

Raytheon Annual Report 1969

Comparative Highlights

	1969	1968 Restated*
Net sales	\$1,285,134,000	\$1 192,366,000
Income before extraordinary item	\$ 35,232,000	\$ 31,720,000
Extraordinary item	\$ —	\$ (1,276,000)
Net income	\$ 35,232,000	\$ 30,444,000
Earnings per common share:		
Income before extraordinary item	\$2.35	\$2.12
Extraordinary item	\$ —	\$ (.09)
Net income	\$2.35	\$2.03
Cash dividends paid		
Preferred stock	\$ 863,000	\$ 867,000
Per share	\$1 12	\$1 12
Common stock	\$ 7,547,000	\$ 6,271,000
Per share	\$.525	\$.45
Net working capital	\$ 158,012,000	\$ 166,066,000
Net property, plant and equipment	\$ 116,348,000	\$ 91,811,000
Stockholders' equity:		
Total	\$ 259,825,000	\$ 232,620,000
Per common share, assuming full conversion of Series A preferred stock	\$16.57	\$14.89
Outstanding shares of common stock (after deducting shares in treasury)	14,423,465	14,355,682
Stockholders of record	28,307	26,504
Funded backlog of U.S. Government orders	\$ 299,042,000	\$ 429,567,000

*Restated to include poolings of interests of companies acquired during 1969 (refer to Note A, Notes to Financial Statements).

In connection with the above, reference should be made to the Financial Review and Financial Statements. Amounts above pertain to results for the entire year or represent year-end balances or statistics.



Thomas L. Phillips, President, left;
Charles F. Adams, Chairman of the Board

Your company achieved an 11 per cent increase in earnings and earnings per share in 1969 and the highest sales, earnings, and earnings per share in any year in its history. It marked the fifth consecutive year of record earnings and the fourth of record sales.

This growth consistency is based upon a continued balance between our commercial and government businesses. During the year we:

- Increased the scope and volume of our commercial business both by means of an acquisition and through internal development and growth
- Strengthened our already broad-based government business and added three new important and long-term programs
- Completed the turn-around of our overseas operations and began a program of overseas diversification and growth

Commercial Businesses

The acquisition of United Engineers & Constructors Inc. extends our participation in the broad field of natural resources exploration, development, and utilization. The activities of United in the design, engineering, and construction of nuclear and conventional power facilities are complementary to those of The Badger Company in petroleum and chemical processing plants. Badger continued to grow during the year and Seismograph Service Corporation accelerated its petroleum exploration services, particularly overseas.

The company's information handling systems business showed sharp growth during the year paced by a \$19.5 million order for Raytheon display terminals for use in hospital data communications systems. Airline use of the terminals

continued to expand, not only in passenger reservation systems but also in a new seat selection and boarding system.

Growth in major appliances continued despite slowdowns in consumer buying and extended strikes at both Amana plants. Sales of Amana products, including the Radarange® microwave oven, increased substantially. The production capacity provided by the new Fayetteville, Tennessee, plant will enable Amana to meet the demand for its heating and air conditioning products. Meanwhile, field tests of prototype models of Amana heating and air conditioning units based on the Raytheon Heat Transfer Module are continuing. The higher volume at Caloric was led by gas ranges with the new self-cleaning ovens.

Government Businesses

Continuing progress was made across the full range of the company's diverse government businesses. Initial funding was received for production of Missile Site Radars for the U.S. Army's Safeguard System. In the SAM-D Surface-to-Air Missile Development program, each of the major elements was tested successfully preparatory to system integration. Good progress is also being made on the Improved Hawk and Advanced Sparrow tactical air defense systems, guidance electronics for Polaris and Poseidon, Tartar-D fire control electronics, and sonars for the U.S. Navy's attack class submarines.

In a further expansion of this broad business base, the company was awarded three major new programs. Early in the year a prime contract was received to develop for the U.S. Air Force an innovative, highly mobile final approach landing system for military aircraft. Another prime contract was received for the engineering development of the NATO Seasparrow shipboard air defense sys-

tem. The RCA team, of which Raytheon is the major member was awarded an important contract for the development of the U.S. Navy's Aegis advanced surface-to-air missile system.

Overseas Growth

Our overseas operations improved substantially during the year. Cossor Electronics and Sterling Cable Company in England operated well in 1969 and demonstrated the capacity for continued growth. Transistor AG in Switzerland became an increasingly important factor in the European market for silicon power devices. Badger subsidiaries in England, The Netherlands, and Japan and Seismograph Service Corporation subsidiaries in England and France all showed significant growth during the year.

We decided not to participate with our partners in the increase in capitalization of Selenia S.p.A., our Italian affiliate, and thereby effectively reduced our participation in that company to a level we feel to be more appropriate. This move also enabled us to concentrate on other elements of our European business and to seek out additional growth opportunities. A.C. Cossor Limited acquired a majority interest in Electrical Installations Limited, a leading company in the design and installation of cable systems.

A New Decade

Early in 1969, D. Brainerd Holmes was elected Executive Vice President of the company. Three of our Vice Presidents and Division General Managers were elected Senior Vice Presidents. Joseph F. Alibrandi of the Missile Systems Division, Edward L. Dashefsky of the Microwave and Power Tube Division, and Joseph F. Shea of the Equipment Division. In January 1970, John R. Allison was elected Senior Vice President, Treasurer. In this capacity Mr. Allison will also have responsibility for financial

relations and will participate actively in the company's continuing diversification program. As Treasurer he succeeds Allen E. Reed, with the company for 25 years and Vice President, Treasurer since 1957. Mr. Reed will serve as Vice President, Senior Financial Consultant until his retirement at midyear.

A major building and plant modernization program was completed during the year. The Badger Company and D.C. Heath and Company have each moved into new headquarters buildings. A new 700,000-square-foot manufacturing facility is nearing completion in Andover, Massachusetts, and is expected to be fully occupied by midyear.

As we enter 1970 and the new decade, the economy is level, government business is very competitive, and demand has declined in certain commercial markets. We also enter the new decade with many strengths. Our diversification program has taken hold and we are operating with a broad earnings base of government, commercial, and overseas business. Our financial position is sound, our plants are modern and competitive, and we have achieved a depth of management strength.

As we look to 1970 and beyond, we see continued opportunities for your company, continued growth, and continued improvement in profitability.

Thomas Z. Phillips

President

Charles Adams

Chairman of the Board

February 10, 1970

Expansion of the natural resources business area, continued sales growth in data handling systems and major appliances, and a change in emphasis in the company's education business marked a year of growth in commercial markets.

Natural Resources

The company's activities in the broad field of exploration, development, and utilization of natural resources were considerably extended in 1969 with the acquisition of United Engineers & Constructors Inc.

The principal business of United Engineers is the design, engineering, and construction of nuclear and conventional power facilities and of industrial plants in the basic metals and chemical fields.

United Engineers has a total of 18 major power generating units under design and/or construction. Twelve are nuclear-fueled and total more than 10 million kilowatts of central station generating capacity; six are fossil-fueled with a total capacity of 3 million kilowatts. As a measure of the scope of this work, the 13 million kilowatts power output of these current United projects is equal to the total existing generating capacity of utilities in the six New England States.

Under contract to the Atomic Energy Commission, United Engineers continuously appraises the status and potential of the entire fossil- and nuclear-fueled power generation industry

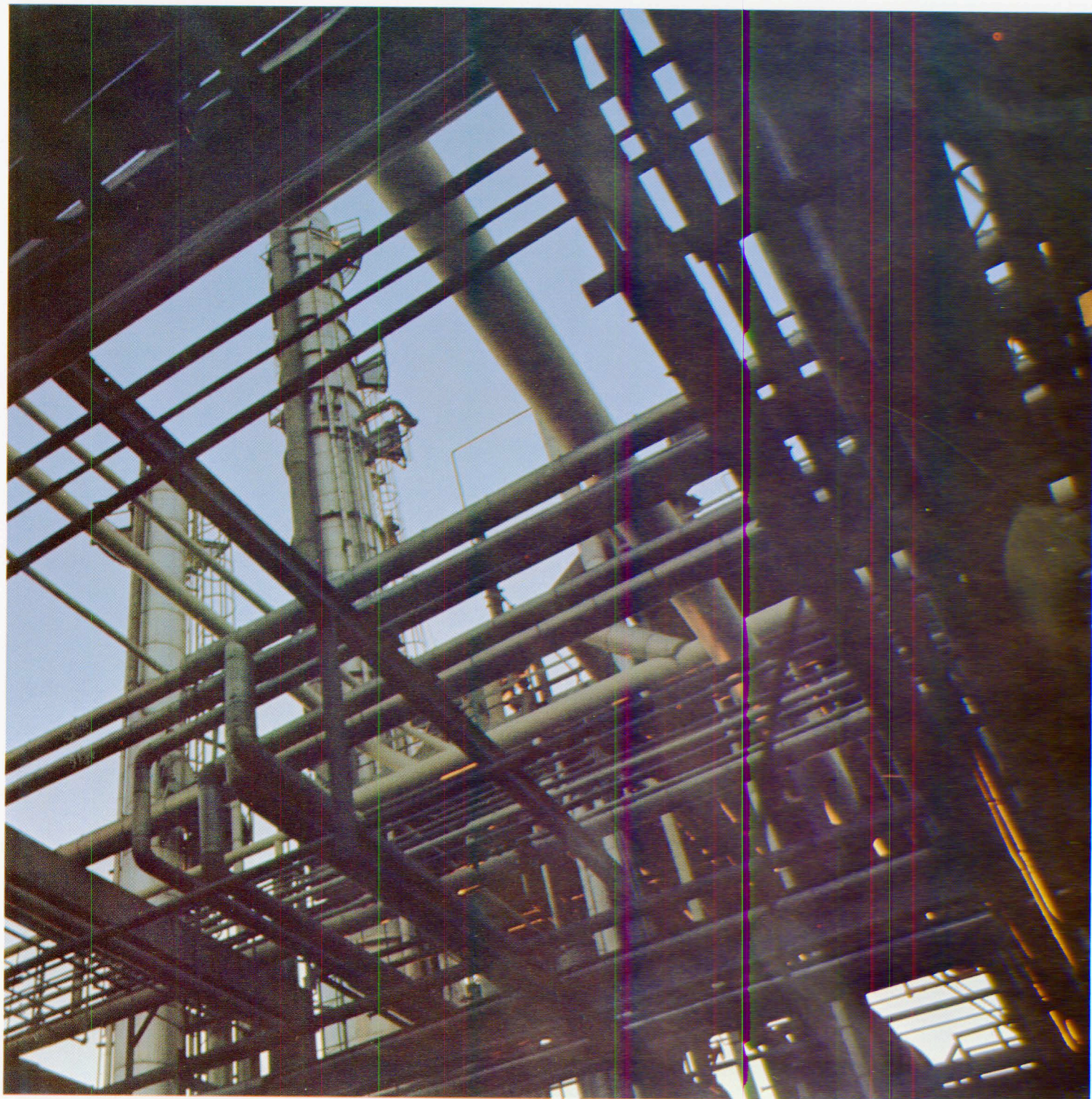
United Engineers is designing and constructing a continuous slab casting facility that will produce the largest steel slabs of any plant in the nation and is also designing and constructing the industry's most modern facility for the rolling of structural steel shapes.

The Badger Company completed 13 major projects in 8 countries and received contracts for 21 new projects in 11 countries. The projects include plants for the production of lubricating oils, expansions of petroleum refineries, and a number of processing plants for phthalic anhydride, styrene, vinyl chloride, and acrylonitrile – all important raw materials for the production of plastics and resins. Badger now offers a complete pollution abatement service ranging from surveys to the design and installation of pollution control facilities.

Additional chemical processes in which Badger has received preferred positions include exclusive world-wide licensing rights to the isothermal phosphoric acid reactor process developed by Whiting Corporation, an exclusive license from Erdoelchemie GmbH of West Germany for the treatment of aqueous waste from acrylonitrile plants, and a license to the Kerr-McGee pentane deasphalting process. The company also received a non-exclusive right to build plants utilizing the BASF process for producing phthalic anhydride from orthoxylene.

Seismograph Service Corporation pioneered the contract use of hovercraft in geophysical exploration with a survey in shallow waters off the coast of The Netherlands. These amphibious craft, riding on cushions of air, are ideally suited to the offshore search for oil in the shallow-water inshore area of continental shelves, intertidal areas where mud flats and sand bars are exposed at low tide, delta areas, and shallow lagoons. At year end, hovercraft were in use by SSC's English subsidiary, Seismograph Service Limited, in contract exploration along the coast of Abu Dhabi in the Persian Gulf.

