

RECEIVING TUBES FIXTURES  
COMPUTERS DATA PROCESSING  
EVENTS INCANDESCENT LAMPS  
**LIGHTING** ONNAISSANCE  
SERVICES DIODES FLASHBULBS

SUBTELEVISION-RADIO HI-FI  
PARTS DEFENSE ELECTRONICS

RECTORS ELECTRONIC SYSTEMS  
RADAR  
EVENTS ELECTRONIC SYSTEMS

ESSAYS PHOTOGRAPHY LIGHTING  
NEW PRODUCTS TRANSISTORS

STROBE LIGHTS PLATED WIRE  
SPECIAL TUBES PICTURE TUBES

WEAPONS WIRE  
PARTS FLUORESCENT LAMPS  
NEON PANELS FLUORESCENT LIGHTING

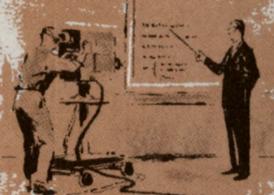
FOR HOME, INDUSTRY, NATIONAL DEFENSE  
TV SETS RADIOS CAMERAS

**SYLVANIA**

OR LAMPS DATA PROCESSING  
**ANNUAL REPORT**

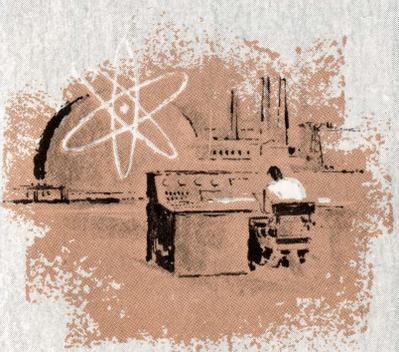
**1958**

## OUR ELECTRONIC ECONOMY



"In the broadest sense, the job of electronics is to gather information, to process it, and then to deliver it to the point where it is needed . . . the detection of an airplane by a radar station and the almost instantaneous alerting of the nation's defenses; the launching and tracking of earth satellites; an electronic computer's summary and interpretation of an entire company's inventory reports; a closed circuit television picture in a police booth showing traffic density on an expressway, or a televised lecture from a university laboratory to classrooms throughout the state; the remote control of a chemical processing plant or an atomic reactor; the guiding of an airplane to a safe landing or a ship to its anchorage. You could name a hundred other examples, because *electronics* is just as broad as your imagination."

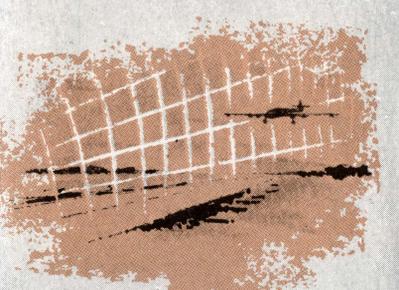
— DON G. MITCHELL,  
Sylvania Chairman



## ANNUAL REPORT 1958

# SYLVANIA

**SYLVANIA ELECTRIC PRODUCTS INC.**



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**EXECUTIVE OFFICE  
DATA PROCESSING CENTER**

1740 Broadway, New York 19, N. Y.  
Camillus, N. Y.

# Highlights of 1958

## Sales

\$333,255,732

Sales slightly below record 1957, reached new high in second half. Defense business increased sharply to new peacetime record of \$77 million, or 23% of total sales.

## Net Income

\$8,373,370

Earnings considerably below 1957, principally because of business recession in first half, but complicated by other factors, including increased product development expenses and unusually intensive price competition.

## Dividends

\$7,458,951

Thirty-first consecutive year of dividends. The Company has paid a dividend in every year since the stock first was sold publicly in 1928.

## New Plants and Equipment

\$11,000,000

More than \$11,000,000 spent for new facilities; now 45 plants and 22 laboratories in 39 communities in 13 states, with total floor-space of 6,800,000 sq. ft.

## Research and Engineering

\$15,000,000

Throughout all levels of the Company, research and engineering costs equalled about 6% of our non-military sales, or \$15,000,000. This does not include a large amount of research and development work being done for National Defense.

## Employee Earnings

\$151,000,000

Employees' wages and salaries, plus non-wage labor costs, set new Company records.

# Four-year comparison of sales and earnings

	1958	1957	1956(*)	1955
Net Sales	\$333,255,732	\$342,957,061	\$332,344,159	\$307,371,315
Net Income	\$ 8,373,370	\$ 12,655,839	\$ 14,835,389	\$ 13,812,970
Preferred Dividends	\$ 376,692	\$ 378,309	\$ 393,217	\$ 835,995
Earned on Common Stock	\$ 7,996,678	\$ 12,277,530	\$ 14,442,172	\$ 12,976,975
Shares of Common Outstanding on December 31	3,585,218	3,526,274	3,515,267	3,020,871
Earnings per Share on the Number of Common Shares Outstanding December 31	\$2.23	\$3.48	\$4.10	\$4.29
Common Share Dividend	\$2.00	\$2.00	\$2.00	\$2.00

(\*) All 1956 figures adjusted to reflect combination of Argus Cameras, Inc., with Sylvania on January 2, 1957.

*Strong improvement in second six months*

*after first-half decline . . .*

*defense business increased sharply . . .*

February 27, 1959

### To the Share Owners and Employees:

SYLVANIA'S OPERATIONS during 1958 reflected two widely different economic situations which should be considered separately from the standpoint of their effects upon the Company's sales and earnings. First, the general business recession, which started in 1957 and extended well into the next year, caused a sharp decline in our sales and earnings during the first half of 1958; second, the economy's gradual resumption of more normal business levels in the latter six months brought a substantial improvement in the Company's total business and operating results.

#### **Major competitive positions substantially maintained or improved**

The decline in Sylvania's business during the first half was largely offset by the record-breaking sales for the second six months, with the result that the total for the year was only slightly below 1957. Moreover, it is significant that your Company's competitive standings in virtually all of our major product lines not only were maintained, but in several instances were further strengthened.

Net sales of \$333,255,732 last year were about 3% behind the record of \$342,957,061 in 1957. About 23% of the total represented National Defense business which increased 20% over the preceding year and included some of the country's most advanced research, development, and production projects. A further indication of the Company's expanding role in electronic defense is the fact that our backlog of unfilled orders at year-end was \$61 million, or 39% ahead of the year earlier.

#### **Effect of recession and other factors upon earnings**

From the standpoint of earnings, the recession affected Sylvania's operations later than in some industries, but hit us with far greater impact early in the first quarter of 1958. As our customers drastically reduced their inventories, our sales volume and earnings declined, particularly in several of our more profitable lines. This situation was complicated by several other major factors, which included: unusually large research and development expense in some of our newer lines which are characterized by extremely rapid technological change in both product design and manufacturing processes; the costly

change-over and re-tooling for our 1959 home electronics line, in the face of the prolonged slump in the consumer durables market; unusually intensive price competition in several major products as a result of lower industry-wide demand.

Although improved sales in the second half produced earnings which were more than double those of the first half, the total for the year was considerably below 1957. Net income totaled \$8,373,370 in 1958, against \$12,655,839 the previous year. After provision for the dividends on the preferred stock, earnings per share of common were \$2.23, comparable earnings in 1957 having been \$3.48 on a slightly fewer number of shares then outstanding.

### **Accomplishments in research, manufacturing, marketing**

In reporting upon Sylvania's operations, it is important to consider not only our sales and earnings but also to review those activities throughout the Company which will determine the future course of our business. In Sylvania's research laboratories and divisional engineering laboratories, significant progress was made in developing new knowledge and new concepts; our manufacturing plants introduced further major improvements in production equipment and processes; new products, improved designs, and broader applications were developed.

### **Continued progress in Sylvania's defense projects**

Especially noteworthy progress was made in our projects for the Armed Services. Among Sylvania's current programs are the data processing project of the Air Force Ballistic Missile Early Warning System (BMEWS); the automatic defense system which comprises the "electronic shield" for the B-58 supersonic bomber; the electronic brain-on-wheels known as MOBIDIC, which is a general-purpose mobile computer for the Army Signal Corps, and a number of other highly advanced projects which cannot be identified because of security considerations. In addition, nearly 40 missile projects are being supplied a wide range of Sylvania components and devices.

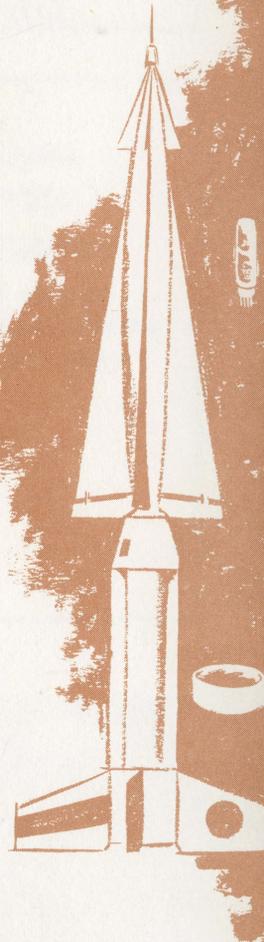
### **Achievements in new product development**

In the industrial, commercial, and consumer product fields, our scientists and engineers recorded a number of achievements, as described in subsequent sections of this report covering the Company's activities in the fields of lighting, electronic components, home electronics, photography and related areas of our business.

### **Merger of Sylvania into General Telephone**

The most significant development of the year for the Company occurred on November 6, when the boards of directors of Sylvania and General Telephone Corporation approved, in principle, a plan to merge Sylvania into General, the country's second largest telephone system which provides telephone service in parts of 30 states and manufactures a wide range of telephone equipment and devices.

As you know, the proposal was approved by the companies' share owners on February 11, 1959, and the merger will be consummated in the near future. The combined company will be a holding company known as "General Telephone & Electronics Corporation", with Sylvania continuing to operate as a separate company, wholly-owned by the parent company.





The merger provides a number of important advantages to various aspects of Sylvania's operations. These advantages include the increased ability to finance our future growth and development; the further diversification of our products as the result of the scientific research and engineering efforts of the two companies; the availability of General's broad experience and background in foreign manufacturing and sales, as added strength for Sylvania's international operations; the increased financial stability afforded by the telephone operations of General; and greater effectiveness on National Defense projects.

From the standpoint of General, the merger will result in increased diversification of investment; substantially increased research and development facilities; a source of know-how in areas of electronic development which may prove of importance to the telephone and communications industry generally and which will enable the General Telephone System to provide better telephone service to the public; and the ability to serve better the National Defense effort.

#### **Meeting the steadily expanding needs of our customers**

Because of the unprecedented potential in the over-all electronics field, as it expands in the future far beyond its present concepts and applications, our present fields of activity provide a strong foundation for meeting the steadily expanding needs of our customers — in National Defense, industry and commerce, the community, and the home.

Whether you have in mind a complete electronic system, or a small component such as a vacuum tube or a transistor, electronics has become, over the space of a remarkably few years, a major key to this country's continued economic development, social progress, and defensive strength. As this trend increases and broadens in the future, with the electronics industry expected to increase its sales and revenues from \$13 billion annually in 1958 to double that amount in less than ten years, Sylvania will have many opportunities for growth and development in highly diversified fields of activity.

#### **Acknowledgment**

In submitting this report to you, the Board of Directors wishes to extend its sincere appreciation to the share owners for their interest and support, and to the men and women throughout the organization for their outstanding spirit, initiative, and cooperation.

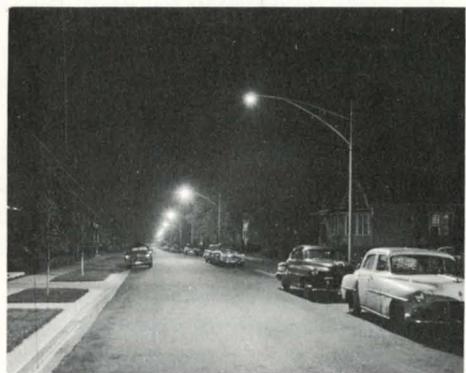
*By order of the Board of Directors,*

CHAIRMAN

PRESIDENT



A "must" for sight-seeing—  
an Argus camera and  
Sylvania flashbulbs.



(Upper left) Sylvania  
fluorescent lighting system  
provides ideal office lighting.

(Center left) Mercury  
street-lighting assures  
excellent "see-ability."

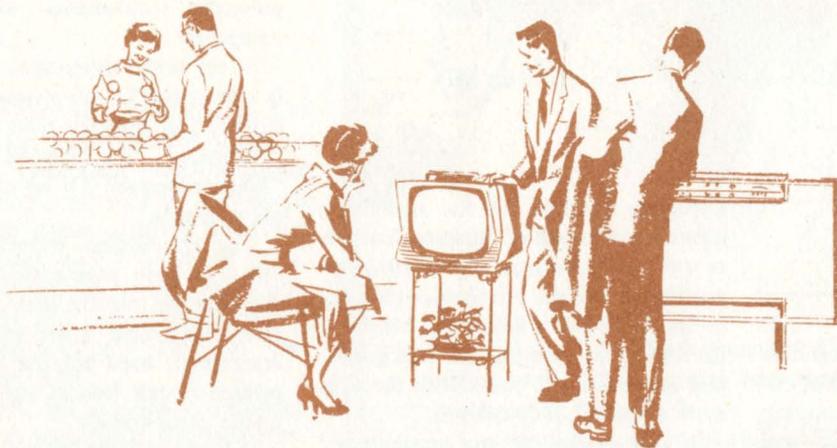
(Above) 17-in. "Dualette"  
combines best features of a  
portable and table model.  
It is first TV receiver in  
all-plastic cabinet.

(Left) The Company is  
supplying various components  
for more than 40 different  
missile projects.

(Right) Another "Silver  
Screen 85" picture tube on  
the way to a customer.



# The Year in Review



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## MARKETING

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*Throughout 1958, greatly increased emphasis was placed on maintaining the highest possible sales levels in the face of lower demand due to the business recession. As a result, the Company returned to more normal volume earlier in the year than would otherwise have been possible, and record over-all sales were achieved in the second half.*

One major aspect of this intensified activity was the realignment of various marketing programs to provide greater flexibility and effectiveness in meeting rapidly changing market conditions as the year progressed.

The Company's marketing organization now includes 29 distribution centers and 32 sales offices, providing efficient customer service in key market areas throughout the country. Our distributor and dealer coverage also was strengthened during the year.

An average nation-wide audience of more than 12 million families is reached each week by our highly successful co-sponsored television program, "The Real McCoys", which enjoyed high ratings throughout the year. In addition to this program devoted to a variety of the Company's products, a wide range of

advertising, promotional, and merchandising programs were undertaken by the individual product divisions.

