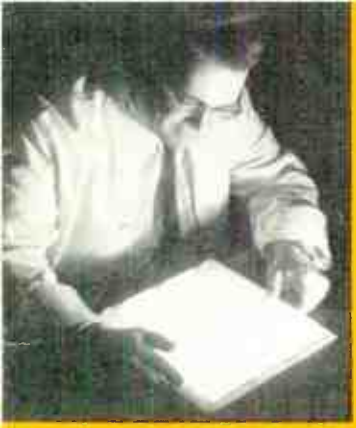


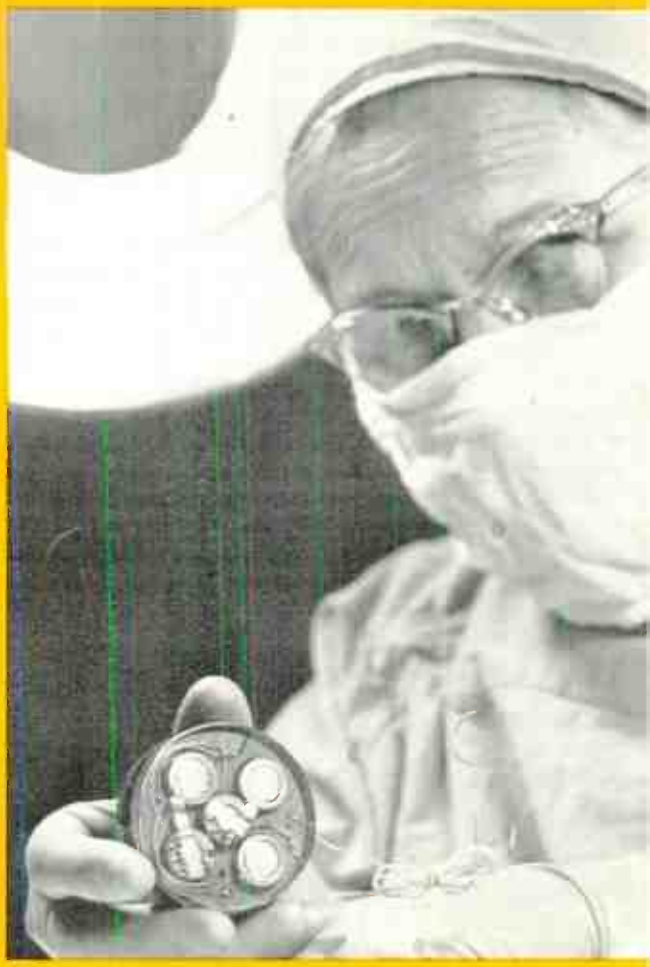
NEW: SQUARE FLUORESCENTS

NEW: UBIQUITOUS LODEX

NEW: FM STEREO

THE MONOGRAM

MAY 1961



NEW: BREAKTHROUGH IN MEDICAL ELECTRONICS

INSIDE: Cordiner on Antitrust . . . A Pair of Peabodies
Communication Satellites, Inc. . . . A Pure-Jet for Business

DOUBLED AND REDOUBLED: EIGHT HAIR DRYERS

LETTERS

Multiplier

EDITOR: Thought your readers might like to hear this story of how General Electric products help sell themselves: we got a letter the other day from Jane Yaple, student at Willamette University, in Salem, Ore., who told us a sorority sister bought one of our hair dryers last year. Then, one evening our correspondent wandered into the reception room at the Pi Phi house, to find a quartet of bridge players, each with her own General Electric hair dryer (photo, above). A hair-dryer clad kibitzer, in fact, made it five. Latest count: eight hair dryers now considered indispensable pre-date apparatus in the sorority.

And their goal is a hair dryer for each of their 25 members!

EDNA W. VERCINI
Housewares and Commercial Equipment
Bridgeport

Major Error

EDITOR: I enjoyed your article on big league lighting (*The Monogram*, April 1961, p. 5). For the record, the local stadium is now known as Municipal Stadium (not Blues Stadium). It was purchased by the city from the New York Yankees, parent organization of the former Kansas City Blues. We have often been accused of still being the Yankee farm club,

(Continued on inside back cover)

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

*Trademark of the General Electric Company.

Keith H. Crandell, Editor

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GENERAL ELECTRIC

VOL. 10, NO. 5

THE GENERAL ELECTRIC
MONOGRAM

MAY 15, 1961

SPACE TRAVEL

Next Stop

Now that Alan Shepard has had an astronaut's-eye view of our planet, much of the talk from Washington and Cape Canaveral these days has to do with what's ahead in America's space program.

Well along in National Aeronautics and Space Administration's plans is Project Apollo, a multi-manned vehicle designed for space exploration in the vicinity of the moon. It's named for the many-sided Greek god said to have been born on the day of the full moon, and famed by Homer as the god of prophecy and first victor at Olympic Games.

A LOOK AT APOLLO
Big enough for three.

General Electric is one of the three companies conducting Apollo studies for NASA. The others are Convair and Martin. A scale model of our proposed, three-man Apollo vehicle recently made the trip from Missile and Space Vehicle Department headquarters in Philadelphia to Washington. There it was viewed by Rep. Overton Brooks, Chairman of the House Space Committee; James E. Webb, NASA head; and George M. Low, chief of the manned space flight program (photo left).

Apollo astronauts will not be along just for the ride; they will be performing carefully planned tasks and conducting important scientific experiments during their six-day round trip to the moon.

The human capabilities of the Apollo astronauts will be integrated with the design of the space vehicle, which will be thus improved by adding the human abilities to reason intelligently and to react physically.

STATE OF THE BUSINESS

Signs of Strength

With an unsatisfactory first quarter under their belts, General Electric people were looking for indications of better things to come as the Company moved into the sec-

ond quarter. And they were finding them.

By Annual Meeting time, Board Chairman Ralph J. Cordiner was able to report that "the outlook for General Electric's business in 1961 reverses the performance of 1960."

Last year the Company declined through the year. This year, said Mr. Cordiner, "business is starting at a relatively low level but indicating signs of strength as the year progresses."

It was a point overlooked by many observers of the Annual Meeting, who were interested in the hubbub of the Company's longest (6½ hours) meeting, and the thumping vote of confidence indicated by the re-election of the Board of Directors and the votes of 98 per cent and up for management's position on each of eight proposals submitted to vote.

During the first quarter, Company sales were $992.6 million, up 4 per cent over the 1960 first quarter, while earnings of $42.5 million were off 19 per cent from the $52.6 million figure for the 1960 first quarter.

Some of the signs of strength:

- Major appliances have begun to perk up.
- Sales of defense equipment have increased as a result of large orders received during 1960.
- Industrial electronics made gains over the first quarter of 1960.
- Large motors and generators, capacitors, certain switchgear lines, lamps, air conditioning, and outdoor lighting also bucked the trend.
- Overall, the Company's backlog of orders, Mr. Cordiner told share owners "is already well above that of the same period last year, and orders received in the first quarter are also up over 1960."

What happened in the first quarter? Partly the recession, which hit appliances and power apparatus especially hard, and partly, said Mr. Cordiner, the October strike. Strike disruptions had, he said, "a most serious effect" on the Company's business. Strike losses stemmed not only from orders lost during the strike, but from pre-strike agitation, threats of a long strike, and inventory imbalances built up in preparation for the strike. The effects were still lingering, he indicated, in the early weeks of the second quarter.