Organic chemical plant under construction in Bayport, Texas by The Badger Company. The new facility, completed in 1969, produces synthetic glycerine for use in paints, plastics, foods, pharmaceuticals, and other consumer products.



Land geophysical operations overseas increased significantly during the year particularly in the Middle East and North Africa. The SSC marine geophysical survey vessel *King Tide* became fully operational and worked on contracts in Central and South American waters.

Two Lorac radiolocation networks were provided for oil companies exploring the Prudhoe Bay area on the North Slope of Alaska. SSC's Birdwell Division increased its domestic, foreign, and marine oil well logging activities and added a new one-year contract from the Atomic Energy Commission. The PED/Seiscor division introduced a single channel subscriber carrier system for telephone companies.

Major Appliances

Amana Refrigeration, Inc. achieved record sales in 1969 despite extended strikes at both its Amana, Iowa, and Fayetteville, Tennessee, plants. The Amana Radarange® microwave oven paced sales increases across the full Amana refrigerator freezer and heating and air conditioning product line.

The Radarange microwave oven is now in nationwide distribution with sales continuing to climb. A model compatible with prevailing household current in other countries has gained a substantial foothold overseas. For the home builder and kitchen remodeling markets, Amana has developed a kit for building the Radarange oven into kitchen cabinetry.

Late in the year Amana introduced three compact refrigerator models and a compact freezer into its 1970 product line. The new products are to meet the growing demand for compact refrigeration units for use in recreation rooms, apartments, offices, mobile homes, boats, and summer cottages.

Sales volume of the Caloric gas range with self-cleaning oven and broiler continues to rise. Ranges with the self-cleaning feature now account for more than 40 percent of Caloric range production. Caloric strengthened its marketing organization with the addition of a number of new franchised dealers, particularly in the Western states.

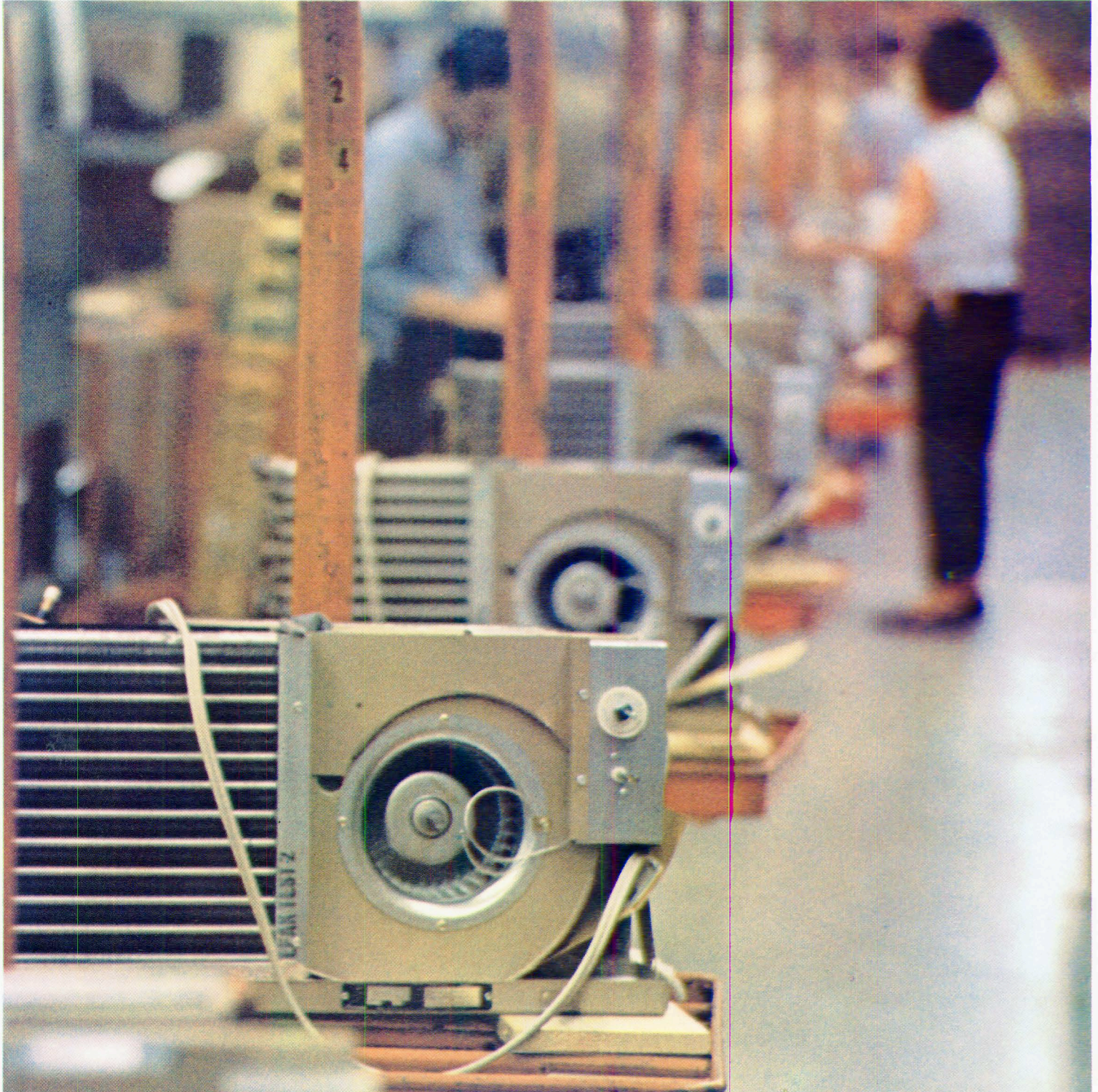
Education

The main thrust of the company's education business is now in the creation and dissemination of intellectual materials for schools and colleges. This shift in emphasis results from the experience of the past few years indicating the necessity for a separate approach to the markets for instructional materials and education electronics.

In keeping with this emphasis, the name of D.C. Heath and Company, textbook publishers acquired in 1965, was adopted for the company's education subsidiary and, early in 1970, the company sold its closed circuit television, language laboratory, and driver education product lines. Macalaster Scientific Company, developers and producers of electronic and other science learning kits, is now a division of D.C. Heath and Company.

A number of new texts were introduced by D.C. Heath during the year among which was a major new high school textbook, *America, A Modern History of The United States*. Based in large part upon newly discovered documents and other historical data, the new text focuses

Room air conditioners move along production line at new Amana plant in Fayetteville, Tennessee. Plant also produces broad line of central air conditioning and heating systems.



Authors Henry N. Drewry, left center and Dr. Frank Freidel, right center meet with D.C. Heath editorial team on publication of their new high school history text, *America, A Modern History of the United States*.



attention on the contributions of everyday citizens as well as those of national leaders. By year end, *America* had won statewide adoption in both Texas and South Carolina.

In the science field, a new laboratory-centered science program for grades seven through nine was published. Entitled *Patterns and Processes of Sciences*, the program includes texts, tape recordings, and Macalaster science learning apparatus. Other new texts for elementary and high schools were published in mathematics, earth and space sciences, language arts, and foreign languages. New college programs include American literature, history, mathematics, and foreign languages.

A new publishing program titled Heath Lexington Books was initiated. In the new program, limited editions of timely works in social and economic areas will be published beginning early in 1970.

In a further move to diversify its publishing activities, D.C. Heath early in 1970 entered into an agreement in principle with Gregg International Publishers, Ltd., to merge Gregg with D.C. Heath. Headquartered in Farnborough, England, Gregg specializes in the publication and reproduction of rare books and other works of significance to scholars. D.C. Heath plans to expand on Gregg's business in Europe and to branch out into other areas of publishing made possible by the combined abilities of Gregg and Heath.

Communications And Data Handling

The company's integrated information handling systems business grew substantially during the year. The basic elements of the business are the Raytheon 700 series general purpose computers, the DIDS-400® Digital Information Display Systems, digital transmission and multiplexing equipment, and installation and maintenance services.

The full range of these elements is applied in the company's services to the airlines industry. A Qantas Airways order for more than 400 Digital Information Display Systems was received, bringing to five the number of major international airlines ordering Raytheon display terminals for use in their reservation systems.

To help meet the massive passenger handling problems of the jumbo jet era, Raytheon developed a one-stop check-in system utilizing a Raytheon 703 computer and a series of DIDS-400 display terminals. The system enables passengers to confirm reservations, check baggage, select seats, and receive boarding passes – all in one stop. The system is now in operation by Eastern Airlines at New York's John F. Kennedy Airport. A variation of the boarding system has been ordered by Air France for use at Orly Field, Paris.

Good progress was made during the year on the development of satellite processor switching centers for the communications network established by SITA, an international association of airlines. The satellite processors will serve as intermediary real-time information handling systems – concentrating, storing, translating, and interchanging messages transmitted in a variety of forms by the offices of member airlines.

The company greatly expanded its participation in the hospital patient data field with a \$19.5 million contract from National Data Communications, Inc., to supply display terminals for use in the NDC computer-based hospital communications system. The Raytheon DIDS terminals provide instantaneous, simultaneous, controlled access to admissions, diagnostic, medication, and other patient data. Doctors can, for example, review patient charts and issue instructions for treatment or medication from any display terminal in the hospital.

In a further extension of its information handling systems business, the company received early in 1970 a letter of intent from the American Stock Exchange to negotiate a contract for the development of a communications network for use by stock specialists on the floor of the Exchange. Each specialist would have continuing access, through a Raytheon display terminal, to the Exchange's central processor for the timely information needed to maintain an orderly market.

A new, small computer the 704, was introduced as Raytheon's entry into the growing mini-computer market. One of the most powerful machines of its type, the 704 is fully program-compatible with the Raytheon 703 and 706. In addition to their use in airline reservations and communications systems, Raytheon 700 Series computers are finding a wide variety of applications ranging from biomedical research to oil exploration.

Two contracts were received from Communications Satellite Corporation, one for three transportable earth stations for experimental use and the other for a microwave radio link in Alaska. The microwave link will connect the large COMSAT earth station at Talkeetna with

Anchorage 75 miles away and will make network television programs regularly available in Alaska for the first time. Most programs are now flown to Alaska as film or as videotape.

Electronic Components

Progress in the product development of the new miniature furnace and the introduction of a number of new products in the semiconductor and x-ray areas highlighted the year in electronic components and equipment.

Prototype models of the Raytheon miniature furnace are being field tested both in this country and overseas. In the U.S., the furnace is being tested in a combination heating-air conditioning unit in more than a dozen different parts of the country. The British Gas Council has placed orders for 70,000 units over the next three years, contingent upon successful field tests. The company is negotiating license agreements in England, Holland, France, Belgium, and Japan.

In the semiconductor components field, the company has established a position of leadership in beam lead technology and now offers a broad line of beam lead digital and linear integrated circuits, transistors, and diodes. Other major product developments during the year were high speed transistor-transistor logic integrated circuits and 64-bit bipolar random access memory circuits that mark entry into a new product area. Some difficulty was encountered in 1969 in producing these innovative, high technology products at high yield.

Raytheon and Thomson-CSF of France completed installation of a cyclotron for use in nuclear research at the University of Maryland. A high-energy linear accelerator for use in cancer therapy at the M.D. Anderson Hospital in Texas is nearing completion.

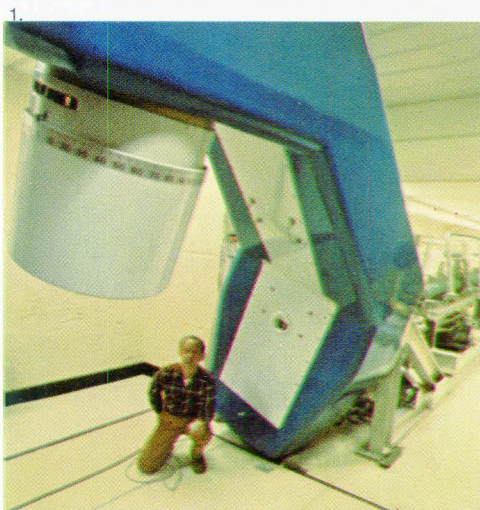
Raytheon's Machlett subsidiary, world leaders in x-ray technology, introduced a new system that automatically prevents x-rays being taken if the beam is wider than the x-ray film. The system, called Dynadex, is used with a Machlett x-ray collimator a device that controls the width of the beam to minimize patient exposure.