### Record lighting product sales

Total sales of lighting products set a new record in 1958, the inventory adjustments by our customers being of shorter duration than in other lines. Incandescent and fluorescent lamp sales showed further increases in both the commercial and retail markets, evidencing the additional strengthening of our distribution. Strong sales levels were obtained by the more specialized light sources, including mercury lamps widely used in street lighting.

Sales increases in the photographic lighting field, in which Sylvania is the largest producer, reflected the continued growth of amateur photography. Our fixture business, in terms of unit sales, exceeded 1957, although dollar volume was affected by severe price competition.

### Defense business at new high

Sylvania's defense business rose sharply to a new peacetime high of more than \$77 million, or 23% of total sales. Substantial new awards, and sizeable increases in existing contracts, brought our backlog to \$61 million at year-end. This was 39% greater than the year earlier, and additional large awards are anticipated in 1959.

### Home electronics and components

Our home electronics business softened considerably along with the over-all decline in the consumer durable mar-

ket, but our relative industry position was maintained. To meet the extremely intense competition which characterizes this area of the Company's business, an unusually large number of design innovations were introduced during the year, as typified by the "Dualette", a combination table and portable model.

Our total market for electronic tubes improved in the second half, but the upturn did not offset the decline during the first half, and the year's volume lagged behind the strong sales of 1957. This was due to the decline in the TV and radio set industry; however, our replacement business remained at a good level, in both picture tubes and receiving tubes.

### Argus volume increased

Sales of Argus cameras and other photographic products were slightly ahead of 1957, volume during the second half showing more than the normal seasonal increase because of new products.

### Transistor sales exceed 1957

In the semiconductor product field, sales of transistors showed a substantial increase during the year, reflecting a strengthened design engineering and development program.

### Components and materials

The recession caused demand for plastic and metal parts, as well as chemical and metallurgical materials, to fall behind the previous year, but inventory rebuilding in the latter half resulted in better sales volume.

## INTERNATIONAL

### Canada

With a relatively less severe business adjustment than the United States recession, Canada's over-all economy held up extremely well last year, and total sales of Sylvania Electric (Canada) Ltd. exceeded the 1957 total.

Home electronics sales were strong, paced by the excellent demand for our television sets which embody the same general features as those sold in the U.S. Home radio and high-fidelity phonograph sales were at a relatively good level. As in the United States, stereophonic sound has given additional impetus to the phonograph market.

In the lighting field, sales of incandescent and fluorescent lamps increased over the preceding year, and a comparable gain was made in photoflash lamp sales.

The major appliance business softened with the business adjustment, but it is anticipated that this area of the subsidiary's business will show an improvement in 1959, with the economic outlook considerably more optimistic than a year ago. Gains are also anticipated in the other product lines as the Canadian economy resumes its dynamic upward trend.

### International

Sylvania's international business in 1958 continued the growth trend that has marked this phase of the Company's operations for the past several years. Last year's expansion of sales was particularly significant because of lower economic activity in several of our international markets.

Increased activity in the European market is being considered by the

Company because of the increasing economic strength of Western Europe, as well as the unusually promising opportunities for the electronics industry in the "European Common Market", the uniting of six countries on a gradually reduced tariff basis, with the ultimate objective of free trade.

A realignment of our international marketing organization, to provide greater concentration in areas with unusual potential, has been successful and will provide a strong basis for future expansion.

### Great Britain

Sylvania's associate in Great Britain, Thorn Electrical Industries Ltd., continued to expand its sales and product lines last year. Our associate enjoys a leading position in such growing fields

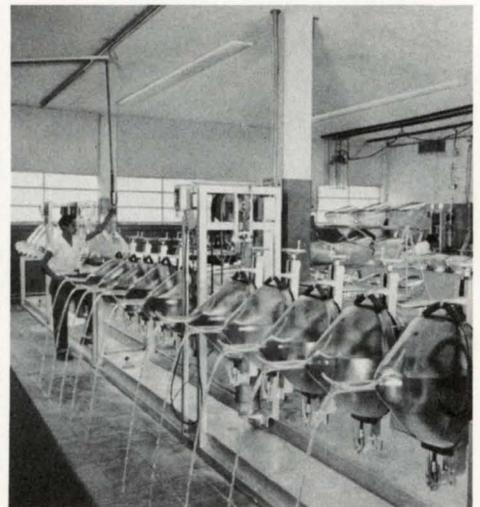
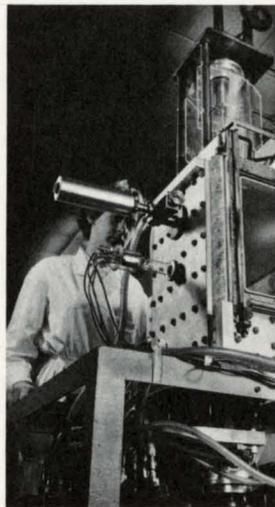
as lighting products; radio and television sets; high-fidelity and stereophonic phonographs; electric ranges; scientific instruments, and aircraft equipment.

In the home electronics field, Thorn is a principal TV set producer in Great Britain. Our associate manufactures the "Ferguson", "His Master's Voice", and "Marconiphone" TV sets, radios, and phonographs.

The production capacity for TV sets has been substantially increased through the introduction of electronically controlled automatic assembly equipment, used for the assembly of printed circuit boards and other electronic components.

A leading British producer of fluorescent lamps, Thorn introduced a number of broader applications of lighting products during the year, including integrated incandescent and fluorescent installations, highway and street lighting, and fluorescent floodlighting.

Sylvania-Thorn Colour Television Laboratories, jointly owned by the two companies, are producing high-precision cathode-ray tubes for technical use, utilizing techniques which show promise for color TV picture tubes. In the semiconductor field, automatic methods for the production of transistors and rectifiers are under development.



(Left) Research on semiconductor devices, a principal activity of Sylvania-Thorn Colour TV Laboratories in England. Laboratories are also engaged in research and development on cathode-ray tubes.

(Right) Production of TV picture tubes at Monterrey plant of Sylvania's manufacturing subsidiary in Mexico, Sylvamex Electronica, S.A.

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## Latin America

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### Operations in Argentina and Brazil

Our subsidiary in Argentina, E. Lix Klett & Cia., is one of that country's principal electronics manufacturing organizations, producing fluorescent lamps and other lighting products, TV receivers, and TV picture tubes. Notable expansion in the production of TV sets and picture tubes, which started less than two years ago, was reported in 1958.

In Brazil, our subsidiary, Produtos Eletricos de Mica Ltda., will soon complete a 60,000-square-foot TV picture tube plant near Sao Paulo to meet the increasing demands resulting from the expansion of the TV manufacturing and broadcasting industries. This subsidiary also increased its production of mica and mica components.

### Developments in Mexico

Sylvania's manufacturing subsidiary in Mexico, Sylvamex Electronica, S.A., of Monterrey, gradually increased the production of TV sets last year, a field that company entered in 1957, and a substantial increase is expected this year. Sales of picture tubes also were higher. Sylvania's two associates in Mexico further expanded their markets. Radios Universal is one of that country's leading manufacturers of radio sets. In the lighting field, Focos, S.A., increased its sales in 1958, successfully building up its program of introducing Sylvania-branded photo-flash lamps throughout Mexico, and Sylvania Electric de Mexico broadened the sale of Sylvania-branded lighting products.

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## Far East

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The second year of operations under the technical assistance agreement with our Japanese associate, New Nippon Electric Co., was completed during 1958, and considerable progress was reported. This associate manufactures receiving tubes, fluorescent lamps, and mercury lamps.

## Sylvania-Corning Nuclear Corp.



Sylvania-Corning Nuclear Corp., owned jointly by Sylvania and Corning Glass Works, completed its first full year of operations during 1958, having scored significant "firsts" in the nuclear fuel elements field.

At year's end, more nuclear reactors were using or have ordered SYLCOR nuclear fuels than those of any other company in the world, the total reactors being 26.

More than 5,000 fuel elements were produced for the "refueling" of the research reactor of Brookhaven National Laboratory at Upton, N. Y., the largest number of nuclear fuel elements ever ordered on the commercial market for a non-military purpose. A contract in excess of \$1 million was received for the manufacture of initial fuel loadings for the 100,000-kilowatt Enrico Fermi Atomic Power Plant near Detroit. Awarded by Power Reactor Development Co., this contract is among the largest in dollar value for commercial reactor fuel elements.

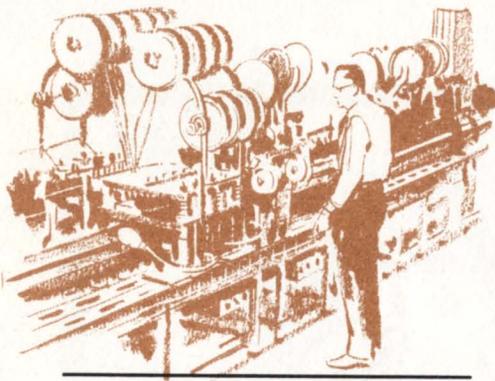
Fuel element production contracts were received for research reactors at four universities — Massachusetts Institute of Technology, Pennsylvania State University, the University of Florida, and McMaster University in Canada — and for research reactors for the Curtiss-Wright Corp. at Quehanna, Pa., the Industrial Reactor Laboratories Inc. at Plainsboro, N. J., and two other reactors at Brookhaven.

At year's end, SYLCOR received a fuel element production contract for refueling the Army Package Power Reactor at Fort Belvoir, Va., the first working prototype of a compact and portable source of nuclear power for areas throughout the world where it is difficult and costly to supply adequate quantities of conventional fuels.

In the foreign market, SYLCOR is producing fuel elements for the test reactors in The Netherlands and Belgium, as well as two research reactors of the French atomic energy commission, and research reactors sponsored by the Governments of Portugal and Israel.

To accommodate the increasing number of production contracts, SYLCOR completed a new commercial fuel element plant at its Hicksville, N. Y., site, adjacent to its plant engaged in work for the U. S. Government.

SYLCOR expects almost 50% of its 1959 business will be for commercial fuel elements, compared to 10% in 1958, and the remainder will be engineering and government work.



## FACILITIES

*The opportunities for continued growth in Sylvania's multi-product operations are reflected in the expansion projects completed or initiated during 1958.*

The Company's total gross investment in land, plant, and equipment at the 1958 year-end was about \$135 million. More than \$11 million was invested during the year in new facilities. Indicating not only Sylvania's current productive strength but, even more importantly, its preparedness for the future, more than 80% of the Company's total gross investment in land, buildings, and equipment has been made in the past eight years.

New projects completed in 1958 increased the total plant and laboratory

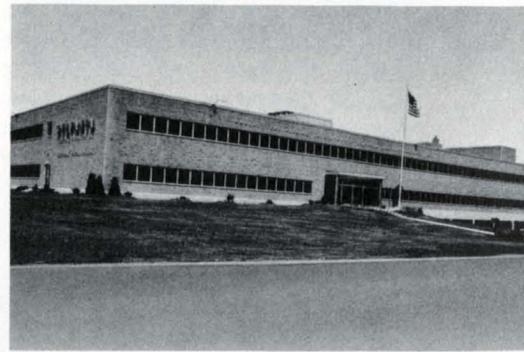
floor space to about 6,800,000 square feet, including 45 plants and 22 laboratories in 39 communities in 13 states. In addition, the 29 distribution centers throughout the country bring the total to about 7,700,000 square feet. Construction now under way or scheduled to start shortly totals more than 245,000 square feet. Capital expenditures presently authorized for 1959 total approximately \$18 million.

Long recognized as a pioneer in the development, construction, and use of automatic and semi-automatic, high-speed manufacturing equipment, Sylvania made notable advances during the year in the installation of manufacturing and materials-handling machinery and equipment that led to significant improvements in costs, product quality, and capacity. Most of this new production equipment was designed and built in our own plants.

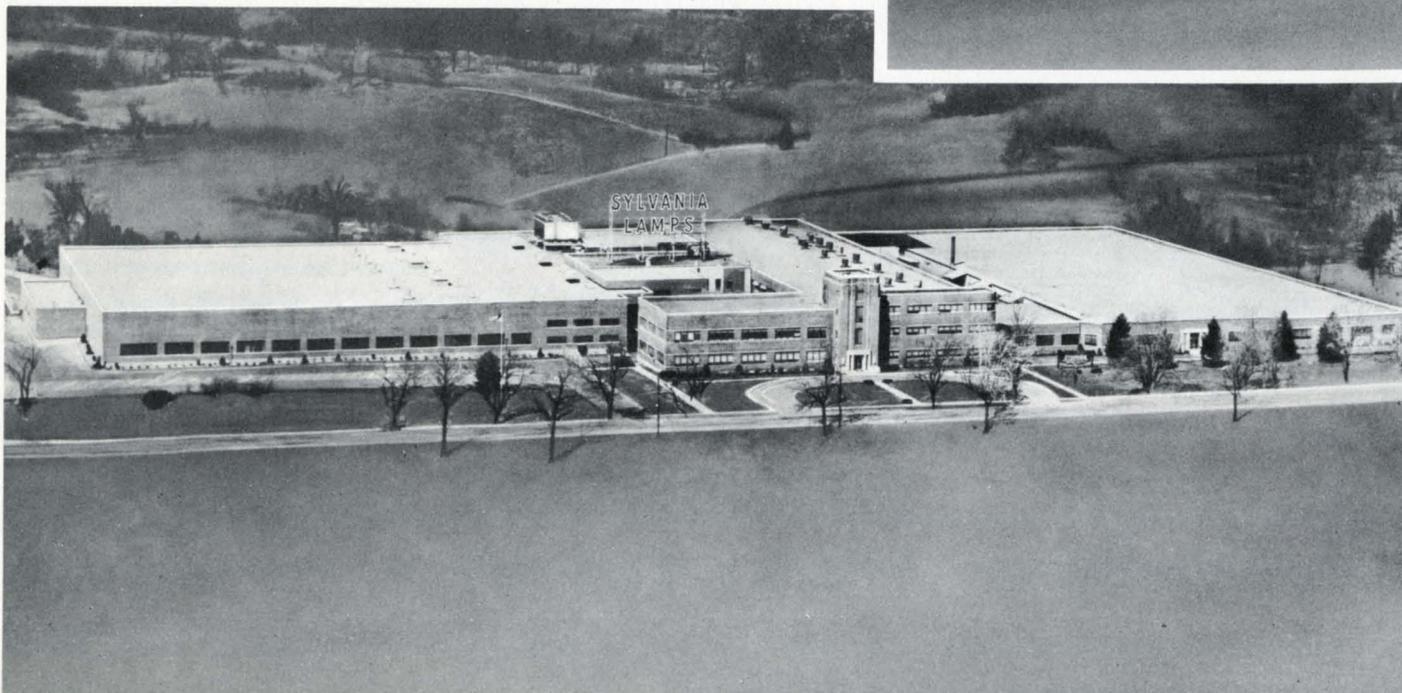
A 190,000-square-foot receiving tube plant, one of the largest in the industry and containing many manufacturing innovations, was opened in Altoona, Pa., in October. A plant investment of this magnitude reflects the Company's firm belief that industry-wide sales of receiving tubes will gradually rise above the present rate of 420 million units a year, and will hold the rate of about 450 million tubes annually for a number of years to come. The new fully air-conditioned plant has three times the space of two older plants it replaced in that community.

