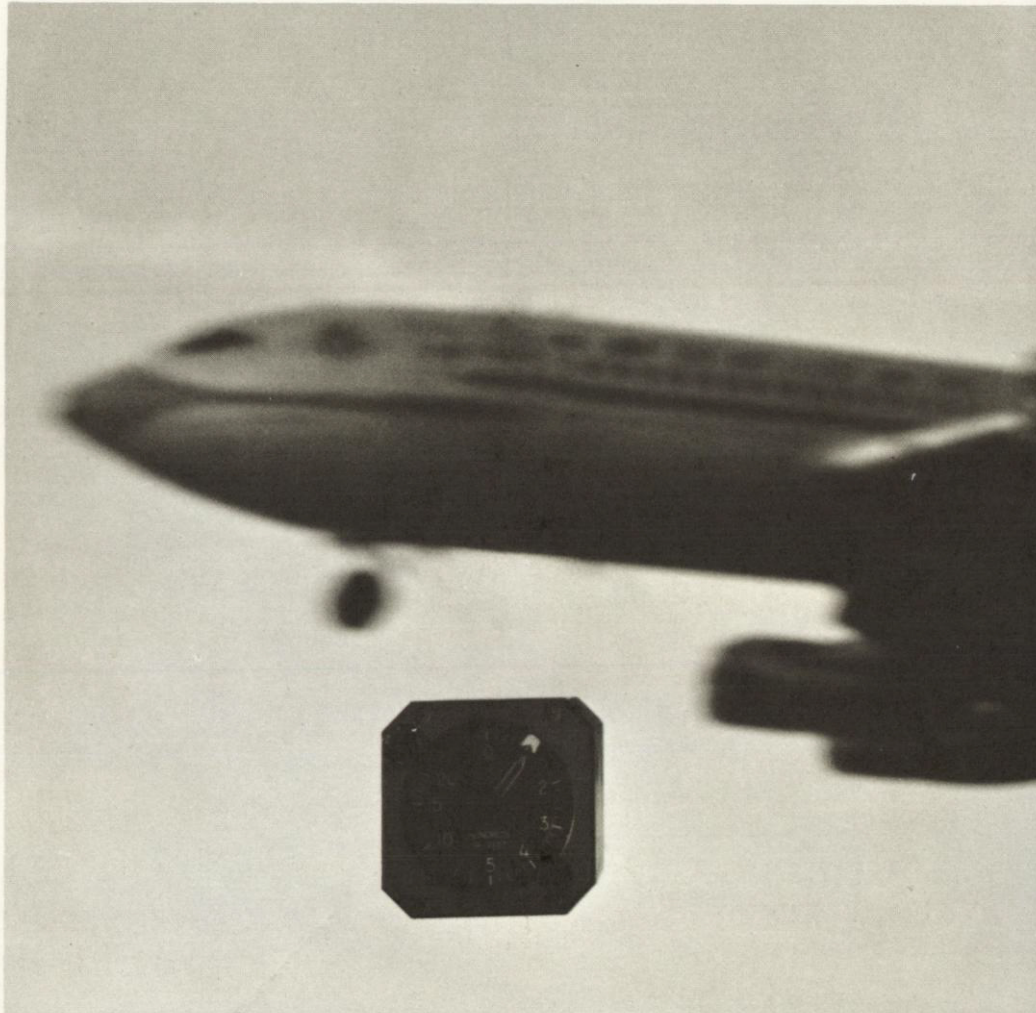
One of these, a rubidium vapor magnetometer, has proved highly valuable in aerial searches for oil and minerals beneath the earth's surface. The new magnetometer's effectiveness lies in its ability to measure variations in the earth's magnetic field 10 to 100 times more accurately than conventional magnetometers.

In May, Aero announced it had successfully tested the first terrain profiler using laser techniques. A continuous-wave gas laser altimeter in the new profiler provides a safeguard against distortions in aerial photographs caused by inadvertent changes in the altitude of the camera plane.

Additional work in the altimeter field by the Amecom division produced a low-range radar altimeter program of

major proportions. Quantity orders were received after the Federal Aviation Agency ruled that airliners equipped with systems utilizing the Amecom altimeter may land with as little as a 100-foot ceiling and visibility of one-fourth of a mile. This constitutes a halving of present FAA requirements. The reduction is made possible by the unprecedented degree of precision with which the new altimeter measures distance above the ground at low altitudes. By the end of the fiscal year, four major airlines had ordered the Amecom altimeter: Pan American, British Overseas Airways, Qantas, and Braniff International. Substantial further orders are anticipated.

In addition to its military programs, the Guidance and Control Systems division continues to work with the Federal Aviation Agency to improve the safety and efficiency of commercial air travel. Under a previously reported contract from the FAA, the division demonstrated the feasibility of inertial navigation for commercial airlines on trans-oceanic flights. A Litton inertial system installed in a Pan American World Airways DC-8 jet liner exceeded the FAA's performance specifications during 50 crossings of the Atlantic ocean. As a result, the



Above - The Amecom division's low-range radar altimeter is designed to provide an unprecedented degree of safety for aircraft landings under conditions of poor landing strip visibility.

RESOURCEFULNESS was a characteristic of the early American salesman who found his customers more widely and sparsely scattered than in the centralized marketplaces of older cultures.

His resourcefulness was marked not only by a travelling search for buyers but with a technique of sales persuasiveness. American author Nathaniel Hawthorne, whose productive span of years paralleled those of artist John Whetton Ehninger, wrote, "There was a peddler there from New York State who sold his wares by auction, and I could have stood and listened to him all day long."

