

THE MONOGRAM FEB. 1957



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LETTERS

Boys Will Be Boys

Editor:

The Capacitor Department at Fort Edward forwarded us a letter the other day with "RUSH" marked on the envelope. Naturally we gave it our immediate attention. Here's what it said:

"Dear Sirs:

I want to congratulate you on your G.E. Bulletins which are being sent out to the schools because they are currently posted in our school.

Unfortunately, one of your pictures was partially damaged by a prankster and must be replaced in two weeks or the penalty is facing the principal and possibly being expelled from school.

I would appreciate it very much if you could rush me a picture of "Thomas Edison at the Age of Thirty-Two."

I will pay for the postage and the picture itself if necessary but please rush the picture to me as soon as you can! Thank you.

Very truly yours,
(signature)
Fort Edward, N. Y.

P.S. Please hurry! Thank you!
(Please excuse the writing paper but the message is *urgent*. Thank you!)"

This boy's faith in General Electric did not go unrewarded. A framed picture of Edison was rushed to the distressed student by return mail. His letter so vividly outlined his plight that even the hardened characters in the Capacitor Department were visily touched.

BRUCE H. COLE
Power Equipment Advertising
Schenectady

Thomas A. Edison, whose 110th birthday was February 11, accomplished many remarkable things, but we doubt if he ever saved a "prankster" from expulsion—at the age of thirty-two or any other time during his eventful life.—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.

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Keith H. Crandell, Editor

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GENERAL  ELECTRIC

REPORT FROM LYNN

Outlook Spectacular

General Manager Armand T. Chandonnet describes his department as "one of the best barometers of the future economic health of the nation."

The department is the Medium Steam Turbine, Generator and Gear Department at Lynn, Mass. From all indications the barometer is rising.

Said Mr. Chandonnet at a press conference in Lynn this month:

- The department's business is at a new peacetime high.
- Scheduled output for both 1957 and 1958 will be a whopping 60 per cent more than last year's highly successful production.
- Employment is at a new peacetime peak, with 6000 men and women now on the job.
- The department will lay out \$9 million this year in carefully planned capital investment and associated costs—compared with a sizable \$5 million investment in 1956.

The department manufactures power generating equipment for electric utilities, industry, warships, and merchantmen. Mr. Chandonnet explained that, when basic industries are optimistic in planning expansion, it is generally reflected in the barometer turbine business—one, two, or three years before this expansion shows in the gross national product.

"Our experience has proved that the turbine-generator business is extremely sensitive to national economic trends. An increase in our business volume usually foreshadows an increase in industrial expansion nationwide," declared Mr. Chandonnet, a tall, spare New Englander who has spent 33 years in electrical

FOR TRAINING: A MILLION DOLLARS

Expansion means more than new buildings.

This fact was brought home this month by the announcement that Lynn's Medium Steam Turbine, Generator and Gear Department is spending more than \$1 million to train both new and old employees for new job opportunities stemming from the department's expansion program.

The department, which invested \$5 million in expansion last year and is adding another \$9 million in planned capital investment in 1957, has added 1000 new jobs in the past year, a 20 per cent rise.

In addition, acquisition of complex machine tools and development of new designs for turbines, generators, and gears to meet customer needs has caused a sharp increase in the demand for skilled employees.

Step-ups in training brought the department's training bill to \$500,000 in 1956, and the estimated training cost for 1957 is \$550,000.



PATTERN FOR THE FUTURE: EXPANSION TO POWER A GROWING ECONOMY

manufacturing. "Apparently," he added dryly, "the prophets of economic doom have overlooked this important business indicator."

The largest item in Medium Steam Turbine's \$9-million expansion program is a mammoth new manufacturing bay (photo above). The bay will cost \$2 million, will cover 63,000 square feet, and will enable the department to meet customer needs for

turbines and generators of 60,000-kw rating. The present maximum at Lynn is 50,000 kw. One piece of equipment in the new bay will be a custom-made boring mill which is valued at \$800,000. Foundations and special steel supporting columns were designed to support huge 200-ton cranes needed to lift heavy steam turbines and generators.

A new five-story, 30,000-sq-ft office

building for the department's engineering, drafting, and administrative personnel will cost \$1.1 million. Both the new manufacturing bay and the office structure are scheduled for completion by midyear.

Helping to insure General Electric's leadership by constant progress in improving the efficiency of generating equipment, is the department's new million-dollar Materials and Processes Laboratory. Recently dedicated, it provides engineers with the facilities to investigate the electrical, chemical, metallurgical, and mechanical problems created by new design trends.

Is the generally healthy outlook in Medium Steam Turbine peculiar to that department? Mr. Chandonnet says not.

What has been true in his department, Mr. Chandonnet comments, "is generally true throughout the entire electric apparatus industry, including other General Electric turbine departments and our competitors."

"From all we can conclude," said Mr. Chandonnet, "from our own 'barometer' business as well as from the forecasts of the most competent authorities, both the short- and long-range economic pictures are extremely optimistic."

CHANDONNET: HE'S LOOKING UP



MAJOR APPLIANCES

A Good Year Ahead

This will be another record year for the sale of major electric appliances, according to Charles W. Theelen, customer relations manager of the Appliance and Television Receiver Division.

In a statement issued at the convention of the National Appliance and Radio-TV Dealers Association in Chicago last month, Mr. Theelen predicted that 1957 industry sales would be about six per cent ahead of the 15 million units sold in 1956.

The past year ended with an industry sales volume some four per cent above 1955, which was itself a record year in the history of major appliances.

SHARE OWNERS

More Than Ever Before

The number of General Electric share owners increased during 1956 by 18,680 to reach a record total of 366,524. One out of seven is a Company employee.

In March, even more employees will assume the added role of share owner when General Electric distributes 119,400 shares to 4800 employees who have never before owned stock in the Company. Like more than 47,500 employees before them, they will be receiving shares earned through participation in the Savings and Stock Bonus Plan.

More than half the share owners are women, and about two thirds have less than 100 shares. Share owners with less than 100 shares have been increasing in proportion to the total.