FIRST QUARTER FIGURES

Sales: General Electric sales for the first quarter of 1961 totaled $992,622,000, up four per cent from sales of $957,433,000 in the first quarter of 1960.

Earnings: Net earnings amounted to $42,476,000 or 48 cents a share, down 19 per cent from earnings of $52,614,000, or 60 cents a share, last year. Net earnings for the first quarter of 1961 included non-recurring income of approximately $5 million resulting from recovery of certain war losses incurred during World War II.

Employee Compensation: Employee pay and benefits totaled $469 million, up $20 million from the first quarter of 1960.

Purchases: Materials, supplies and services from the Company's 45,000 suppliers totaled $470,000,000.

Taxes: General Electric also made provision for payment of $53,821,000 — roughly 27 per cent more than the Company's earnings — in direct federal, state and local taxes and renegotiation, in addition to indirect taxes included in prices paid to suppliers.

AT DEADLINE

Big Idea: A whopping $1752 suggestion award went to Ordnance Department secretary Beverly Furey, for her economical ideas on improved mailing procedures. The people at Pittsfield think it's probably the largest amount ever paid to a secretary in the 55-year history of the Suggestion Plan.

Stereo Sequel: When Zenith Radio challenged the validity of General Electric's development of the new FM-stereo broadcast system (see p. 8), Hershner Cross, general manager of the Radio and Television Division, simply cited the FCC report itself. It points out that the Zenith proposal was modified just before the report was issued to make it practically identical to the system recommended by General Electric. After the Zenith proposal was altered, the FCC said that the General Electric and Zenith proposals "are now theoretically identical, and we shall treat them as such."

En Route: A General Electric Model 240 turboshaft engine left Evendale early this month bound for Dynamic Developments, Inc., a West Coast affiliate of the Grumman Aircraft Engineering Corporation, where it'll be used to power an 80-ton experimental hydrofoil craft which begins sea trials this summer. (*The Monogram*, Mar. 1960, p. 18). During tests at Evendale the 6600-pound engine ran more than 15 hours at a horsepower setting that would have propelled the hydrofoil craft at its maximum design speed of 60 knots.

Coming Attractions: The 1960 Report of the Corporate Alumnus Program, being a six-year record of contributions by the General Electric Foundation matching the gifts of employees to the institutions of higher education they have attended, is now on the way to eligible employees. Some of its highlights: 1960 peaks included 509 schools supported by 6638 individuals, who contributed a record total of $304,738.02. In its six-year history, the Corporate Alumnus Plan (which has become the model for 115 other gift-matching programs) has matched employee contributions of some $1.4 million, for total receipts to schools and colleges of $2.8 million.

Go, Sam! The Company's fourth annual GOSAM Symposium is being held in Schenectady this week. Otherwise known as the Group on Semiconductor Applications and Measurements, some 200 General Electric people are gathering to compare notes on the fast-changing semiconductor field. Such items as an "Electrical Switching Technique for Transistors and Static Inverters," will command their attention in the two-day meeting.

ANTITRUST HEARINGS

Cordiner to Testify

General Electric Board Chairman Ralph J. Cordiner last week accepted an invitation to appear before the Senate Subcommittee on Antitrust and Monopoly on May 18. Earlier, the General Electric chief executive told share owners at the Company's Annual Meeting (see page 12), "I expect to be invited to testify and will, of course, do so."

Meanwhile, as *The Monogram* went to press, the Kefauver Subcommittee was turning its attention to Westinghouse witnesses after listening to a string of 13 present and former General Electric men testify on the recent antitrust cases.

Several of the former General Electric men sought to link the Company's senior officers with the cases, and some of their comments made startling headline material. But most of it appeared to be based on inference and second-hand reports and those who were anticipating sensational revelations may have been disappointed. On the surface the most solid piece of testimony seemed to come from former managers in the Switchgear and Control Division, who reported on a Philadelphia luncheon allegedly attended by Vice President Arthur F. Vinson, at which they were allegedly told to fix prices.

But the testimony was not really new. It was on the basis of this story that Mr. Vinson had been indicted last year. The indictment was quashed after the most painstaking investigation by the Justice Department, and a thorough checking of all of the documentation which showed that Mr. Vinson could not have even been in Philadelphia at the time cited.

The entire story, including the allegations and the details of Mr. Vinson's repudiation of the charges, had long since been made known by the Company in its "First Interim Report" last December.

Mr. Vinson, who spent a full day on the witness stand, denied again unequivocally under oath that any such luncheon had taken place or that he had any knowledge of any illegal activities of his subordinates.

Former President Robert Paxton, who has been on a leave of absence since February, following major surgery, also spent an entire day on the witness stand. The blunt-spoken executive told the Subcommittee that throughout his career he'd given his subordinates explicit instructions "to have no truck" with pricing arrangements with competitors.

And one of those former subordinates, William S. Ginn, one of those convicted of antitrust violations, testified that "Mr. Paxton came closer to being an Adam Smith advocate than anybody I've known."

He said also that Mr. Cordiner had, in personal discussions, emphasized the necessity for full compliance with antitrust laws, and that he had decided, himself, long before the antitrust investigation began, to shuck the practices engaged in by what he termed the "old Ginn."

ATOMIC ENERGY

Reactors for Japan

General Electric Japan has begun major construction on a 12,500 kw reactor near Tokyo which will generate the Far East's first nuclear power.

And on the heels of this report, the firm announced last week that it had contracted to furnish a critical assembly reactor for the Japan Atomic Energy Research Institute. San Jose will design the reactor and fabricate fuel elements.

SPACE SIGN-UP: Officials of new ComSat Company (all from MSVD Philadelphia) perform first official duties for new space firm. From left, Donald Atkinson, President Hilliard Paige, Robert Haviland. Objective: 10 stations in orbit by '65.

SPACE COMMUNICATIONS

"First Concrete Step"

With a pair of baby-blue documents submitted to the Federal Communications Commission, General Electric made the first big push for private-enterprise development of a world-wide commercial communication satellite system under government regulation.

The first, submitted Friday, April 28, revealed the formation of a new company, Communications Satellite, Inc., which, said General Electric, would serve as the focal point for participation by other aerospace and communication firms. ComSat is now wholly owned by General Electric, but the Company recommended that in the operation of a cooperative venture, no one entity, including General Electric, should hold an interest of more than roughly ten percent. Provision was also suggested for participation by foreign nations.

The New York Times noted that other firms have discussed the "joint venture" approach, but that in setting up the new firm "General Electric seized the initiative." Said the *Times*, "the General Electric move was the first concrete step to establish such a cooperative venture."

By the following Monday, May 1, ComSat, with the Missile & Space Vehicle Department general manager, Hilliard Paige, serving as president, had a second blue document before the Commission. The title was simple, descriptive, and to the point: "Application to the Federal Communications Commission To Establish a Communication Satellite System."

The initial system which could be in operation by 1965, would include ten identical satellites and 20 ground stations. They would service communications organizations throughout the world. Total cost for engineering, testing and establishment: roughly $250 million. A complete world-wide system with 120 ground stations would run about $400 to $500 million.

What will the system do? General Electric sees Communication Satellite as serving as a sort of "common carrier's common carrier." It will provide world-wide communications for telephone, telegraph, television, and data transmission.

Use of satellites is considered to be less expensive and more desirable than, for instance, laying undersea cables and crowding the radio channels that can be used in the earth's atmosphere.

LAMP PANEL ENTHUSIASTS VERN KAUFFMAN, DON SCARFF, BOB CORNING
They've got what the customer wants.