The style of marketing has undergone much change in subsequent years. However, the spirit of enterprise continues as an important ingredient for Litton's approach to the marketing challenges of today.

"THE YANKEE PEDDLER" 1853.

John Whetton Ehninger, 1827-1889. Collection of the Newark Museum.

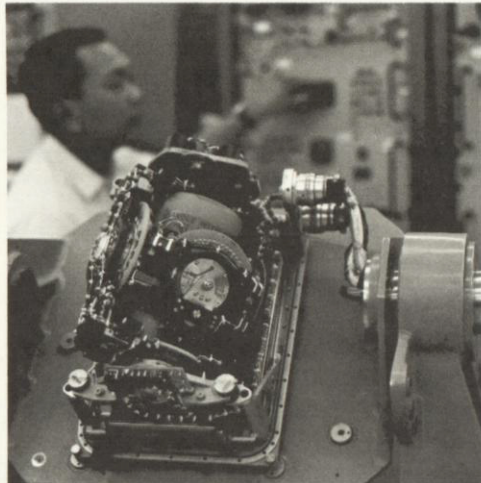
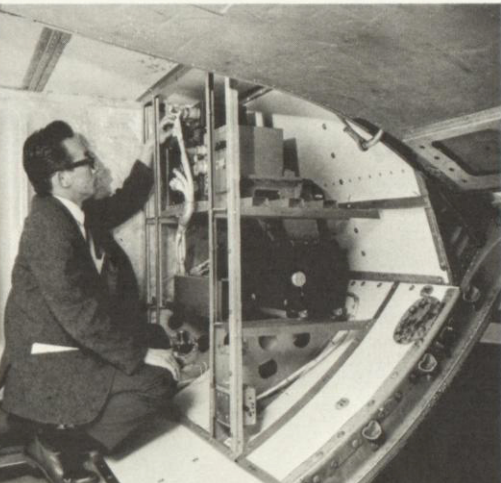


MERGING PUBLIC SERVICE WITH COMMERCIAL ENDEAVOR has been typical of many marketplaces throughout history. Consequently, in a developing America it is natural that organized public functions gravitated toward the centers of market activity. Today, commercial talents customarily support and supplement — frequently design and construct — services created for public needs.

Thomas Waterman Wood, an artist who reveled in portraying the subjects of everyday life in a realistic treatment, captures on canvas for the appreciation of generations to come the wares of a 19th Century American store and the services of a postoffice housed under a single roof.

"THE VILLAGE POSTOFFICE" 1867. Thomas Waterman Wood, 1823-1903.
New York State Historical Association, Cooperstown, New York.





federal agency in 1965 awarded the company a follow-on contract.

The first phase was designed to illustrate the assistance an inertial system can provide for the aircraft's navigator. Under the new contract, the Guidance and Control Systems division added a computer to the inertial system, making it capable of controlling the aircraft. The new equipment is currently under flight test and initial results reported by Pan American World Airways confirm the design accuracies. The tests include Atlantic crossings.

Another FAA contract received during the year calls for the development of a low cost system for private aircraft to maintain selected speed automatically. The system would enhance safety in private aviation by permitting pilots to devote more attention to the other details of flight control. Equipment of this nature eventually may become mandatory for private aircraft.

During the year Litton's Space Laboratories developed the prototype of an advanced space suit which was delivered in June to the National Aeronautics and Space Administration's Manned Spacecraft Center. The company is confident the space suit will be used in exploration of the moon's surface and for other

Top left • Inertial system tests exceeded FAA requirements during fifty trans-oceanic flights.

Top right • Final check-out for Litton commercial inertial navigation system.

Bottom right • Litton inertial navigation aids airline pilots and increases flight safety.

Bottom left • Litton's space suit is designed for exploration of the lunar surface by Apollo astronauts.

extra-terrestrial planetary applications.

An important new area in which the company became active during fiscal 1965 concerned large scale educational projects. The systems approach, utilized successfully for years by Litton in its large defense equipment contract management responsibilities, has an equally effective potential when applied to complex educational training programs. Litton has taken a leading role in bringing systems training techniques to the management of large scale educational programs.

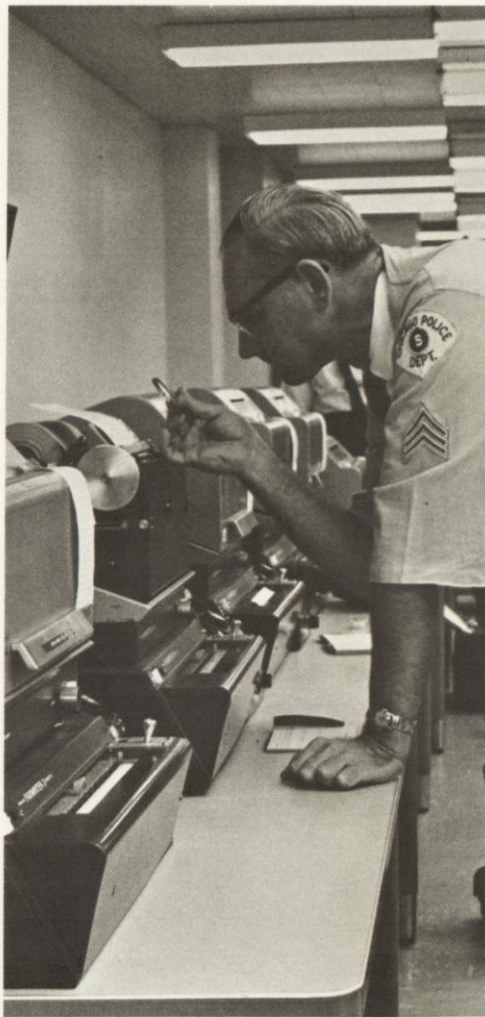
Accordingly, the company formed the Educational Systems division in 1965 and competed successfully for a contract from the U. S. Government's Office of Economic Opportunity to operate a Job Corps training center at Camp Parks, near Pleasanton, California. The Parks Job Corps Center for Men was in full operation by the close of the fiscal year, with 1,200 young men receiving basic educational and vocational training courses. Ultimately, the Parks Center enrollment will total 2,000 or more.

