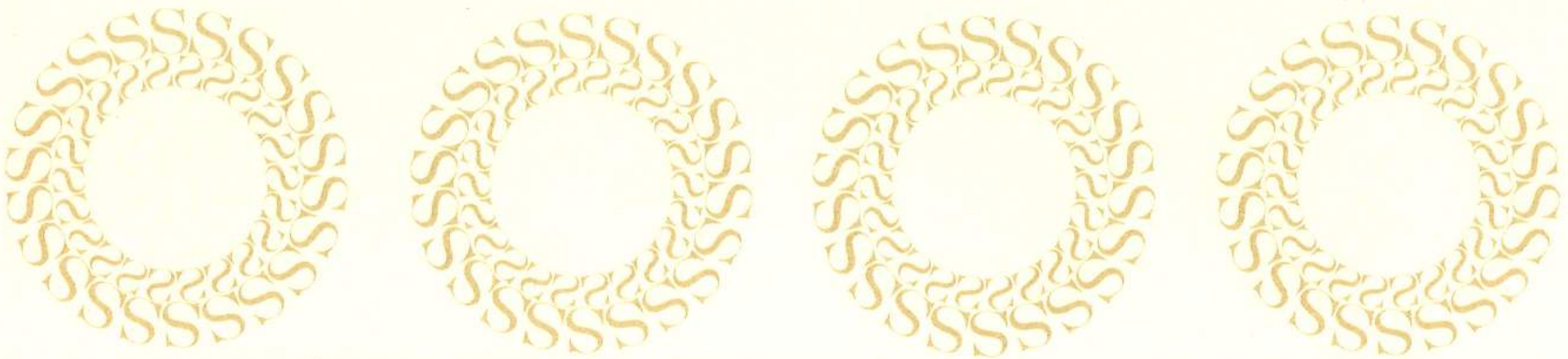
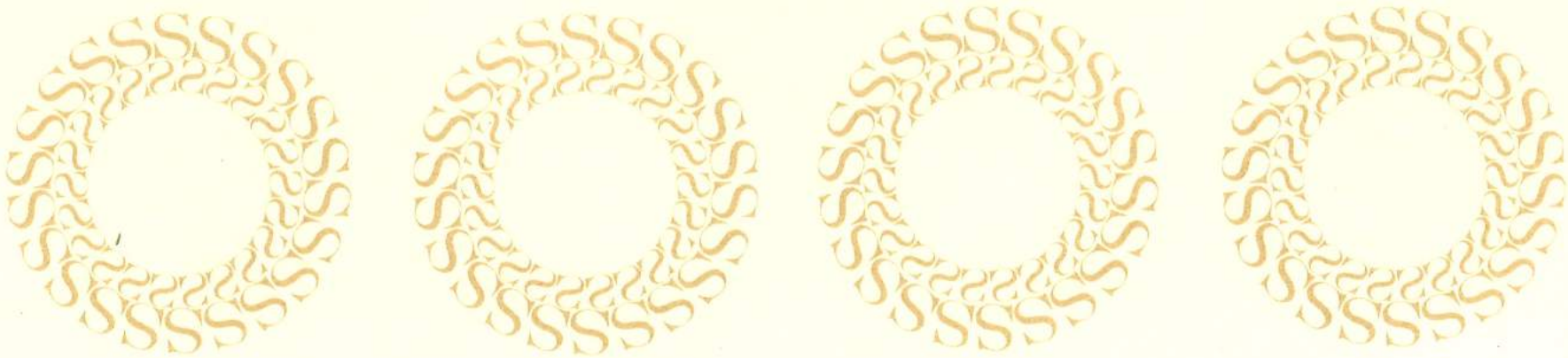
Sylvania Lighting Products





Sylvania Lighting Products

Introduction

General Telephone & Electronics 1

Sylvania Electric Products Inc. 11

Sylvania Lighting Products 21

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Applications 55

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The production and application of radiant energy is an exciting and fast changing business which continues to produce innovations of major importance to our burgeoning society. Sylvania is proud to be a leader in the development of a brighter, safer, more productive world through a growing list of lighting achievements.

This book has been prepared to introduce you to the people, facilities and the unusual creative climate which have made these successes possible. And our past achievements are an indication of future possibilities for Sylvania to take a major role in the constructive growth of our society.

Here you will also find discussions of marketing techniques, descriptions of engineering activities and our complete marketing philosophy. And we discuss people, our most important resource.

We cannot fully describe in the limited space of this book our 25-plant manufacturing complex, our 22 warehouses and more than 30 district sales offices; but we hope this outline will indicate the depth of our product line, breadth of production capabilities, and applications skills.

As always, you are welcome to tour the Sylvania Lighting Center in Danvers, Mass., as our guest.

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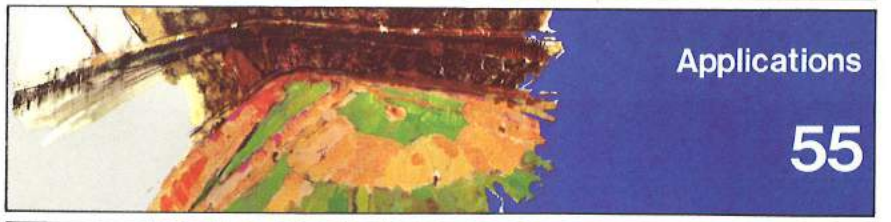

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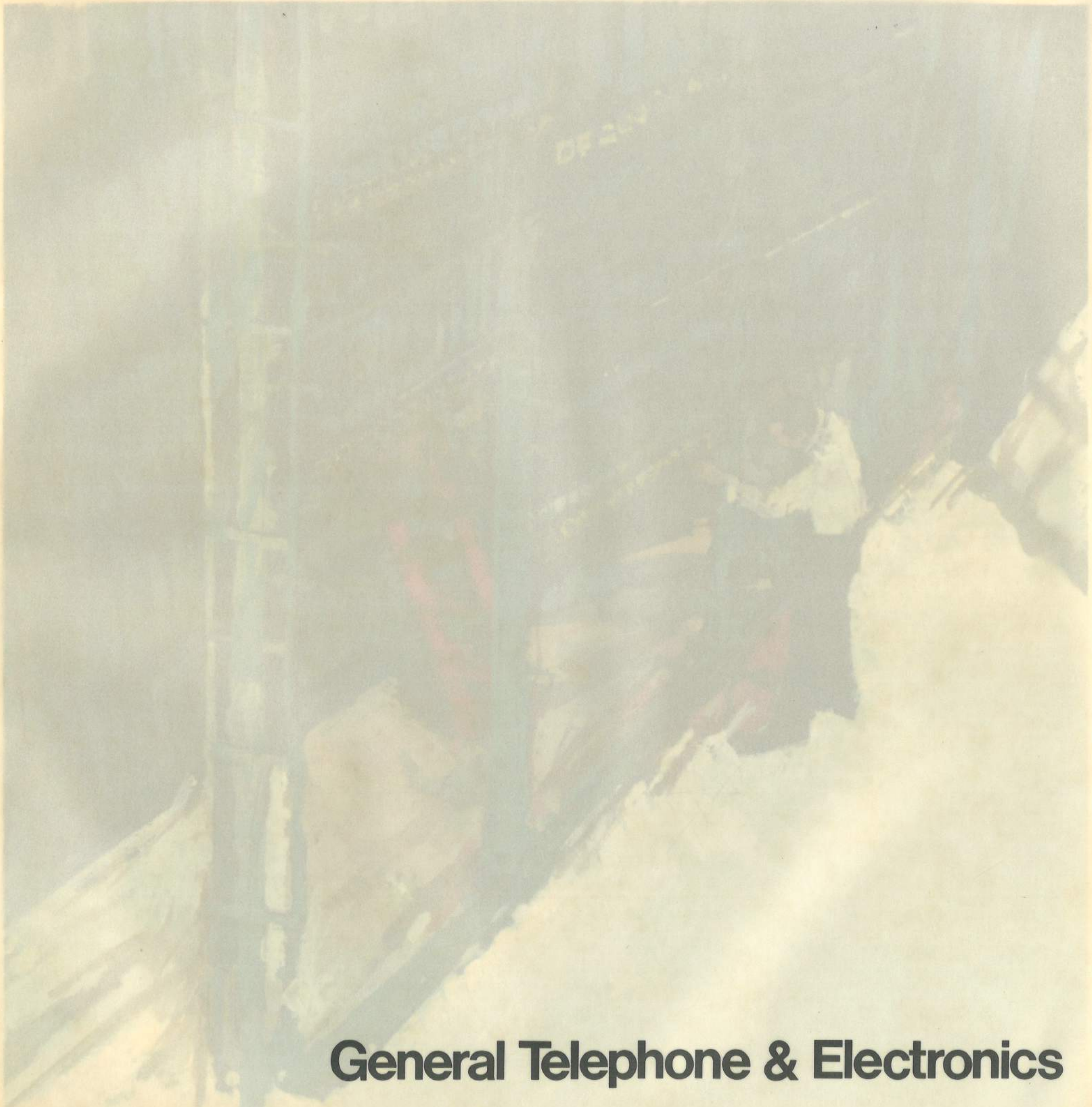
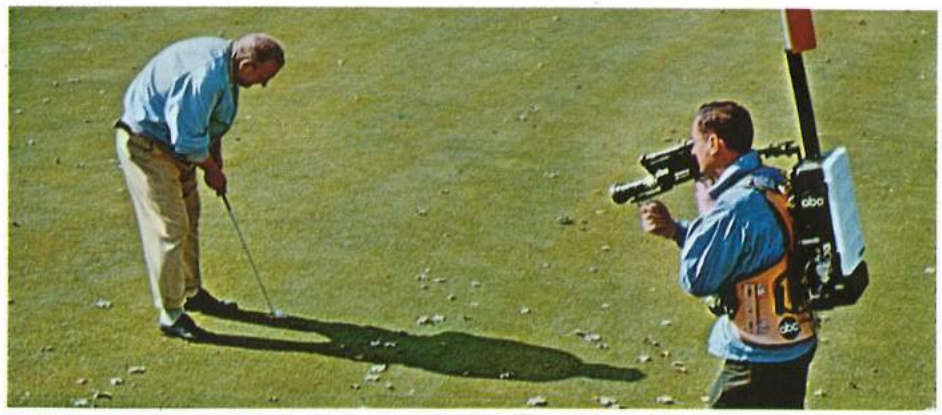
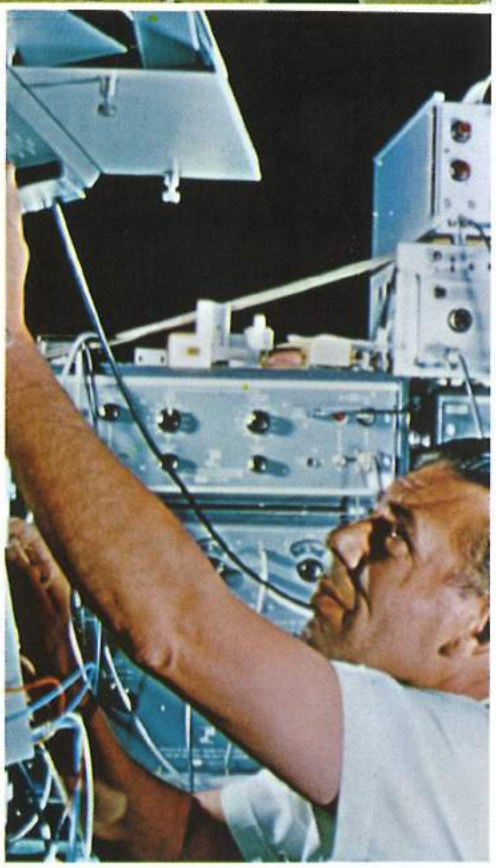


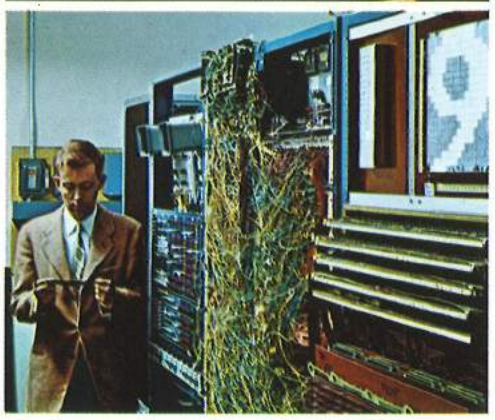
General Telephone & Electronics

General Telephone & Electronics

General Telephone & Electronics







General Telephone & Electronics Corporation is a communications and manufacturing enterprise whose highly-diversified operations throughout the United States and abroad are known as the "General System." The Corporation has more than 60 communications, manufacturing, and research subsidiaries with operations in 38 states and 16 countries abroad.

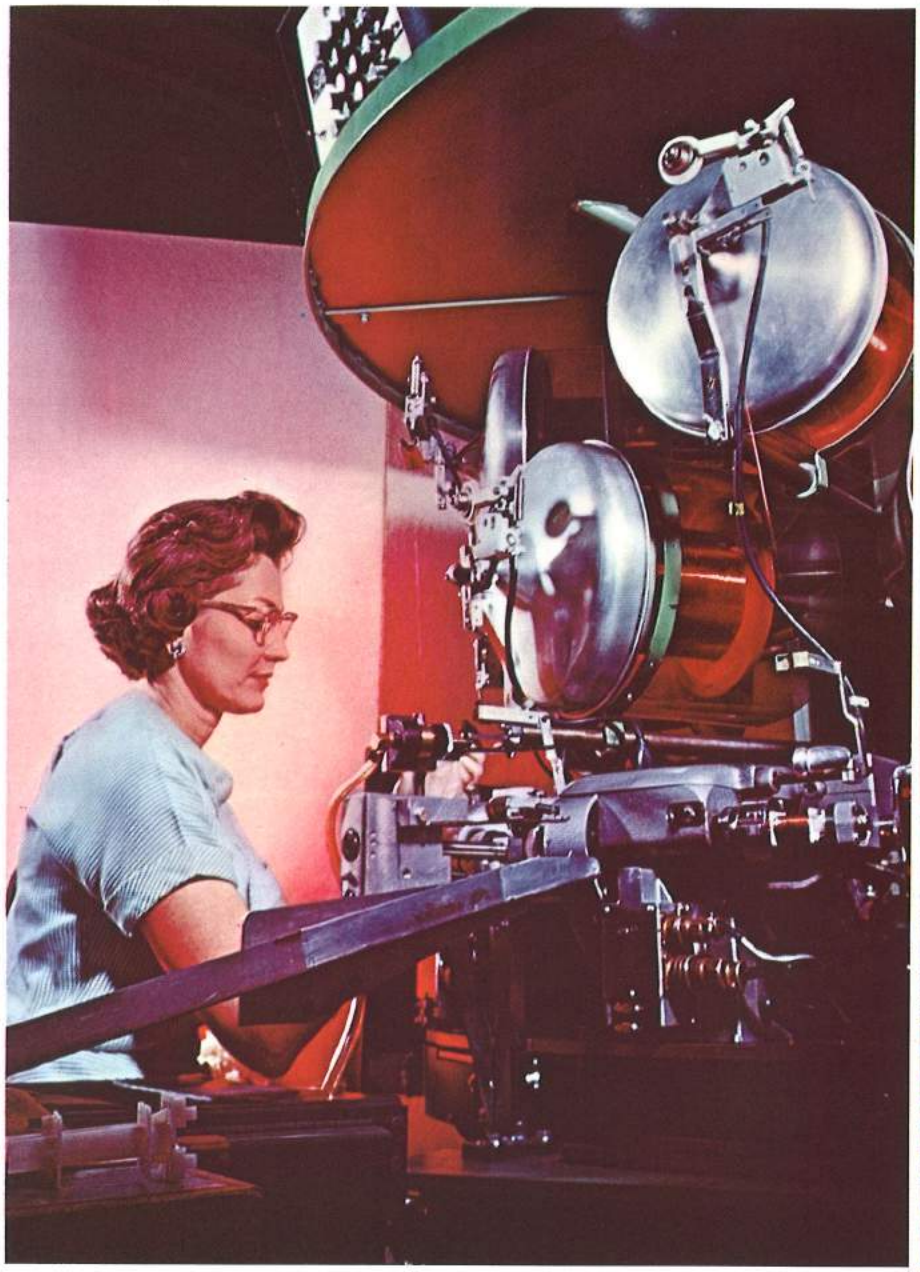
The telephone operating companies of the General System provide many types of communications services, ranging all the way from telephone service for the home or office, to highly complex voice and data services for industry and national defense. More than 30 domestic telephone operating subsidiaries comprise the largest independent (non-Bell) telephone system in the country, and international telephone operating subsidiaries provide service in Canada and the Dominican Republic.

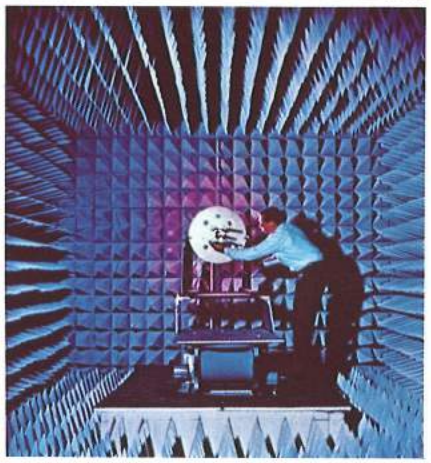
The manufacturing companies produce a wide variety of products, ranging from complete communications systems and telephone instruments to television sets and lighting products.

General Telephone's revenues and sales exceed $2 billion annually and its total assets are in excess of $4.5 billion.

Clockwise from center
C. *New equipment for data-transmission over telephone circuits*
T.R. *Mobile transistorized T.V. transmitter*
B.R. *Communications equipment test laboratory at Lenkurt Electric*
B. *High reliability printed circuit boards*
B.L. *High speed print reader-converter for computer link-up*
T.L. *Telemetering console of an industrial control system being checked out for shipment*

Opposite Page *Roof installation of microwave antennae for TV and telephone transmission.*





L. *12-headed winding machine making coils for electronic switching systems*
T.C. *Research laser*
T.R. *Laser used to transmit T.V. pictures*
B.L. *Special sound laboratory for antenna testing*
B.R. *Exhibit of Sylvania International products*

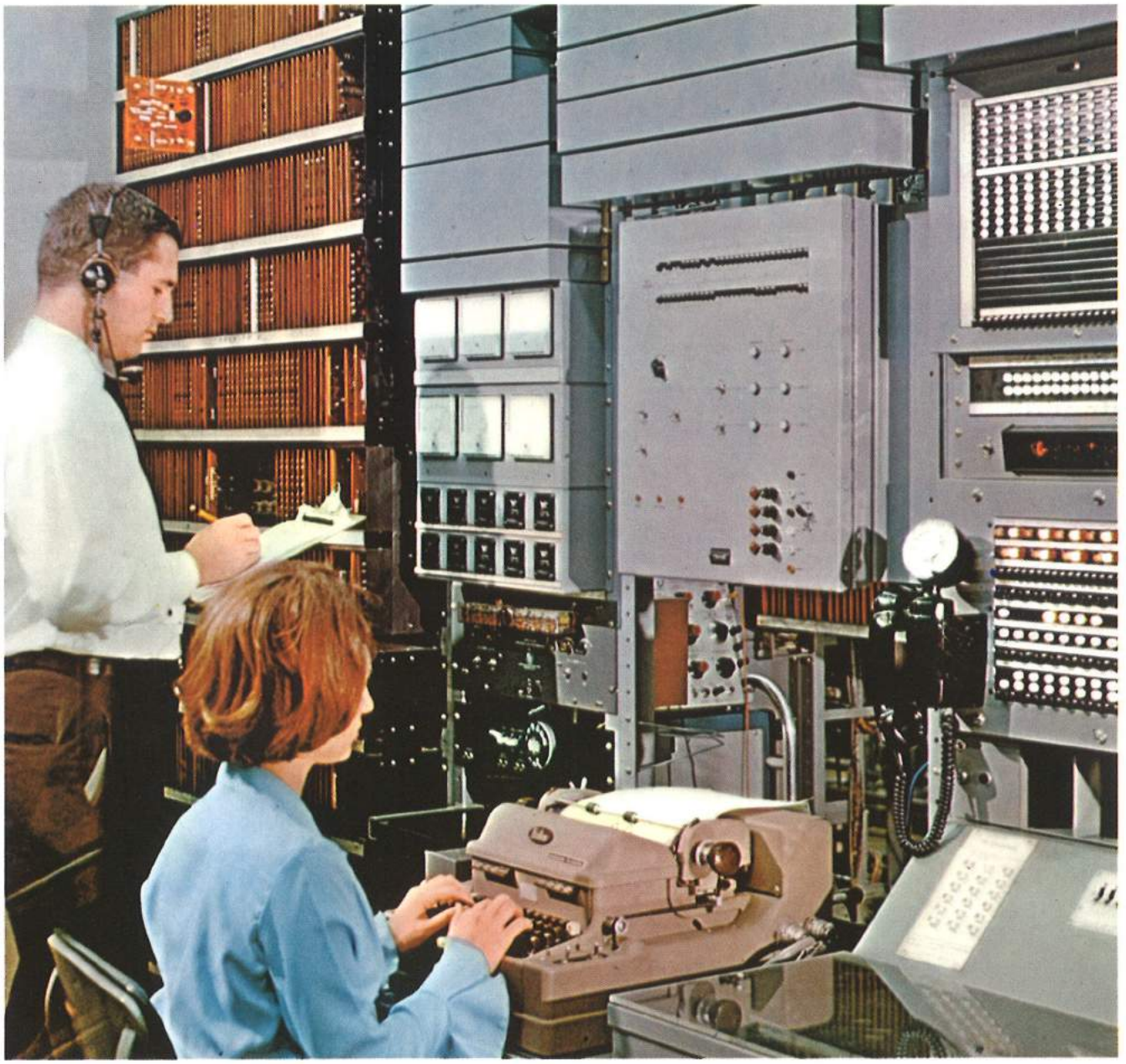
Opposite Page. *Electronic automatic switching installation at Indiana telephone exchange*

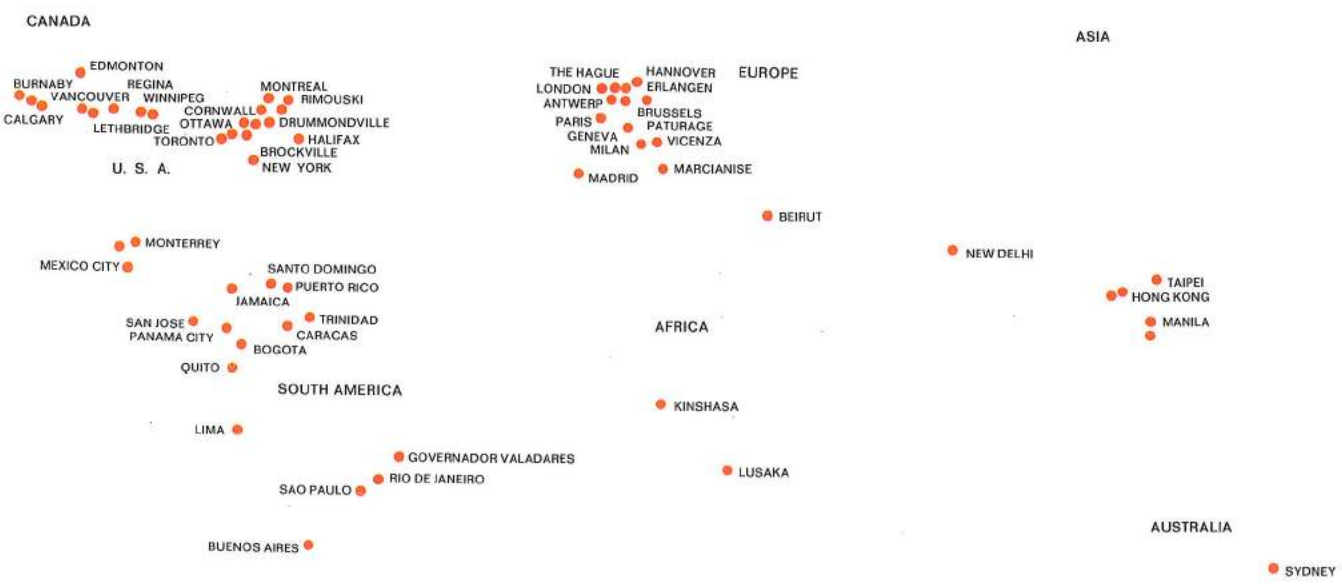
The domestic manufacturing subsidiaries are Automatic Electric Company, Lenkurt Electric Co., Inc., and Sylvania Electric Products Inc. International manufacturing subsidiaries are located in Canada, Europe, Latin America, the Caribbean area, and the Far East.

The manufacturing companies of the General System have 102 plants throughout the world — 71 in the United States and 31 in Canada, Europe, Latin America, the Caribbean area, and the Far East. In addition to the plants of GT&E manufacturing subsidiaries, associated manufacturing companies are located in Great Britain, Italy, Mexico, and India.

General Telephone & Electronics Laboratories Incorporated is the research subsidiary of General Telephone & Electronics Corporation, the nation's 10th largest industrial organization in terms of total assets. It is the basic responsibility of GT&E Laboratories to assist the various subsidiaries of General Telephone & Electronics in achieving long-range technological objectives vital to their growth.

This major research organization is constantly exploring the limits of scientific knowledge in many important fields. Much original research is carried on here as well as collecting and evaluating work done at foreign and domestic subsidiary laboratories.





A few examples of the exciting growth products being developed illustrate past achievement and future directions.

The Laboratories have developed a high-energy, low-cost, liquid laser producing approximately 100 times more energy at room temperature than was previously possible. The projection of color images with laser beams, and creation of three-dimensional images through special laser techniques have been pioneered in the Laboratories. These accomplishments already are being applied to solve industrial, educational, and medical problems.

By combining standard computers, and advanced telephone switching equipment, General Telephone & Electronics Corporation can provide efficient communications systems virtually anywhere in the world. Whether it involves phoning the house next door or ordering a missile alert, General Telephone & Electronics is continually seeking ways to improve and simplify the communications task.

The Laboratories have also contributed significantly to the development of integrated circuits. These incredibly tiny devices, smaller than the head of a pin, are highly compact circuits composed of microscopic etches on minute silicon chips and hermetically sealed. They are used to perform numerous functions with higher reliability, lower power consumption, and greater economy than older, larger types of circuitry. Such devices are essential to military equipment which must be compact and reliable. Without these tiny electronic parts, space craft and other space and airborne electronic equipment would be impracticable.

The development of telephone data systems has made possible sophisticated telecommunications systems for instantaneously retrieving from computers data for personnel records, inventory control, plane reservations, merchandise orders, or similar information.

Advanced research in areas as diverse as heat-with-light, electronic warning systems, plasma physics, solid-state devices, and analytical studies are continuing activities.

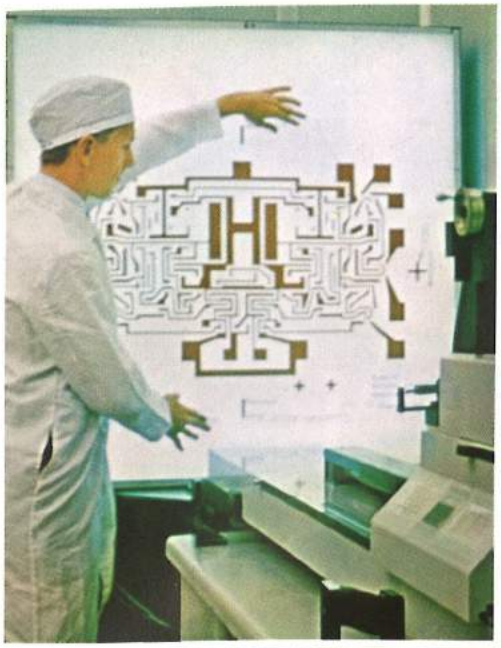
With more than 6300 scientists and engineers engaged in research, GT&E has more employees involved in this single activity than thousands of this country's firms have total employees.

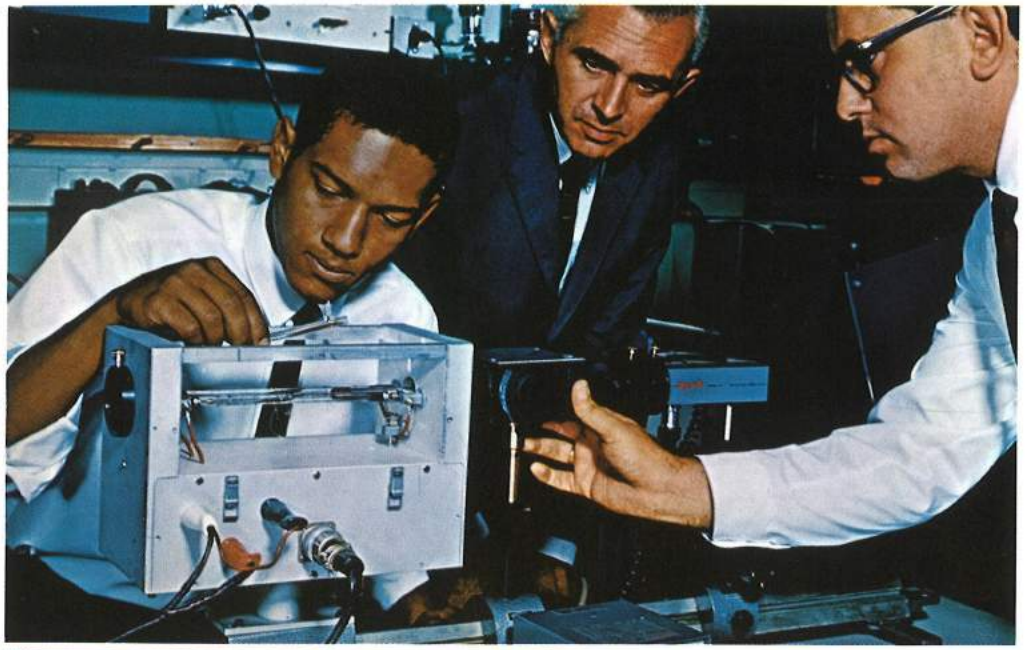
Sylvania Electric Products Inc., with scores of plants and laboratories in 29 states and territories is GT&E's largest manufacturing subsidiary. Through Sylvania, General Telephone & Electronics is a leader in the fields of lighting, electronics, television-radio, chemistry, and metallurgy.

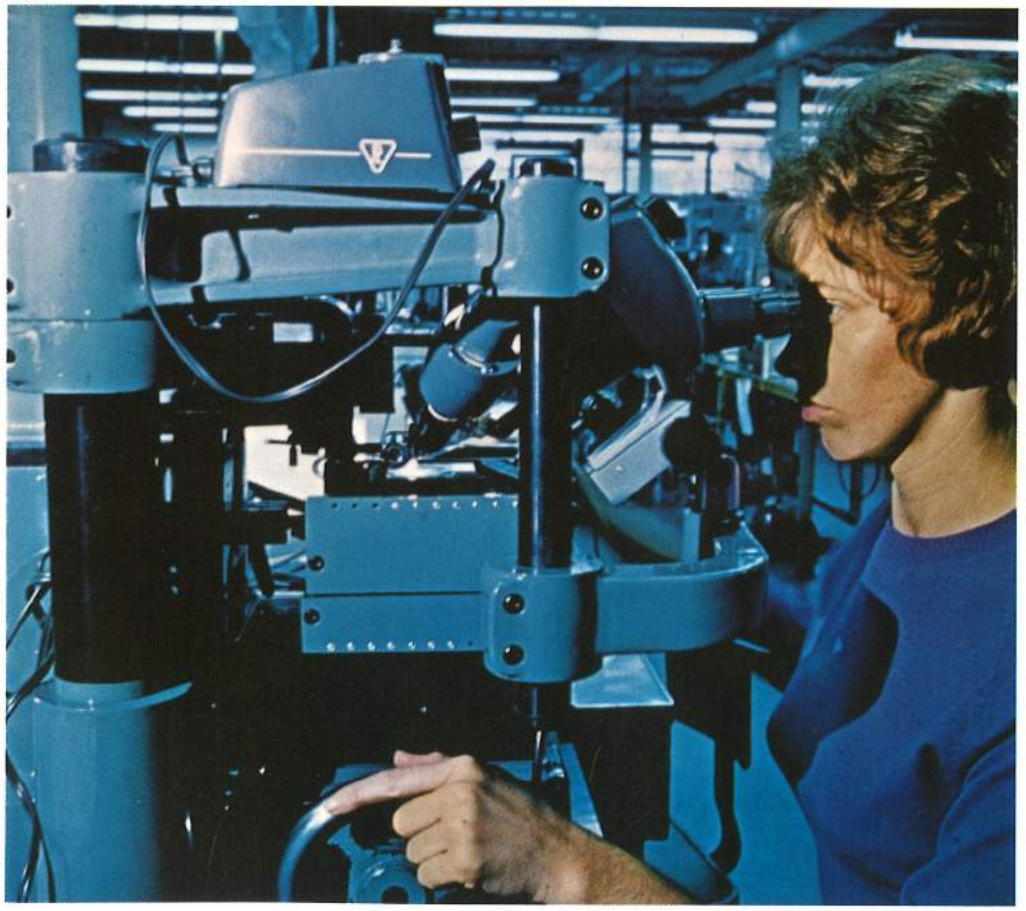
T. *Electronically driven directing mirror and laser for tracking rocket sleds*
B. *Testing E-A-X automatic exchange at Antwerp, Belgium, plant*

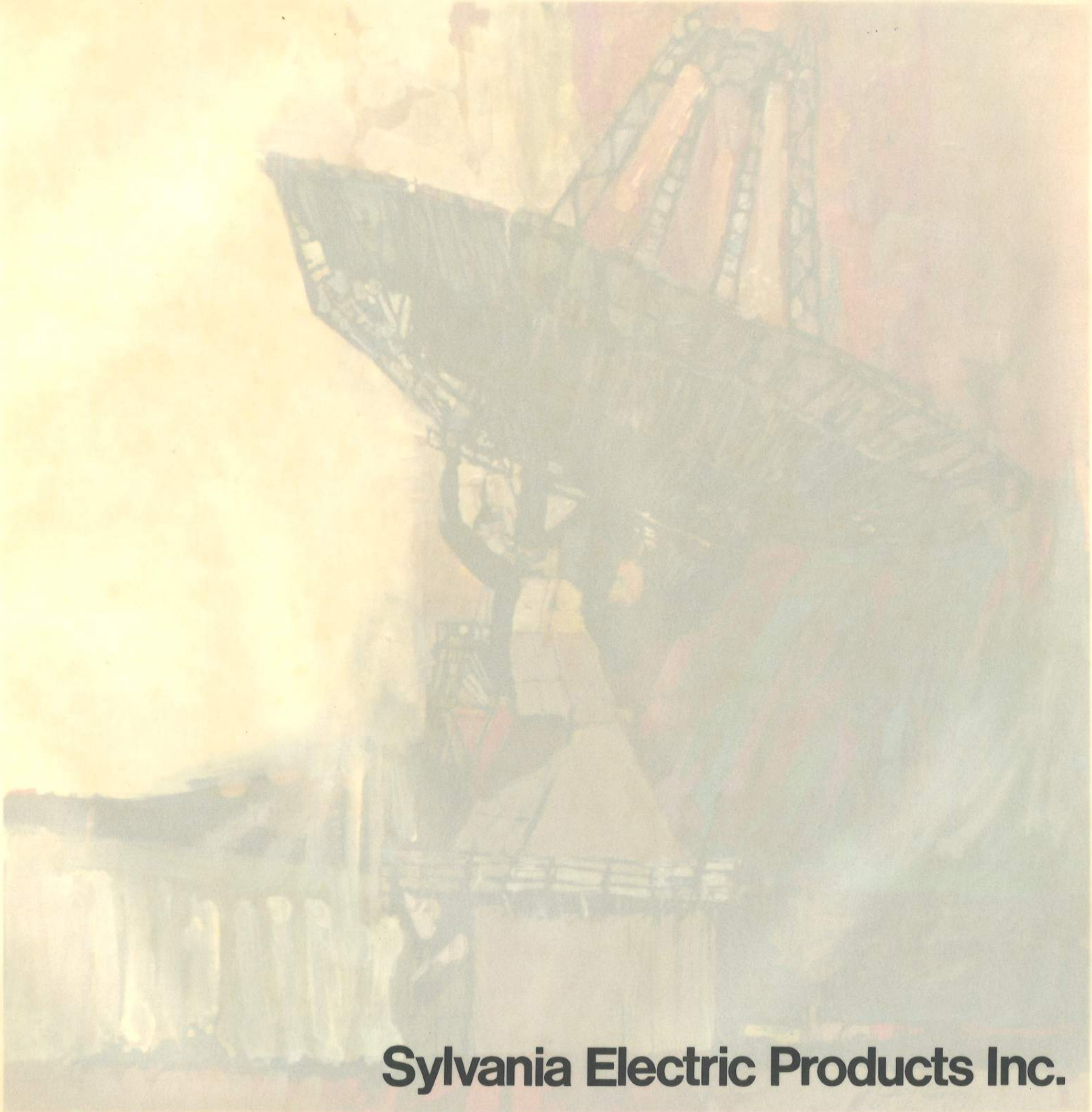
Opposite Page

T.L. *Magnified view of integrated-circuit mask*
T.R. *High-energy liquid laser*
B.L. *Microwave relay tower*
B.R. *Thermal bonding of micro-miniature transistors*









Sylvania Electric Products Inc.