Full operations began during the summer in the new 118,000-square-foot manufacturing plant of the fluorescent lamp facility in Danvers, Mass. The new building brings to nearly 316,000 square feet the size of the over-all plant, which is the world's largest facility for the production of fluorescent lamps and tubing. The new building was necessitated by the rapid growth of the fluorescent lamp market and the expanding requirements of the lighting industry in general.

(Top) New Chemical and Metallurgical Division Laboratory at Towanda, Pa.  
(Bottom) Near Buffalo, N. Y., new Amherst Engineering Laboratories of Sylvania Electronic Systems.



(Below) This 316,000 sq. ft. facility at Danvers, Mass., is world's largest for production of fluorescent lamps and tubing.



With the Company playing a substantially increased role in research, development, and production for National Defense, Sylvania Electronic Systems opened four new facilities during the year. These included a 102,000-square-foot leased facility at Needham, Mass., for a new Data Processing Laboratory and associated activities, whose projects include development of the data processing system for the Air Force Ballistic Missile Early Warning System (BMEWS) and the Army's MOBIDIC, a mobile digital computer for the field armies. Near Buffalo, N. Y., the 85,000-square-foot Amherst Engineering Laboratory is undertaking research and development work in communications, countermeasures, radar, and navigation for all branches of the Armed Forces. A 51,000-square-foot laboratory at Mountain View, Calif., is in the fields of ground and airborne reconnaissance systems, and a 40,000-square-foot laboratory at Waltham, Mass., is assigned to missile systems projects.

#### New defense projects facilities

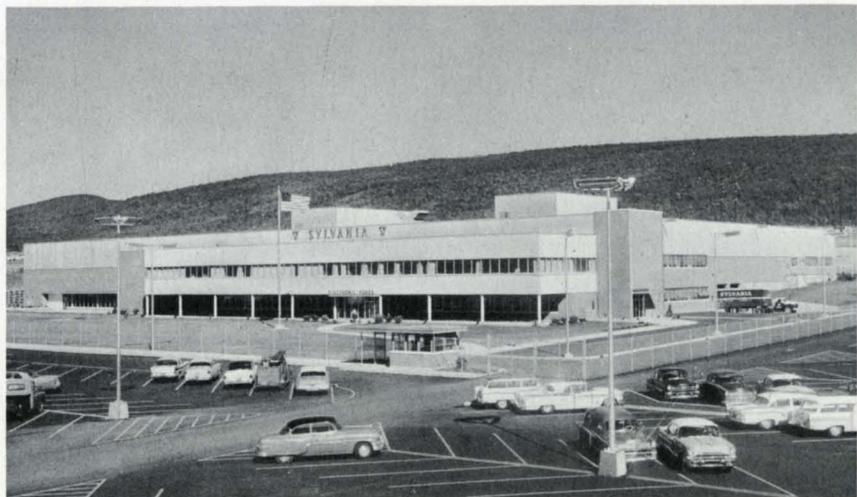
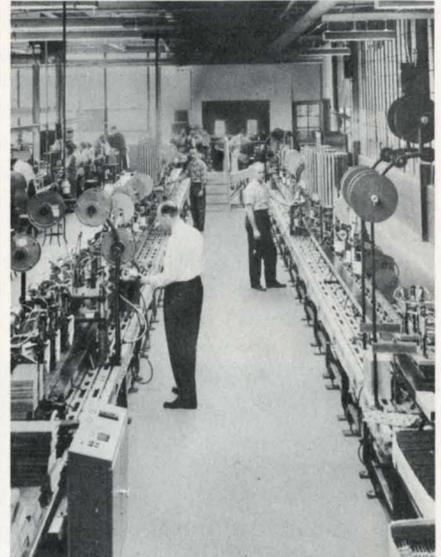
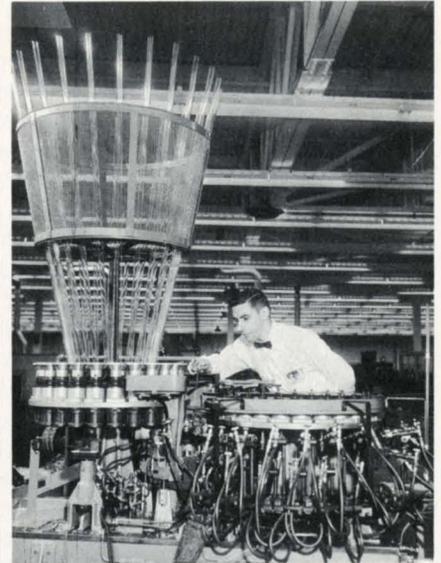
In addition, Sylvania Electronic Systems early this year opened a new 30,000-square-foot combined division headquarters and pilot plant building at Waltham. Now virtually completed are a 76,000-square-foot addition to the Electronic Defense Laboratory at Mountain View, and a 70,000-square-foot plant in Muncy, Pa., which will produce computer components presently manufactured in nearby Williamsport, Pa. The total facilities at Mountain View include five installations totaling 250,000 square feet.

The Chemical and Metallurgical Division formally opened a new 48,000-square-foot laboratory at Towanda, Pa., in October. The facility is engaged in research and product development in many areas of metallurgy and chemistry, and in such fields as phosphors, semiconductor materials, spectrography, and X-ray diffraction.

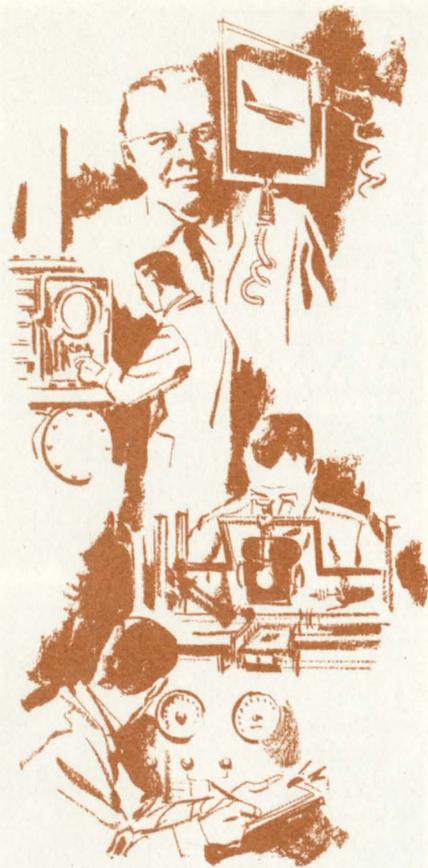
A 33,000-square-foot addition to a principal facility of Sylvania Research Laboratories at Bayside, N. Y., was completed in the fall. The new wing will permit expanded research activities by the Laboratories in such principal fields as chemistry, metallurgy, physical electronics, solid-state physics, and systems and circuits.

## Progress in Production

Sylvania's leadership in the development, construction, and use of automatic and semi-automatic high-speed manufacturing equipment is reflected in the Company's receiving tube plant in Altoona, Pa., and the home electronics plant in Batavia, N. Y. The top photograph shows a new type of machine which is a combination glass cutter and tubulator. Long sleeves of glass are precision-cut at high speed to form the envelope or "bulb" for electronic tubes. Bottom photograph shows production equipment at Batavia which automatically inserts and solders components into printed circuit boards for TV receivers, radios, and phonograph amplifiers. The two lines can be used separately to produce different types of printed circuit boards, and can be tied together by conveyor to produce a single type.



One of the largest manufacturing plants in the electronic tube industry, the new 190,000 sq. ft. fully air-conditioned facility at Altoona, Pa.



## RESEARCH AND ENGINEERING

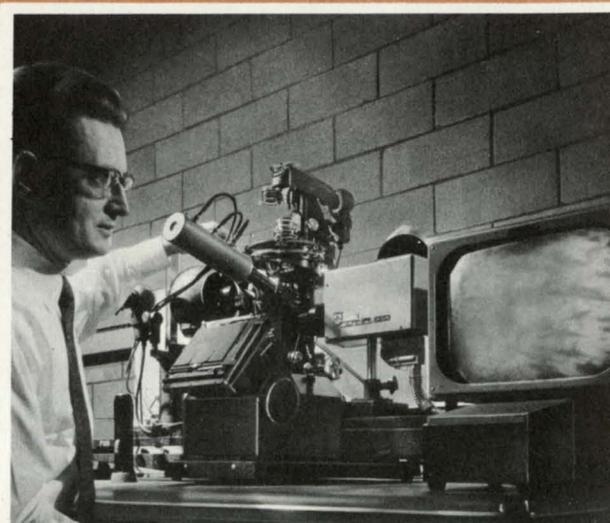
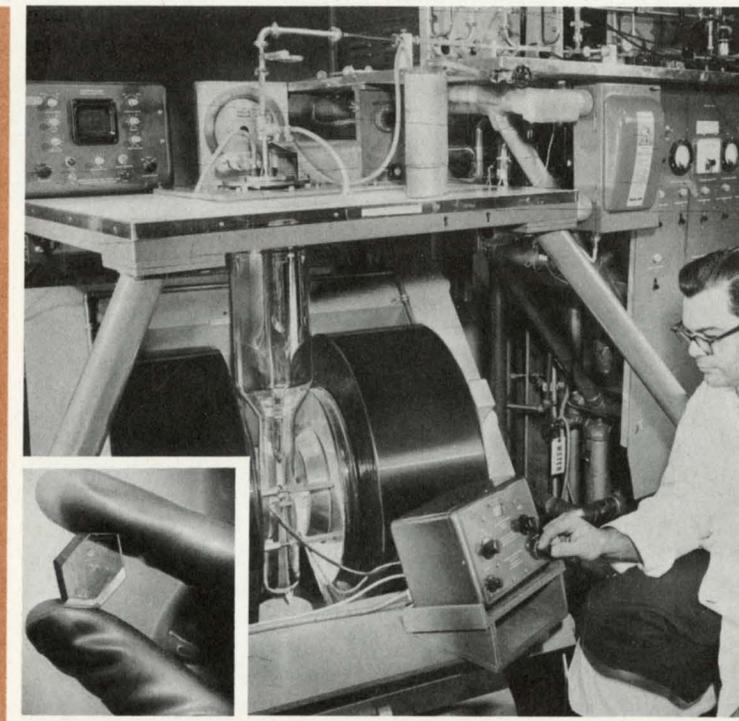
*The constant challenge facing every company in the electronics industry is to keep abreast of the rapid and far-reaching technological change which characterizes our industry — the flow of scientific and engineering developments which enabled the industry to triple its annual volume in 10 years and to reach \$13 billion in 1958. The key to this growth has been the realization that today's research means tomorrow's progress — the creation of new products, new services, new job opportunities, new investments.*

To meet this challenge and to assure Sylvania's future progress, the Company's more than 2,500 scientists and engineers made numerous contributions

in all our basic fields of operation — lighting, electronics, television-radio, photography, and chemistry-metallurgy. These activities in 1958 represented the expenditure of about 6% of each non-military sales dollar, or more than \$15 million, exclusive of the many research and development projects for the government.

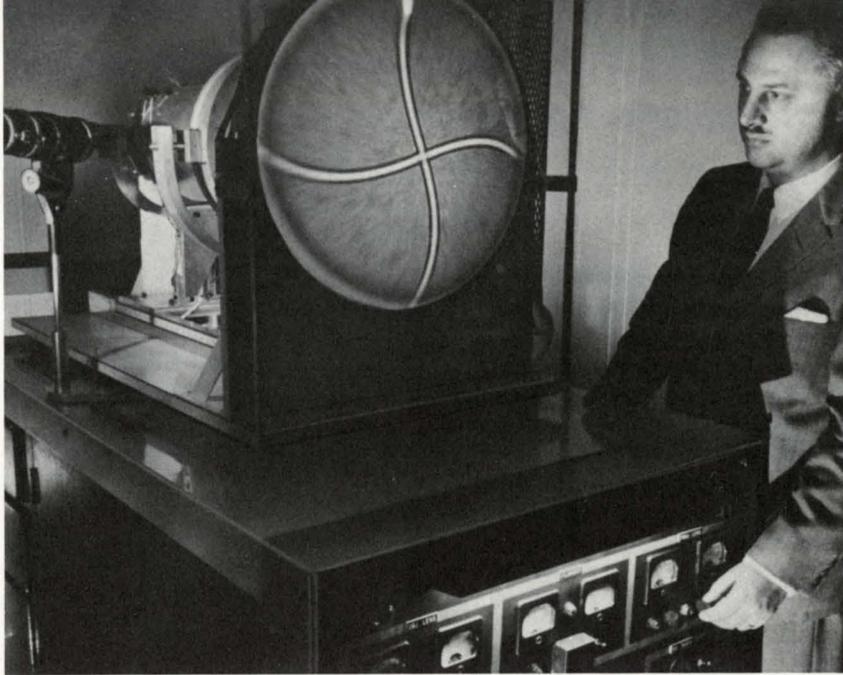
### The search for new materials

The scientists of Sylvania Research Laboratories have the primary assignment of developing profitable innovations in the form of new principles, devices, processes, and materials. One of their foremost programs is the continuing search for superior basic materials needed in various fields of the electrical-electronics industry. The Laboratories last year developed new techniques in the use of radioactive tracers, mass spectroscopy, optical spectroscopy, emission microscopy, and chemistry. This work involves the highly precise and sensitive analysis of such widely-used materials as tungsten, silicon, germanium, molybdenum, alloys, and phosphors.



(Above) This complex laboratory equipment performs double duty: it can serve either as a "MASER" device or as a research tool to study "MASER" materials. "MASER" is expected to increase greatly the range of radar and "seeing power" of other electronic equipment. (Inset) This crystal is heart of "MASER" device.

