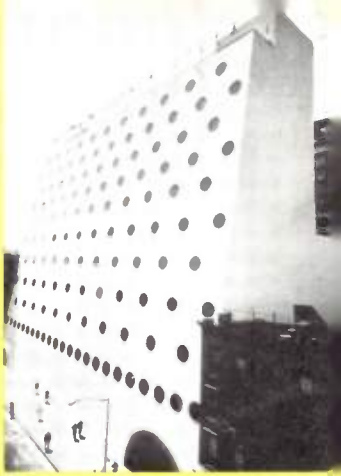
THE MONOGRAM

JULY-AUGUST 1966

FIRST STEPS AT CLINTON TRAINING CENTER . . . p. 7



EQUIPPING SEA SCHOOL

BIRTHDAY IN VIRGINIA

TINY CLOCK-RADIO

INSIDE: Biggest Nuclear Order . . . Video Tape Recorder
Hot Business in Cooling . . . Faster Motor Service

LETTERS

What Happiness Is?

EDITOR: That was a happy way to lead off your June issue, telling us of the engagement of two trainees. But when you get down to it, who's happy about it?

Maybe three people. The betrothed couple, who have found the key to a lifetime of happiness, and the editor of *The Monogram* who found a dandy lead story.

Not managers-manufacturing across the Company, who have little chance of obtaining Mary Lou's talent—unless she waives the role of housewife-mother AND her husband takes a job in a GE location that manufactures AND is willing to move with her when Mary Lou gets a transfer-promotion showing she grows with the job.

Not I, a shareowner who watches my Company invest in the salary, benefits and training of an employee who is a long shot to return the investment in Company service.

I love the ladies. I bear no discrimination on sex, but I do hold shares and a grudge against recruiters and ERMs who spend my money on training young, attractive girls for marriage instead of manufacturing.

NAT BOYNTON
Schenectady, N.Y.

Aside from our obligations under the equal employment opportunity law, the Company needs all the bright, competent young people we can find. When and if Miss Maddux officially joins the Manufacturing Training Program next June (she's actually on a co-op assignment now), she'll be expected to fulfill the requirements of the program including moving to new assignments. As a matter of fact, there are a good many wives of trainees who'll tell you moving isn't a novel experience for them. We think Mary Lou will warrant the Company investment, but there's always some risk with every trainee. We're still happy about it.—Ed.

Instrument Check

EDITOR: Your interesting cover story "Round the World by Business Jet" neglected to mention the most important General Electric equipment aboard the Jet Commander—instruments supplied by the Instrument Department in West Lynn. As the aerospace instrument representative calling on Aero Commander, my view is slightly biased, but there

(*continued on inside back cover*)

The object of *The Monogram* is to keep its readers informed on General Electric activities so they may contribute more effectively to General Electric progress on the job and better represent the Company in its relations with the public.

IN THIS ISSUE

Richard T. Tibbetts, Editor

Devere E. Logan

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GENERAL ELECTRIC

VOL. 15, NO. 7

THE GENERAL ELECTRIC
MONOGRAM

JULY-AUGUST, 1966

UNION RELATIONS

To Court on the Coalition

Court hearings on a motion to issue a temporary injunction ordering General Electric to bargain with a "de facto" union coalition group were in progress as *The Monogram* went to press.

The motion was requested by the IUE and presented by the National Labor Relations Board to the United States District Court in New York City. Earlier in July, an NLRB regional director had dismissed the Company's charges against the eight-union bargaining coalition and issued a complaint in response to union charges that the Company should have met with the coalition group for prenegotiation discussions last May.

At the May meeting, the IUE, after having informed the Company it was abandoning suggestions for joint meetings, introduced an "IUE negotiating committee" which included representatives of most of the other seven unions in the proposed coalition. Philip D. Moore, the Company's chief negotiator, termed this approach by the IUE "subterfuge" and refused to meet with a "de facto" coalition group.

At the court hearings, IUE President Paul Jennings and IUE-GE Conference Board Chairman John Callahan maintained that the IUE has "abandoned" coalition bargaining. And they warned that there will be an IUE strike of General Electric on Oct. 3 (when the present contract expires) if the Company does not meet with "a committee of the IUE."

General Electric spokesmen had not yet been called to testify when *The Monogram* went to press. But in response to questions from a news reporter, Mr. Moore expressed the Company's view that a strike would not be the necessary consequence of the court dismissing the case.

"We don't believe an IUE strike is inevitable unless the union is dead-set on calling one this year," Mr. Moore said. "As far as General Electric is concerned, we expect to commence negotiations with IUE within two weeks (of July 28) because, if the court tells us we have to meet with IUE along with the other union representatives, we will do so; on the other hand, we feel sure that if the IUE loses the court case, they will come to the bargaining table promptly."

David L. Benetar, the attorney representing GE, told the court that the Company sees the threat of a strike "coming much more imminently from a coalition which would attempt, as they have publicly declared, to have a nation-wide or Company-wide or multi-plant strike against the Company."

Unsettled Issue: Company spokesmen pointed out that no matter how the court rules on the application for a temporary injunction it will not be a ruling on the merits of the issue of "the subterfuge approach to coalition bargaining." That issue, it was noted, will be determined initially by the NLRB under its formal

procedures on the complaint issued by its regional director. Those procedures were scheduled to begin Aug. 16 in New York, may last well into the fall, and then will be subject to almost certain appeal to the courts, regardless of the outcome.

Earlier, the Company had announced it would appeal the dismissal by the NLRB regional director of its charges against the eight-union coalition whose bargaining objectives were seen by the Company as illegal on five different counts.

Meanwhile, other developments tended to support the Company's contention that the coalition was bent on a strike course.

In Schenectady, the second largest IUE local in the Company asked for and got authorization from its members to call a strike on Oct. 3 if national or local agreements had not been reached. Schenectady management observed that "never before has the IUE used tactics such as these to get a blank-check strike authorization before any issues are defined" and saw "the hand of the coalition reaching out to Schenectady."

Time lost to strikes and walkouts in the first six months of 1966 was running many times ahead of the rate in the previous four years, and Company spokesmen pointed out that almost all the strike activity came at locations represented by members of the coalition.