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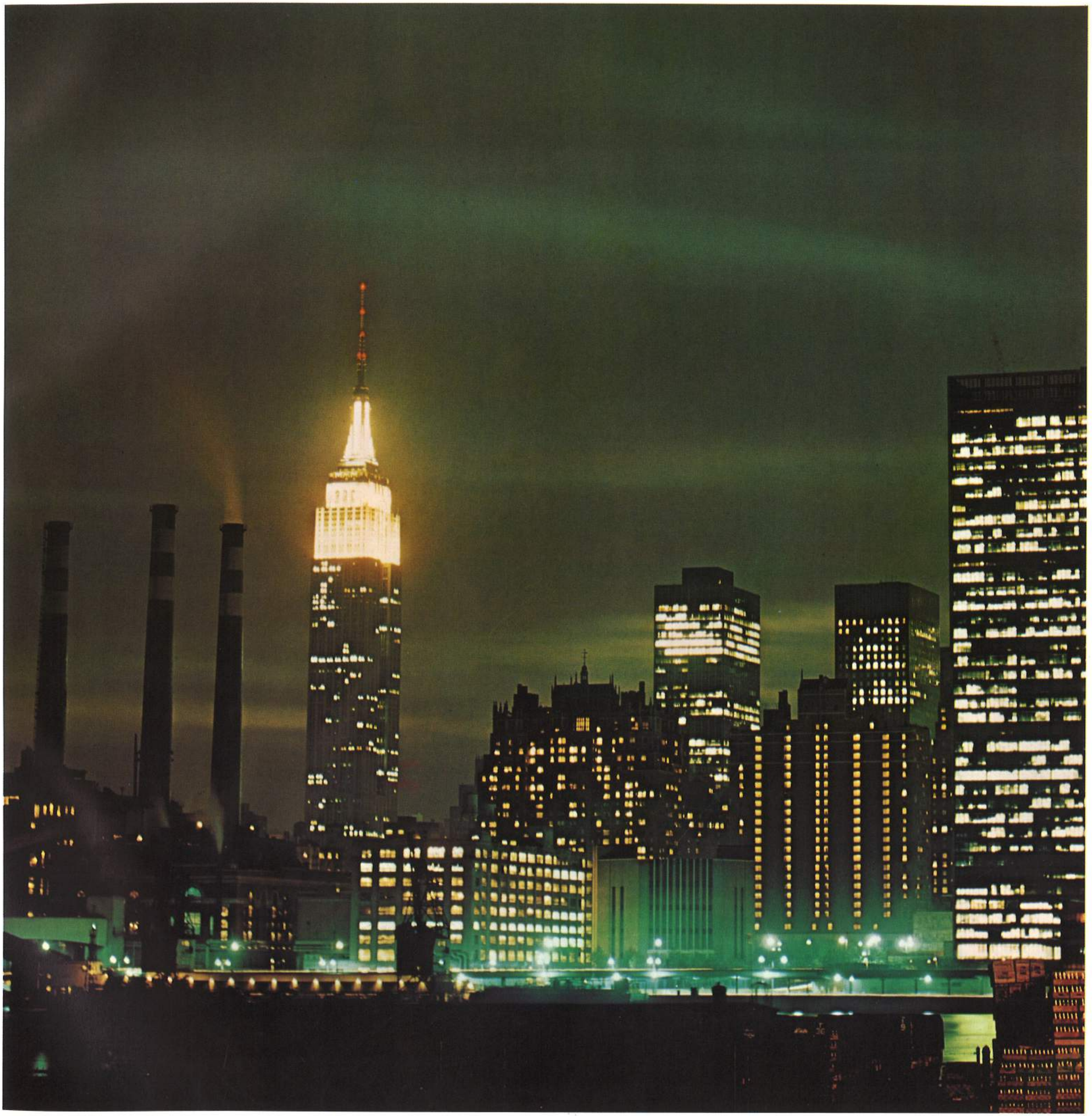
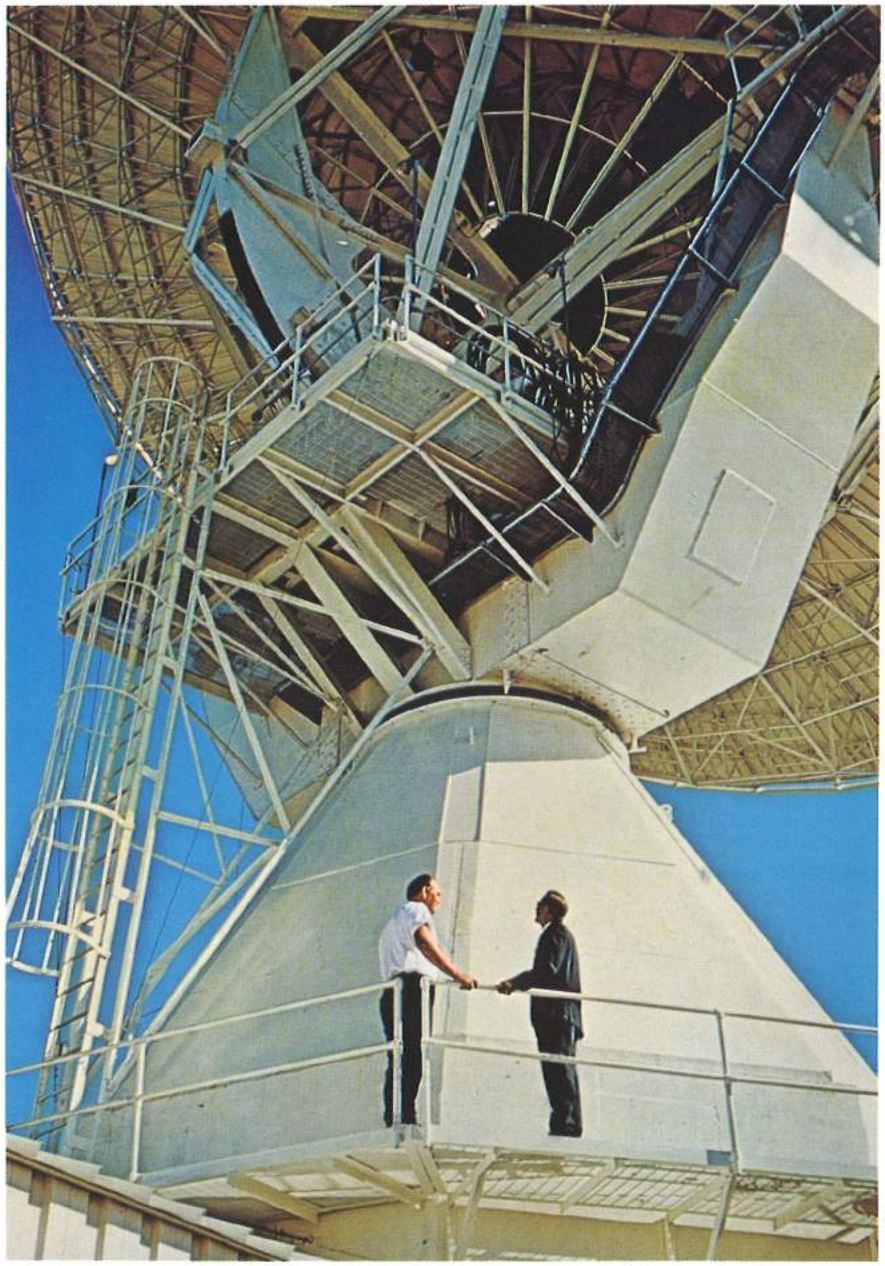
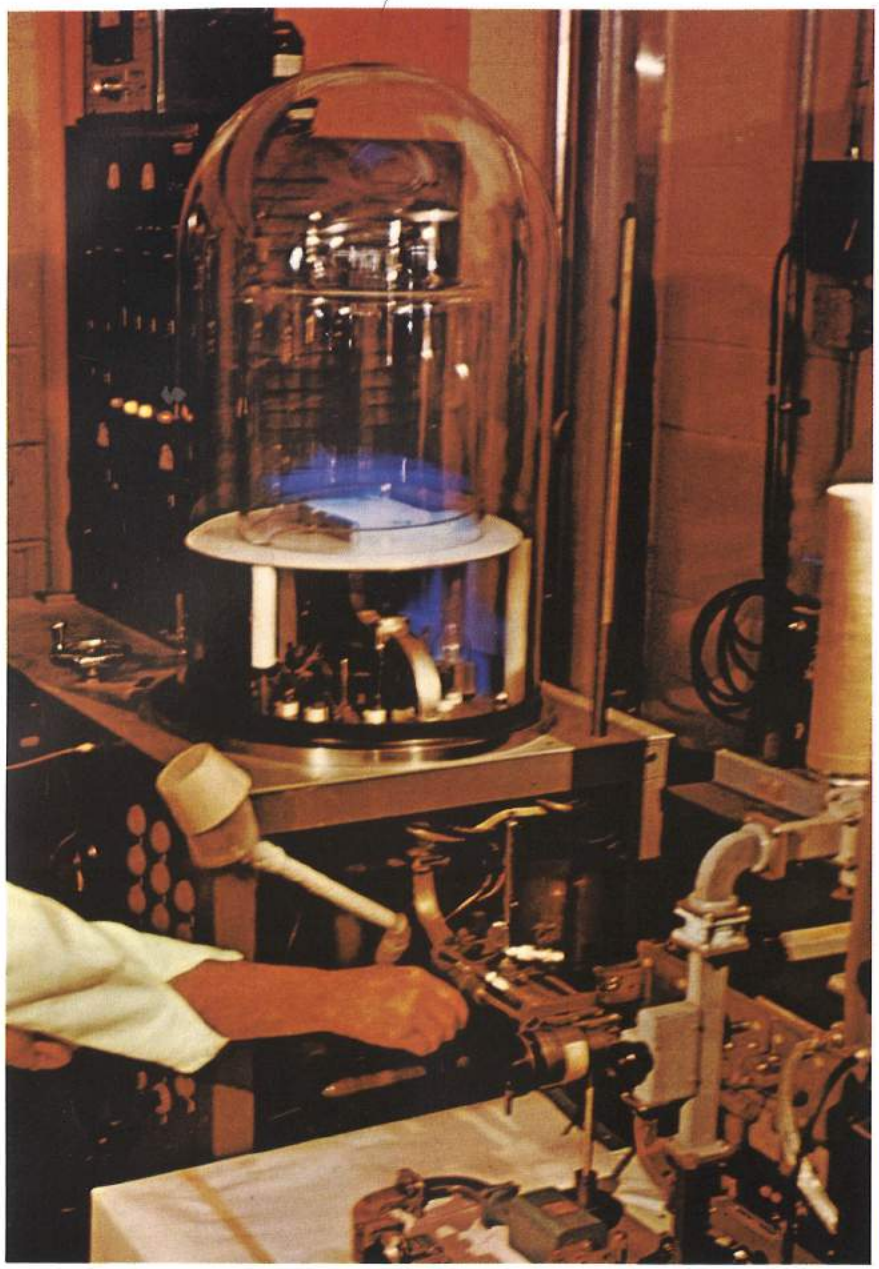
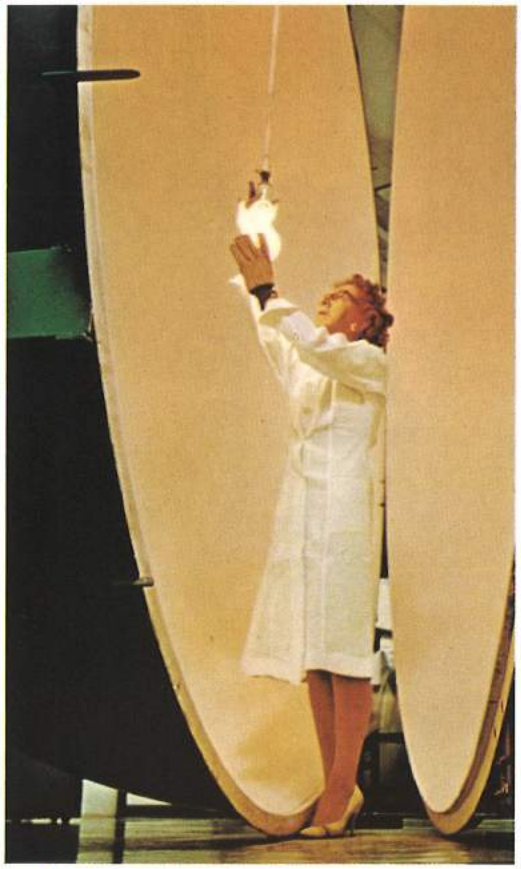
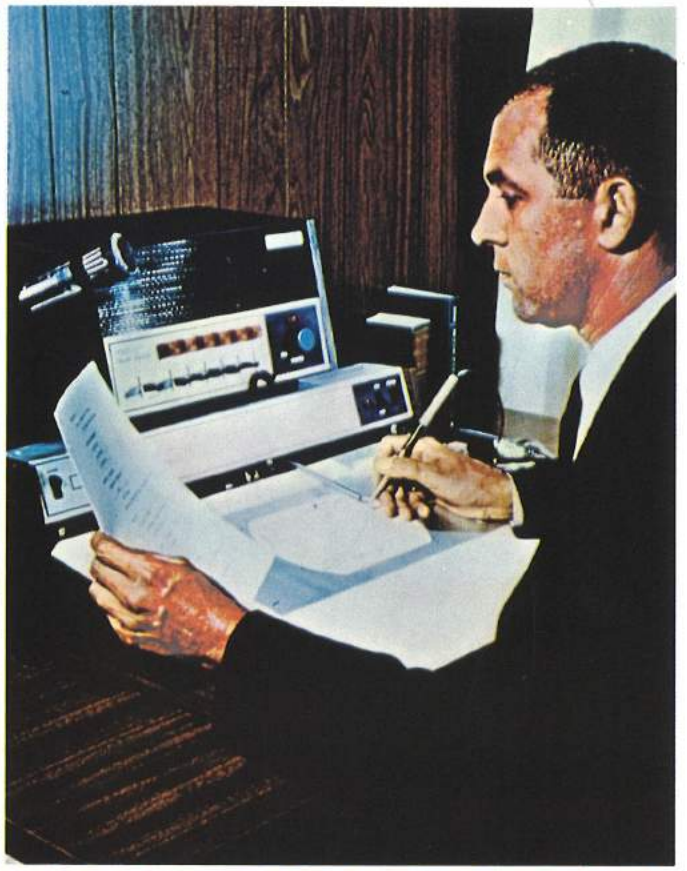




Sylvania Electric Products Inc.





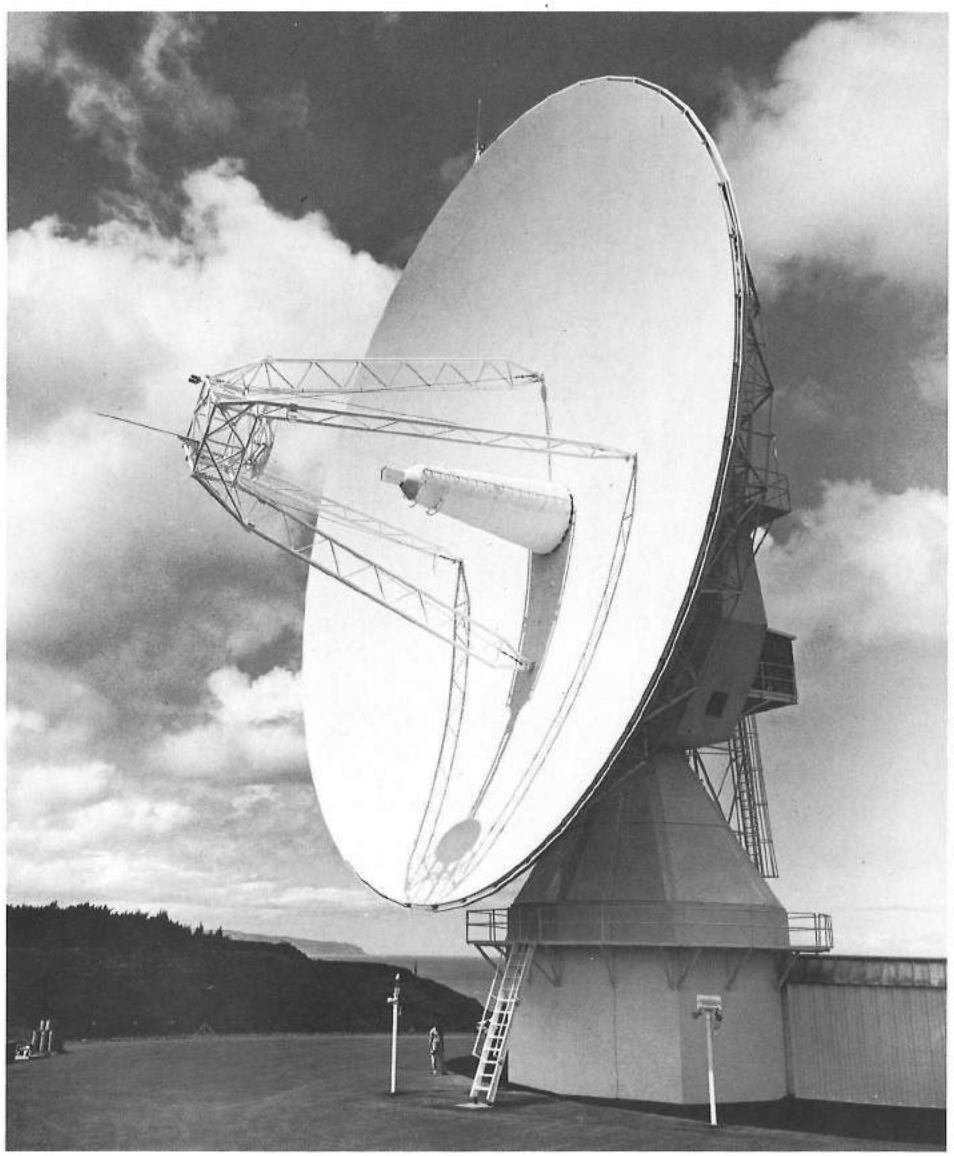


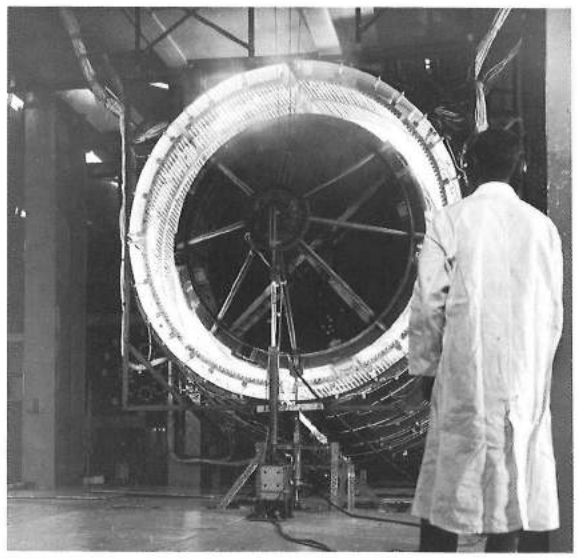
Sylvania Electric Products Inc., General Telephone & Electronics' largest subsidiary, was founded as an electric light bulb producer in 1901. Today, with plants, sales offices, and distribution Centers in 29 states and territories, Sylvania is one of the nation's leading producers of consumer, military, commercial, and industrial products and equipment. The ingenuity and imagination which spurred its growth in the lighting field has enabled Sylvania to become a leader in a number of other areas, resulting in the establishment of several groups for the production of a broad range of electrical and electronics products. These groups are: Sylvania Electronic Systems, Sylvania Lighting Products, Sylvania Electronic Components, Sylvania Metals and Chemicals, Sylvania Information Systems, and Sylvania Entertainment Products. From these have come innovations which have revolutionized photography, aided national defense, education and manufacturing, and made leisure activity more rewarding.

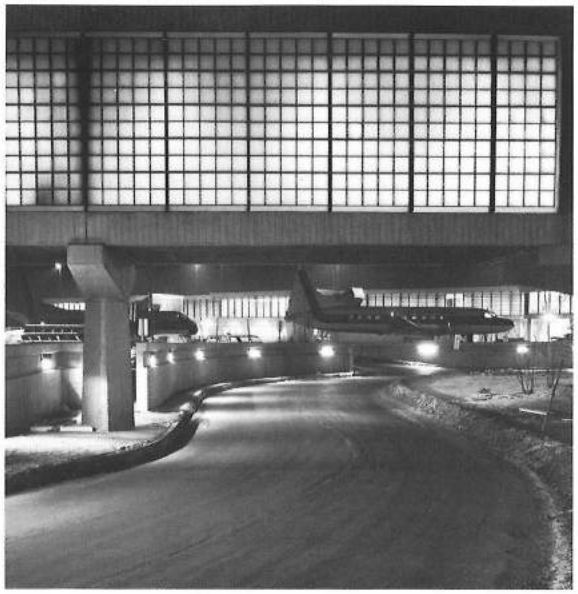
Among Sylvania Electronic Systems' significant achievements are design and development of earth stations and satellite antennas for global communications, anti-intrusion equipment, advanced radar systems for anti-missile studies, and compact rescue radios for downed airmen.

L. *Ionization studies at a Sylvania research laboratory*
T.C. *Placing incandescent lamp in goniometer to measure light output*
T.R. *Blackboard-by-Wire TV-audio teaching system*
B.R. *Flash lamps for every purpose*

Opposite Page. *Satellite communication earth station — Brewster Flat, Washington*

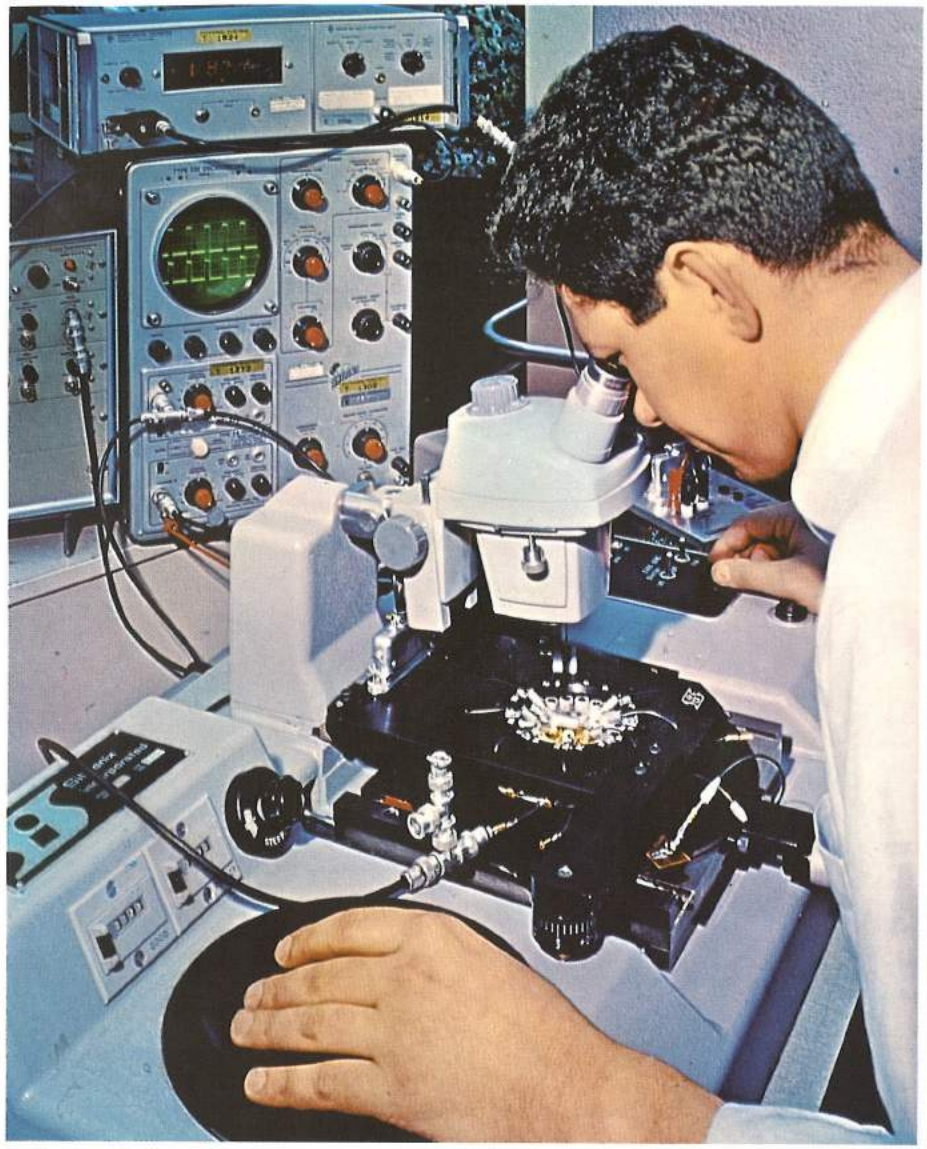


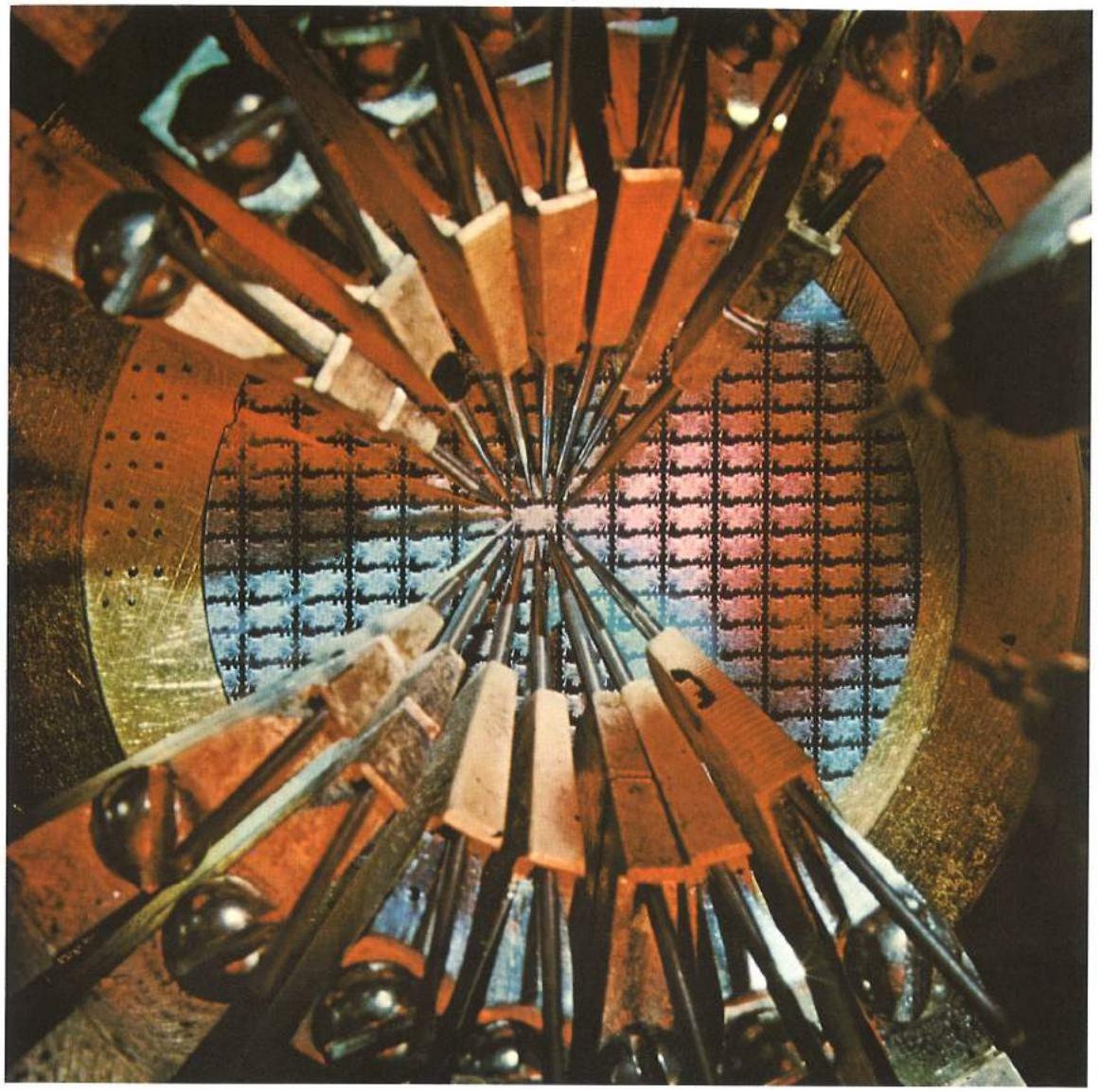




Sylvania's leadership in many areas of the lighting industry has been achieved through its comprehensive research, ultra-modern facilities, and people. Today, Sylvania is the largest manufacturer of photoflash and projector lamps; the second largest producer of incandescent and fluorescent lamps; the developer of the Metalarc lamp; one of the three largest producers of color and black and white television picture tubes and receiving tubes; the developer of the first "rare earth" phosphor color tube; a leading producer of phosphors for lighting; a major producer of metal and plastic parts for industry, and a pioneer in the thin film technique of producing micro-circuits.

A particularly interesting example of Sylvania's research is the Gro-Lux fluorescent plant growth lamp. This energy source makes possible commercial cultivation of vegetables and fruit in areas such as Alaska, which had previously been totally dependent upon imported salad crops during its long northern winter. It also may be used in loft type buildings, in basements, or in enclosed buildings in any part of the world, free from weather, climate, or insect blight.

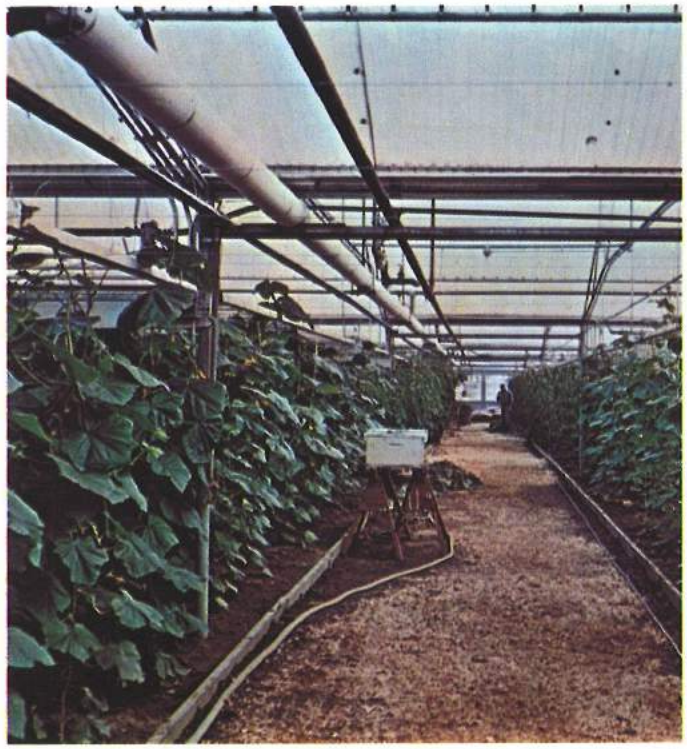




L. *Integrated-circuit test set-up*
R. *Magnified view of micro-circuit tester*

Opposite Page

L. *Radar installation*
T.R. *Simulation of space vehicle re-entry heating*
B.R. *Glare-free roadway lighting*




FLORIS
FLEUR
FLEURETTE
FLIRT
FLORA
FLORIDA

L. *Engineering communications equipment for helicopters at Williamsville Laboratory*

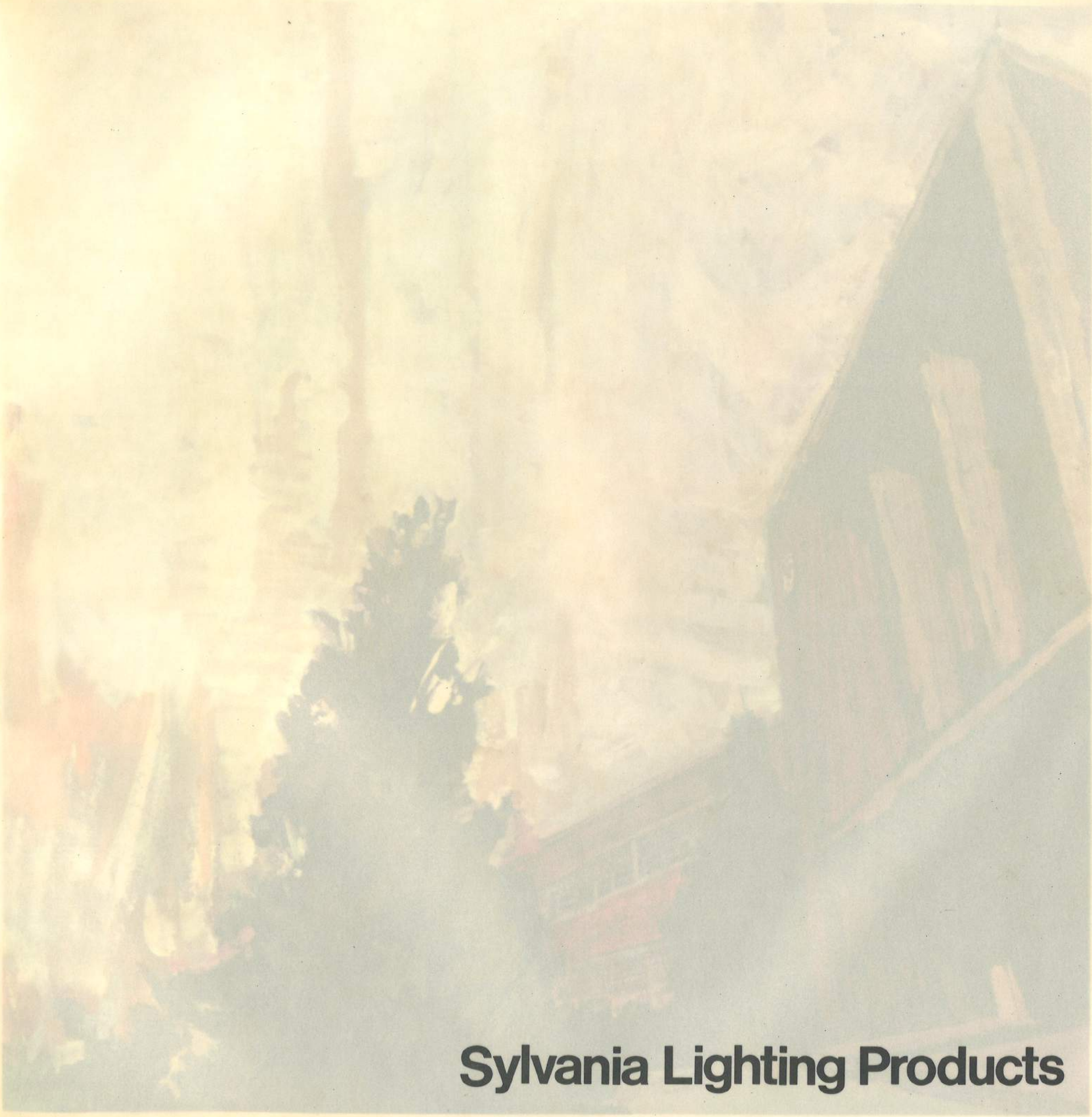
Opposite Page
T.L. *Commercial Gro-Lux lamp application*
B.L. *Gro-Lux lamp horticulture*
T.R. *Fluorescent quality-control rack*
B.C. *Blackboard-by-Wire TV monitor in classroom use*
B.R. *Sylvania high brightness TV console*

As one of the leading companies producing closed circuit television and related systems, Sylvania equipment is helping to improve teaching methods and communications systems in schools, colleges, hospitals, communication and transportation centers. And through its Ultronic Systems subsidiary, Sylvania is engaged in the development, manufacture, lease, and servicing of electronic quotation systems for securities and commodities markets.