LIGHTING

New: Square Fluorescents

For years, architects, designers and lighting engineers have been looking for a lamp that would combine the glare-free quality of fluorescents and the compactness of incandescents. Now they've got it.

This month in Detroit (where the National Association of Electric Distributors was gathered), General Manager Donald D. Scarff announced that his Large Lamp Department now has a square fluorescent panel ready for the market.

He was understandably enthusiastic about the innovation. The panel lamps, he said, "should have a dramatic impact upon the future lighting of commerce, industry, and the home."

Right now, the Department's marketing men are showing the new panel to manufacturers of the fixtures required for the new lamps. The availability of the new panels to the public will follow the production of new fixtures. Mr. Scarff sees them coming to the market by fall. Price per panel: $6.95. (At Danville, Ill., this month, General Electric's Ballast Department announced the development of three new ballasts for use with the fluorescent panels.)

The new panels are a little less than a foot square, and are designed to operate

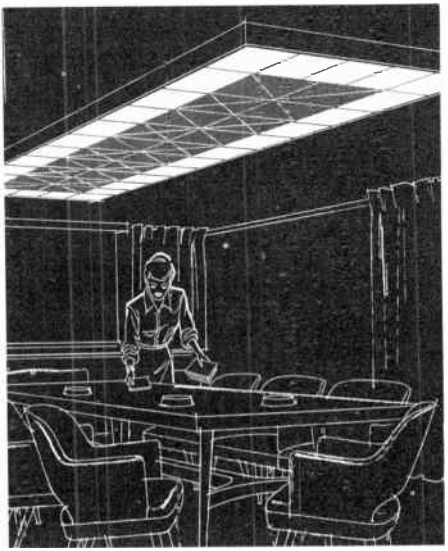
at either 80 watts or 50 watts. The first lamps to be marketed will emit light from both the top and the bottom, giving the impression of indirect lighting, and will be "cool white," the most popular white fluorescent. Later panels will have a reflector material on the inside which will direct most of the light through the front. Colored panels will also be introduced.

In the words of Applications Manager C. M. Cutler, "It is a practical way to get more light conveniently into a small square, and still have the very desirable features of other fluorescent lamps—high efficiency and long life."

Behind the introduction of the new panels were years of intensive development effort. A developmental model was displayed two years ago (*The Monogram*, March 1959, p. 15). Engineering Manager Vern Kauffman reports that more than 60 scientists and engineers collaborated on the development program. They made important discoveries of the plastic properties of glass which made possible the precise fusing of the two plates which make up the panel. They were able to compress a five-foot-long arc stream into a single square foot. And they translated their development effort into the realities of mass production.

Production facilities, said Mr. Kauffman, "will be as new as the lamp itself." First production will be at Nela Park where preformed glass plates will be fed into new, electronically controlled equipment which applies phosphors with meticulous precision, inserts electrodes, and seals the plates into a single panel.

Notes Mr. Kauffman: "Millions are at stake" on the success of the new lamp. And Don Scarff thinks they have a winner. He's comparing it, in fact, to the introduction of the first fluorescent back in 1938. By General Electric, of course.



WILL YOUR CONFERENCE ROOM look like this? Artist's sketch shows use of panels in patterns.

WILL YOUR KITCHEN look like this? Model displays smart new panel in a kitchen setting.

DEVELOPMENT TEAM: Seated around an FM tuner and simple stereo adapter are Bill Thorne, Tony Csicsatka, and Bob Linz, who, with engineer Harwood Moore, were key General Electric men on development of FM stereo broadcast standards. Beaming Radio Receiver managers are, from left, William Beaubien, advanced product development engineering, Robert Wilson, general manager, John Phillips, engineering.

RADIO

The Best News in Years

Stereophonic FM radio broadcasting is about to take off. What will it mean to General Electric?

At Utica, General Manager Robert Wilson of the Radio Receiver Department sees FM stereo as "the most significant marketing factor in the radio industry since the introduction of the clock-radio by General Electric 15 years ago." (For a bench-mark, General Electric has sold more than 7 million clock-radios.) Radio Receiver had an FM stereo receiver all ready to go to the market when the Federal Communications Commission announced late last month that it would permit FM radio stations to convert to stereo broadcasting starting June 1, using a system essentially the same as that developed and recommended by General Electric.

At Decatur, the Department's Audio Products Section was set to move with an inexpensive adapter which will permit conversion of the Company's FM radio-stereo phonograph consoles to stereophonic reception of FM stereocasts. With the exception of two low-priced models, all consoles on the market are equipped with proper switch positions and jacks.

At Syracuse, the Television Receiver Department was ready to convert its "home entertainment center" (combined television, FM radio, and stereo phonograph) to stereophonic FM reception.

In Syracuse's Technical Products Operation, General Manager Robert L. Casselberry was looking at the FM-stereo news from the transmitting end. His operation will market modulators and modulator kits to the country's FM stations.

And in Schenectady, General Manager J. Milton Lang planned to make WGFM, the Company's pioneering FM station, among the first to transmit FM-stereo.

The System

For Antal (Tony) Csicsatka, April 20 was a day to be remembered. Less than four

years after he had arrived in America as a refugee from Red oppression, the Hungarian-born engineer's work earned recognition from the government of the United States.

Mr. Csicsatka spearheaded the General Electric efforts which led to the development of the system which, with slight modifications, drew the FCC's approval.

In late 1957, as Soviet troops poured into Hungary to crush the Hungarian Revolt, he and his family fled to America. He brought little else with him but his 1936 electrical engineering degree from the Technical University of Budapest, a 1938 graduate degree, and his years of experience.

He joined Radio Receiver soon after arrival and two years ago was named to head up the push to develop a General Electric approach to FM-stereo broadcasting. It was a team effort.

He got able help from engineers Harwood Moore and Robert Linz and technician Bill Thorne.

They came up with what is known as a multiplexing system in which a main carrier signal and an ultrasonic subcarrier signal are transmitted on a single FM band, and then sorted out by relatively simple adapter circuitry at the receiving end, for full stereophonic FM reception.

Their system had these advantages:

- outstanding sound reproduction;
- relatively inexpensive for both the FM equipment buyer and the FM station operator;
- fully compatible with current FM sets. (In other words, you don't have to junk your present FM radio or tuner just because of the new system; you will receive FM programs just as you always have. Of course, if you want to receive them stereophonically you will have to buy an adapter or new equipment.)

When the FCC announced that from several proposals it had selected standards essentially the same as he and his teammates had recommended, Tony Csicsatka said, simply, "I'm very happy."

EMPLOYEE RELATIONS

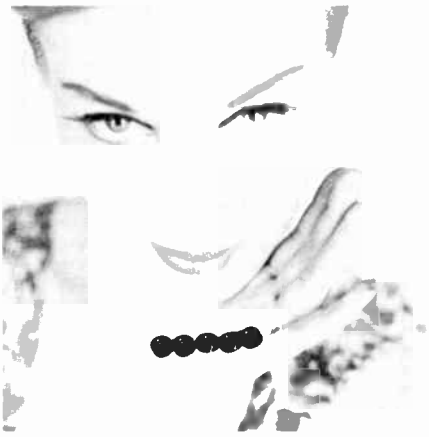
Where Do You Start?

What can you do when the jobs of more than 4000 people are affected by a major contract cancellation — like the termination of work on a nuclear-powered aircraft (*The Monogram*, April 1961, p. 4).