On the other hand, General Electric representatives have been holding prenegotiation meetings with the UE, which is not a member of the coalition. Almost 20 of these GE-UE sessions had been held by the end of July. In June, the Company offered to broaden the scope of these discussions to include vacation, insurance and pensions without making any promises about changing them. The current contract on these subjects does not expire until 1968.

OPERATING RESULTS

A Record First Half

Whatever the portents for the months ahead, General Electric has whipped through its strongest first half in history.

President Fred J. Borch reported sales up 18 percent and earnings up 13 percent for the first six months compared to the same period a year ago. Employee pay and benefits and Company purchases of materials and services also set new records.

Only indicator to decline was the figure for earnings per dollar of sales. The 1966 figure was 5.2 cents per dollar of sales, down from 5.4 cents in the prior period. Mr. Borch said the decline reflected in part higher development costs in preparation for a larger role in a number of defense and aerospace projects.

Sales for the first half rose to $3,334,205.000—up from $2,817,031,000 a year ago. Earnings reached $172.666,000 or $1.89 a share. The 1965 figures were $152,418,000 or $1.67 a share.

Broad Advance: Mr. Borch noted that the sales increases were shared "across the board" by the Company's major product groupings. He also commented that they reflect the continued high level of business activity in the nation generally.

Sales for the second quarter hit $1,768,426,000 and earnings totaled $90,903,000 —both up substantially from 1965.

Employee pay and benefits reached a first half high of $1,380,000,000 while the record amount paid to suppliers of materials and services was $1,580,000,000.

Results were reported on the new world-wide basis of consolidation adopted by the Company for the 1965 Annual Report.

AT DEADLINE

New Director: Frederick B. Dent, a South Carolina textile manufacturer, has been elected a member of the Company's Board of Directors. His election brings the number of directors to 18, all but two from outside the Company. Mr. Dent is president of Mayfair Mills in Arcadia, S. C., and vice-president of the American Textile Manufacturers Institute.

Nimbus Progress: The Nimbus II weather satellite, for which Missile and Space Division was the prime contractor, passed its final test objective of two months of continuous operation in mid-July. National Aeronautics and Space Administration reported at that time that Nimbus "has not had a failure in two months of a 24-hour-a-day operation." In its first two months of operation, the satellite travelled more than 20 million miles, received more than 23,000 commands or instructions from ground controls and took over 150,000 pictures. By the end of July, Nimbus completed its 1000th orbit, a new record for complex orbiting satellites.

Export Orders: IGE Export Division has received million-dollar orders from England and Mexico. The British contract calls for three steam turbines and a gear for the world's largest ethylene plant located in Yorkshire. One of the three turbines, a 35,640-hp unit, will be the largest ever built by the Small Steam Turbine Department in Fitchburg, Mass. The other order for more than $1 million is for the installation of a preliminary network of ten television stations which will cover the principal cities of the Mexican Republic. The contract with the network which will ultimately have 30 stations is described as the most important television contract ever signed by the Company with a private firm outside the U.S.

Chemical Venture: A new company has been formed to develop and commercialize products based upon certain proprietary General Electric polymers in the field of oxidative coupling chemistry. General Electric will have a majority interest in the new company; American Enka Corp. and Algemene Kunstzijde Unie (AKU) of The Netherlands will hold the remaining shares. Products of the new firm will be marketed by American Enka. A pilot plant is now under construction at Enka, N. C.

JET ENGINES

Running for the SST

General Electric's giant turbojet engine for the U.S. supersonic transport (SST) ran successfully in its initial test at the Evendale plant in July.

The GE4 turbojet, which will be in the 60,000-pounds-thrust class when in commercial service, was started and accelerated to idle speed on July 18, then run up to 100 percent speed on July 20. The latter event took place nine days ahead of the contract testing date established a year and a half ago.

On Schedule: The excellent performance of the engine prompted this comment from Edward E. Hood, Jr., director of the Company's SST project: "Successful operation of the GE4 on test and ahead of schedule substantiates our belief that it is feasible to build a long-life, low-cost, high-performance engine that can be delivered to airlines in the required time."

Present schedules call for the U. S. SST prototype to make its first flight in late 1969 or early 1970 and to enter commercial service in 1974 following a rigorous flight evaluation program.

Development work on the GE4 is proceeding under a Federal Aviation Agency Phase IIC contract, which calls for an 18-month competitive period of initial aircraft and engine design and development.

Winners of the airframe and engine competition are scheduled to be announced by the FAA on January 1, 1967. Pratt & Whitney is competing with our Flight Propulsion Division for engines; Boeing and Lockheed are the airframe competitors.

Power-Plus: Four GE4 turbojet engines, designed for use with either the Boeing or Lockheed competing airframe designs, would propel the SST at 1800 miles an hour (2.7 times the speed of sound) at altitudes of 65,000 to 75,000 feet.

The GE4's 60,000 pounds of thrust would be three times as powerful as engines on present-day, subsonic, long-haul commercial airliners and nearly twice as powerful as the turbojet engines for the Anglo-French SST, the Concorde.

Mr. Hood said that component testing which preceded the full engine test will continue in parallel, together with large-scale noise testing using the J93 turbojet.

ATOMIC POWER

The TVA Order

The biggest order in General Electric history, outside the aerospace field, went in June to San Jose and Schenectady.

The customer was the Tennessee Valley Authority, and the order, for TVA's first nuclear generating plant, broke several records besides the Company sales figure.

For $122,698,000, General Electric will supply two power generating units of 1.1-million kw capacity each, including nuclear systems, turbine generators and allied equipment. Atomic Power Equipment Department will also provide the fuel, and San Jose won an additional contract for $66 million for the initial supply.

King-size: The 2.2-million kw plant which will be located in northern Alabama, about 25 miles west of Huntsville, is the largest nuclear generating station, now operating or on order. Each of the nuclear units will be bigger than any single

atomic-fueled unit in the world, and the turbine generators will also be record-setters.

But the project has great significance beyond sheer size:

- TVA's decision to build a nuclear plant after an "exhaustive study" is a big victory for atomic power in its competitive battle with fossil-fueled stations. The *Wall Street Journal* described TVA as "the country's biggest user of coal."
- The TVA order highlights a year in which nuclear purchases are outstripping the most optimistic prediction. *Electrical World* magazine reported that utilities in the first six months of 1966 had announced plans for 58 percent more nuclear power capacity than in all previous years combined.
- TVA announced it would act as its own prime contractor, architect-engineer and plant builder—a development which the Company sought to encourage earlier in June when we informed the industry that GE would accept no more nuclear orders on a "turnkey" basis.