One of Sylvania's most exciting yet practical developments for educational purposes is the "Blackboard-by-Wire" teaching system. This device employs a unique telephone line system for inter-classroom audio and video communication, making possible the simultaneous teaching of multiple classes in different geographical areas from a single point of origin.

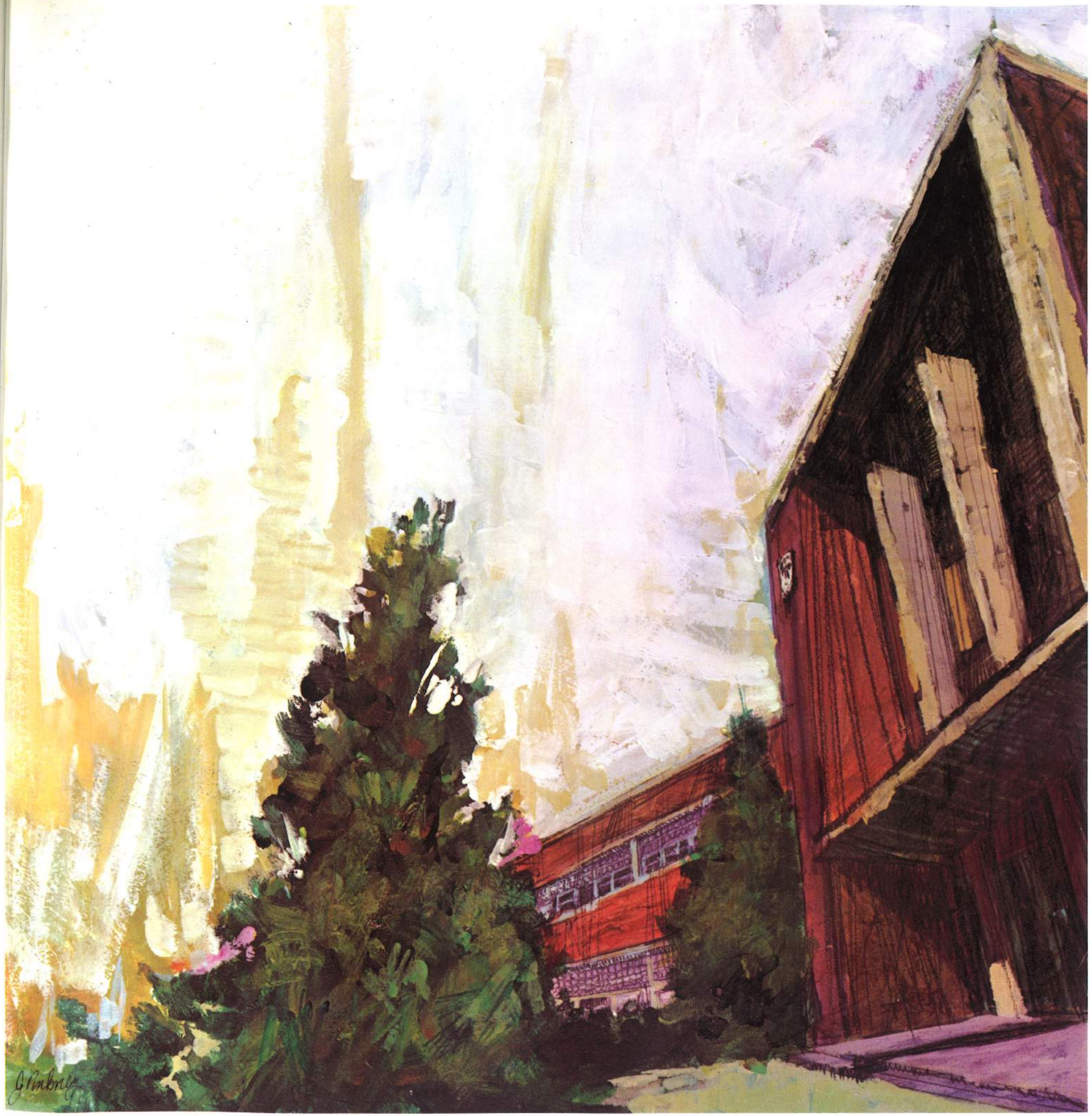
Sylvania Electronic Systems, with over-all responsibility for systems management of General Telephone & Electronics Corporation's major government projects, is active in the research, development, and production of advanced electronics for communications, defense, and aerospace programs. The group's activities cover a complete spectrum, including training and simulation systems, data processing, electro-optics, display systems, advanced antenna and radar systems, communications equipment, and systems for defensive missiles, electronic warfare, navigation, reconnaissance and security.

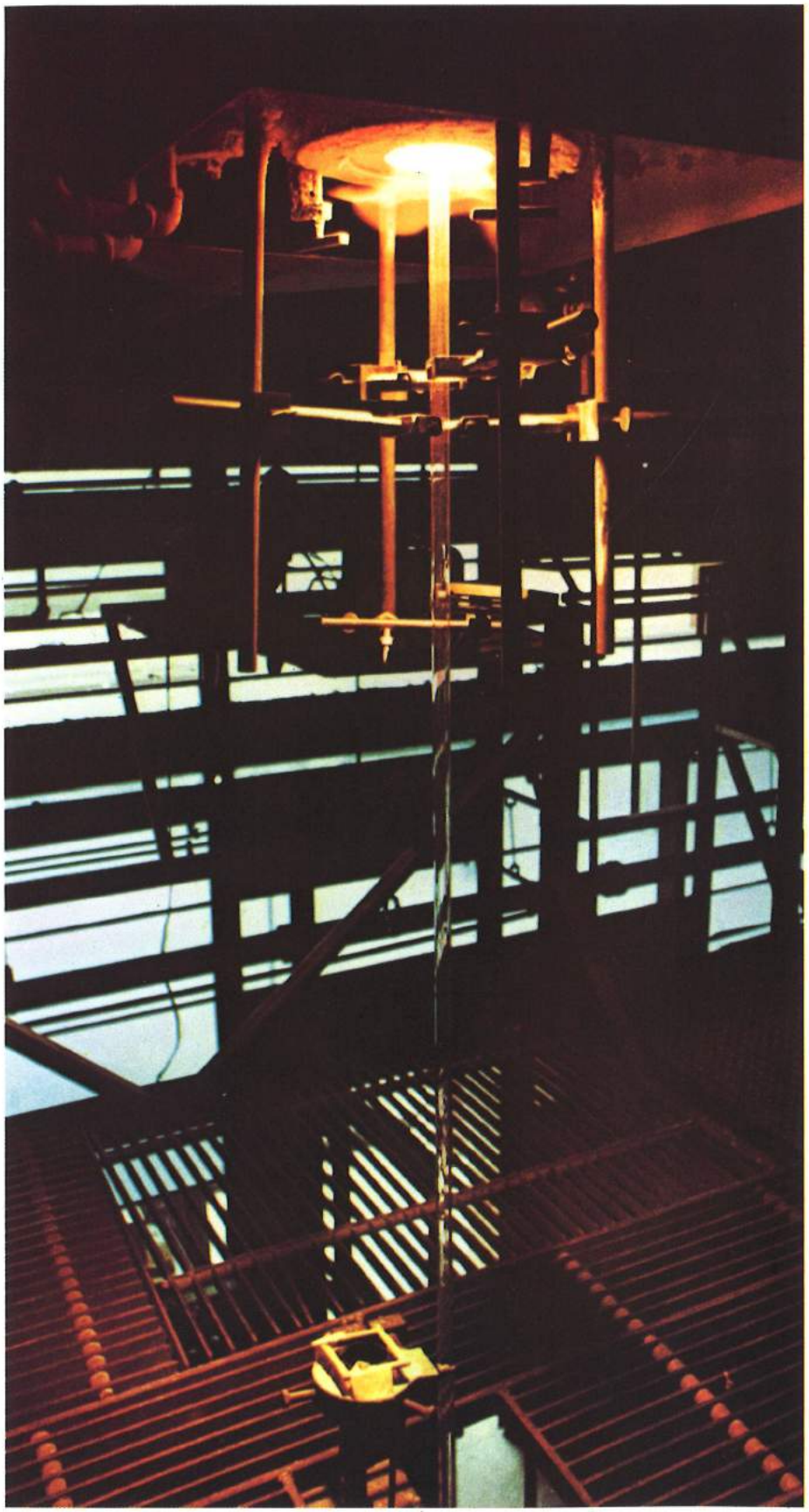
This broad capability which has made Sylvania a leader in scores of lighting, communications and electronics activities is setting the pace for its future growth and development.



Sylvania Lighting Products

Synthetic Lighting Products





Sylvania Lighting Products

Responsibility for the development, design, and production of architectural, industrial, and consumer lighting products is assigned to Sylvania Lighting Products. This operating group is composed of four divisions: Lamp Division, Lighting Equipment Division, Photolamp Division, and Special Products Division. The group has 25 plants in 13 states.

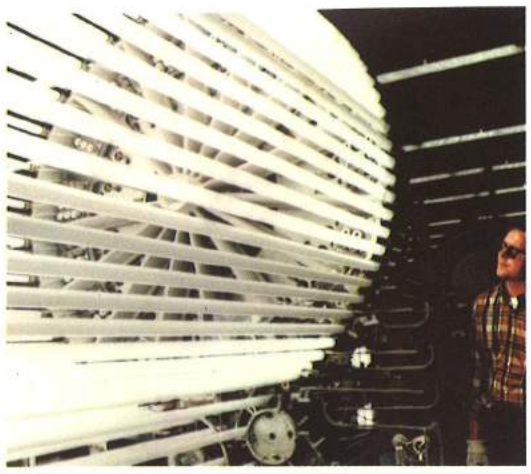
The Lamp Division with plants ranging from Waldoboro, Me., to Winchester, Ky., produces more than 6,000 different types of lamps including fluorescent, incandescent, mercury, tungsten-halogen, Metalarc, miniature, and special lamp types.

The Lighting Equipment Division was the world's first fluorescent fixture operation and is a leading producer of standard, custom-made, and heat-of-light fixtures. It has eight plants ranging from Spokane, Wash., to Fall River, Mass.

The four-plant Photolamp Division produces, through a near miracle of automation, millions of photographic products such as the Flashcube, Flashlamps of all sizes, Sun Guns, and special movie, TV, and theatrical light sources. In 1962 Sylvania's Sun Gun received a special "Oscar" from the movie industry.

Components such as ballasts, transformers, control devices, and Panelescent® electroluminescent area lighting sources are produced by Special Products in its seven plants.

The entire Sylvania Lighting Products group insures swift and accurate support of customer requirements by connecting its 23 manufacturing facilities in 13 states, its 27 warehouses and 30 sales offices with a 20,000 mile private communications system. This facilitates instant response to customer requirements and enables Sylvania to market its products competitively and efficiently.

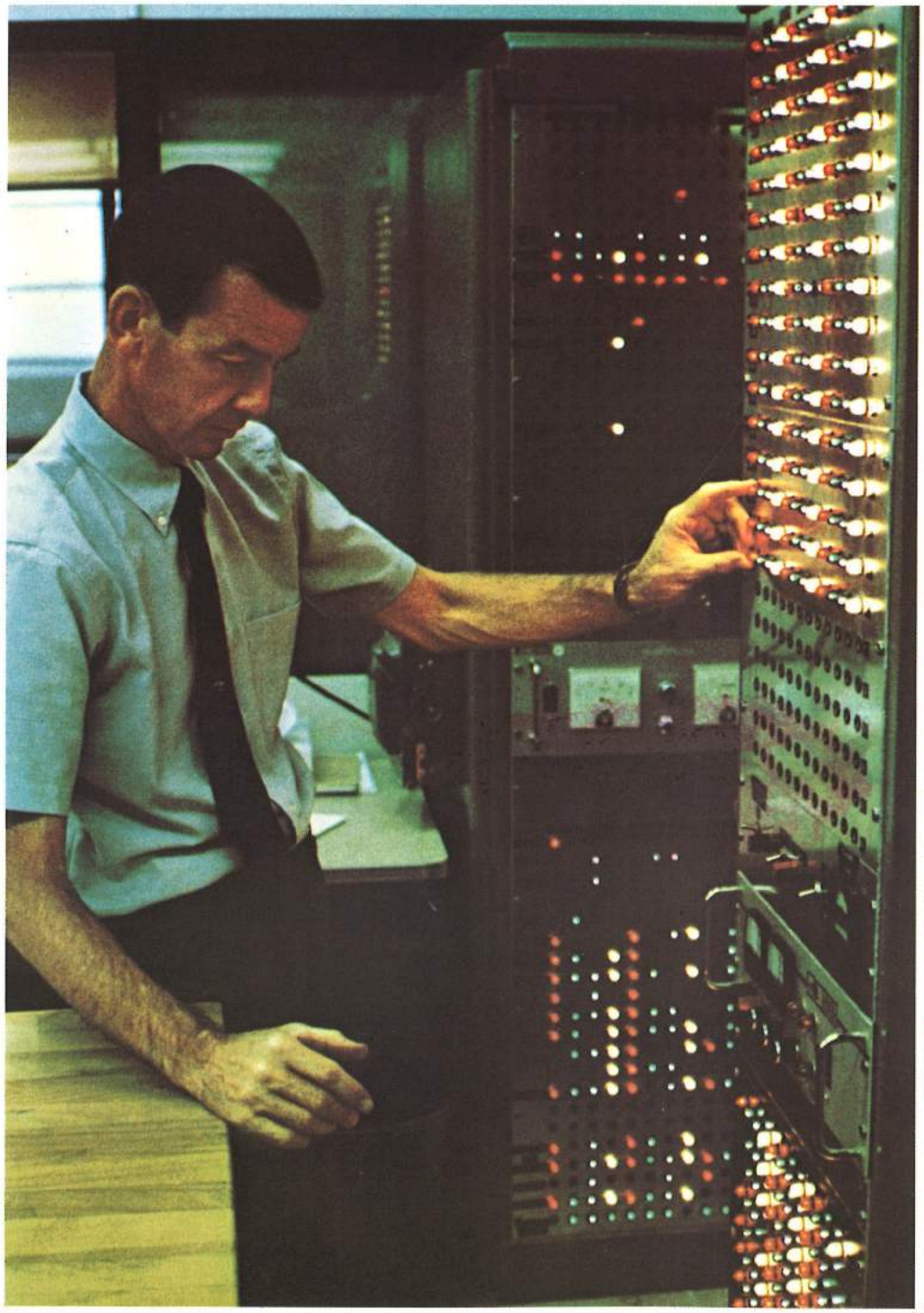


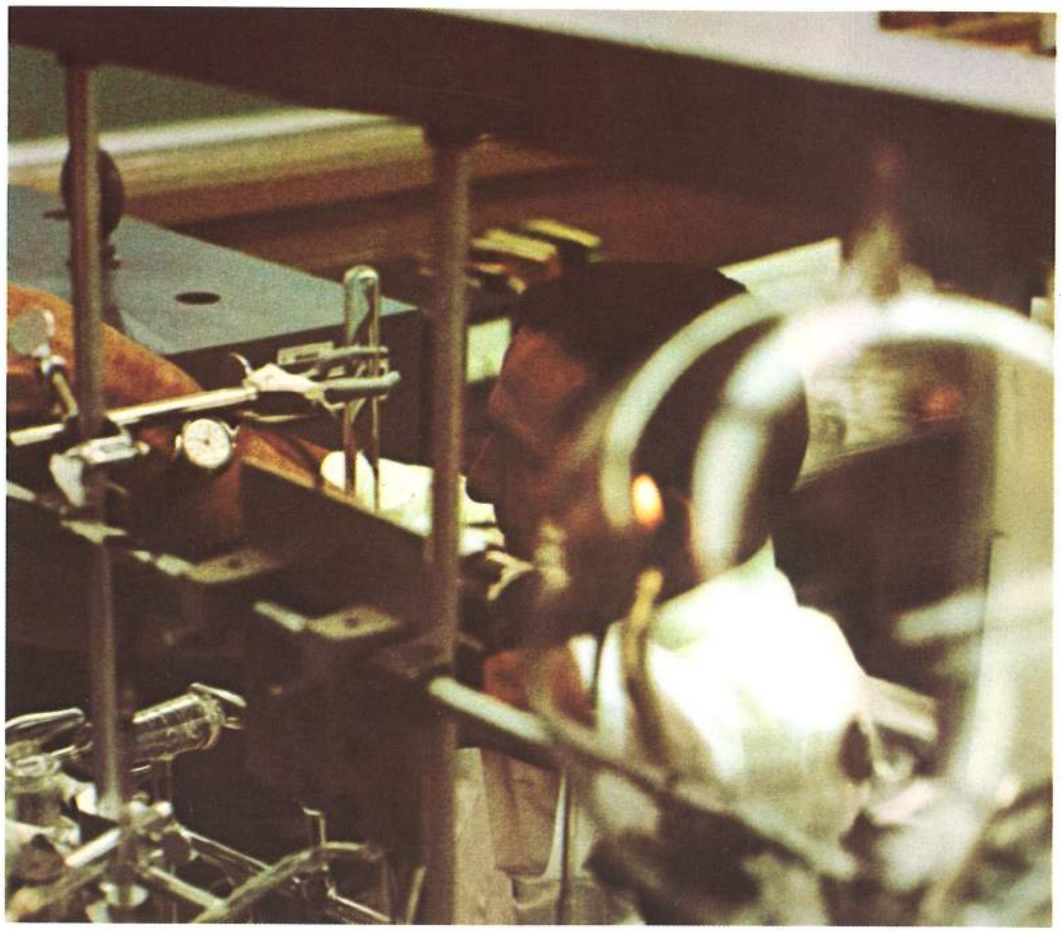
Opposite Page. *Original design crystal melting furnace for high production of quartz tubing*

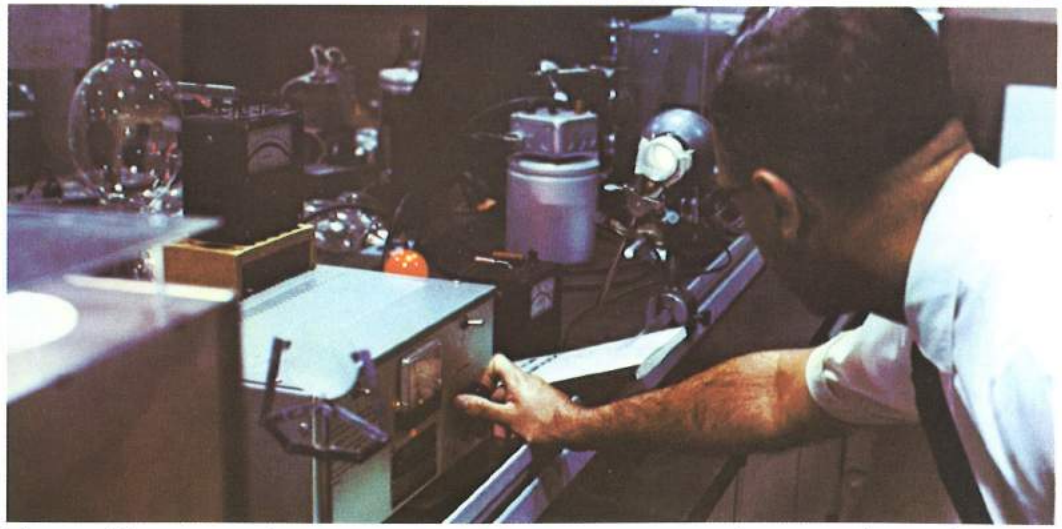
T.L. *Fluorescent testing drum*
T.R. *View of world's largest goniometer testing light output*
B.L. *Panelescent materials research laboratory*
B.R. *Lighting Products' top management meeting*

Research & Development

Research & Development



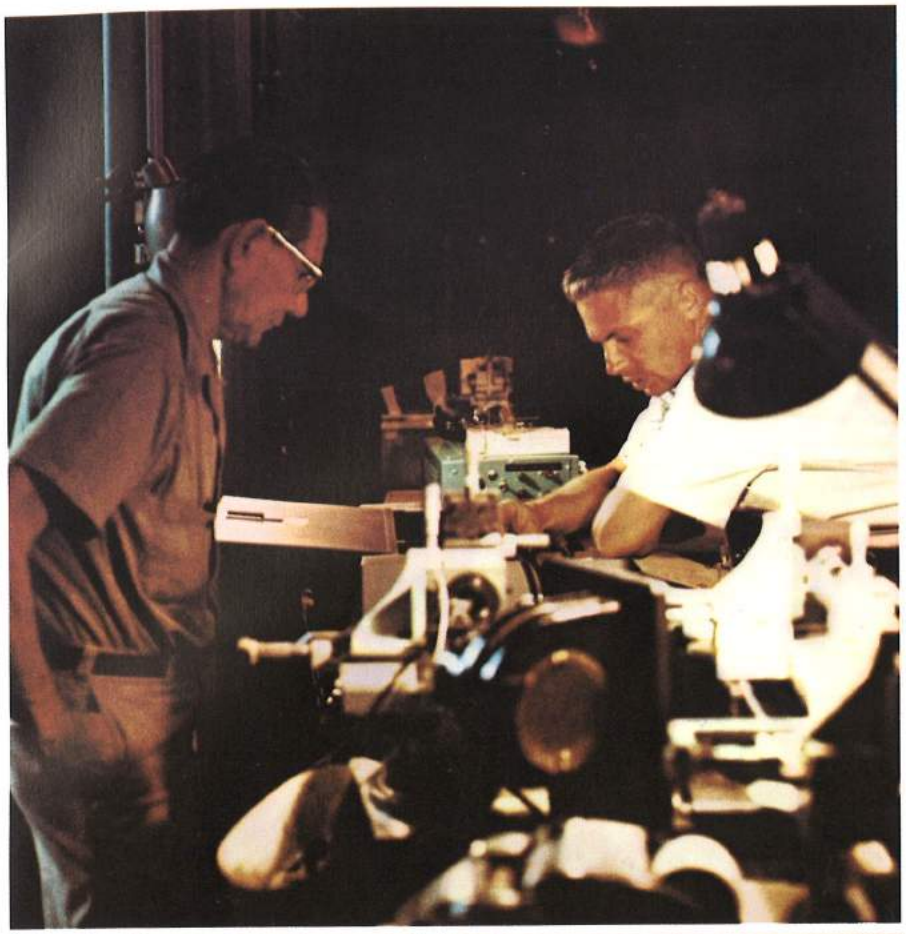


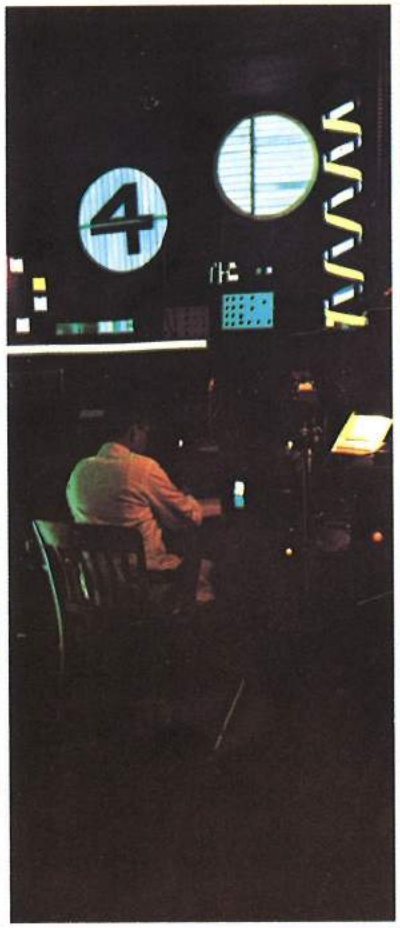


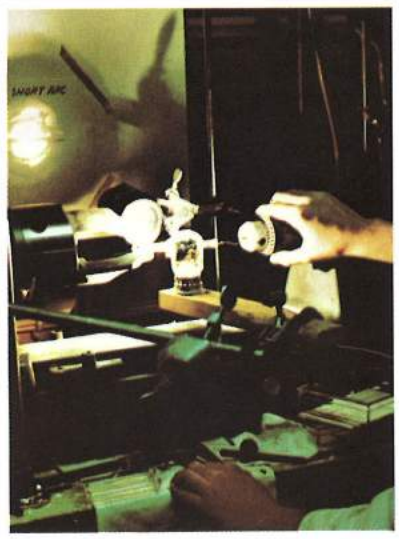
The world's most modern lighting and radiant energy research center is located in the 185,000-square-foot Sylvania Lighting Center at Danvers, Mass. Here in a maze of laboratories and test facilities, physicists, crystallographers, phosphor chemists, electrical and electronic engineers are involved in the search for newer, better, and more efficient light sources. The research laboratory has a complement of several hundred scientists and engineers whose success is demonstrated by an ever-growing list of patents and inventions.

Included in the facility is the world's largest goniometer. This device measures the actual distribution of light from a source by rotating a light-sensing device in a 30-foot circle around the energy source or fixture.

The lighting laboratories utilize the most advanced scientific equipment for testing and evaluation of potential product development. Spectroscopy, gas chromatography, environmental, radiometric, and photometric testing





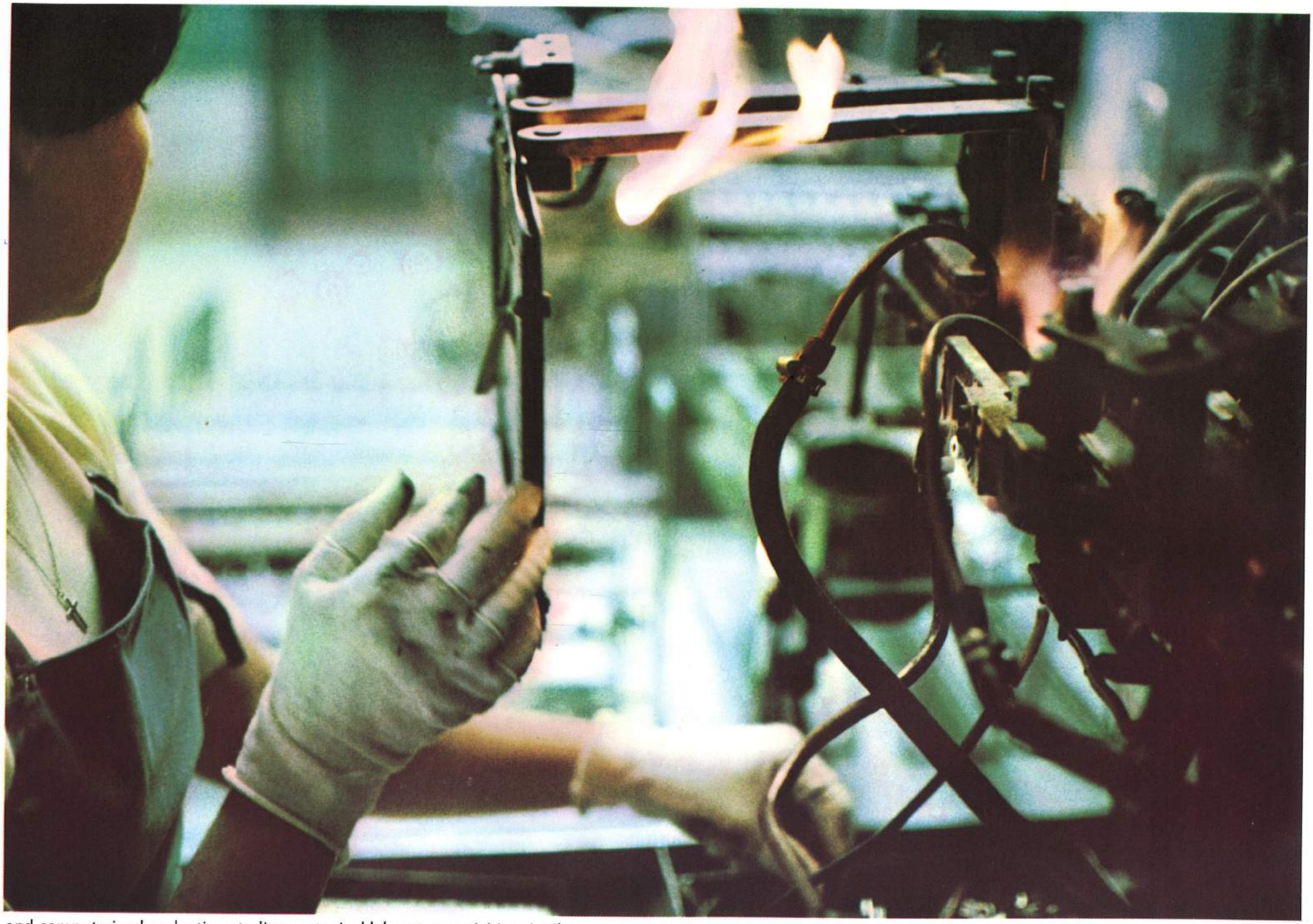


Research & Development

T.L. *Discussion of bench test set-up*
T.C. *Test measurements in Panelescent development laboratory*
B.L. *Glass blowing to form lamp model*
B.C. *Projection of lamp filament for inspection*
R. *Reading data off graphic test equipment*

Opposite Page

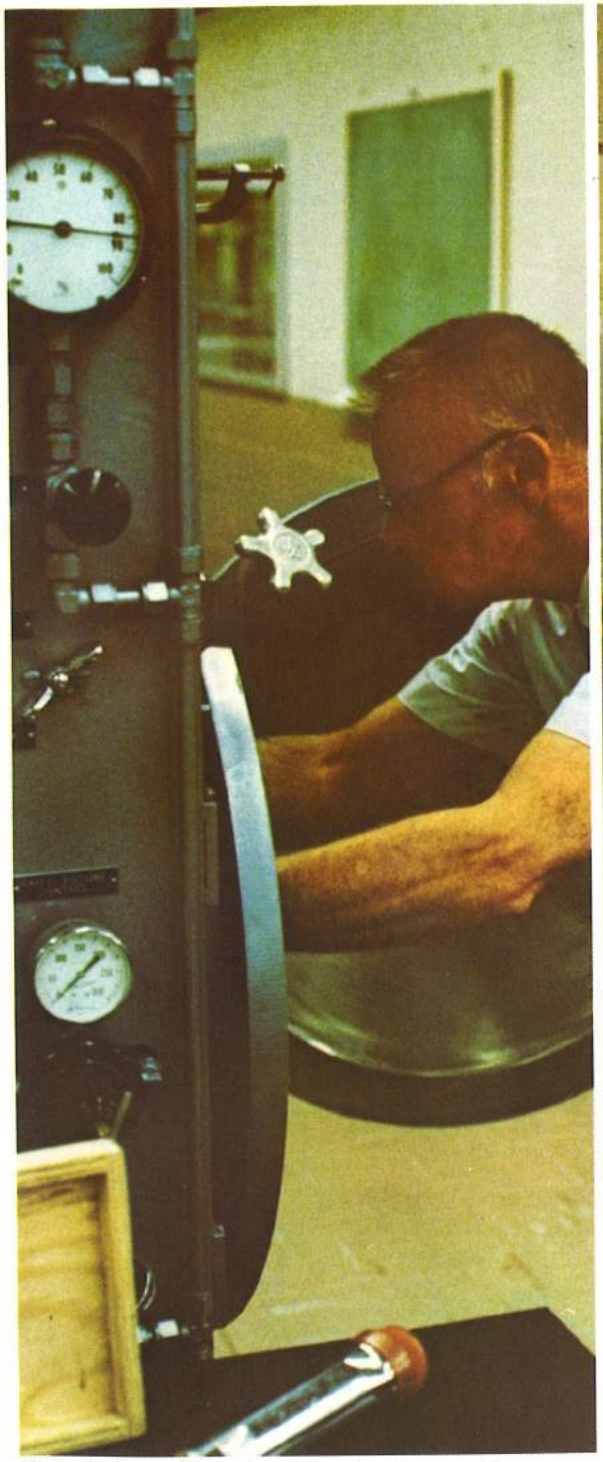
L. *Analogue computer linked to test rack*
T.R. *Experimental laboratory for lamp design*
B.R. *Measurement of lamp characteristics*

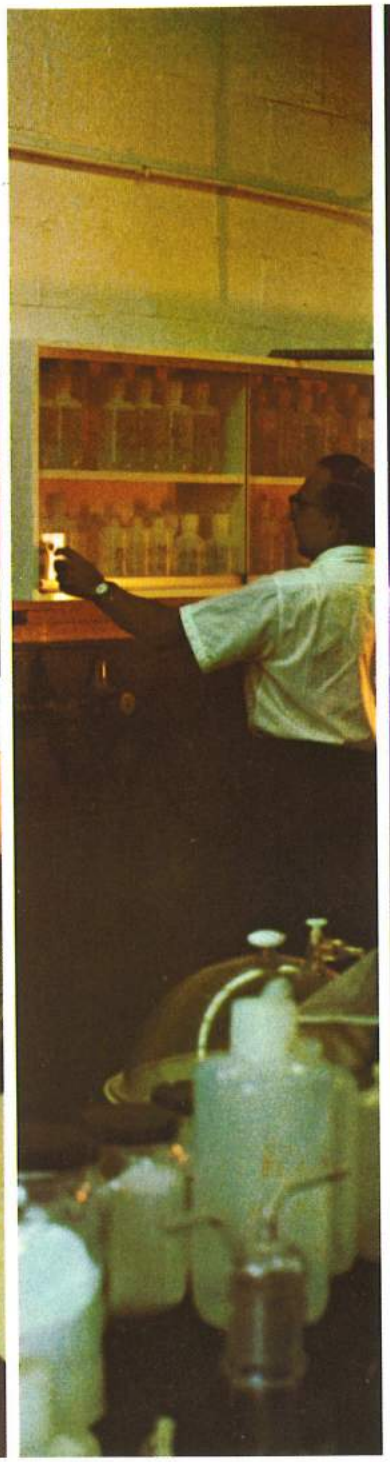


and computerized evaluation studies are typical laboratory activities. A pilot phosphor plant develops and standardizes new formulas for fluorescent and allied products. Infrared and ultra-violet sources are investigated for new applications in painting, curing, sterilization, baking, and reprographic devices.

A recent development with broad architectural implications is the heat-with-light concept where warmth produced as a by-product of light is utilized for space heating. A complete installation has been built in the laboratory for the further development and evaluation of fixtures which will light and heat commercial buildings in the future.

Many laboratory activities are joint efforts involving other groups such as quality assurance specialists or manufacturing methods engineers. Of primary concern is the early integration of new radiant energy developments with the manufacturing and quality control capabilities of the plants so that the final product will measure up to Sylvania's rigid standards.