You go to work, and you work hard, to help them try to find jobs. For some, like highly-skilled nuclear physicists and space experts it's not too difficult. But for most of the people affected (3700 at Evendale and 520 at the Idaho Falls Test Station), finding a job, and finding one fast, is not so easy.

The size of the task is evidenced by the physical arrangements of Evendale's quickly-organized Placement Service: 106 desks, 73 telephones, 82 interviewing stations, 100,000 crisp copies of resumés, and — most vital of all — well over 100 people working full-time to find work for other General Electric people. Their contacts with job prospects both inside and outside the Company produced 3000 interviews within a month of the contract's cancellation. By mid-May, job offers — most of them to scientists, engineers, and other technically trained personnel were building momentum.

Additionally, new business prospects are being pursued to their ultimate. One bright spot: under new appropriations requested for the Atomic Energy Commission, $4.5 million would be expended by General Electric for high-temperature materials research.



MAGNETIC LODEX
Already: hearing aids, speakers, speedometers.

MAGNETS

Lodex for the Long Pull

More than a quarter of a century ago, scientists at the General Electric Research Laboratory came up with a new permanent magnet called Alnico. For years it has been the bellwether of the magnet industry. Now, General Electric's Magnetic Materials Section at Edmore, Mich., is moving into the market with a new permanent magnet material which bids fair to take the crown from King Alnico.

They call it Lodex*. It has already scored some remarkable successes:

1. It has won almost total acceptance in the hearing aid business;

2. Because of its cost advantages, it has enabled the Radio Receiver Department to keep making speakers at Utica, in competition with Japanese speaker imports;

3. It has won approval by Chrysler and Ford for 1962 and 1963 speedometers.

**A trademark of the General Electric Company.*

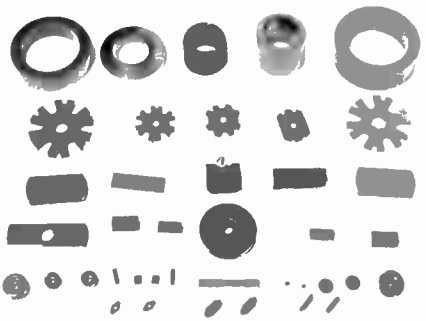
Says Magnetic's marketing manager, Max Hartl, "For the long pull, we firmly believe here that the coming permanent magnet material is Lodex. It has so many things to offer above all of the known commercial magnet materials today that all of our effort, talent, and money is being spent in this direction."

General Manager Ernest E. George's section, part of the Metallurgical Products Department, has turned out Lodex magnets for DC permanent magnet motors, meters, timing motors, speedometers, radio speakers, hearing aids, and controls. The five little magnets displayed at left are for use in automatic blanket controls.

Lodex has important advantages. It has a remarkable resistance to demagnetization. It can be used in smaller sizes than its predecessors to do the same job. And, perhaps most important, Lodex magnets can be turned out in a variety of shapes in a press. This means that the customer can simply specify the design he wants, and he will get it, with no further machining on his part required.

Lodex stems from the work of several

ALL SHAPES & SIZES: Lodex can be pressed to the customer's need, an important advantage.



Full Report: Cordiner on Antitrust, at the Annual Meeting

Last month, Board Chairman Ralph J. Cordiner stood before 2700 share owners and discussed at length the recent antitrust cases. We believe that his remarks deserve the careful attention of every MONOGRAM reader and are reprinting them here in full. — Ed.

BEFORE WE PRESENT OUR PLANS for your Company's growth in sales and earnings, let me comment on a matter that has received much public attention in recent weeks: the antitrust cases that involved 29 electrical manufacturers, including the General Electric Company.

No one regrets more than I the damage that has been done not only to General Electric, but to the reputation of the whole business community, by these tragic violations of the antitrust laws.

As share owners, you have been kept informed on this matter by statements in two annual reports, by a special report last January, and by a lengthy review of the facts in your proxy statement. Many of the share owners have written us, and we appreciate your taking the time and effort to inform yourselves fully concerning your Company's position.

It has been said by some that I as Chairman and Chief Executive Officer either knew of these violations and condoned them, or that I was derelict in not knowing of them.

To the first assumption I can say flatly, as I have said many times before, that I did not know and I did not condone.

To the alternate assumption, I believe it can be fairly stated that we were diligent in the light of the facts as we then knew them. Obviously we have learned from this experience and I can assure you that we have already taken additional steps which will act to prevent future violations.

The basic facts are these. A few highly placed and highly trusted employees violated the antitrust laws in secret. In so doing they also violated a long-standing and well understood written Company policy that forbids any activities that could even be interpreted as a violation of the antitrust laws. Nor did we stand idly by as these violations of Company policy were disclosed, but accepted our responsibility and promptly disciplined all who admitted violation of this policy subsequent to 1956. The sentenced individuals and the Company have been punished by the government, and by public criticism far stronger than has been common in antitrust cases heretofore. None of the individuals who were sentenced remains with the Company.

It has also been said that management has held itself remote from accepting responsibility for the fact that these violations have occurred within its ranks. Nothing is further from the truth. I do, and I have from the outset, assumed the ultimate responsibility for the violations, as must any Chief Executive Officer.

It is no excuse that 28 other companies were involved. Or that only three out of twenty-one divisions were at fault. Or that the products involved represented only a small per cent of General Electric sales. It is not even an excuse that we tried for years to prevent this very thing. It is evident, however, that our efforts were not successful and thus we failed to fulfill the Company's objective of complying with the law at all times. In no way do we minimize the seriousness of what has happened, and as we pledged in the proxy statement, your management is determined to do all in its power to see that it does not happen again.

DETERRENTS FOR THE FUTURE

The lessons learned and the disciplinary actions taken will, in my opinion, be a deterrent against future violations. But in addition, we have taken these positive steps:

There will be penetrating legal reviews of operations by the lawyers specifically assigned to each division on a full-time basis. We have adopted new financial and legal auditing techniques to identify clues to possible violations. The other Executives and I will be asking searching questions on this subject at executive business reviews. We will continue the practice of repeated issuance of the Company's Directive Policy 20.5 on compliance with the antitrust laws, and signed evidence of agreement by employees. The Company's lawyers, who have already done much teaching on the subject of antitrust through the years, are intensifying their teaching activities at all levels and stimulating further management discussions. Operating and Services

Managers throughout the Company have been instructed to develop methods by which they can more quickly identify situations which could lead to possible violations in their own particular industry, business, or function.

But even more will be required. Beyond these teaching and preventive activities, there is a need for every one of us in General Electric to re-examine his *own* standards, in the light of this experience — for it has reaffirmed some fundamental lessons that cannot be repeated too often:

First, each of us is finally responsible for his own acts, and when any of us makes a serious mistake, he hurts all the rest.

Second, no one can set himself above the law.

Third, our system of Company policies, to be effective, must be even more widely taught, deeply respected, and vigorously enforced.

Fourth, even the finest Company reputation for integrity is extremely fragile. The errors of a few can do great damage, and it will take patient effort to restore what has been lost.

Fifth, the price of leadership is to be a target for attacks. We must expect that each error will be eagerly seized and used by our critics.