“Borazon” Makes Its Mark

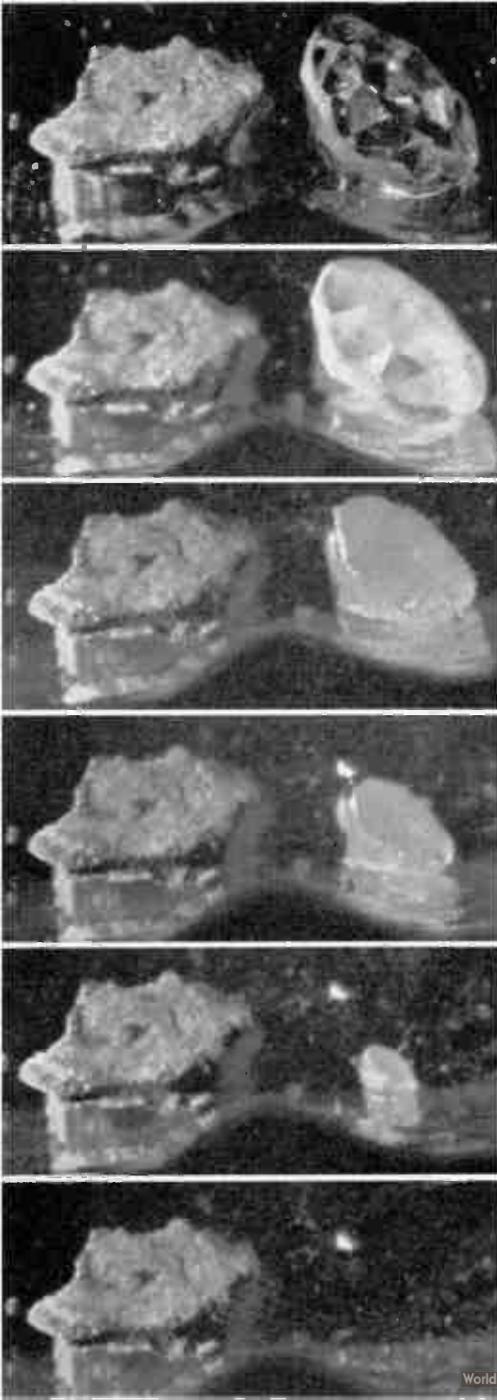
Another diamond myth was exploded this month by the General Electric Research Laboratory where, exactly two years ago, production of the first man-made diamonds was announced. The latest development, concerning boron nitride crystals, destroys the long-popular belief that nothing can scratch a diamond except another diamond.

The tiny crystals, never before seen in nature, have the hardness and structure characteristic of diamonds, plus a valuable quality—they can withstand temperatures that literally burn up diamond. General Electric's name for the new cubic boron nitride is “borazon,” a name that will be added to dictionaries the world over. The discovery, according to Dr. C. Guy Suits, vice president and director of research, “can have far-reaching impact on industrial processes and thus increase the value of products all of us will use in the future.”

Produced by combining tremendous pressures (more than a million pounds per square inch) with extremely high temperatures (over 3000° F), borazon was discovered by Dr. Robert H. Wentorf, 30-year-old member of the research team that made diamonds by using a similar technique.

Is borazon actually harder than diamond? Dr. Wentorf cautiously guesses it to be “about the same; borazon scratches diamond almost exactly as diamond scratches borazon—and diamond scratches borazon.” He demonstrated this at a New York showing and displayed photographs (left) graphically illustrating the difference

DEATH OF A DIAMOND: Photo sequence, taken at 30-second intervals, shows a diamond (right) vanishing in 2½ minutes at 2000° F, while borazon (left) remains hard enough to scratch diamond.





A PROUD YOUNG SCIENTIST BEAMS as his discovery, borazon, is discussed by fellow scientists, Harvard's Dr. Percy Bridgman, left, and General Electric's Dr. Irving Langmuir, right, both Nobel Prize winners, and Dr. Herbert Strong, who with Dr. Wentorf was a member of the four-man General Electric research team responsible for development of the first man-made diamonds.

in behavior of diamond and borazon at about 2000° F. Diamonds will oxidize at a temperature of 1600° F.

Unlike nature's most glamorous stone, borazon can withstand temperatures above 3500° F, should thus prove superior to diamond for many industrial applications.

The first borazon crystals, shown in New York on February 12, are no larger than grains of sand. But even in this form, borazon is expected to prove suitable for a variety of uses.

Stressing the significance of Dr. Wentorf's discovery, Dr. Suits called it "a scientific achievement—the creation of a new material with properties equaling or surpassing those of one long thought to be the 'ultimate.' This work is an important step in General Electric's program of research aimed at producing the improved materials that will insure tomorrow's progress."

Ordinary boron nitride is a white solid similar in density, slipperiness, and crystal



A NEW ONE FOR WEBSTER

structure to black graphite. In the periodic table of elements, boron and nitrogen straddle carbon, which is one of those substances that can crystallize in more than one form, depending mainly on the crystallizing pressure and temperature. Superpressures and extremely high temperatures are used to produce crystals of boron nitride with a structure that is cubic (like diamond) rather than hexagonal (like graphite).

Finding a name for the new substance was a diversion for Research Laboratory scientists, who tried scores of conceivable combinations (photo above).

"We believe borazon's resistance to oxidation will make possible superior methods of mounting stones in industrial tools," says Dr. Suits, "and may also allow bits and wheels to be operated at higher speeds, performing their cutting and polishing more quickly and efficiently."

To the man in the street—who may never have occasion to burn up a diamond, let alone scratch one—this means better products for his better living, tomorrow.

AIR CONDITIONING

Weathertron's Newest

Smaller (by 50%), lighter ($\frac{1}{3}$), and more efficient (32% in cooling performance and 17% in heating) than any previous model—these are among the features of the all-new, 1957 Weathertron heat pump, the first especially designed for the home builder market. Now in pilot production at Bloomfield, N. J., the compact unit was introduced late last month at the National Home Builders Show in Chicago.

The product of General Electric research and development for a large new market, the heat pump is winning acceptance by electric utilities, architects, and contractors—and for good reason. To the utility, it means expanded residential and commercial markets, new all-electric home and industrial customers, and more balanced seasonal loads. To the architect, it provides a flexibility of design never before possible. Because it uses no combustible fuel or water, it can be located anywhere, and the architect can forget about storage tanks, piping, and ventilating openings.

Finally, the versatile Weathertron provides the builder with a lasting-value, quality feature that attracts buyers and puts his houses in a class above the ordinary.

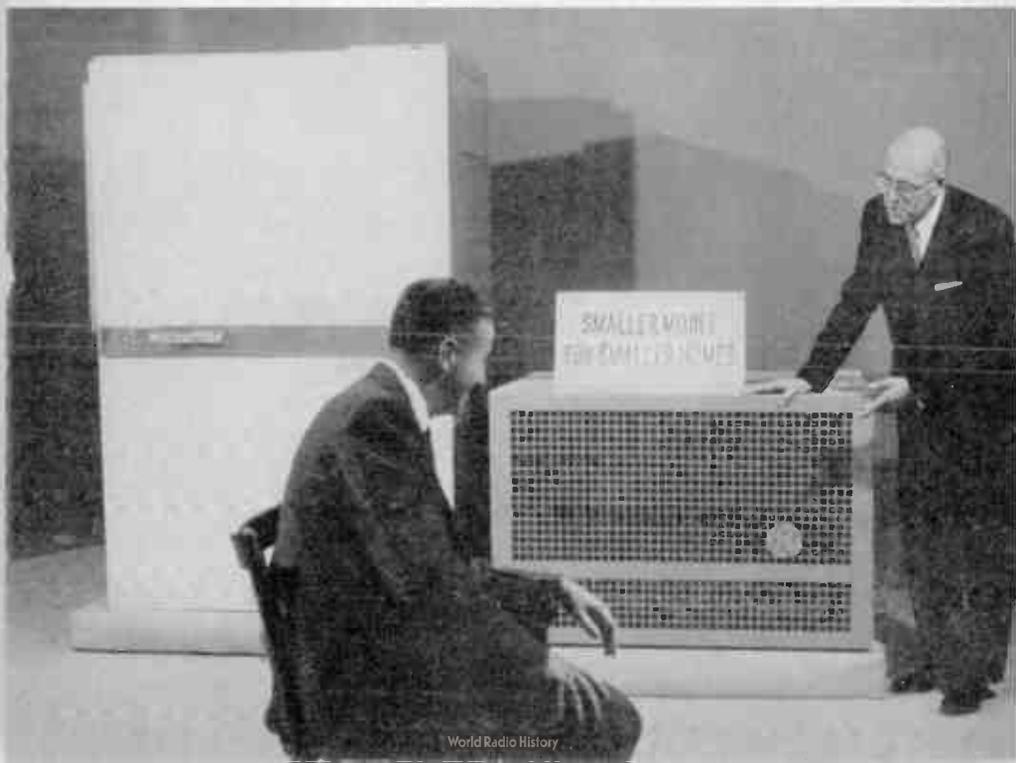
Tyler's First

The recently completed \$15-million Home Heating and Cooling Department plant in Tyler, Texas, unveiled its first product last month—the new, air-cooled air conditioner, first model of the 1957 line.