Opposite Page. *Operator at glass forming machine*
L. *Removing sample from environmental test chamber*
C. *Chemistry laboratory*
R. *Fixture being tested in goniometer room*

Products

Products

Over the past several decades, Sylvania has emerged as the leading innovator in light sources. Each year the record grows. From the introduction of the first long-life incandescent lamps, built especially for shock and vibration resistants in industrial applications to the development of internally-reflectorized lamps for flood and spot lighting that automatically provide an efficient new reflector with each lamp change, . . . to the Sun Gun, and the Flashcube, . . . an astounding variety of dependable new type lamps are continually being developed by Sylvania engineers for the home, business, and industry.

L. *Typical range of sizes of tungsten light sources*
L.C. *Circline lamps and packaging*
R.C. *Special small size incandescent lamps*
R. *Array of tungsten-halogen lamps including single and double ended types*

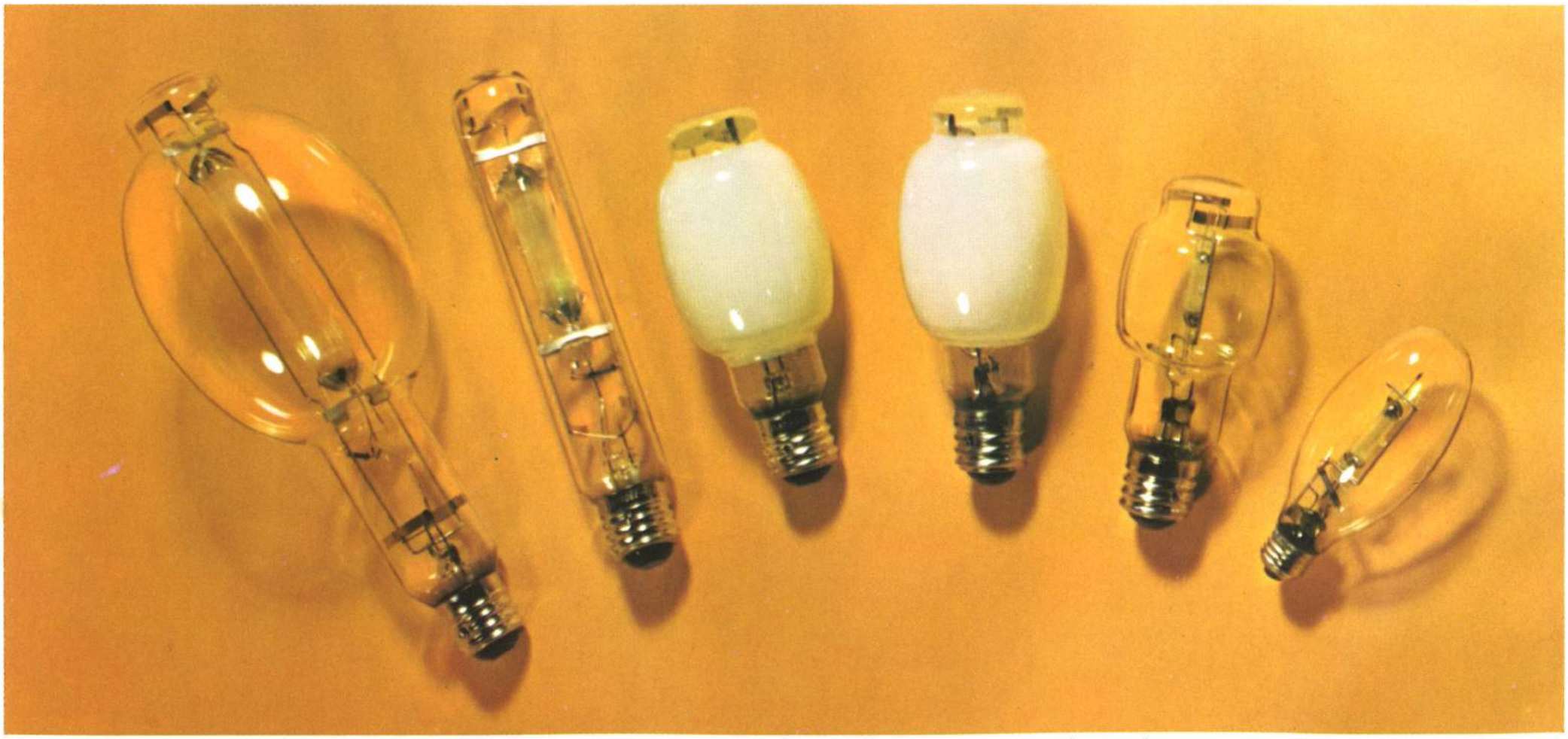
Opposite Page

L. *Lamps for every household application*
R. *Wall fixture using one of the many Decor lamp types*

Good examples of lighting innovations are the high-output (250 to 750 watts) lipstick-size, tungsten-halogen lamps being used to create new kinds of lighting fixtures. These tiny but powerful sources have opened up a myriad of new fixture design possibilities for home and industry by providing flattering white light together with the added benefit of 2,000 hour life — more than 4 times longer than common incandescent types. Decor lamps, infrared, ultra-violet and sun lamps, night lights, spotlights, floodlights, and fluorescents, represent only a fraction of the ever-growing Sylvania lighting product line.

Growing recognition of the safety factor provided by adequate street lighting and the productivity improvement achieved through proper industrial lighting is fast changing lighting practices across the land. Sylvania's trend-setting line of mercury lamps has in many ways anticipated these needs. Together with lighting equipment engineers, lamp designers have created efficient, shock resistant mercury lamps with a wide choice of color temperatures and efficient, attractive fixtures designed to optimize their features.

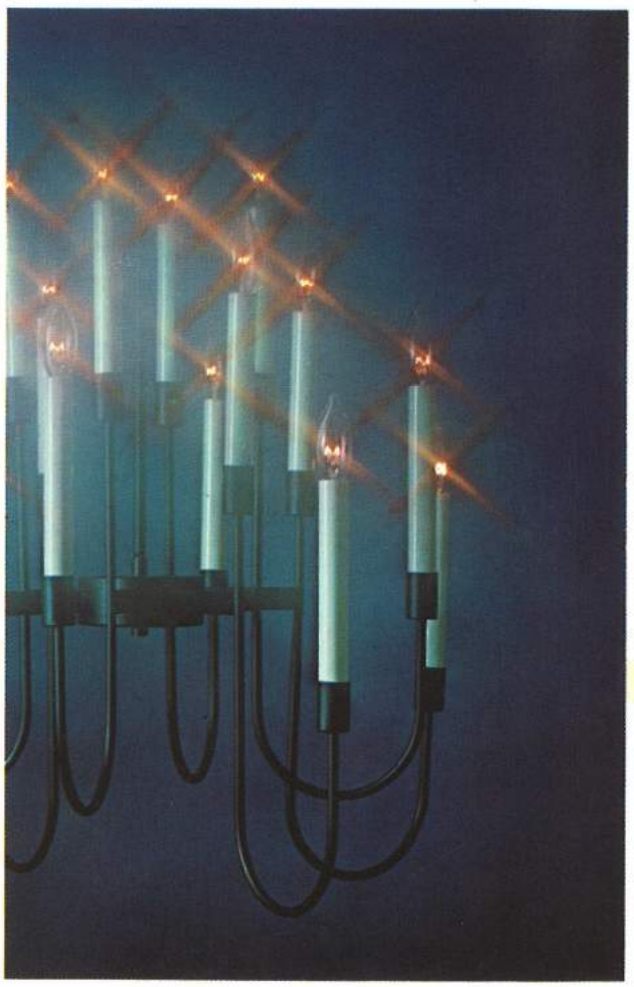
Reflector type lamps, either white or colored, provide an economical answer to a hundred special lighting tasks from jewelry displays to manufacturing processes.



Broad Range of mercury lamp sources provides versatility for varied lighting tasks

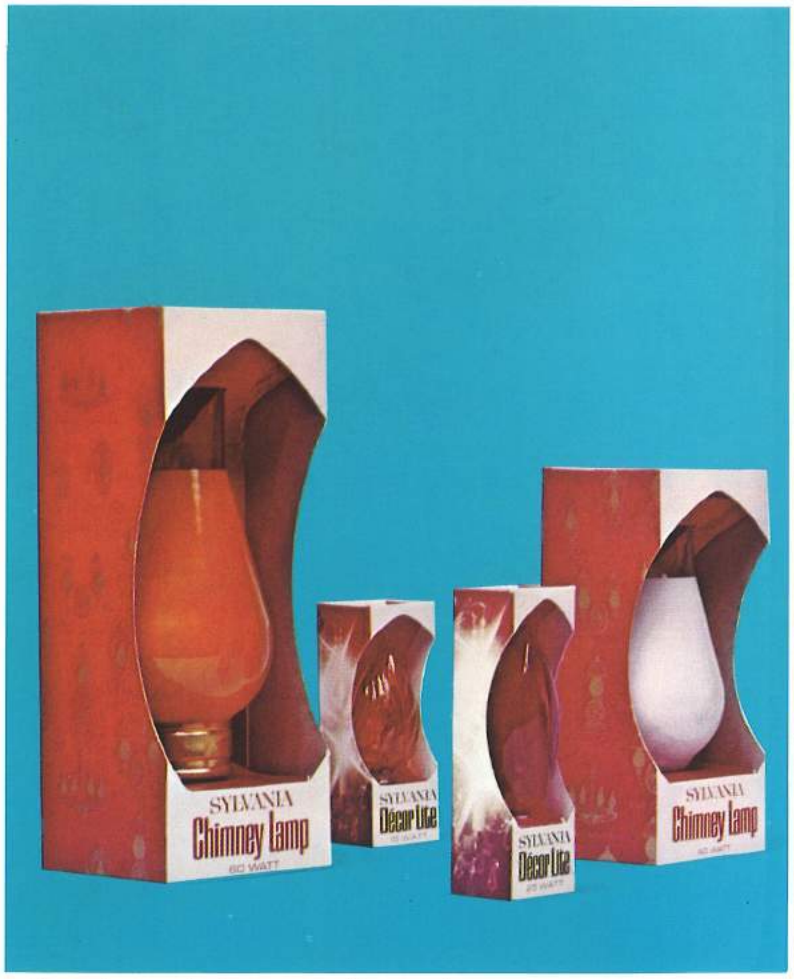
Opposite Page

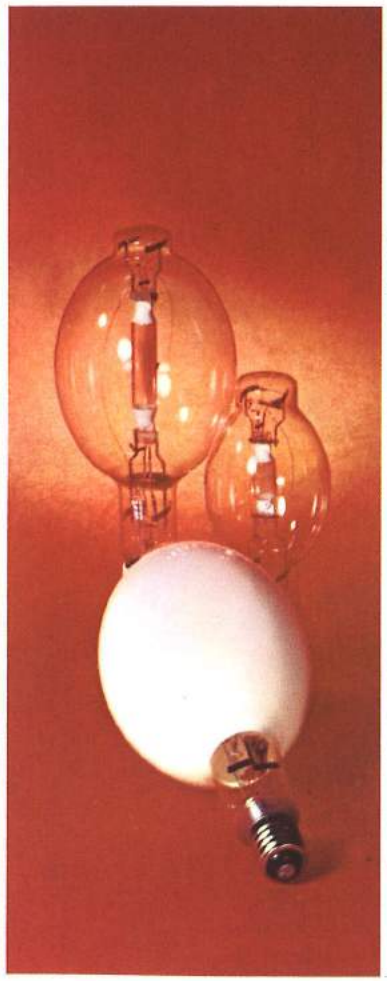
L. *Colored reflectorized lamps show multiple color choice*
R. *Candelabra design is enhanced by graceful Decor lamps*



Metalarc, an almost magical name in arc-discharge type light sources, has in the space of little more than a year revolutionized sports lighting, supermarket, and department store lighting by producing superb color rendition at peak efficiencies. Infrared quartz types now are available with such fantastic capacity to produce heat from a miniature source, that they have opened up many possibilities for climate control. They are even used in laboratories to simulate the extremely intense heat encountered by space vehicles during re-entry of the earth's atmosphere.

Sylvania produces the widest, most versatile line of residential decor lamps available from a single manufacturer: Beaded, twist top, flame shape, iridescent, chimney types and numerous others in a wild array of colors, sizes, and shapes. And for special effects, white or richly colored stained glass PAR lamps are available in smart, appealing packages.

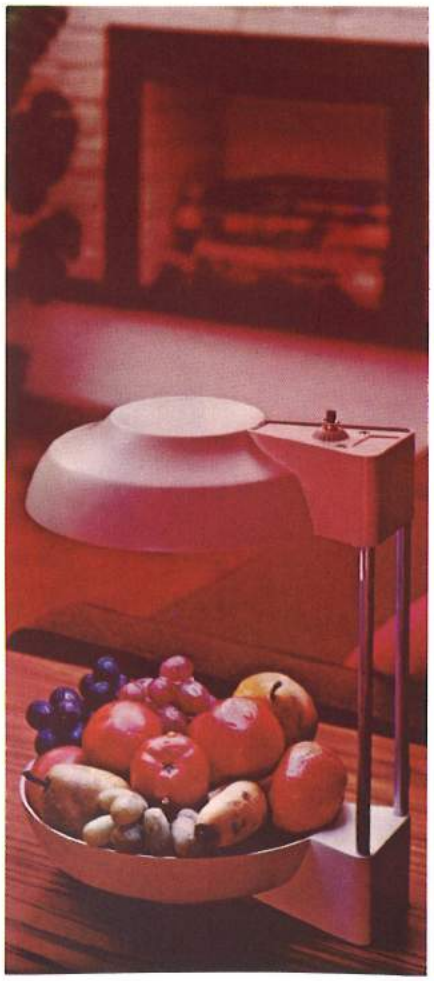




L. *Decor lamp packaging creates sales appeal*
L.C. *Revolutionary Metalarc lamps*
R. C. *Accent lighting adds room interest*

Opposite Page

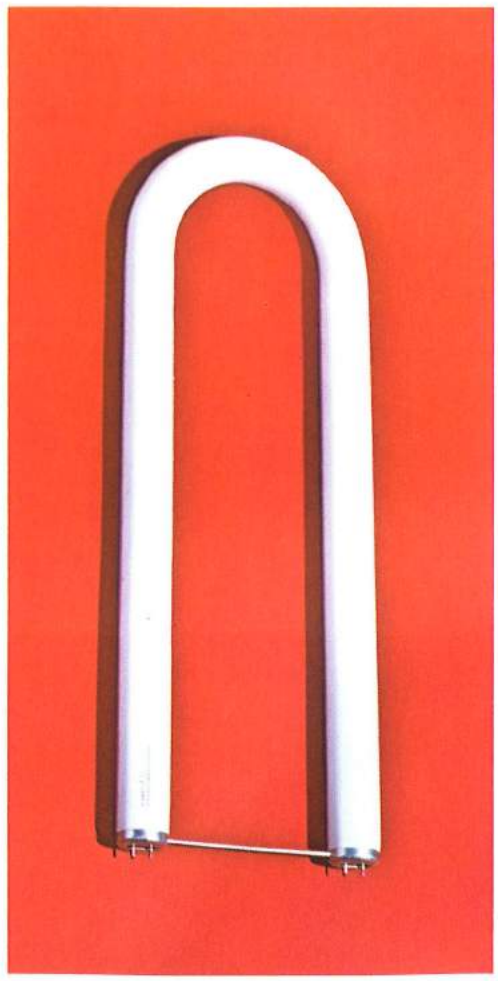
L. *The famous Gro-Lux home ripener*
R. *PAR lamps in attractive eye-catching package*




SYLVANIA
Cool-Lux
SYLVANIA
Spotlite
SYLVANIA

If there is a single most important group of lamps in use today, it is the fluorescent family, and here Sylvania leads the field in innovations. Its broad line includes the most efficient, economical, longest life lamps available today — from one inch to eight feet in length. Not content with producing the finest fluorescents made, Sylvania devised the Caddy-Pack to make group relamping simpler and less costly, another benefit for Sylvania customers.

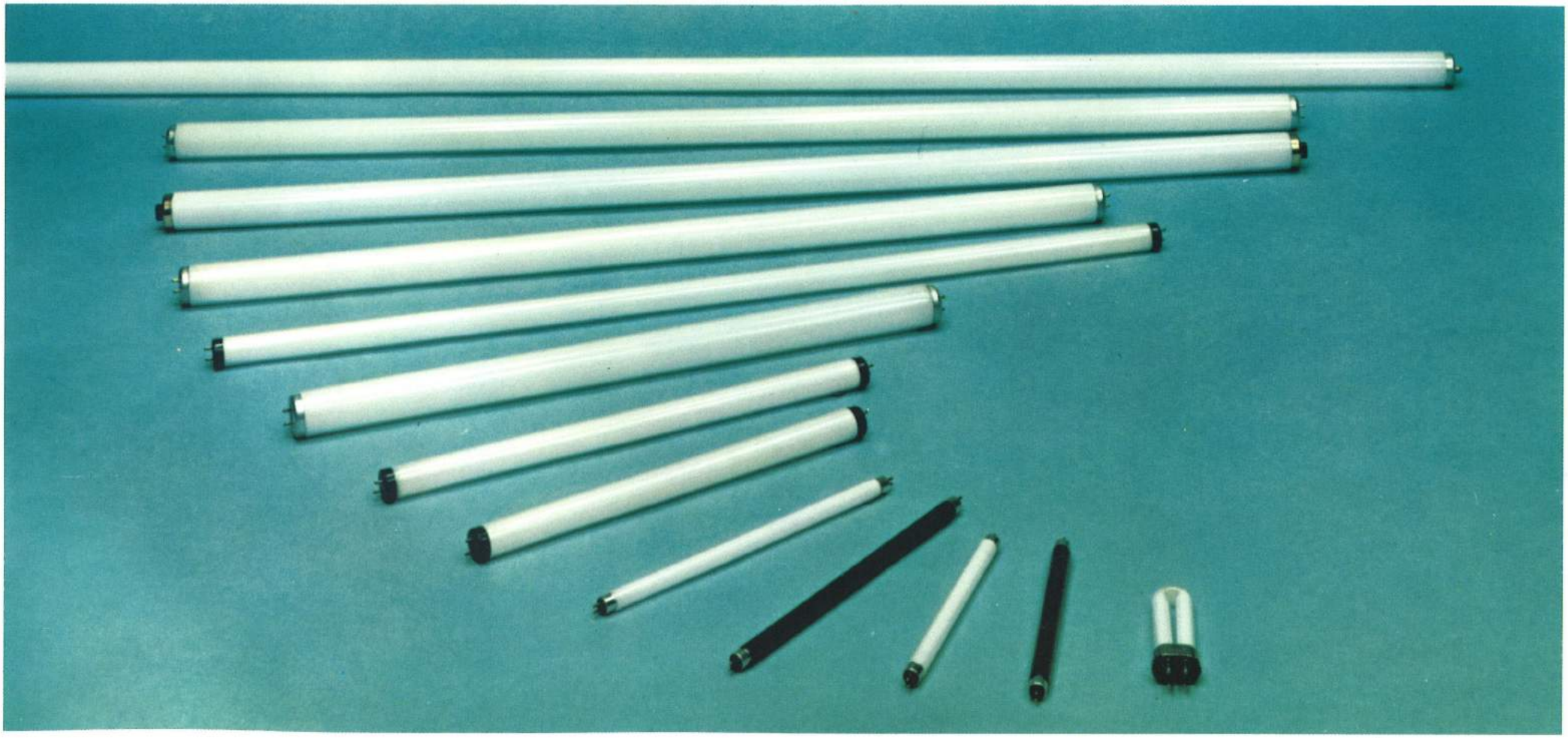
More exciting and unusual sign lighting is being designed because of the variety of shapes and colors available in Sylvania sign lamp types. Vivid or subtle, whatever the effect wanted, Sylvania lamps help convert the sign designer's ideas to bright reality.



L. *Caddy-Pack demonstrates innovative packaging*
C. *Many answers to sign lighting problems*
R. *Newly developed curvalume means better space utilization for special jobs*

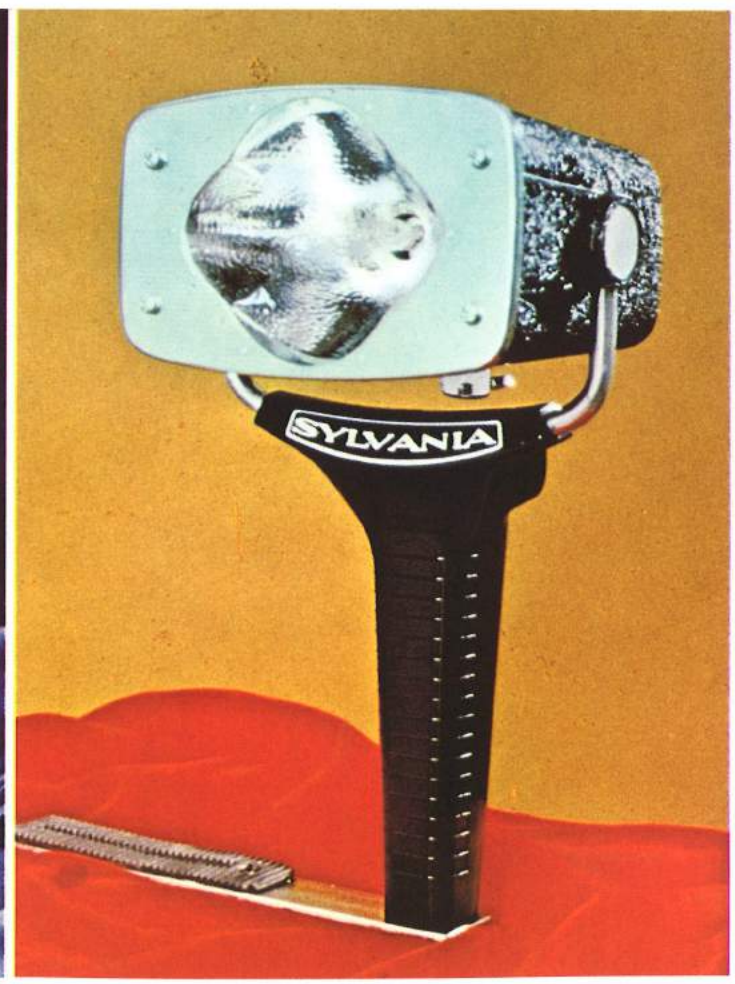
Opposite Page

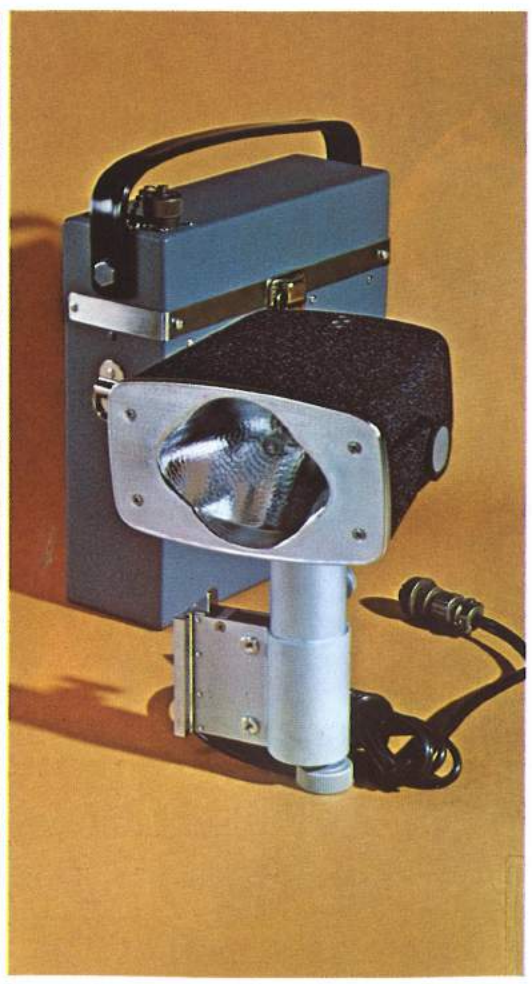
C. *The most efficient fluorescent lamp line commercially available*



Revolutionary is an exciting word, but it is necessary to describe the projector lamps, theatre, and television lamps, the Sun Gun concept, and the whole series of Sun Gun models, and the special purpose strobotrone, deuterium, and zirconium arc lamps that stream from Sylvania laboratories and factories. By putting optical reflectors inside the lamp itself, slide and movie projectors were completely redesigned . . . smaller and sleeker. Optically perfect filaments and a special heat-dissipating dichroic coating on Tru-Flector lamps made these style changes possible.

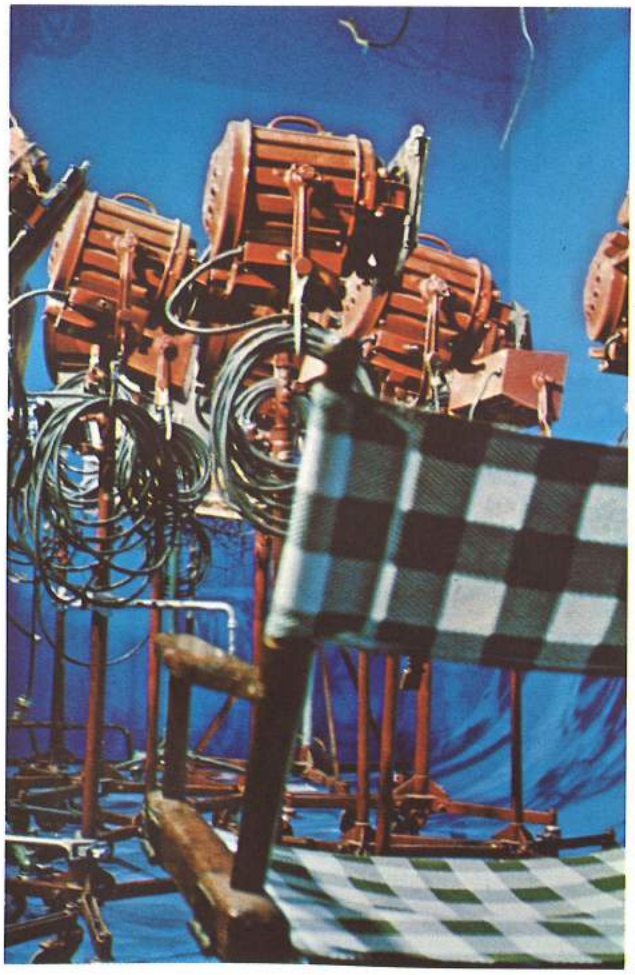
The Sun Gun movie light was considered so important a contribution that it was recognized by a special "Oscar" from the Motion Picture Academy of Arts and Sciences. Now a new battery pack Sun Gun makes night time pictures and movies possible anywhere, anytime.

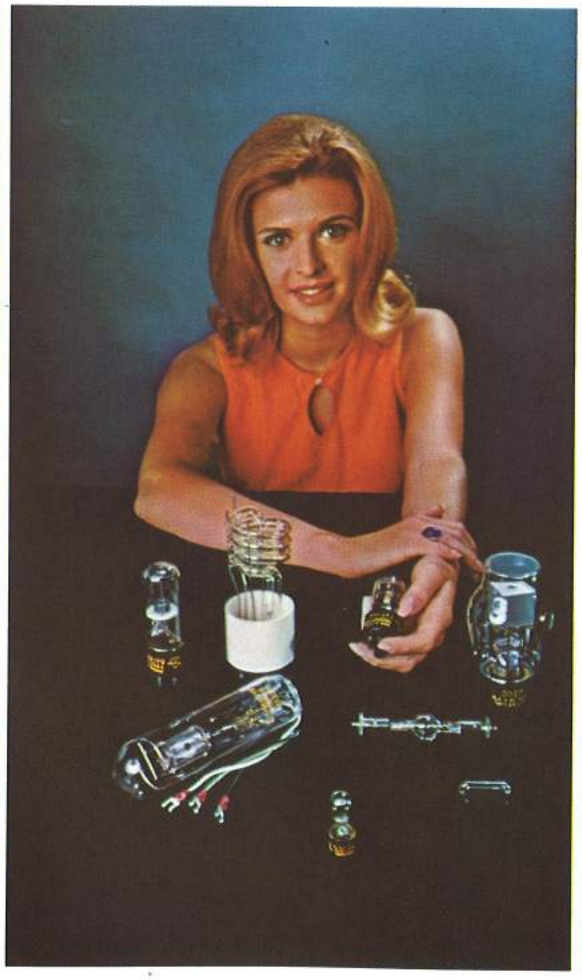




L. *Special Sun Gun "Oscar"*
C. *Portable Sun Gun model*
R. *Heavy duty battery pack unit*

Opposite Page
L. *Theatrical lighting uses many special sources*
LC. *Special purpose lamps for exotic scientific applications*
R.C. *These projection lamps have changed the projector industry*
R. *Tungsten-halogen lamps for theatrical lighting.*

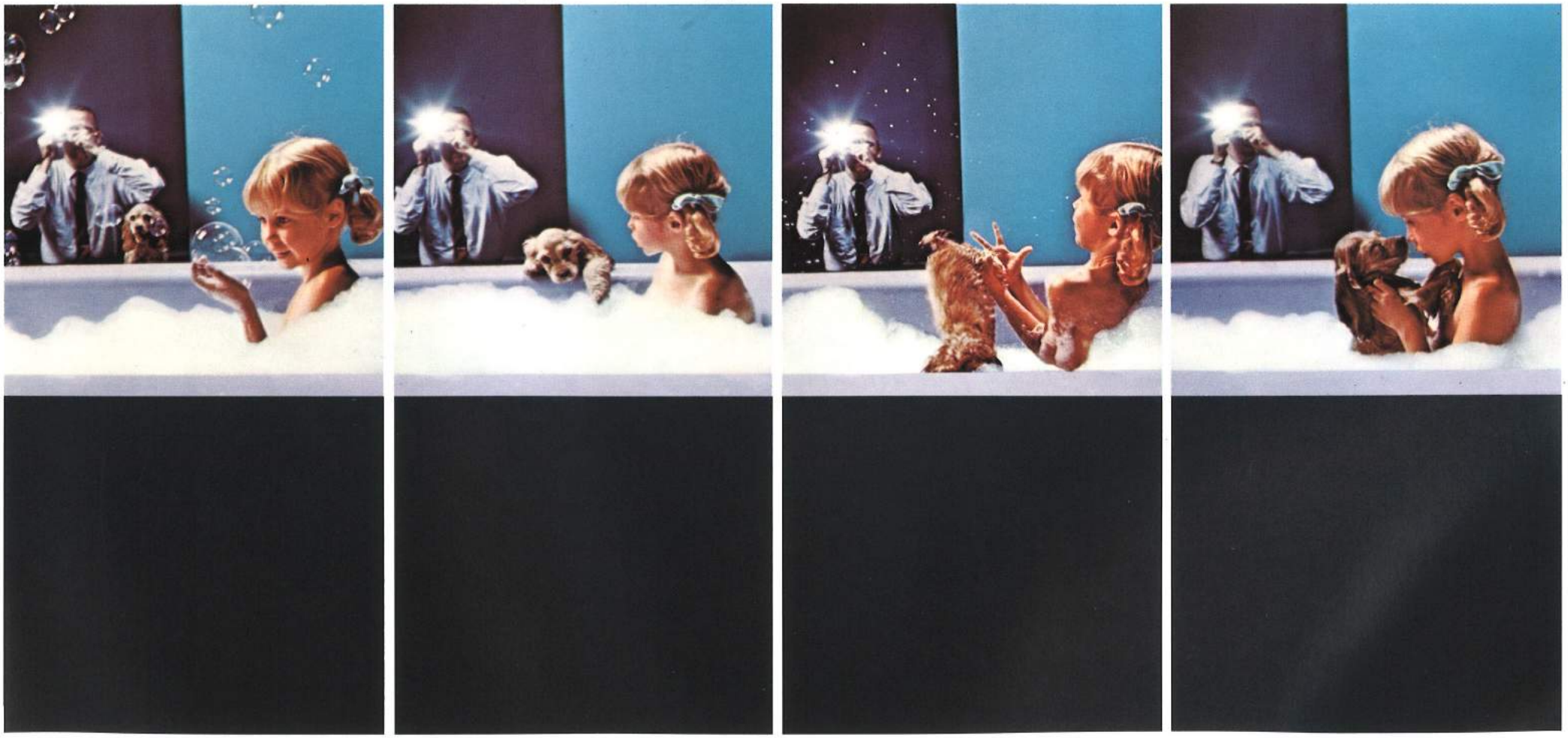




Long the leader in photographic lighting, where "Blue Dots for Sure Shots" is synonymous with dependable performance, Sylvania made its dependability indisputable with the dramatic introduction of the Flashcube. Almost overnight, the Flashcube became a photographic sensation.

For other lighting applications, Sylvania devised the mini-ballast to convert less efficient post top lamps to bright, economical long-life mercury simply and inexpensively.

Indicator lamps, panel lights, and other miniature lamp types, some as tiny as a grain of rice, flow from automated precision machinery into every kind of equipment from telephones to elevators, to complex electronic equipment.

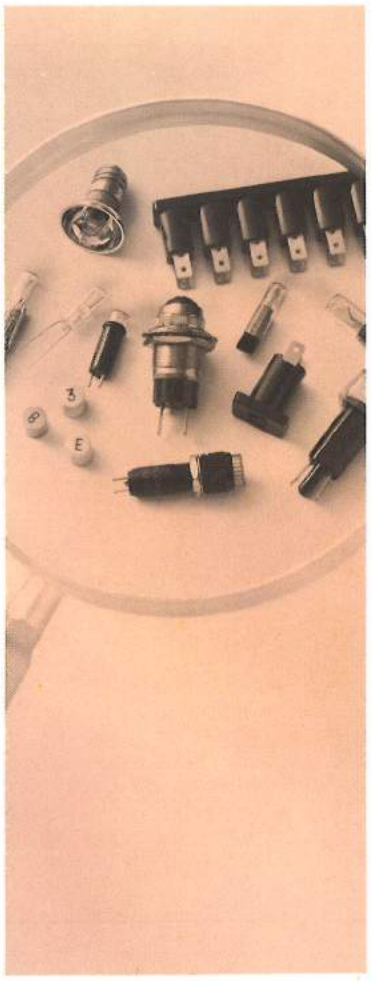


The invention of the Flashcube makes this kind of picture a simple task

Opposite Page

L. *This mini-ballast converts post top lamps to bright efficient mercury*
L.C. *Miniature lamps used for electronic and other equipment*
R.C. *Testing miniature lamps*
R. *Reprographic light sources*


SYLVANIA
SYLVANIA
MAGNETIC COMPONENTS DEPT. IPSWICH, MASS.