During the fiscal year the company expanded its participation in the growth of the medical sciences field by acquiring George A. Henke, GmbH, Tutlingen, Germany. This company complements

Litton's present complex of medical instrument manufacturers represented by our Fritz Hellige division in Germany and Profexray division in the U. S.

Major additions were made to the Profexray division's distributor organization for medical diagnostic X-ray equipment. Also new medical instruments were added to the company's product line. The division introduced an image intensifier recorder, an electronic X-ray system which reduces the radiation emitted during the examination of patients. Profexray also completed the development of a new heavy-duty X-ray table with a number of features unavailable in competing equipment.

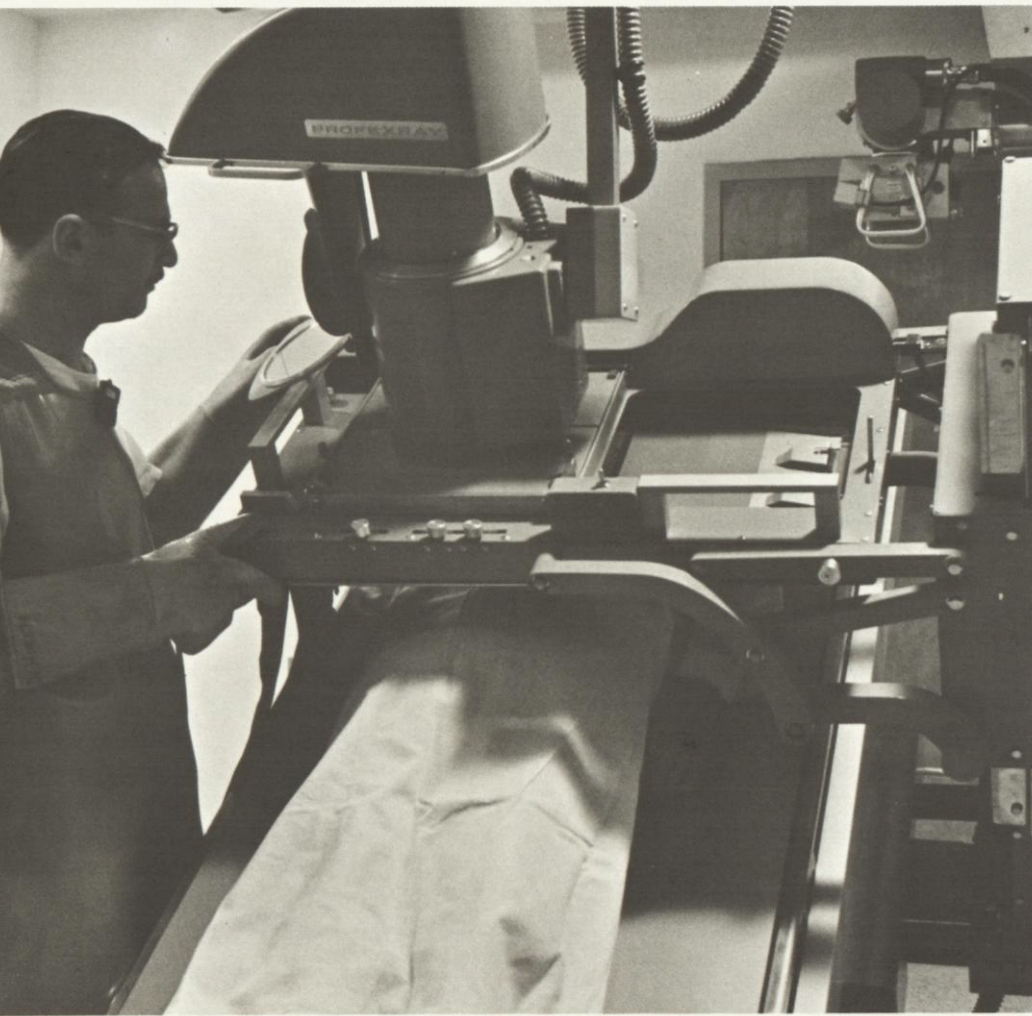
Marked gains were recorded by the Fritz Hellige division in the sale of equipment for making measurements and recordings in heart surgery and physiological and pharmacological research. The Hellige division also began marketing a new line of equipment designed to monitor the condition of hospital patients recovering from surgery or under other intensive care. The new Hellige products thus enable a nurse to attend a greater number of patients. In view of the steadily rising costs encountered by hospitals today, a strong demand for the new Hellige equipment



Top - The Fritz Hellige division, Germany, is noted for its advanced electronic medical instrumentation systems.

Bottom - The Westrex Communications division's Policefax system makes possible the rapid transmission of information between precincts and police headquarters.

Right - New heavy-duty x-ray tables with unique features were introduced during the year by the Profexray division.



is anticipated.