The plant, designed for a rapidly expanding market, will eventually be able to build as many central units for the home as the entire industry produced in 1956.



POINTS OF VIEW: Housewife, tradesman, and dealer cannot but agree with General Manager Henry M. Brundage (right, below) of the Weathertron Department that the new, half-size, residential model heat pump offers advantages for all concerned—both inside and outside the home of today.





O'CONNELL AND THE CHAMBER: ALL SMILES AT RUTLAND

BUSINESS CLIMATE

It's Important in Vermont

In 1950, members of the Chamber of Commerce in Rutland, Vt. (1950 pop., 17,659) decided that, industrially speaking, Rutland was in a rut. They embarked on a five-year program to make their city attractive to new business.

Several months ago, the Company's Aircraft Accessory Turbine Department managers began a search for a suitable site for the department's spare parts business.

Last month, it was revealed that the two paths had crossed. Department General Manager Walter C. O'Connell announced that General Electric had purchased manufacturing facilities in Rutland—largely because of the city's attractive business climate. Employment will be about 100 and eventually may reach 200. Mr. O'Connell pointed out that the move was

part of the department's long-range expansion and that no employees at AAT headquarters in Lynn would be dropped as a result of it.

Ticking off reasons for selecting Rutland, Mr. O'Connell cited, among others, community progressiveness, the cost of doing business, and community attitudes toward business. General Electric experience at two other Vermont locations (Ludlow and Burlington), Mr. O'Connell noted, has shown that the state as a whole "seems to be aware that business climate is important."

When the move was announced, the Rutland Chamber (whose energetic local improvement campaign has attracted six major industries to town) presented Mr. O'Connell (at extreme left in photo above) with an oversized key to the city. Said one community leader in expressing the sentiments of the group: "This is quite a day for Rutland . . . a thrilling moment."

General Manager O'Connell replied by praising the Chamber for its straightforward approach ("At no time were we ever approached with a 'deal' or a 'gimmick' to try to prevail upon us to come to this city.") and told Rutlanders, "We are looking forward to becoming a good corporate citizen of Rutland."

Decatur Says 'Well Done'

Once a community attracts a new industry, the real pay-off for the community stems from the way the newcomers conduct themselves. Ten years ago, General Electric picked Decatur, Ill., as a good site for expansion of its promising new plastics business, and last month Decatur's Junior Chamber of Commerce decided that General Electric deserved special recognition for the quality of its conduct there.

In presenting the Plastics Department with their annual human relations award, the Jaycees cited 14 major achievements.

Among them: employee health insurance, financial aid to local activities, individual participation in community affairs, the plant's community information program, the fair treatment accorded all plant employees regardless of race or sex or creed, and a record of Company-employee cooperation that has eliminated all work stoppages for five years.

AIRCRAFT PRODUCTS

Orders for West Lynn

The Instrument Department reports receipt of U.S. Air Force orders totaling nearly \$2¼ million for varying quantities of five different flowmeter instrument models. The

instruments, which measure liquid fuels in aircraft, will be installed in eight-engine B-52 jet bombers (see story below), KC-135 high-altitude refueling tankers, C-132 and C-133 jet cargo and transport planes—the first installation of General Electric flowmeters in these types of aircraft.

The Company's steadily expanding flowmeter instrument business, exemplified in this latest USAF contract, is a result of intensive engineering research and product development. Department managers pointed out that the orders will stabilize existing employment at West Lynn and contribute to job security there.

Making History with SAC

General Electric was well represented in last month's history-making flight of B-52 jet bombers around the world in 45 hours. Each plane was equipped with AP-10 hydraulic turbopumps and AD-10 turbo alternator drives, produced by the Aircraft Accessory Turbine Department, Lynn.

The hydraulic turbopump provides the power to operate the landing and steering gear, bomb-bay doors, and stabilizer. The turbo alternator drive supplies power to elaborate electronic servomechanisms and systems, including search radar made by the Light Military Electronic Equipment Department at Utica.

The Strategic Air Command's famed non-stop flight was possible only with "IFR"—the intricate operation of inflight refueling from tanker planes that rendezvoused with the bombers at predetermined points along their route. On this occasion, KC-97's—equipped with General Electric turbo-superchargers (also made by AAT)—accomplished the difficult and often hazardous task of feeding the B-52's fuel at the rate of 600 gallons per minute.



OUR MARINE REPAIRMEN MEET A CRISIS

SERVICE SHOPS

Service for the Free World

When General Electric's Service Shops repair electrical equipment, they not only provide a service to customers but to millions of electric power beneficiaries who have never heard of a General Electric service shop. This was pointed up in dramatic fashion last month when the New York *Times* pinpointed a story of outstanding service for the non-communist world.

Like many other stories in the January 20 issue, this article was concerned with the Middle East crisis and the closing of the Suez Canal. Middle East oil—vital to the welfare and defense of the West—now reaches Europe only after the long journey around the Cape of Good Hope. As a result, tankers are sailing on virtually a wartime basis, and a tanker in need of repair is a

major liability to its owner, as well as being a bottleneck in supplying oil-starved European countries.

The Report: Marine repair specialists from General Electric's apparatus service shops are setting new records in making emergency repairs on electric drive engines in tankers from the Middle East. Normally it takes four to five and a half weeks to strip, rewind, and test 55-ton, 6000-hp engines that drive standard-sized oil carriers. Faced with the current oil crisis, General Electric's service shop at North Bergen, N. J., called in other General Electric marine repairmen from Detroit, Boston, and Philadelphia. These high-voltage specialists (among the most highly trained technicians in the repair business) went to work on a shoulder-to-shoulder, around-the-clock basis and cut this repair time to a total of three weeks.

Not only are General Electric's marine repair teams going into emergency action at North Bergen but many are operating at port locations up and down the East Coast—including Staten Island, N. Y., where they put in many night hours getting the tanker *Bull Run* in operation (see cover).

Estimating a tanker's operating value at \$10,000 a day (as compared with \$3000 a day about a year ago), Norman Gilbert, in charge of marine repair at the North Bergen shop, stated that owners of three tankers recently repaired in the New York area saved \$1.68 million as a result of this high-speed service.

Since most tankers now plying the seas were built during World War II, their accelerated use is causing increasing breakdowns. According to Mr. Gilbert, about half the shop's marine work is now on tankers. "Until the Suez Canal is reopened and tanker utilization gets back to normal," he said, "General Electric will continue to do all its tanker work on a high-speed basis."