(Lower right) Closed circuit TV linked to microscope permits study of materials used in semiconductor devices.



This emission microscope screen shows image of a cathode in actual operation, enlarged nearly 200 times. Two crossed lines are tiny grooves in cathode—the “heart” of an electron tube. Such research results in constant tube improvements.

In the field of solid-state physics — including both the development and refinement of semiconductor devices and materials — the Laboratories now are working on a transistor capable of operating over a wide range of temperatures, including the region near absolute zero. Such a transistor would be used in earth satellites and other space electronics where low temperatures would “knock out” a conventional transistor. Also in the semiconductor field, a new method was developed for producing hyper-pure silicon, leading to improved stability and performance of the end product devices.

Under a contract with the U. S. Government, the Laboratories are devising a method of making synthetic mica — an essential component material in most electronic tubes. Completion of the program is expected to lessen substantially the U.S. electronics industry’s dependence on natural sources of mica, chiefly in foreign countries.

In an important advance in metallurgical research, the Laboratories are developing a method for producing tungsten of unprecedented ductility, thereby improving its workability in such processes as wire drawing.

#### Microwave communications receive strong attention

Another major Laboratories program is in the general field of microwave communications. Strong attention is being devoted to the field of “MASER” — Microwave Amplification by Stimulated Emission of Radiation — an amplifying

principle in which a crystal emits stored energy when stimulated by a weak microwave radiation received by such a device as a radar antenna. Its widespread use is foreseen in ultra-long-range radar, missile tracking, space communication, and radio astronomy. It is, for example, expected to increase greatly the present range of radar.

Because “MASER” devices principally are being explored and developed by the industry only on a laboratory basis, a new Sylvania program to “ruggedize, miniaturize, and package” these devices for use in military and industrial applications, and in general scientific research has gained wide attention. A prototype packaged “MASER” system is now under development. The Research Laboratories are also devoting much effort to the improvement of “MASER” crystals, the “heart” of the device; such crystals include synthetic rubies and a substance known as potassium cobaltcyanide, a compound of remarkable electronic qualities.

In a related microwave communication area, research is being done on devices known as “parametric amplifiers”. A less complex device than the “MASER”, a parametric amplifier is able to operate effectively at normal temperatures (whereas the “MASER” crystal must be cooled to near absolute zero, minus 460 F). The device is superior to present-day equipment and will be used where the low-noise qualities of “MASER” are not required.

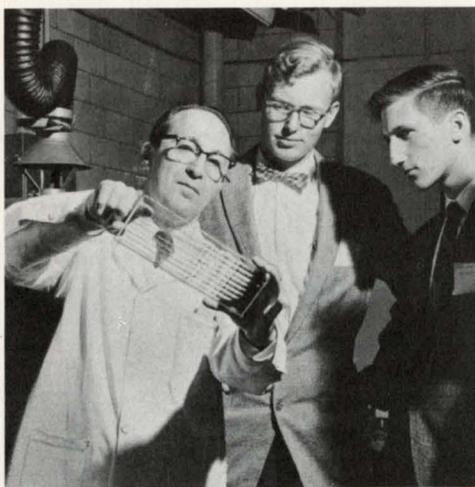
#### Further advances in electroluminescence

Sylvania’s work in the electroluminescent field is in two areas: “Panelescent” lighting and “Sylvatron” devices, the flat panels which produce visual displays or images electronically.

In lighting, the Research Laboratories, working with the close cooperation of the lighting and chemical and metallurgical laboratories, developed electroluminescent materials of greatly increased brightness and efficiency, and in a wider range of colors, permitting broader applications.

Several new non-commercial applications for “Sylvatron” were investigated during the year, bringing the Company appreciably closer to its long-range goal of using the device in radar, computers, various types of instrumentation, and, ultimately, flat-wall television.

(Left) Sylvania scientist describes use of “Sylvatron” image-producing panel in Navy training devices for automatic target tracking of surface ships. (Below) To promote interest in scientific careers, Research Laboratories conduct tours for high school groups. Here, staff member demonstrates spectrographic tests of semiconductor materials.



## Lighting Products

*One of the major keys to continued expansion of the lighting market is increasing the illumination output of the various light sources, and Sylvania Lighting Products made significant increases during the year in the light output of fluorescent, incandescent, mercury, and electroluminescent lamps.*

Intensive research on phosphor structure and on processing techniques led to the attainment of new high levels of light output for fluorescent lamps, representing the highest such level in the lighting industry.

Many modifications of incandescent lamps were introduced during the year, including several types designed for use in home appliances and in a variety of specialized industrial applications. In addition, extensive market testing is being conducted on new bulb shapes and colors.

In keeping with the marked increase in the use of mercury lamps for street and highway lighting throughout the nation, the Company introduced a new "Ruggedized" line of mercury lamps with light output nearly 10% greater than previously attained. The new lamps also are designed to offer extra protection from destructive shocks and vibrations.

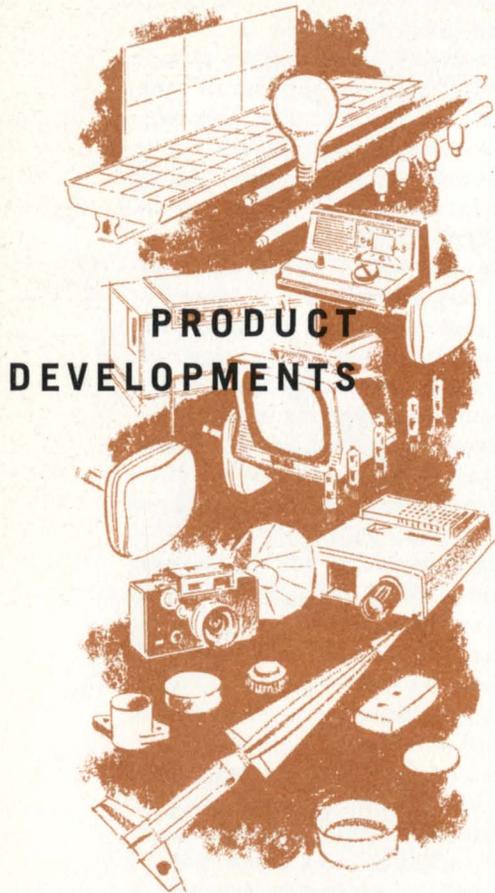
The light output of Sylvania's "Panelescent" lamp, the electroluminescent device which produces a panel of light through the excitation of a phosphor coating on a thin sheet of metal, was increased substantially during 1958, reaching a level of five times greater than existed two years ago.

The one-half millionth "Panelescent" lamp production milestone was passed early in 1959, and application of these devices has been extended to self-illuminating table desk clocks, super-highway marking signs, and various types of instrument dials.

Under a Navy contract, the Division is exploring the feasibility of electroluminescent lighting of aircraft instruments and control boxes, as well as general cockpit lighting. Plans also are now being completed for the use of "Panelescent" lamps on automobile dashboards, and in furniture.

Two major achievements in the development of "Sylvatron" image-producing panels, an extremely important extension of the "Panelescent" principle, were made last year. These include the first military contract for a prototype training device using "Sylvatron" for automatic target tracking of surface ships. Also, the first successful electronic "scanning" in a version of "Sylvatron" was attained. "Scanning" is the process by which a spot of light is moved rapidly across a luminescent screen in repeated horizontal lines, one beneath the other, until the accumulated lines appear as a solid sheet of light, or create a picture.

Two new types of fluorescent fixtures were introduced during the year. These included the "Seneca" series, particularly suited to surface mounting, and a shallow recessed troffer, especially designed to meet the various requirements of the many different ceiling systems. "Sylva-Lume", the modular, interchangeable plastic panel ceiling lighting system introduced in 1957, was extended to new home applications.



(Above) Life-test on scores of different types of incandescent lamps.  
(Right) Production of "VHO" fluorescent lamps, high-intensity light sources.



## Photographic Lighting

Sylvania's continued leadership in photographic lighting was enhanced during 1958 by the excellent acceptance of our new M-25 and M-25B flashbulbs, which provide far greater light output through the use of zirconium foil instead of conventional material — a concept introduced by Sylvania.

Supplementing these midget-size bulbs, introduced primarily for use with widely-used box-type cameras, are the new Sylvania M-5 and M-5B zirconium-filled bulbs — designed for more versatile cameras.

Another new flashbulb — the "Flood Flash" long-duration lamp — is especially useful with high-speed movie cameras. Maintaining a light burst of  $1\frac{3}{4}$  seconds, the new lamp is capable of providing illumination for 75 feet of movie film at 2,000 frames per second.

In the projection lamp field, the "Super Tru-Flector" lamp was introduced. By supplementing its light-focusing internal reflector with low-voltage operation and rugged filament structure for maximum brightness, the diminutive 150-watt lamp is able to outperform 8mm projection systems using much higher wattage lamps.

The new lamp supplements, and is an advanced version of, our "Tru-Flector" projection lamp. Both lamps were made possible by our "Tru-Focus" lamp. A high-precision optical light source with standardized parts, the "Tru-Focus" represented the first new concept in basic projection lamp design in 30 years. The 1,000,000th "Tru-Focus" lamp was manufactured this month.

## Airport Lighting

With the inauguration of civil aviation's jet age and the need for all-weather operation of military aircraft, Sylvania's airport lighting activities have expanded sharply — indicating recognition of our top position in this growing field.

Our EFAS (Electronic Flash Approach System) is presently either installed, under construction, or on order at more than 70 civil and military airports throughout the world, including virtually every major U.S. city. In addition, a new Sylvania runway lighting system is being studied at Washington National Airport as a prospective standard.

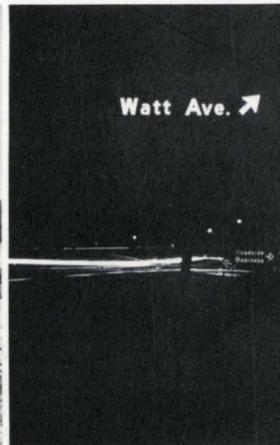
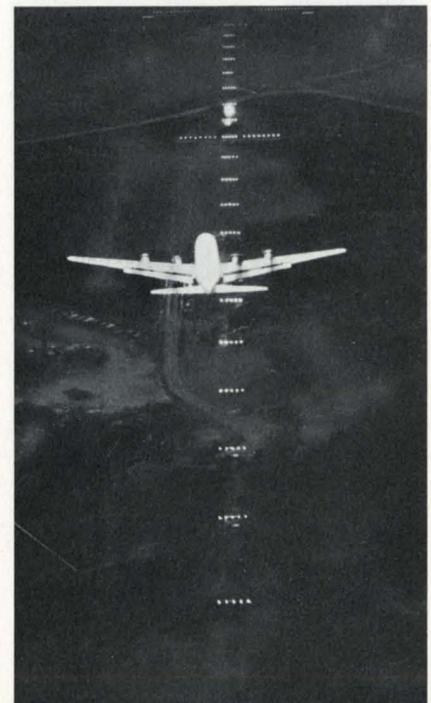
A combination of the two systems would provide the pilot of an incoming plane with the kind of visibility he requires at night and under daytime conditions of poor visibility, from the moment he begins his approach several miles away until he sets his plane down.

EFAS provides early runway identification for incoming planes through a series of electrically-timed Strobeacon units that flash brilliantly in sequence at supersonic speed toward the safe landing area from 3,000 feet beyond the end of the runway. The flashes reach a peak of 30 million candlepower, creating a blue-white fireball of light shooting along the approach to the airport.

The runway lighting at Washington consists of VHO (Very High Output) fluorescent lamps stretched continuously for 1,400 feet on either side of the runway. It represents a major advance toward all-weather operations by clearly illuminating the runway surface features in the touch-down area.



(Above) Mass production of photoflash bulbs. (Below) Sylvania "VHO" fluorescent runway lighting. (Bottom) Electronic Flash Approach System guides plane to landing in poor visibility.



A new application of "Panelescent" lighting—California superhighway marking sign.

## PRODUCT DEVELOPMENTS



Sylvania is one of the top two producers of television picture tubes.

## Home Electronics

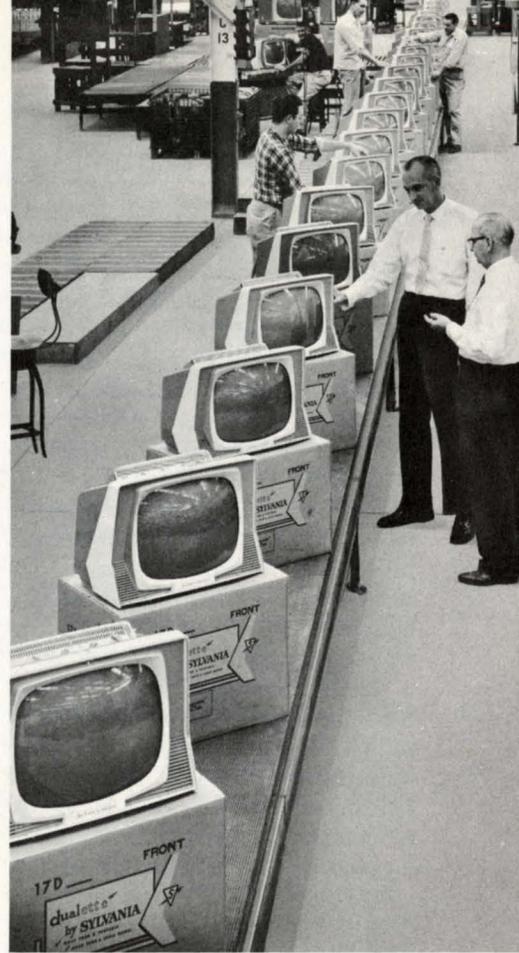
*More new product models were introduced in 1958 by Sylvania Home Electronics than in any previous year. In addition, the Division early in 1959 entered the growing field of closed-circuit television, with the development of a compact, highly-efficient system which is expected to provide new markets for the Company.*

In December, the Company brought out another design innovation in television sets — the first receiver in an all-plastic cabinet. Named the “Dualette”, the 17-inch receiver combines in one set the best features of a table model and a portable. It is expected to create a new model category which eventually will eliminate the table model as it is known today. Use of plastic cabinets allows designers wider latitude in styling and also provides greater safety and weight advantages. Another feature of the “Dualette” is the accessibility, for service purposes, of its chassis. The chassis can be removed from the set in a matter of minutes, providing easy access to all its components and circuits. Through the use of germanium rectifiers, the set operates at a considerably lower temperature than comparable models. In addition, the rectifiers improve over-all performance.

