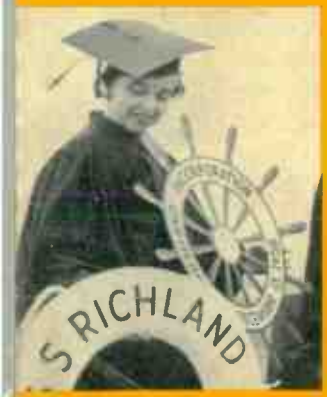
THE MONOGRAM

JAN. 1959

THE BABIES MAKE A COMEBACK . . . p. 6



THE CITY IS THEIRS
(p. 8)

THE RECOVERY IS SOUND
(p. 1)

THE FIRST PHASE IS OVER
(p. 3)

In One Month . . .

LETTERS

More on the *Seawolf*

EDITOR: I hope that *The Monogram* will be able to bring its readers up to date on the status of the *Seawolf*. The October 15 issue gave part of the story, but we would like to hear some more details.

PHELPS MEAKER
Large Lamp Department
Cleveland

Editor's Note: On December 12, KAPL General Manager Frederick E. Crever received this wire:

TODAY AT 1650 HOURS WE HAD THE SAD HONOR TO SHUT DOWN FOR THE LAST TIME THE AMAZING S2G PLANT IN SEAWOLF AFTER STEAMING 71,609 MILES DURING TWO YEARS OF UNTOUCHED AND FAULTLESS OPERATION. TO ALL AT KAPL, WE SEND OUR GREATEST ADMIRATION AND APPRECIATION FOR THIS MARVEL OF SCIENCE AND ENGINEERING. MAY YOUR FUTURE BE EVEN BRIGHTER.

(SIGNED) *THE SEAWOLF*

Are People a Boon?

EDITOR: In the December *Monogram* "our growing population" is listed as one of 20 "plus factors" in our economy today. In the long run, however, a growing population is definitely a minus factor, and it is time we recognized it as such. If the world's population keeps increasing at the present rate—doubling every 40 years—there will be one person for every foot of land in 600 years.

Such a fantastic population density is unlikely, so we should assume a probable levelling off and face up to the knotty economic problem of how to maintain prosperity with a stable population.

FREDERICK N. THURSTON
General Engineering Laboratory
Schenectady

The current domestic population trend still seems like a "plus factor" to us, in terms of the immediate economic outlook. At that point in the future when the Earth is no longer sufficient to hold its burgeoning population, is it not just possible that our descendants may not be bound to this particular planet?—Ed.

The object of THE MONOGRAM is to keep its readers better informed on General Electric activities and policies, so that they may more effectively represent the Company in its relations with the public.

IN THIS ISSUE

Keith H. Crandell, Editor

The Monogram is an intra-Company magazine published for office employees of the General Electric Company and its affiliates. Circulation is restricted to General Electric personnel. It is published monthly at New York and printed in the U.S.A. by The Maqua Company. Permission for reprinting articles should be obtained from Public and Employee Relations Services, General Electric Company, 570 Lexington Avenue, New York 22, New York.

GENERAL ELECTRIC

VOL. 8, NO. 1

THE GENERAL ELECTRIC
MONOGRAM

JANUARY 15, 1959

STATE OF THE BUSINESS

What Kind of a '59?

For members of the business press who are interested in a carefully considered, realistic appraisal of the business scene, the annual year-end news conference held by the Chief Executive of General Electric is an event of major importance. Last month's meeting was no exception, as representatives of the nation's leading magazines, radio and television networks, newspapers, and wire services sought General Electric's views at a meeting at New York's Waldorf Astoria.

Board Chairman Ralph J. Cordiner struck the meeting keynote when he told the press that, "in the opinion of General Electric's management, the business recovery that has been underway since the third quarter of 1958 is a sound recovery and will continue."

President Robert Paxton and Vice Presidents Jack S. Parker and Lemuel R. Boulware of Public & Employee Relations Services joined Mr. Cordiner in answering rapid-fire press questions.

Said Mr. Cordiner: "A free economy is never wholly predictable, of course, because it responds to the changing moods and interests of highly diverse markets. However, the somewhat slower rate of recovery in recent weeks is a good sign that businessmen are exercising prudent judgment; they are not indulging in a thoughtless build-up of inventories and facilities beyond what is warranted by foreseeable economic trends. This pru-

"THE BUSINESS RECOVERY IS SOUND"—This was the keynote for what one newsman called "the best-conducted press conference I have ever attended." Company executives met with 36 of New York's top financial and business editors, columnists, and writers to tell about General Electric's 1958 and plans for 1959. Left to right: Vice President Parker, Chairman Cordiner, President Paxton.

dence will have valuable long-term effects in the fight against inflation."

Advances in '59: Mr. Cordiner indicated that 1959's advances in levels of electrical business will be paced by consumer goods and components, electronics, and electrical equipment for community services.

Orders for electrical equipment for industry will increase slowly in 1959 and surge strongly in 1960 and 1961. Most electrical equipment sold in 1959 will be for modernization and replacement of existing facilities, rather than for expansion. Efficient production facilities, Mr. Cordiner emphasized, have become a major factor in industrial competition.

Electric Utility Equipment: Last year, Mr. Cordiner noted, the recession struck hardest at consumer goods and industrial components, while heavy backlogs of apparatus and defense orders sustained the Company's production levels. Next year, higher levels of consumer goods and components, along with continued defense business, are expected to compensate for the lower backlogs of utility and industrial orders.

Last year, Mr. Cordiner pointed out, electric utilities installed a record amount of new generating capacity, but the new capacity "only kept pace with load growth in most utilities."

He noted that the recession cut power sales in some major industrial centers and that an unusually cool summer and high rainfall also reduced the load.

"If we have a hot, dry summer as well as the expected improvement in economic conditions," Mr. Cordiner said, "many utilities will find that their reserves are not as large as they seem.

"The utilities will undoubtedly need more capacity early in the 1960's, so their orders for equipment with a long manufacturing cycle cannot be indefinitely postponed."

The Big Problem: Asked for his evaluation of the Company's "big problem" for 1959, Mr. Cordiner had this comment:

"I would say that our big, fundamental problem is to so conduct the business that, with the built-in wage-salary cost spiral, we don't have to ratchet it on in prices to our customers, as is happening generally in the industry.

". . . Our five-year contract provided in the year 1958 an increase of 3.48 per cent. Historically, the productivity of this country has averaged a gain . . . of only 2.3 per cent, so our challenge to General Electric through innovations, automation, lengthening the arm of the worker, keeping the value of the product, but finding out how to design it and manufacture it and sell it at lower costs, is probably our fundamental challenge."

CORPORATE CITIZENSHIP

The Political Awakening

General Electric's increasing attention to its political responsibilities stimulated a host of questions at Mr. Cordiner's press conference. "General Electric," he said, "intends to push ahead. . . ."