CUSTOMER ORIENTATION: A FUNDAMENTAL OF THE MARKETING PHILOSOPHY

“Under the marketing philosophy, the customer becomes the fulcrum—the pivot point about which the business moves in operating for the balanced best interests of all concerned.”

This is how Fred J. Borch, vice president for Marketing Services, explained General Electric's marketing philosophy early this month to some 1500 business leaders gathered at New York's Statler Hotel. The selection of Mr. Borch as keynote speaker for the annual marketing seminar of the American Management Association was no coincidence. For General Electric is attaining national recognition as a leader in the new philosophy of marketing.

At General Electric, where nearly one out of every three salaried employees plays a part in the all-important marketing function, the term “marketing” connotes many more activities than those normally associated with the word “sales.” Marketing work—product planning, market research, advertising and sales promotion, sales, personnel development and administration—phases into a widespread operation that extends through each product department to dealers and customers. Manning this network are 37,000 employees, including the biggest single Company marketing unit, the 10,000-man Apparatus Sales Division. Multiplying the efforts of General Electric marketing employees are some 400,000 other companies which distribute and sell General Electric consumer and industrial products.

Mr. Borch believes that the primary concern of this large marketing organization must be the customer as an individual.



MARKETING'S BORCH

He calls this concept “customer orientation.” Today's buyer, Mr. Borch points out, “is a rapidly changing customer who is offered an ever-mounting variety of goods, with a constantly diminishing compulsion to purchase any of them.” A generation ago this was not the case.

“Before the days of mass communication, national markets, and mass production,” Mr. Borch told his A. M. A. audience, “the business pioneers were cognizant of their customers and of their

markets. They knew their customers individually, and these individual customers formed their collective market. Our predecessors built their relationships through personal contact, and got very rapid feedbacks on customer wants and needs. They were their own market researchers, analysts, salesmen, product planners, advertisers, and promoters. Beyond question, their businesses were customer-oriented, because they knew this was the only way to run a business!

"But mass production could not bring its desired economies to widely scattered customers without taking away the ability of the producer to know personally each customer."

To illustrate this, Mr. Borch cited the pre-war years when manufacturers offered

the public a choice of any color automobile—provided it was black. "More than one manufacturer of the old, stiff, high collars," he continued, "nearly went broke trying to sell his product, long after customer preferences had shifted toward today's softer varieties. And it took World War II silk shortages to convince many stocking manufacturers that nylons really were preferred . . ."

"As a company grows in size," Mr. Borch pointed out, "its potential ability to drift away from customer orientation grows proportionately. Similarly, as its size increases, so does its necessity for awareness of this danger."

Mr. Borch explained the marketing philosophy as a recognition of this situation. "Those companies that have grown successfully," he said, "are those which were quick to recognize any tendency to drift from a true understanding of the customer."

Why Marketing?

"In our free enterprise system," says Fred J. Borch, "marketing is the catalyst which brings together the two dominant elements. One is the massive technological complex which our free enterprise system has fostered; the other is the consumer and industrial markets which are being built directly and indirectly upon the hungers of millions of individuals for better ways to satisfy their needs and wants.

"Marketing makes these two elements mesh. It lets the purchaser know what the skills of the scientist, the designer, the engineer, and the manufacturer can do for him. In addition to this, it provides the knowledge of the customer's desires that enables the producer to apply his skills and technologies to consumer and industrial products that will satisfy these desires."

The answer to the problem of keeping close to the customer—when the very nature of quantity production tends to separate him further and further from manufacturing's decision-makers—lies in mass marketing, said Mr. Borch. He defined this challenge as the "dual core" job of marketing. Half of this job is early and accurate identification of the customer's needs—even before he realizes them himself. The other half: the familiar and all-important processes of persuasion, consisting of those many arts of promotion and true selling which induce one to buy a new product or service.

"The concept is growing," said Mr. Borch, "of selling not the product, but the function that the product performs." Marketing personnel in the Meter Department, for instance, do not consider themselves simply in the meter business: they are in the business of measuring



ELECTRIFIED-HIGHWAY MARKET STUDY is one of several special projects undertaken by Marketing Services for Company product and distribution components. At round-table sessions such as this one, marketing men determine how the many interested departments can best approach the nation's large highway market with integrated impact, rather than uncoordinated individual efforts (by Outdoor Lighting or Communication Products salesmen, for example). In addition to special study projects, Marketing Services conducts an advanced marketing training course and periodic functional seminars on such subjects as market research, product planning, advertising and sales promotion.

electrical power revenue for utilities.

Mr. Borch called the dual core job "the first fundamental of the marketing philosophy." The second is "the acceptance of the profit concept, rather than the profitless volume (or volume-for-the-sake-of-volume-alone) concept as a way of business life."

One of marketing's major objectives—that of market expansion via product development and market development—depends on the application of the marketing philosophy. The consumer's preference for certain colors, space-saving features, and the built-in look in major appliances—resulting in products that better fulfill his wants and needs—are examples of product development under

this realistic philosophy. The Company's efforts in market development are apparent in such large-scale programs as Live Better—Electrically, More Power to America (see story, p. 17), and National Electrical Week (*The Monogram*, Jan. 1957, p. 11), as well as in individual product department operations, where, Mr. Borch believes, many General Electric marketing men are doing an outstanding job.

The marketing philosophy applies with equal validity to industrial-type products, as well as to consumer goods. Under decentralization, the philosophy is being effectually implemented throughout General Electric.

A customer-oriented approach can bring substantial benefits to the manufacturer, as well as to the customer. "When pro-

duction is closely tied to the real needs of the market," said Mr. Borch, "inventories are kept in line with demand. This also assures more employment stability, through a definite dampening effect on personnel ups and downs due to poorly forecast production requirements." (See story, opposite page.)

Conversely, when customer orientation is allowed to take a back seat—as it sometimes has in the past—the manufacturer

risks his market position and his reputation, if not his business.

"If we organize our policies around these factors which are mutually important to the customer and to our profits," Mr. Borch concluded, "we will find a real community of interest between the producer and the customer. This is the marketing philosophy, and its realization and practice can change the way of life in the world no less than did the industrial revolution of the 19th Century."

The New Look in Marketing Services

When Marketing Services was established in 1951, one of its pressing problems was to provide the guidance needed by the many new marketing elements then being established as the Company was being rapidly reorganized on a decentralized basis.

Now, with that task well in hand, Marketing Services has just completed its own reorganization. Until last year, its work was broken up neatly among sub-functional services that matched the work in product departments (for advertising and sales promotion, an A&SP counterpart, and so forth). This organizational focus, says Vice President Borch, was useful and timely when the necessary emphasis was on helping new departments get new staffs in place. But it did not readily lend itself to the important phases of services work which involve the marketing function as a whole.

Marketing Services is now gearing itself to work on what Mr. Borch calls "the total marketing package." In addition, it is placing greater emphasis on marketing planning, fundamental research, and personnel development.

Five of the 11 men reporting to Mr. Borch under the new setup are marketing consultants. Each of them (Charles J. Coward, George E. Fouch, Charles G. Klock, Harold W. Poole, and James E. Weldy) has a particular specialty but each is also concerned with the over-all marketing strategy. Each Company department is a client of one of these five consultants. Specialized sub-functional assistance is rendered by the new Marketing Specialization Consulting Service headed by Hershner Cross.