Marine Electronics

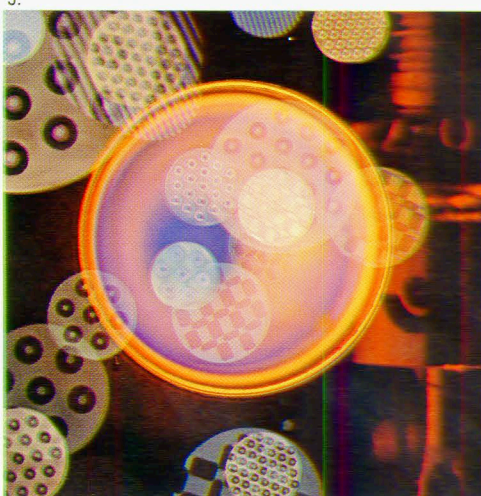
Two radars were among nine marine products developed during the year. The 2840 radar is designed for workboats and commercial fishing craft. The new 2900 radar designed primarily for pleasure craft, features a light-weight, enclosed antenna, compact indicator and a range of 32 miles. Other products introduced include a new lower cost VHF/FM radiotelephone, a single-sideband radiotelephone, and a new commercial depth sounder.

A contract was received from Chris-Craft Corporation to design and produce marine navigation and communications equipment to be integrated into the command consoles of larger Chris-Craft cabin cruisers. Built-in marine electronic equipment is expected to set a trend in the boating industry.

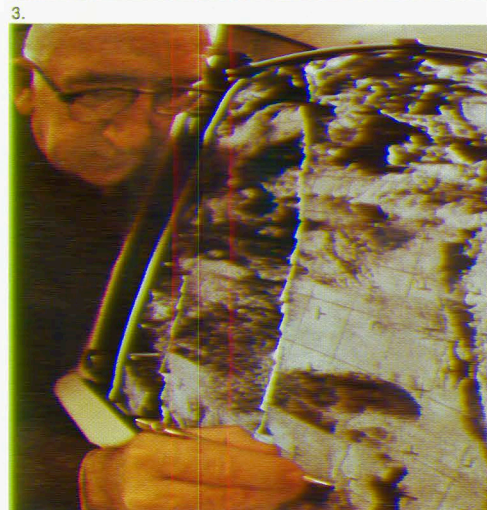
1. Raytheon-produced display terminals give qualified hospital personnel instant access to patient data.
2. The new Raytheon 704 mini-computer foreground, is dwarfed by the peripheral equipment it supervises.
3. Testing a beam-lead integrated circuit wafer at extreme temperatures.
4. Linear accelerator in final testing before delivery to cancer therapy center in Houston, Texas.
5. New Caloric oven undergoes flame test at Topton, Pennsylvania plant as part of comprehensive quality assurance program.
6. High resolution Cloudfax recorder displays satellite weather observations.
7. Seismic crew lays recording cable from Hovercraft during search for oil in shallow coastal waters.
8. Silicon wafers on which Transistor AG, Switzerland, diffuses thyristors, triacs, and other power devices.
9. Compact indicator for new yacht radar displays targets up to 32 miles away.



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Government Programs

Raytheon continues to apply its technological and systems management skills across a broad spectrum of advanced defense, space, air traffic control, and other government programs.

Safeguard System

During the year Congress authorized and appropriated funds for the production and deployment of Safeguard Systems to defend two Minuteman strategic missile locations.

Raytheon has received from Western Electric Company prime contractor for the Safeguard System, initial funding to proceed with the production of Missile Site Radars for these two locations.

Meanwhile, system tests of the prototype Missile Site Radar proceeded exceptionally well at Meck Island in the Pacific.

Tactical Air Defense

Raytheon is a major factor in meeting the tactical air defense needs of the nation. The company is prime contractor for the SAM-D and Hawk ground-to-air and Sparrow air-to-air systems and produces Sidewinder air-to-air missiles.

This role was further expanded during the year with the addition of two new programs, the NATO Seasparrow and the U.S. Navy's Aegis shipboard air defense systems.

Raytheon was named prime contractor for the engineering development of the NATO Seasparrow a shipboard surface missile system that will use a modified version of the Sparrow III air-to-air missile. Participating governments in the NATO project are Denmark, Italy, Norway, and the United States. Other NATO nations are expected to participate.

Raytheon will be a major subcontractor to RCA on the engineering development of the Aegis advanced surface missile system. The company's role will be the development of the guidance illuminators, the high power transmitter for the major phased array radar and much of the weapons command and control system. Aegis will be the Navy's major defensive missile system and is planned for the new guided missile ships scheduled to join the fleet in the mid 1970's.

Progress on the advanced development phase of the SAM-D program during the year was excellent. Each of the major functional elements of the system – radar weapon control, and guidance – has been tested successfully the elements are being integrated into a complete system for test and demonstration during 1970. In addition, two successful test firings of full-scale missiles proved out both the aerodynamics of the missile and effectiveness of the launch system.

Employing advanced technology in both subsystems and components, SAM-D is designed to achieve a high level of performance with low operation and maintenance costs throughout its life cycle. The system is expected to be available to meet the Army's air defense needs in the latter part of the 1970's and beyond.

To meet the Army's interim needs, Raytheon developed the Improved Hawk ground-to-air system, greatly advanced over the presently deployed basic Hawk. The first production order for Improved Hawk missiles was received during the year and flight tests of industrial prototypes were initiated and are continuing.

A large photograph of a busy electronics assembly plant. Numerous workers in white lab coats are seated at long workbenches, working on electronic components. The background features a large grid pattern with a prominent black zigzag line and a series of numbers.

A development contract was received to convert the basic Self-Propelled Hawk system to an Improved SP Hawk system. SP Hawk batteries, mounted on tracked vehicles, are used by the Army for forward area defense.

An Advanced Sparrow air-to-air missile, with expanded capabilities and reduced field support requirements, has performed well in initial flight tests. The Advanced Sparrow will replace Sparrow III missiles on the F-4C and has been specified for use on both the U.S. Navy F-14 and the Air Force F-15 advanced fighter aircraft.

Raytheon continues to produce the Sparrow III system for use by the U.S. Navy and Air Force and by the United Kingdom. The Sparrow III is also being produced in Italy by Raytheon's affiliate and licensee, Selenia S.p.A., for use on the F-104S, and has been selected by the Japanese government as primary armament on the F-4E aircraft used in its air defense program.

The company is the major producer of the infrared-guided Sidewinder air-to-air missile and has received a pre-production contract for an Advanced Sidewinder using all solid state circuitry for significant improvements in reliability, producibility, and ease of maintenance.

Longer range activities in the tactical air defense field include a contract from the U.S. Army for a system definition study on an advanced Low Altitude Forward Area Air Defense System to protect the Field Army against low flying, high speed tactical aircraft. In an independent development effort, the company has designed a laser guidance system for air-to-ground missiles. The system, utilizing optical guidance and digital data processing techniques, is under Navy evaluation.

Avionics Systems

A well established leader in ground-based phased array radars, Raytheon is making excellent progress in the development of an airborne system.

For the U.S. Air Force Avionics Laboratory, the company developed, fabricated, and tested the RARF (Radome, Antenna, and RF Circuitry) phased array antenna, and concurrently, proceeded with the development of an all solid state airborne multi-mode radar as part of its continuing independent development program.

Late in 1969, this radar and the RARF antenna were successfully integrated and demonstrated. The company has an Air Force contract for flight tests of the integrated system beginning in 1970.

Raytheon is also a leading producer of airborne electronic countermeasure equipment and has independently developed an advanced countermeasures system utilizing a new multiple beam array concept.

These capabilities in airborne phased array radar and electronic countermeasures are applicable to the nation's future tactical and strategic aircraft. A near-term application is the U.S. Air Force B-1 strategic aircraft.

Guidance and Control

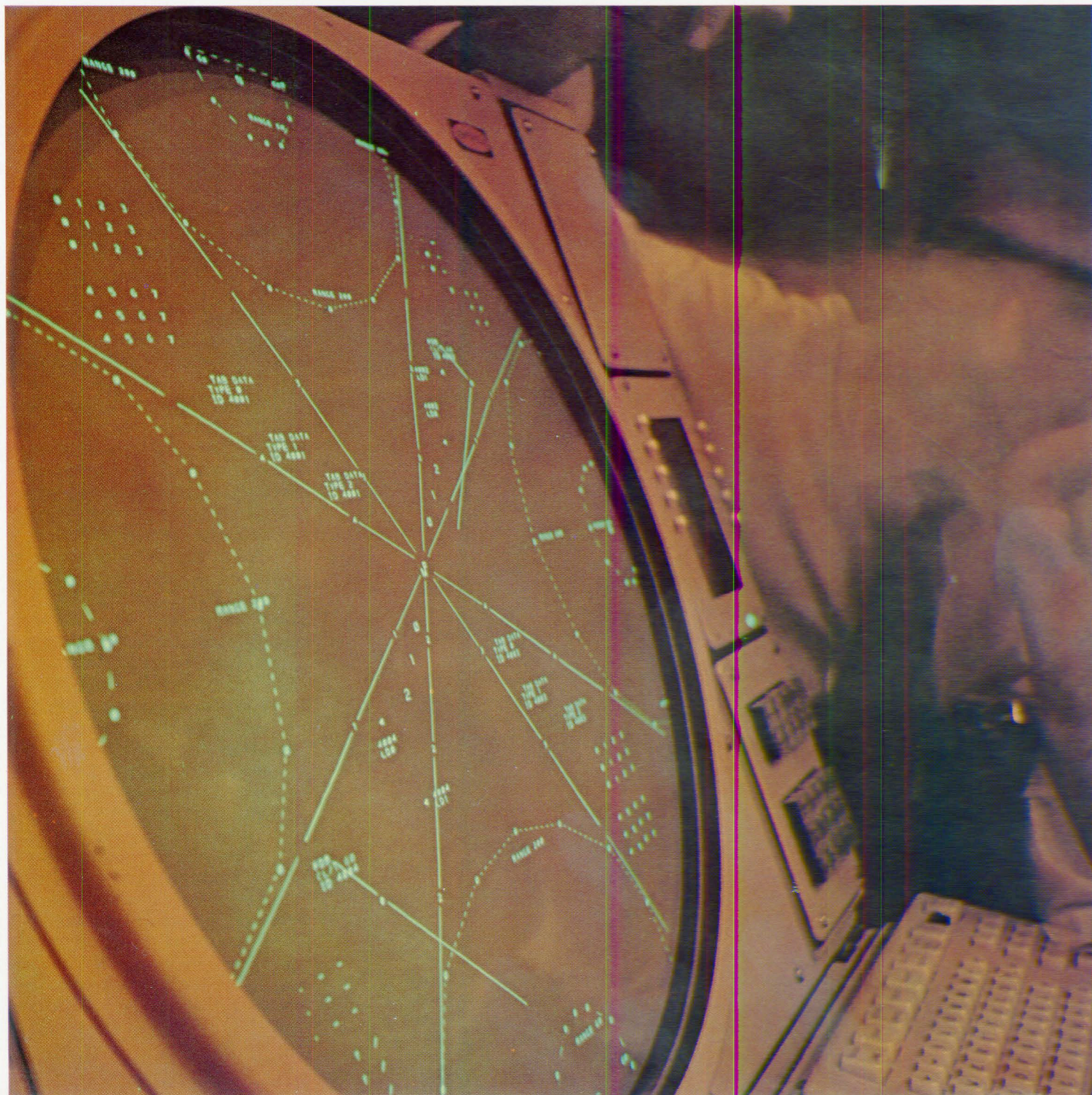
Raytheon shared with the nation and the world the feelings of both awe and pride that followed man's first lunar landing.

There was a particular pride among the Raytheon people who produced the on-board guidance computers that performed so well all of the navigational

Technician makes adjustment in developmental airborne phased array radar antenna during rooftop testing at the company's Bedford, Massachusetts Laboratories.



Display consoles for the FAA's National Airspace System are designed to provide controllers with immediate access to data needed for safe and efficient air traffic control.



Government Programs

computations required through the course of the complex and historic Apollo 11 mission. So accurate was the guidance and navigation system during the mission that only two minor mid-course corrections were made during the long translunar and transearth coasts. The lunar landing was well within the designated area. In describing the lunar orbit rendezvous, Astronaut Mike Collins said the returning Lunar Module "came up from below absolutely as if they were riding on a rail." Splashdown in the Pacific was just 6,000 yards from the prime recovery ship.