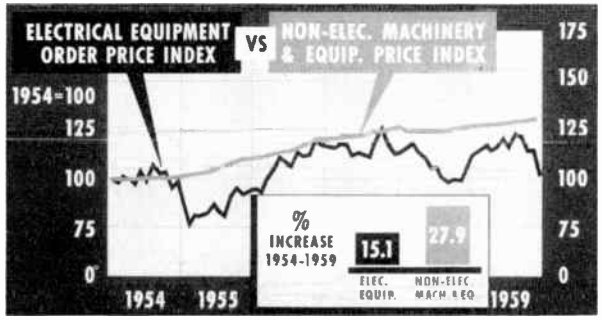
Sixth, the only effective business strategy for the General Electric Company is a strategy of vigorous competition to produce outstanding values at the market place.

GOOD VALUES FOR CUSTOMERS

As you have read and heard, the Company has volunteered to make good any overcharges that may have been made against individual customers. The Company will vigorously defend the share owners' interests in any damage suits that may be entered. However, our studies indicate that prices were not unreasonable or excessive and that customers received very good values.

An exhaustive review of over 50,000 order transactions was undertaken to determine the price behavior of certain heavy electrical equipment involved over the period 1954 through 1959. This index, which has 1954 as its base, appears on this chart, (Chart A, left).

CHART A



In spite of the inflationary pressures in the economy, this index shows only a modest rise in electrical equipment prices over the period, and generally follows the pattern of over-all business conditions. Perhaps more noteworthy are the month-to-month variations which are indicative of a market highly responsive

years. Its magnetic material is composed of highly elongated single-domain iron or iron-cobalt particles. Millions of these tiny particles, pressed together with a binding agent (in this case, lead) form the magnet. Originally, the Instrument Department, with the aid of the Research Laboratory, conducted the research effort, with three men, Dr. Thomas O. Paine, Dr. F. E. Luborsky, and L. I. Mendelsohn, spearheading the effort. Now at Edmore, in a new development laboratory, Magnetic Materials Section is pressing forward on advanced work.

COMMERCIAL JETS

A New Pure-Jet for Business

Small Aircraft Engine Department at Lynn thinks there'll be well over 1000 lightweight (8,500-14,000 pounds), jet-powered planes sold for business use before the end of the 1960 decade. SAED is solidly in the engine race.

This month, Aero Commander announced its Jet Commander: a 500-mph, six-place executive aircraft for corporate customers powered by SAE's CJ610 engines. The 40-inch, 355-pound power plant packs 2850 pounds of take-off thrust, enabling the Jet Commander to take off from runways only 2500 feet long. It can operate out of airports now used by present, piston-powered executive aircraft. Once aloft, time-pressed corporate officials can move via Jet Commander from plant-to-plant and office-to-office, over a range of 1500 miles.

This makes it a natural for covering General Electric's far-flung operations. No surprise then that General Electric is high on the Jet Commander customer list. We're buying two for 1963 delivery.

COLLEGE BOWL: A TOUCHDOWN
"Illuminating, entertaining, and exciting . . ."

TELEVISION

Winners' Circle

General Electric and Texaco became the first sponsors of television programs to win two George Foster Peabody Awards in one year, late last month. Our prize-winners: best entertainment feature — "The Fabulous Fifties," variety show presented by Major Appliance Division in January last year, and "The General Electric College Bowl," winner in the youth program category.

Attending the awards luncheon in New York (above) were University of Georgia's John E. Drewry, administrator of the Peabody Awards; College Bowl moderator Allen Ludden; Company Vice President Willard H. Sahloff; and Bennett Cerf, chairman of the Peabody Board. "College Bowl" will return next fall for its fourth season under the Housewares and Commercial Equipment banner.

sive to delicate shifts in supply and demand. For comparative purposes, we have also drawn on this same chart a composite index for *non*-electrical machinery and equipment developed from Bureau of Labor Statistics data. The price increase of 15.1 per cent for electrical equipment is far less than the 27.9 per cent increase in the BLS non-electrical machinery and equipment price index.

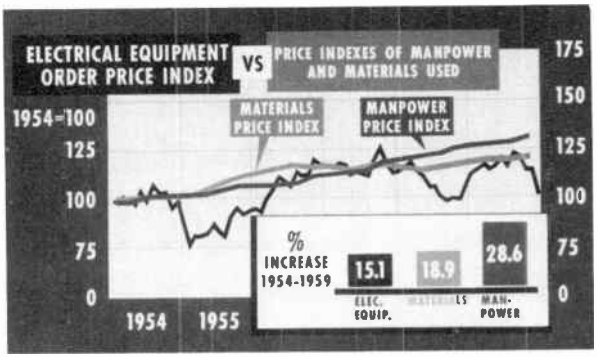


CHART B

This price index gains added significance when compared with the indices of the costs of materials and manpower used by the manufacturers in the production of this heavy electrical apparatus. Here, again, the electrical equipment price index shows a more modest increase, 15.1 per cent as against 18.9 per cent for materials and 28.6 per cent for the price of manpower (Chart B, above).

Steam turbine generators, which represent one of the most complex pieces of equipment produced by this industry, were not included in the price indices in this slide. Because of the rapidly expanding technology of the industry, turbine-generator price movements should be considered in relation to the increased efficiencies of these machines. This has been done (in Chart C, below) which traces the impact of turbine-generator prices and efficiencies on the cost of generating electricity.

Over the ten-year period since 1950, the cost of generating electricity was barely affected and even that modest change was more than offset by other factors which were not included in this evaluation, such as savings in plant construction, manpower, and maintenance, but which have been substantially aided by improvement in turbine designs.

This picture is especially significant in an industry where electric utility

CHART C

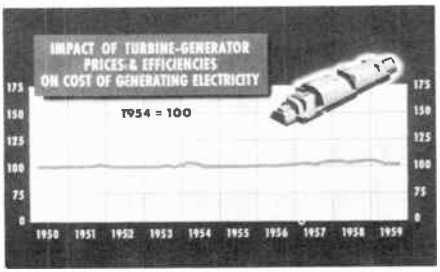
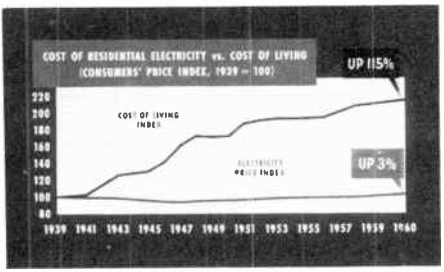


CHART D



engineers and purchasing agents have traditionally laid great stress on buying products on a carefully evaluated basis. Thus the electrical manufacturers have made a significant contribution to the achievement of the electric utilities in producing abundant low-cost electric power (Chart D, page 15). While the cost of living has gone up 115 per cent since 1939, the cost of electricity has gone up only 3 per cent. Few other industries could point to such a sustained record of cost-conscious service to the public.

I wish I could tell you that we have heard the last of this regrettable matter. Unfortunately, I cannot. Certain union officials have already indicated their intention of dragging the case through the headlines again and again. The twin objectives of this union campaign, we are told, are, first to discredit the Company in the hope of "softening up" our position on bargaining; and, second, to attack the whole business community, and so discredit it politically, by vilifying General Electric. It is hard to see how such a destructive campaign could benefit anybody, including the union members themselves, who have nothing to gain by destroying the sales and jobs in their own Company.

As you doubtless know, there is now underway a Congressional investigation of the electrical manufacturing industry by the Senate Antitrust Subcommittee. The hearings have been going on this week and there are more to come. The Committee is interested in learning what knowledge of these matters existed at top levels of the companies involved and is currently inquiring about our disciplinary program, Policy 20.5, and so forth. I expect to be invited to testify and will, of course, do so. By their very nature, hearings of this kind always generate a great deal of publicity, and although it is unpleasant, we must not be surprised or discouraged if your Company, as the leader in this industry, becomes the principal subject of any such adverse public attention.