The Emphasis During 1959: "Learning more about the political process, and urging other businessmen to acknowledge their political responsibilities. The Company's managers will continue to speak out on important issues of local and national concern, on a non-partisan basis, trying to reflect what they believe to be the public interest."

Mr. Cordiner commented on the Com-

pany's activities in two specific areas of public controversy during 1958—the recession, and compulsory unionism.

The Recession: "The Company's activities during the recession illustrate how business can make a helpful, non-partisan contribution in the area of public policy. Last winter, when there were many voices crying for massive government intervention to prevent a depression, General Electric took a firm public stand against inflationary tax cuts and wasteful public spending. Instead, the Company urged a more moderate program of business and government action to create the conditions for economic recovery. The brevity of the recession indicates that this moderate course was the correct one."

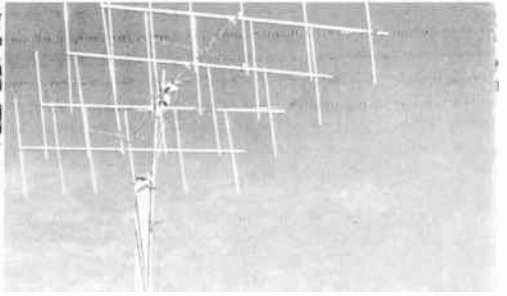
Compulsory Unionism: "General Electric undertook several experiments in political activity, notably offering public support for right-to-work propositions in several states where the Company has large employment.

"In most cases these propositions were defeated—not on their merits, but because union officials and their political allies conducted a successful campaign to confuse the voters as to the real issue, which is compulsory unionism.

"I am still convinced that the voters in these states do not favor compulsory unionism, but were erroneously led to believe that these laws were an attempt to destroy unions, which is not true. However, I do not want to give the impression that we in General Electric have a fixation on this particular issue. It is only part of a larger political problem that all citizens will have to face sooner or later.

"At the moment, although the American people are overwhelmingly in favor of the free enterprise system as opposed to a government-controlled economy, there is very little organized opposition to the pressure groups that are trying, issue by issue, to increase the control of the Federal Government and the union machine over economic life. We believe that businessmen must take the lead in reasserting the values of a free economy over a government-controlled economy—and must win popular support for their views."

OPERATION UPTURN ACHIEVEMENT REPORTS were made to Executive Office Group Executives after successful completion of Upturn's "Phase One." Left to right: Vice Presidents Cramer W. LaPierre, James H. Goss, and Arthur F. Vinson present bound reports to Philip D. Reed, to whom program was dedicated, at Crotonville. Looking on are President Paxton (right) and Chairman Cordiner, who next day told press, "Operation Upturn has been a rousing success."



SATELLITE-TRACKING equipment is tested (abave) in Syracuse by engineers A. D. French (left) and Dr. J. P. Castas, before shipment ta mabile tracking statian (right), where Schenectady engineers Gunther Fenner and Ray Andersan are shawn inspecting antenna.

MISSILE GUIDANCE

Pride in the Atlas

After General Electric-built electronic equipment guided the 4½-ton Atlas missile into orbit, just before Christmas, Syracuse *G-E News* Editor Bill Johnson checked on the reaction of readers at the local Defense Systems Department. Said one happy employee:

"When you read about something like this, you just can't help feeling proud about the part you've had . . ."

Pride was shared with employees of the Heavy Military Electronics Department, which developed the Atlas' radio-command guidance system and produced ground-based equipment.

Said DSD General Manager Richard L. Shetler: "This launching represents a great advance in guidance control and is an historic tribute to the more than 3000 General Electric personnel who have worked on the project over the past three years."

Meanwhile, down in Schenectady, a two-man crew from the General Engineering Laboratory kept close electronic tabs on the missile from the Company's mobile Space Vehicle Tracking Station. Radio signals received from the orbiting Atlas were promptly relayed to the Defense Department in Washington.

The station consists of an ordinary house trailer, a mast, and specially built TV-like antenna. It is part of the Air Force Cambridge Research Center's space tracking program, and was set up under an Air Force contract with HMED. The trailer contains high frequency receivers and recording equipment.

OUR MISSILE AND SPACE PROJECTS

Here are some of the principal missile and space projects on which General Elcctric worked during 1958, as reported to the press by Mr. Cordiner (p. 1):

PROJECT	WORK ASSIGNMENT
Atlas	Re-Entry Vehicle and Ground Guidance
Green Quail	Propulsion
Honest John	Arming and Fuzing
Lacrosse	Arming and Fuzing
Man-in-Space	Design of Space Cabin
Mauler	System Study
Missile Able	System Study
Nike Hercules	Arming and Fuzing
Polaris	Fire Control and Guidance
Regulus	Propulsion
Sidewinder	Production
Talos	Shipboard Handling and Launching
Tartar	Fire Control
Thor	Re-Entry Vehicle Development and Production
Thor Able	Re-Entry Vehicle Research and Development

INVESTOR INFORMATION

For the Whole Community

Erie General Electric is letting the whole community in on its information program on securities and investing. Since October 20, the Erie plant's roving community radio reporter, Frank Martin, has been visiting the offices of Paine, Webber, Jackson & Curtis, securities brokers, for interviews on securities and investing (photo below). They are broadcast nightly, five evenings a week, over radio station WJET.

The interviews are based on the New York Stock Exchange's investment information program. Since Investor Relations Service conducted a pilot course for General Electric employees in New York in the fall of 1957 (*The Monogram*, Nov. 1957, p. 6), many locations have initiated similar programs for employees. Among them: Erie, Schenectady, Ithaca, Evendale, Philadelphia, Cleveland, Somersworth, West Lynn, and Syracuse.

Erie, however, decided to go one step further. Community Relations Manager

MORE AND MORE Americans are investing in American industry—and many more are interested but just don't have enough information. Erie General Electric is helping fill the information gap locally with sponsorship of investor information radio broadcasts as part of its over-all community relations program. Here Frank Martin (right) interviews broker Robert Keim.

THE BABIES MAKE A COMEBACK

Four General Electric share owners are shown below (and on the cover) as they'll appear on their return to television via the General Electric Theater on January 18. Progress Reporter Don Herbert talks over Company affairs during their 1954 debut, in photo above. The babies won shares by being born on the Company's 75th anniversary.

Arch McKinlay, Jr., enlisted the aid of Robert Keim, co-manager of Paine, Webber, Jackson & Curtis' Erie office and an articulate spokesman on the basic principles of investing.

He agreed to tape a series of interviews each week for presentation on Erie General Electric's daily community relations program.