The Raytheon computers aboard both the Command and Lunar modules performed equally well in each of the other three Apollo missions during 1969 – Apollo 9 during which rendezvous and docking maneuvers were tested in earth orbit; Apollo 10 which sent its Lunar Module close to the surface of the moon, and Apollo 12, the second lunar landing.

The company also plays a major role in the guidance system for the submarine-launched Poseidon missile. A contract was received early in the year for the first production of guidance electronics, including the digital computers, for the Poseidon system. The first production guidance package was successfully flight tested and production continues. The company is also providing support activity on the guidance electronics for the presently operational Polaris missiles.

Radar and Fire Control

Raytheon is contributing significantly to the development and production of fire control systems for the U.S. Navy's Tartar shipboard air defense system. During the year contracts were received to produce additional Tartar-C fire control systems and to update existing Tartar-C fire control radars with digital computers. The Raytheon-produced prototype of the advanced Tartar-D fire control system met the Navy's environmental

test criteria and a contract was received to produce four systems to be installed aboard nuclear-powered Navy ships now under construction.

The Navy has also awarded Raytheon a contract to do the design work necessary to adapt the Tartar-D fire control radar to the Talos weapon system. Navy cruisers are equipped with the Talos system to provide long-range air defense for the fleet.

Air Traffic Control

Raytheon has long been a major supplier of air route surveillance radars, radar bright displays, and other air traffic control equipment. Early in 1969, the company was awarded a contract by the U.S. Air Force to develop a ground-controlled final approach radar system to assure the safe landing of military aircraft in bad weather at even the most remote airfields.

The AN/TPN-19 Landing Control Central is an innovative, advanced technology system capable of handling landings at rates of up to one a minute. Modular in design and therefore readily transportable and easily deployed, the basic system will include an area surveillance radar, a precision approach radar of phased array design, and a control center with radar display, processing, and communications equipment.

The design and development phases of the program proceeded well during the year with several elements of the system expected to be ready for testing in 1970. A general purpose computer using LSI integrated circuits is being developed for use in the TPN-19 system. The production prototype of the system's microwave radio link will be ready for integration tests by mid-year.

Government Programs

Substantial progress was made during the year in the development of the Computer Display Channel system for the FAA, even though some design difficulties and delays have been encountered in the display equipment portion of the contract. The Computer Display Channel will link the air traffic controller with the system's central computer complex and will enable him to select and display directly on his radar screen the identification, position, speed, altitude, path and other vital information about aircraft in the area.

Underwater Systems

The company continues as a major supplier of sonar systems for the U.S. Navy's nuclear-powered attack class submarines. The first large-scale production and delivery of BQS-13 submarine sonar systems to the fleet began in 1969.

Delivery is being made of a special purpose sonar for use by Fleet Ballistic Missile submarines. Contract work began during the year on the development of a new generation of air-dropped sonobuoys for use in submarine detection and location.

In an independent development project, an underwater vision system was produced and demonstrated. The system, utilizing a Raytheon green laser and a Raytheon image intensifier, has a variety of military and commercial applications.

Defense System Components.

The development of samarium cobalt magnets by Raytheon scientists has enhanced the company's competitive position in the development and manufacture of high power microwave tubes.

The new magnets have been successfully incorporated in four types of traveling wave tubes and in a klystron amplifier with significant improvements in performance and significant reductions in weight and cost. A contract has been received from the U.S. Air Force for work on manufacturing methods involving the samarium cobalt magnets.

Higher output power was achieved in the new wide band injected beam crossed field amplifier being developed for the U.S. Air Force for use in advanced electronic countermeasure equipment.

In the night vision field, a contract was received to develop second generation image intensifier tubes for the U.S. Army's night vision goggle program and a night vision device was developed, under U.S. Air Force sponsorship, for use in helicopter rescue missions on land or at sea.

Among the important developments in solid state microwave devices during the year were a gallium arsenide avalanche diode with significantly higher output power special PIN diodes for use in phased array radars, and a two-stage microwave integrated circuit, also for phased array radar applications.

1. Developmental underwater vision system combines Raytheon's laser and light amplification technologies.

2. Marine biologist studies effects of temperature and chlorine concentration on the respiration of codfish eggs.

3. Powerful digital computer with large scale integrated circuitry measures only 12" square and 3" deep.

4. Circuit board assemblies for Shillelagh missile system are tested at Electromagnetic Systems Division in Santa Barbara, California.

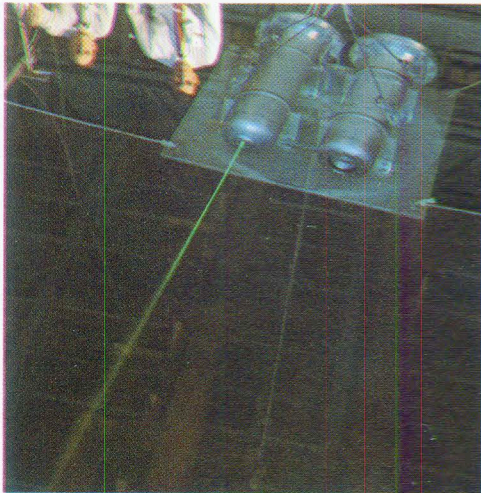
5. Antenna for a shipboard radar system is installed by Raytheon Service Company field engineers.

6. High-power crossed field amplifier for use in advanced shipboard radar system.

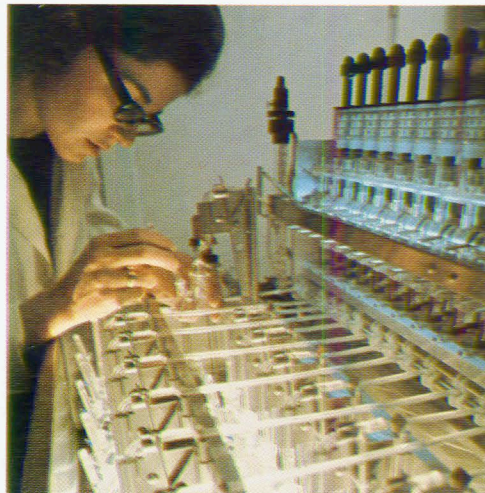
7. As seen from Apollo 11 Command Module, Lunar Module rises from surface of moon for critical rendezvous maneuver. Raytheon guidance computers performed flawlessly throughout historic lunar landing mission.

8. Guidance electronic assemblies for the Poseidon Fleet Ballistic Missile.

9. Test pattern is displayed on SAM-D command and control console.



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2.



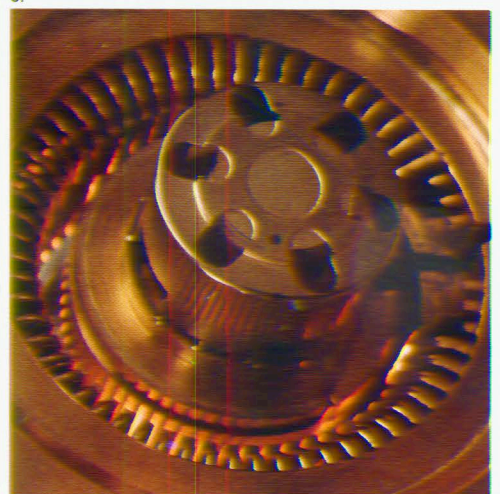
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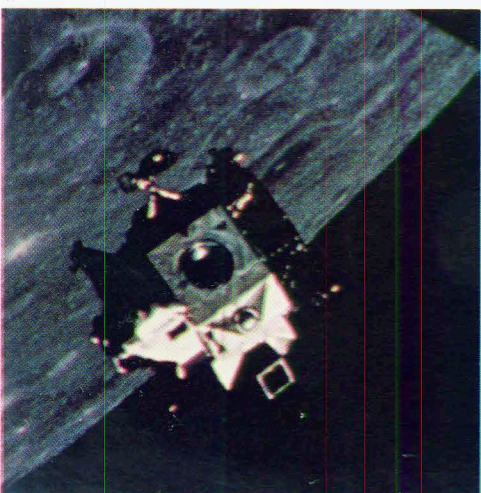
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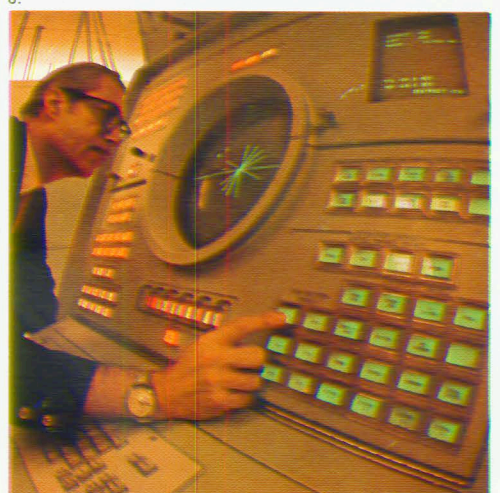
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7.



8.



9.

Transfer of Technology

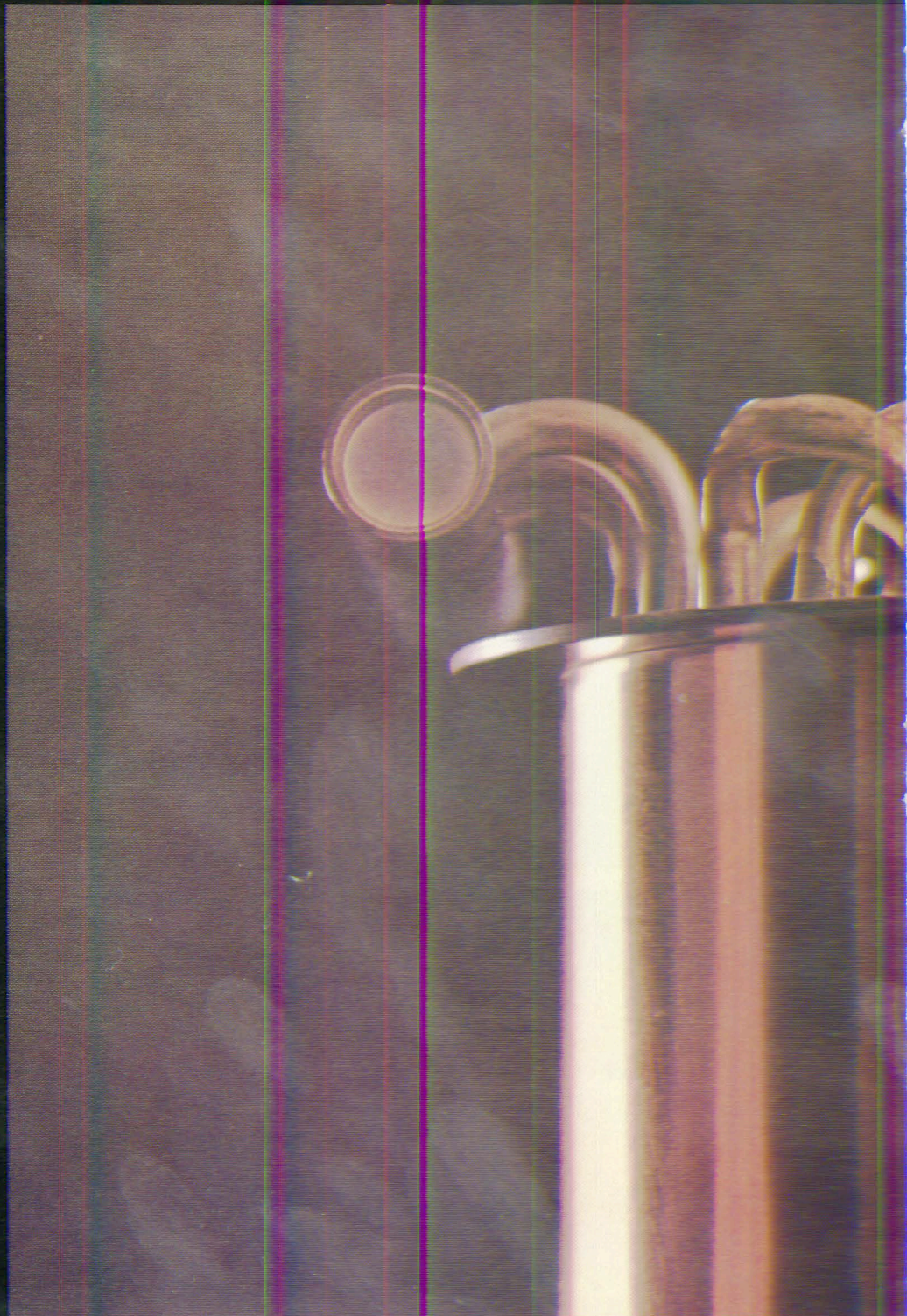
As a diverse and broad-based company, Raytheon is finding an increasing number of opportunities for the successful transfer of its technologies from one area to another, both to create new products and markets and to seek viable solutions to environmental problems.