A PERSONAL COMMENT

If I may speak informally for just a moment, I should like to tell you of my personal shock and dismay at this entire situation. To realize that some General Electric people have been less than frank with me and my immediate associates, to realize that my express instructions have been deliberately violated by trusted fellow workers, has inevitably hurt beyond measure. Virtually my whole business life has been with the General Electric Company and for it I have the highest affection. I am grieved at the injury which has been done not only to this Company and to its reputation, but to the business community as a whole.

You must know that I have spent many night hours worrying over these problems, how they came about, and how to avoid their ever being raised again.

I want to thank personally the many share owners who have written letters of encouragement to me in these troublesome times. And I want to assure everyone concerned that I shall do my utmost to help to move this great Company forward to greater sales, and greater profits, through the highest standards of integrity and service to the public.

Let us now turn to other matters.

TALKING POINTS

Make Business a Pleasure

If Company business or your own pleasure takes you to one of the cities where Northeast, Delta or TWA operate their Convair 880's, why not see if their flight times tie in with your travel schedule? Here's a list of cities serviced by the record-shattering Convair 880, powered by General Electric jet engines:

Albuquerque (TWA)
Atlanta (D)
Baltimore (D, NE)
Boston (NE, TWA)
Chicago (D, TWA)
Cincinnati (D)
Dallas (D)
Dayton (D)
Denver (TWA)
Ft. Lauderdale (NE)
Houston (D)
Indianapolis (TWA)
Jacksonville, Fla. (NE)
Kansas City (D, TWA)
Las Vegas (TWA)
Los Angeles (TWA, D)
Memphis (D)
Miami (D, NE)
Montreal (NE)
New York (D, NE, TWA)
New Orleans (D)
Oklahoma City (TWA)
Philadelphia (D, NE)
Phoenix (TWA)
San Francisco (TWA)
St. Louis (D, TWA)
Tampa (NE)
Washington, D.C. (D, NE)

And if you land at New York, Los Angeles, San Francisco or Chicago, you might see about taxiing into town aboard a turbocopter.

Nature's Way

The infrared sensing organ in pit viper snakes, we learn, can detect temperature changes as slight as 1/1000 of a degree. This is how they sense prey even in the dark, or around corners. Who told us? Such unlikely intelligence is everyday working knowledge in the Bionics Unit at Light Military Electronics Department's Advanced Electronics Center in Ithaca. The pit viper's capabilities, along with those of birds who navigate from pole to pole, and muscles which change chemical energy to physical, it seems, are far more efficient than any man-made counterparts. To find out why, a new science — combining biology and electronics, hence Bionics — has been born. It's not exactly new. Developing radar similar to a bat's built-in pathfinder is much the same. But the *-onics* element — relating neuron functions to computer logic, for instance — is already adding some new clues to the design of electronic equipment. Also under study: the Visilog, a device based on one of the most important functions of vision — the role of the eye in orientation and locomotion.

Those Far Out Sounds

The General Engineering Laboratory has taken the beeps, squiggles, whines and moans out of space vehicles churning through the sky, and pressed them into a phonograph record. The haunting "beep-beep" of a tiny 2/10-watt radio transmitter more than 400,000 miles from Earth is one of several far out sounds picked up at the GEL's Observatory near Schenectady. Bearing the "Sounds from Outer Space" label, the pixilated platter was passed out at last month's Annual Meeting in Syracuse. Besides voices bounced off the the moon (from Earth), it plays back the bagpipe-like sounds of Explorer VII, and those of Pioneer IV, the U.S. space rocket which was orbited around the Sun.

PEOPLE

A Normal Life For Rose Cohen

THE ANXIETY of a dangerous heart affliction safely behind her, Mrs. Rose Cohen (right), now leads a normal life—her heart paced by an electronic circuit surgically implanted in her body. General Electric engineers helped save her life by building an electronic device that causes her heart to beat in proper rhythm.

Like several hundred Americans each year, Mrs. Rose Cohen, a Brooklyn homemaker, recently developed Stokes-Adams disease, a heart condition generally considered to be fatal. As a result, her pulse rate began a slow but persistent decline. Unlike many so afflicted, however, Mrs. Cohen has the good fortune to be a patient of Dr. Abraham Kantrowitz.

Two years ago, Dr. Kantrowitz, head of cardiovascular surgery at Brooklyn's Maimonides Hospital, met Jerome J. Suran, manager of advanced circuitry at the Electronics Laboratory at Syracuse, who had learned of his experiments in medical electronics. They set up a research team which later included Electronics Laboratory engineers Hal Abbott, Adam Klisz, Heinz Raillaird and John Schmidt. Inspired by the opportunities they saw, they began studying them on their own time, later earned Company support for their research.

The painstaking work of this medical-electronics team had its big moment late in March. An electronic pulse stimulator—called a pacemaker—was surgically connected to Mrs. Cohen's heart. Unlike earlier models, it was surgically implanted with no outside connections. By building into the pacemaker's design the latest technology in advanced transistor circuitry, materials unaffected by body chemistry, and miniature batteries, they were able to give Mrs. Cohen a device which

works with lifesaving reliability. Its only maintenance: new batteries every three to five years.

The pacemaker not only provides Mrs. Cohen with a life-sustaining pulse rate of 65 beats per minute, but Syracuse engineers have provided her with an electronic accessory—much like a small transistor radio — which can be worn outside the pacemaker, to increase her pulse rate in a range of from 70 to 125 beats per minute when she needs the extra energy.

The patient's reaction: via Board Chairman Ralph J. Cordiner, Mrs. Cohen sent her "special gratitude" to the many General Electric people, "who worked on this lifesaving project for me."

What else does the dramatic field of medical electronics portend? It may some day replace the iron lung with an electronic version, and provide electronic muscles for paraplegics, or construct electronic replacements for vital body organs. And for doctors, there may be a diagnostic computer to help research and sort vast amounts of fast-advancing medical information.

Top Talent: Not one to wait for others to take action, Schenectady's Clarence A. Renouard, Manufacturing Services communication specialist, decided to find out how a student goes about gaining admission to the right college. To unravel this knotty problem, he enlisted the presidents of Williams College, Rensselaer Polytechnic Institute, Siena College and Colgate University for a half hour, public service panel discussion telecast by WRGB on May 13. He called it "sort of a local, educational summit meeting."