Other components include a Marketing Services Research Service, under John B. McKitterick, which encompasses much of the "look ahead" work on the future problems and opportunities in marketing; a Marketing Personnel Development Service, under John A. Spencer; a Marketing Services Administration Operation, under Edward S. McKay; an Economic Research and Forecasting Operation, under Edwin J. Klock, in which economic statistics for use by the entire Company are collected and analyzed; and a Defense Planning Service under Haywood S. Hansell, which provides advice and counsel on developments peculiar to the Company's national defense activities.

A Case in Point—Fans, Profits, and Steady Work

Practicing the marketing philosophy in General Electric's fan business has contributed to multiple benefits not only for customers but for employees, distributors, dealers, and share owners as well. The case history of this success, involving a product of obvious seasonal ups and downs, features careful planning, accurate market forecasting, and a drastic change in work procedures. Covering a five-year span, these achievements of electric fan production and marketing clearly exemplify the concepts expounded by Vice President Fred J. Borch (see story, page 11).

IN 1951, the Bridgeport fan plant turned out 66 models, many of them short-run types designed for specialized use in limited consumer and commercial markets. Employment was subject to violent seasonal ups and downs, with overtime, layoffs, and much time lost in change-overs and training employees in new operations. Also, profits were down, expenses up, and the many problems attending long-line, short-run operations plagued management, engineers, production workers, and dealers.

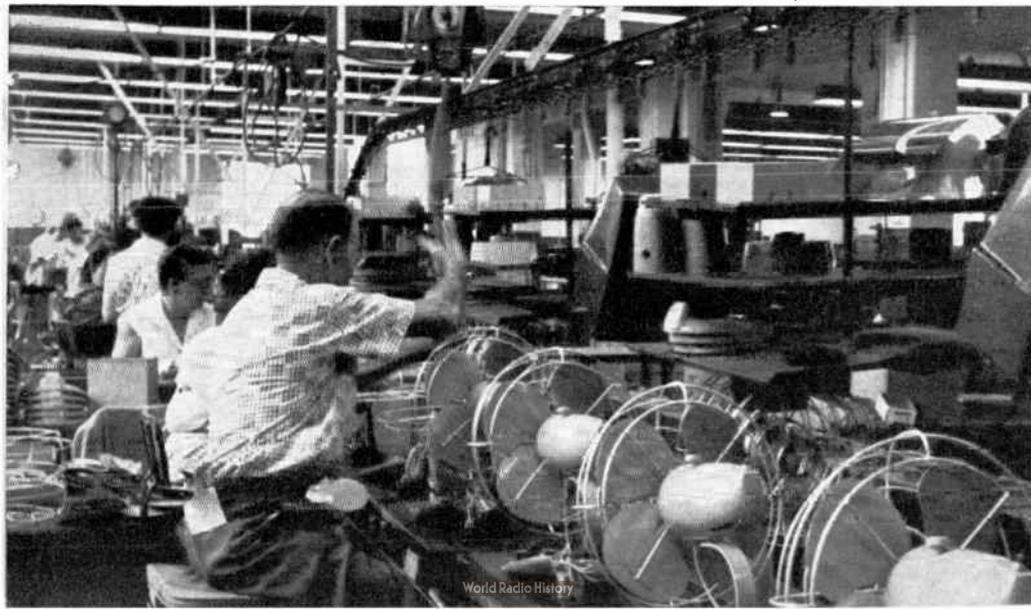
To get out of a rut that led inevitably

to an ever-expanding line, with a compounding of the complex problems already existing, Bridgeport made a drastic and abrupt shift to a short line of only six models, eliminating over 90 per cent of its specialized models in 1952.

A product planning program was then initiated, with the result that fresh new styling and new features were added for customer appeal at sound competitive prices. The changes were aimed at better satisfying the needs of the many, rather than the few, among fan customers. The

AT BRIDGEPORT, MANY MORE ADVANTAGES IN THE LONG RUN

Photo courtesy APPLIANCE MANUFACTURER



1957 fan line includes 13 models, each designed to appeal to a significant segment of the market.

Have the shifts—short lines, customer-oriented styling, competitive pricing—paid off? The answer is, emphatically, yes.

To fan employees, a short line means stabilized production and year-round work, less lost time and more job security, better working conditions and more interesting work. His morale high, the employee reaches peak efficiency faster and maintains it, uninterrupted by layoffs and change-overs. And not only are there steadier jobs but there are more jobs. The number of plant employees went up 272 per cent over the yearly average employed during the long-line, short-run operation, resulting in progress not only for the individual employee but for the Bridgeport community as a whole.

From the dealer's viewpoint, the compact line is easier to display and inventory, customer confusion is minimized, and turnover is faster, meaning more profits.

To management, less labor turnover, better inventory control, improved quality and output, and year-round production efficiencies are some of the advantages. The long-run short line permits investment in specialized equipment. But, as Mr. Borch has pointed out, closer planning—from design to sales—is essential. Trends must be quickly observed and accurately interpreted; on-the-nose sales forecasting is required, and extra care is necessary in all phases.

Sales and Earnings: From 1952 to 1956, sales billed went up 255 per cent, return on investment went up 184 per cent, and General Electric's share of the fan market increased 50 per cent.

Automatic Blanket and Fan Department General Manager Robert O. Fickes credits the over-all results to sound marketing—

which diagnosed the ailment; engineering—which found the cure; and manufacturing—which succeeded in producing a competitively priced product containing the competitive features which are desired by today's fan customers.

But, Mr. Fickes warns, fan sales are, and will probably remain, subject to climatic cycles, and a long-run, limited-model operation will continue to demand particular attention in marketing and engineering; a constant awareness of customer wants and a sufficiently advanced design to insure extended product popularity.

THE SLOGAN

Progress, Nebraska Style

Nebraska's re-elected governor, Victor E. Anderson, last month borrowed what he called "the slogan of a well-known television commercial" as the theme for his inaugural address. The slogan: "Progress Is Our Most Important Product."

Commented Commercial Vice President George L. Irvine in a letter to the Governor:

THE GOVERNOR AND THE CHAIRMAN





A MATTER OF ARITHMETIC: Fred W. McChesney, General Electric's "dean of productivity forums," traces 57-year productivity increases in Newark MPA presentation. By 1976, productivity requirement (for 15.6 million workers on a 34.9-hour week) will be an estimated 61,300 kilowatt-hours per worker.

" . . . of course we are hoping that all citizens of Nebraska knew the organization to which you referred."

Mr. Irvine (who visited the Governor along with Board Chairman Philip D. Reed last fall, photo opposite) praised the address which, indeed, interpreted "progress" in ways with which many in General Electric would agree.

"We are concerned not just with physical progress," the Governor noted. "thrilling and exciting though this may be. We are concerned even more with human progress—with maintaining a wise and frugal government, which will restrain men from injuring one another, will leave them otherwise free to regulate their own pursuits, and will not impose a burdensome tax load that will take from them the fruits they have so justly earned. . . . Genuine progress is spiritual. If what we call material or social progress is achieved at the price of a retreat from spiritual freedom, no matter how this is disguised, it is not progress but retreat."