Techniques for faster and more efficient collection and transmission of information have long been a pressing requirement of the world's law enforcement agencies. During the year Litton made available a new system which fulfills an important segment of the need in this area. Developed by the company's Westrex Communications division, the new system consists of a network of facsimile machines which connect the headquarters of a law enforcement agency with its outlying stations, permitting rapid transmission of fingerprints and criminal histories.

Forty-nine Policefax units were installed in the nineteen districts of the Chicago Police Department during the year. The Litton equipment enables Chicago police to send a set of fingerprints from a district station and receive a suspect's criminal record, or no-record report, in less than one hour. Previously this process required nearly six hours.

The Westrex division began deliveries of a new model of its StereoDisk recording system, the most widely used system in the world for producing stereophonic records. The new 3D Model StereoDisk delivers greater dynamic range and improved fidelity of sound reproduction.

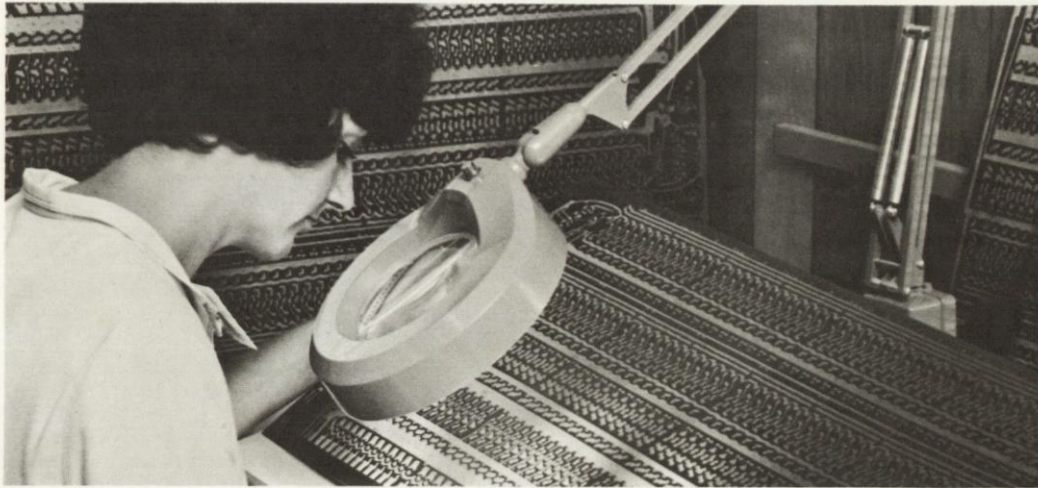
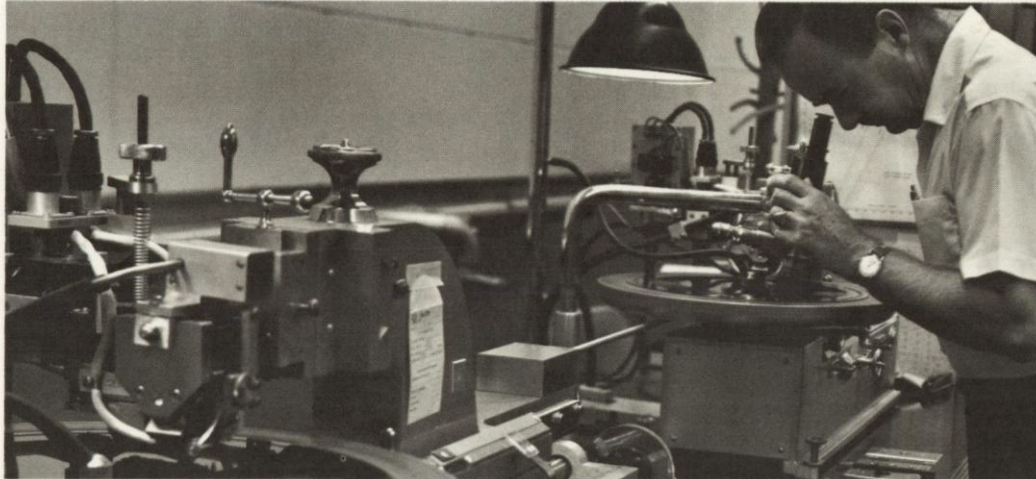
The industrial community, as well as military programs, benefited from the research activities of our Components Group.

The Airtron division occupied a new crystal physics laboratory and made significant advances in solid-state materials research and development.

The division grew a 667-gram yttrium iron garnet crystal, the largest in existence. This material is being used in an increasing number of applications such as tunable filters, delay lines, limiters, and amplifiers, products which are used to control microwave energy in long-range communications systems.

Airtron also achieved the first laser action in ruby material grown by the hydrothermal process. The division is pioneering in this technique and believes it will permit sharp reductions in the cost of rubies for use in lasers. Such reductions are a prerequisite to widespread utilization of lasers in commercial and military electronic systems.

The Advanced Circuitry division developed a new proprietary process of plating through holes of multilayer circuitry, assuring far greater reliability than previous processes provided. Such advanced techniques and processes are considered essential for sophisticated



Top • The Westrex division introduced a new model of its StereoDisk system, the most widely used for production of stereophonic records.

Bottom • A wide variety of printed circuit boards are produced at the company's Advanced Circuitry division.

ORGANIZATION OF COMPLEXITY typified the engineering projects of the 19th Century. As a plan to satisfy large-scale public needs, these feats were forerunners of the 20th Century's systems analysis and design.

The bridge-building art of creating great arching spans suspended by webs of parallel wire cables received its greatest impetus from the engineers, John A. Roebling and his son, Washington Roebling. The Brooklyn Bridge, opened in May 1883 to link the business communities of New York and Brooklyn, was the first of a series of similar structures. Combining the genius of mathematics, the logic of engineering, and the art that flows from function, the project continues as a symbol of industrial talent organized to satisfy needs of a market more public than personal.