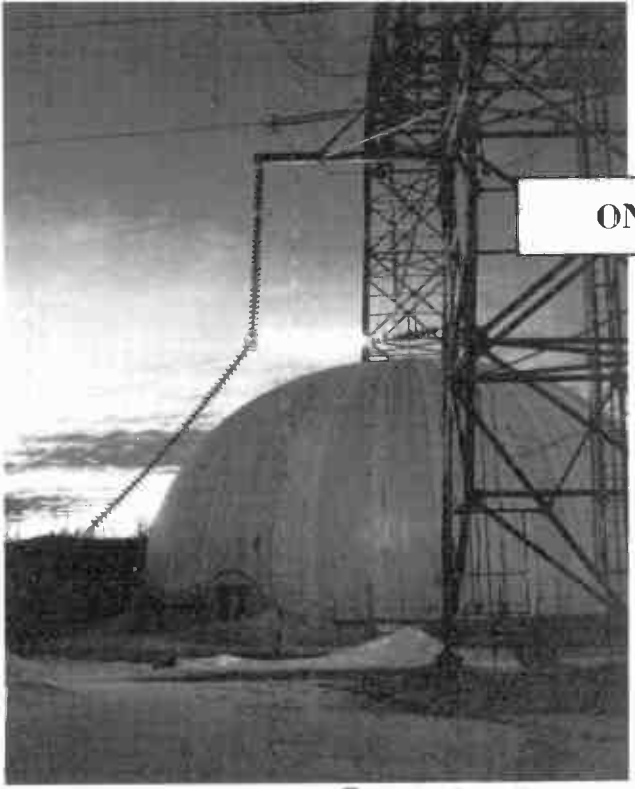
Honors: Robert L. Yowell, manager of Manufacturing Services' Real Estate and Construction Operation in Schenectady, cited by University of Missouri for "outstanding achievement in business and in community service." . . . The Benjamin Franklin Award of the Texas Manufacturers' Association to Tyler Plant Manager Tom Sproule for his question-and-answer "Plant Manager's Corner" in the plant *News*, edited by Jack Winemiller.

Whoooo? Appliance Park apprentice Larry Thornberry became the 21,000th Life Member in the National Wise Owl Club, industry-wide eye safety organization, when safety glasses he was wearing prevented a serious eye injury.

Quinquennial Election: Only once each five years are distinguished Americans named to the Hall of Fame of New York University. On June 4, Thomas Alva Edison, organizer of the first of General Electric's predecessor companies, becomes the 86th citizen so honored. In the most recent election, held last year, the holder of the U. S. patent record (with 1,097) led the voting list, with 108 ballots, 37 more than were needed for the honor.

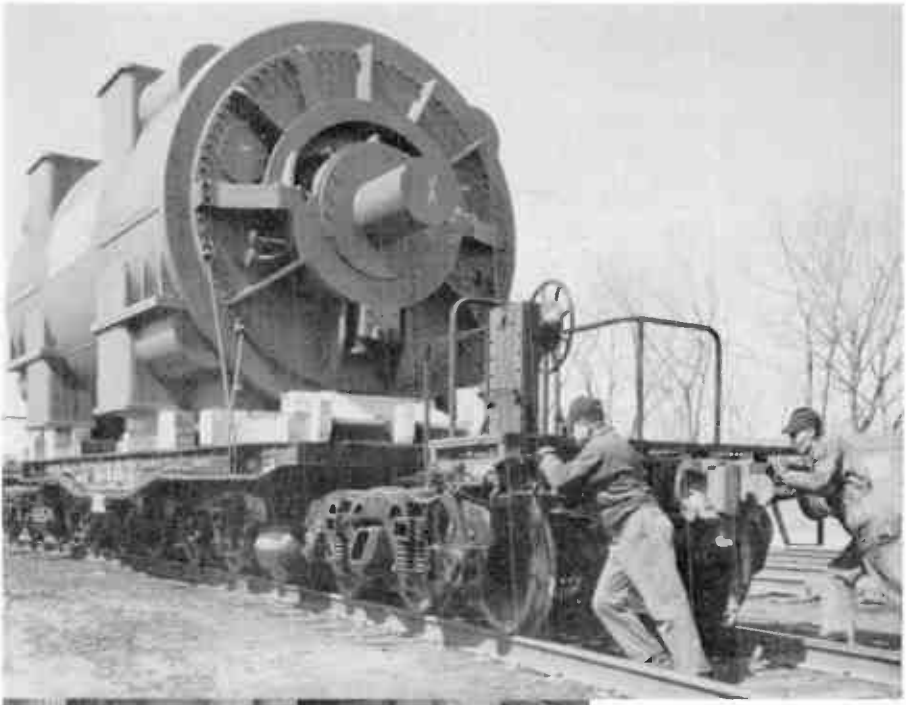
THOMAS ALVA EDISON
In Washington, circa 1878.
— photo by Mathew Brody

ON CAMERA



THREE MILLION VOLTS of artificial lightning blasts a string of insulators on the experimental extra-high-voltage line near Pittsfield. Nature doesn't provide lightning frequently enough to test the EHV system, so we're making our own in an 80-foot, mushroom-shaped housing for a lightning-making impulse generator.

CALICO NO 1: Usually famed for their big anes, Locomotive and Car Equipment Dept. ot Erie put same special pride in little five-ton-and-a-half trammers shipped to Knott's Berry Farm in Buena Park, Calif. Every weekend the mighty, midget engines haul upwards of 50,000 passengers (mostly minors) through an imaginative re-creotion of a century-old Colifarnia gold mine.



MANPOWER: That's a 275-ton generator being sent on its way by Schenectady railroaders Joe Orchard (left), and Bill Seiden. Don't worry: they didn't push it all the way to its West Coast customer; they just wanted to see if the bearings on a new 12-axle flat car are as friction-free as they're supposed to be. They are.

COMPANY CONTRIBUTION to the New York Public Library was marked by National Library Week presentation of $5000 check to Library Director Edward G. Freehofer by Anne West, Relations Services Librarian. The City's Reference Library handles inquiries from throughout the Company.

PRODUCTS

Everything, including the kitchen sink, comes with a new, trial model of General Electric's fast-moving 1961 automatic washer.Home Laundry Department's Marketing Manager Ed Stehle (right), unveiled it last month for contract sales managers from areas where the new unit will be test marketed with a companion, undercounter dryer. Both are designed primarily for built-in use in new homes. The utility-top washer features a stainless steel basin with faucets, swivel-arm spout, and drain, as well as all the flush-mounted, counter-high features of the new 12-pound, 1961 home laundry line, *(The Monogram*, Nov. 1960, p. 8). It's planned for nation-wide availability in 1962.

HOME LAUNDRY'S ED STEHLE
Everything, including the sink.

Sleek, squared-off design accents new, low-priced vaporizer being introduced in July by Automatic Blanket and Fan Department. Its unbreakable, yellow-plastic bottle holds 80 ounces of water, enough to steam for eight hours. Other vaporizers in the line list at $9.95 and $12.95; this one: $7.95.

A little late for Easter, but this month marks General Electric's entry into the hat business. Automatic Blanket and Fan Department has announced a new line of bonnets for use with their model HD-1 hair dryer. Smartly styled in pink, yellow, blue and green, they carry a suggested retail price of $2.95. This way, each member of a family can have her own personal bonnet, adjusted to her head size, in her own color choice.

Suggested retail prices of three portable appliances have been reduced: the M-47 portable mixer is down to $19.95, from $21.95; the S-40 electric saucepan now lists at $16.95, down from $26.90; and the S-20 saucepan now carries a $14.95 price tag, down from $22.90.

Confused about paint? Insulating Materials Department at Schenectady — which makes one of the best there is — offers this advice: basically, there are three grades of paint on the market — top quality, good, and low-priced paints. By selling their Glyptal alkyd-base paints through employee stores, they can bring you a premium quality paint for a medium-grade price. Bonus: this year they've got a new line of one-coat, super-hiding interior paints. It's available in 20 pastel colors and white.

If you're one of those people who totes a portable radio around in your car, take a good look at the new General Electric P870 portable shown by Radio Receiver

RADIO RECEIVER'S CHARLES GUSTAFSON
Wherever you go, there's radio.