How's the response? Messrs. Keim, Martin, and McKinlay have all received excellent comments from listeners. Reports Arch McKinlay: "We have no hot tips, no inside information, no recommendations on any particular securities. No one is ever urged to invest. It's strictly educational. Nevertheless, the response has been excellent, particularly from average income people who report that they've really learned something. We have indications that many listeners are following the course night after night."

GENERAL ELECTRIC THEATER

Who Owns American Industry?

On the facing page, Don Herbert, Progress Reporter for the General Electric Theater, is shown conducting two small share owner meetings. The first took place in 1954, and brought together four of the 191 babies born to General Electric families on October 15, 1953, the Company's diamond anniversary. Each of the 191 won five shares of Company stock. The same four share owners, five years older and wiser, return to television on January 18th. Susan Carroll, Gary Elverson, Linda Ann Pace, and Patrick Keenan will help dramatize an important subject: the broad ownership of American industry.

Why important? Largely because of the many misconceptions surrounding American shareownership.

In point of fact, as the January 18th Progress Report will point out, American industry is not the province of a few wealthy persons; it has more than 10 million owners, most of them making less than $7500 a year. General Electric alone has nearly 500,000 owners, including almost 400,000 owners of record, and four whose parents will be watching proudly as they make their television comeback on the 18th.

The parents are Mr. and Mrs. Vincent J. Carroll, Mr. and Mrs. William Elverson, Mr. and Mrs. Troy Pace, and Mr. and Mrs. James T. Keenan. Messrs. Carroll, Elverson, Keenan, and Mrs. Pace are Philadelphia employees of the Company.

RESEARCH

Pursuit at Nela

"The aggressive pursuit of fundamental knowledge and information" was furthered last month with the dedication of the Lamp Division's multi-million dollar Research Center in Cleveland. The new Center includes three separate components, whose common objective is the searching out of better light sources:

- Lamp Research Laboratory;
- Lamp Engineering Research Lab;
- Radiant Energy Effects Lab.

This newest General Electric research facility will house an organization of researchers "who will not be bound by current thinking on the source, form, fabrication, operation, or application of light," according to Carl L. Olson, the Center's manager. Their task: to advance the frontiers of knowledge about light and its effects on all living things.

IT'S UP TO THE CITIZENS of Richland to govern themselves, now that the city is officially incorporated. Example of employees' civic leadership: on new city council are HAPO-ites (from right) Paul P. Beardsley; Ernest B. Street; Mayor Pat Merrill; Lester K. Coon; Joyce Kelly (retired); and Fred E. Brockenbush. Fred Clagett is former employee. Mayor Merrill is wife of HAPO engineer. *Time-Life* photographer, left, snaps council during inspection of new City Hall.

NOW A CITY: RICHLAND, WASHINGTON

It was a time of festive celebration for the townspeople, and a fine demonstration of democracy in action. Reason: Richland, Wash.—home of the vast Hanford Atomic Products Operation—officially became a first-class incorporated city last month. Running the city is now the residents' responsibility, an objective repeatedly endorsed by General Electric.

When construction on the vital plutonium plant began in 1943, the small town of Richland was included in the land bought by the Government. Managing Richland was one provision of the Government contract when General Electric took over operation for the AEC.

Recent passage of a Federal law allowing residents to buy property gave Richlanders (some 23,000 strong) their chance for self-government. General Electric promptly helped sell almost 4800 homes (commercial property is in process of being sold). Richlanders quickly voted for incorporation, approved a city charter, elected councilmen.

Said a HAPO spokesman at the hoopla marking the town's coming of age: "General Electric is glad to step back into its more familiar role of a business firm in a normal, democratically governed city. While giving up the responsibility for managing Richland, the Company stands ready to play its proper role as a corporate citizen."

Already, General Electric residents are setting an example of citizenship responsibility for the rest of the town's populace. Of the seven new councilmen, four are HAPO employees, one a retired employee, while Mayoress Pat Merrill (photo above), is the wife of HAPO engineer Edwin T. Merrill. (On front cover, Her Honor displays wheel and life ring for new "ship of state.")

AWARDED annually to military pilots, General Electric Trophy recognizes outstanding aviation achievements. Here, General Curtis E. LeMay (at left) presents trophy to Captains Jones (left center) and Shaff for setting official intercept record last month. At right, Manager Neil Burgess (now of Commercial Engine Operation), who headed development of J79 which powered record-setting Starfighters.

JET ENGINES

J79 Scores in '58

"In the military area, more than 95 per cent of the country's total turbojet experience at Mach 2 has been acquired with General Electric engines." So reported John B. Montgomery, general manager of the Aircraft Gas Turbine Division, in his summary of Evendale's 1958.

The engine that helped to make this jet-age record: Evendale's herculean J79.

Last month, Air Force Captains Bruce D. Jones and Maurice A. Shaff won the General Electric Trophy (photo above) for setting an official intercept record with J79-powered Lockheed F-104 Starfighters. They intercepted and destroyed a target 172 miles from base in less than nine minutes, averaging 1150 mph from dead stop to target destruction at an altitude of 35,000 feet.

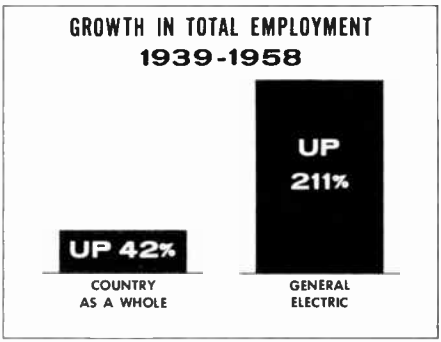
Starfighters captured the world's speed (1404 mph) and altitude (91,243 ft) records earlier last year (*The Monogram*, June 1958, p. 6). In December, Starfighters, with J79 powerplants, set seven new time-to-climb records—the first aircraft to hold world records in all three categories. First Lts. William T. Smith (at left, photo below) and Einar K. Enevoldson made up the record-breaking team.

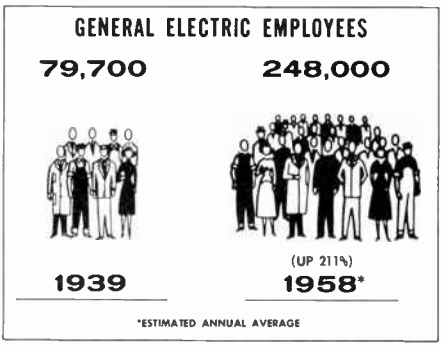
J79 performance, said Mr. Montgomery, played an important part in the selection of the General Electric J93 to power North American's 2000-mph B-70 bomber and the F-108 long-range intercepter, which will fly faster than Mach 3.