The geometric precision of engineering intrigued American artists of the 20th Century and stimulated cubism as an art form.

"THE BROOKLYN BRIDGE — VARIATION ON AN OLD THEME," 1939
Joseph Stella, 1880-1946. Whitney Museum of American Art, New York.



electronic systems of the future.

The Triad Transformer division substantially broadened its participation in the electronic wave filter market during fiscal 1965, and made further improvements in the reliability and environment capabilities of its fine wire miniature transformers and inductors.

These Triad components are widely used for coupling and control in ground, air and space communications systems. Their superior designs meet military requirements and are available in stock.

These have been the highlights for the year just ended. Our report subjects have ranged from tiny, fine wire transformers to huge ore blending facilities—all products of Litton Industries, all products with the common denominator of scientific achievement.

But even more important, we have been reporting on the efforts of people hard at work in the market place economy—65,500 people of Litton Industries contributing talent and technology to the manufacture of more than 6,000 products. In the years to come, our people will continue the production of new items, improved systems, and expanded services, dedicated to the purpose of making Litton capabilities a growing force in the development of the private enterprise system.

MARKETS SERVED BY THE WORLD-WIDE DIVISIONS OF LITTON INDUSTRIES

BUSINESS EQUIPMENT Banks and Savings and Loan Associations • Insurance Companies • Chain Stores • Federal, State and Local Governments • Identification System Printers • Publishing Industry • Industrial Distributors • Department Stores • Printing, Publishing and Allied Industries • Food Service Firms: Restaurants • Lunch Counters • Drive-ins, etc. • Hardware Manufacturers • Specialty Shops: Men's, Women's, Children's Apparel, etc. • Office Furniture Users • Textile Industry • Furniture Manufacturers • Office Buildings • Drug Manufacturers • Paint and Wall-Paper Stores • Camera Shops • Educational Institutions: Elementary and Secondary • Colleges • Universities • Personal Credit Institutions • Chemical Firms • Food Packagers • Hardware Stores • Dry Goods Stores • Bakeries • Candy Shops • Sporting Goods Stores • College Book Stores • Drug Stores • Accounting Service Firms • Liquor Stores • Food Processors • Public, Private and Parochial Schools • Packaging Wholesalers • Paper Wholesalers • Feed and Farm Stores • Sheet Printers • Interior Decorators • Variety Stores • Dairy Industry • Concessionaires • Electric Utilities • Auto Supply Stores • Military Clubs and Post Exchanges • Forms Converters • Toy and Hobby Shops • Engineers and Architects • Oil Companies • Laundries • Office Supply Houses • Legal Services • Farm Implement Stores • Premium Merchandisers • Stationery and Book Stores • Lumber and Building Materials Industry • Food Stores: Supermarkets • Grocery Stores • Gift Shops • Department Stores • Card Shops • Canning Industry • Newspapers • Shoe Stores • Artists and Engineering Supply Companies • Building Supply Dealers • Commercial Printing Users • Office Equipment Dealers • Utility Companies • Reproduction Departments • Apparel Industry • Miscellaneous Business Services

DEFENSE AND SPACE U. S. Army, Corps of Engineers • Naval Avionics Facilities • Air Force Systems Command • Atomic Energy Commission and Prime Contractors • Aircraft Avionics Producers • Simulator Input Users • Data Processing Equipment Producers • U. S. Marine Corps • Department of The Army • Federal Aviation Agency • Government Communications Agencies • Ordnance and Tactical Rockets Producers • NASA Prime Contractors • Government ECM • Aircraft Fleet Operators • National Security Agency • Aircraft and Missile Ground Support Users • Air Force Aeronautical Systems Division • Aircraft Manufacturers • Anti-Submarine Warfare Equipment Producers • Telemetry Users • Linear Accelerator Research Laboratories • Advanced Research Project Agency • Space Exploration Agency • Nuclear Energy Agency • Ballistics Systems Division • Air Force • Missile Tracking Industry • Naval Air Development Center • NASA Space Administration • Aerospace Industry • Tactical Air Command • Corps of Engineers • Satellite Network Ground Data Processing Users • Microwave Antenna Makers • U. S. Navy Bureau of Ships • Strategic Air Command • Research and Development Laboratories and Institutes • Radar Systems Producers • U. S. Navy Bureau of Weapons • Fuel Control Industry • Air Force Missile Development Center • Defense Atomic Support Agency • Foreign Governments • U. S. Coast Guard • Military Air Transport Service • Military Command and Control Networks • U. S. Navy Aerial System Test and Evaluation Laboratories • Computer Manufacturers • Missile Manufacturers • Naval Air Test Centers • Naval Ordnance Test Stations • Air Force Logistics Command • Explosive Devices Manufacturers • Display System Producers • Department of the Navy