MARKET DEVELOPMENT

Milestone for MPA

Last month—for the one hundredth time in seven years—General Electric teamed up with an electric utility to conduct a day-long productivity forum for representatives of industry. Co-sponsored by New Jersey's Public Service Electric & Gas Company, the 100th Industrial Productivity Forum was held at Newark with a record attendance of more than 550 manufacturers and businessmen.

The Newark meeting was part of the nationwide More Power to America market-development program to promote community, farm, and industrial electrification. With the theme "New Ideas for Increased Productivity," it included presentations on materials handling and industrial TV.

Setting his sights on 1976, Commercial Vice President Harold A. Olson said

in his keynote address: "To satisfy the demand for all the goods and services by the well-heeled population of 1976 will require expansion on the part of American industry . . . We cannot wait until the 1970's, if we are to have in place, in time, the manufacturing and commercial facilities, the homes, transportation, highways, schools, and hospitals required to fill the needs of a nation of 228 million."

This forum, and those like it held in previous years, was designed to show ways by which industry—through increasing productivity—can prepare for the busy and profitable future.

In recognition of their foresightedness and co-operation, General Electric is presenting framed certificates to the 68 utilities which participated as co-sponsors in MPA's first 100 productivity forums.

With 100 successful forums to its credit, MPA is gaining influence and acceptance on an industry-wide scale. Additional forums are already scheduled for 1957 in various parts of the country.

Birthday for LBE

Live Better—Electrically, the electrical industry's first national promotion effort, celebrated its first birthday on January 30.

In 53 major cities, the feature event of the day was a one-hour closed-circuit television report on LBE's achievements during its first year and its plans for 1957. The live-and-filmed show, starring Gisele MacKenzie and John Daly, was seen simultaneously by combined audiences totaling some 40,000 representatives of the industry—one of the largest business TV hookups ever to be undertaken.

What they saw not only proved the outstanding success of LBE in the past year, but gave promise of even greater

success in the future. By midyear, another 100,000 businessmen will have seen kinescopes of the LBE report and the word will be spread through every conceivable communications medium.

Briefly, LBE's purpose is to get more people to use more electricity, appliances, and electrical products. After one year of operation, has LBE achieved this goal? The report, liberally seasoned with conclusive testimonials from all parts of the country and a variety of businesses, indicates an unqualified "Yes!"

Items:—A Sunland, Calif., builder reports that he sells his homes faster than he can put them up, by featuring all-electric kitchens and 200-amp power.

—An LBE display in a San Diego, Calif., supermarket chain helped increase freezer sales 57 per cent.

—An organized Housepower promotion under the LBE emblem increased wiring business 60 per cent in the Twin Cities of Minneapolis and St. Paul and netted local contractors over 3000 jobs in 1956.

—By promoting LBE with its depositors, a Pensacola, Fla., bank has gained many new financing accounts it would not otherwise have handled.

—Dealers and utilities throughout the Southwest joined forces to make LBE the dominating theme at the Texas State Fair, where 2½ million people visited the huge electrical building display.

Bigger and better plans for the year ahead were previewed at the anniversary meeting. These include a "big spring push"—triggered by the all-out promotion of National Electrical Week (Feb. 10-16) which will steadily gain momentum. In 1957, more and more Americans will become familiar with the circular LBE emblem, while millions of families will learn what it means to Live Better—Electrically.



FOR IGE AND INTERNATIONAL DISTRIBUTORS, AN AUDIENCE IN THE VATICAN

PEOPLE

Papal Audience: Pope Pius XII is pictured above during his 20-minute audience for representatives of International General Electric Company and electrical distributors and their wives from 25 European, Middle Eastern, and African countries, who were in Rome for a marketing conference early this month. Instead of greeting the delegation from his chair, as is the usual custom, His Holiness circulated among the group, speaking to each one in English or one of the other ten languages which he speaks fluently. Heading the 12-man IGE delegation from the Company's New York and Paris offices was Eugene F. Peterson, at the Pope's right, manager of the Consumer Goods Export Department. Countries represented among distributors: Belgian Congo, Belgium, British West

Africa, England, Egypt, France, French West Africa, West Germany, Greece, Iran, Iraq, Italy, Jordan, Kuwait, Lebanon, Morocco, The Netherlands, Portugal, Saudi Arabia, Spain, Sweden, Switzerland, Syria, Tangier, and Turkey.

Mrs. Mary A. Burke, a 45-year-old Philadelphia housewife, will reap a reward from General Electric Company this month for eight years of unstinting public service as an amateur radio operator. In 1952, General Electric's electronic tube marketers sought a way of gaining greater public recognition for the country's earnest and useful band of radio amateurs—and at the same time of enhancing General Electric's prestige among this small but influential group of electronics customers. The solution: the Edison Radio Amateur Award, presented by General Electric for public service by a radio amateur. Now, five years later, the award is a coveted honor among



ONE MONTH'S MESSAGES

"hams." Last month a blue-ribbon judging panel—F.C.C. Commissioner Rosel H. Hyde, Red Cross Chairman E. Roland Harriman, American Radio Relay League President G. L. Dosland, and Herbert Hoover, Jr., then under-secretary of state—picked Mrs. Burke. Mrs. Burke has relayed an almost incredible total of 312,000 messages between overseas servicemen and stateside families and friends since 1949. Mrs. Burke operates her radio amateur service from 6:30 a.m. to 8 p.m. at the rate of 100 messages a day. On February 28 she'll receive her Edison Award cup and \$500 at a banquet ceremony in Washington honoring her—and other radio amateurs whose praises haven't yet been sung.

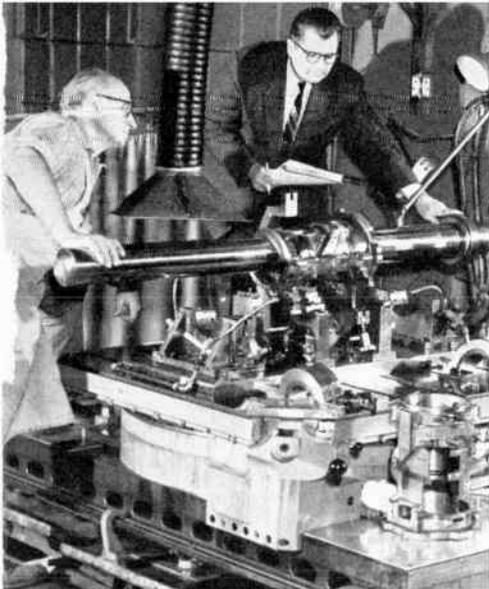
Douglas V. Smith, a Manufacturing Services purchasing-training specialist in New York, last month proved that he also knows something about marketing. Attending a course on management policy given

by management expert Peter Drucker at New York University's Graduate School of Business Administration, purchasing specialist Smith saw an opportunity to make a sale. He wound up by selling 39 copies of President Cordiner's *New Frontiers for Professional Managers* for use as a supplementary text by his classmates—who represent a cross section of American industrial enterprises. Among the purchasers: one man from Westinghouse.