HANDSHAKE AFTER SEVEN RECORDS

IN 20 YEARS: TWO MILLION JOBS

EMPLOYMENT IN THE ELECTRICAL INDUSTRY		
INDUSTRY COMPONENT	1939	1957-58 (ESTIMATE)
MANUFACTURING	444,000	1,400,000
UTILITIES	307,100	405,000
CONTRACTORS	60,000	190,000
WHOLESALERS	37,800	165,000
RETAILERS	92,000	160,000
SERVICE & REPAIR	7,000	40,000
COMMUNICATIONS	374,000	835,000
TOTAL	1,321,900	3,195,000





Today, one out of every 20 employed persons in the United States works in some branch of the electrical industry or related services. The 3.2 million people employed in seven major segments of the industry received compensation of $13 billion during 1957.

These and other impressive facts support the theme for this year's National Electrical Week observance: *Electricity builds jobs.* NEW is scheduled for the week of February 8-14, including the Feb. 11 birthday of Thomas Alva Edison (in recognition of his contributions to mankind through research and invention).

The three charts at left illustrate how the number of jobs at General Electric and throughout the electrical industry has increased dramatically over the last 20 years. The growth of the industry has meant increasing contributions to the national wealth.

- Item: In 1958, an estimated $4 billion (or 14.7 per cent) of all business expenditures on plant and equipment were accounted for by the electrical machinery industry and the utilities. The majority of these funds is going into modernization projects.
- Item: The wealth created by the electrical industry (and related services) has been growing at a faster rate than the economy as a whole. The industry has contributed some $24.8 billion to the nation's total income of $363.9 billion.
- Item: Between 1939 and 1954, the use of electricity by manufacturing industries more than *tripled*, while utilities have *doubled* their generating capacity since 1949.

What does all this add up to? More jobs in fields connected with the produc-

tion, distribution, and utilization of electricity. Over one million customers were added to utility lines last year, raising the total served to more than 55 million throughout the United States, which generates better than 40 per cent of the world's electricity. Some 3.2 million persons are employed in some branch or other of the electrical industry; in some categories, the number has grown five times the comparable 1939 figure.

ATOMIC ENERGY

"Critical" at Vallecitos

A $4-million test reactor, first of its kind in American industry, "went critical" at the Vallecitos Atomic Laboratory one day last month. The Atomic Power Equipment Department's new 30,000 thermal kw "GETR" (for General Electric Test Reactor) is America's first large, privately owned, test reactor.

Located near Pleasanton, Calif., the nuclear facility has already been called "the latest step in U.S. industry's epic struggle to harness the atom for peacetime use" (see page 14).

GETR is adjacent to "VBWR" (for Vallecitos Boiling Water Reactor), which was dedicated in 1957 (*The Monogram*, Dec. 1957, p. 6). The nation's first privately financed nuclear generating facility, VBWR furnishes steam to a 5000-kw turbine-generator of the Pacific Gas & Electric Company.

The new test reactor will substantially increase facilities in this country for the vital testing of materials under intense nuclear irradiation. At the outset, GETR will be used chiefly for irradiating test fuel elements for nuclear power plants, simulating actual operating conditions for a variety of reactor types. In a matter of hours, GETR can simulate months, or even years, of radiation exposure.

Having "gone critical," GETR becomes the nation's third materials testing reactor; two others are in operation at the Atomic Energy Commission's Idaho Test Station at Arco, Idaho.

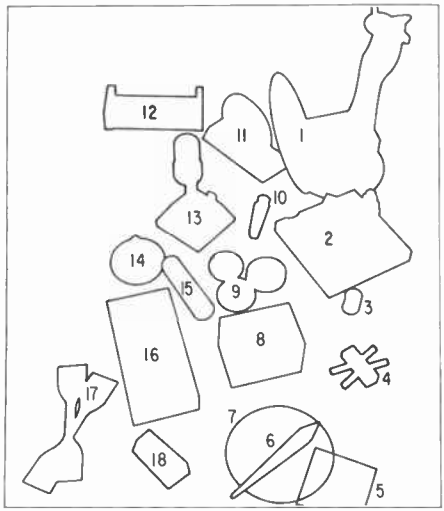
CHAIN REACTION gets under way at Vallecitos' new test reactor, as team of nuclear engineers and technicians studies control gauges. From left, GETR's J. W. McCumsey, P. H. Zeanah, J. O. Arterburn, and Operations Manager H. T. Wells.

Dr. Suits Makes an Addition to His Pro

On the corner of his desk at the General Electric Research Laboratory in Schenectady, Dr. Guy Suits keeps an unusual collection of what he terms "little things" (photo opposite). Most recent addition: a small developmental thermionic converter (see below).

To Dr. Suits, vice president and director of research, these collector's items, small though they may be in size, are big in significance. Each is a milestone in the Company's progress in research.

They, and the hundreds of other mementos stored away in Dr. Suits' office cabinets, symbolize the Company's investment in a sound research program which sparks dynamic Company growth. From continuing research and development



WHAT'S ON DR. SUITS' DESK? His research progress mementos include a thermionic converter (1), which turns heat from a gas flame directly into electricity to run a tiny electric motor. Next are samples of disk-seal electronic tubes (2), including the famous General Electric "lighthouse" tube; early fine-particle magnets (3) produced at West Lynn's Measurements Laboratory; and (4) one of the first developmental germanium rectifiers. Upon a memory-cell "honeycomb" (5), Research Laboratory scientists have been able to store nearly one million "bits" of information per square inch, while a silicon crystal (6) is completely free of the dislocations which make materials weaker than they should be. A coil of wire (7) is coated with Alkanex® wire enamel. Nearby: the first Air Force transistor (8), produced by General Electric; samples of man-made diamonds (9); a vacuum-melted alloy (10) produced with new techniques; Alnico magnets (11) whose energy came from the atomic reactor at West Milton, N. Y., and a step-gauge (12) for measuring thicknesses in millionths of an inch. A display (13) shows the relative size of three devices designed for essentially the same function—a standard vacuum tube, a transistor, and a new button-size metal-ceramic vacuum tube. A unique item is an engagement ring (14) whose diamond has been scratched by borazon, the first material to rival the diamond in hardness. The bottle (15) contains some of the first silicone oil produced after General Electric entered this "born-in-the-Research Laboratory" business. Next are a cross-section of an early microwave device (16); samples of the new nitrile silicone rubber (17); and tiny whiskers of iron (18) that have set a "world record" for the strength of metals (nearly two million pounds per square inch).

gress Corner

spring the new and better products of the future that win greater customer preference, build jobs, and increase Company contributions to national welfare.

National Honor to Dr. Suits

Dr. Suits was awarded the William Procter Prize for Scientific Achievement last month. Presented by the Scientific Research Society of America, the prize is given annually in recognition of notable accomplishments in scientific research.

Dr. Langmuir's Medals

During his long career with the Research Laboratory, the late Dr. Irving Langmuir received high honors from home and abroad for his distinguished researches.