From the company's depth of experience in microwave technology – applied in a variety of defense, communications, and air traffic control systems – came the Amana Radarange® microwave oven for the home. Research in high power microwave tubes resulted in a breakthrough in heat transfer technology and a highly efficient miniature furnace.

Experience in displays and digital techniques gained in defense and space programs was translated into the highly successful DIDS-400 Digital Information Display System for a variety of commercial applications. The principles of underwater acoustics used in submarine sonar systems were applied to produce a non-explosive energy source for use in marine geophysical exploration.

Remote sensing, data processing, and data display techniques are being combined to help solve problems of vehicular traffic control and safety. Aerial photography and photo interpretation skills used in military reconnaissance are being applied to natural resources exploration and the preparation of detailed maps for use in such activities as resource planning and urban development.

The company's extensive knowledge of the water environment is being applied to coastal and harbor surveys and to the study of water pollution. Contract studies are going forward for the power generating industry to determine the effects of water temperatures on algae growth and marine life.



Heat Transfer Module, approximately the size of a two-pound coffee can, is the heart of a miniature furnace so efficient it will heat a nine-room house. The breakthrough in heat transfer technology was made by Raytheon engineers seeking more efficient techniques for cooling high power microwave tubes. The Heat Transfer Module, incorporated in a combination heating and air conditioning unit, is undergoing extensive field tests before introduction to the marketplace.

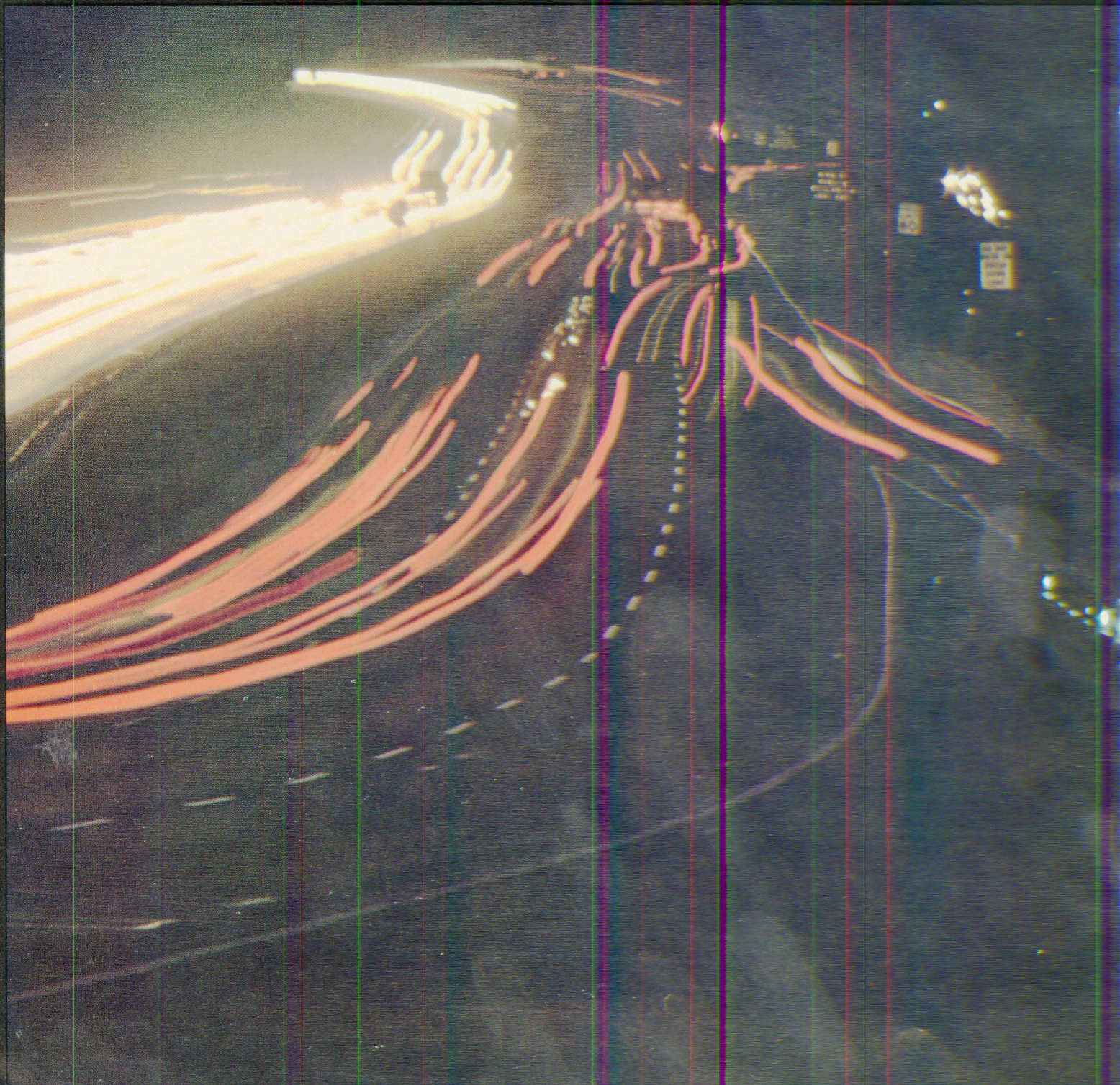


The Radarange® microwave oven for the home represents a blending of Raytheon's pre-eminence in microwave technology and Amana's skill in consumer product manufacturing and marketing. Shown adjacent to the controls of a Radarange oven is the interior structure of a magnetron tube that generates the microwave energy. Raytheon discovered the principle of microwave cooking and pioneered the use of microwave ovens.



The DIDS-400 Digital Information Display System provides instant access to computer-stored information, with the data displayed on the television-like screen in clear, bright, flicker-free characters. Information may be entered, retrieved, and updated or changed via the alphanumeric keyboard. The versatile DIDS-400 has an increasing variety of uses by airlines, insurance companies, hospitals, banks, utilities, and others.





Ramp Merging Control System installed for tests at access to a major high-speed highway in Massachusetts. Electronic sensors buried in the road identify gaps in the flow of traffic on the main highway. This information is processed in real time by a Raytheon 703 computer which activates a pacer light, actually a series of lights operating sequentially. The driver on the ramp matches his speed to the pacer light and feeds smoothly and safely into the flow of traffic.



Net Sales in 1969 were \$1.285 billion, an increase of \$127 million or 11 % above the \$1 158 billion reported for 1968. This record total includes sales of approximately \$39 million by United Engineers & Constructors Inc., acquired in 1969, with the remaining increase of \$88 million, about 8 % representing internal growth of the company as it was constituted at the end of 1968. Of the total volume, 55 % was for U.S. Government end use as compared with 58 % in 1968 and 83 % as recently as 1964.

Net Income of \$35.2 million in 1969 represented an increase of \$4.4 million, or 14.2 % over the previous record reported for 1968 before the extraordinary charge. Net income has increased in each of the last six years. Return on sales was 2.74 % compared with 2.66 % in 1968.

Earnings Per Common Share increased to \$2.35 in 1969 from \$2.10 in 1968 before the extraordinary charge. These figures have been calculated by dividing net income, after provision for the annual dividend requirements on the preferred stock, by the average number of common shares outstanding during the years involved. If all outstanding preferred stock had been converted to common stock at the beginning of the period and all applicable stock options had been exercised, fully diluted earnings per share would have been \$2.24 in 1969 and \$2.02 in 1968 before the extraordinary charge.

Backlog of funded U.S. Government orders amounted to \$299 million at the end of 1969 compared with \$430 million a year earlier. Some government orders expected late in 1969 were not received because of the delay in Congressional appropriations for defense.

Return on Stockholders' Equity was 14.3 % in 1969, compared to 14.4 % in 1968.

Dividends on the company's common stock were paid quarterly in cash at the annual rate of \$.60 per common share since mid-1969, up from the previous \$.50 per share. In addition, the normal annual dividend of \$1.12 was paid in cash on the Series A preferred stock. The total dividends of \$8.8 million recorded in 1969 equalled 25 % of the consolidated earnings.

Common Shares outstanding increased by approximately 76,300 shares in 1969. Key employees purchased 56,600 shares for cash in connection with the company's stock option plan. 11,100 shares were issued for conversion of Series A preferred stock; and 8,600 shares were issued for the acquisition of P.E.D., Inc. The company has not purchased any shares of its common stock since August 1965.

Preferred Shares totalling 500,000 were issued in connection with the acquisition of United Engineers & Constructors Inc.

Total Stockholders' Equity increased to \$259.8 million. The total increase during the year was \$34.2 million of which \$7.0 million was the net worth of the acquired companies at the end of 1968. The book value of the common stock, assuming the full conversion of the preferred stock, increased from \$14.93 to \$16.57 during the year.

Wages and Salaries paid to employees were \$486.6 million in 1969 as compared to \$442.4 million in 1968. Total employment rose to 53,300 at the end of 1969 from 51,588 a year earlier. A new two-year collective bargaining agreement was reached in September with IBEW Local 1505, affecting approximately 9,000 production and maintenance employees in Massachusetts and agreements were reached with the Interna-

tional Association of Machinists covering employees in Rhode Island, Iowa, and Tennessee. Improved compensation and benefit programs have also been implemented for the company's non-unionized employees.

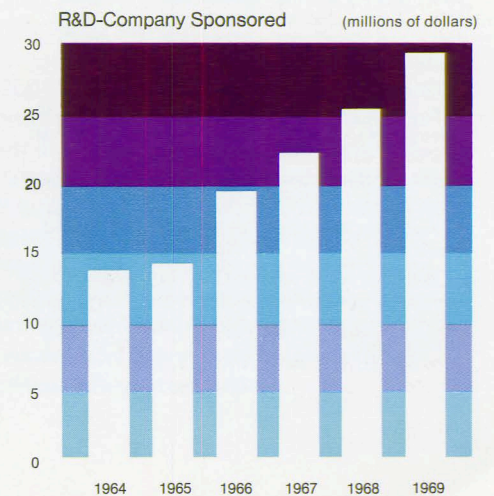
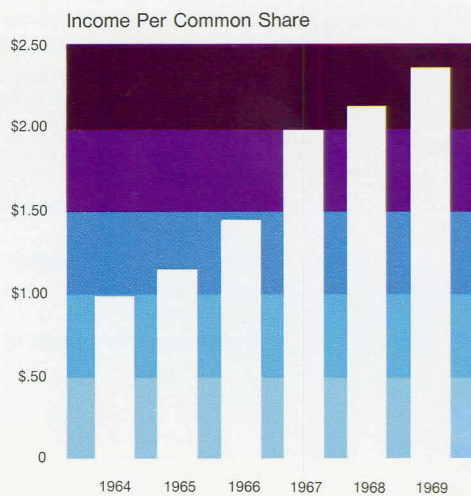
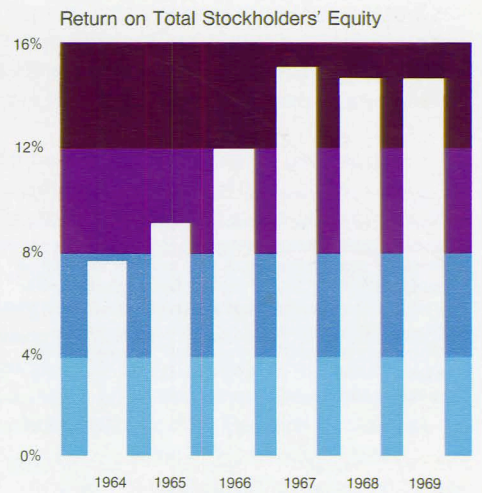
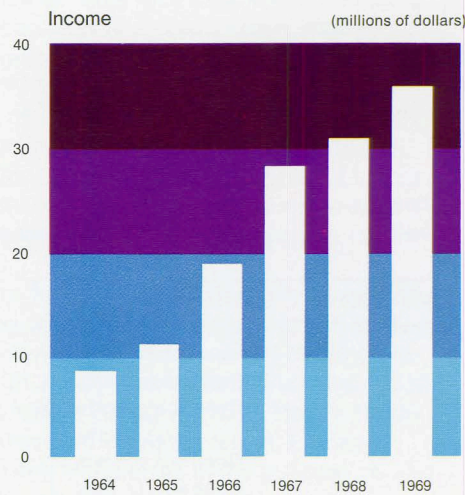
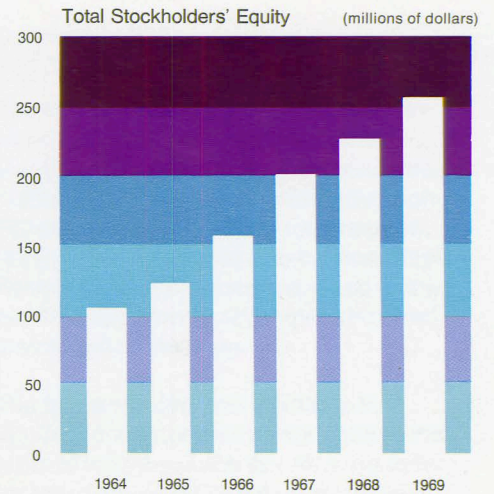
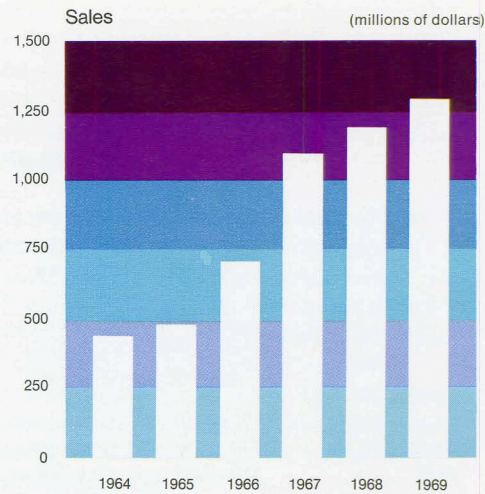
Pension Expense charged to operations in 1969 for all plans was \$6.6 million. The company charges all current costs of pensions to operations, as well as regular planned amounts for prior service where such liability exists. Pension funds are handled by professional trustees independent of company control for all plans affecting United States and Canadian companies.