The “Sylouette” prestige television line was also extended to five models. At the request of the U. S. Government, a model was on display in the U. S. Pavilion at the Brussels World’s Fair as an example of American TV set design. With a cabinet less than 10 inches deep, the “Sylouette” is the slimmest console TV in production.

In the home radio field, 11 “Smart Set” table and clock radios were introduced. Featuring ultra-modern styling and slim cabinets, the “Smart Set” models have been in strong demand. Another new product is the Play Timer clock-radio — a cordless, battery set operated by seven transistors.

In line with the growing public interest in realistic, full-range sound reproduction, 13 stereophonic phonographs were introduced, including the in-



dustry’s first phonograph combination having independent AM and FM receivers which provide stereophonic radio listening. Among the new models are two self-contained portables.

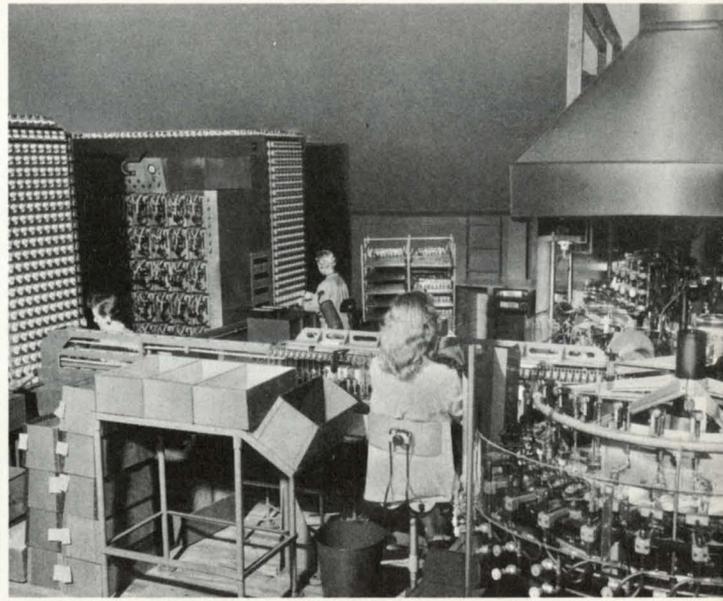
## Electronic Tubes

*The principal supplier of receiving tubes and picture tubes to other equipment manufacturers, and one of the industry’s two principal tube manufacturers in terms of total production, Sylvania Electronic Tubes introduced a number of new tube types during 1958, featuring increased reliability and operating uniformity.*

### Receiving Tubes

Improved performance of many types of electronic equipment, including guided missiles and satellites, were made possible by an imaginative com-

"Dualette" 17-in. combination table model and portable roll off production line. Sets are receiving final check prior to shipment from Batavia, N. Y., plant.



(Left) Hundreds of receiving tube types are produced by Sylvania. Their applications range from electronic computers to guided missiles, from TV sets to communications equipment. (Right) The Company's annual production of receiving tubes exceeds 100 million units. Photo shows highly-advanced equipment at the new Altoona, Pa., plant.

combination of ceramic and glass in a new receiving tube placed in production. Adaptation of the principle of the ceramic "stacked" tube, introduced by the Company in 1954, to the conventional glass envelope or bulb, resulted in a line of "glass" tubes capable of withstanding extreme vibration, shock, and temperature variations.

Television and stereophonic sound equipment will benefit from a line of tubes employing the "Framelok" grid construction which provides greater stability and extended tube life. Other new tubes introduced during the year provide extremely high video output for picture tubes used in television, oscilloscopes, and other equipment.

Experimenting with the very heart of the tube, the cathode, which emits electrons, Sylvania developed a "Sarong-wrap" technique of cathode coating which improves the uniformity of electron emission and results in improved tube performance and longer life. Sylvania continued to add to its expanding line of 12-volt miniature tubes operating directly off an automobile storage battery. To meet the critical

needs of industrial and military applications, another new tube type incorporates an especially "ruggedized" mount to improve reliability under conditions of severe shock and vibration.

#### Picture Tubes

Sylvania has continued to enlarge and improve its line of television picture tubes, while intensifying efforts in the growing field of cathode ray tubes for specialized commercial, industrial, and military applications.

Among new developments in tube design is a "ruggedized" electrostatic focus gun which not only results in greater tube-for-tube uniformity, but has reduced up to 2½ inches the over-all front-to-back length of conventional 110-degree television picture tubes.

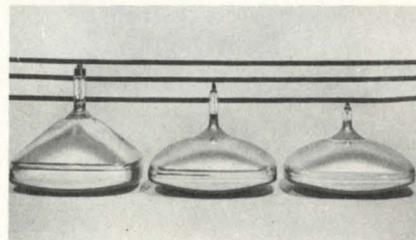
The first completely portable 110-degree check tube was introduced, enabling servicemen to test and adjust TV receivers in the home. As a further aid to servicemen, Sylvania offered a complete correspondence course on television performance and repair to independent servicemen and dealers.

As television cabinets become trim-

mer and more compact, reduction of heat is a major consideration. To meet this problem, the Company produced a line of 110-degree tubes incorporating a feature which permits the design of cooler operating portable and console receivers.

The line of special-purpose cathode ray tubes was expanded to well over 100 for radar, oscilloscope, and materials-processing applications. An intricate triple-gun tube for use in airborne fire control equipment was developed, and development work was conducted on other multi-gun types, incorporating as many as five electron guns.

New "short-neck" picture tube compared with earlier types.



## PRODUCT DEVELOPMENTS

### Argus Photographic Equipment

*The biggest "new product" year in Argus history strengthened the Division's leadership in color-slide photography and established the Argus name in the fast-growing amateur motion picture product field.*

In addition to the compact, lightweight M500 8mm movie projector, which was the first projector to utilize Sylvania's "Tru-Flector" projection lamp, the new

products included five color-slide cameras, five slide projector models, and seven related accessories.

The new Argus Match-Matic C3 camera combines the finest design features with a highly simplified system of photography. It has already achieved popular acceptance equal to that of its predecessor, the original Argus C3, which has been the most widely-used color-slide camera since 1939.

The C33 camera, to be introduced shortly, features drop-in film loading, single-stroke rapid film wind, rapid crank rewind, combined rangefinder-viewfinder, and double-exposure prevention. A light meter which couples instantly to the shutter-speed dial of both the C33 and the new Rapid-Wind C44 model provides the user, in one simple step, with all exposure data needed for the perfect picture.

A prestige model color-slide projector called the Argus President is fully powered for completely automatic forward and reverse operation, as well as for elevation and other controls. Another new slide projector, the Argus Special, introduced Argus quality into the low-cost projector field. The Special offers automatic, push-pull slide changing, jet-flow cooling and other advanced

features normally restricted to more expensive models.

In the very near future, Argus activities in the motion picture field will be accelerated through a substantially broadened product line. Additional 8mm movie products will include a second compact, attractively-styled projector, using the new "Super Tru-Flector" lamp, and two movie cameras of highly advanced design.

### Wire, Metal and Plastic Parts

The Parts Division is a major supplier of custom-made wire, welds, metal and plastic parts to the electrical-electronic, automotive, photographic, toy, packaging, and watch industries. The Division exemplifies the Company's policy of vertical integration, by supplying to other operating divisions items ranging from lamp and electronic tube bases and lead wires, to plastic radio cabinets and fully-assembled photographic pre-viewers.

In response to the needs of industry and the Armed Services for materials



(Above) Argus 8mm movie projector marked entry into motion picture field. (Right) President color-slide projector. (Inset) The new C-33 camera.



that will "take heat", Sylvania has developed a versatile copper wire, clad with a chrome-iron alloy designed to operate under extremely high temperatures, and corrosive and oxidizing conditions. Known as "Oxalloy 28", the new wire extends the operating range of Sylvania's high-temperature conductors to 1300 degrees F.

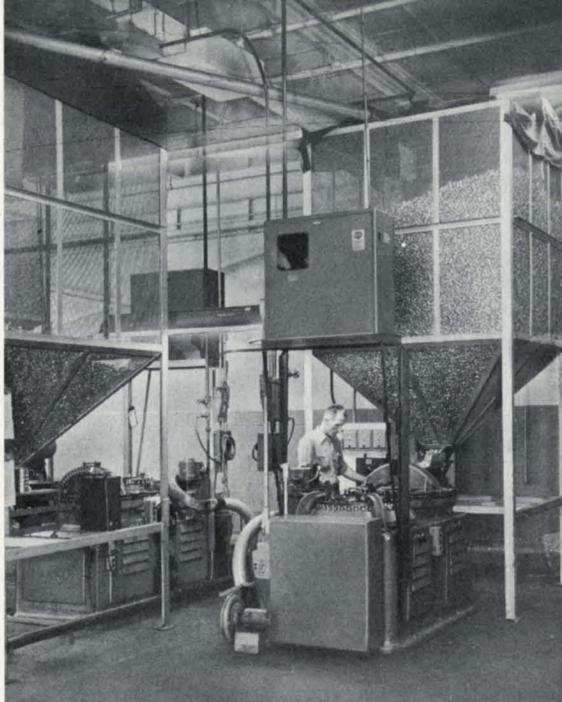
Additional progress in the field of cable sheathing and other electrical-electronics applications has been made possible by a new process for electroplating copper on aluminum strip. The Company has also introduced a new type of plastic container tip that offers closer tolerance in paint spraying, food garnishing, and other spraying applications.

## Chemical and Metallurgical Materials

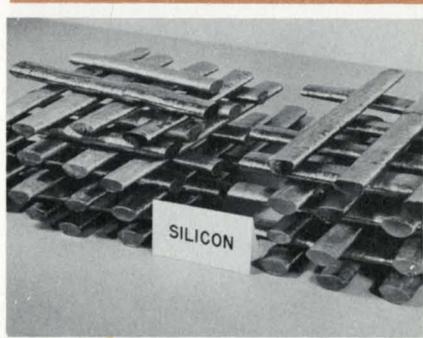
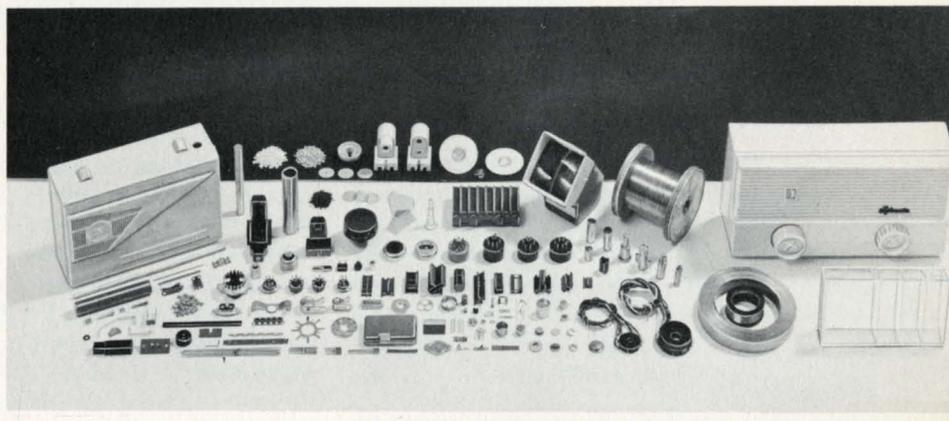
One of the principal manufacturers of phosphors for lighting and electronics, this Division further improved the light output and brightness maintenance of phosphor blends used in picture tubes and fluorescent lamps.

In semiconductor materials, germanium shipments hit an all-time high, while progress in silicon purification was highlighted by the development of a new manufacturing technique which removes from silicon crystals virtually all contaminants. The resultant ultra-purity silicon offers manufacturers of transistors, diodes, and other semiconductor devices, maximum uniformity of electrical characteristics at substantial cost savings.

New methods of purifying potassium silicate and improving its uniformity further advanced the technique of picture tube "screen settling." The production of molybdenum and tungsten was substantially increased to meet the growing need for abundant quantities of "workable" metals and alloys capable of withstanding the extreme temperatures generated by supersonic missiles and rockets. In powder metallurgy, consumable electrodes used in special types of arc-casting are being produced in increasing quantities. Production of tungsten and molybdenum powder for casting, and pellets for vacuum melting, was expanded.



(Left) Lamp bulb bases are produced by the millions. (Below) Some of the many metal and plastic components and parts produced by Sylvania.



(Left) Worth many thousands of dollars are these bars of silicon—a material used in transistors. (Below) Production of high-purity chemicals, used in various electrical-electronic products.



## PRODUCT DEVELOPMENTS



### Electronic Systems and Equipment

*The highly advanced projects being undertaken for the Armed Services by Sylvania Electronic Systems symbolize the steadily expanding role of electronics in National Defense and the Company's growing prominence in this field.*

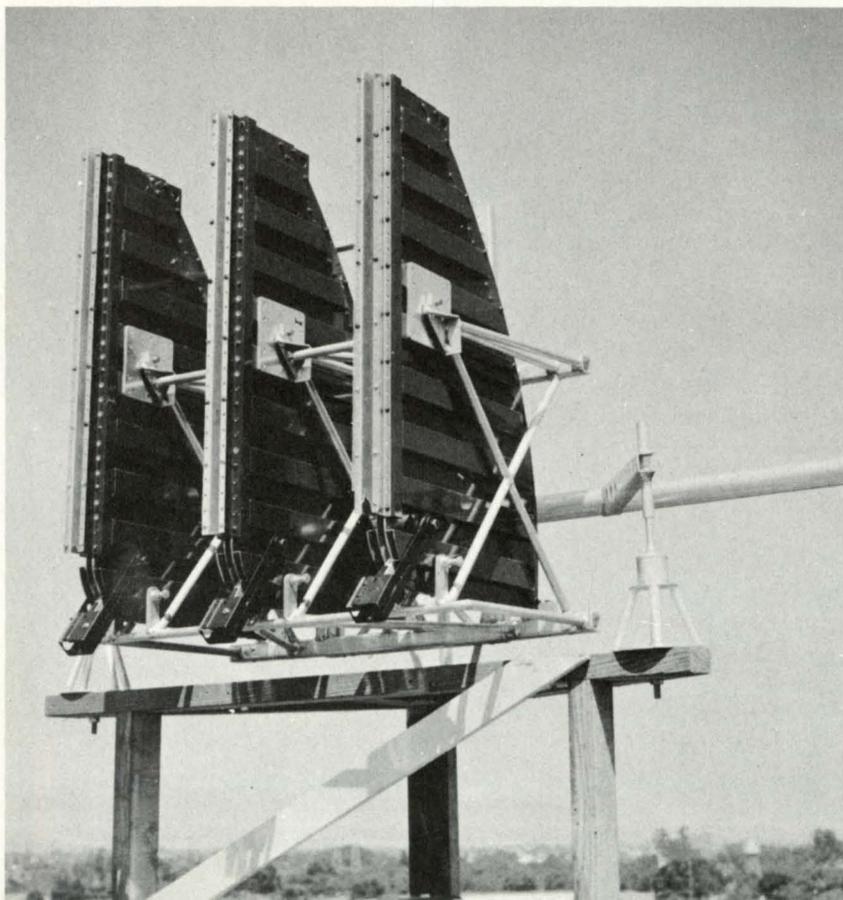
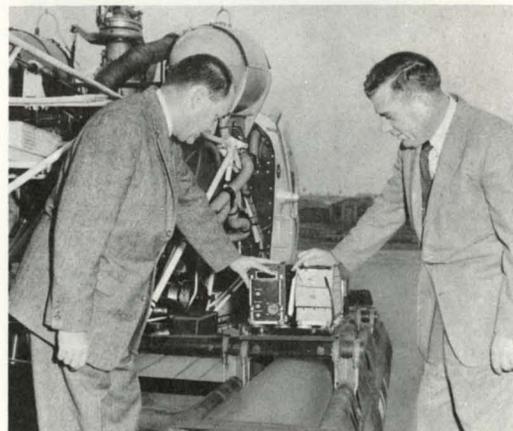
One of the most significant developments of the year was the selection of Sylvania as a major subcontractor on the Air Force's Ballistic Missile Early Warning System (BMEWS), which calls for the development and production of a long-range electronic system for detecting intercontinental ballistic mis-

siles. The Company is responsible for the data processing portion.