Last month, 24 medals awarded Dr. Langmuir, including one symbolizing the Nobel Prize (1932), were presented to the laboratory by his daughter, Mrs. Harry R. Summerhayes, Jr. (photo below). Accepted by Dr. Suits, the medals will be displayed in the Laboratory.

REMINDERS OF GREAT ACHIEVEMENT

PUBLIC RELATIONS

"Risk and Opportunity"

In its January 12 issue, *Time* magazine described the start of operations at the new $4-million, 30,000-kw Vallecitos test reactor this way: "The latest step in U. S. industry's epic struggle to harness the atom for peactime use."

The event was the newspeg for a 13-page article on General Electric and America's atomic industry. Featured on the cover: Board Chairman Cordiner.

Time's wide-ranging article covered our activities in many areas, including:

Atomic Energy: ". . . none have met the challenge of the atom on a broader front."

Employee Education: ". . . it maintains company schools with more students (32,000) than most U.S. universities."

Jet Engines: "G.E. built the engine for the first U. S. jet fighter in 1942, has done so much jet work that today it is ranked with Pratt & Whitney as the top jet producer. During the Korean War, 60 per cent of jets in service had G.E. engines."

Missiles: "Hardly a missile rises from its pad that does not contain some G.E. part."

Fusion and Future Progress: "No one will know whether fusion research is a success or failure for another three or four years, and any practical results will come years after that. Nonetheless, a company such as G.E. must commit itself to these grandiose projects with no guarantee of success, if it hopes to survive another generation of doing profitable business. That fits in perfectly with Ralph Cordiner's concept of G.E. as a company of risk and opportunity."

Ready for the Market

Spanking-new products matched to customer preferences trigger the sales on which jobs depend. Ready with a host of 1959 customer-oriented values: Bridgeport's Housewares and Radio Receiver Division. And the division expects favorable customer reaction. Vice President Willard H. Sahlhoff sees 1959 sales about 10 per cent higher than last year's. Here's a first-of-the-year sampling of his division's newest.

Upright Cleaner: Industry figures show that 20 per cent of the vacuum cleaner customers want an upright model. The Vacuum Cleaner Department is meeting this preference with its first upright cleaner since 1952 (photo right). The unit's powerful, rug-hugging intake is only 4½-in high and the handle lowers flat to the floor, allowing easy access under low furniture. Weighing about 14½ lbs, the cleaner can be stored by standing it in a closet corner or hanging it on a wall. Suggested retail price: $69.95. A complete set of cleaning attachments: $19.95. Available later this month.

Production economies have enabled the department to reduce the suggested price of its floor polisher from $49.95 to $39.95.

New Combo: The Radio Receiver Department is meeting burgeoning customer interest in fine sound reproduction equipment with a new table-model radio-stereophonic phonograph and matching amplifier-speaker. The radio-phono combo is the department's first since 1951. Phono features: four speeds, twin 6½-in speakers, turntable compartment light, portability. Suggested price: $129.95; amplifier speaker: $49.95. The units will be available in February.

IT MEETS A CUSTOMER DESIRE

Heading the department's new portable radio line is an eight-transistor "Cross-Country" model. Suggested price: $75. Available in June.

Bright Brewer: From the Portable Appliance Department comes a new automatic coffeemaker (Model P-40) with a stainless steel interior for easy cleaning, better-tasting brew. Exterior: chrome on stainless steel. Suggested price: $31.95 in February.

A drink mixer attachment on the department's new portable mixer (Model M-37) makes whipping up milk shakes, eggs nogs, and fruit juices a whiz. Suggested retail price of the deluxe portable: $19.95. February availability.

Employee prices on the new products have not been announced.

MINDING THEIR "PDQ'S"—Price, delivery, quality, service—was theme of Schenectady purchasing workshop. Above, a Chamber of Commerce guest discusses selling with conference chairman, E. S. Waters of Large Steam Turbine-Generator Department. The Chamber praised civic responsibility behind the first-of-its-kind vendor seminar.

PURCHASING

How to Woo the Customer

To help Schenectady area suppliers earn the maximum portion of some $100 million local General Electric components expect to spend for goods and services during 1959, Schenectady Public & Employee Relations recently conducted a unique seminar on "how to sell us."

First of its kind, the one-day workshop consisted of talks on the do's and don't's of getting General Electric business, round-table discussions, and panel sessions, in which 29 purchasing agents and buyers—representing all Schenectady departments—told the guests how to compete in such areas as price, delivery, quality, and service.

Of the 400 vendors invited, 330 accepted. The word spread and another 40 vendors sought and received invitations.

Seminar chairman Edward S. Waters, purchasing manager for the Large Steam Turbine-Generator Department, pointed out that Schenectady General Electric now does business with more than 5000 suppliers all over the country, would like to give local firms as large a share of the orders as possible. He outlined purchasing policies, advised salesmen to be thoroughly familiar with their own products and General Electric needs, and to keep the customer posted on new products, applications, and innovations.

The 370 enthusiastic participants asked questions, went home with the answers which could mean millions of dollars to Schenectady's economy.

SUGGESTION PROGRAM

Humor at Hanford

A good many employees may soon find inspiration to participate in the Company's suggestion program (and get a chuckle besides) via such offbeat cartoons as those reproduced on the facing page.

A total of six "Suggest a Better Way" ads were originally part of an Operation Upturn campaign to reduce costs and eliminate waste at Richland's Hanford Atomic Products Operation. Communication specialist Bill Jury and artist Ken Staley produced the wacky series, which appeared weekly in the local plant newspaper.

Result: high readership and a greater awareness of the suggestion program by employees. "We enjoyed the ads," says D. F. Spellman of Hanford's Relations and Utilities Operation, "and apparently others did too, because we have answered requests from other Company components for 30 sets of reprints."

Oola was editor of the Dinosaur Gazette. His publication was a good one, but its circulation was limited. Using a stone chisel and a mallet, it took him four years to complete one edition. Only the strongest cavemen could turn the pages. Imagine Oola's delight then when his young apprentice, Bonla, suggested replacing the stone chisel with a pterodactyl quill and the stone slabs with the hides of saber-toothed tigers. Now the Dinosaur Gazette is a monthly publication and its circulation has been increased to 11. If YOU have an idea for increasing production, don't keep it to yourself. Suggest it. Win a cash award.

SUGGEST A BETTER WAY upturn

In beez day, Felepe Lopez was the greatest boolfighter in all Espana. He was nimble of foot, queek with the blade and smart in the head. Then the years she began to creep up on Felepe. Heez feet were no longer nimble. Heez blade she was no longer queek. But he was still smart in the head. He tradred heez blade for a cannon. What heez strength had done for heem in heez youth, he let black powder do for heem now. He wasn't the greatest boolfighter in all Espana, but by zingles he was the oldest! If YOU have an idea for prolonging the life of a piece of equipment around the plant, talk it over with your supervisor. Write it out on a Suggestion form and send it in. Muchos pesos have been won by those who have. Why not you?