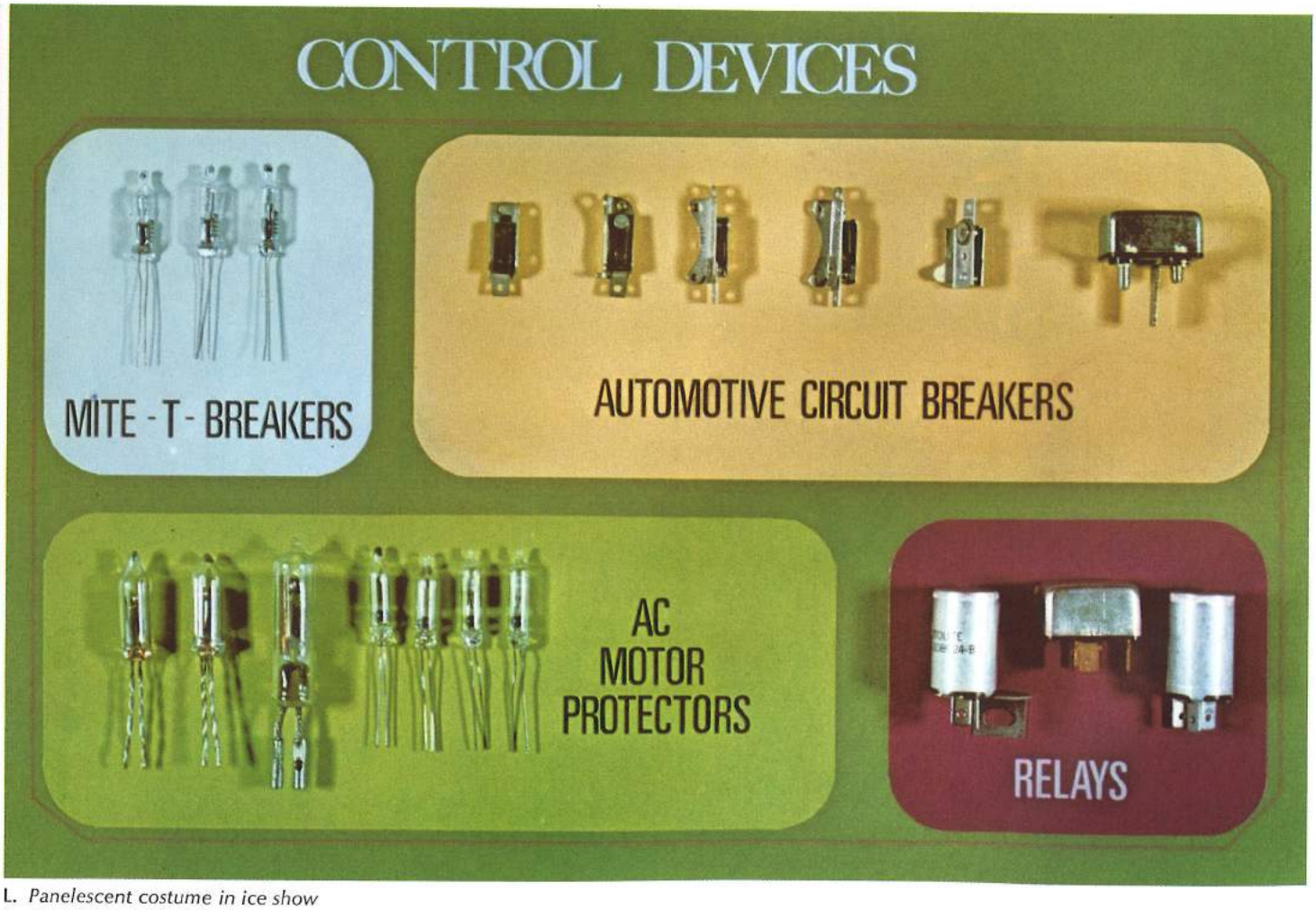



SYLVANIA
FLASH
CUBES

Panelescent® lighting, a unique area light source pioneered by Sylvania, is made either in special shapes or by the yard as Tape-Lite. It has been used for interior decoration, costumes for theatrical productions, and for controlled visibility landing field lighting for military aircraft. It is used as a space vehicle light source.

Sylvania's control devices and thermostatic elements provide circuit protection for hair dryers, refrigerators, model trains, and literally millions of automobile electrical circuits, to name only a few of the applications for these tiny switching elements.

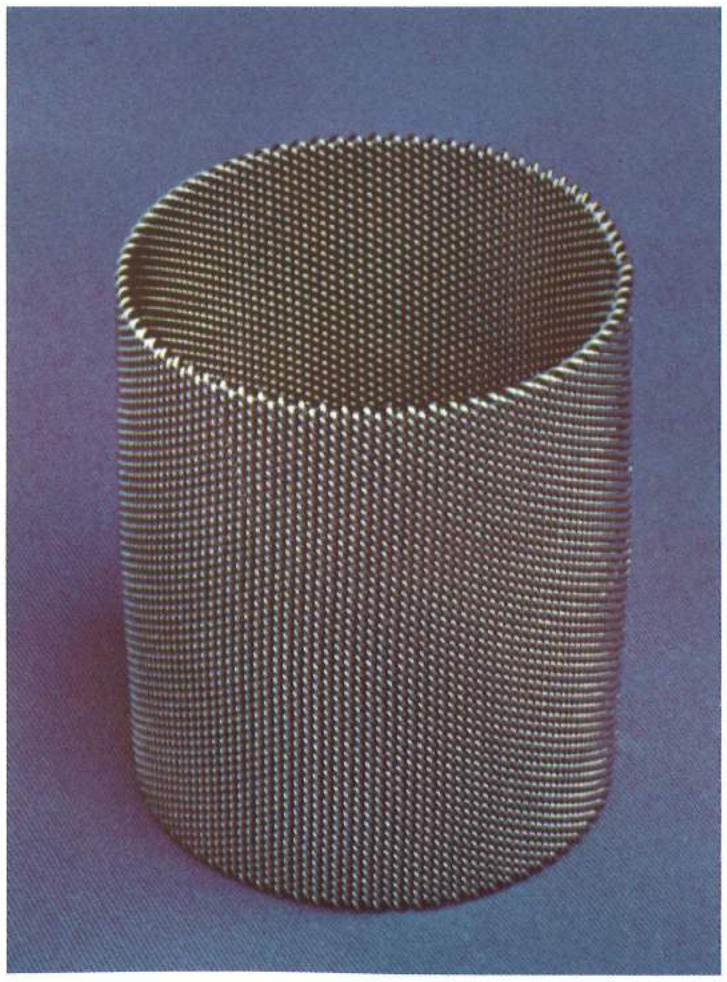
The coil operation, originally formed to supply internal lamp filament requirements, has put its engineering and production talent to wider use and has created a whole new business supplying special tungsten and other refractory and deposition metal sources to laboratories and manufacturers.

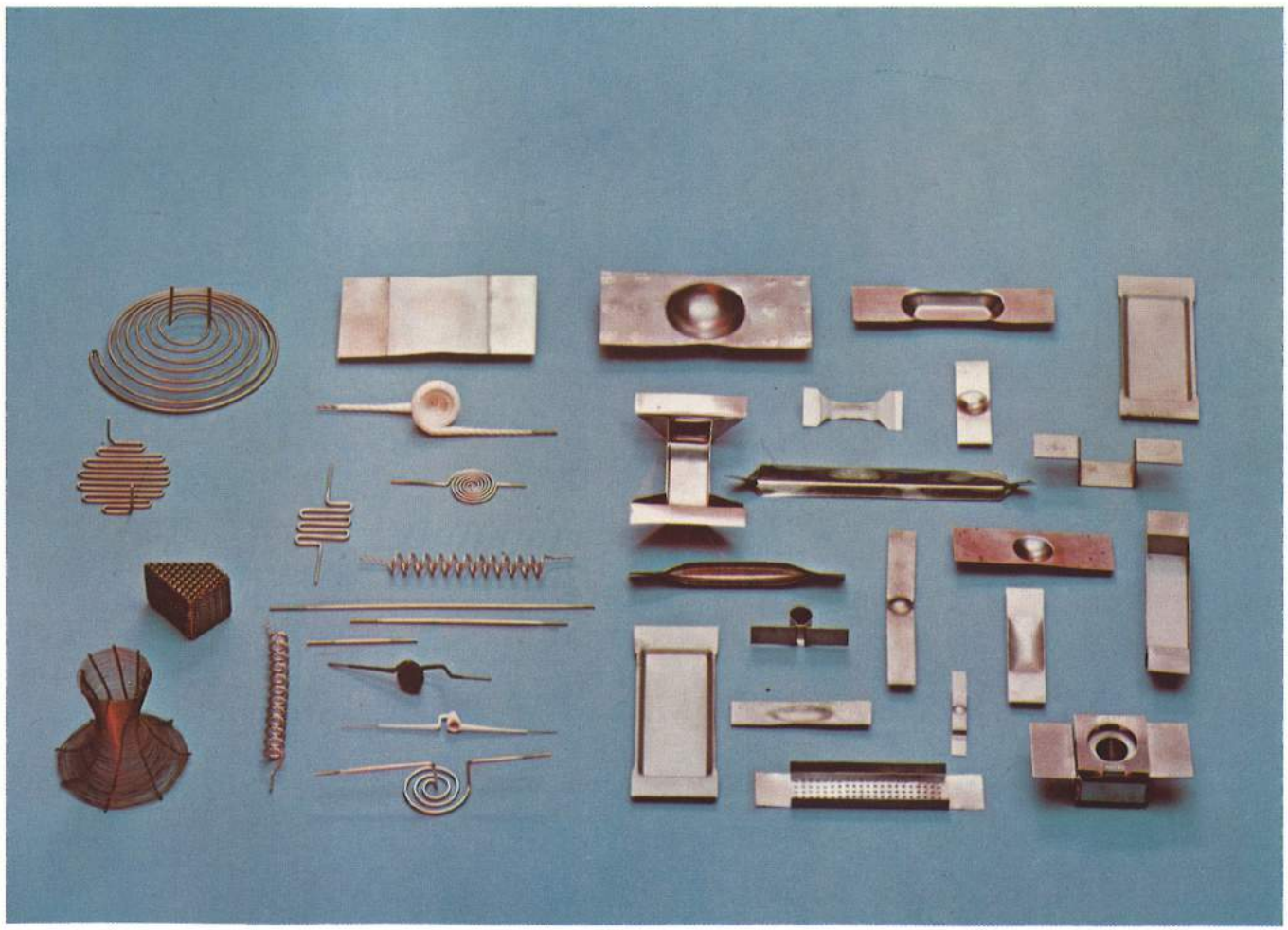


L. *Panelescent costume in ice show*
R. *Protective control devices*

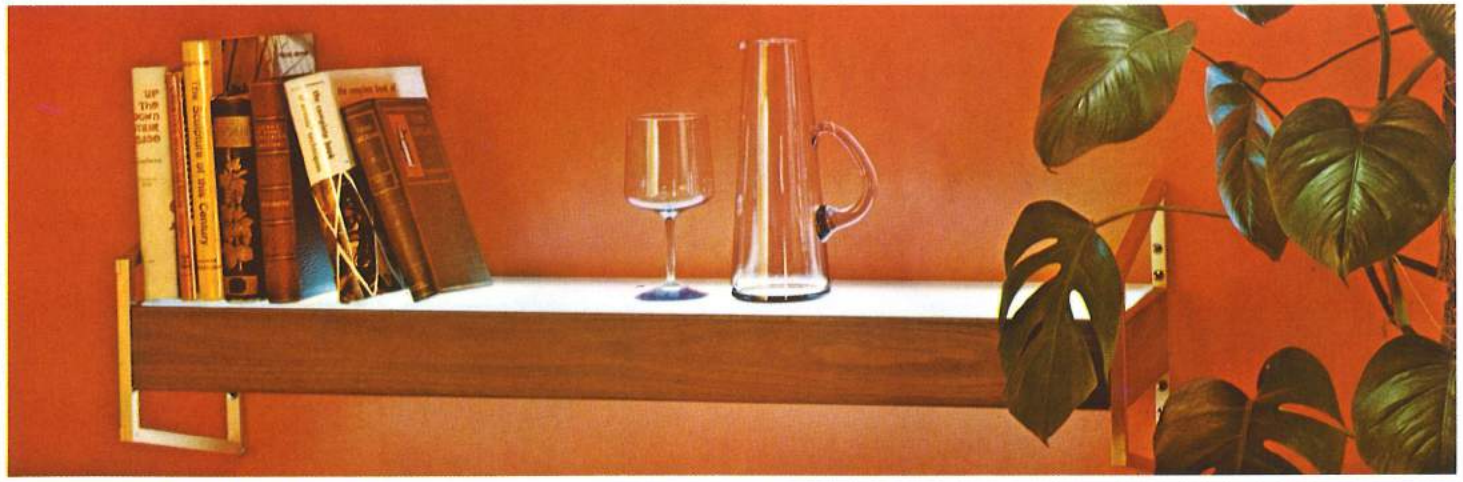
Opposite Page

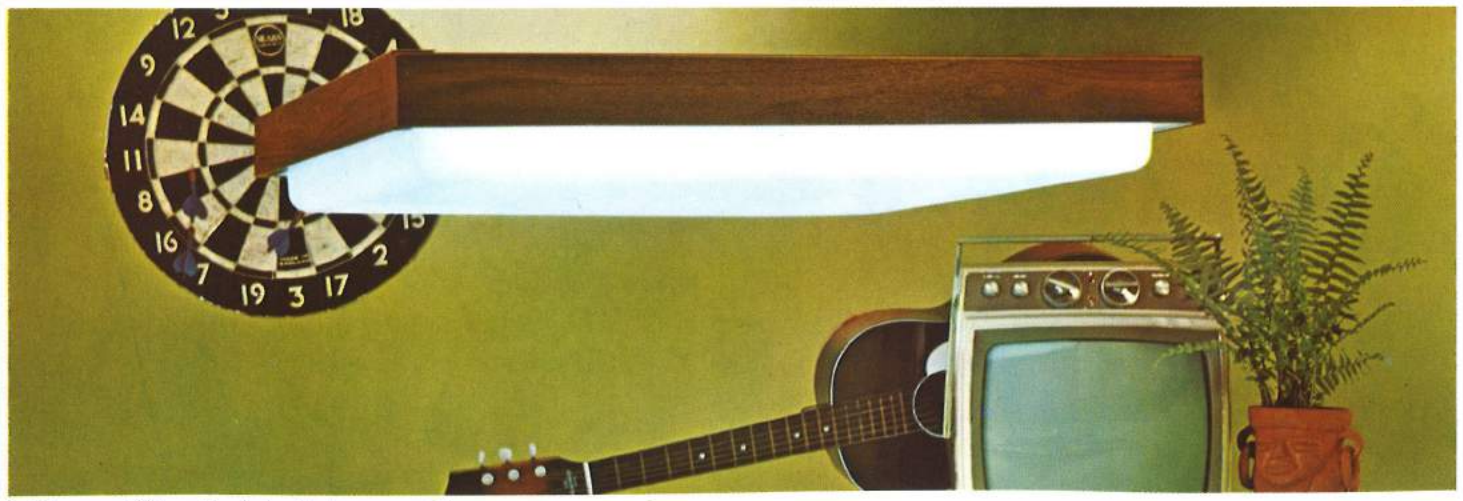
L. *Tungsten mesh high temperature heating element*
R. *Array of evaporation and deposition sources*





The pioneering Lighting Equipment Division is growing swiftly through the increasing acceptance of its newest lighting fixtures. Here as in the lamp operation, innovation has been the key to progress. Indoor industrial and commercial fixtures, such as the Caribbean and Vanguard, are solving tough lighting problems. Heat-with-light technology is putting Sylvania units into the most modern office buildings. Its Acre-of-Light unit is helping to make parking areas, malls, car lots, and shopping centers brighter and safer through its advanced optics and superior light utilization. The interior decorator line and outdoor custom designed architectural lighting fixtures are making Sylvania's the most sought after, fastest-moving fixture line in the industry.





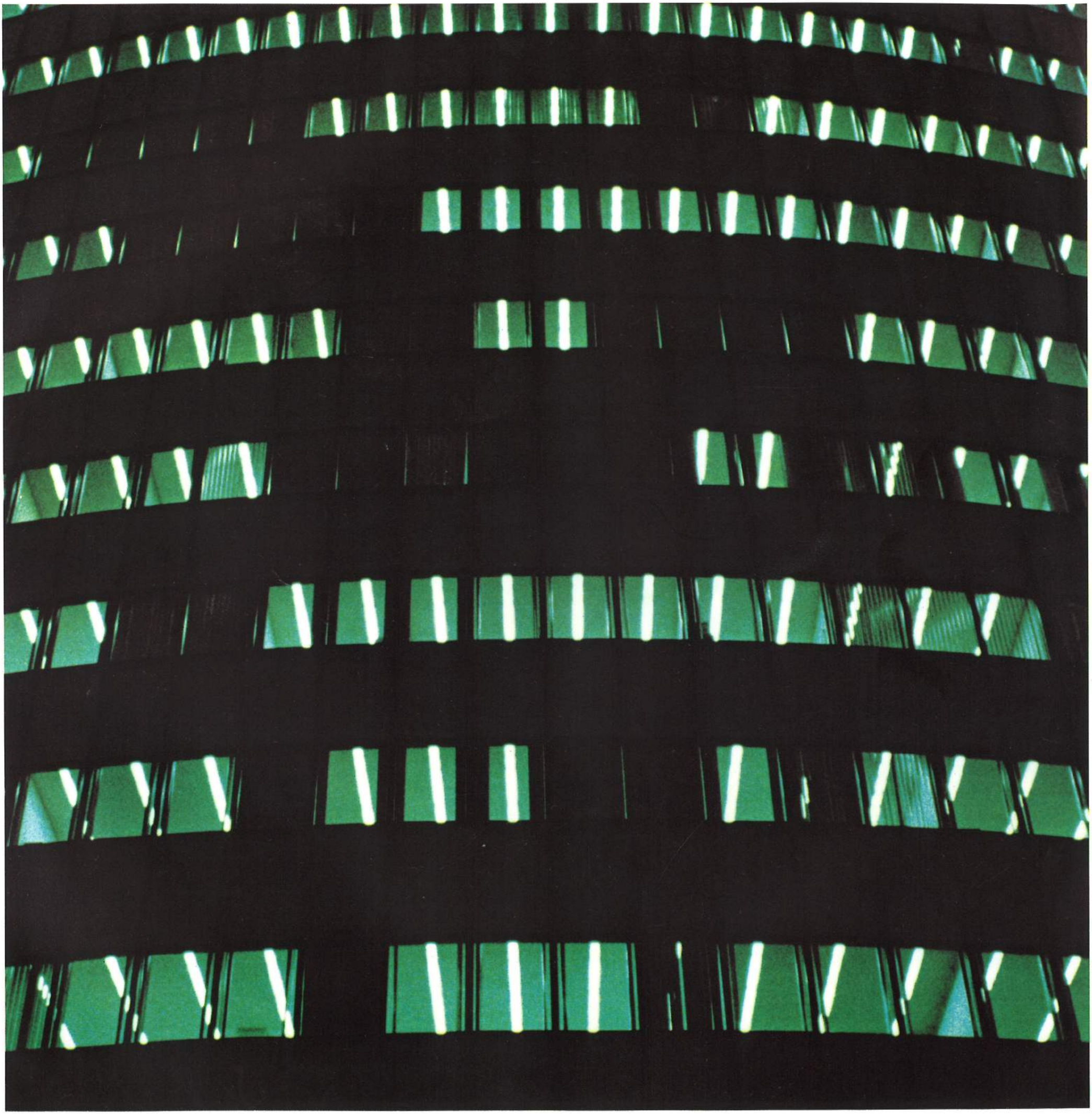
L. *Vanguard fixture for industrial-commercial use*
T.R. *Shelf-Lite provides both light and shelf space*
B.R. *Modulite simulates built-in look*

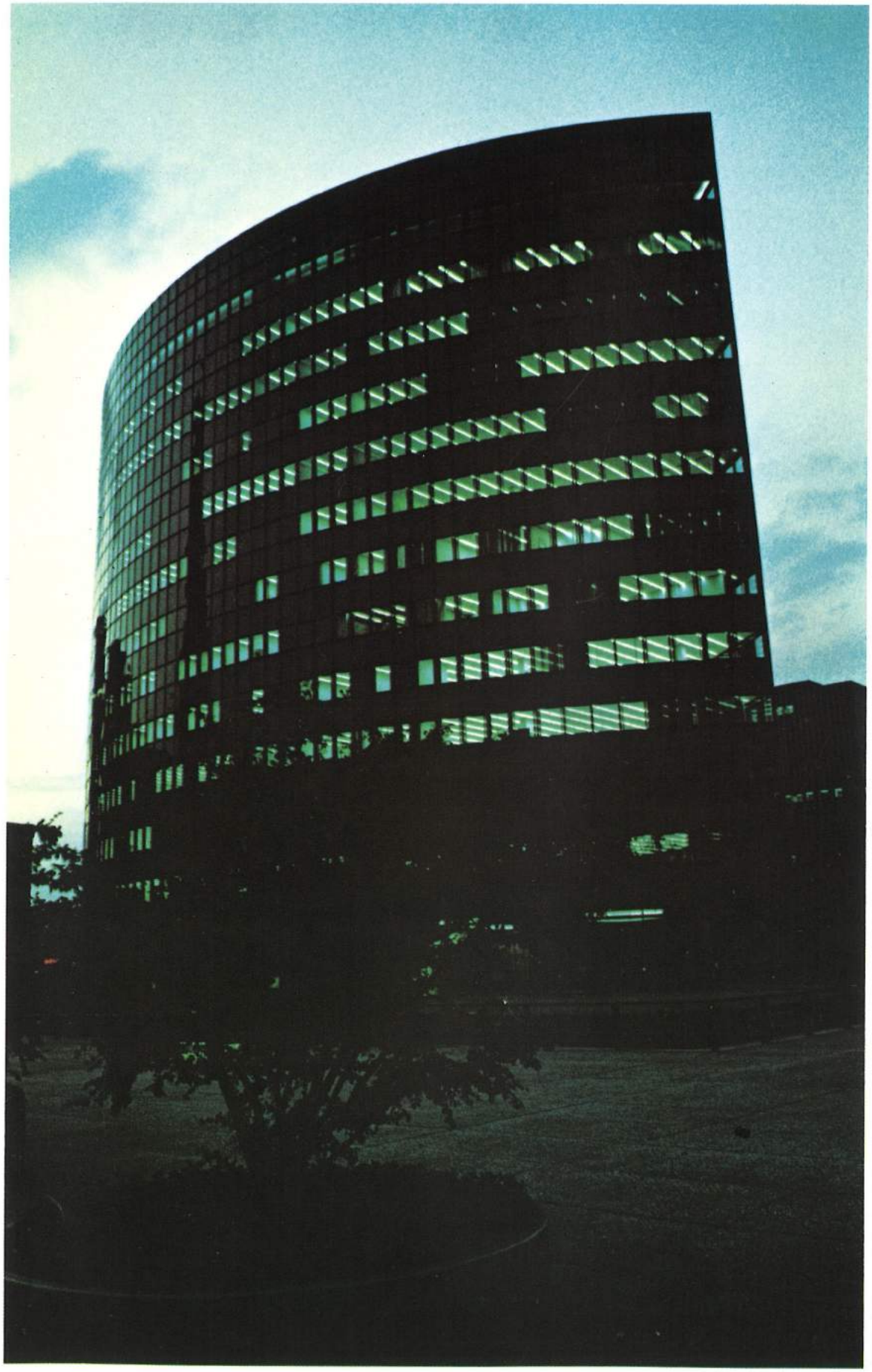
Opposite page

L. *Outdoor ball globe fixture*
C. *Acre-of-Lite boasts high efficiency*
R. *Acre-of-Lite shines on duty*

Applications

Applications



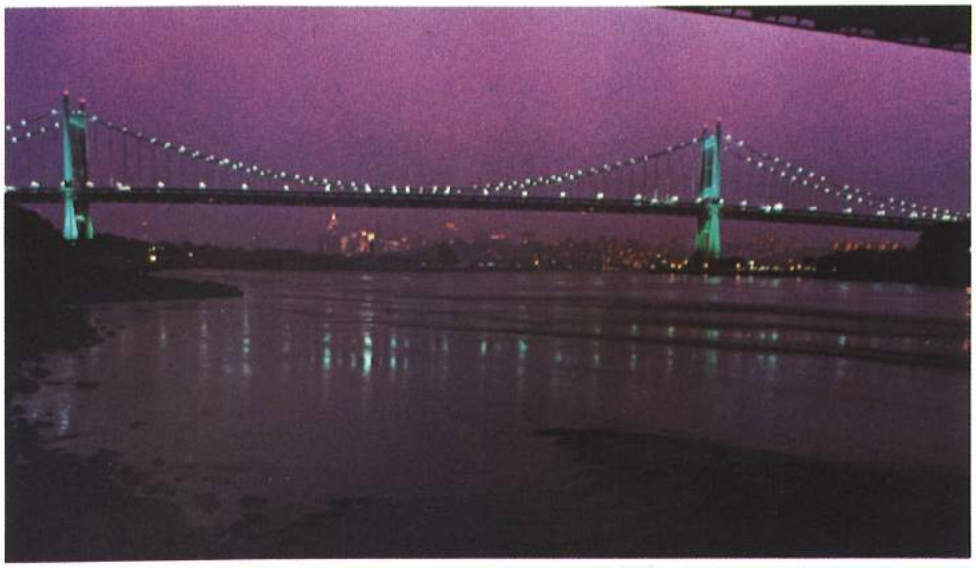


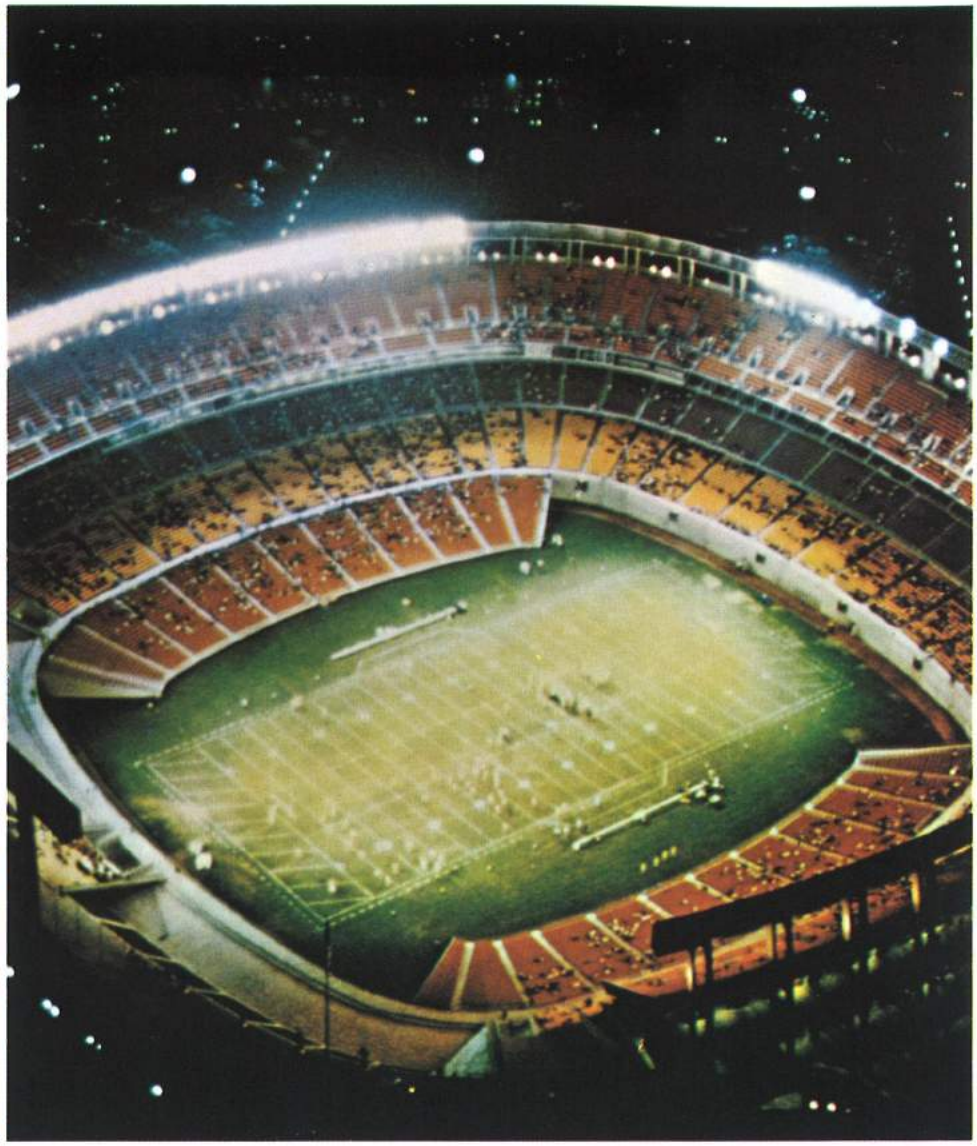
Applications

High level lighting in Hartford's Constitution Plaza

Opposite Page

T.L. *Necklace lighting on a New York City bridge*
B.L. *Metalarc lamps light an indoor tennis court*
R. *San Diego's Charger Stadium*





It is difficult to find an area where lighting products made by Sylvania do not provide pleasing, efficient answers to lighting tasks. In homes, offices, bridges, tunnels, parking lots, sports arenas, hospitals, theatres, space vehicles, underground caverns, indoors or out, the always reliable, often unique benefits of Sylvania's more than 6,000 types of lamps help make our world brighter, warmer, safer, and more beautiful. And each year new types are being developed to do these jobs better.

One of Sylvania's most impressive research developments was the Metalarc lamp, the first and the most effective *metallic additive* lamp. The lamp is widely used where both color and high light efficiency are important, such as in the Montreal Forum and the Boston Garden, for hockey and basketball games.

The Boston Garden chose Sylvania Metalarc lamps to provide as near daylight conditions as possible for color telecasting. San Diego chose Metalarc lamps to illuminate Charger Stadium for the best in color telecasting.


SHOWROOM


HOWARD JOHNSON'S
Motor Lodge & Restaurant
NEXT EXIT
LEFT TO GRAND AVE. 4 MILES - THEN RIGHT.


GERMAN-AMERICAN FOOD
COCKTAILS
BAVARIAN HAUS
THIS EXIT-5 BLKS

In business and in transportation, lighting can be the difference between success and failure, between safety and danger. Sylvania has repeatedly brought new ideas to light in aviation and outdoor area lighting. It developed the Electronic Flash Approach System using million candlepower strobotrons on runway approaches. Later the Visual Glide Slope Indicator was added to make visual landing easier. Even loading areas are safer through the brightness of Controlled Fluorescent Reflector units that give glare-free airport apron lighting. Many airports accent their details with versatile tungsten-halogen and other Sylvania light sources to emphasize their impressive modern design.

Metalarc efficiency at Boston's Logan Airport

Opposite Page

T. *Memphis airport uses incandescent sources to achieve bright sculptured look*

B.L. *Warm lighting for a financial institution*

B.C. *High intensity lamps aid car sales*

B.R. *Sign lighting requires many lamp types.*

Sylvania Metalarc and mercury lamps are used to create necklace lighting installations on bridges in every part of the country. In addition to providing safe crossings, they make the great sweeping lines of suspension bridges even more beautiful after dark.

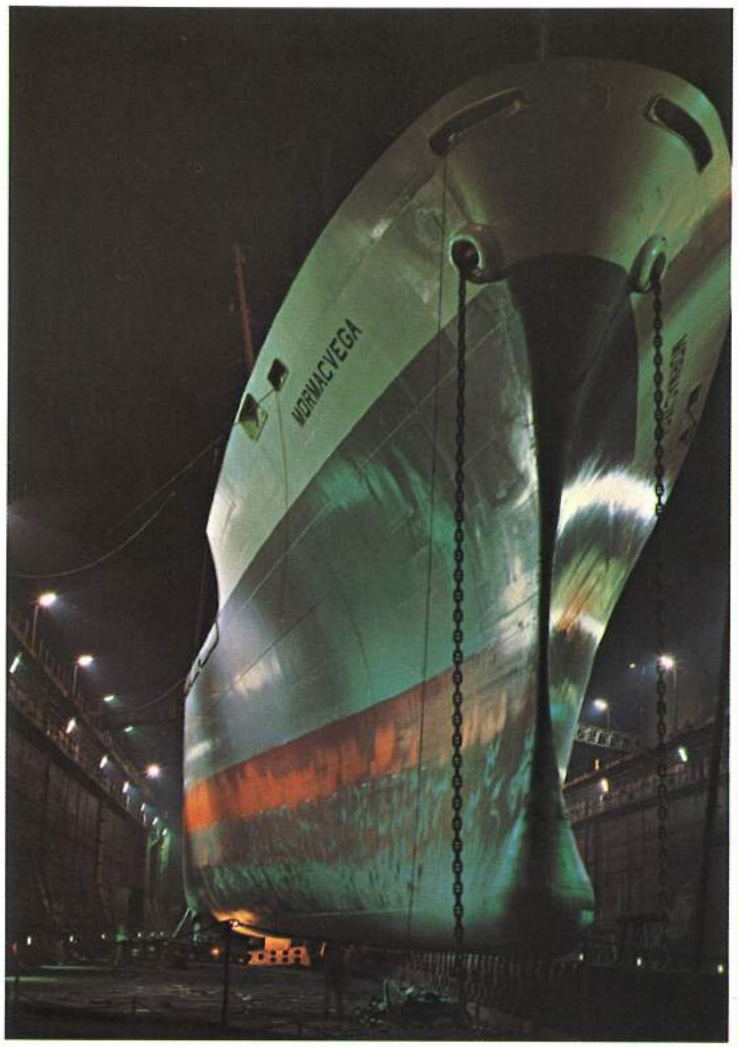
Indoor sports lighting is becoming more and more specialized, and Sylvania is a leader in this special field.

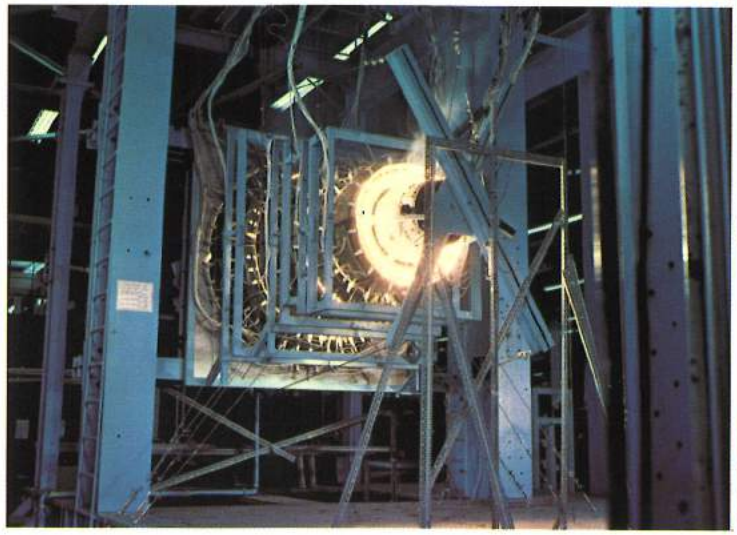
Retail stores and supermarkets can create a warm lighting climate with lamps such as Metalarc which bring out all the color appeal of food or fabrics and stimulates customer interest.

In photographic lighting, Sylvania's famed Big Shots photographs are made by setting off literally thousands of flash lamps simultaneously, to dramatize the possibilities of modern flash techniques. The Pyramids, the U.S.S. Antietam, the famed Horseshoe Curve in Pennsylvania, and the new Opera House at New York's Lincoln Center, have all been Big Shot subjects.

T.L. *Lighting used to create a contemporary scene*
B.L. *Proper office lighting provides a good working climate*
R. *High-intensity Metalarc lamps make possible indoor sports event television*

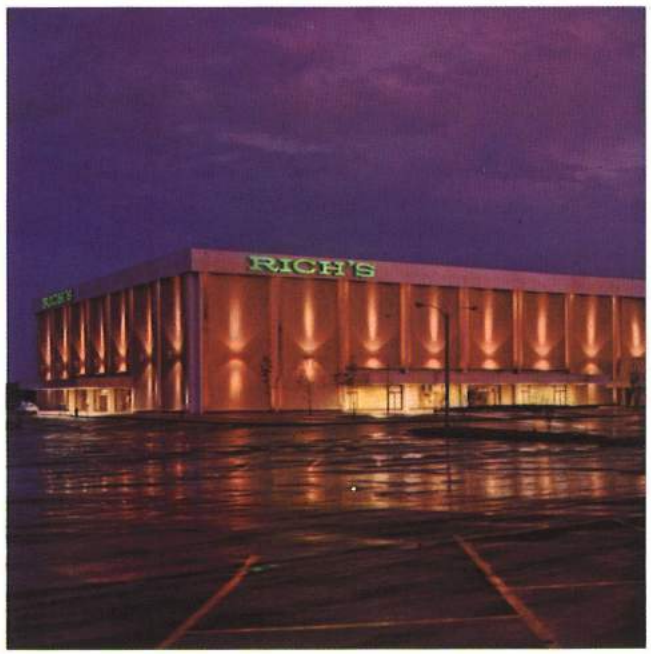
Opposite Page.
Bridges show their character with after-dark lighting





T.L. *Metalarc again, here at nation's 2nd largest floating drydock*
B.L. *Re-entry vehicle testing with infra-red heat sources*
T.R. *New Lincoln Center Opera House Big Shot*
B.R. *High level-food market illumination with Metalarc*

Opposite Page
Yankee Stadium during a night baseball game



Sylvania has been a breeding ground for new ideas in lamps, in lighting equipment and in applications techniques. When it developed the basic Miralume fixture and first established the fluorescent fixture industry in 1939, it assured public acceptance of the then-new fluorescent lamp. Since then, Sylvania has marked literally scores of "firsts" in lighting. In fluorescent lamps, Sylvania developed the Very High Output lamp and Natural White lamp, both leaders in their field; its projector lamp innovations have changed generations of projector models; its soft-white incandescent units were the first ever made.