INDUSTRIAL PRODUCTS AND SERVICES Independent Telephone Companies • Individual and Company Aircraft Operators • Oil Drillers • Refiners and Marketers • Business Machine and Computer Manufacturers • Air Conditioning System Makers • Industrial Process Control Manufacturers • Motor Vehicle Dealers • Cafeterias • Company Marketing Departments • Warehouses • Airlines • Civil Engineering Services Firms • Mining Firms • Electronic Companies • Service Stations • Shipboard Control Users • Hospitals • Medical Supply Houses • Oceanographic Research Laboratories • Transportation Industry • Industrial Communication Equipment Manufacturers • Foreign Educational Agencies • Department of the Interior • Field Surveying Firms • Shipowners and Operators • Medical Schools and Clinics • Medical Supply Companies • Commercial Communication Firms • Electrical Equipment Manufacturers • Marine Exploration Companies • Maritime Industry • Amateur Radio Operators • Pulp and Paper Producers • Vending Companies • Photogrammetric Engineers • Physicians • Aerial Photography Users • Metal Working Machinery Manufacturers • Department of the Treasury • Microwave Heating Users • Machinery Manufacturers • Tape Recorder Manufacturers • Television Systems Users • Construction and Mining Machinery Manufacturers • Department of Commerce • Waterways • Industrial Communication Equipment Makers • Truck Terminals • Hotels and Motels • Optical Instrument Industry • Petroleum Refiners • Process and Control Industry • Amusement Parks • Oil Surveyors • Television and Radio Manufacturers • Law Enforcement Agencies • Textile Machinery Manufacturers • Mineral Survey Companies • Mobile Caterers • Resources Development Firms • Scale Industry • Shipyards • Subway Systems • Inertial Guidance Systems Manufacturers • Automotive Industry • Bureau of Commercial Fisheries • Foundries • Industrial Caterers • Microwave Oven Users • Magnetic Surveyors • Veterinarians • Municipal Bus Systems • Musical Instrument Producers • Office of Economic Opportunity • Discount Stores • Display and Advertising Industries • Chemical Mining, Processing and Manufacturing • Bus Lighting Systems Manufacturers • Coin Operated Phonograph Companies • Sports Parks • Construction Aggregate Products Firms • Department of Health, Education and Welfare • Gas and Oil Well Construction Services • Food Products Machinery Manufacturers • Cement and Concrete Producers • Railroads • Machine Tool Industry • Commercial Fishing Fleets • Programmed Instruction Users • Geophysical Exploration Companies • Farm Machinery and Equipment Manufacturers • Small Boat, Barge and Other Marine Vessel Operators • Steel and Aluminum Manufacturers • State Education Agencies • Theaters • Commercial Avionics Companies • Appliance Manufacturers • Steel Fabricators and Constructors • Toll Road Administrations • Topographic Map Producers •

FINANCIAL STATEMENTS

HIGHLIGHTS OF TEN YEARS' OPERATIONS

As reported in the Company's annual reports

Fiscal Years Ended July 31

	1965	1964	1963	1962
Operating Results				
Sales and service revenues	\$915,573,929	\$686,135,497	\$553,146,239	\$393,807,709
Earnings before taxes on income	71,539,247	56,151,444	43,796,403	30,849,499
Federal and foreign taxes on income	31,787,234	26,384,123	20,500,296	14,533,547
Net earnings	39,752,013	29,767,321	23,296,107	16,315,952
Per common share outstanding at year-end**	3.45	2.70	2.18	1.56
Depreciation	22,998,000	16,780,000	11,467,000	8,527,000
Financial Position (Year-End)				
Net working capital	\$235,752,097	\$198,260,860	\$151,350,137	\$113,478,440
Property, plant and equipment — at cost	246,306,480	175,228,276	140,975,286	106,787,138
Accumulated depreciation	89,427,211	70,560,357	55,085,040	43,820,326
Net property, plant and equipment	156,879,269	104,667,919	85,890,246	62,966,812
Total assets	630,023,274	423,697,443	354,945,287	269,491,286
Stockholders' equity	231,998,008	154,749,892	121,967,925	102,934,058
General Statistics (Year-End)				
Shares of common stock outstanding**	10,936,695	10,771,074	10,658,819	10,441,071
Shares of preferred stock outstanding	888,905	463,681		
Number of stockholders of record:				
Common	59,009	57,323	43,417	32,755
Preferred	16,175	10,203		
Number of employees	65,500	46,900	43,000	37,700

Note: In its annual financial statements the company consistently reports the operations of businesses acquired under the pooling of interests concept from the beginning of the year in which the acquisition occurs. On the basis of including operations of pooled businesses prior to their years of acquisition, operating results would have been as follows:

	Sales and Service Revenues	Net Earnings	Earnings Per Common Share
1964	\$705,696,000	\$30,084,000	\$2.72
1963	613,679,000	24,185,000	2.16
1962	489,806,000	18,685,000	1.68
1961	354,191,000	12,861,000	1.18

1961	1960	1959	1958	1957	1956
\$250,114,456	\$187,761,242	\$125,525,561	\$83,155,473	\$28,130,603	\$14,920,050
19,687,457	15,365,182	10,805,756*	7,044,437	3,232,493	1,995,703
9,529,134	7,910,328	5,851,725	3,342,234	1,426,000	976,000
10,158,323	7,454,854	4,954,031*	3,702,203	1,806,493	1,019,703
1.04	.78	.59*	.46	.32	.20
5,131,267	3,213,720	2,235,128	2,090,083	693,218	430,607
\$ 73,631,064	\$ 53,846,309	\$ 38,741,071	\$23,117,831	\$ 6,731,958	\$ 2,655,003
60,860,252	41,545,708	29,633,695	22,781,070	7,277,766	4,648,181
22,987,124	17,563,971	11,850,224	7,915,605	1,939,535	1,144,109
37,873,128	23,981,737	17,783,471	14,865,465	5,338,231	3,504,072
172,771,125	119,004,373	83,254,170	57,750,861	16,823,383	10,826,182
63,730,972	50,568,249	34,546,600	27,994,799	7,785,419	4,533,177
9,643,512	9,410,153	8,128,960	7,845,971	5,538,631	4,856,026
21,936	16,322	8,589	5,801	4,500	3,000
23,000	17,400	12,400	8,600	2,700	2,000

*Excluding special income credit of \$1,021,000 or 13¢ a share.