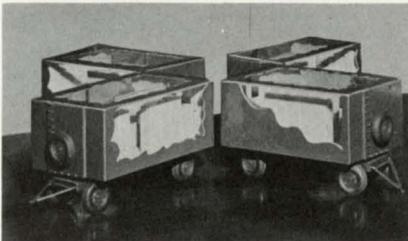
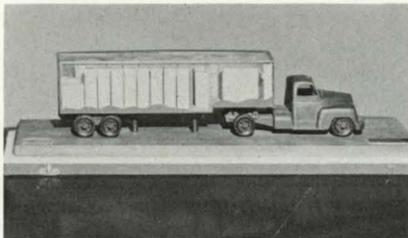
Also in the military data processing field, additional Signal Corps contracts were received late in 1958 for MOBIDIC computers, the mobile completely transistorized computers for field army use.

Important advances were made in three major communications programs for the Armed Services. These extremely high-priority projects call for extensive use of newly-developed techniques in electronic systems and equipment.

In the field of electronic countermeasures and counter-countermeasures, the Division is achieving strong success, including the first successful flight tests of the "electronic shield" or automatic defense system for the Convair B-58 "Hustler" supersonic jet bomber. Awards to date for Sylvania's B-58 work presently total about \$75 million, and additional contracts are now under negotiation.



(Top left) B-58 bomber for which Sylvania is producing "electronic shield". (Top and center) Highly-advanced equipment for various electronic defense applications, including communications, countermeasures, data processing, and other fields. (Bottom) Demonstration of electronic altimeter, the first for helicopters and drones. (Left) Radar antenna of advanced design.



Cut-away scale models of MOBIDIC, mobile fully-transistorized computers for Army Signal Corps.

An additional contract for an airborne countermeasure system was received during 1958. This award is for the development and the production of a countermeasure subsystem for the B-52 long-range bomber.

In addition, several new major study contracts were received from the Air Force. Development of a radar target simulator or counter-countermeasures trainer, called "ACTER", was announced and production was begun under an Air Force contract.

Work progressed on the PLATO anti-missile missile system for Army Ordnance. The objective is a mobile system which would use the NIKE-ZEUS anti-missile missile in defense of overseas military installations. The Company has made several recommendations to the Defense Department concerning the future availability of funds for this program.

Late in 1958, work was begun on an Air Force subcontract in the airborne reconnaissance field. Activities are principally in data processing.

Four types of navigational equipment, each unique in its field, were introduced during the year. These included a low-altitude altimeter, the first developed for use in helicopters and drones; an all-weather radar navigation system; a rescue beacon for locating downed aircraft, and an airborne radio-sonde receiver, the first transistorized radio-sonde for use in reporting weather conditions.

## Special Tubes

Special Tube Operations, a part of Sylvania Electronic Systems, is in the field of especially complex electronic devices. Developments in 1958 included permanent-magnet focusing of traveling-wave tubes — which magnify hundreds of electrical signals simultaneously and are used in electronic countermeasures and radar equipment. This eliminates the need for bulky accessory equipment, resulting in significant weight and power savings of great importance in various uses.

Several new magnetrons were developed, increasing the Company's line of these devices which are used in airborne radar and missile applications; cloud-finding, mapping and missile guidance equipment; airport traffic control, marine, and airline radar; and navigational and fire control radar.

A wide variety of ferrite devices were developed, capable of performing numerous functions in radar equipment and with exceptionally long life. Design improvements in ferrite devices resulted in size and weight reductions — in one case reducing an existing 15-inch device to 5-inch size.

## Semiconductor Products

With industry-wide transistor sales expected to increase five-fold from 47 million units in 1958 to 250 million units in 1962 valued at nearly \$300 million, Sylvania has greatly intensified its research and engineering activities in the semiconductor field. An enlarged engineering staff, increased floor space, and new custom-built production equipment has enabled the Semiconductor Division to develop new designs and new fields of applications for transistors (which amplify electrical impulses), diodes (which detect and switch impulses), and other semiconductor devices.

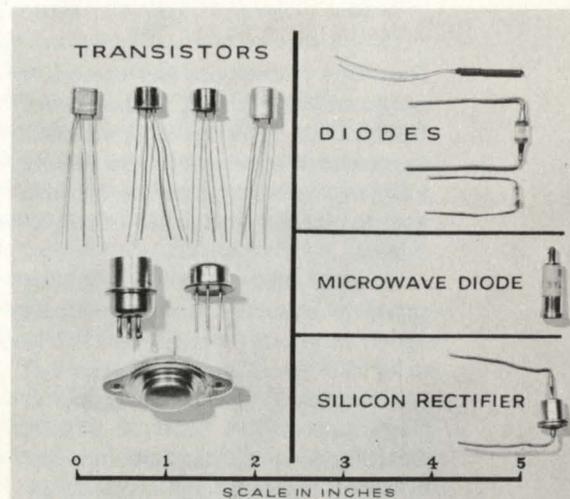
Sylvania's semiconductor products currently include about 150 types of crystal diodes and twice that number of transistor types for portable radios, computers, communications equip-

ment, supersonic missiles and rockets, and earth-circling satellites. Additional applications are indicated for automobile ignition and fuel injection systems, automatic pilots, fuel quantity measuring systems, cabin pressure controls, and air-conditioning systems.

During 1958, the Company made available to manufacturers of military and commercial hi-fi and short-wave equipment, a new series of "extremely stable" transistors with a minimum of feedback capacitance, and developed a line of switching transistors for high-speed data processing systems.

In addition, the Company manufactures a versatile line of microwave diodes for long-range military and commercial radar, and silicon rectifiers for television power supply.

(Below) Some of the variety of semiconductor devices produced by Sylvania. (Bottom) Diodes in high-volume production under most exacting quality standards.



# FINANCIAL AND ORGANIZATION

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## Financial

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### Shareholdings set new record

The number of share owners of the Company's preferred and common stocks at year end was 35,747 — a new record high and about 34% greater than the number of employees. When the merger of Sylvania into General Telephone Corporation is completed in the near future, Sylvania will become a wholly-owned subsidiary and all Sylvania share owners will become share owners of General Telephone & Electronics Corporation.

### Executive Stock Option Plan

Sixty-nine officers and key executives are participants in the Executive Stock Option Plan, the purpose of which is to encourage key employees to acquire a larger proprietary interest in Sylvania and to furnish them additional incentive.

As of January 1, 1958, 184,706 shares of common stock were under option at prices ranging from \$28.18 to \$51.25. In addition, 809 shares of common stock were under option at prices ranging from \$12.71 to \$28.21, these shares representing options issued by Argus Cameras and assumed by Sylvania. During 1958, additional options were granted for 27,900 shares at prices ranging from \$33.75 to \$58.50 per share, such prices representing 95% of the market value of the stock on the date the options were granted. During the year, options previously granted were exercised to the extent of 5,214 shares at an average price of \$32.31 per share, and options for 1,878 shares expired. Options held by former Argus employees were exercised during the year to the extent of 138 shares at an average price of \$25.29 per share. Accordingly, there were outstanding options at the end of 1958 for 205,514 shares at prices ranging from \$28.18 to \$58.50 under the Company's Plan, and



671 shares at a price of \$28.21 for those assumed from Argus. At the beginning and close of 1958, 46,333 and 24,437 shares, respectively, were available for additional options.

### Depreciation policy

Beginning in 1954, the more rapid depreciation of facilities acquired after December 31, 1953, as permitted under the Revenue Code, was used for tax purposes, but was not used in arriving at reported net income because it was believed that the total amount of depreciation and the amortization of defense facilities reflected a sufficiently conservative depreciation policy.

Amortization of defense facilities expired in significant amount during 1957, and beginning January 1, 1958, the book depreciation rates were adjusted to offset the amortization decline and yield an aggregate annual amount which approximates the accelerated tax deduction, thus continuing the Company's conservative depreciation policy.

### Payment of dividends

The provisions of long-term debt and preferred stock contain certain restrictions on the payment of dividends on the common stock. At December 31, 1958, earnings retained for use in the business in the amount of approximately \$8,400,000 were free of the most restrictive of such provisions.

### Long-term debt

The sinking fund debentures require payments in aggregate annual amounts from \$2,120,000 to \$2,370,000 (\$1,370,000 in 1959 because of prepayment), plus contingency payments not in excess of \$700,000 based on income each year through 1967, and varying amounts thereafter. The 4½% convertible subordinated debentures, due 1983, have been called for redemption on March 3, 1959. It is anticipated that substantially all will be converted to common stock.

### Renegotiation of government sales

More than \$77,000,000 or about 23% of 1958 sales are related to defense projects subject to renegotiation, which is about 20% more than the 1957 total. The formal renegotiation proceedings for 1957 and 1958 are still pending, but your management is of the opinion that the net profit realized on such sales is reasonable and that no refund will be required.

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## Employee Relations

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Sylvania's nearly 27,000 employees earned a total of more than \$138 million in wages and salaries during 1958, an amount greater than the Company's total sales only nine years ago.



(Left) Several hundred community and industrial leaders attended dedication of new Altoona, Pa., plant. (Above) Opening-day visitors being welcomed to new laboratories in Towanda, Pa.

A new schedule of wage and salary increases was announced in August, providing a 5-to-11 cent per hour increase for hourly employees effective September 1, 1958, and an additional 5-to-11 cent per hour increase on August 31, 1959. Corresponding increases were provided for salary employees.

The Company also announced it will continue through August 31, 1960, its cost-of-living wage and salary adjustment schedule originally announced in 1955. During 1958, three separate cost-of-living adjustments were granted to all employees, except officers, effective January 27, April 28, and July 28, totaling 4 cents per hour for hourly employees and \$8 per month for salary employees.

A more liberal life insurance and hospital, surgical, medical program was instituted for retired employees.

**Representatives of general and technical press interview Sylvania executives at Towanda laboratories formal opening.**



### Employees' Stock Purchase Plan

On June 27, 1958, 5,840 employees subscribed to purchase 59,081 shares of Sylvania common stock under a payroll deduction plan inaugurated in 1958. Under the Plan, employees will pay \$33.725 per share (95% of the fair market value on June 27, 1958) or 100% of the fair market value at the close of the offering period, May 31, 1959, whichever is lower.

Total shares purchased cannot exceed 5% of stock outstanding, and an employee may not purchase shares for an amount in excess of 10% of his annual pay, nor can an employee acquire more than 50 shares through the Plan. On December 31, 1958, options for 57,096 shares were outstanding, options for 93 shares had been exercised by terminated employees, and 1,892 shares had been cancelled in accordance with the Plan.

### Savings and retirement

Membership in the Sylvania Savings and Retirement Plan, one of the foremost in industry, increased during 1958 to 20,220 or 99% of those eligible to join. The Company's contributions last year amounted to \$3,396,403 and members contributed \$3,026,607. Payments under the Plan in 1958 to those members who left the Company for all reasons, as well as to beneficiaries and pensioners, amounted to \$1,909,337, leaving \$44,909,820 in the fund on December 31, 1958.

### Suggestion program

During the year, the Company paid \$52,910 to employees for suggestions which resulted in improved operations. A total of 1,576 employees shared this amount under terms of Sylvania's Employee Suggestion Program which is one of the oldest in industry, having been inaugurated in Salem, Mass., in 1918. The largest single award last year was to Fred Place of Towanda, Pa., for \$1,642.

### Work stoppages

During 1958, contracts between Sylvania plants and various unions, which were negotiated in 1955, expired. Thirteen contracts were renegotiated without incident. In the course of negotiations, two strikes were called against the Company — at Buffalo and

Batavia. The Buffalo plant resumed production after 17 weeks and Batavia operations resumed after the loss of 6½ production days.

### Executive development

As a major phase of the Company's executive development program, the Sylvania Management Institute was established in 1958. During the year, 146 key personnel attended one-week sessions devoted to broadening the individual's understanding of all areas of management and Company policy objectives, as well as emphasizing the principles of effective management and promoting the interchange of practical experience. Ultimately all key personnel will attend one of the sessions, held at New York University's Gould House, Ardsley-on-Hudson, New York.

## Public Relations

To assure the greatest possible mutual understanding and respect between the Company and the millions of persons who comprise its various publics, the entire organization views as one of its basic responsibilities the maintaining of effective communication with the general public and such key segments as customers, trade associations, plant communities and employees, government, industry, education, and investment and financial groups.

This responsibility is viewed as especially important in the electrical-electronics industry, whose activities strongly influence virtually every phase of every-day life. During 1958, our communications programs included announcement conferences at which new research and product developments were described to principal cross-sections of the public, institutional advertising and information programs, plant tours and ceremonies.

Honoring individuals and organizations who made outstanding contributions to advancing the quality of TV programming during the past year, an independent committee of prominent persons conferred the eighth annual Sylvania Television Awards in January, 1959. The Sylvania Awards have attained leading stature and are widely regarded as a major incentive to the development of better programs.