To Fit the Occasion: Appropriately dressed up for National Electrical Week, in a creation of her own design emblazoned with Live Better—Electrically symbols, is Margaret Sineway of LBE's Atlanta, Ga. office. The unusual dress is being copied by Southeastern utilities for use in such LBE promotional activities as home economist meetings, exhibits, and appliance demonstrations. Mrs. Sineway is one woman who, when faced with the problem of what to wear for a special occasion, finds something suitable—even if she has to make it herself!

ONE WEEK'S DRESS





THE IDEA WAS IMPORTANT

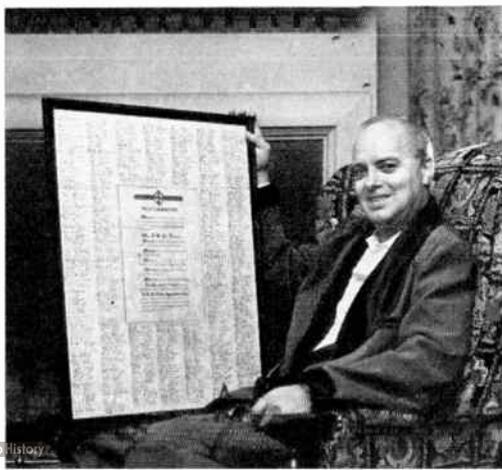
High praise means little, unless it comes in the right form from the right source. From a very right source, though in a somewhat unusual form, spontaneous praise came recently to suggestion investigator Robert W. Gidley (photo above) of the Aircraft Products Department. An impressive petition, addressed to his office and signed by scores of Schenectady employees, commended Mr. Gidley—not only for the outstanding job he is doing, but particularly for the friendly, considerate, and sincerely interested manner in which he is doing it. So effective have been his individualized efforts in human relations, that 84 enthusiastic fellow employees chose this expressive way of showing their appreciation. More important, the original idea was their own. And it is one idea that Bob Gidley will never have to investigate.

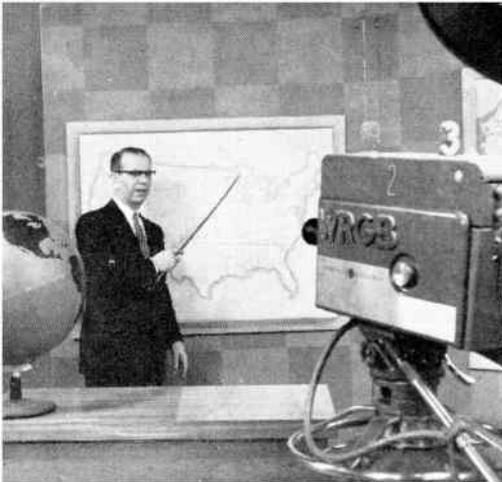
Many more signatures were affixed to another type of testimonial document by the 548 employees of the Asheboro

(N.C.) electric blanket plant, who recently presented a parchment proclamation to plant manager Jack O. DeVries (photo below). The Asheboro General Electric Employees Association voted to give the popular manager a permanent token of their esteem and presented the scroll to Mr. DeVries at home on the day following his return from a local hospital after an emergency appendectomy.

A new share owner is Mrs. Rose Heiden, a grandmother-to-be of Lake City, S.C., who won four shares of General Electric stock on NBC-TV's quiz *The Price Is Right*. Mrs. Heiden and three other contestants attempted to guess the actual cash value of four shares of stock, with the closest bidder reaping the stock as the reward. On the day of the program, the market price for four shares of General Electric was \$216. Mrs. Heiden, whose winning guess was only \$150, far underestimated the value of her winnings, but her fellow contestants had inflated ideas of the cost of becoming a General Electric share owner and put their bids over the \$300 mark. Exclaimed Mrs. Heiden, excitedly, "I'm a stock holder!"

THE SENTIMENT WAS APPRECIATED





A TASTE OF COLLEGE OVER WRGB

AROUND THE COMPANY

Carte Blanche: It seems that appliance serviceman H. E. Hardeman of Borger, Texas, puts his confidence in General Electric—in more ways than one. Returning a refrigeration-leak detector to the West Lynn (Mass.) plant for repairs last month, Mr. Hardeman enclosed a signed *blank* check. No slip of the pen, the check was accompanied by a note suggesting that the Instrument Department “fill in the correct amount.” The unique arrangement happily proved satisfactory to all concerned.

Course Credit Via TV: For the first time in New York State, high school seniors are earning credits toward college degrees while sitting in their classrooms watching television. Three mornings a week, General Electric’s Schenectady TV station, WRGB, broadcasts a course in Introductory Geography, taught by Dr. Howard H. Flierl (photo above), associate professor at the State University of New

York in Albany. Successful completion will give the student two units of undergraduate credit at the State University and other institutions. Dr. William S. Carlson, president of the university, has called the series “a milestone in educational television in New York State.” Said he, “The Mohawk-Hudson Council on Educational Television and Station WRGB are to be congratulated for their leadership in making such programming possible.”

Starting February 18. Edward Bullock, an engineering supervisor in the Aircraft Accessory Turbine Department, and 29 other AAT engineers will be trekking off to high schools in the Lynn-Boston area. Their mission: to explain the role of the engineer in today’s world. The occasion for the activity is Engineers’ Week, February 18-23. Mr. Bullock, head of the AAT Engineers’ Week committee, plans to have five-man teams of engineers conduct forums in each of 15 schools in the area, to stimulate a realistic interest in engineering on the part of not only potential engineers but all students. The AAT program is the local application of the national Engineers’ Week campaign sponsored by leading engineering figures, among them General Electric Engineering Services’ vice president, Clarence H. Linder, who chose the occasion to urge engineers to “translate new knowledge into more and better goods and service and to meet aggressively their ever-increasing social responsibilities.”

Latest evidence of the effort to speed the translation of new research knowledge into new products, new materials, new methods, new jobs, comes from Electronics Park in Syracuse. There the Semiconductor Products Department has set up an Advanced Semiconductor Lab-



SEAWOLF UNLEASHED IN LONG ISLAND SOUND

oratory "to bridge the gap between basic research and semiconductor product engineering," with a staff of 15 research scientists headed by Dr. Harris M. Sullivan, manager of the laboratory. The department produces germanium and silicon transistors, rectifiers, and diodes for rapidly expanding markets. (*The Monogram*, Jan. 1957, page 18.)

Enemy mortar fire was one of the biggest factors in Army battle casualties in both World War II and the Korean action. Now, General Electric and the Signal Corps have come up with a new radar unit which can pinpoint enemy mortars within seconds after they are first fired, and provide information which field artillery units need to direct accurate counterfire. The mortar

locator, just announced by John J. Farrell, general manager of the Heavy Military Electronic Equipment Department, combines both mobility and accuracy. It is transportable on two small trailers and can be set up in ten minutes on any site. Production has started at Syracuse.

Underway for the first time, the nuclear-powered submarine USS *Seawolf* began her builder's sea trials off the New England coast January 21 (photo above). The *Seawolf*, whose liquid-sodium-cooled reactor was built by General Electric, operated both surfaced and submerged on her maiden voyage out of New London, Conn. The submarine was built by General Dynamics Corporation at Groton, Conn.