Research and Development expenditures for company-sponsored projects were increased in 1969 to \$29.6 million compared with \$26.2 million in 1968. This is in addition to sizable Government contracts for research and development.

Plant and Equipment increased more than \$25.2 million in 1969. Capital expenditures of \$48.1 million were the highest in the company's history, offset by depreciation of \$22.2 million. The increase in net investment in plant was a significant factor in the company's cash flow during 1969.

Short Term Debt increased from \$77.3 million at the end of 1968 to \$82.8 million at the end of 1969. Of the latter amount, \$58.0 million is in the form of borrowings from nine commercial banks under a credit agreement expiring on March 31, 1970, which provides for maximum borrowings of \$150 million. Borrowings from commercial banks outside the above-mentioned credit agreement and the current portion of long-term debt account for the remainder.

The Financial Review and the charts are based upon results before extraordinary items, as originally reported.



Statistical Summary

Raytheon Company and Consolidated Subsidiaries

(Dollars in Thousands Except Per Share Statistics)

1969

Sales	Net sales	\$1,285,134
Income	Income before taxes	\$ 69,562
	Income before extraordinary items	\$ 35,232
	Net income	\$ 35,232
	Earnings per common share (2)	
	Income before extraordinary items	\$2.35
	Extraordinary items	
	Net income	\$2.35
	Income before extraordinary items as % of sales	2.7%
	Income before extraordinary items as % of average total stockholders' equity	14.3%
Dividends Paid	On preferred stock (cash)	\$ 863
	On common stock (stock)	
	On common stock (cash)	\$ 7,547
Assets	Current	\$ 403,592
	Property, plant and equipment (net)	\$ 116,348
	Investments and other	\$ 18,896
	Total	\$ 538,836
Working Capital	Working capital	\$ 158,012
	Ratio of current assets to current liabilities	1.64
Financial Structure	Short-term debt	\$ 82,790
	Long-term debt	\$ 33,431
	Total debt	\$ 116,221
	Preferred stock	\$
	Common stockholders' equity	\$
	Total equity	\$ 259,825
	Common stockholders' equity per share	\$16.57 ⁽³⁾
	Debt/equity ratio	.45
General	Funded backlog of U.S. Government orders	\$ 299,042
	Number of employees	53,300
	Building space (square feet)	12,300,000
	Research & development (company sponsored)	\$ 29,553
	Depreciation and amortization on property, plant and equipment	\$ 22,153
	Additions and replacements in property, plant and equipment	\$ 48,137
	Shares outstanding (after deducting shares in treasury)	
	Preferred	1,259,263
	Common	14,423,465
	Common stockholders of record	26,502

Notes:

1. The above tabulations summarize the company's financial statements as contained in its annual reports for each of the years 1960 through 1969, which include the operations of businesses acquired under the pooling of interests concept from the beginning of the year in which the acquisition is reported. On the basis of including operations of pooled businesses prior to their years of acquisition, operating results would have been as follows:

	Net Sales	Net Income	Net Income Per Common Share
1968	\$1 192,366,000	\$31,720,000*	\$2.12*
1967	\$1 147,839,000	\$30,015,000	\$2.02
1966	\$ 912,750,000	\$21,360,000	\$1.43
1965	\$ 735,032,000	\$18,389,000	\$1.21

*Before extraordinary charge of \$1,276,000; \$.09 per share

2. Earnings per share statistics computed: for 1969 through 1965, on average number of shares; for 1964 and prior on the number of shares outstanding at end of each period on earnings reduced by preferred stock dividends where applicable.

3. Assuming full conversion of Series A preferred stock.

4. Statistics for all years prior to 1968, relating to the number of common shares outstanding, have been adjusted to give effect to the two-for-one common stock split on June 4, 1968.

1968	1967	1966	1965	1964	1963	1962	1961	1960
\$ 1 157,963	\$ 1 106,049	\$708,993	\$487,834	\$454,122	\$510,516	\$599,019	\$562,901	\$539,975
\$ 59,960	\$ 54,405	\$ 36,478	\$ 19,956	\$ 15,589	\$ 13,339	\$ 18,715	\$ 13,067	\$ 15,845
\$ 30,845	\$ 28,602	\$ 18,443	\$ 11,021	\$ 8,243	\$ 6,332	\$ 9,553	\$ 6,877	\$ 8,105
\$ 29,569	\$ 28,602	\$ 18,443	\$ 11,021	\$ 8,243	\$ 92	\$ 9,553	\$ 6,877	\$ 11,536
\$2.10	\$1.98	\$1.45	\$1 13	\$.98	\$.73	\$1 16	\$.85	\$1.05
\$ (.09)					\$ (.76)			\$.46
\$2.01	\$1.98	\$1.45	\$1 13	\$.98	\$ (.03)	\$1 16	\$.85	\$1.51
2.7%	2.6%	2.6%	2.3%	1.8%	1.2%	1.6%	1.2%	1.5%
14.4%	15.1%	11.9%	8.9%	7.6%	5.8%	9.2%	7.2%	9.4%
\$ 867	\$ 885	\$	\$ 234	\$ 248	\$ 281	\$ 284	\$ 315	\$ 315
\$ 6,271	\$ 5,023	\$ 4,055	\$ 2,662	\$ 1,850	\$ 3%	\$ 3%	\$ 3%	\$ 5%
\$ 361 151	\$ 364,492	\$301,429	\$210,870	\$180,272	\$187,217	\$201,862	\$193,687	\$184,966
\$ 91,087	\$ 78,255	\$ 63,949	\$ 44,790	\$ 39,317	\$ 39,978	\$ 48,257	\$ 44,781	\$ 35,139
\$ 13,428	\$ 17,298	\$ 16,592	\$ 18,088	\$ 16,099	\$ 12,983	\$ 14,375	\$ 14,171	\$ 5,689
\$ 465,666	\$ 460,045	\$381,970	\$273,748	\$235,688	\$240,178	\$264,494	\$252,639	\$225,794
\$ 160,391	\$ 148,042	\$122,880	\$104,556	\$ 93,375	\$ 96,854	\$ 89,219	\$ 84,865	\$ 61,661
1.80	1.68	1.69	1.98	2.07	2.07	1.79	1.78	1.50
\$ 77,314	\$ 112,496	\$ 98,061	\$ 39,231	\$ 39,385	\$ 37 118	\$ 49,451	\$ 49,358	\$ 75,698
\$ 39,254	\$ 42,647	\$ 42,379	\$ 41,670	\$ 39,707	\$ 40,979	\$ 42,502	\$ 44,188	\$ 10,350
\$ 116,568	\$ 155,143	\$140,440	\$ 80,901	\$ 79,092	\$ 78,097	\$ 91,953	\$ 93,546	\$ 86,048
\$	\$	\$	\$ 4,202	\$ 4,325	\$ 4,956	\$ 5,127	\$ 5,738	\$ 5,738
\$	\$	\$	\$121,561	\$104,759	\$103,402	\$103,935	\$ 93,890	\$ 86,400
\$ 225,652	\$ 200,948	\$161,042	\$125,763	\$109,084	\$108,358	\$109,062	\$ 99,628	\$ 92,138
\$14.93 ⁽³⁾	\$13.48 ⁽³⁾	\$12.48 ⁽³⁾	\$12.68	\$12.84	\$12.53	\$12.94	\$12.07	\$11.59
.52	.77	.87	.64	.73	.72	.84	.94	.93
\$ 429,151	\$ 380,287	\$354,379	\$262,287	\$238,195	\$245,672	\$340,657	\$362,723	\$288,350
51,588	50,146	41,821	32,559	30,173	35,777	42,574	43,713	40,078
12,000,000	10,500,000	9,100,000	8,100,000	7,600,000	8,100,000	8,100,000	8,200,000	7,900,000
\$ 26,163	\$ 22,560	\$ 19,536	\$ 14,616	\$ 14,221	\$ 13,128	\$ 15,294	\$ 13,596	\$ 10,997
\$ 19,585	\$ 16,694	\$ 12,422	\$ 8,504	\$ 7,655	\$ 8,938	\$ 8,379	\$ 7,091	\$ 5,349
\$ 33,130	\$ 26,545	\$ 23,567	\$ 11,616	\$ 8,430	\$ 8,083	\$ 9,382	\$ 17,594	\$ 14,468
770,403	788,948	792,023	84,048	86,505	99,120	102,549	114,769	114,769
14,347 131	14,123,872	12,115,450	9,585,248	8,158,792	8,253,710	8,034,976	7,783,344	7,456,494
24,582	23,512	25,011	24,103	26,443	27,341	28,678	27,783	28,096

Balance Sheets

Raytheon Company and Consolidated Subsidiaries

Assets	December 31 1969	1968
Current Assets		
Cash	\$ 21,361,682	\$ 25,718,513
Accounts receivable:		
Government contracts, direct and indirect, including unbilled costs and fees on cost-type contracts:		
1969, \$10,664,782; 1968, \$8,192,220	52,814,180	48,818,566
Other	86,438,008	74,166,299
Inventories (Note B)		
Fixed price contracts in progress, less progress payments. 1969, \$160,800,872; 1968, \$145,460,178	120,003,091	108,587,846
Other	115,120,515	110,792,649
Prepaid expenses	<u>7,854,638</u>	<u>8,320,133</u>
Total current assets	403,592,114	376,404,006
Investments in Unconsolidated Foreign Companies (Note A)	6,126,984	7 161 191
Property, Plant and Equipment , at cost, less accumulated depreciation and amortization (Note C)	116,347,660	91,811,110
Other Assets		
Patents, processes and other assets less accumulated amortization 1969, \$3,099,155; 1968, \$2,631,062	1,810,578	2,263,857
Deferred charges and long-term receivables	<u>10,958,923</u>	<u>4,571,471</u>
	<u><u>\$538,836,259</u></u>	<u><u>\$482,211,635</u></u>

The accompanying notes are an integral part of the financial statements.