# SYLVANIA ORGANIZATION



## DIRECTORS

DON G. MITCHELL  
*Chairman*

LAWRENCE A. APPLEY  
*President, American Management Association*

MAX F. BALCOM  
*Retired Chairman and Director of various companies*

RICHARD L. BOWDITCH  
*Chairman of the Board, C. H. Sprague & Son Co.,  
Boston, Mass.*

JAMES P. HALE  
*President of C. F. Hallin Co., Salem, Mass.*

FRANK J. HEALY  
*a Senior Vice President of the Company*

CHESTER F. HOCKLEY  
*Chairman, Davison Chemical Division  
W. R. Grace & Co., Baltimore, Md.*

ROBERT E. LEWIS  
*President*

EDWARD J. POOR  
*Retired Chairman*

DONALD C. POWER  
*President, General Telephone Corporation*

WILLIAM J. WARDALL  
*Director of various companies*

WILLIAM WHITE,  
*President, Delaware & Hudson Co.,  
resigned in November as a Director of  
Sylvania. He joined the Sylvania Board  
in April, 1956. The Directors and  
management of Sylvania wish to express  
their deep appreciation to Mr. White  
for his outstanding counsel and guidance.*

## CORPORATE OFFICERS

DON G. MITCHELL  
*Chairman of the Board*

ROBERT E. LEWIS  
*President*

MATTHEW D. BURNS  
*Senior Vice President*

BENNETT S. ELLEFSON  
*Vice President — Technical Planning*

GEORGE W. GRIFFIN, JR.  
*Vice President — Public Relations*

LEON C. GUEST, JR.  
*Controller*

CURTIS A. HAINES  
*Vice President — Facilities Planning*

W. BENTON HARRISON  
*Senior Vice President — Finance*

FRANK J. HEALY  
*Senior Vice President*

ARTHUR L. MILK  
*Vice President — Government Relations*

MARION E. PETTEGREW  
*Senior Vice President*

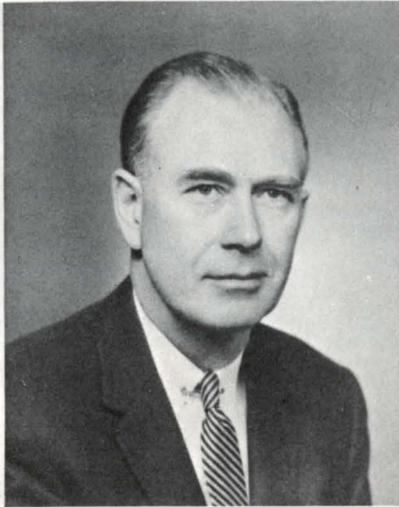
COLE H. PILCHER  
*Vice President — Industrial Relations*

ARTHUR L. B. RICHARDSON  
*General Counsel & Secretary*

HOWARD L. RICHARDSON  
*Senior Vice President*

WALTER R. SEIBERT  
*Treasurer*

BARTON K. WICKSTRUM  
*Senior Vice President — Marketing*



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## Robert E. Lewis Elected President

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In December, Robert E. Lewis was elected President of the Company by the Board of Directors. Prior to his election, Mr. Lewis was a Senior Vice President with over-all responsibility for the Argus Cameras Division and the Semiconductor Division. He is also a Director of the Company.

In assuming the presidency, Mr. Lewis succeeded Don G. Mitchell, who continued as Chairman of the Board of Sylvania and will become President of General Telephone & Electronics Corporation, the combined company resulting from the merger of Sylvania into General Telephone Corporation. Mr. Mitchell had been both Chairman and President of Sylvania since 1955.

Over the past decade, Mr. Lewis has become widely recognized as an important contributor to the science and philosophy of industrial management. He attaches great importance to such principles of corporate organization as participative management, broad delegation of authority and responsibility, and the widest possible communication through all levels of management.

Indicative of his interest in the science of management is the major role he plays in the activities of the American Management Association, an organization he serves as a Director.

Before joining Sylvania, Mr. Lewis was President of Argus Cameras, Inc., an independent company prior to its combination with Sylvania in 1957.

## OPERATING DIVISIONS

### SYLVANIA ELECTRONIC TUBES

MATTHEW D. BURNS, *President*

DONALD W. GUNN, *Vice President — Electronic Tube Sales*

W. HERBERT LAMB, *Vice President — Picture Tube Operations*

WALTER A. WEISS, *Vice President — Radio Tube Operations*

### SYLVANIA LIGHTING PRODUCTS

FRANK J. HEALY, *President*

HENRY F. CALLAHAN, *Vice President — Operations*

O. HOWARD BIGGS, *Vice President — Research and Engineering*

GEORGE C. CONNOR, *Vice President — Photolamp Sales*

GARLAN MORSE, *Vice President — Lighting Sales*

### SYLVANIA ELECTRONIC SYSTEMS

HOWARD L. RICHARDSON, *Senior Vice President*

HENRY LEHNE, *Vice President and General Manager*

### SYLVANIA HOME ELECTRONICS

MARION E. PETTEGREW, *Senior Vice President*

### METAL & PLASTIC PARTS

MARION E. PETTEGREW, *Senior Vice President*

MERLE W. KREMER, *Vice President and General Manager*

### ARGUS CAMERAS

CLINTON H. HARRIS, *President*

JOSEPH H. DETWEILER, *Vice President*

### CHEMICAL & METALLURGICAL MATERIALS

MARION E. PETTEGREW, *Senior Vice President*

GERALD L. MORAN, *Vice President and General Manager*

### SEMICONDUCTOR PRODUCTS

WILLIAM J. PIETENPOL, *Vice President and General Manager*

### SYLVANIA INTERNATIONAL

BARTON K. WICKSTRUM, *Senior Vice President*

KAREL VAN GESSEL, *Vice President and Managing Director*

### SYLVANIA RESEARCH LABORATORIES

BENNETT S. ELLEFSON, *Vice President*

ROBERT M. BOWIE, *Vice President — Sylvania Research Laboratories*

### REGIONAL SALES

BARTON K. WICKSTRUM, *Senior Vice President*

CHARLES A. BURTON, *Regional Sales Vice President — Mid-West*

ROBERT C. HARPER, *Regional Sales Director — Pacific Coast*



## DOING A BETTER JOB – THROUGH ELECTRONICS

From 98 stations located at Sylvania facilities in nearly 70 communities throughout the country, a wide variety of information on many phases of the Company's operations flows over a 20,000-mile private communication network to our Data Processing Center in Camillus, N. Y.

There the information is processed through some 25

tons of complex electronic equipment, including a room-size computer, and the entire organization is supplied vital information in greater detail, more accurately, and more quickly than ever before. This compiling, summarizing, and processing of financial and statistical information – or electronic data processing – was further broadened and improved at Camillus during 1958.

## Twelve Year Review

Year	Net Sales	Net Income	COMMON STOCK					Preferred Dividends Paid	Total Amount Preferred & Common Dividends	% of Net Income Distributed	Reinvested in Business
			Earnings Per Share	Dividends Paid Per Share	Federal Income Taxes Per Share	Common Dividends Paid					
1947	\$95,715,638	\$2,507,075	\$2.10	\$1.40	\$ .34	\$1,409,170	\$397,414	\$1,806,584	72.0	\$700,491	
1948	99,347,751	3,823,382	2.84	1.40	1.96	1,549,170	395,474	1,944,644	50.9	1,878,738	
1949	102,539,866	3,052,840	1.82	1.40	1.36	1,951,670	394,004	2,345,674	76.8	707,166	
1950	162,514,814	8,221,185	5.37	2.00	7.55	2,913,100	392,280	3,305,380	40.2	4,915,805	
1951	202,806,387	8,253,973	4.18	2.00	9.64	3,513,100	475,868	3,988,968	48.3	4,265,005	
1952	235,023,437	6,960,625	3.04	2.00	5.72	3,736,012	1,265,328	5,001,340	71.9	1,959,285	
1953	293,267,408	9,536,181	3.10	2.00†	5.60	4,851,162†	1,253,765	6,104,927	64.0	3,431,254	
1954	281,641,987	9,480,941	2.92	2.00	3.14	5,417,200	1,202,780	6,619,980	69.8	2,860,961	
1955	307,371,315	13,812,970	4.29	2.00	4.66	5,938,244	835,995	6,774,239	49.0	7,038,731	
1956*	332,344,159	14,835,389	4.10	2.00	3.73	7,040,050	393,217	7,433,267	50.1	7,402,122	
1957	342,957,061	12,655,839	3.48	2.00	3.29	7,051,764	378,309	7,430,073	58.7	5,225,766	
1958	333,255,732	8,373,370	2.23	2.00	2.29	7,082,259	376,692	7,458,951	89.1	914,419	

†In addition to a cash dividend of \$2.00 per share a 10% stock dividend was issued.

\*All 1956 figures adjusted to reflect the combination of Argus Cameras, Inc., with Sylvania, January 2, 1957.

# SYLVANIA

SYLVANIA ELECTRIC PRODUCTS INC.

## Simplified Profit and Loss Statement

### SYLVANIA RECEIVED

From sale of products and services . . . . . **\$333,255,732** 100%

### IT COST SYLVANIA

For materials, manufacturing, selling and administrative expenses . . . . . **\$150,344,592**  
 For new machinery as old wears out . . . . . **9,528,479**  
 For taxes (exclusive of social security taxes) . . . . . **10,452,385**  
 For interest on debentures and loans . . . . . **3,491,622**  
 For wages, salaries and non-wage labor costs . . . . . **151,065,284**  
 These items total . . . . . **\$324,882,362** 97.5%  
 Leaving as net income . . . . . **\$ 8,373,370** 2.5%

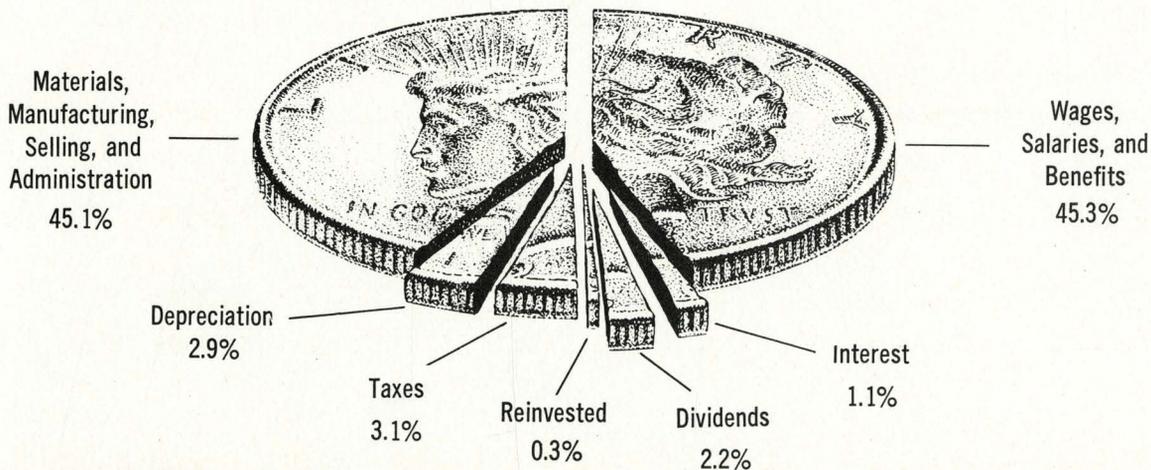
### SYLVANIA DISTRIBUTED

To share owners as dividends . . . . . **\$ 7,458,951** 2.2%

### THERE REMAINED

To be reinvested in the business . . . . . **\$ 914,419** 0.3%

### The Sylvania Sales Dollar and how it was distributed



# Balance Sheets, December 31, 1958 and

(Comments on pages 4-5 regarding pending merger with General Telephone Corporation)

## Assets

	1958	1957
Cash . . . . .	\$ 6,917,483	\$ 8,568,005
Accounts and notes receivable, less allowances for doubtful items and cash discounts (including accounts receivable from United States Government: 1958, \$13,510,427; 1957, \$7,100,136) . . . . .	75,654,482	69,447,655
Inventories, at the lower of cost or market:		
	1958	1957
Finished goods . . . . .	\$ 56,728,781	\$ 54,055,521
Raw materials, goods in process and supplies . . . . .	29,170,802	25,516,349
Prepaid insurance and other expenses . . . . .	3,126,694	1,794,214
<b>Total Current Assets . . . . .</b>	<b>171,598,242</b>	<b>159,381,744</b>
<b>Property, plant and equipment:</b>		
	1958	1957
Land, buildings, machinery and equipment, at cost	\$135,157,445	\$126,877,751
Less, allowances for depreciation and amortization	57,334,085	50,173,451
<b>Investments and other assets:</b>		
	1958	1957
Investments in and advances to unconsolidated subsidiaries, at cost or less . . . . .	\$ 6,595,345	\$ 2,862,840
Miscellaneous investments and other assets, at cost . . . . .	6,395,635	6,933,311
<b>Deferred charges . . . . .</b>	<b>2,476,312</b>	<b>1,428,729</b>
	<u>\$264,888,894</u>	<u>\$247,310,924</u>

# SYLVANIA

SYLVANIA ELECTRIC PRODUCTS INC.

1957

## Liabilities

	1958	1957
Notes payable to banks . . . . .	\$ 3,000,000	\$ 6,000,000
Accounts payable . . . . .	15,471,255	11,522,299
Accrued payrolls and other expenses . . . . .	17,666,461	16,878,891
Federal income taxes . . . . .	8,431,023	11,803,280
Portion of long-term debt due within one year . . . . .	1,370,000	1,164,629
<b>Total Current Liabilities</b> . . . . .	<b>\$ 45,938,739</b>	<b>\$ 47,369,099</b>
<b>Long-term debt</b> (comments on page 22):		
Sinking fund debentures:		
3¾% due 1971 . . . . .	\$ 18,795,000	\$ 19,544,498
4% due 1978 . . . . .	16,250,000	17,000,000
4⅝% due 1975 . . . . .	5,760,000	5,880,000
4¾% due 1980 . . . . .	19,500,000	
Convertible subordinated debentures, 4½% due 1983 (called) . . . . .	17,999,000	
Refinanced and other . . . . .		20,111,146
	<b>\$ 78,304,000</b>	<b>\$ 62,535,644</b>
<b>Contingent liabilities:</b> under guarantees of obligations of unconsolidated subsidiaries, \$4,840,000, and as guarantor of certain financing services for customers, \$960,000, at December 31, 1958.		