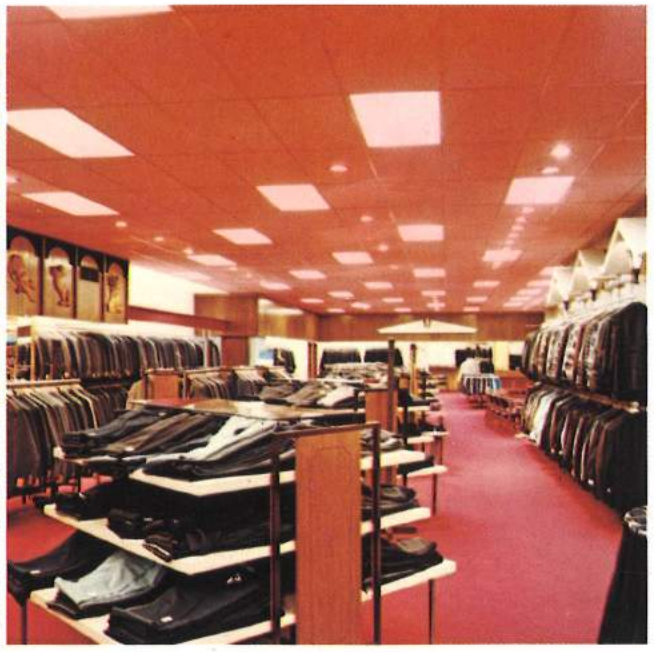
The Sun Gun movie light, which won an award for technical achievement from the Motion Picture Academy of Arts and Sciences; the Flashcube; and the Long-Duration Flashlamp have enabled industries to change their basic product design or operating concepts. Faced with the problems of vibration and shock in outdoor and industrial lighting, Sylvania developed the first ruggedized mercury lamp, then proceeded to add color-corrected versions to broaden the whole market for mercury lighting.

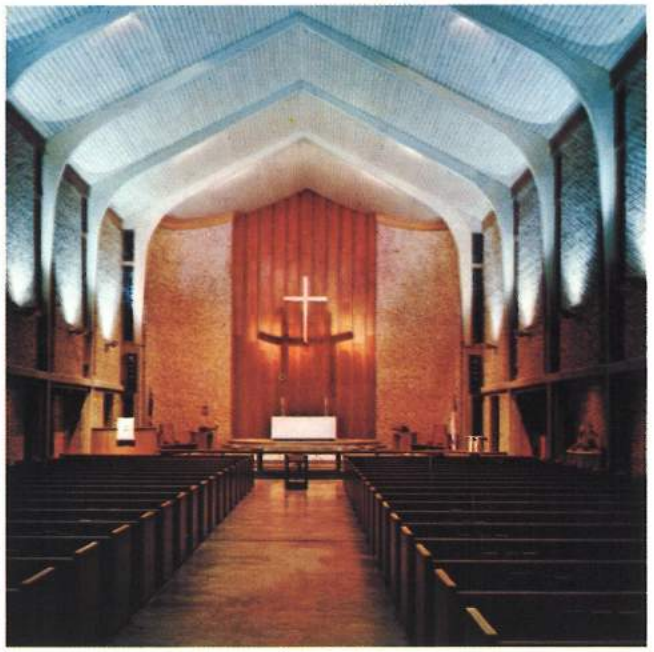
Sylvania developed the first commercially-successful electroluminescent lamps, the Gro-Lux plant-growth lamp, and wafer-wound coils. Sylvania lighting has improved working environments, lengthened useful leisure hours for golf, skating, and other sports, and enriched the after-dark beauty of cities and homes.

T.L. *Unusual architectural lighting*
T.R. *Sign lighting spectaculars in Las Vegas*
B.L. *Atlanta department store accent lighting*
B.R. *Lighting for lawmakers*

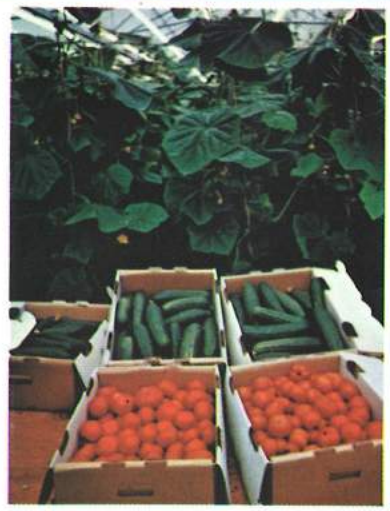
Opposite Page

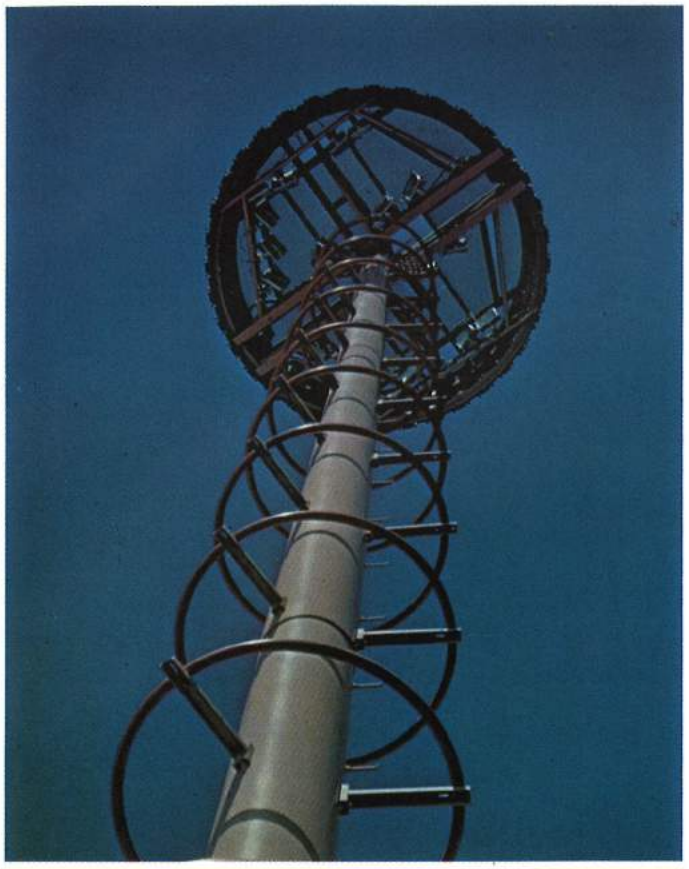
T.L. *Aircraft production line*
T.C. *Merchandise is enhanced by attractive lighting*
T.R. *New light sources and fixtures make night golf popular*
B.L. *Drafting room needs high illumination on work surfaces*
B.C. *Building interiors reflect good lighting design*
B.R. *Church lighting for a special effect*






FEDERAL-MOGUL CORPORATION





Sylvania engineers are expert in supplying the proper light from the proper source for maximum effectiveness and aesthetic achievement. They have designed fixtures and sources to illuminate professional and amateur sports arenas and playing fields in every part of the country. Yankee Stadium in New York City uses Sylvania's lamps.

A large new Sylvania fixture, the *Acre-of-Lite,* is ideally suited for playground or parking lot use and to help reduce after-dark crime. It provides an average of five footcandles of light over an acre of land using Metalarc or mercury lamps as its light source.

Tungsten-halogen lamps from Sylvania illuminate space probes in their first moments of flight. Architectural lighting awards are won through the versatility of the broad Sylvania lamp product line. And the march to better lighting continues: with the exquisite new jewel-like Boutique lamp, with incredibly rich stained-glass colored PAR lamps, with the brilliant Metalarc lamp, with lamps as small as a grain of rice or larger than a basketball.

T. *Airport lighting tower*
B. *Overall view of airport lighting*

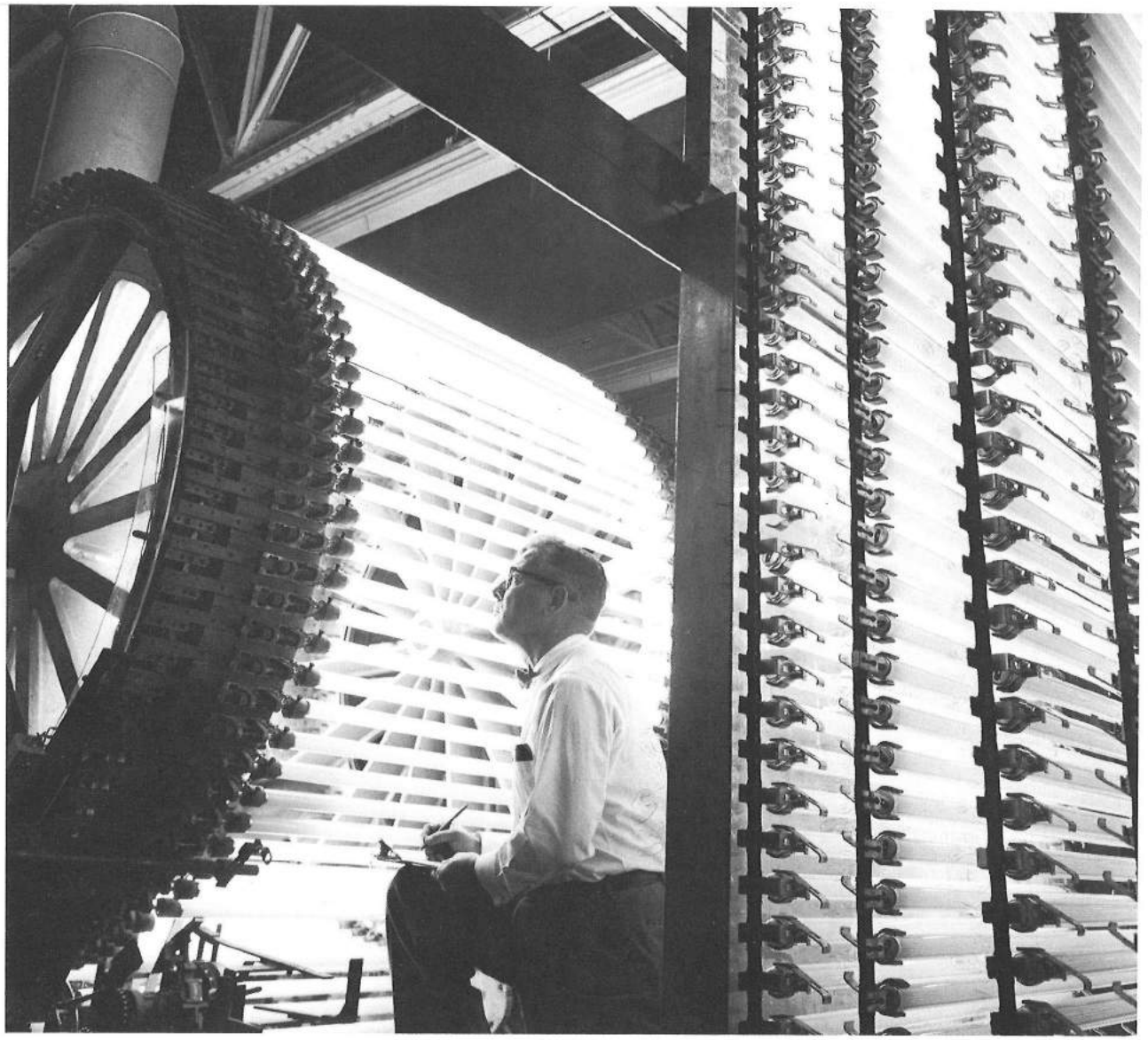
Opposite Page

T. *Lighting adds excitement to an attractive building*
B.L. *Gro-Lux grown food production*
B.C. *Catching a space-vehicle in flight*
B.R. *Railroad transportation complex after dark*


People

people

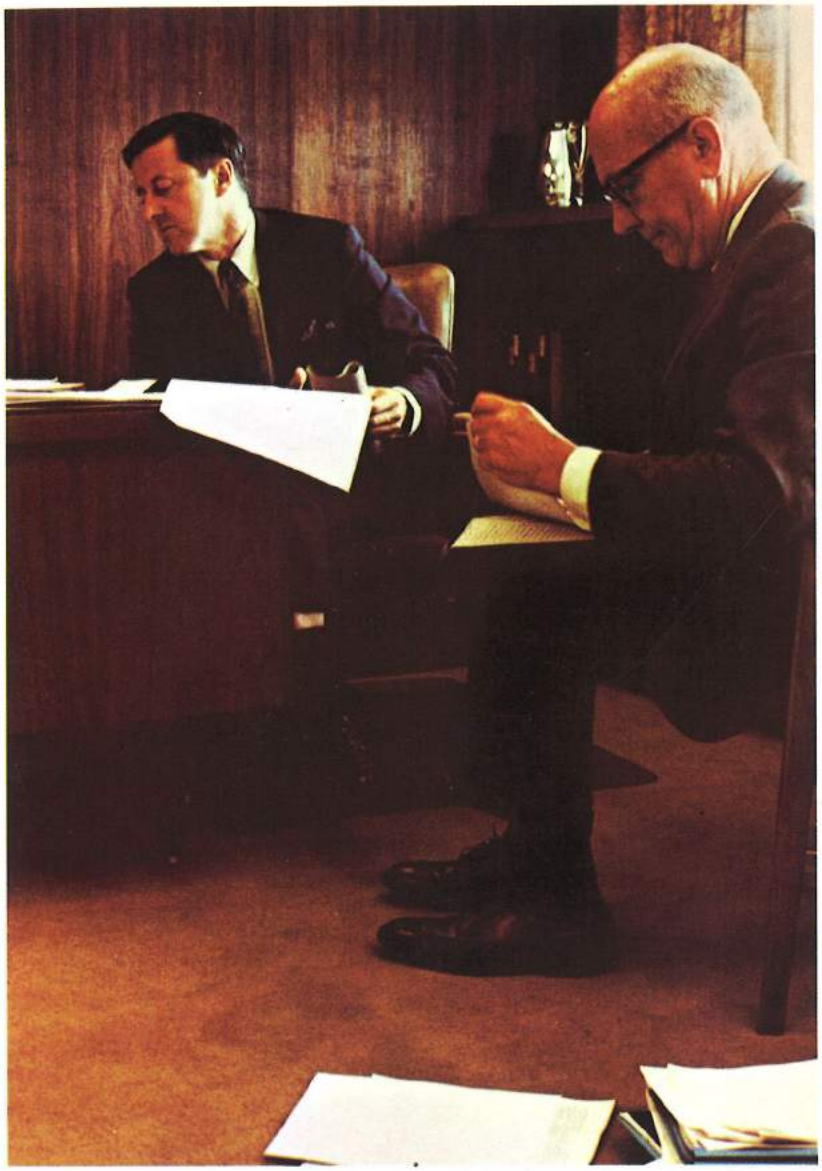
People



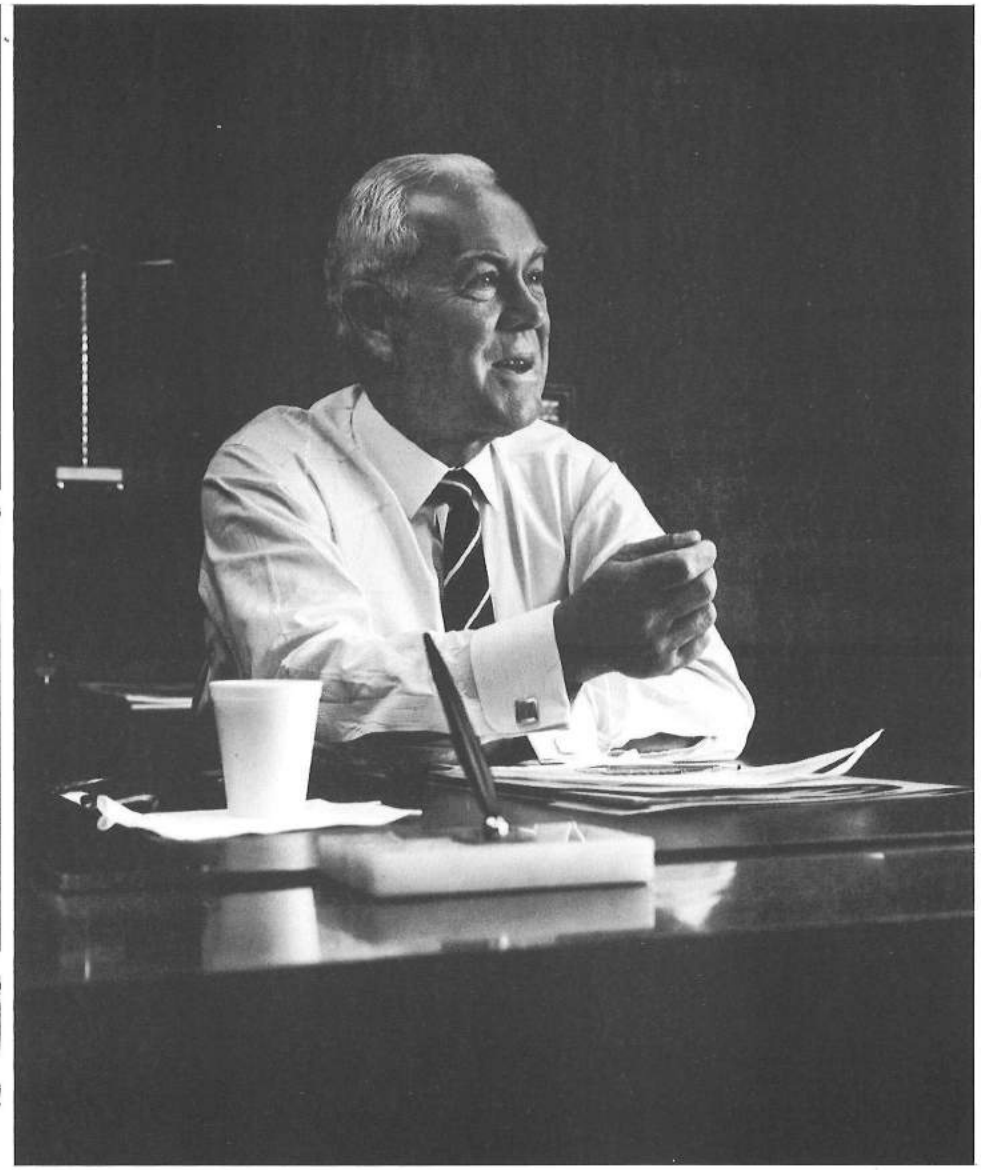
Sylvania's most important resource is its people. People talented in research and development, in marketing, in management, and in manufacturing are responsible for Sylvania Lighting Products having been the industry's leading growth company for more than 25 years.

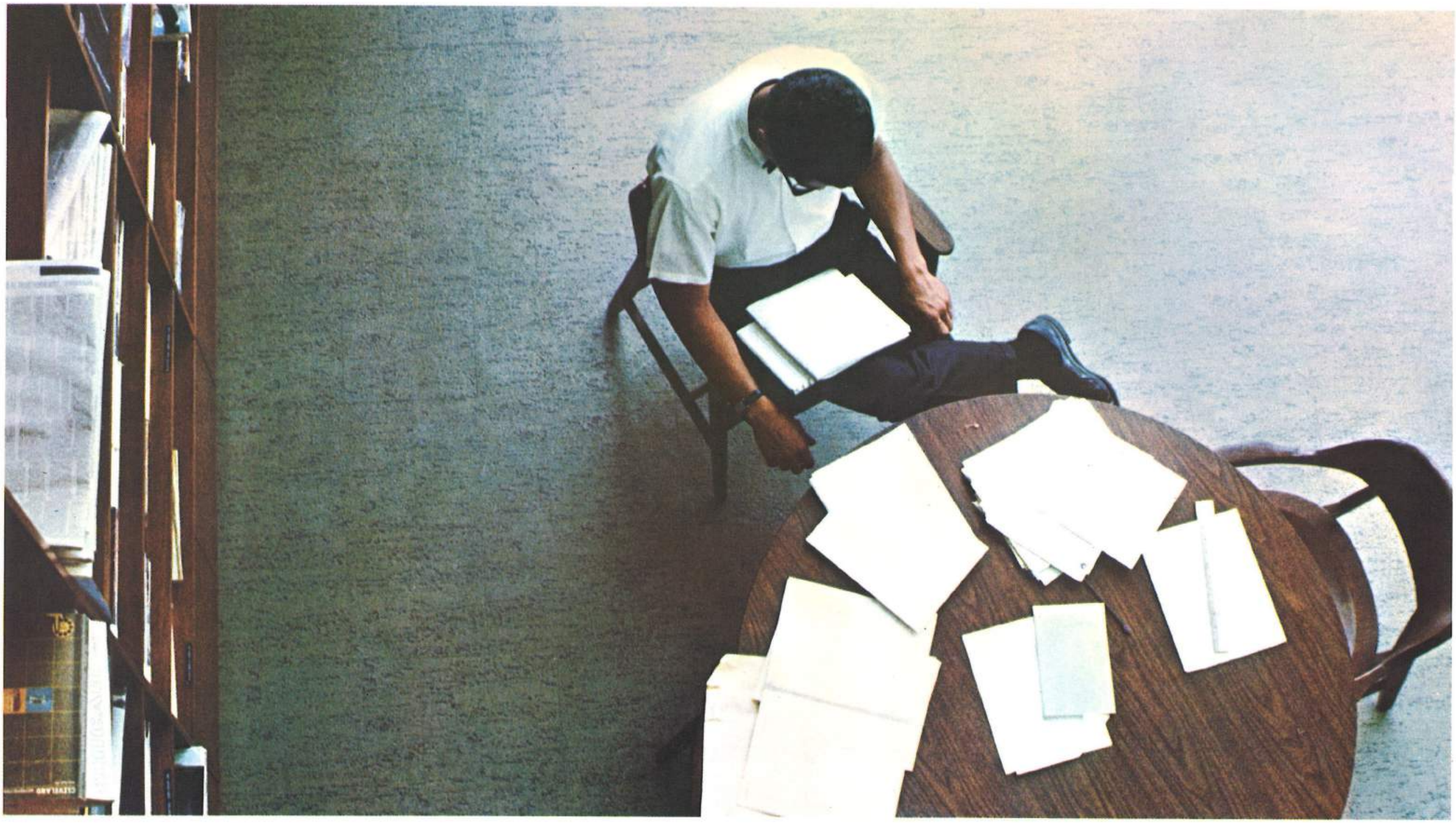
During this period, Sylvania's share of the market in lamps, lighting equipment, and allied products has grown substantially faster than the burgeoning industry itself, and with it the market share of Sylvania distributors also has grown. Other major factors contributing to this growth have been Sylvania's varied and dependable product line, fine engineering and research capabilities, and a creative sales approach based on the development of markets as a key to sales growth.

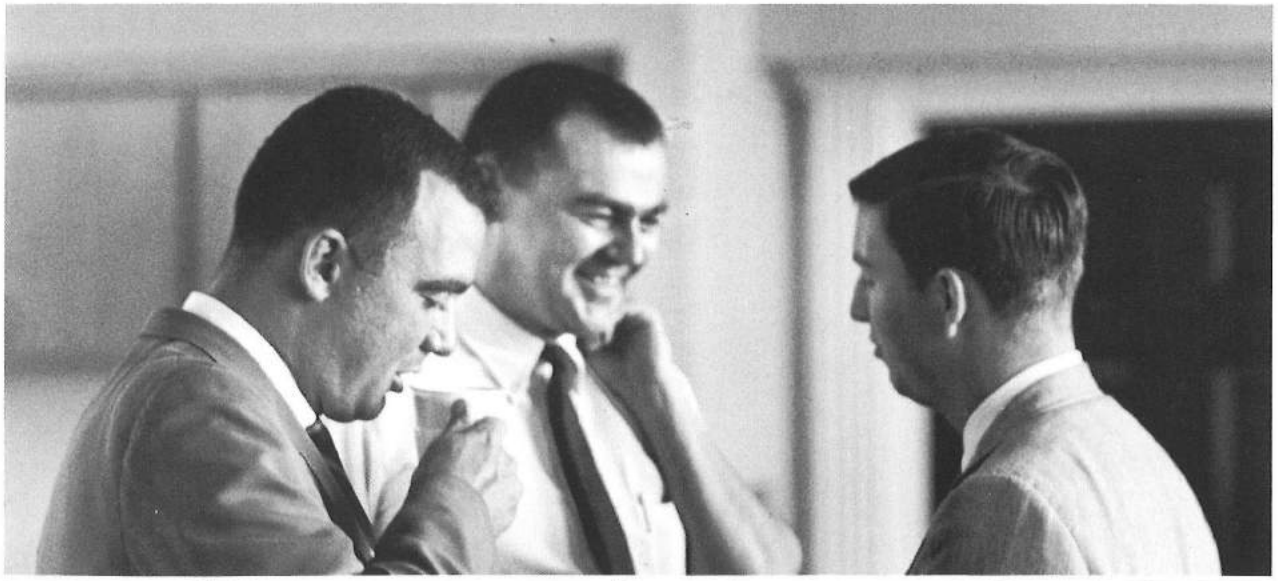
The Sylvania Lighting Products team is balanced for achievement and effectiveness: Research and development people; general engineering people; skilled manufacturing personnel; sales and marketing specialists; staff people experienced in equipment development, employee, industrial and public relations; financial experts, and other administrative line and staff personnel. Together the group continues to demonstrate the many skills and talents which have contributed to Sylvania's leadership in the lighting industry.

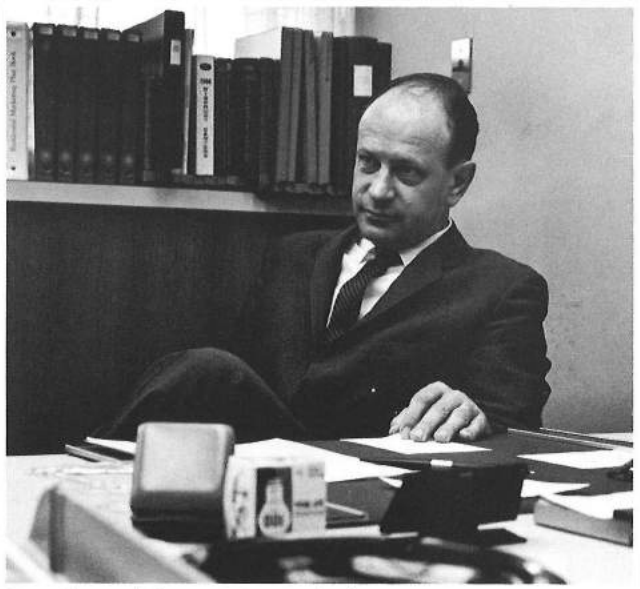


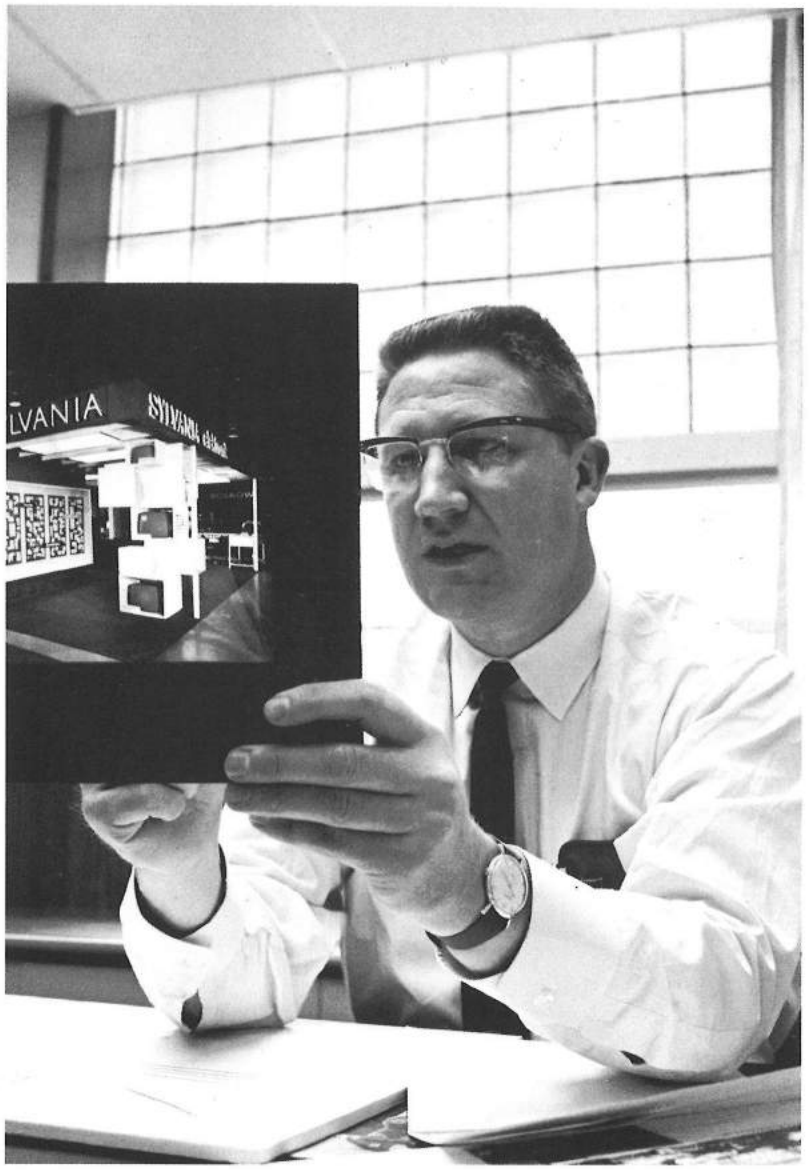
There is an instantly obvious creative climate, an atmosphere of intense activity pervading at Sylvania Lighting Center and its satellite plants and offices. These are people who demonstrate total involvement in their jobs, in service to the customer, in all the exciting activity of a growth oriented organization. The many different actions that go on simultaneously — quotations to customers, pricing, new product introductions, promotion planning, long range planning — proceed logically and without delay. The results speak more eloquently than this description: Outstanding growth in new products, new services, in profitability to Sylvania, and in profitability and satisfaction for Sylvania customers.



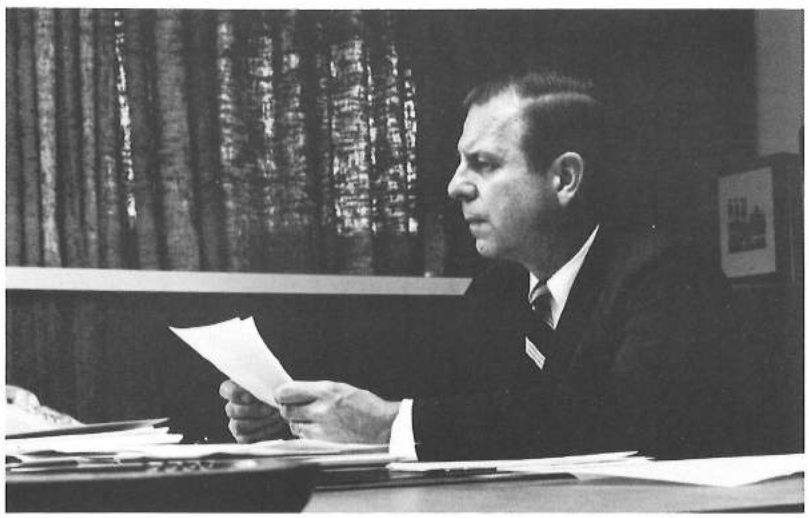






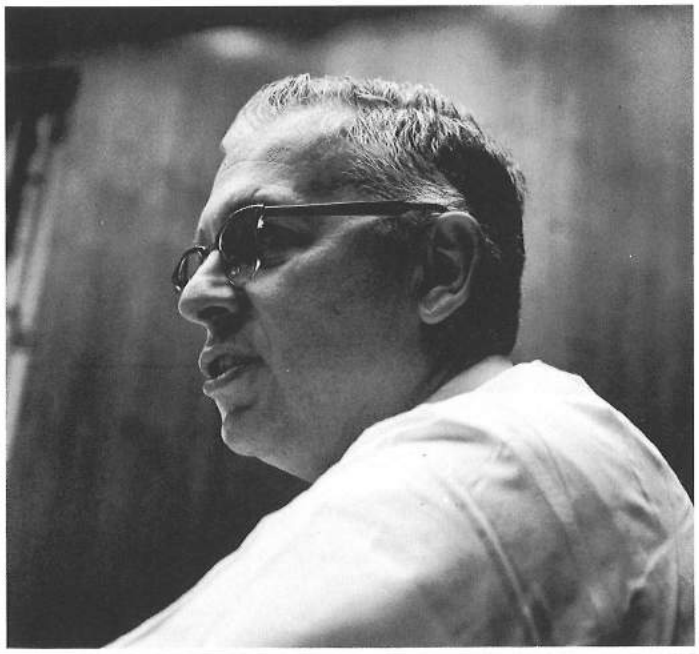


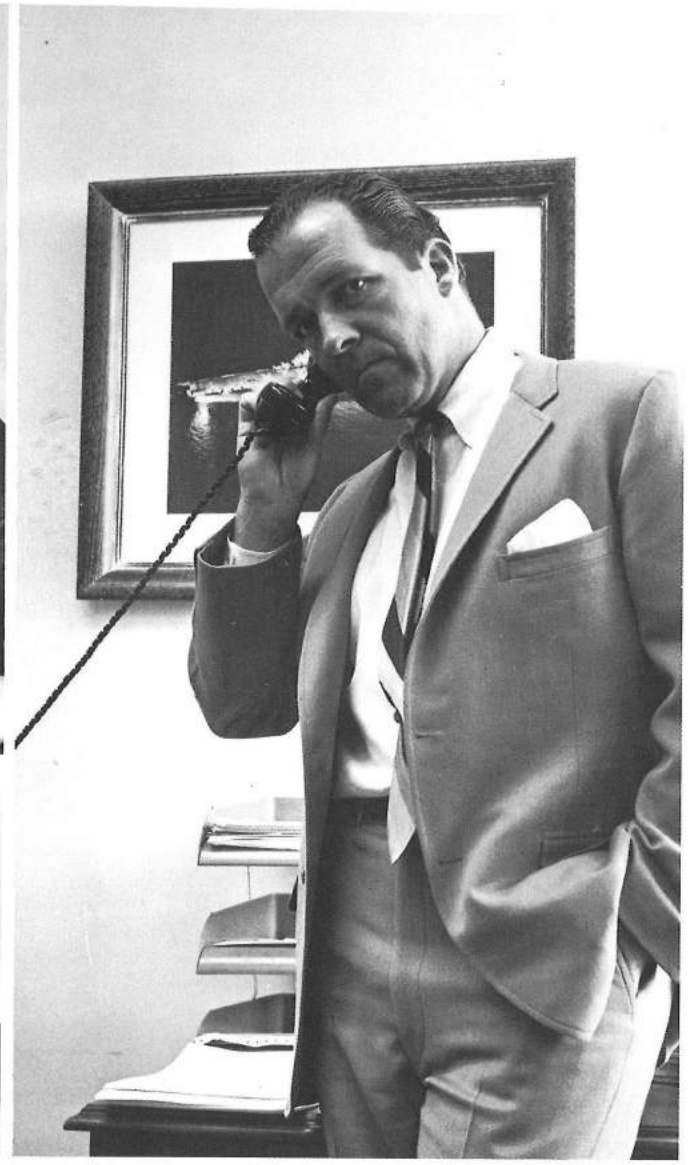
Personnel development has important implications, not only for Sylvania employees, but even more for Sylvania's distributors, Utility customers, and Original Equipment Manufacturers. The salesmen who invest time in product information studies, in application refresher courses, and financial management studies not only are better able to increase their sales, but are in a favorable position to help a customer select the precise lamps or lighting equipment for his particular needs. A genuinely useful and valuable relationship between the salesman or field engineer and the customer is created. The result is a deep loyalty between customer and company and a sound basis for future business growth.