Total cost of TVA's nuclear plant, excluding fuel, is estimated at $247 million —$11 million less than the estimate for a coal plant. As for fuel, TVA found that the nuclear station "would provide savings exceeding $8 million a year over the coal-burning alternative, for a total saving of about $100 million in the twelve-year period in which the cost of the fuel for the nuclear plant is guaranteed."

Based on advancing nuclear technology, General Electric guaranteed declining fuel costs, ranging from 14.9 cents per million Btu in 1970 when the first unit is scheduled for operation to 10.31 cents by the end of the 12-year warranty.

Because of the dissimilarity in equipment and fuel, TVA evaluated bids on the basis of cost per kilowatt-hour of energy produced. Cost for the nuclear plant is estimated at 2.37 mills a kilowatt-hour, 20 percent less than the 2.83 mills for the coal-using plant. Chief competitors for GE were Westinghouse, for the nuclear plant, and Brown-Boveri of Switzerland, low bidder on the coal plant.

Outlook for Coal: TVA pointed out that it would continue to be a major coal user and expected its coal purchases to rise from about 25 million tons a year to 30 million tons a year over the next five years.

No More Turnkey

Reaction from utilities to General Electric's decision to refrain from bidding on turnkey nuclear plants was quick and, for the most part, enthusiastic.

Within three weeks of the announcement, utilities had revealed plans for four major nuclear generating stations to be constructed on a non-turnkey basis.

The reasoning behind the GE move was summed up by Vice President James F. Young, general manager of the Nuclear Energy Division (formerly Atomic Products): "We consider it time that General Electric return to its historic role as a systems manufacturer and supplier—to get out of the construction business—including construction labor, materials, and techniques. This will enable us to devote our manpower and energies to the technical areas where we are most able, and where we can make our greatest contribution."

Instead of a complete nuclear plant, the Company will offer a "nuclear system," consisting of the nuclear boiler, nuclear fuel, associated auxiliary systems, and related services. GE will retain responsibility for safety and other features of the nuclear system and for nuclear system performance warranty.

The turbine generator, as well as such other GE equipment as transformers and switchgear, will be quoted separately and contracted for separately by a customer, not as part of the "nuclear system" package. Electric Utility Sales Division will continue to represent various manufacturing components to the customer.

Exceptions to the non-turnkey policy are five domestic projects on which the Company has already made commitments or has outstanding quotes and all overseas nuclear plants, which traditionally are handled differently from U.S. projects.

Otherwise, utilities will be expected to take responsibility for their own design work or employ architect-engineering firms for the purpose. Some utilities have already elected this alternative. For instance, San Jose took non-turnkey contracts in previous years for Pacific Gas & Electric's Humboldt Bay plant, Niagara Mohawk's Nine Mile Point plant, and Consumers Power's Big Rock Point plant.

Mr. Young suggested that the move may well heighten competition in the field, observing that "our government representatives have indicated that turnkey offerings may serve to limit the spread of participation in the nuclear industry."

Substantiation for that view was not long in coming. Early in July, Duke Power Company announced plans for the largest capacity nuclear plant yet purchased by an investor-owned utility under a single contract. The order for two 822,000-kw nuclear steam supply systems went to Babcock & Wilcox.

VICE PRESIDENT YOUNG
Key month for atomic power.

New Venture in Japan

General Electric and two major Japanese electrical manufacturers have formed a jointly owned company to manufacture nuclear fuel for power reactors overseas.

Tokyo Shibaura Electric Co., Ltd., (Toshiba) and Hitachi, Ltd., have also signed separate technology exchange and systems licensing agreements with the Company covering the design and manufacture of GE boiling water reactors.

These agreements are all subject to approval by the Japanese government.

The Japanese agreement follows by one year Atomic Power Equipment Department's first overseas joint venture and licensing agreement with Allgemeine Elektricatats-Gesellschaft (AEG). The German fuel manufacturing plant is scheduled for startup this fall.

Our Good Customer

The Company's biggest atomic power customer, Commonwealth Edison, exercised its option in July for a fourth 809,000-kw nuclear generating unit.

The new unit will join another of the same size at the Quad Cities power station near Cordova, Ill. Commonwealth Edison Chairman J. Harris Ward said the total contract price for this unit and the one ordered in March will be about $160 million.

Two other 809.000-kw nuclear units have been ordered from San Jose for the utility's Dresden station near Chicago.

When all four units are completed in 1971, Commonwealth Edison will have about one-fourth of its total generating capacity in nuclear plants.

JOB CORPS

A Beginning at Clinton

Twenty miles up river from the site of the Quad Cities nuclear plant, General Electric was beginning another business venture with profound implications for America's future.

There in June, at a former Veterans Administration hospital in the town of Clinton on the Iowa side of the Mississippi, the Company welcomed the first group of 64 girls to its Job Corps training center.

For General Electric, which has trained thousands of employees in job skills, their arrival signaled the start of a new experience—the schooling of large numbers of job seekers outside an industrial environment.

For the trainees, drawn from deprived areas all over the United States, their new home in mid-America represents an opportunity to equip themselves for steady employment and a better life than they have known.

Staff Ready: The first contingent of Clinton Corpswomen was met by Director Wilford A. Lewis and his staff (on cover. Mr. Lewis chats with some of the early arrivals). Mr. Lewis, a former college instructor with a reputation for getting things done on the Polaris missile program at the Ordnance Department in Pittsfield, has been canvassing a wide area of the country for administrators, instructors, counsellors, and resident advisors since the Company signed the Job Corps contract in March.

The staff now exceeds 200 and only about 15 have previous GE experience. Among the latter are the manager of facilities, Victor Loskot (Valley Forge); manager of finance, John Copenhaver (Syracuse); manager of relations, John Grier (Utica); and manager of program administration, Robert Smythe (Pittsfield). Dr. Barbara Mason, former principal of a New Rochelle, N.Y., high school, is the director of education. While many staff members come from the Iowa-Illinois area, some 23 states contributed trained personnel.