**Adjusted for stock dividends and stock splits.

LITTON INDUSTRIES, INC. AND SUBSIDIARY COMPANIES

ASSETS

CONSOLIDATED BALANCE SHEET JULY 31, 1965

Current Assets:

Cash, and marketable securities of \$11,022,313 at cost (approximate market value)		\$ 24,865,376
Accounts receivable:		
Trade accounts	\$196,829,994	
Reimbursable unbilled expenditures under government contracts	<u>3,286,192</u>	200,116,186
Inventories, at lower of cost or market, less progress billings of \$54,098,103		188,554,577
Prepaid expenses		<u>7,880,411</u>
<i>Total Current Assets</i>		421,416,550

Equity in Unconsolidated Finance Subsidiaries (Note B)

16,293,240

Other Investments — at cost

14,487,382

Property, Plant and Equipment — at cost:

Land	8,880,674	
Buildings	70,848,351	
Machinery and equipment	<u>166,577,455</u>	
	246,306,480	
Less accumulated depreciation	<u>89,427,211</u>	156,879,269

Other Assets:

Patents	527,247	
Excess of cost over related net assets of businesses purchased	17,509,895	
Other	<u>2,909,691</u>	<u>20,946,833</u>
		<u>\$630,023,274</u>

See notes to financial statements.

LIABILITIES AND STOCKHOLDERS' EQUITY

<i>Current Liabilities:</i>			
Notes payable to banks			\$ 26,216,289
Accounts payable			89,835,145
Payrolls and related expenses			33,448,782
Federal and foreign taxes on income			34,016,237
Current portion of long-term liabilities and debentures			<u>2,148,000</u>
<i>Total Current Liabilities</i>			185,664,453
<i>Long-Term Liabilities (Note C)</i>			105,396,200
<i>Deferred Federal Taxes on Income</i>			14,198,147
<i>Deferred Service Contract and Other Income</i>			13,886,866
<i>Convertible Subordinated Debentures (Note D)</i>			78,879,600
 <i>Stockholders' Equity (Note E):</i>			
Capital stock:			
Voting preferred, convertible, cumulative, par value \$5 a share, issuable in series:			
Authorized 3,000,000 shares			
Series A issued 936,124 shares less 47,219 shares			
in treasury		\$ 4,444,525	
Common, par value \$1 a share:			
Authorized 17,000,000 shares			
Issued 11,324,601 shares less 387,906 shares			
in treasury		10,936,695	
Additional paid-in capital		118,396,829	
Earnings retained in the business	\$169,555,122		
Less cumulative amounts transferred to paid-in capital for stock dividends paid	<u>71,335,163</u>	<u>98,219,959</u>	<u>231,998,008</u>
			<u>\$630,023,274</u>

See notes to financial statements.

LITTON INDUSTRIES, INC. AND SUBSIDIARY COMPANIES

CONSOLIDATED STATEMENTS OF EARNINGS

	<u>Year ended July 31, 1965</u>	<u>Year ended July 31, 1964</u> (Note A)
Sales and service revenues	\$915,573,929	\$686,135,497
1964 sales of companies not acquired until 1965 and treated as poolings of interests	915,573,929	19,561,044
	915,573,929	705,696,541
Costs and expenses (including depreciation of \$22,998,000 and \$17,098,000):		
Cost of sales	665,518,820	530,540,031
Selling, general and administrative	170,927,102	112,002,013
Interest	7,588,760	6,369,109
	844,034,682	648,911,153
Earnings before taxes on income	71,539,247	56,785,388
Federal and foreign taxes on income	31,787,234	26,701,363
Net earnings	39,752,013	30,084,025
Deduct 1964 net earnings of companies not acquired until 1965 and treated as poolings of interests		316,704
Net earnings, as reported	\$ 39,752,013	\$ 29,767,321

See notes to financial statements.

CONSOLIDATED STATEMENT OF EARNINGS RETAINED IN THE BUSINESS

Year Ended July 31, 1965

Balance at beginning of year:			
	Litton Industries, Inc. and subsidiary companies, as reported		\$ 72,877,433
	Companies acquired — accounted for as poolings of interests		<u>3,079,525</u>
			75,956,958
	Net earnings for the year		<u>39,752,013</u>
			115,708,971
Deduct (add):			
	Premium on redemption of convertible subordinated debentures	\$ 803,603	
	Cash dividends on preferred stock — \$3 a share	2,060,887	
	Market value of 2½% stock dividend	16,507,948	
	Reduction in federal taxes applicable to prior year charges to earnings retained in the business	<u>(1,883,426)</u>	<u>17,489,012</u>
	Balance at end of year		<u>\$ 98,219,959</u>

CONSOLIDATED STATEMENT OF ADDITIONAL PAID-IN CAPITAL

Year Ended July 31, 1965

Balance at beginning of year:			
	Litton Industries, Inc. and subsidiary companies, as reported		\$ 69,045,689
	Companies acquired — accounted for as poolings of interests		<u>(405,205)</u>
			68,640,484
	Excess of market value of stock dividend over par value of common stock issued		16,125,188
	Excess of market value over par value of common and preferred stocks issued to purchase businesses		32,902,557
	Premium on sale of convertible subordinated debentures		<u>728,600</u>
	Balance at end of year		<u>\$118,396,829</u>

See notes to financial statements.