## Stockholders' Equity

<b>Preferred stock</b> , \$4 cumulative without par value (redeemable at \$106.50 per share and entitled to \$100.00 per share upon involuntary liquidation, plus accrued dividends); authorized: 95,581 shares; outstanding: 94,173 shares . . . . .	\$ 9,582,103	\$ 9,582,103
<b>Common stock</b> , par value \$7.50 per share; authorized, 6,000,000 shares; outstanding: 1958, 3,585,218 shares; 1957, 3,526,274 shares (stock option and purchase plans comments on pages 22-23) . . . . .	26,889,135	26,447,055
<b>Additional paid-in capital</b> . . . . .	59,563,193	57,679,718
<b>Earnings retained for use in the business</b> (comments on page 22) . . . . .	44,611,724	43,697,305
<b>Total Stockholders' Equity</b> . . . . .	<b>\$140,646,155</b>	<b>\$137,406,181</b>
	<b>\$264,888,894</b>	<b>\$247,310,924</b>

# Statements of Income and Earnings Retained for use in the Business

YEARS ENDED DECEMBER 31, 1958 AND 1957

## Income

	1958	1957
Net sales (renegotiable sales comments on page 22) . . . . .	<u>\$333,255,732</u>	<u>\$342,957,061</u>
Cost of goods sold . . . . .	\$246,003,129	\$250,471,159
Selling, general and administrative expenses . . . . .	51,923,940	50,099,313
Depreciation . . . . .	9,528,479	9,292,875
Taxes, other than federal income taxes . . . . .	6,519,678	7,055,992
	<u>\$313,975,226</u>	<u>\$316,919,339</u>
Operating income . . . . .	\$ 19,280,506	\$ 26,037,722
Other income less other deductions . . . . .	784,486	956,936
	<u>20,064,992</u>	<u>26,994,658</u>
Interest expense . . . . .	3,491,622	2,738,819
Income before federal income taxes . . . . .	16,573,370	24,255,839
Federal income taxes . . . . .	8,200,000	11,600,000
Net income . . . . .	<u>\$ 8,373,370</u>	<u>\$ 12,655,839</u>

## Earnings retained for use in the Business

Balance, January 1 . . . . .	\$ 43,697,305	\$ 38,471,539
Net income for the year . . . . .	8,373,370	12,655,839
	<u>\$ 52,070,675</u>	<u>\$ 51,127,378</u>
Cash dividends on:		
\$4 preferred stock . . . . .	\$ 376,692	\$ 378,309
Common stock, \$2 per share . . . . .	7,082,259	7,051,764
	<u>\$ 7,458,951</u>	<u>\$ 7,430,073</u>
Balance, December 31 . . . . .	<u>\$ 44,611,724</u>	<u>\$ 43,697,305</u>

# SYLVANIA

SYLVANIA ELECTRIC PRODUCTS INC.

## Statements of Additional Paid-in Capital

YEARS ENDED DECEMBER 31, 1958 AND 1957

	1958	1957
Balance, January 1 . . . . .	\$ 57,679,718	\$ 57,339,035
Excess of:		
Stated value of 939 shares of \$4 preferred stock acquired for sinking fund over cost of such shares . . . . .		18,409
Option price of 5,445 shares (1958) and 2,872 shares (1957) of common stock issued under stock option and purchase plans over par value of such shares . . . . .	134,282	54,836
Market value of 5,192 shares (1958) and 8,135 shares (1957) of common stock issued under Executive Incentive Compensation Plan over par value of such shares . . . . .	151,866	267,438
Face value of convertible debentures less debt expense over par value of 48,307 shares of common stock issued therefor . . . . .	1,597,327	
Balance, December 31 . . . . .	<u>\$ 59,563,193</u>	<u>\$ 57,679,718</u>

## Accountants' Report

### LYBRAND, ROSS BROS. & MONTGOMERY

To the Board of Directors,

SYLVANIA ELECTRIC PRODUCTS INC.:

We have examined the balance sheets of SYLVANIA ELECTRIC PRODUCTS INC. as of December 31, 1958 and 1957 and the related statements of income, earnings retained for use in the business and additional paid-in capital for the years then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances; as it is not the general practice of the United States Government to confirm accounts receivable we applied other auditing procedures in respect to such receivables.

In our opinion, the accompanying financial statements present fairly the financial position of SYLVANIA ELECTRIC PRODUCTS INC. at December 31, 1958 and 1957 and the results of its operations for the years then ended in conformity with generally accepted accounting principles applied on a consistent basis.

*Lybrand, Ross Bros. & Montgomery*

New York, January 29, 1959.

# Divisions and Subsidiaries

# Plants, Laboratories, and Products

## SALES OFFICES

ANN ARBOR, MICH., 405 Fourth St. (Argus Cameras)  
ATLANTA 10, GA., 2115 Sylvan Road, S.W.  
BALTIMORE, MD., 5301 Harford Road  
BOSTON, MASS. (71 Loring Avenue, Salem, Mass.)  
BUFFALO 6, N. Y., 601 Bailey Avenue  
CAMILLUS, N. Y., 5700 West Genesee Street  
CHARLOTTE, N. C., 1416 E. Morehead Street  
CHICAGO, ILL. (2001 North Cornell Avenue, Melrose Park, Ill.)  
CINCINNATI, OHIO, 411 Oak Street  
CLEVELAND 11, OHIO, 4848 West 130th Street  
DALLAS 2, TEXAS, 100 Fordyce Street  
DAYTON, OHIO, 333 West First Street  
DENVER, COLO., 4700 East 48th Avenue  
DETROIT 38, MICH., 7800 Intervale  
GARDEN CITY, N. Y., 600 Old Country Road  
IPSWICH, MASS., Estes Street  
KANSAS CITY 15, KANS., 450 Funston Road  
LOS ANGELES 54, CALIF., 6505 East Gayhart Street  
MILWAUKEE 3, WIS., 606 West Wisconsin Avenue  
MINNEAPOLIS, MINN., 711 West Lake Street  
NEW ORLEANS, LA., 8140 Forshey Street  
NEW YORK 19, N. Y., 1740 Broadway  
PHILADELPHIA 31, PA., 4700 Parkside Avenue  
PITTSBURGH 34, PA., 300 Mt. Lebanon Boulevard  
ROME, N. Y., 225 North Washington Street  
ST. LOUIS 9, MO., 5010 Kemper Avenue  
SALT LAKE CITY, UTAH, 428 South Main Street  
SAN FRANCISCO, CALIF. (1811 Adrian Road, Burlingame, Calif.)  
SEATTLE 4, WASH., 3466 East Marginal Way  
TETERBORO, N. J., 1000 Huyler Street  
WASHINGTON, D. C., (2520 Oakville Street, Alexandria, Va.)  
WOBBURN, MASS., 100 Sylvan Road

## INTERNATIONAL OPERATIONS

NEW YORK 19, N. Y., 1740 Broadway

## SYLVANIA ELECTRIC (CANADA) LTD.

CALGARY, ALTA., CANADA, 1210 Eleventh Avenue, S. W.  
HALIFAX, N. S., CANADA, 71 Cork Street  
MONTREAL, P. Q., CANADA, 6233 Cote de Liesse  
REGINA, SASK., CANADA, 2774 Montague Street  
TORONTO, ONT., CANADA (35 Vulcan Street, Rexdale)  
VANCOUVER, B. C., CANADA, 8265 Fraser Street  
WINNIPEG, MAN., CANADA, Marjorie and Barry Streets

## GOVERNMENT RELATIONS

WASHINGTON 5, D. C., 734 15th Street, N.W.

## LIGHTING PRODUCTS



HEADQUARTERS AND LABORATORY:  
60 Boston Street, Salem, Mass.

### PRODUCTS:

Incandescent, fluorescent, mercury vapor lamps, fluorescent fixtures and lighting systems, controlled fluorescent reflector systems, parts, starters, fluorescent sign tubing, including "HaloLight"; "Sylvatron"; "Panelescent" lighting; photoflash, photoflood, enlarger, projection lamps, including Tru-Focus and Tru-Flector lamps; darkroom and studio lamps, concentrated arc, germicidal, and insect lamps; infra-red and telephone resistance lamps, specialized transformers, including wafer coils; tungsten coils; circuit breakers; reflector, sun, and switchboard lamps; strobos; glow modulators; electronic flash tubes; RF lamps; airport Electronic Flash Approach Systems, runway identification lights, and runway lighting.

### PLANTS:

Danvers, Mass.; Ipswich, Mass.; Montoursville, Pa.; St. Marys Pa.; Salem, Mass.; Waldoboro, Me.; Wheeling, W. Va.; Winchester, Ky.

## ELECTRONIC TUBES



### RECEIVING TUBES

HEADQUARTERS AND LABORATORY:  
Emporium, Pa.

### PRODUCTS:

Receiving tubes; subminiature tubes; special tubes for computers, and military and industrial applications; stacked tubes.

### PLANTS:

Altoona, Pa.; Brookville, Pa.; Burlington, Ia.; Emporium, Pa.; Houtzdale, Pa.; Mill Hall, Pa.; Montoursville, Pa.; Shawnee, Okla.; Williamsport, Pa.



### PICTURE TUBES

HEADQUARTERS AND LABORATORY:  
Seneca Falls, N. Y.

### PRODUCTS:

Television picture tubes; oscilloscope tubes; industrial cathode ray tubes; military and radar cathode ray tubes.

### PLANTS:

Fullerton, Calif.; Ottawa, Ohio; Seneca Falls, N. Y.

## HOME ELECTRONICS



HEADQUARTERS AND LABORATORY:  
Batavia, N. Y.

PRODUCTS:  
*Television and radio receivers; stereophonic high-fidelity phonographs; closed circuit television systems.*

PLANT:  
Batavia, N. Y.

## ELECTRONIC SYSTEMS



HEADQUARTERS:  
63 Second Avenue, Waltham, Mass.

### SYSTEMS

LABORATORIES:  
*Amherst, N. Y. (Engineering Laboratory); Mountain View, Calif. (Electronic Defense Laboratory and Reconnaissance Systems Laboratory); Waltham, Mass. (Applied Research Laboratory, Avionics Laboratory, Missile Systems Laboratory); Needham, Mass. (Data Processing Laboratory).*

PRODUCTS:  
*Military electronic systems and equipment, including electronic counter-measures and counter-countermeasures; weapons systems, including missile and anti-missile systems; data processing systems, computer components; communications systems, radar, and navigational equipment, reconnaissance systems, support equipment; commercial and industrial electronic equipment.*

PLANTS:  
*Buffalo, N. Y.; Muncy, Pa.; Needham, Mass.; Santa Cruz, Calif.*

### SPECIAL TUBES

HEADQUARTERS:  
500 Evelyn Avenue, Mountain View, Calif.

LABORATORIES:  
*Mountain View, Calif. (Microwave Physics Laboratory, Microwave Components Laboratories).*

PRODUCTS:  
*Microwave components and special purpose tubes, including TR and ATR tubes, counter tubes, rocket tubes, trigger tubes, gas-pressure measuring tubes, traveling-wave tubes, klystrons, magnetrons, ferrite devices, and gaseous electronic devices.*

PLANTS:  
*Mountain View, Calif.; Williamsport, Pa.*

## ARGUS CAMERAS



HEADQUARTERS AND LABORATORY:  
Ann Arbor, Mich.

PRODUCTS:  
*Motion picture and still cameras; motion picture and slide projectors; viewers; lenses; optics; exposure meters; photographic accessories.*

PLANT:  
Ann Arbor, Mich.

## WIRE, METAL AND PLASTIC PARTS



HEADQUARTERS AND LABORATORY:  
12 Second Avenue, Warren, Pa.

PRODUCTS:  
*Molded receiving tube sockets and associated components; tube bases; fluorescent lampholders and bases; custom assemblies; custom molded plastics; incandescent and flashbulb bases; custom metal stampings; deep drawn metal parts; plated metal strip; carbonized metal strip; plated, clad, and alloy fine wire; custom and machine welds; fabricated bridge mica; tools and dies.*

PLANTS:  
*Naugatuck, Conn.; Nelsonville, Ohio; Titusville, Pa.; Warren, Pa.; York, Pa.*

## CHEMICAL AND METALLURGICAL MATERIALS



HEADQUARTERS AND LABORATORY:  
Towanda, Pa.

PRODUCTS:  
*Lamp and television phosphors; germanium and silicon; tungsten and molybdenum metal powder, pellets, ingots, rod, wire and electrodes; plated wire; high purity chemicals for the electrical-electronics industry.*

PLANTS:  
Towanda, Pa.; Troy, Pa.

## SEMICONDUCTOR PRODUCTS



HEADQUARTERS AND LABORATORY:  
100 Sylvan Road, Woburn, Mass.

PRODUCTS:  
*Crystal diodes, microwave diodes, transistors, silicon area rectifiers, and other semiconductor devices.*

PLANTS:  
Hillsboro, N. H.; Woburn, Mass.

## SYLVANIA RESEARCH LABORATORIES

*Chemistry Laboratory, Metallurgy Laboratory, Physical Electronics Laboratory, Solid State Laboratory, Systems and Circuits Laboratory*

HEADQUARTERS: Bayside, N. Y.      LABORATORIES: Bayside, N. Y.; Flushing, N. Y.

## SUBSIDIARIES

ARGENTINA—E. Lix Klett & Cia. Ltda., Buenos Aires.  
*Fluorescent Lamps, Other Lighting Products, TV Sets, TV Picture Tubes.*

BRAZIL—Produtos Eletricos de Mica Ltda., Rio de Janeiro and Sao Paulo.  
*Mica Production and Fabrication, TV Picture Tubes.*

CANADA—Sylvania Electric (Canada) Ltd., 6233 Cote de Liesse Road, Ville St. Laurent, Montreal 9, Quebec.  
*Incandescent, Fluorescent, and Photoflash Lamps, TV and Radio Sets, High-Fidelity Phonographs, Major Appliances, Receiving and Picture Tubes, and Electronic Components.*

PLANTS: Drummondville, P.Q.; Dunnville, Ont.

MEXICO—Sylvamex Electronica, S.A., Apartado Postal 1133, Monterrey.  
*TV Sets, TV Picture Tubes.*

SYLVANIA ELECTRIC, S.A., Apartado 4030, Havana, Cuba.

SYLVANIA ELECTRIC DE MEXICO, S.A. DE C.V., Ayuntamiento 132, Mexico 1, D.F., Mexico.

SYLVANIA INTERNATIONAL CORPORATION, 22 Bahnhofstrasse, Coire, Switzerland.



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