SUGGEST A BETTER WAY upturn

TIME was when all Apoochee maidens relied on smoke signals for contacting the young Nuvaha braves across the ridge. It was bad medicine all the way around. Accepting a date to the weekly rain dances sometimes took hours. If dust storms interfered with the signals, their answering "Pick me up at sundown" never got through. Then Princess Bubbly Brook got an idea . . . Why not install a telephone? Now she has time to braid her hair and rinse out a pair of buckskins before her young brave rides up. If YOU have an idea for improving communications at Hanford . . . or for improving ANY condition in your work area . . . write it down and send it in. Good ideas are an important part of "Operation Upturn." They can mean wampum for you, too.

SUGGEST A BETTER WAY upturn

DWARFING HER BUSY TUGS and cheering people on her vast decks, the *Universe Apollo* is slowly nudged to fitting-out dock, shortly after launching ceremonies at Kure shipyard. Some 950 ft. long, the world's largest tanker is 135 ft. wide, 67½ ft. deep, and is designed to draw 48 ft. when loaded. Among General Electric people at the launching was Phil Flaig (Installation & Service Engineering field representative in charge of installing the MSTG equipment aboard the ship), who took this photo.

SHIPS AND THE SEA

Another "Barrier" Broken

A Lynn-built 27,500-hp propulsion unit helped make maritime history last month, with the launching of the SS *Universe Apollo* on the other side of the world. Reason: *Apollo* is the most ship ever built —a titanic 104,520 deadweight tons of tanker—the world's first vessel of any type to "break the 100,000-ton barrier."

The single propulsion unit, manufactured by the Medium Steam Turbine, Generator & Gear Department, will drive the monster merchantman's huge 24-ft, 8-in. single screw.

Launched at a Kure (Japan) shipyard last month, the *Apollo* is being fitted out for National Bulk Carriers, Inc. Said NBC's President Daniel K. Ludwig in a pre-launching speech:

"The building of a 100,000-ton ship has been an almost legendary ambition of shipbuilding generations in the past—the ultimate goal which everybody envisioned but never quite expected to attain."

So large is the ship (photo above) that she could not be launched in the conventional, down-the-ways manner, but had to be built in a dock, where the hull could be floated at a certain stage of construction.

Why build such a giant tanker? "The economy of the world, as I see it now developing," explained Mr. Ludwig, "is raw materials moving from one continent to another. Any raw material has to be moved cheaply. And to move it cheaply, you've got to move it in large quantities."

The big bulk carrier is designed to do just that. Her cargo capacity—an estimated 1,021,000 barrels of oil—makes her also the world's first tanker to break the "million-barrel barrier."

Apollo will undergo her sea trials later this month, soon after which she will enter the Tokuyama-Kuwait (Persian Gulf) run, on lease to the Idimetsu Oil Company of Japan.

SEQUEL

Rounding the Corner: "*Commercial production of [the Semiconductor Products Department's silicon controlled rectifier] will not begin until late next fall. But to those in the electronics industry who recognize its potential, 'next fall' seems just around the corner*"—(The Monogram, *Jan. 1958, p. 6*). Sequel: True to its timetable, the department's Clyde (N. Y.) plant swung into full production of the tiny controlled rectifier last month —a remarkable product transition from laboratory to factory.

General Electric is the only producer of the thimble-size silicon controlled rectifier, which not only converts a-c to d-c but also controls the amount of power it puts out.

Already, enthusiastic engineers have found many working applications for the miniature component, are actively searching for more.

A number of Company departments and the General Engineering Laboratory are currently carrying out a joint program to discover new applications for the controlled rectifier.

Last month, about 100 employees from these departments met in Schenectady with laboratory personnel (photo below) to exchange application information and experience, with a view toward expanding the uses for this promising product of General Electric research progress.

MULTI-DEPARTMENT INTEREST is expanding uses for Semiconductor Products' minute silicon controlled rectifier. At right, General Engineering Lab's J. D. Harnden, Jr., SPD's F. W. Gutzwiller, Specialty Control's B. Cooper, and Low Voltage Switchgear's A. Hansen, Jr., check performance wave forms of a d-c silicon controlled rectifier drive, as recorded on moving chart.

AROUND THE COMPANY

Sunday Night Honors: The nation's television editors and columnists have voted General Electric Theater one of the top three "best dramatic film series." The tenth annual poll was conducted by *Television Today* and *Motion Picture Daily* for *Fame* magazine.

Good Neighbor Policy: Results of a community attitude survey recently taken in Syracuse rated General Electric high on neighborliness, with 97.5 per cent of those polled of the opinion that the Company's presence has improved the community. And 88 per cent considered General Electric employees excellent, very good, or good neighbors.

First Prize—A Rosy Glow: In Philadelphia last month, personnel of Relays & Accessories, Low Voltage Switchgear Department, wound up Operation Upturn in a manner befitting the season. Rather than use $400 (accumulated during a six-month on-time shipment contest) for awards, Christmas-spirited employees voted to spend it on 80-pound food parcels for each of 21 needy families. The families were selected by four churches in Philadelphia.

WHAT'S NEW

Honors know no state boundaries. Living in ***Washington***, Wilfrid E. Johnson, general manager of the Hanford Atomic Products Operation at Richland, has been appointed to ***Oregon's*** Technical Advisory Committee on Nuclear Development. . . . Kentucky's Governor Chandler commissioned a ***Utica, N. Y.,*** man a Kentucky Colonel for his civic activities while living in ***Cincinnati, O.,*** which benefited many nearby Kentucky communities. The new Colonel: William C. Peck of the Light Military Electronics Department, suh.

Just published: *Modern Jupiter, the Story of Charles Proteus Steinmetz* by John A. Miller of Schenectady's General Engineering Laboratory. . . . Way down ***South*** in New Orleans, the lavish (and world's largest) motel, the ***Fontainebleau,*** opens soon. Units from Louisville's Air Conditioning Department will heat and cool all ***400 rooms;*** entertainment will be via TV Receiver Department sets.

Something of a production record has been set by ***employees*** in the Appliance Motor Department's Murfreesboro (Tenn.) plant. They occupied it in September, 1957; 15 months later, turned out their ***500,000th*** motor.

To play abroad: the Company's "Adventures in Science" show at ***Tokyo's*** International Trade Fair this May. Plans are being made for a tour of ***South Africa*** later in the year.