Liabilities and Stockholders' Equity

December 31 1969

1968

Current Liabilities

Notes payable, principally to banks, and current maturity of long-term debt (Note D)

\$ 82,789,557

\$ 79,450,669

Advance payments, less fixed price contracts in progress: 1969, \$67,527,544; 1968, \$51,620,795

18,814,250

26,816,856

Accounts payable

54,634,850

49,745,397

Accrued payrolls, taxes and other expenses

59,992,036

54,389,572

Federal and foreign income taxes (Note F)

29,349,148

(64,565)

Total current liabilities

245,579,841

210,337,929

Long-Term Debt (Note D)

33,431,311

39,254,096

Commitments and Contingent Liabilities (Note G)**Stockholders' Equity**

Serial preferred stock, without par value:

Authorized 3,000,000 shares

Series A, \$1 12 cumulative, convertible, stated value \$2.50

Outstanding 1969 - 1,259,263 shares;

1968 - 1,270,403 shares (Note E)

3,148,158

3,176,008

Common stock, par value \$2.50:

Authorized 30,000,000 shares

Outstanding: 1969 - 14,423,465 shares;

1968 - 14,355,682 shares (after deducting shares in treasury: 1969 and 1968 - 311,735 shares) (Notes E and H)

36,058,662

35,889,205

Capital in excess of par value (Note E)

46,501,665

45,582,377

Earnings reinvested in the business (Note D)

174,116,622

147,972,020

Total stockholders' equity

259,825,107

232,619,610

\$538,836,259\$482,211,635

Statement of Income and Earnings Reinvested in the Business

Raytheon Company and Consolidated Subsidiaries

	Year Ended	
	December 31 1969	1968
Net sales	\$1,285,134,447	\$1,192,366,201
Cost of sales	1,077,090,533	994,703,557
Administrative and selling expenses	107,382,565	104,493,947
Research and development expenses	29,553,173	26,162,904
Interest expense	12,921,238	12,650,378
Other income – net	(11,375,433)	(7,638,805)
	<u>1,215,572,076</u>	<u>1 130,371,981</u>
	69,562,371	61,994,220
Federal and foreign income taxes (Note F)	<u>34,330,000</u>	<u>30,273,724</u>
Income before extraordinary item	35,232,371	31,720,496
Extraordinary item		
Net loss (after tax benefit of \$13,073,796) incurred or anticipated with respect to Elsi S.p.A., an Italian subsidiary, which has discontinued operations (Note I)		<u>1,275,737</u>
Net income	35,232,371	30,444,759
Earnings reinvested in the business at beginning of year	<u>147,972,020</u>	<u>125,640,401</u>
	<u>183,204,391</u>	<u>156,085,160</u>
Cash dividends declared		
Preferred, \$1 12 per share	862,818	867,367
Common 1969 – \$.55 per share; 1968 – \$.475 per share	7,916,719	6,785,449
Pooled company, prior to acquisition	<u>308,232</u>	<u>460,324</u>
	<u>9,087,769</u>	<u>8,113,140</u>
Earnings reinvested in the business at end of year	<u>\$ 174,116,622</u>	<u>\$ 147,972,020</u>
Earnings per common share (Note J)		
Outstanding shares:		
Income before extraordinary item	\$2.35	\$2.12
Extraordinary item		(.09)
Net income	<u>\$2.35</u>	<u>\$2.03</u>
Fully diluted		
Income before extraordinary item	\$2.24	\$2.02
Extraordinary item		(.08)
Net income	<u>\$2.24</u>	<u>\$1.94</u>

The accompanying notes are an integral part of the financial statements.

Statement of Resources Provided and Applied

Raytheon Company and Consolidated Subsidiaries

Resources Provided	Year Ended	
	December 31 1969	1968
Net income	\$35,232,371	\$30,444,759
Depreciation and amortization		
Property, plant and equipment	22,153,149	19,701,449
Patents, processes and other assets	468,093	463,872
Investments in unconsolidated foreign companies	189,168	344,291
Disposal of property, plant and equipment	1,447,562	1,995,470
Sale of common stock under option plans	1,060,895	2,350,510
Decrease in investments in unconsolidated foreign companies, exclusive of amortization	845,039	1,567,346
Decrease (increase) in working capital	8,053,804	(12,988,126)
	<u>\$69,450,081</u>	<u>\$43,879,571</u>
Resources Applied		
Additions to property, plant and equipment	\$48,137,261	\$33,313,100
Dividends declared	9,087,769	8,113,140
Increase (decrease) in other assets exclusive of amortization of patents, processes and other assets	6,402,266	(996,153)
Decrease in long-term debt	5,822,785	3,442,978
Capital transactions of a pooled company prior to acquisition		6,506
	<u>\$69,450,081</u>	<u>\$43,879,571</u>

The accompanying notes are an integral part of the financial statements.

Notes to Financial Statements

Note A: Principles of Consolidation

The consolidated financial statements include the accounts of the parent company and its wholly-owned domestic and foreign subsidiaries. Consolidated domestic and Canadian subsidiaries are included on the basis of years ending in November or December. Consolidated foreign subsidiaries are included on the basis of years ending in September or November. Certain accounts in 1968 have been reclassified to be comparable with those of 1969.

The company acquired all of the capital stock of United Engineers & Constructors Inc. and the business and net assets of P.E.D., Inc. during 1969 in exchange for 500,000 shares of Series A preferred stock and 8,551 shares of common stock respectively. The acquisitions have been accounted for as poolings of interests, and their operations are included for the entire year 1969. The financial statements for 1968 have been restated to include the acquired companies.

During 1969, the company relinquished control of an unconsolidated foreign company as part of a reorganization. As a result, the company ceased to adjust its investment for its share of the net earnings or losses of the foreign company but continues to amortize over a ten year period the excess of cost over equity in underlying net tangible assets at date of acquisition of control. Such unamortized excess amounted to \$756,667 and \$945,835 at December 31, 1969 and 1968, respectively. Investments in other unconsolidated foreign companies are stated at cost.

The net assets, net sales and net income of consolidated foreign companies (other than Canadian) were:

	1969	1968
Net assets	\$ 25,597,713	\$ 21,372,699
Net sales	\$162,019,987	\$113,417,626
Net income	\$ 4,092,198	\$ 1,477,131

Note B: Inventories

The company follows the practice of accruing income from certain fixed price contracts on the percentage of completion method with costs and estimated profits included in sales as work is performed. Accrued income is based on that percentage of estimated total income that incurred costs to date bear to total estimated costs after giving effect to the most recent estimates of cost and funding at completion. On certain fixed price contracts for United States Government business, increased funding has been assumed based on equitable adjustments of contract prices for increased scope and other changes ordered by it. Some contracts contain incentive provisions based upon performance in relation to established targets to which applicable recognition has been given in the contract estimates. Many of these contracts extend over long periods of time and revisions in cost and funding estimates during the progress of work have the effect of adjusting income in the current period applicable to performance in prior periods. When the current contract estimate indicates a loss, provision is made for the total anticipated loss. In accordance with these practices, fixed price contracts in progress are stated at cost plus estimated profit but not in excess of realizable value.

Other inventories are stated at cost (partly on a first-in, first-out, and partly on an average basis) but not in excess of net realizable value. The composition of such inventories at December 31 is as follows:

	1969	1968
Finished goods	\$ 32,100,367	\$ 31,582,994
Work in process	50,567,519	52,479,801
Materials and purchased parts	34,057,874	30,542,699
	<u>116,725,760</u>	<u>114,605,494</u>
Less progress payments received	1,605,245	3,812,845
	<u>\$115,120,515</u>	<u>\$110,792,649</u>

Note C: Property, Plant and Equipment

Balances, at cost, by major classification at December 31 are as follows:

	1969	1968
Land	\$ 4,759,296	\$ 3,764,425
Buildings and leasehold improvements	64,346,865	50,877,451
Machinery and equipment	172,706,820	148,873,954
Equipment leased to others	2,873,042	3,132,095
	<u>244,686,023</u>	<u>206,647,925</u>
Less accumulated depreciation and amortization	128,338,363	114,836,815
	<u>\$116,347,660</u>	<u>\$ 91,811,110</u>

Generally, provisions for depreciation are computed on the sum-of-the-years digits method, except for certain subsidiaries that use the straight-line or declining balance method. Useful lives, on which depreciation provisions are based, approximate U.S. Treasury guidelines. Leasehold improvements are being amortized over the lesser of lease periods or estimated useful lives.

Note D: Long-Term Debt

Long-term debt consists of the following:

5½ % notes payable, \$1,000,000 semi-annually, with balance payable December 1 1981	\$29,000,000
Other notes (principally in the range of 5 % to 6 %) payable in installments, maturing at various dates from 1970 to 1982 (including mortgage notes, \$3,478,283)	8,306,283
	<u>37,306,283</u>
Less amounts maturing during 1970	3,874,972
	<u>\$33,431,311</u>

The aggregate amounts of indebtedness maturing in each of the succeeding four years are: 1971 \$2,812,366; 1972 \$2,836,084; 1973 \$2,815,203; 1974 \$2,841,808.

Under the agreement covering the 5½ % notes due in 1981, \$81,979,849 of earnings reinvested in the business at December 31, 1969, was unrestricted with respect to cash dividends on common stock.

Note E: Capital Stock

Changes during the year ended December 31, 1969 in capital stock were as follows:

	Series A Shares	Preferred Amount	Common Shares	Common Amount	Capital in Excess of Par Value
Balance at beginning of year	1,270,403	\$3,176,008	14,355,682	\$35,889,205	\$45,582,377
Shares sold to officers and employees under stock option plan			56,643	141,607	919,288
Conversion of Series A preferred stock to common stock	(11,140)	(27,850)	11,140	27,850	
Balance at end of year	<u>1,259,263</u>	<u>\$3,148,158</u>	<u>14,423,465</u>	<u>\$36,058,662</u>	<u>\$46,501,665</u>

The Series A, \$1.12 cumulative preferred stock is convertible into common stock on the basis of one share of Series A for one share of common stock. Each share of Series A has one vote per share. The company may redeem preferred shares on or after January 1 1972, at prices beginning at \$27.50 and declining to \$26.25 per share on or after January 1, 1977. The aggregate involuntary liquidation value of the shares outstanding at December 31, 1969, based on \$11.29 per share, is \$14,217,079.

Note F: Federal and Foreign Income Taxes

The company and its domestic consolidated subsidiaries record provision for federal income taxes on pretax accounting income (adjusted principally for amortization of excess investment costs and in 1968 for results of operations of unconsolidated foreign subsidiaries) at rates in effect under existing tax law, less investment tax credits (1969 \$1,201,848; 1968 \$1,815,394) and other tax credits. Foreign subsidiaries have recorded provision for income taxes at applicable foreign tax rates in a similar manner. Except for the foreign subsidiaries of The Badger Company, Inc., no provision has been made for United States or foreign taxes that would accrue if the retained earnings of the foreign subsidiaries were distributed in the form of dividends.

Income reported for federal and foreign tax purposes differs from pretax accounting income due to various requirements of internal revenue codes and the company's accounting practices. The differences are not fully determined until after the reporting of the results for the year. At December 31, 1969, the net credit balance of deferred taxes and the net increase during the year were estimated to be \$11,000,000 and \$4,500,000 respectively.

Note G: Commitments and Contingent Liabilities

At December 31, 1969, the company had long-term leases on real property expiring on various dates subsequent to 1972, requiring annual rentals on a net lease basis of approximately \$7,900,000 through 1972 and lesser amounts thereafter.

Certain of the negotiable instruments received in connection with a customer contract were sold during the years 1966 through 1969 without recourse except in the event of failure of the company to perform. The related contingent liability at December 31, 1969 amounted to \$6,629,158.

Various claims, generally incidental to the conduct of normal business, are pending or threatened against the company from time to time. Ultimate liability, if any, is presently indeterminable and, in the opinion of management, should have no material adverse effect on the financial condition of the company.

Note H: Stock Options

During the year ended December 31, 1969, options for 123,750 shares were granted to officers and employees, under the 1968 Qualified Stock Option Plan, at purchase prices equivalent to 100% of the fair market value on the date of grant. Options for 56,643 shares were exercised at prices ranging from \$11.81 to \$44.09 per share, and options for 45,007 shares expired.

There were outstanding at December 31, 1969, options to purchase 592,008 shares of common stock (569,908 shares at December 31, 1968) at prices ranging from \$11.81 to \$56.03, of which options for 229,139 shares were exercisable. All outstanding options expire at various dates to December 23, 1974.

At December 31, 1969, the following shares of common stock were reserved:	
For stock options (Note H)	701,778
For conversion of outstanding Series A preferred stock	1,259,263
For contingent issuance of shares in the acquisition of P.E.D., Inc.	31,449
	<u>1,992,490</u>

Note I Extraordinary Item

The 1968 extraordinary loss of \$1,275,737 consists of \$14,349,533 representing the company's write-off of its investment in, and accounts receivable from, Elsi S.p.A., and payment or provision for guaranteed loans and other costs, reduced by a total estimated tax benefit of \$13,073,796.