Studies: After a two-week orientation period, the girls in Clinton began preparing themselves for jobs in the fields of health occupations, cosmetology, business and office, culinary arts, or retailing. The length of their training will depend on their progress.

By the end of July, enrollment at Clinton had risen above 150, a student government had been elected, and a Center newspaper was being published. And the public was invited in each Saturday for tours of the center conducted by Corpswomen.

Contractors were at work on the 80-acre, 67-building campus to enlarge and modernize instructional areas, improve dormitory facilities, and put the swimming pool, gymnasium and theater into condition. Completion date is early fall when Clinton's total complement of 600 enrollees will be in residence.

RADIO AND RECHARGER-CLOCK
Big value from a little package.

CONSUMER ELECTRONICS

Thinking Smaller

A revolution may explode in the personal entertainment market this fall when a new, ultra-compact clock radio is introduced by the Consumer Electronics Division.

On the outside there is a small portable radio the size of a cigarette package that plugs into a recharger base to make the smallest clock radio unit on the market (see photo).

But inside is a sophisticated departure from conventional units: instead of transistors there is but one tiny silicon chip measuring only 1/32 of an inch square. This "microelectronic" chip contains most of the elements required for a radio circuit.

General Electric's new clock radio is our first consumer entertainment product to use such subminiature circuitry. Yet, it is being offered at a reasonable figure ($39.95 suggested retail price). *Merchandising Week* magazine commented on the introduction: "GE has taken a giant step into a third generation of technology, moving beyond the vacuum tube and the transistor."

More than Size: Although microelectronics makes possible the reduction in size of many products, Robert C. Wilson, vice president and general manager of the Consumer Electronics Division, says that "Dramatically improved reliability is the major advantage.

"Elimination of the wiring, connections, and many individual components that comprise a conventional circuit has vastly reduced the likelihood of failure," he said.

Mr. Wilson's sincerity is reflected in an unprecedented three-year warranty covering both parts and labor on the new radio. This contrasts with the standard 90-day warranty period for other radios made by the Company.

The warranty also covers the GE-designed rechargeable nickel cadmium battery which powers the radio. The battery —from the Capacitor Department's Battery Business Section at Gainesville, Flor-

MICROCIRCUITS are checked by George B. Farnsworth, left, manager of marketing and William G. Gingrich, manager, multi-element devices sales and planning, Semiconductor Products Department.

ida—will power the radio for 12 hours from an overnight charge.

Cutting Costs: Microcircuits, which resulted from a need for compact, reliable circuitry for military and space applications, cost as much as $475 each in 1961. The real breakthrough came when the Semiconductor Products Department applied mass manufacturing techniques to reduce the price to under one dollar, thus making the circuits suitable for a variety of applications.

Semiconductor Products, which is supplying the microcircuits, will spend the balance of this year building up and refining its mechanized production line according to William G. Gingrich, manager of multi-element devices sales and planning. By next year, additional standard units will be offered to other users in addition to custom circuits.

The era of microcircuitry offers many interesting possibilities, according to Mr. Wilson. For example, he envisions pocket-size tape recorders, a radio in a signet ring, or a television set that could be held in the palm of the hand.

Later this year, the clock radio will be joined by other products containing microcircuits: a portable television receiver and a phonograph. By 1970, all of GE's consumer electronics products will use some form of the tiny chips, says Mr. Wilson.

According to William M. Lynch (see cover), general manager of the Radio Receiver Department, the new clock radios will be manufactured in Utica.

Video Recording at Home

A new video recorder is being marketed this fall that will tape record television programs directly from the home screen or make "instant electronic movies" for playback minutes or years later.

DECATUR'S WALDRON AND RECORDER
A television studio in your living room.

Consumer Electronics Division, which plans to market the units about November 1, will lead off with a black-and-white unit and then, early next year, supply a color unit.

The video recorder is actually a system of several component parts, and the consumer is offered an option of adding to his basic system. To record "off the air" for later playback, for example, all the user needs is a video recorder with matching receiver.

To produce his own television programs or "instant home movies," a GE PE-23 miniature home video camera can be added to the system.

The black-and-white recorder plays up to 90 minutes while the color system provides up to an hour of recording.

Prices will range from under $850 for the monochrome home recorder to as much as $4,000 for a professional-quality educational or industrial recording system.

Hicks B. Waldron, (see photo) general manager of the Audio Products Depart-

ment which will produce the recorders in Decatur, said that prices for the color systems haven't been determined. He said, however, that within normal price ranges for consumer electronics products, a home unit including color recorder and color receiver will obviously be more expensive—possibly above $2,000.

The color system was viewed with great interest at the first major demonstration of the video recorders in Chicago. Some 20,000 industry tradesmen at the annual Music Show in mid-July saw continuous demonstrations, including such color programming fare as "The Flintstones."

The addition of video recorder production to the Decatur plant will be accomplished using existing facilities, noted Mr. Waldron. He said that the new product line should have a stabilizing effect on Decatur employment.

Jack L. Hunter, marketing manager for the department, is enthused over the potential of the video recorder business. In his opinion, the Company is entering a "fresh, untapped field of vast potential."

TELEVISION

Porta-Color to Portsmouth

Four months after the first television set rolled off its assembly line, the Portsmouth, Va., plant has been scheduled for a $10 million expansion program which will double its size and equip it to produce the fast-selling Porta-Color* models now made in Syracuse.

Portsmouth began production of black-and-white personal portables (sets with picture tube sizes of 16 inches or smaller) on February 14 after a crash program to renovate a vacant, former U. S. Marine Corps warehouse and to train employees (*The Monogram*, April '66). In June, the Television Receiver Department announced the facility would be doubled to about 400,000 square feet and that the portable color TV line would be transferred to Portsmouth by next spring.

Employment in Portsmouth has now passed 1200, and department officials predicted the total would top 3000 by June of 1967.

About 425 production employees now work on the Porta-Color line in Syracuse. Relations Manager Gilbert E. Dwyer said the tight employment picture in Syracuse "would seem to virtually assure that all of these employees will be absorbed by other GE operations in Syracuse."

Mr. Dwyer cited the continuing difficulties in obtaining employees for the department's second and third shifts and the pressing shortage of manufacturing space in Syracuse as prime reasons for the Porta-Color move. He said that Company operations in Syracuse will need 2000 new employees by the end of the year.

To help meet those requirements for additional employees, the Company established a pre-employment training school near Electronics Park in July.