NOTES TO FINANCIAL STATEMENTS • Year Ended July 31, 1965

NOTE A—Principles of Consolidation

The accounts of the Company and its wholly-owned subsidiaries (excluding its finance subsidiaries) are included in the accompanying financial statements.

During the year ended July 31, 1965, the Company purchased a number of businesses, the most significant of which were Royal McBee Corporation and Hewitt-Robins Incorporated. The operations of these businesses are included from dates of acquisition.

Also during the year the Company acquired the net assets of other businesses which have been accounted for as poolings of interests. The 1964 statement of earnings includes the operations of these businesses.

NOTE B—Equity in Unconsolidated Finance Subsidiaries

The Company's equity in its wholly-owned finance subsidiaries is stated at cost, represented by investments and advances, and undistributed current earnings of \$497,091. At July 31, 1965, these subsidiaries had total assets of \$38,998,487 and liabilities to banks and others of \$22,705,247.

NOTE C—Long-term Liabilities

Long-term liabilities at July 31, 1965 consisted of the following:

Notes payable to insurance companies:	
Due to 1984 with interest from 3½% to 4½%	\$ 58,542,000
Due to 1983 with interest from 4½% to 6%	10,889,000
Notes payable to banks:	
Due to 1978 with interest from 3% to 4½%	18,633,000
Due to 1976 with interest from 5½% to 6½%	2,346,000
Miscellaneous debt due to 1984 with interest from 2½% to 6%	16,664,200
	107,074,200
Less current portion	1,678,000
	\$105,396,200

The principal maturities due during each of the next five fiscal years and the annual interest expense for those years is as follows:

	<i>Principal</i>	<i>Interest Expense</i>
Year ended July 31, 1966	\$ 1,678,000	\$4,691,000
Year ended July 31, 1967	19,442,000	3,853,000
Year ended July 31, 1968	2,052,000	3,766,000
Year ended July 31, 1969	5,262,000	3,584,000
Year ended July 31, 1970	7,968,000	3,286,000

The Company has complied with its agreements to maintain specified ratios of assets to debt and stockholders' equity to debt.

NOTE D—Convertible Subordinated Debentures

Convertible subordinated debentures at July 31, 1965 were as follows:

3½% due April 1, 1987, issued 1962, 1963, 1964 and 1965	\$71,014,600
5¼% due December 1, 1974, issued 1959	4,105,000
4¾% due June 1, 1974, issued 1959	4,230,000
	79,349,600
Less current portion	470,000
	\$78,879,600

The debentures are convertible into common stock of the Company at conversion prices as follows: 3½% debentures — \$80 a share until April 1, 1972, \$85 a share until April 1, 1982, \$90 a share thereafter; 5¼% debentures — \$40 a share; 4¾% debentures — \$32.50 a share. These conversion prices are subject to antidilution provisions.

The Company has agreed to retire annually principal amount of debentures as follows: 3½% debentures — \$2,819,000 commencing April 1, 1972; 5¼% debentures — \$600,000 commencing December 1, 1968; 4¾% debentures — \$470,000.

The debentures are subordinated to all existing debt and future debt of the Company with limited exceptions. The Company has complied with the terms of the debentures.

NOTE E—Stockholders' Equity

The preferred stock is currently convertible into common stock on a share-for-share basis, and is redeemable on or after April 1, 1972 at \$100 a share plus accrued dividends. In the event of liquidation each preferred share is entitled to receive \$50 a share plus accrued dividends. The preferred stock is protected by antidilution provisions.

At July 31, 1965, there were reserved 1,120,462 common shares for conversion of debentures and 936,124 common shares for conversion of preferred stock.

Under certain acquisition agreements capital stock may be issued as additional consideration for businesses acquired. The number of shares to be issued is dependent, among other things, upon future earnings of acquired businesses and future market value of Litton stock. Based upon current estimates, the maximum number which could be issued as additional consideration is approximately 90,000 common shares and 8,000 preferred shares.

Under the terms of the Company's borrowing agreements, consolidated earnings retained in the business of approximately \$82,000,000 are available for cash dividends on common stock at July 31, 1965.

Subsequent to July 31, 1965, the Board of Directors proposed amendments to the Certificate of Incorporation: to provide for an increase in the authorized common stock from 17,000,000 shares to 39,000,000 shares; to create a new class of voting preference stock; and to authorize the issuance of 8,000,000 of such shares. These proposals are fully described in the proxy statement to be sent to all stockholders and will be voted upon by the stockholders at their annual meeting in December 1965.

The Board of Directors also declared a common stock dividend of 2½% payable November 5, 1965 to holders of record of such common stock at the close of business September 30, 1965 and a two-for-one split of the common stock to be distributed in January 1966. These transactions have not been reflected in the accompanying financial statements. After the stock split, each share of Series A preferred stock will be convertible into two shares of common stock.

NOTE F—Lease Obligations

Annual rentals under long-term leases expiring between 1968 and 1994 are approximately \$4,300,000 plus property taxes and insurance in some instances.

TOUCHE, ROSS, BAILEY & SMART

October 6, 1965

Board of Directors, Litton Industries, Inc.
Beverly Hills, California

We have examined the accompanying consolidated balance sheet of Litton Industries, Inc. and subsidiary companies as of July 31, 1965, and the related statements of earnings, earnings retained in the business, and additional paid-in capital 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 procedures as we considered necessary in the circumstances.

In our opinion, the financial statements referred to above present fairly the consolidated financial position of Litton Industries, Inc. and its subsidiary companies at July 31, 1965, and the consolidated 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.

Touche, Ross, Bailey & Smart

Certified Public Accountants

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