WHAT'S NEW

White Pass and Yukon is the name of an Alaskan railway which has to contend with, among other things, temperatures of 65° below zero, snowdrifts 35 feet high, and a two-story station at the summit of Alaska's White Pass which occasionally disappears when the snow gets too deep. WP&Y officials have decided that diesel-electric engines—specifically, models from General Electric's Locomotive & Car Equipment plant at Erie—will help solve many of the problems. Three engines were shipped from Erie to Skagway, Alaska, last month to join two others already in service and to replace less efficient steam engines. The new engines have special snowplows and other winterizing features—none of which promise to keep the White Pass station from sinking periodically into snowy oblivion.

Now It Can Be Told: Her Serene Highness, Princess Grace of Monaco, picked an automatic washer and matching clothes dryer for the royal palace during her trip to the United States last December. The units were custom-built at Appliance Park to meet palace electrical requirements, were air shipped by International General Electric, and were delivered well in advance of the arrival of Princess Caroline. The color: an intuitive petal pink.

Mite-sized Methuselah: A tiny (one inch long) new battery with a projected life of 20 years is in pilot production at the Auburn, N. Y., plant of the Specialty Electronic Components Department. The new unit is designed for highly specialized uses requiring small size, long life, and high voltage output. It produces 95 volts, weighs

GENERAL ELECTRIC ON TV

General Electric Theater

(CBS, 9-9:30 p.m. EST)

Feb. 24—"Flight from Tormendero,"
Donna Reed.

Mar. 3—"The Fenton Touch," Jack
Benny.

Mar. 10—"With Malice Toward One,"
Bette Davis.

Mar. 17—"The Victorian Chaise
Longue," Joan Fontaine.

Warner Brothers Presents

(ABC, 7:30-8:30 p.m. EST)

Feb. 26; Mar. 11—"Cheyenne."

Broken Arrow

(ABC, 9-9:30 p.m. EST)

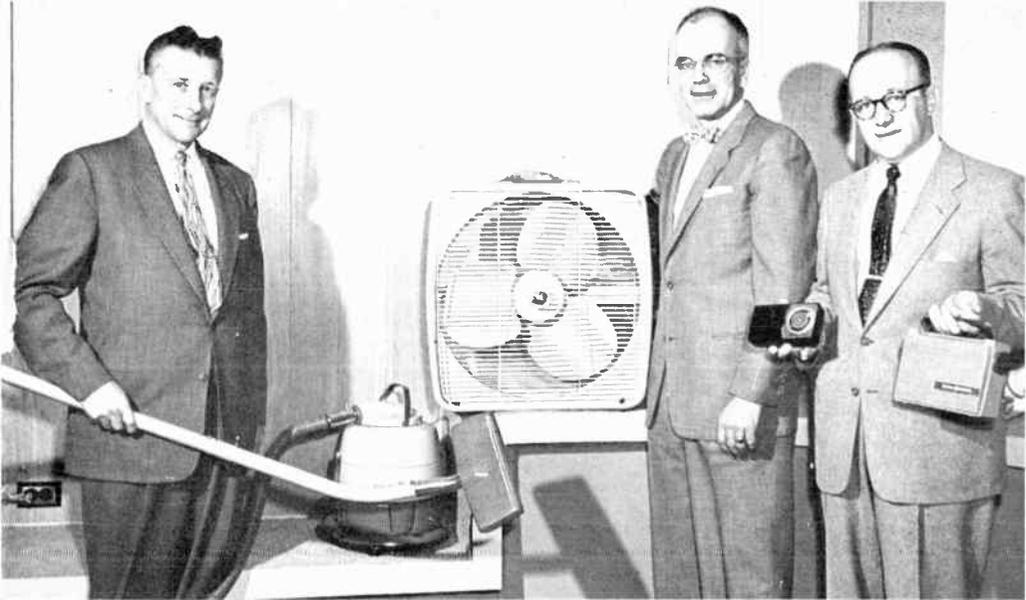
Feb. 19, 26; Mar. 4, 11.

but a fifth of an ounce, and retails for \$12.50. It has been estimated that mass production could eventually cut the price of the battery to approximately one dollar.

PRODUCTS

All-Purpose Fan: Newest member of General Electric's 13-unit 1957 fan line (see p. 15) is a 20-inch portable (model W-6) which can be used either as a window fan or as an air circulating fan anywhere about the house. Featuring three-speed control and a disappearing carrying handle, the lightweight W-6 can easily be reversed in a window. It sells for \$39.95 (recommended retail price) and is styled in a gray-and-white color scheme to blend with any décor.

Housewives will like the new double-action cleaning unit for rugs and



MARKETING MANAGERS display new wares: Joseph C. Hunt (with Roll-Around vacuum cleaner), David T. Meskill (with 20-inch portable fan), S. Martin Fassler (with new pocket and portable radios).

floors, featured on General Electric's 1957 Roll-Around vacuum cleaner (Model C-1). It has two spring-mounted, self-leveling brushes that adjust automatically to all carpet and floor surfaces without special attachments. The Roll-Around retails at \$54.95—\$41.21 for employees. Also announced is a \$10 price reduction on the Roll-Easy; \$14.96 is the new employee price.

Transistor Radios: General Electric's new radio line includes a smaller and lighter (16 oz. with batteries) pocket model with non-snag styling and a six-transistor portable with built-in ferrite antenna. The pocket radio, 6 $\frac{3}{8}$ in. long, is equipped with four transistors and one crystal diode that provide 100 intermittent hours of normal play on one set of mercury batteries, or 100-200 hours on pen light cells. It is priced at \$34.95 retail and comes in two colors with gold trim. The portable model, 5 $\frac{1}{4}$ in.

high, will play 100-600 intermittent hours on one set of flashlight batteries. Costing \$19.95, it weighs four pounds.

ORGANIZATION

Measurements and Industrial Products

Effective March 1, Robert B. Hanna, Jr., is appointed general manager of the Industrial Heating Department.

Public and Employee Relations Services

Emil Peters, real estate counsel, Corporate Legal Operation, and Ralston B. Reid, manager of Advertising and Sales Promotion, Apparatus Sales Division, have been elected to the Board of Directors of The Maqua Company.

Behind Lynn's Progress: Planning ²⁴

THE RACE, it has been said, goes to him who runs swiftly—with care.

At Lynn, the Company's Medium Steam Turbine, Generator and Gear Department is running its race in just that way. (See story, page 1.)

Sales there are at a new peacetime peak. So is employment. Output in both this year and next is expected to be 60 per cent over last year. The potentials of the business are such that, to its \$5-million investment of last year, the department is adding another \$9 million this year in new plant and equipment and associated costs.

The casual observer might be tempted to see this business as one which is racing along with abandon. In point of fact, this is not the case. The business is being built swiftly—as befits a business which must supply generating equipment for the nation's ever-growing power needs—but it is also being built with care.

The very sizable investments which are being made at Lynn are planned investments, long-term investments to enable the department to measure up to predictable opportunities. They are investments which are being made with careful consideration for the need to apply seasoned manpower, money, and technological knowledge to the most promising opportunities.

The best measure of the results of General Electric's growth, as it doubles its business in the next eight years, will be in terms of benefits to people—customers, employees, share owners, other businessmen, and just plain individual citizens. The quality of those results will be based largely on the Company's skill and care in evaluating its opportunities and resources as it runs its long-distance race to achieve its growth goals.