New Move Studied: Shortage of personnel and manufacturing space is also causing the Television Receiver Department to consider the possible relocation of large screen color (19-inch to 25-inch screen sizes) production, Mr. Dwyer reported.

A $15-million expansion in the Cathode Ray Tube Operation is now underway in Syracuse. That operation will continue to supply color picture tubes for the Porta-Color sets after the production line has been moved to Portsmouth.

Trademark of General Electric Co.

THE GOVERNOR AT LYNCHBURG
Open house for a birthday.

ANNIVERSARIES

Decade in Virginia

While Portsmouth was enjoying a booming infancy, a couple of older members of the General Electric family in Virginia were rounding out their first decade in the Old Dominion.

At Lynchburg in June, more than 3000 guests, including Gov. Mills E. Godwin, Jr., showed up for the plant's tenth birthday party.

Meanwhile, 55 miles to the west in Salem, Industry Control Department was making plans for its own tenth anniversary celebration in September.

Neither Lynchburg nor Salem holds GE seniority in Virginia, however. Waynesboro's Specialty Control Department plant reached its tenth birthday two years ago.

At Lynchburg's open house, Gov. Godwin (at left in photo above with Richard P. Gifford, general manager of the Communication Products Department) took the opportunity to tote up General Electric's growing stake in his state. The Company now has plants in five Virginia locations, plus a division headquarters at Charlottesville, he noted, and has become one of the state's largest employers with almost 10,000 Virginians on the payroll.

General Electric has had a salutary social, as well as economic, effect on Virginia, according to the governor. He credited the Company with helping to stimulate improvements in the state educational system, particularly on the establishment of the new community college program.

CREDIT

On Time in Germany

General Electric Credit Corporation has established its first foreign operation with the creation of General Electric Kredit GmbH, a sales financing subsidiary in Frankfurt, West Germany.

Comments C. G. Klock, president and general manager of GECC: "In line with the GECC policy of aiding a favorable balance of payments, General Electric Kredit is established under German banking law and operates on funds originating in Germany.

"We intend to make available to consumers and businessmen in West Germany a variety of sales financing plans and techniques that have proved highly successful in the United States."

The new operation follows by a year the establishment of another international activity by GECC, the Export Financing Plan under which GECC provides financing for the overseas sales of United States manufacturers of capital goods.

Long, Hot Summer

For millions of hot, tired, relief-hungry Americans fleeing to already-crowded beaches, pools, parks or picnic areas, this was indeed the hot summer of '66.

Temperatures steamed up to over 100 degrees in no less than 23 states on one day.

No ocean breeze whispered by the Company headquarters in New York City, which was recording some hotter days than the southwest. (Normally-hot Phoenix did record a competitive 113 degrees on July 6.)

The common chorus to beat the heat was bound to turn into a brisk demand for air conditioners and fans.

It did.

By the hundreds of thousands, people sought and then bought a way to get cool.

"Room air conditioner retail sales are certain to hit an all-time high in 1966," predicted Donald E. Smyser, marketing manager for the Room Air Conditioner Product Section in Louisville.

Cold Rush: There was good reason to believe the prediction. The most intense retail activity in history was exhausting stocks of some air conditioner models, and back orders were flooding in. Many models were sold out for the year.

Louisville filled one order by removing air conditioners that were on display at Appliance Park, substituting photographs or dummy models until production would catch up (see photo).

"The Company has been doing all it can to transfer merchandise from one area to another to balance inventory geographically and to give the best possible service to customers in locations where extreme heat has been experienced," said Mr. Smyser.

Production was moving full-speed ahead to satisfy demand, and it looked like the Company would wind up the summer season with one of the lowest inventories in relation to sales ever experienced.

One of the immediate effects of the high sales activity was an announcement that the Company would increase by about 60 percent its air conditioner manufacturing space at Louisville with a 241,000-square-foot building addition.

The construction is expected to be completed by 1968.

Hotpoint Sales: Air conditioner stocks at Hotpoint were also at a low ebb according to Edward J. Zirkle, manager of marketing for Hotpoint air conditioning. He said that orders were still being taken, however, with deliveries to dealers moving on schedule.

"Up until the heat wave, Hotpoint air

LOUISVILLE SELL-OUT
Brisk business from sweltering Americans.

conditioner sales were running ahead of any previous year in history," he said. "The heat wave that affected most of the nation certainly stimulated retail sales."

Predictions are that sales in 1966 will top three million units and make it a record year for the industry.

Although the heat wave of '66 has had a decided influence on sales, a trend was developing in 1964, which was the biggest year to date with 2.7 million units sold. In 1965—a rather cool year by comparison—industry-wide sales still rose to a total of 2.8 million units according to Mr. Zirkle's records.

This trend suggests that the record high 1966 sales may be due to more than the climbing mercury.

Fanning Out: In Bridgeport, Housewares Division reports that it sold out its supply of fans, and that sales were running substantially above 1965.

"Distribution inventories are nil at present, compared with last year when some units were on the shelves," noted William J. Pfeif, manager of the marketing and distribution operation for the division.

Cool for Japan

A joint venture to manufacture room air conditioners in Japan has been formed by General Electric and two Japanese firms and approved by the Japanese government.

GE will hold 50 percent of the stock of the new company, to be known as Nihon Aircon, Ltd. Nihon Dennetsu Company, Ltd., will own 40 percent, and Mitsui & Company, Ltd., the remaining ten percent.

Both Japanese companies have had previous business with General Electric. Nihon Dennetsu manufactures electric blankets in Japan under a GE license. Mitsui is the Japanese distributor for some GE major appliances.

The manufacturing plant for the joint venture will be constructed at Toyoshina, about 125 miles from Tokyo. Production is scheduled to start by year-end.

The air conditioning market in Japan is young but expected to grow rapidly.

AEROSPACE

Gravity's Guiding Hand

Rising smoothly from its Cape Kennedy launch pad June 16, a powerful Titan III-C rocket carried eight satellites—including a special 104-pound package from Valley Forge — to an altitude of 20,941 miles, and then, one by one, released them in perfect orbits.