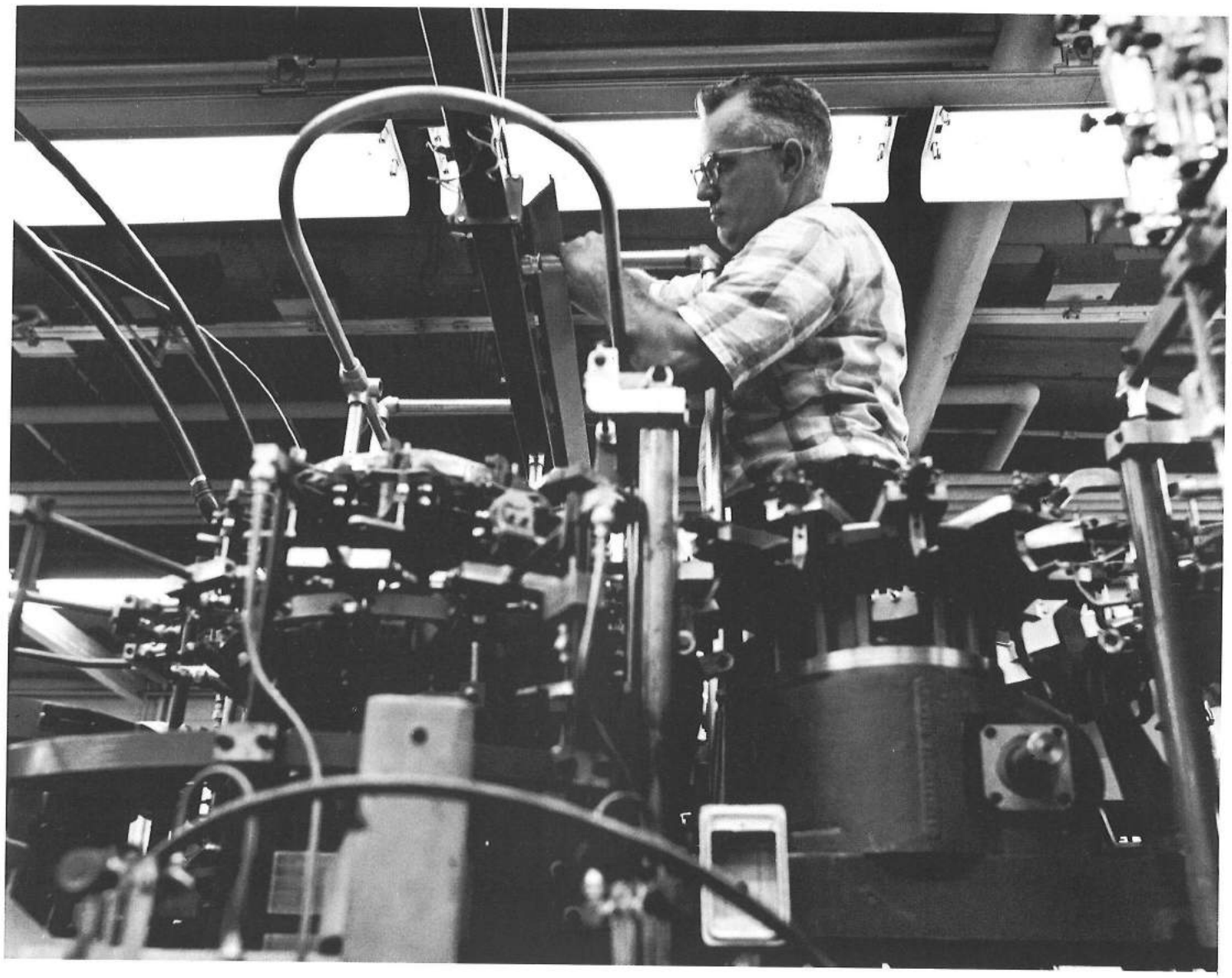


The progressive policies of Sylvania Lighting Products reflect the philosophy of its management team. They are the product of analysis, discussion, argument, and testing to anticipate both short and long range goals. Sylvania personnel close to the actual markets, and in constant touch with end users, help provide the facts for sound decisions. For this reason there is a close rapport among the sales and engineering people in the field and the headquarters management team. Computerized information handling also helps determine current market needs for products and services.

Another Sylvania investment in the growth of the lighting industry is its computerized system for solving customer lighting installation problems. With this system a distributor or designer merely provides the installation data. The computer is programmed to provide the most nearly ideal solution such as number of fixtures, type of lamp, relamping schedule, and other maintenance recommendations.







For a company to succeed as dramatically as Sylvania Lighting Products has, sound management is not enough. Service, factory, engineering, production, accounting, clerical, and other support personnel must demonstrate dedication and responsibility. In this regard, the Sylvania employees are unequaled.

The foresight and constructive attitude of Sylvania employees have made it possible to incorporate the latest business methods, equipment, and techniques and thereby continually improve productivity and product quality. The most important ingredient in Sylvania products is the pride of the people who make them.

Manufacturing

Manufacturing

Manufacturing Facilities

2850 Gilchrist Road
Akron, Ohio 44312

1177 Logan Circle NW
Atlanta, Georgia 30318

8400 Ambassador Row
Dallas, Texas 75235

75 Sylvan Street
Danvers, Massachusetts 01923

Box 990
Dyersburg, Tennessee 38024

Portsmouth Avenue
Exeter, New Hampshire 03833

21 Penn Street
Fall River, Massachusetts 02724

Estes Street
Ipswich, Massachusetts 01938

Abbey Street
City of Industry
County of Los Angeles, California

655 South Willow Street
Manchester, New Hampshire 03103

Broad Street
Montoursville, Pennsylvania 17754

Rt. 29 on Highway 87
Reidsville, North Carolina 27320

Washington Road
St. Marys, Pennsylvania 15857

60 Boston Street
Salem, Massachusetts 01970

121 Loring Avenue
Salem, Massachusetts 01970

71 Loring Avenue
Salem, Massachusetts 01970

Route 202
South Waterboro, Maine 04087

Industrial Park
3808 N. Sullivan Road
Spokane, Washington 99220

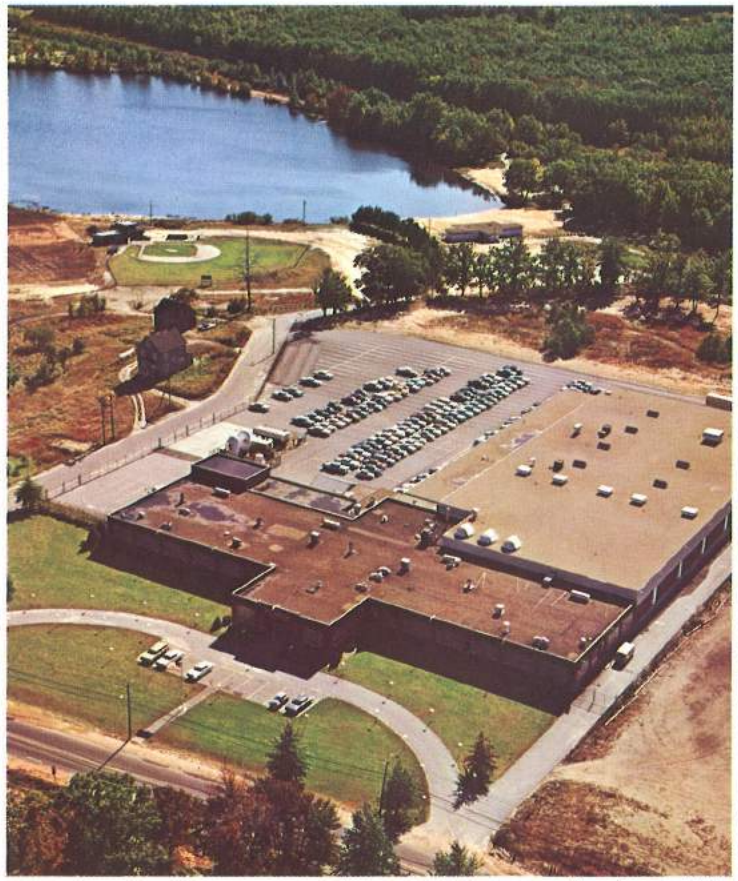
Route 35
Standish, Maine 04084

900 Tyrone Pike
Versailles, Kentucky 40383

Friendship Street
Waldoboro, Maine 04572

One 48th Street
Wheeling, West Virginia 26004

Irvine Road
Winchester, Kentucky 40391



Manchester, N.H.

Facilities

Sylvania is continually adding new facilities to its impressive list of manufacturing plants. Each plant is designed to produce distinct lines of light sources for maximum productivity and efficient market distribution.

The few facilities described in this section are representative of the large network of plants operated by Sylvania Lighting Products . . . and illustrate how Sylvania is able to produce and market high volume products at popular prices.

Lighting Center, Mass.

Exeter, N.H.
Danvers, Mass.

Exeter, N. H.
This plant specializes in the production of tungsten coils for the Sylvania Lighting Products and other industrial customers. Operating with micrometer standards, machines in this plant can twist as much as 31 linear inches of high quality tungsten wire into a one-inch filament to insure highly efficient, long-life light sources. About 350 are employed in this 80,000 square foot facility.

Sylvan Street, Danvers, Mass.
Nearly 350,000 square feet of space are devoted to producing high efficiency lamps in the world's largest fluorescent manufacturing plant. About 800 employees produce fluorescent, diazo, germicidal, appliance, Circline, Gro-Lux and other linear light sources.

Reidsville, N. C.
In this modern 220,000-square-foot plant, the Lighting Equipment Division produces a wide variety of fluorescent lighting fixtures for industrial and commercial use. Approximately 150 are employed in this high-volume operation.

Reidsville, N.C.

Versailles, Ky.

St. Mary's, Pa.

Manchester, N. H.
Manchester is the home of Sylvania's Metalarc and mercury vapor lamps, both widely used in industrial and commercial applications for high-level, low-cost lighting. Metalarc has become popular where high-level area lighting with fine color rendition is necessary, such as in shopping center parking lots.

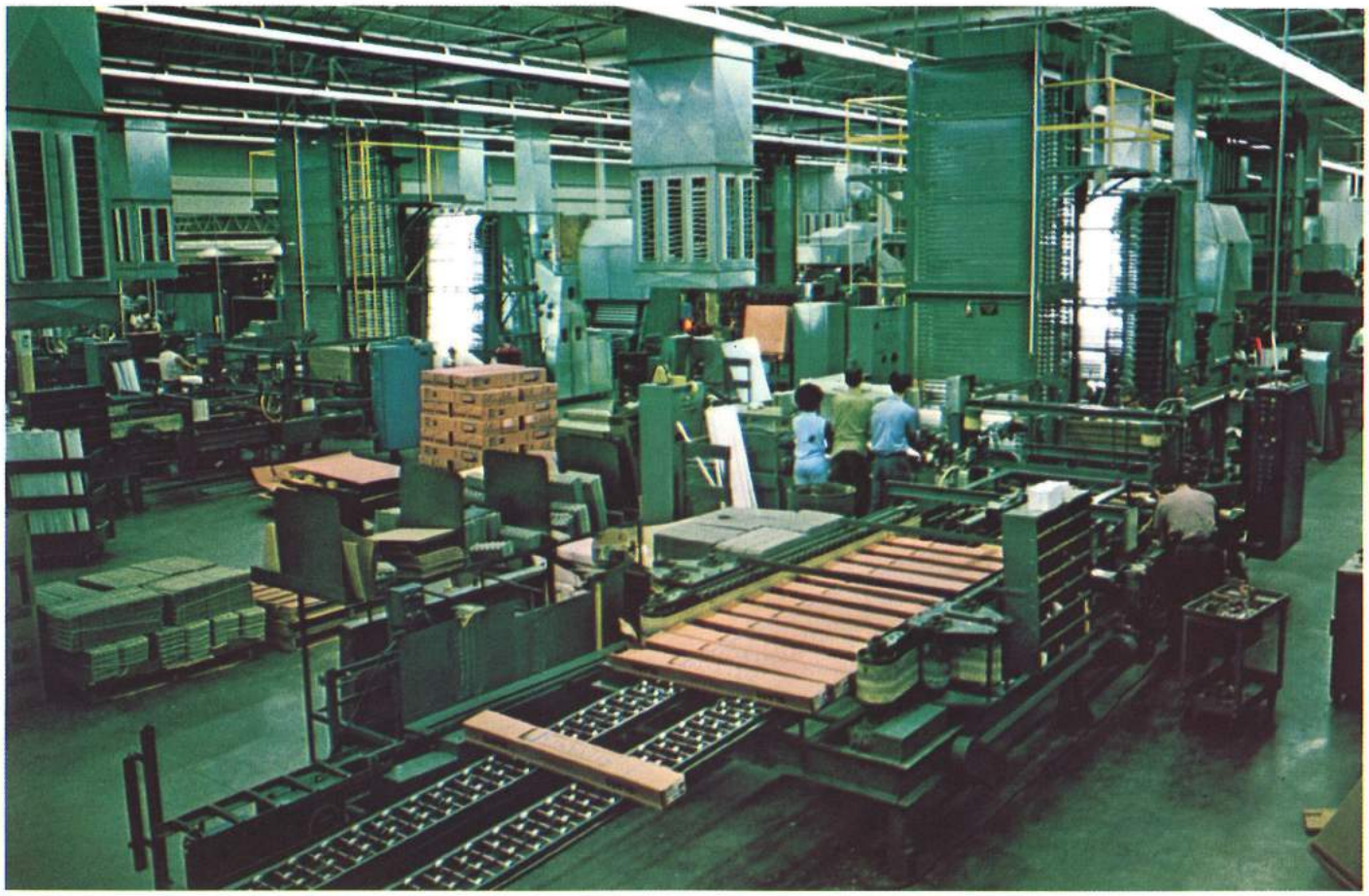
Sylvania Lighting Center
Sylvania Lighting Products headquarters. This ultra-modern building in Danvers, Mass., houses the Sylvania Lighting Center, nerve center of the 25-plant lighting complex. A honeycomb of laboratories houses research specialists in plasma physics, crystallography, chemistry, optics, metallurgy, glass technology, and instrumentation. Sales, public relations, sales promotion, market applications, engineering, marketing, product development, advertising, industrial relations, industrial engineering, and purchasing offices are located here.

Versailles, Ky.
A smaller version of the world's largest fluorescent plant has been built in Versailles to supply high quality fluorescent products to Sylvania's mid-continent marketing areas. More than 200 employees pour thousands of pre-tested fluorescent lamps into consumer pipelines from this ultra-modern 160,000-square-foot production center.

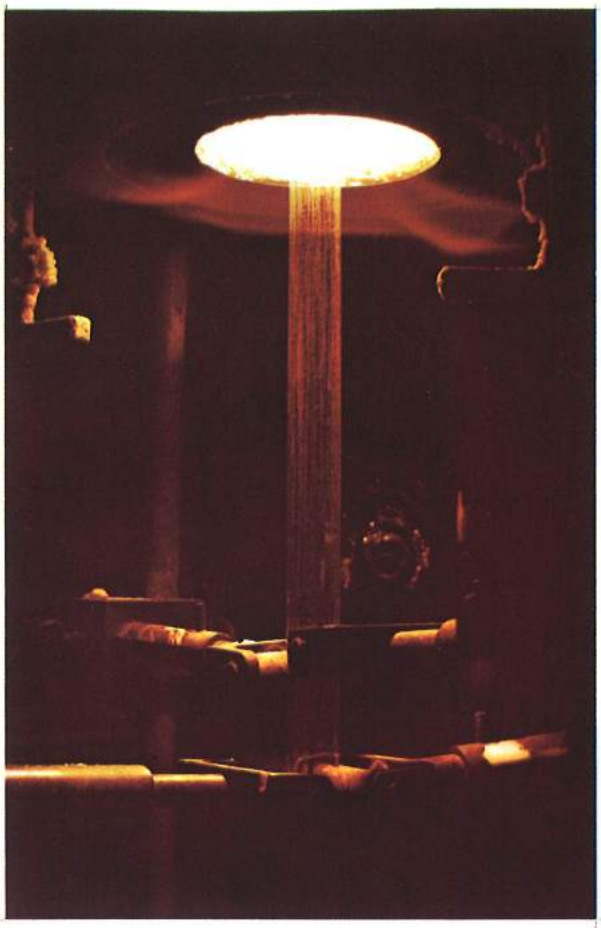
Dyersburg, Tenn.
When Sylvania invented the Flashcube, a new facility devoted entirely to the production of the revolutionary new photographic light source was required. Approximately 800 persons are employed in this 150,000-square-foot plant.

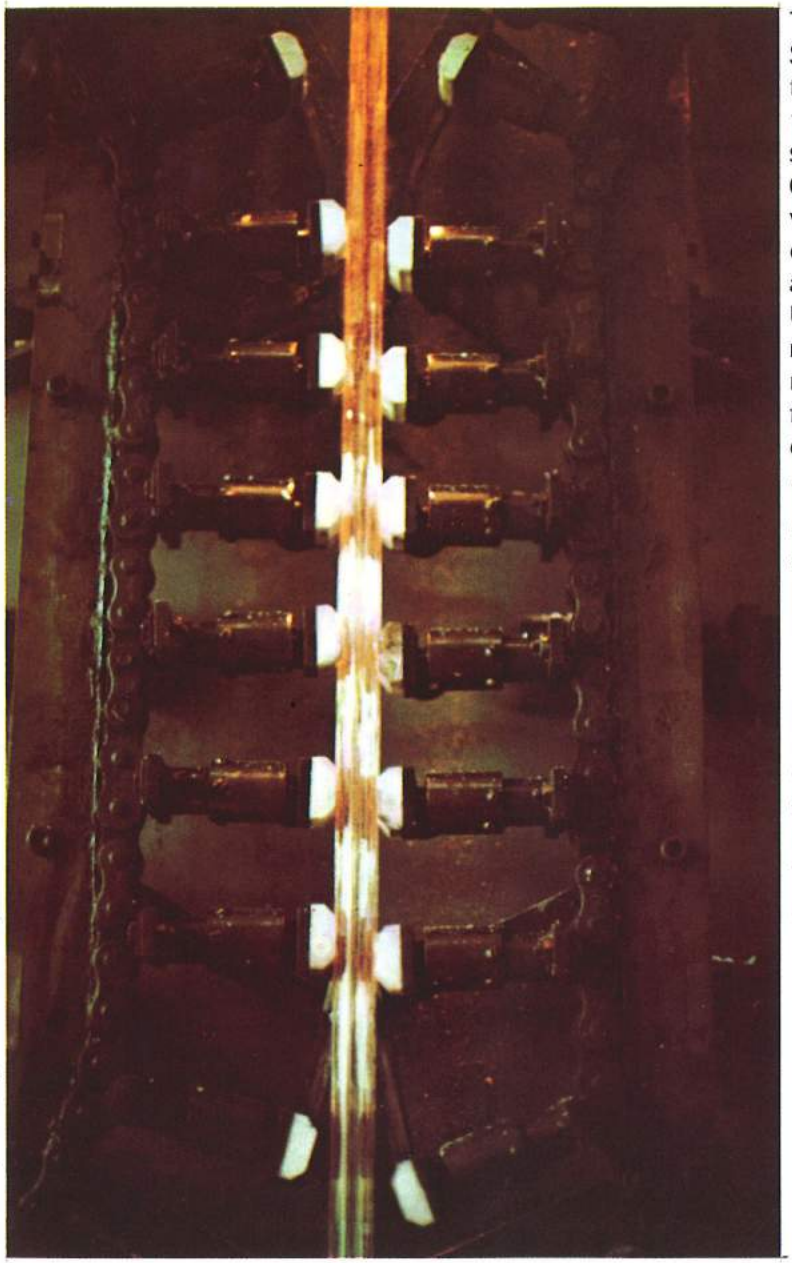
St. Marys, Pa.
Incandescent lamps are produced in this 240,000-square-foot plant. In this facility, selected as one of the "Ten Best Plants" of the year when built, some 450 employees turn out millions of household type incandescent lamps daily.

Dyersburg, Tenn.



Manufacturing





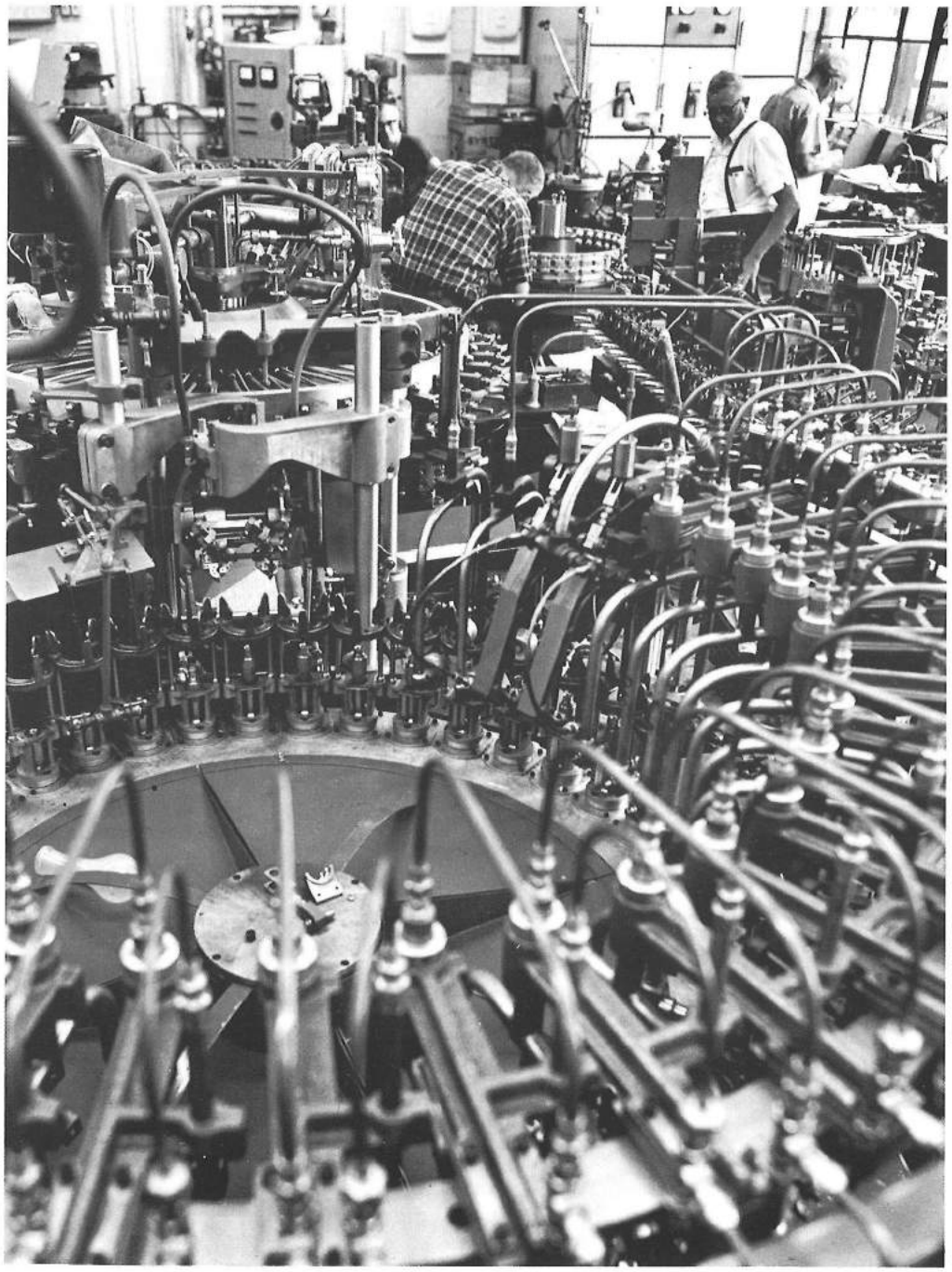
The manufacturing facilities of Sylvania Lighting Products are among the most modern and efficient in the world. Twenty-five plants in 13 states produce and ship more than 6,000 different types of lamps, as well as the fastest growing line of commercial, industrial, and architectural lighting fixtures. Using highly advanced automated machinery, these plants produce millions of incandescent, fluorescent, and photoflash lamps each day.

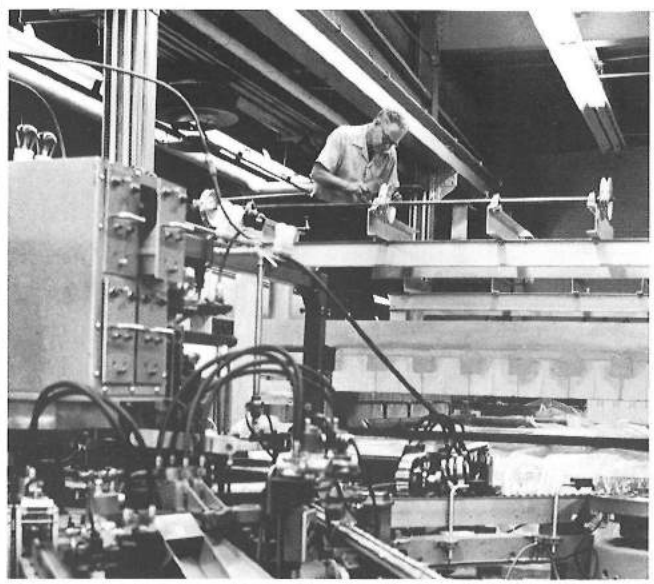
Thousands of pounds of natural quartz crystals are melted daily in special furnaces and drawn into precision quartz tubing for use in mercury and Metalarc lamps.

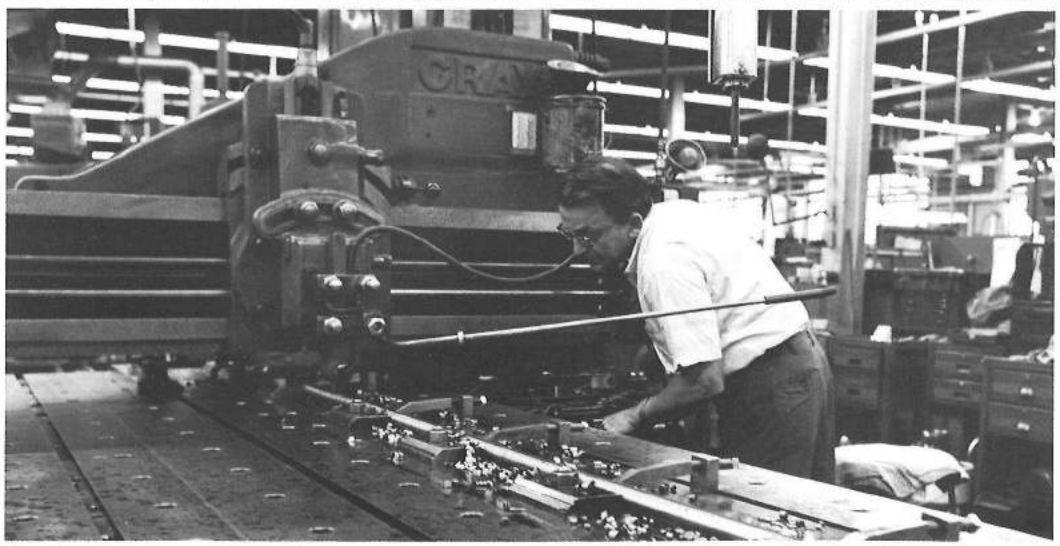
Plants have been designed to manufacture specific types of lamps with special process, quality control, and packaging machinery developed for each operation. The resultant efficiency is passed on to the buyer in lower costs and greater dependability.

L. *Drawing quartz tubing from specially designed furnace*
R. *Detail of tube drawing clamps*

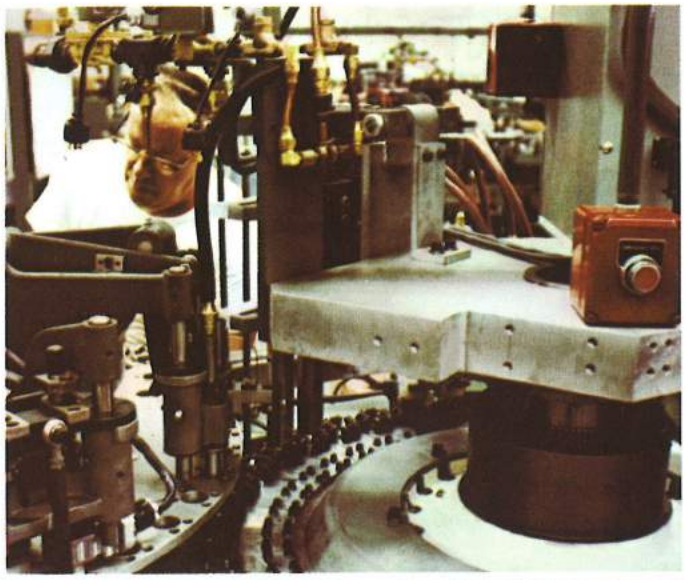
Opposite Page
L. *Production packaging, fluorescent lamp facility*
T.R. *Inspection of phosphor coating in lamp tubes*
B.R. *Adjusting a fixture forming press*

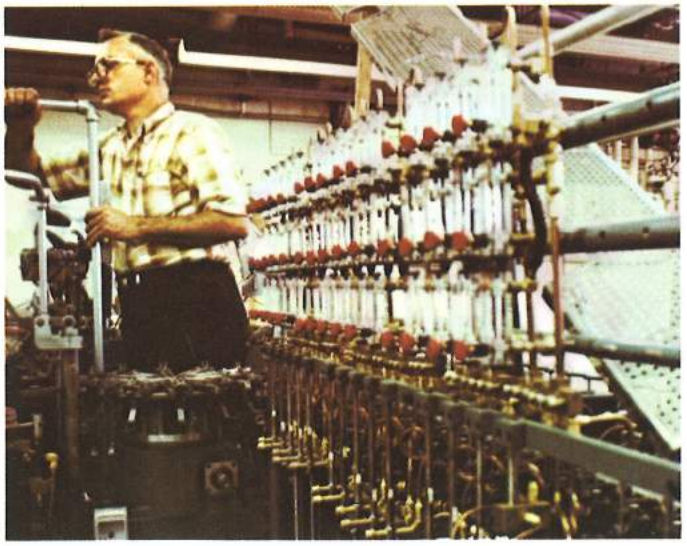






Automation equipment being constructed and a variety of operations in the Equipment Development machine shop

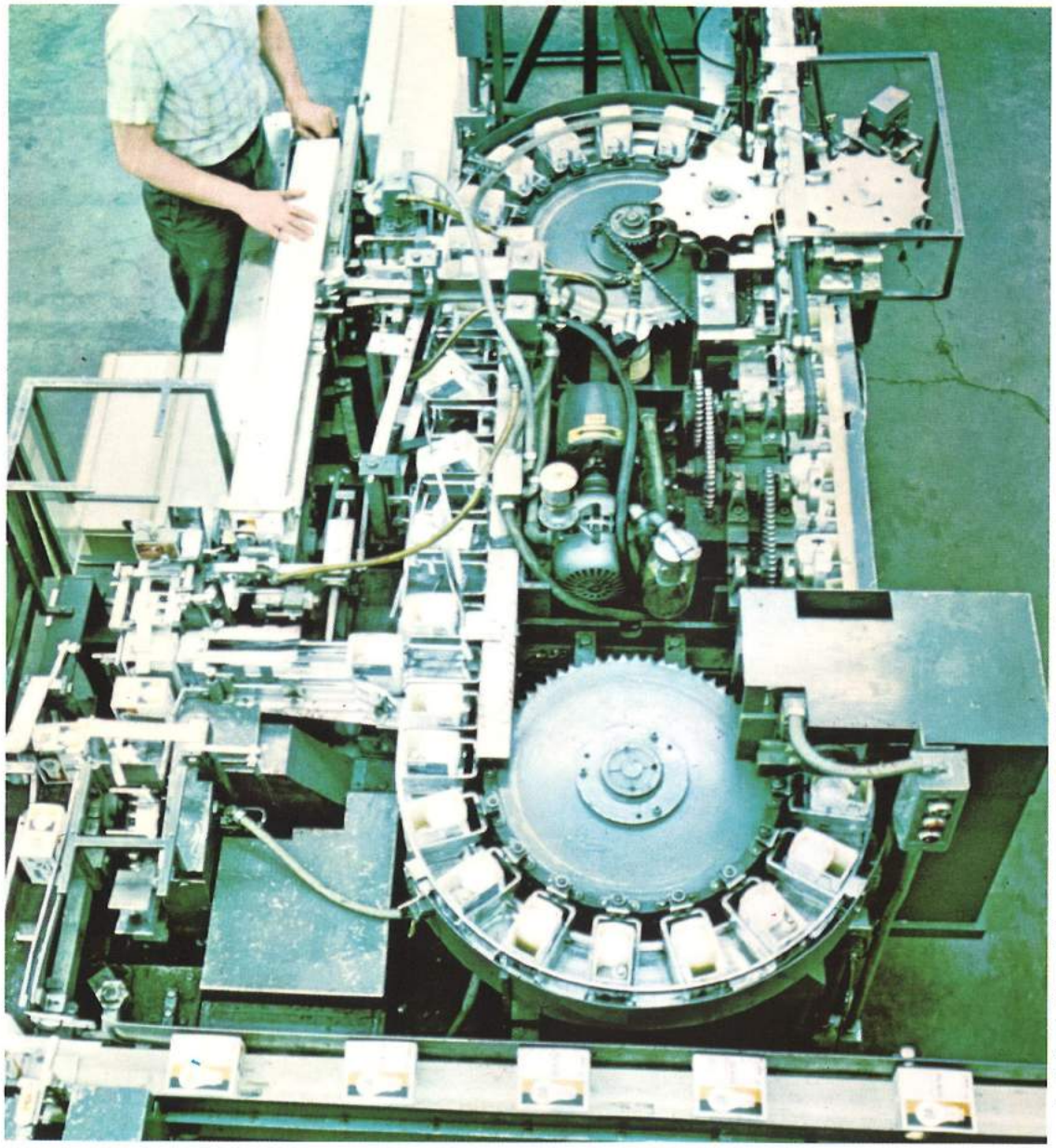


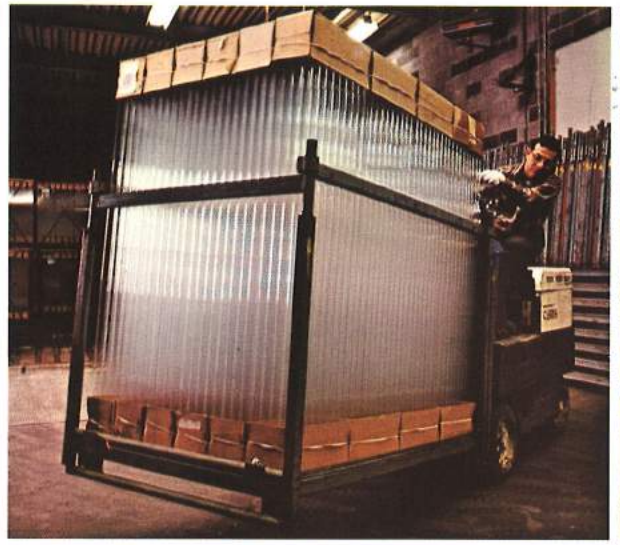


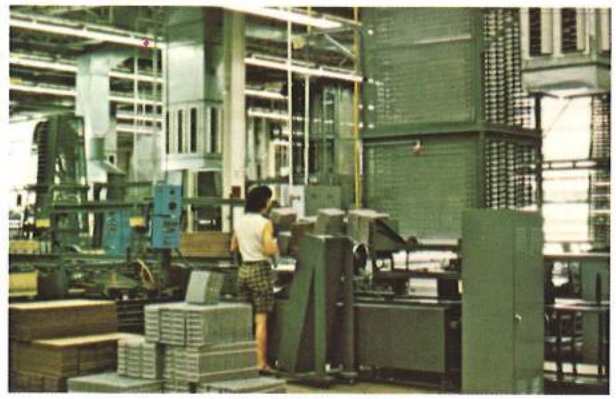
Two equipment development plants design and build the automated machinery and systems for Sylvania's manufacturing plants, such as the world's largest and most efficient fluorescent plant located in Danvers, Mass. Here massive trailers loaded with glass and other components enter at one end and finished, packaged lamps flow from the other end of the production line for loading and shipment.