The General Engineering Laboratory's Dr. Thomas P. Goodman has received the ***Melville*** Prize Medal of the American Society of Mechanical Engineers. . . . Our part-time teachers: some 18 Utica department employees are ***volunteering*** their services in an Oneida County-sponsored program to provide advanced study opportunities for gifted ***students.***

Ideas we like: The kids get a playhouse when Mom buys a new free-standing General Electric ***range.*** The shipping carton can be quickly converted into the ***kid-size*** "Trading Post" shown in the photo at left. It's a promotional idea from Appliance Park's Range Department. . . . Three-minute ***egg-timers*** were recently handed out by Schenectady's Power Tube Department—handy reminders for employees to make telephone calls ***short.*** . . . Buying a 12-bulb pack of No. 5 or PowerMite M2 flashbulbs, customers receive a ***free*** battery test light, courtesy of Nela Park's Photo Lamp Department, to check the dependability of flash equipment. . . . It was a ***community*** affair when the Household Refrigerator Department ***presented*** its 3,000,000th refrigerator to Louisville's General Hospital last month. ***On hand*** were representatives of the hospital, the city, the University of Louisville, the Board of Health, and the Chamber of Commerce.

WITH A RANGE, A PLAYHOUSE

ELECTRICAL CENTER: Frank Trevarraw (right) displays laad center ta LBE's Jae Synar. The hame is wired far 175-amp service, has 24 light circuits.

THE TREVARROWS stand praudly at the entrance ta their new Medallian Hame an Betsy Lane in Irving, Tex. All-electric hames are a warthwhile investment far any af the many General Electric families planning a mave.

The Home on Betsy Lane: Like many another mobile General Electric family, Frank and Carole Trevarrow have just finished moving. But unlike many others, the Trevarrows have moved into an electrical showplace—a Medallion Home at 2010 Betsy Lane, Irving, Tex.

Mr. Trevarrow, district sales manager at Dallas for Industrial Electronics, calls the home "my part toward carrying out the 'Live Better Electrically' idea." He designed it himself.

In the Trevarrows' front porch is a bronze medallion, like that shown above, which certifies that the home is equipped for modern electrical living.

The home includes a complete General Electric kitchen (built-in appliances); General Electric cabinets; Textolite tops on all working areas; a Weathertron. The lighting system alone employs 24 circuits, plus base plug circuits.

Commented Joe J. Synar, regional manager for LBE: "There's nothing like having an employee of the electrical industry living in a showcase of his own."

Medallion Homes: How're They Doing?

LBE's New York headquarters reports 234 utilities, 4900 builders participating in the Medallion Home program. In 1958, LBE targeted 20,000 Medallion Homes. Actual result: 70,000. In 1959, the target is 100,000 Medallion Homes. Extra attraction for 1959: America's 20 million homes which need modernization —a major opportunity for advancing the electrical living concept.

GRACIAS FROM SOUTH OF THE BORDER

The photograph above was a customer's way of expressing thanks for the kind of service he received from General Electric. The three gentlemen are Leonardo Garza and José de la Herran, Sr., of Radio Panamericana, S.A., and Carlos M. Fernandez of Electro Servicios Mexicanos, S.A. "Mr. Coyle," to whom the picture was sent last month, is Arthur S. Coyle, district apparatus specialist for the General Electric Supply Company Division in Houston. When Mr. Fernandez came to Mr. Coyle's office to explain his urgent need for lightning protection at a high-altitude location near Mexico City, Mr. Coyle had the answer and got on the phone. The Lightning Arrester Section at Pittsfield rushed three arresters by air to Mexico City. Texan Coyle comments that the service indicates "how we operate here in Texas," but adds, "It took some damn good Yankees to back up our sales efforts."

Variety on the Roof: Acquiring elaborate Christmas lawn or rooftop decorations can be costly; it can be prohibitive if you want a different display each seas-

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First for '59: The year's first Advanced Management class (AMC 59-I) convened January 5 at Crotonville with 52 participants. It continues until March 20. Those now studying the professional work of management include:

ACCOUNTING SERVICES: Edwards B. Murray.

AIRCRAFT GAS TURBINE DIVISION: A. Sidney Johnson; Miles K. Wolfson.

APPARATUS SALES DIVISION: William F. Henn; Robert F. Quinn; Russell B. Rose; David A. Sergent.

ATOMIC PRODUCTS DIVISION: Leonard B. Mackey; Robert J. Schier; George White.

CANADIAN GENERAL ELECTRIC CO., LTD.: John S. Keenan; Donald P. MacIntyre; J. Lawrence McKeever.

CHEMICAL AND METALLURGICAL DIVISION: Edward G. Hopkins; Arnold Jensen; Wright H. Manvel; Theodore C. Ohart.

COMPONENT PRODUCTS DIVISION: Martin L. Kresge, Jr.; Charles E. Slater.

DEFENSE ELECTRONICS DIVISION: Rodney A. Curtiss; Robert M. Fritz; Gilbert T. Garber; James R. Pemrick.

ELECTRONIC COMPONENTS DIVISION: Newell J. Corwin; Robert E. Lee.

ENGINEERING SERVICES: Richard K. Fairley.

GENERAL ELECTRIC SUPPLY CO. DIVISION: Robert F. Davis; John F. McCarthy.

HOTPOINT DIVISION: Frederic L. Tarleton.

HOUSEWARES & RADIO RECEIVER DIVISION: Clifford A. Flower; John N. Phillips.

INDUSTRIAL ELECTRONICS DIVISION: Martin A. Edwards; William J. Morlock; Harry L. Palmer.

INTERNATIONAL GENERAL ELECTRIC CO. DIV.: Lawrence E. Bell; Philip M. Markert.

on. With this in mind, Pittsfield Pensioner Ernest Williams has combined his woodworking hobby, a concern for the holiday attractiveness of his community, and good business sense to come up with a novel Yuletide *rental* idea that will keep him busy for years to come. Mr. Williams builds his own life-size figures of Santas, reindeer, angels, etc., had so many requests for them this year (at $5 to $15 for 20 days) that he plans to expand next Christmas. Coming: Easter Bunnies.

Thicker Than Water: Schenectady's Ted Mioducki, Light Military Electronics, was not surprised to hear that Ellis Hospital urgently needed a pint of his rare Rh-Negative blood. It had happened before and Donor Mioducki was quick to respond, for he knew that a life was at stake. Back at his desk later in the day, he learned that his donation had been received in time to save the life of his sister, Mrs. Bernice Zywot, also an Rh-Negative.

LAMP DIVISION: Warren E. Stearns.

LEGAL SERVICES: Gerard Swope, Jr.

MAJOR APPLIANCE DIVISION: Lloyd G. Hertzler; Herbert Riegelman; John E. Ryan; John W. Tremaine.

MANAGEMENT CONSULTATION SERVICES: Donald R. Webb.

MANUFACTURING SERVICES: Addison E. Wiles.

MARKETING SERVICES: Hershner Cross.

MOTOR & GENERATOR DIVISION: Joseph U. Neill.