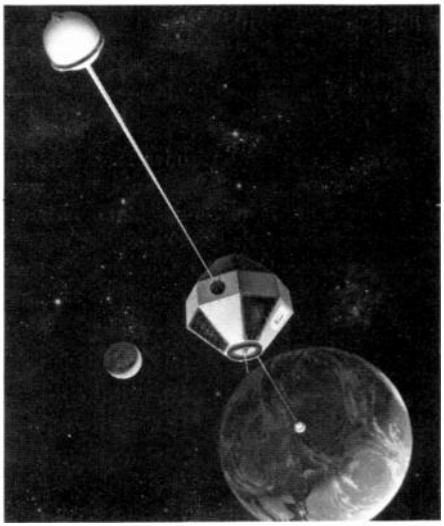
The eight-in-one launch was as unique as it was perfect.

Seven of the satellites were communication types which, together, formed an experimental network that would link Washington with U.S. forces around the world.

Satellite number eight was a different kind: a General Electric experimental gravity gradient test satellite (GGTS).

The GGTS is part of a program to test the feasibility of orienting satellites in synchronous or near-synchronous orbits using what is called the gravity gradient method. This means, in effect, using earth's gravity to keep a spacecraft always pointed at the earth (*The Monogram*, June '64). Thus, one axis of the satellite will constantly point toward earth (see photo on page 14) in much the same manner as the moon, which never turns its back on our planet.

With very few parts, and using no power for operation, a gravity gradient stabilization system is entirely passive.



GGTS ORIENTED IN ORBIT
With gravity gradient rods extended.

and therefore highly reliable and long-lived. The GGTS program is designed to show the usefulness of such a system for earth-pointing missions such as navigation, communications and meteorological spacecraft.

Unlike the tumbling and wobbly motion that characterized early satellites, the GGTS stabilization system will orient the spacecraft within eight degrees in both pitch and roll. Initial oscillations resulting from separation from the Titan III-C rocket were reduced from as much as 180 degrees to less than 25 degrees within 20 to 30 orbits. Final stabilization will take from 60 to 120 days.

Thus far the GGTS has performed well, with tracking stations reporting system stabilization occurring ahead of schedule.

The system was built by the Spacecraft Department at Valley Forge under contract for the U.S. Air Force Space Systems Division.

Live From Space

One of these days your home radio may be picking up broadcasts direct from a satellite; at least that's the goal of a study being conducted by the Missile and Space Division and RCA.

The $200,000, six-month study contract was awarded recently by the National Aeronautics and Space Administration.

The study will define both the cost and the technological factors involved in developing an unmanned satellite that could send radio signals directly to conventional home receivers using either FM or short-wave bands. A prime consideration is that the system be successful without modifications or expenditures to the radio receivers.

NASA will use the study to help direct its future research and development program.

The European Plan

Across the Atlantic this summer, companies from five European countries were forming plans to get their own satellites off the ground.

Because none of the five had sufficient experience or broad enough capabilities to manage, design and construct a satellite project alone, they banded together in a European Satellite Team (EST). And to benefit from the extensive U.S. experience in space, they signed on General Electric Technical Services Co., Inc., as consultant. GETSCO will draw on Missile and Space Division for support.

The EST lineup includes Elliott-Automation in Great Britain, Compagnie Francaise Thomson-Houston (CFTH) in France, Fokker in The Netherlands, Allmanna Svenska Elektriska AB (ASEA)

in Sweden and Fabbrica Italiana Apparecchi Radio (FIAR) in Italy.

Their target: the design and construction contract for the TD-1 and TD-2 scientific satellites to be let by the European Space Research Organization (ESRO), a ten-nation organization for cooperative space ventures.

The TD-1 and TD-2 satellites will be launched by the U.S. National Aeronautics and Space Administration in 1969 and 1970. Their "TD" designations derive from the Thor Delta boosters which will propel them into space. Both satellites will carry experiments concerned with the study of solar-terrestrial relationships, auroral phenomena, stellar astronomy, and cosmic rays.

The New York Times reported that two other teams of European manufacturers have been formed to bid for the ESRO satellites. Both have U.S. advisers.

EST will divide responsibilities this way: Elliott-Automation, the team leader, will manage the project and provide spacecraft attitude control; CFTH will be responsible for telecommunications and experiment integration; Fokker, for spacecraft structure and thermal control; FIAR, for power supplies; and ASEA, for ground support and onboard logic equipment.

GE Role: Valley Forge will share its technical and management know-how with the team members, review the team's designs, and assist in system integration.

For General Electric, the role represents an entrance to the European space market which may eventually reach $1 billion annually.

Explains John L. Galt, manager of advanced marketing at Valley Forge: "The route to United States industry participation must emphasize affiliation rather than direct hardware sales."

INDUSTRY CONTROL

School for Seamen

Standing high and dry above Manhattan's 17th Street, a new $5-million school was dedicated June 15 to train seamen on land for a new automated era at sea.

The Upgrading and Retraining Center is operated by the National Maritime Union, to qualify unlicensed members for higher ratings and for those new ratings established as a result of changes in operating procedures aboard ship caused by automation.

The equipment in the school includes a training version of a General Electric centralized engine room control console and a GE bridge control unit built specifically for the NMU by the Industry Control Department.

Its purpose—like much of the training equipment at the school—is to familiarize NMU members with the centralized push buttons, dials and meters that are gradu-

SEAMEN AND BRIDGE CONTROL

Land-locked learning for a new age at sea.

ally replacing scattered valves, switches and gages on newer ships.

The GE engine room control equipment —chosen by the school staff as the best means of updating its students—provides remote control of engines, boilers and auxiliary equipment. The bridge console (see photo) provides a single man on the bridge control of propeller speed and direction from full ahead to full astern.

Courses at the NMU school run from five to 12 weeks. Up to 400 seamen can train simultaneously at the school, which has an annual capacity of 2,000. The sale was arranged by marine and defense facilities sales operation.

INTERNATIONAL

Seminar in Switzerland

Crotonville's Advanced Marketing Management Seminar (1200 graduates to date) was exported June 12 as 26 key representatives from GE-associated companies in Europe and the Mediterranean gathered in Geneva for a concentrated two-week session.

Absorbed by a lively dawn-to-dusk schedule plus their evening homework, the attendees from seven countries had little time for sightseeing.

Leader of the first European Marketing Management Seminar was William F. Ogden, consultant-advanced education, who was joined in conducting the sessions by three professors from the Harvard Graduate School of Business: Milton P. Brown, Hugo Uyterhoeven, and Stephen H. Fuller.