Note J Earnings per Common Share

Earnings per common share shown in the Statement of Income and Earnings Reinvested in the Business are based upon the weighted average number of common shares outstanding during each year after giving retroactive effect to common shares issued in poolings of interests as if effected on January 1, 1968. Income before extraordinary item and net income are reduced by the Series A preferred stock annual dividend requirements (pro forma basis in 1968 and 1969 for the 500,000 shares issued in December 1969).

The fully diluted earnings per common share assumes the full conversion of the Series A preferred stock, and the additional shares resulting from the exercise of all outstanding stock options with prices below the average market price for the year reduced by the number of shares repurchasable from the assumed proceeds of the exercise of the options. No dilution would result from the issuance of the contingent shares in the acquisition of P.E.D., Inc.

Note K: Pension Plans

The company and its consolidated subsidiaries have several plans covering substantially all employees, including certain employees in foreign countries.

Current service costs and interest on prior service costs are accrued and funded as incurred. Generally, prior service costs are amortized and funded over periods of from twenty to thirty years.

Unaccrued prior service costs approximated \$20,495,000 at December 31 1969. The amounts funded and accrued exceeded the actuarially computed value of vested benefits at December 31, 1969, for all plans except two, wherein excess benefits amounted to \$1,800,000.

Total pension expense charged to income was \$6,556,240 in 1969, \$6,101,075 in 1968.

Auditor's Opinion

To the Board of Directors and Stockholders
Raytheon Company
Lexington, Massachusetts

We have examined the financial statements of Raytheon Company and consolidated subsidiaries for the year ended December 31, 1969. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. It was not practicable to obtain direct confirmation of certain accounts with the United States Government, but we satisfied ourselves as to such accounts by other auditing procedures. We previously examined and reported upon the financial statements for the year 1968 which have been restated to include the accounts of companies acquired in 1969.

In our opinion, the accompanying balance sheets, statement of income and earnings reinvested in the business, and statement of resources provided and applied present fairly the financial position of Raytheon Company and consolidated subsidiaries at December 31, 1969 and 1968, and the results of their operations and resources provided and applied for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Lybrand, Rose, Broer & Montgomery

Boston, Massachusetts
January 22, 1970

Common Stock Transfer Agents

Morgan Guaranty Trust Company of New York
New York, New York 10015

Harris Trust and Savings Bank
Chicago, Illinois 60690

Bank of America NT & SA
San Francisco, California 94120

The First National Bank of Boston
Boston, Massachusetts 02106

Preferred Stock Transfer Agents

Morgan Guaranty Trust Company of New York
New York, New York 10015

The First National Bank and Trust Company of Tulsa
Tulsa, Oklahoma 74102

Common Stock Registrars

Manufacturers Hanover Trust Company
New York, New York 10015

Continental Illinois National Bank
and Trust Company of Chicago
Chicago, Illinois 60690

United California Bank
San Francisco, California 94104

The National Shawmut Bank of Boston
Boston, Massachusetts 02106

Preferred Stock Registrars

Manufacturers Hanover Trust Company
New York, New York 10015

National Bank of Tulsa
Tulsa, Oklahoma 74102

The Annual Meeting of Stockholders will be held on May 27 1970, at the Executive Offices of the company, Lexington, Massachusetts. Notice of the meeting and proxy material will be sent to stockholders in April.

This Annual Report is submitted for the general information of the stockholders of Raytheon Company and is not intended for use in connection with any sale or purchase of, or as an offer or solicitation of offers to buy or sell, any securities.

Directors

Charles F. Adams
Chairman of the Board

Charles F. Avila
Chairman of the Board
Boston Edison Company

Harvey Brooks
Dean of Engineering and
Applied Physics
Harvard University

Roger C. Damon
Chairman of the Board
The First National Bank
of Boston

Eli Goldston
President
Eastern Gas and Fuel Associates

William J. Hogan
President
Victory Carriers, Inc.

D. Brainerd Holmes
Executive Vice President

Thomas L. Phillips
President

Robert W. Stoddard
Chairman of the Board
Wyman-Gordon Company

Gerald H. Westby
Chairman of the Board
Seismograph Service
Corporation

Management

Charles F. Adams
Chairman of the Board

Thomas L. Phillips
President

D. Brainerd Holmes
Executive Vice President

Corporate Staff Management

John R. Allison
Senior Vice President, Treasurer

Albert H. Bryan, Jr.
Vice President
Government Programs

Harry L. Evans
Vice President
Corporate Development

Fritz A. Gross
Vice President, Engineering

W. Rogers Hamel
Vice President
Corporate Activities
Washington, D.C.

Robert G. Hennemuth
Vice President
Industrial Relations

Robert L. McCormack
Vice President
Director Real Estate Planning

Joseph Oppenheim
Vice President
International Affairs

Allen E. Reed
Vice President
Senior Financial Consultant

Charles H. Resnick
Vice President, Secretary,
and General Counsel

Arthur V. Schene
Vice President, Controller

Martin Schilling
Vice President
Research and Development

Robert L. Seaman
Vice President, Planning

John G. Stobo
Vice President, Manufacturing

Richard P. Axten
Director Financial Relations

John F. Campbell
Director Public Relations

Richard F. Daly
Director Government Marketing

James M. Hill, Jr.
Director Procurement

Stephen W. Rowen
Director Government Contracts

Operating Management

Joseph F. Alibrandi
Senior Vice President
General Manager
Missile Systems Division

Adrian J. Broggin
Chairman of the Board
The Badger Company, Inc.

Henry M. Chance II
President
United Engineers
& Constructors Inc.

John D. Clare
Vice President
General Manager
Raytheon Europe

Edward L. Dashefsky
Senior Vice President
General Manager
Microwave and Power Tube
Division

Luther Davis, Jr.
General Manager
Research Division

Palmer Derby
Vice President
Assistant General Manager
Microwave and Power Tube
Division

Glennon J. Doyle
President
Caloric Corporation

George C. Foerstner
President
Amana Refrigeration, Inc.

Mike W. Fossier
Vice President
Assistant General Manager –
Technical
Missile Systems Division

Francis S. Fox
Chairman of the Board
D.C. Heath and Company

Harold M. Hart
Vice President
Assistant General Manager
Equipment Division

E. Nevin Kather
Vice President
General Manager
Semiconductor Division

Dean M. Laux
President
D.C. Heath and Company

Harry A. Loebel
President
Raytheon Service Company

Justin M. Margolskee
Vice President
Assistant General Manager –
Operations
Missile Systems Division

Ralph A. Martin
Vice President
General Manager
Submarine Signal Division

Joseph F. Shea
Senior Vice President
General Manager
Equipment Division

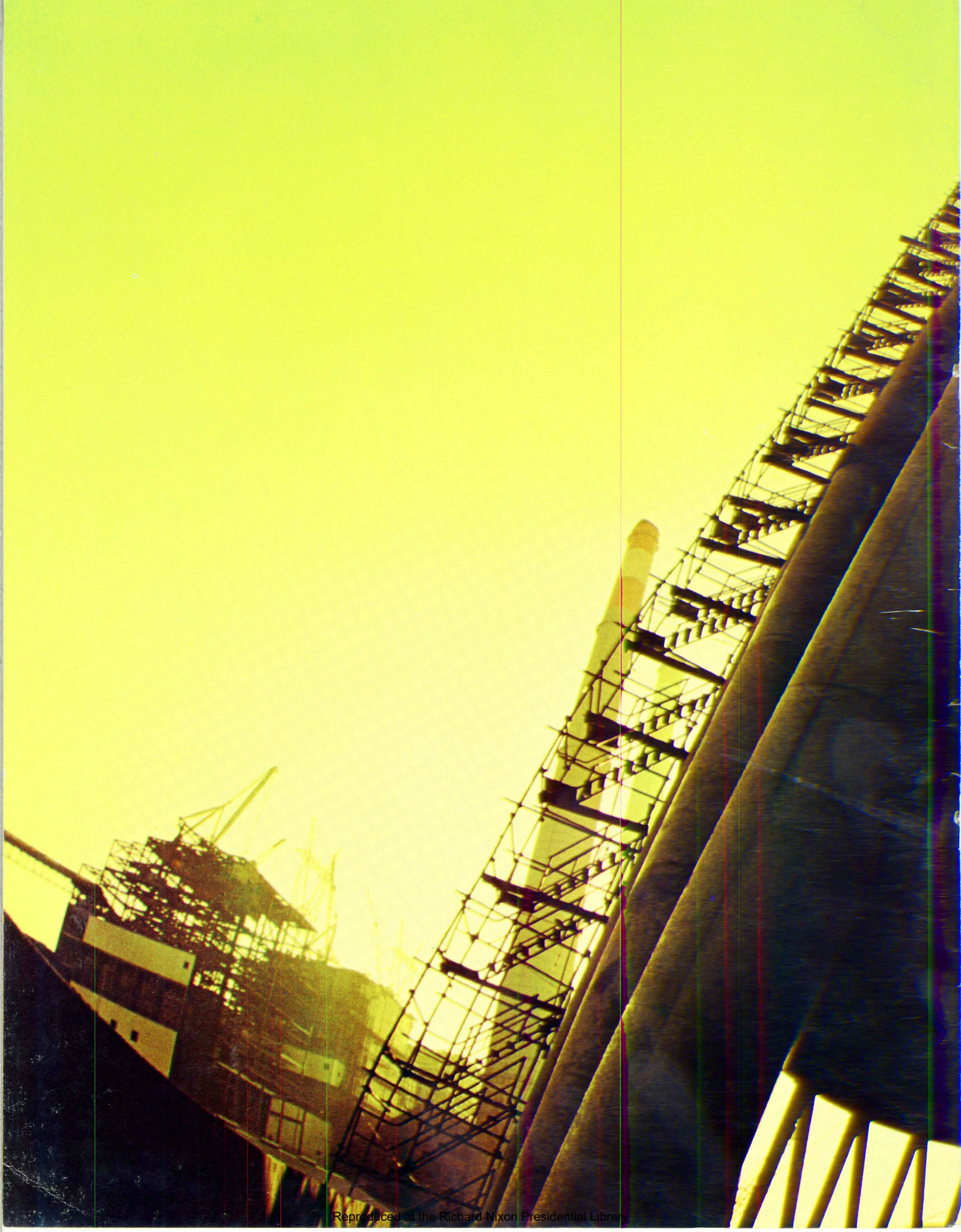
Rulon G. Shelley
General Manager
Electromagnetic Systems
Division

Robert E. Siegfried
President
The Badger Company, Inc.

Gerald H. Westby
Chairman of the Board
Seismograph Service
Corporation

E.D. Wilson
President
Seismograph Service
Corporation

Floyd T. Wimberly
Vice President
Manager SAM-D Program
Missile Systems Division



DATE August 14, 1969

TO: Director for Community Relations
Office of the Assistant Secretary of Defense (Public Affairs)
Room 1E-798, The Pentagon
Washington, D. C. 20301

Name of Organization: RAYTHEON COMPANY
141 Spring Street
Headquarters Address: Lexington, Mass. 02173 Phone: (617) 862-6600
Suite 601 Solar Bldg.
Washington Office Address: 1001 16th St., N.W. 20036 Phone: (202) 638-5200

Purpose of Organization (attached any organization brochures, charters, etc) _____
Electronics Manufacturers

Founded (date and place) Founded as American Appliance Company, Cambridge, Mass
in 1922.

Total membership More than 50,000 employees

Organization publication: Title RAYTHEON NEWS Frequency of
publication Monthly Deadline date 15th of month

National Convention: Annual _____ Other _____ Date and location next convention
Does not apply Estimated Attendance: _____

National Officers: (date of installation and term of office)

President or Commander Thomas L. Phillips, President
~~Principal Staff Officer -~~ D. Brainerd Holmes, Exec. Vice President
Public Relations Director John F. Campbell
Defense Chairman _____
Washington Representative W. Rogers Hamel, V.P. Corporate Activities

We (do X do not _____) wish to receive the bi-monthly Commanders Digest.

We (do X do not _____) wish to receive additional selected Defense information materials.

Name of staff official, office and address of organization as desired on mailing list
John F. Campbell, Director of Public Relations
Raytheon Company, Spring Street, Lexington, Massachusetts 02173

By John F. Campbell
Title Director of Public Relations