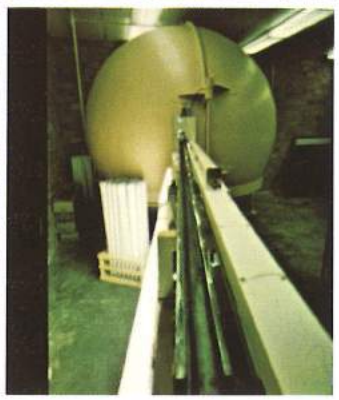
The machinery and equipment built by Sylvania ranges from a multi-station chassis, simultaneously performing hundreds of steps in the production of microminiature lamps, to the block-long fluorescent production equipment. The high speed precision chassis developed for these tasks make Sylvania one of the country's six leading producers of automation chassis.

By working with other departments such as the Emissive Products Operation, developers of the tungsten mesh heating element, general engineering built a quartz melting furnace superior to any available, capable of high production and continuous operation far exceeding previous capabilities.





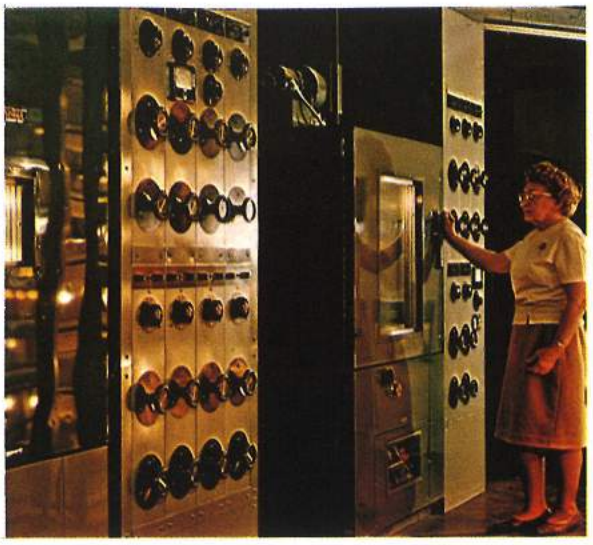


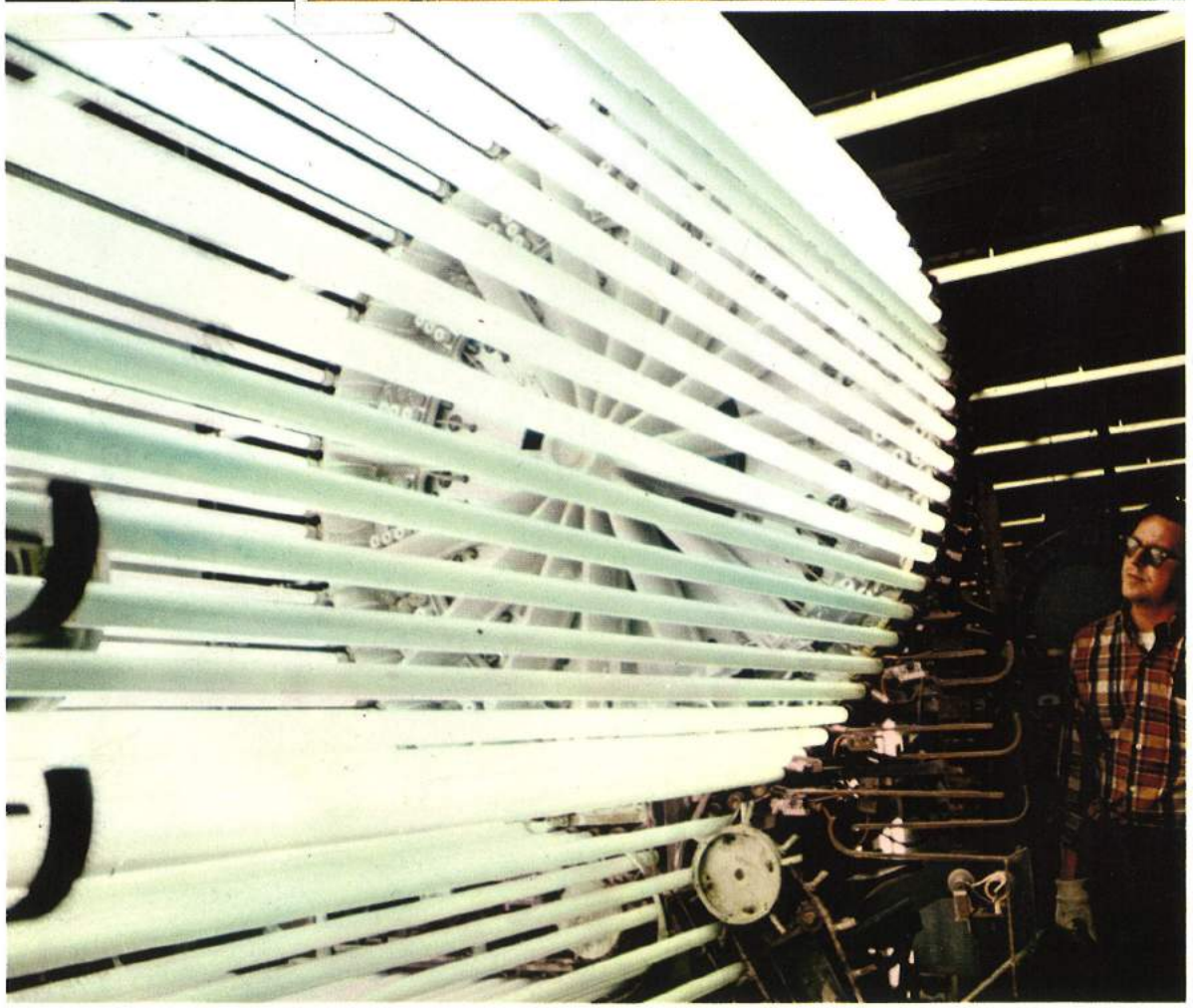


L. *Incandescent lamp packaging for retail sales*
T.C. *Raw glass tubes for automated production line*
T.R. *Special incandescent lamps on test*
B.C. *Production packaging equipment*
B.R. *Goniometer for light output measurement*

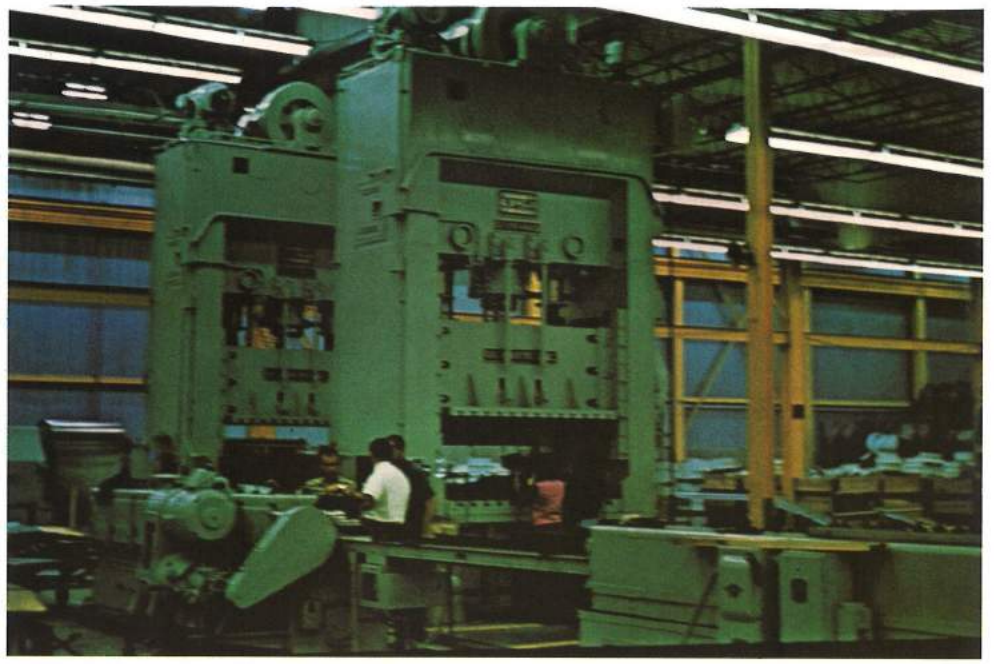
Opposite Page

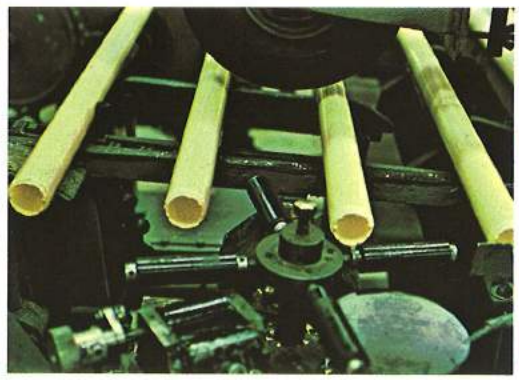
T.L. *Circline lamp test station*
T.C. *Operating environmental test controls*
T.R. *Phosphor development laboratory*
B. *Fluorescent lamp inspection*





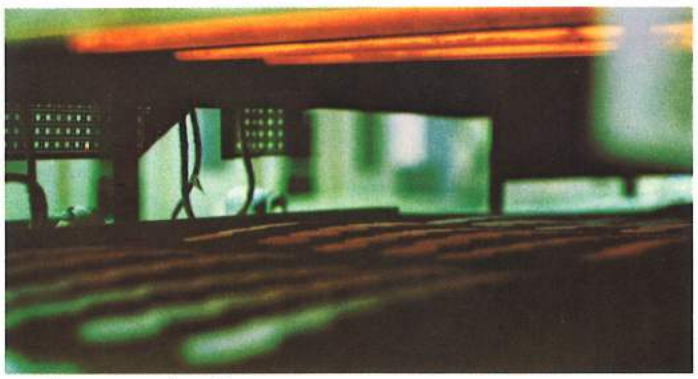
Each manufacturing step from component assembly to final packaging is monitored by quality control procedures. Quality and dependability cannot be inspected into a product. They must be built in. Sylvania's quality assurance and zero defects programs are two methods used to achieve high reliability and superior lamp performance.

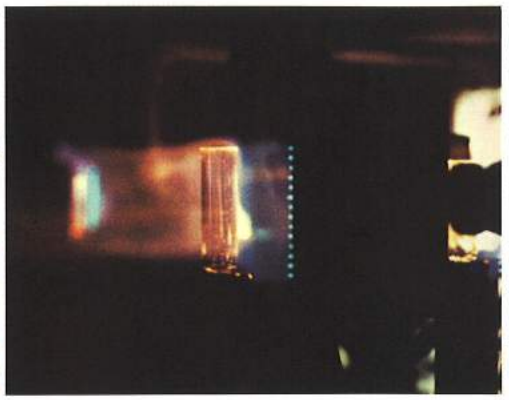


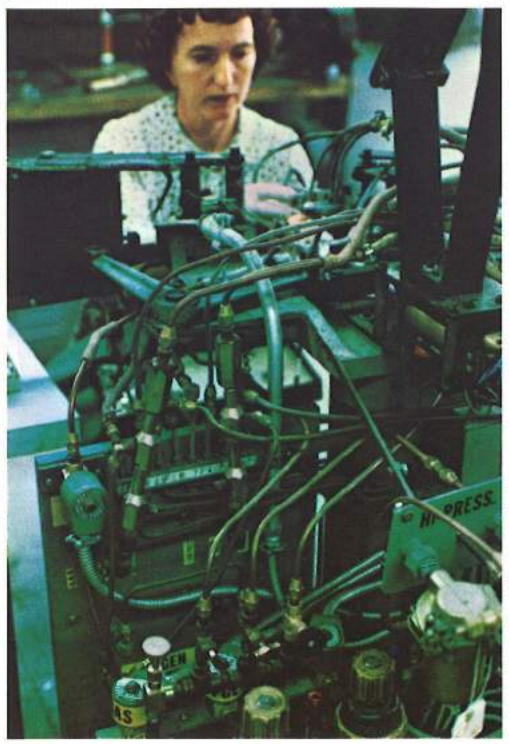


Much of the modern equipment used in Sylvania Lighting Products plants dwarfs standard machinery. Huge hydroform machines and massive punch presses convert long rolls of metal sheet into a continuous flow of finished fixture shells.

The development of a horizontal method for the manufacture of fluorescent lamps increased production rates while providing substantial savings and improved





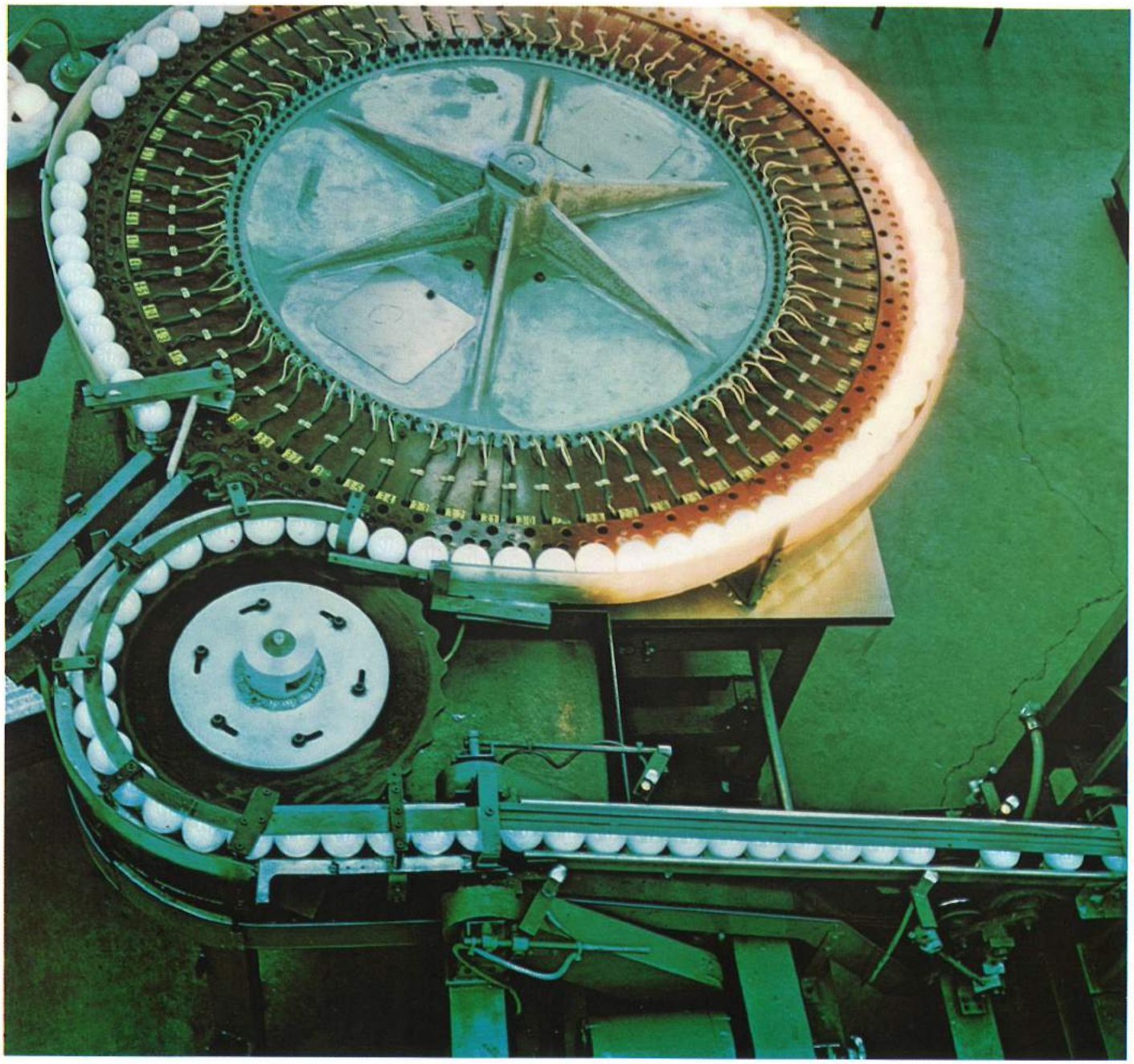


T.L. *Metal stamping feed-reels and presses*
T.C. *Glass sealing operation*
B.L. *Curing-cycle Panelescent Nite-Lites*
B.C. *Lamp-forming sequence*
R. *Panelescent Nite-Lite blanks on drying rack*

Opposite Page
L. *Fluorescent lamp etch imprinting*
T. *Large fixture-stamping presses*
B.L. *Detail of imprinting rollers*
B.R. *Automated lamp manufacturing*

performance for the consumer.

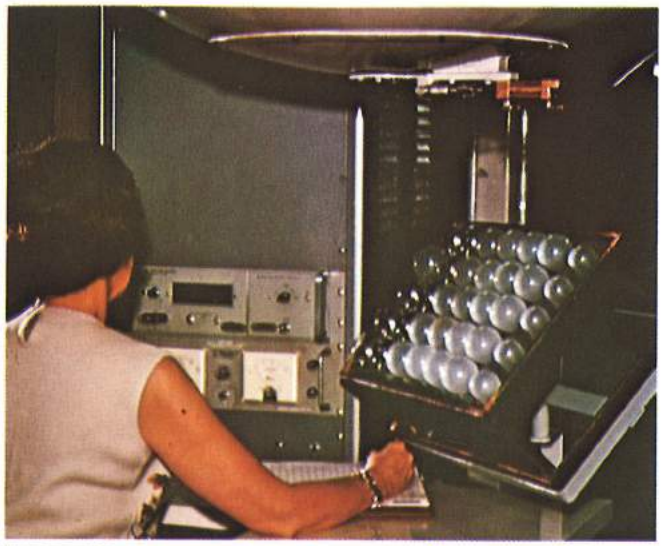
The development of Panelescent lighting devices has been pioneered by Sylvania. Now this unusual area-type light source is available in shaped or stamped metal form or in a flexible plastic model in lengths up to several hundred feet. Having no filament, this light source is extremely shock resistant and of particular interest for government and military applications.



L. *Incandescent lamp testing*
T.R. *Phosphor coating of glass tubes*
B.R. *Loading production line with tubing*

Opposite Page

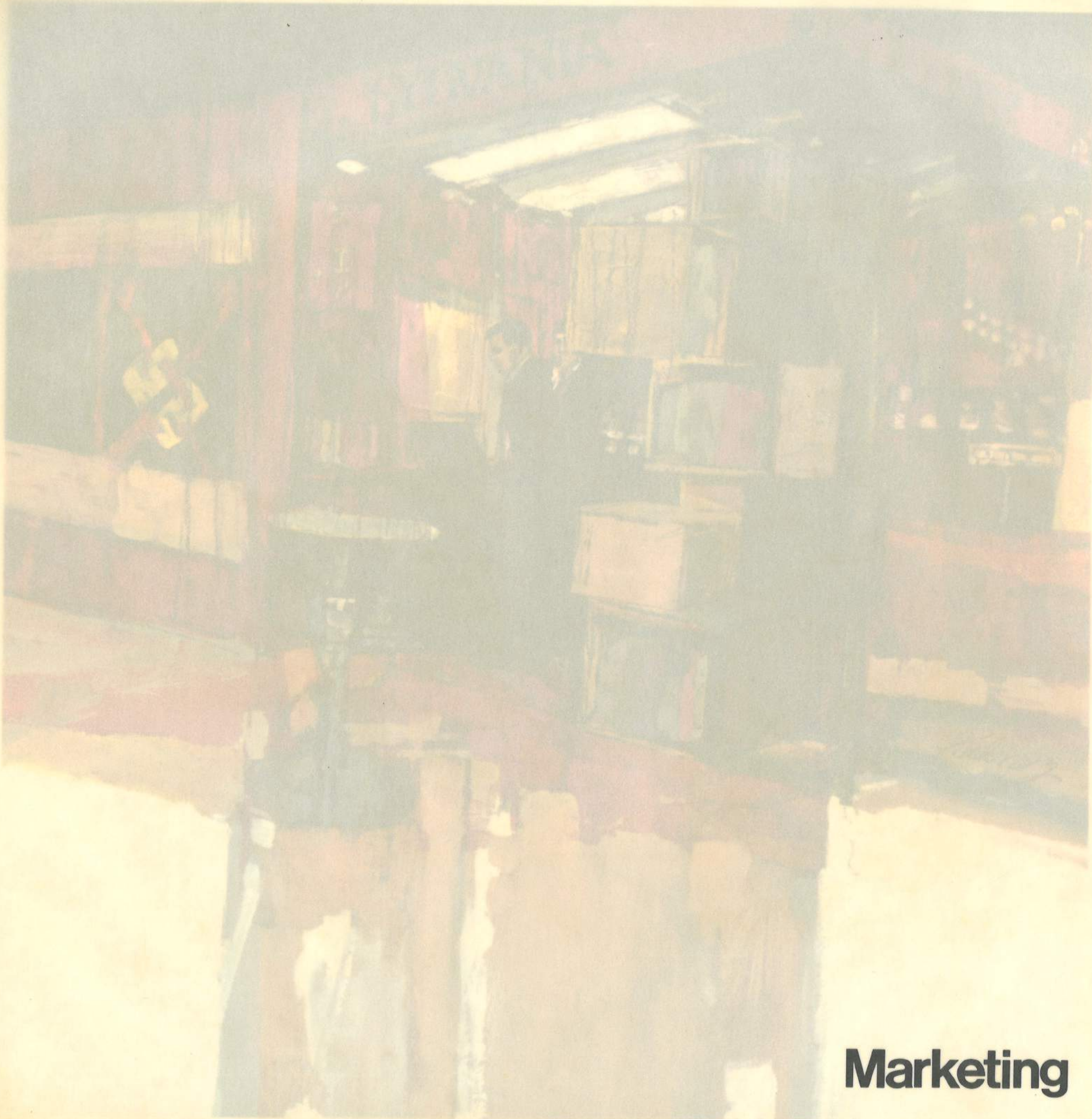
T.L. *Pre-packaging lamp sorting*
T.C. *Light output check*
T.R. *Automated lamp production*
B.L. *Plasma-discharge research*
B.C. *Preliminary lamp test*
B.R. *Filament loading of lamp bases*



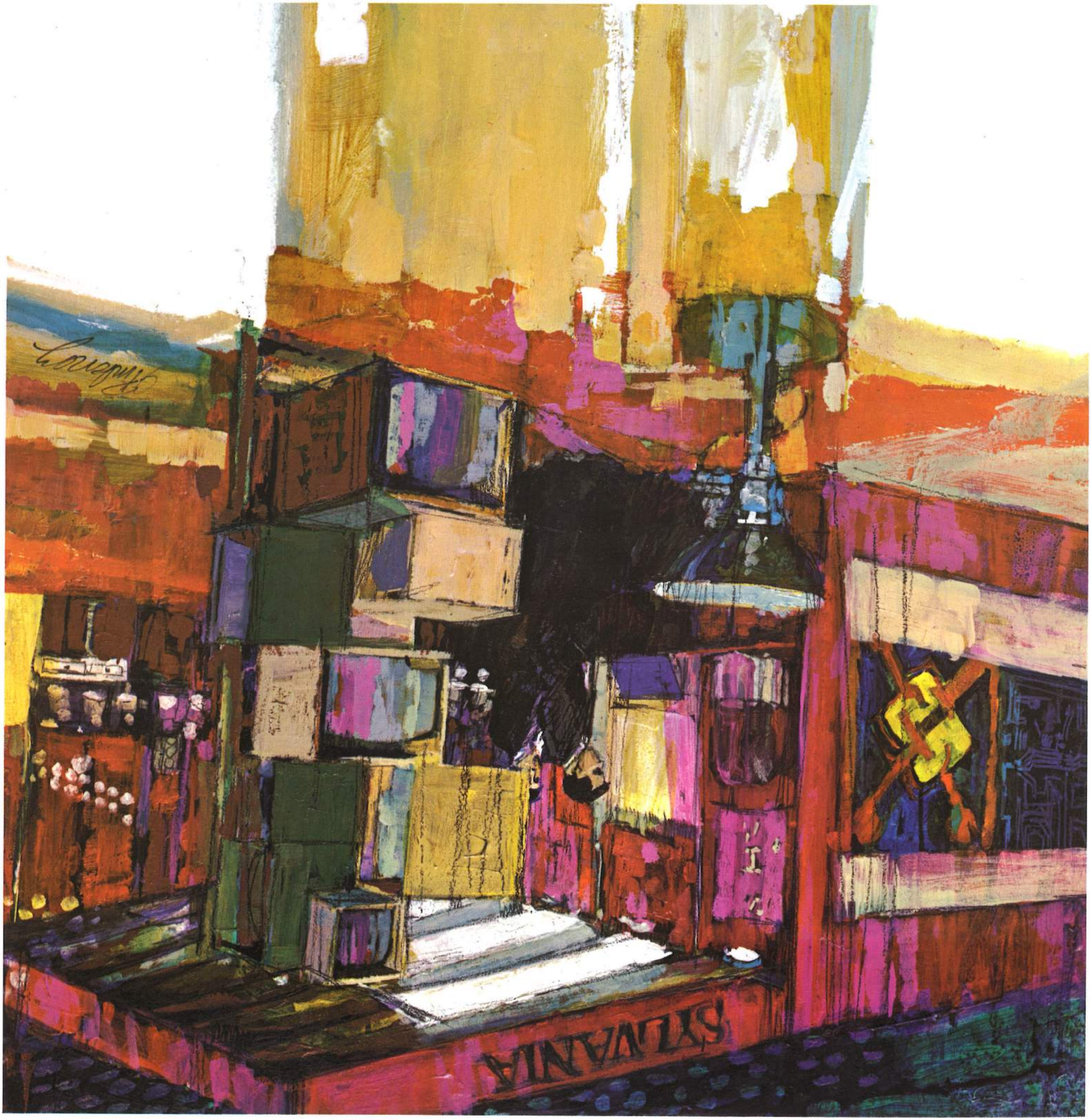
The introduction of special phosphors, improved cathodes, and special gas fills have enabled Sylvania to maintain its fluorescent product advantage over competitors.

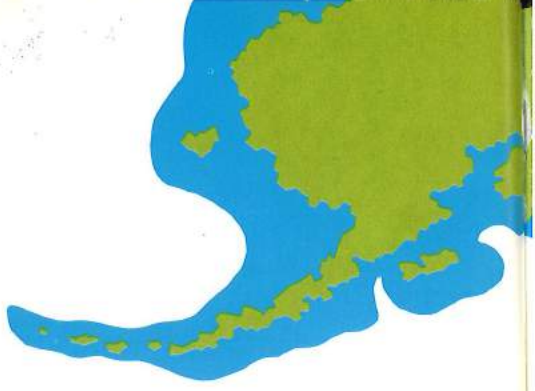
The speed with which incandescent lamps, Flashcubes, and photoflash lamps come from production lines dramatically demonstrates the skill and expertise of Sylvania's manufacturing personnel. This complex machinery is regularly converted from producing one type of product to another and back again, depending on market requirements

The company's quality assurance methods are among the most stringent in the industry. Fluorescent lamps undergo 278 individual quality tests before being released for sale to consumers. The manufacturing group has the prime responsibility for establishing and maintaining Sylvania's reputation for quality products at low cost.



Marketing


SYLVANIA



District Sales Offices ○

60 Boston Street
Salem, Massachusetts 01970

100 Constitution Plaza
Hartford, Connecticut 06103

1000 Huyler Street
Teterboro, New Jersey 07602

730 Third Avenue
New York, New York 10017

4700 Parkside Avenue
Philadelphia, Pennsylvania 19131

25 Dewberry Lane
Gardenville Industrial Park
Buffalo, New York 14224

5480 Creek Road
Cincinnati, Ohio 45242

4848 West 130th Street
Cleveland, Ohio 44135

10800 Ford Road
Dearborn, Michigan 48126

1910 Cochran Road
Pittsburgh, Pennsylvania 15220

450 Funston Road
Kansas City, Kansas 66115

2001 North Cornell Avenue
Melrose Park, Illinois 60160

10721 W. Capitol Drive
Milwaukee, Wisconsin 53222

2211 East Hennepin Avenue
Minneapolis, Minnesota 55413

5010 Kemper Avenue
St. Louis, Missouri 63139

2115 Sylvan Road, S.W.
Atlanta, Georgia 30310

3811 North Davidson Street
Charlotte, North Carolina 28205

6610 Electronic Drive
Springfield, Virginia 22150

1010 Executive Center Drive
Room 220, Orlando, Florida 3280[illegible]

100 Fordyce Street
Dallas, Texas 75207

5510 Jefferson Highway
New Orleans, Louisiana 70123

4675 Holly Street
Denver, Colorado 80216

6505 East Gayhart Street
Los Angeles, California 90054

Security Bank Building
Suite 903
233 "A" Street
San Diego, California 92101

Cascade Plaza Building
2828 S. W. Corbett Avenue
Portland, Oregon 97201

1811 Adrian Road
Burlingame, California 94010

750 S. Michigan Street
Seattle, Washington 98108

333 West 1st Street
Dayton, Ohio 45402

21040 Greenfield Road
Oak Park, Michigan 48237

Franklin National Bank Building
Garden City, L.I. New York 11532

Distribution Centers △

2115 Sylvan Rd. S.W.
Atlanta, Georgia 30310

3811 North Davidson Street
Charlotte, North Carolina 28205

3625 East 11th Avenue
Hialeah, Florida 33013

Estes Street
Ipswich, Massachusetts 01938

4700 Parkside Avenue
Philadelphia, Pennsylvania 19131

6610 Electronic Drive
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450 Butler Street
P.O. Box 9544
Pittsburgh, Pennsylvania 15223

100 Fordyce Street
Dallas, Texas 75207

450 Funston Road
Kansas City, Kansas 66115

2001 North Cornell Avenue
Melrose Park, Illinois 60160

2211 E. Hennepin Avenue
Minneapolis, Minnesota 55413

5510 Jefferson Highway
New Orleans, Louisiana 70123

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St. Louis, Missouri 63139

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Burlingame, California 94010

4675 Holly Street
Denver, Colorado 80216

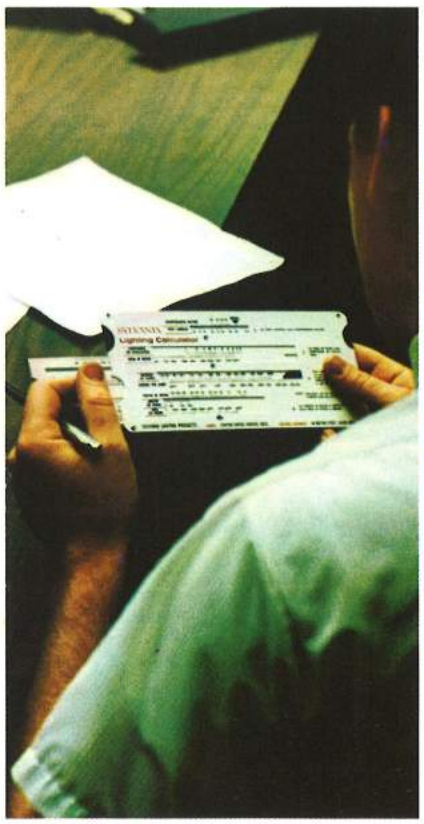
6505 East Gayhart Street
Los Angeles, California 90054

750 South Michigan Street
Seattle, Washington 98108

Marketing

The marketing philosophy of Sylvania Lighting Products is constantly being modified to reflect the continual changes in our dynamic industry. Some aspects, however, remain constant, such as the regard for product integrity, and the importance assigned to customer needs and service.

Sylvania long ago decided that its future strength was largely dependent on the growth of its distributor customers. The soundness of this decision has been proven by Sylvania's continuing success. By developing new products and improving older products, it has developed new applications and helped its distributors gain a larger share of their respective markets. The emphasis on progres sive marketing creates a platform for profitability both for Sylvania and its customers.



L. *Working out a course problem*
T.C. *Sales force learns latest marketing facts*
T.R. *Application engineering seminar*
B.C. *International sales seminar*

Opposite Page. *Refresher courses keep sales engineers current on product advantages*

To communicate the many benefits of doing business with Sylvania, the company utilizes the most appropriate marketing media and mass communications techniques. Participation in trade shows provides a dramatic means for announcing new products and stressing the multiple advantages of existing Sylvania products. Elaborate exhibits are built and shipped throughout the country for scores of national, regional, and local shows and conventions. Consumer, industrial, distributor, and military buyers are thus kept informed about Sylvania products and services. These exhibits also provide a means for obtaining valuable feedback concerning changes in customer requirements.

T.L. *One of several computer centers*
T.C. *Visitors learn about variety of GT&E products*
R. *Cars showing visibility gained with new tungsten-halogen lights*
B.L. *Informal idea exchange at a sales meeting*
B.C. *Customers being shown new light energy sources*

Opposite Page
L. *Retail store merchandiser rack*
R. *Typical industrial-commercial product exhibit*

Building quality products is only a part of the marketing function. Packaging, promotion, product information, distribution, and service can be just as important as the product itself.

The depth and variety of marketing services available from Sylvania is unmatched in the industry. The sophisticated packaging used for Sylvania lighting products is not only the most modern and attractive, it has a number of other valuable benefits. In the consumer area, it capitalizes on the fact that lamps are often an impulse purchase. The color coding of Sylvania lamps by wattage is a strong reminder to the shopping housewife, and makes warehousing, stocking, and display simpler for the retailer. New product development, and clever, helpful packaging, demonstrate Sylvania's dedication to making life easier for the consumer. Industrial product packaging such as the Caddy-Pack has special utility features. Sun lamps, infrared, and Decor Lamp packages vie successfully for the consumer's eye and interest.

Advertising and Direct Mail programs are designed to build recognition and acceptance within market areas.

Unequaled distribution facilities provide distributors, dealers and customers with the latest products from strategically located warehouses and distribution centers

Distribution requirements are handled on a 24-hour basis through 30 Sylvania Lighting Products Sales Offices and 27 distribution centers strategically located around the country. All units are linked by a 20,000 mile private wire system controlled by headquarters computers to maintain adequate inventory. Even the most unexpected requirement can be handled by air shipment through the nearest distribution point. The staff of each district sales office includes a professional engineer to help solve customer lighting problems or act as liaison with the engineering group at Sylvania Lighting Center. The recently introduced lighting maintenance program — "Computerized Relamping R_x" — utilizes this combination computer-wire service network to provide idealized solutions for maintenance contractors and other customers. Requirements for special light sources can also be handled through the district office swiftly and successfully.

L. *Control panel of the Heat/Light laboratory at the Lighting Center*

Opposite Page. *Strong distributor relationships based on mutual cooperation help develop market penetration*

For the aggressive distributor, Sylvania services can make a great difference in profitability and growth. Any Sylvania lamp distributor can take advantage of our free Financial Advisory Service, Product Refresher Courses, Application Seminars, Incentive Programs, Market Potential Analysis, Sales Training Courses, Utility Support Programs, Product Clinics, Direct Mail Programs, Warehouse Service, Product Literature, Demonstration Equipment, and Technical Marketing Services.

This Distributor Leadership Support Program is unequaled in the industry. It is the most effective way Sylvania can demonstrate its commitment to its customers.

We hope you have enjoyed this visual tour of Sylvania Lighting Products facilities and areas of activity. We realize it is impossible for everyone to visit all of our plants, but we would welcome you to visit Sylvania Lighting Center in Danvers, Mass. This administration and research headquarters of Sylvania Lighting Products is the world's most modern facility specializing in lighting, radiant energy and lighting equipment research and development.

These are our facilities — our people — and our capabilities. All are available to meet your lighting requirements.