PUBLIC & EMPLOYEE RELATIONS SERVICES: H. Dwight Meader; Willard V. Merrihue.

RESEARCH SERVICES: Malcolm H. Hebb.

TRANSFORMER DIVISION: Orville W. Wilkinson.

TREASURY SERVICES: Franklyn G. Zimmerman.

TURBINE DIVISION: Raymond J. Hennessey.

GENERAL ELECTRIC ON TV

General Electric Theater

(CBS, 9:00–9:30 p.m., EST)

January 25—"Bill Bailey, Won't You Please Come Home?" starring Dan Dailey.

February 1—"The Taming of the Squaw," starring Gisele MacKenzie, John Raitt, and Eddie Foy, Jr.

February 8—"The Last Lesson," starring Charles Laughton.

February 15—"I Was a Bloodhound," starring Ernie Kovacs.

"Man with a Camera"

Starring Charles Bronson (ABC, 9:00-9:30 p.m., EST)—January 23, 30; February 6, 13.

"G-E College Bowl"

Emceed by Allen Ludden (CBS, 5:00-5:30 p.m., EST)—January 25; February 1, 8, 15.

VICE PRESIDENT
RAYMOND W. SMITH

VICE PRESIDENT
HAROLD A. STRICKLAND, JR.

ORGANIZATION

Two Elected Vice President

On Christmas Eve, Board Chairman Ralph J. Cordiner announced the election of two General Electric men as vice presidents of the Company. The new officers:

Raymond W. Smith, general manager of the Transformer Division, who has been with the Company since 1928;

Harold A. Strickland, Jr., general manager of the Industrial Electronics Division, who joined the Company in 1950.

Air Conditioning Changes

Recent changes were announced concerning the air conditioning departments of the Major Appliance Division (formerly Appliance & TV Receiver).

Effective January 1, the Room Air Conditioner and Air Conditioning departments were consolidated into a single Air Conditioning Department.

Vice President Charles K. Rieger, division general manager, explained the move as "a logical combination of similar businesses making products to accomplish the same end result."

Carl W. Moeller, formerly general manager of Room Air Conditioner, has been appointed general manager of the new department. Carl A. Salmonsen, former general manager of Air Conditioning, will serve as consultant to Mr. Moeller, and manager of the Bloomfield (N.J.) plant, prior to retirement later this year.

Plans were also announced to cease the manufacture of large equipment for the central air conditioning of commercial and industrial buildings. Consequently, the Bloomfield plant will close April 1.

"We have always held the hope we could conduct our department operations

successfully in Bloomfield, with continuing jobs for our employees," said Mr. Salmonsen. "We have backed this hope with an investment of millions of dollars."

Approximately $2.5 million in termination pay, pension contributions and interest will be available to the 700 active Bloomfield employees, plus some 350 others laid off since April 1, 1958, who have maintained service continuity.

Arrangements are being set up to provide employees with special employment and personnel counseling services.

Product Line-up: The Air Conditioning Department will henceforth concentrate on home heating and cooling devices. Its market also includes certain commercial and industrial applications. Room air conditioner production continues at Appliance Park; central air cooling equipment and Weathertrons at Tyler, Tex.; warm-air furnaces at Trenton, N. J.

Two functional organizations will be maintained by the department: marketing, engineering, manufacturing, and finance sections for room air conditioners, similar sections for central equipment.

Departments Realigned

In a move aimed at increasing corporate efficiency, President Robert Paxton announced last month the reassignment of 12 departments and the dissolution of the Construction Materials and the Measurement & Industrial Products divisions. No physical relocation of manufacturing facilities is planned.

Vice President Harold E. Strang, general manager of the former Measurements & Industrial Products Division, has been appointed Consulting Engineer—Industrial Electronics Division.

For an interim period, C. Howard Black, former general manager of the Construction Materials Division, will work with Vice President Robert L. Gibson of the Chemical & Metallurgical Division on special assignment.

Departments of the Construction Materials Division have been assigned as follows: Accessory Equipment to the Component Products Division; Conduit Products, Wire & Cable, Wiring Device, Sales, Bridgeport Relations & Utilities, and Legal departments to the Chemical & Metallurgical Division.

Measurements & Industrial Products Division departments have been assigned as follows: Industrial Heating to the Motor & Generator Division; Meter to the Transformer Division; Instrument to the Industrial Electronics Division (except for the manufacture of instrument transformers, which has been assigned to the Meter Department); Outdoor Lighting to the Lamp Division. The Legal Department has been discontinued.

The Industry Control Department has been transferred from the Switchgear & Control Division to the Industrial Electronics Division.

Chemical & Metallurgical

John T. Castles has been appointed Manager of the Chemical Development Operation.

An Insulating Materials Department has been established. Theodore C. Ohart has been appointed General Manager.

A Specialty Alloys Product Section has been established in the Metallurgical Products Department. Walter E. Jones has been appointed General Manager.

Hotpoint Division

The name of the Hotpoint Company Division has been changed to the Hotpoint Division.

EDITORIAL

Electricity Builds Jobs

THE ELECTRICAL INDUSTRY is a strange and wonderful business. It lifts onerous burdens from the backs of the many, for electricity combats drudgery throughout the world—in homes, in factories, on farms. Yet, at the same time, the electrical industry is one of the world's great job-builders.

This year National Electrical Week (February 8-14) will dramatize the great job-building nature of the electrical industry. It is fitting that "Electricity Builds Jobs" should be chosen as the theme for National Electrical Week—1959, for the recent recession has made Americans increasingly job-conscious. Few industries have such a spectacular record of stimulating jobs.

Consider the figures cited on page 10: electrical industry employment up nearly 2.5 times in the past 20 years, General Electric employment advancing five times as fast as the economy as a whole.

These advances didn't just happen, of course. Customer-oriented innovations, sparked by the hope of good future earnings, have been the stimulus which has provided literally millions of new jobs—as well as better products for customers, more business for other enterprises in the economy, increased national security, and a rising level of living for the entire nation.

And what of the future? We suggest you take another look at page 13, at the "progress corner" on Dr. Guy Suits' desk in the Research Laboratory. Here are mementos of research which signify the electrical job-building of tomorrow. (Indeed, some of them are already providing jobs today.)

In considering prospects for the job-building ventures of tomorrow's electrical industry, we believe that three points are critical:

(1) Such projects can best be undertaken by companies which have financial support of prior profitable and successful ventures.

(2) Good profits stimulate the new and uncertain ventures which, when successful, lead to rapid progress.

(3) Political actions, which strike at the profit-making abilities of the electrical industry (as well as other enterprising industries), will end up by limiting research and development and restricting the expansion of job opportunities.

Given the right climate for growth, the electrical industry will prove even more dramatic a job-builder in the future than it has over the past two decades.