Department Sales Manager Charles Gustafson, above. The new, $59.95 portable, dubbed the "General," has these special features: a clip for car-window mounting, which doubles as a table-top stand, and an adjustable whip antenna. It's guaranteed to work in your car, and runs about 250 hours on three standard flashlight batteries. It will clip to a belt, boat or bicycle — or wherever you may want to take it, for that matter.

Color television bearing the General Electric signature will be out in August. Our re-entry to the market is made with color stability and set service — two of the major problems of color TV — now under control. Television Receiver Department's line of 21-inch sets will feature a Color Balance Stabilizer, which overcomes the problem of color hue changing as picture brightness changes. And, they'll be serviced under a new "DOT" system, whereby servicemen can get a "Diagnosis-Over-Telephone" from a local, factory-trained color service expert. General Electric color television will be competitively priced.

RELAXEZ-VOUS: In the bustling Paris suburb of Aubervilliers, free laundry for a week was the big drawing card when the first coin-operated laundry in France opened for business last month. Equipped with 20, 12-pound General Electric washers, it's the first of what may number more than a hundred in the Paris area alone. Customer reaction: magnifique!

AROUND THE COMPANY

Atomics: One of the most important research tools in the Pacific Northwest, Washington State University's new open pool nuclear reactor, has gone critical. It sustained its first nuclear reaction under guidance of engineers from the Atomic Power Equipment Department. And while San Jose engineers were doing that, fourteen staff members from Hanford Laboratories toured twelve countries in Europe and the Far East for international information exchanges. Their subject: atomic technology.

Contracts: For Glen Canyon Power plant on the Colorado River, $8 million worth of Schenectady-made generators . . . A $2.6 million order for 15 Erie-made locomotives to join a fleet of 31 now in use by Colombian National Railways . . . A $28 million incentive contract to Missile and Space Vehicle Department to develop the nose cone for the advanced Titan II intercontinental missile for the U. S. Air Force.

Space Maker: When current development work is finished, MSVD will have ample room to make those Titan II nose cones. They're expanding manufacturing facilities at their Burlington, Vt., plant, with an addition to the present buildings, and a lease on more space.

Some Total: General Electric is adding $14 million in plant and equipment investment at Schenectady this year, bringing the five-year total to over $80 million. Since the end of World War II, in fact, the Company has invested more than $250 million to streamline facilities at its birthplace. That's almost $2000 invested every hour, on every day of the postwar era.

GENERAL ELECTRIC ON TV

General Electric Theater

(CBS, Sundays, 9 p.m., EDST)

May 21—"Strictly Solo," starring Tony Randall and Sally Forrest.

May 28—"A Little White Lye," starring Dorothy Malone.

June 4—"Graduation Dress," starring Hugh O'Brian and Stella Stevens.

June 11—"The Drop-out," starring Edward G. Robinson.

General Electric College Bowl

(CBS, Sundays, 5:30 p.m., EDST)

Coming Up: May 21—University of Florida; May 28—Muhlenberg College; June 4—Bates College; June 11—George Washington University.

Leave It to Beaver

(ABC, Saturdays, 8:30 p.m., EDST)

LETTERS

(Continued from inside front cover)

which isn't true. We may get awfully low in the second division, but we're still in the majors.

We're glad to be playing major league ball in Municipal Stadium here, so please don't send me back down.

HALE H. LAIT
Electric Utility Sales
Kansas City

Dropped Digits

EDITOR: In the April, 1961, *Monogram*, page 23, under "Sizzlers," I'm afraid your sizzle would fizzle at 32 watts. A 32-watt unit will boil a pint of water in an incendiary 13,000 seconds. You're in luck, however, Hotpoint is manufacturing a 3200-watt unit which will fill your specifications; i.e., boil one pint of water in your specified incendiary 130 seconds.

GORDON E. MULLINS
Hotpoint
Chicago

Reader Mullins is right. But Louisville reports that its fast-boiling unit is also 3200 watts.—Ed.

Good Idea

EDITOR: I was very interested and impressed by the Company's new electronic science kits (*The Monogram*, Feb. 1961, p. 3). It occurred to me that Don Herbert of our General Electric Theater could make excellent use of the various devices covered in this area. And it certainly would make excellent door prizes or awards at high schools, science fairs and school seminars. In fact I think I will buy and build a kit myself.

RICHARD T. BOGH
Electronic Components Div.
Southfield, Mich.

Don Herbert is looking at the idea right now for his General Electric Theater progress reports.—Ed.

Gladly

EDITOR: I've just read your April issue and it certainly has a lot of interesting items.

I was a little puzzled, though, by the paragraph on page 17 headed "Under New Management," since it mentions only the retirement of Louis C. Sommers, as manager of the Company's headquarters building in New York. The new manager is Claude A. Schutter. Can you get his name into your next issue?

RUTH E. DWYER
Manufacturing Services
Schenectady

Yes.—Ed.

ORGANIZATION

Executive Office

Ralph J. Cordiner, Chairman of the Board, has also been elected President.

Electric Utility Engineering

Eugene B. Sanford has been appointed Administrator — Professional Relations.

International Group

Howard M. Crow has been appointed President and General Manager of General Electric de Venezuela, S.A., in the International General Electric Company Division.

Albert R. Nobbs has been appointed President and General Manager of General Electric de Colombia, S.A., in the Manufacturing Subsidiaries Department.

Motor and Generator

Louis E. Wengert has been appointed General Manager of the Direct Current Motor and Generator Department, with headquarters at Erie, Pa.

EDITORIAL

A Few Good Words . . .

AFTER DEVOTING a major share of his remarks to share owners last month to the distressing antitrust cases, Board Chairman Ralph J. Cordiner turned to other matters with this comment:

"I think it is full time that someone said a few good words for the thousands of loyal managers and employees who produced over $4 billion worth of sales last year — and who never heard of this conspiracy until they read about it in the paper."

While the attentions of the headline writers have been focused on the few who were involved in unhappy endeavors, the other 99.9999 per cent of General Electric employees (whom Mr. Cordiner called "perhaps the most creative team in industry") have been about the business of progress.

In Philadelphia, for instance, men and women of the Missile and Space Vehicle Department have been laboring for months over a practical approach to space satellite communications — with all its technical, legal, and competitive complexities. During the past month, their efforts came to bud, with a detailed plan presented to the Federal Communications Commission. If adopted, it could set the stage for a dramatic use of outer space for peaceful purposes.

In Edmore, Mich., the talents of the Magnetic Materials Section have been quietly and effectively applied to the development of a new magnet material which already has won acceptance in such diverse products as transistor radios, automobiles, and hearing aids.

Out of the labors of employees of the Radio Receiver Department at Utica has come an FM-stereo broadcast system which many competent observers believe will give FM radio the boost that it needs to achieve its long predicted high promise.

From the Major Appliance Division comes the report that we are what Vice President Fred Borch calls "well within gunshot of our long-range targets" on one of the industry's knottiest problems, appliance service. General Electric appliance service people are now providing 80 per cent of our appliance users with either same day or second-day attention to their service calls.

Not all of the endeavors are mass efforts designed to serve the needs of millions. The work of a dedicated group of men in the Electronics Laboratory in Syracuse with a remarkable electronic heart stimulator, called a pacemaker, has helped save a single human life in Brooklyn.

As Vice President Clarence Linder put it in discussing important developments in his Electric Utility Group (EHV, direct-conversion processes, nuclear power, gas turbine innovations, among others) "the human competence behind these developments is the basic strength of this Company."