In addition, the seminar included Walter G. Ward and Carl W. Moeller, vice presidents and general managers of Area Division Europe and Mediterranean respectively, who were active in bringing the course to Switzerland; William R. Smart, chairman of the board and managing director of IGE Limited, London; J. Stanford Smith, vice president-Marketing and Public Relations Services; Robert M. Estes, vice president-general counsel and secretary; Paolo Fresco, counsel and secretary, Compagnia Generale di Elettricita; and Donald E. Perry, general manager, Overseas Housewares Department.

Summed up one attendee at the end of the course: "It was most valuable, and introduced us to a concept of marketing and management over a much wider range of businesses than in our previous experience."

MARKETING MIX: Participating in the first European Advanced Marketing Management Seminar at Geneva were, from left, Pedro Toledo, manager of marketing, General Electric Espanola; J. Stanford Smith, vice president, Marketing and Public Relations; Umberto Urbani, president, Telefunken Radio Televisione; Johannes Gunther, general manager, ESGE GmbH.

Speeding Up with GEGARD

Time is a precious commodity in the highly competitive motor repair business, and this summer GE Service Shops are saving plenty of it with a new process called GEGARD*.

The new process completely eliminates the conventional motor repair method of varnish dipping and oven baking that used to take as many as 28 hours for motors up to 150 hp.

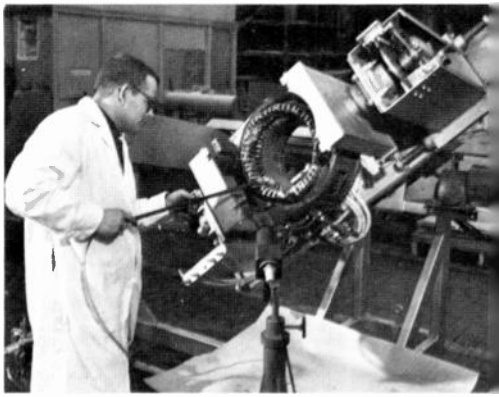
GEGARD does the job in about 15 minutes.

Such speed results from a new technique in which a special solventless resin — developed by the Insulating Materials Department—is applied directly to motor windings while the stator is held by a special machine (see photo). The machine rotates while electrical impulses are sent through the winding during application of the resin. This causes movement in the winding and allows each wire to be enveloped by the insulation.

GEGARD Extras: The process does more than save time; it yields motors better-equipped to operate under rugged conditions and higher temperatures. The solventless resin eliminates most dangerous voids in stator windings, and its flexibility means a 100-percent improvement in resistance to cracking from temperature cycling.

In a laboratory test, a GEGARD-treated motor was dunked in water for ten hours without damage. Then, exposed to 160 degree heat, salt water, dew, and 100-percent humidity, the GEGARD motor stood up under a half-million dynamic reversal cycles.

According to Peter C. Van Dyck, general manager of the Service Shops Department—part of the Industrial Sales Division—the GEGARD process can have far reaching effects on maintenance and production problems in the nation's continuous process production plants, where countless millions of dollars are lost by production line breakdowns each year.



GEGARDING A RANDOM-WOUND MOTOR
One up on Father Time.

"A one-hour reduction in unscheduled downtime often can result in a savings of thousands of dollars," he pointed out.

Case History: Mr. Van Dyck cited an incident in which a printing firm with a contract to print a Sunday color supplement for a city newspaper went to press early on the morning the job was due.

"During printing, a color press random-wound motor burned out. The repair of this motor would normally take three days. With the GEGARD process, that motor was back in less than 12 hours—in time to meet the deadline. Sunday papers on *Sunday*, not Monday."

GEGARD—touted as the first new insulating process for random-wound motors in 80 years — currently is available in about half of the 54 Service Shops, with installation in the rest due by year's end.

**Trademark of General Electric Co.*

AROUND THE COMPANY

Hey, Look Us Over: General Electric plants marked the advent of warm weather by throwing open not only the windows but also the front door. Open houses for families of employees and community neighbors were the vogue. San Jose staged a public birthday party for two plants—the motor manufacturing facility, celebrating its 20th year in San Jose, and the Atomic Power Equipment Department, which began operations there ten years ago. Other large and notable open houses were held in Erie, Evendale, and Lynchburg (see page 11) . . . Utica pulled a switch on this theme by hosting 85 employees, who started when the Radio Receiver Department plant did 20 years ago, on a flying visit to New York City.

FOREIGN NEWSMEN ON TOUR
Some trouble with the daily language.

Our Language? Company publicists led another group of visitors, 24 members of the Foreign Press Association, through a fast-paced tour of Schenectady's Large Steam Turbine-Generator Department (photo above) and Research and Development Center which left the newsmen impressed and grateful. But Polish correspondent Wieslaw Gornicki did report some trouble with the language — not English, but GE industrial. He said it's hard to imagine words like "cryogenics, polymers, multivapors or analogs" as part of the daily language. Somebody tell him it's easy . . . Another distinguished foreign visitor to Syracuse had no such trouble with the vocabulary of consumer electronics. He was the Japanese Ambassador, Ryuji Takeuchi. Mr. Takeuchi also visited Schenectady.

Looking Good: General Electric and the American Wood Preservers Institute have begun a joint project to study new appearance design concepts for overhead power distribution and outdoor lighting systems. The project, named OSAR for Overhead Systems Appearance Research, will be assisted by a nine-member utility advisory board in the selection of prototype designs.

Niche for Tape: Radio Receiver Department has formed a new Tape Recorder Business Section and moved it into the building formerly occupied by the Radio Guidance Operation in Utica. Relations Manager Robert Cross said the new section would hire 200 employees and begin production in September. The Utica operation will be responsible for the low-priced end of the tape recorder line; models with suggested retail prices above $100 will continue to be manufactured and marketed by Audio Products in Decatur, Ill.

Stock Watch: The American Stock Exchange has contracted for a General Electric computer complex as the central step

in its long-range automation program. Two GE-415 computers and related equipment will be placed in operation next year. Among the jobs outlined for the computer complex: drive the Exchange's sales and quotation tickers, monitor trade data for accuracy, increase the speed and scope of stock watch and market surveillance programs, and provide a compared clearance.

What's a SNAP? Missile and Space Division signed a $9.2-million contract in June for development of the SNAP-27 nuclear power plant and spelled out some of the terms of this Phase II effort. The SNAP (Systems for Nuclear Auxiliary Power) series is an Atomic Energy Commission program. SNAP-27 will generate power to operate research packages to be left on the moon by astronauts. In this phase, Valley Forge will continue testing to define design criteria and fabrication techniques and will manufacture components and systems for testing.

Offshore Orders: IGE Export Division has received an order for more than $2.5 million to supply 20 diesel-electric locomotives to the Federal Railway System of Brazil. The U6B locomotives, to be built in Erie, will join a fleet of more than 300 GE diesel-electrics previously sent to Brazil . . . A government-owned utility in Morocco has ordered a GE gas turbine power plant and associated equipment, valued at more than $1.6 million. It's the first IGE order for a gas turbine in an area where French equipment has been used almost exclusively . . . A smaller but no less significant order comes from Greece for 13 transformers, valued at $362,000. To win the order from 34 other competing firms, Medium Transformer Department had to agree to build the equipment to British specifications. The Greek utility arranged its own financing, so that product features, quality, and price were the only considerations.

Additions: Johnson City dedicated its new Optical Sight Assembly facility in June with Brig. Gen. Thomas S. Jeffrey Jr. as honored guest and a telegram of congratulations from Vice President Humphrey. One of the nation's most modern and precise critical assembly and manufacturing areas, the facility will be used to meet the exacting requirements of the Air Force F-4 and F-111 programs . . . Hotpoint operation in Chicago, which doubled its warehouse space last year, is tacking on another 47,500 square feet.

Personnel Development: With the General Management Course now running regularly and smoothly, Management Development and Business Education Service has turned its attention to the next generation of Company managers. The second 40-man class in a pilot run of a new four-week Manager Development Course will graduate on Aug. 20 at Crotonville. The course parallels GMC in many ways but is geared to managers about eight years younger and a couple of levels lower in the organization . . . Engineering Services is also training employees this summer. A series of four-day, time-sharing seminars for Company engineers has been running from June through August in Saratoga.

Recognition for Self-Help: In Philadelphia, Vice President Hubert W. Gouldthorpe, general manager of the Power Transmission Division, presented a check for $1000 to Rev. Leon H. Sullivan, director of the Opportunities Industrialization Center which trains Negroes to qualify for jobs in industry (*The Monogram*, Aug. '64). The OIC program has spread to 40 cities, and 15 graduates of the Philadelphia courses are now on the GE payroll.

'TOWN AND COUNTRY' LUMINAIRE
New look for neighborhoods.

PRODUCTS

A Light to Like: In Hendersonville, they think they now have the answer to how street lights can be beautiful. It's the TC-100 "Town and Country," Outdoor Lighting Department's first standard, production-line luminaire designed for decorative street lighting. The new unit is of traditional design, and it mounts at about ten feet, roughly one-third as low as conventional residential street lighting. It will be used primarily in neighborhoods served by underground distribution systems.

New from Universal: The Universal by General Electric product line broadened considerably at the Chicago housewares show in July. New products or models included an automatic food cooker, electric slicing knife, portable mixer, professional hair dryer, automatic clothes brush, and three cigarette lighters.

More Solid: Most colorful new product line of the year belongs to the Laminated Products Department, which brought out a rainbow of 51 new solid colors in its Textolite® laminates. By more than doubling its "Solid Spectrum Series," the Coschocton, Ohio, plant was bidding for more business from home architects and designers who are attracted by the broadest possible selection. Would you believe Burnt Mustard? Eggplant? Tiger Lily?

For the Workshop: Housewares Division has added three products to its variable speed control power tool line. The new tools with suggested retail prices: ¼-inch drill, $27.98; ⅜-inch drill, $32.98; and sabre saw, $36.98. Also new is a complete variable speed control power tool kit consisting of power unit, three tool heads and accessories at a suggested retail price of $64.98.

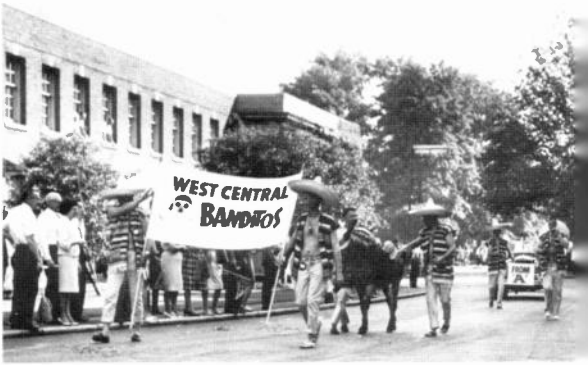
Color for Canada: Canada will begin color television programming this fall, and Canadian General Electric has bagged more than $2 million in orders for live and film color TV cameras from the Canadian Broadcasting Corp. The CBC will receive ten of the new GE PE-250 live four-tube color cameras and 19 PE-24 four-vidicon color film cameras. CGE also reports numerous orders for the 4-V color film cameras from the Canadian Television Network and local stations.

On Tape: Insulating Materials Department is out with an all-weather vinyl plastic electrical tape which can be used for indoor or outdoor work over a wide temperature range. The new AW-1 tape is available from GE Supply Co. outlets.

ON CAMERA

JOLLY GENE GIANT: It took 1,350 miniature GE lamps to complete this illuminating model of a fruit fly gene 289,000 times actual size. The Upjohn Company educational exhibit displayed at the 1966 American Medical Association convention in Chicago is examined by Christopher and Vicki Elsberry, whose father is GE publicist Richard B. Elsberry.

EL LAMP BANDITOS: Burro and serape-draped salesmen march through Nela Park during a parade opening "Camp Challenge," a three-day sales meeting held this summer by the Miniature Lamp Department. Under the sombreros are sales district representatives competing for awards in a "Parade of Progress."



COOL CORN: This "air conditioned corn crib"—by the Frigidome Corporation of Peoria, Illinois — preserves and conditions field-shelled corn at harvest time. Weather-proof General Electric silicone construction sealant is used to seal the vertical joints (upper right). The GE sealant acts as a moisture barrier and adds to the strength of the joints.

PEOPLE

AEC Appointee: Wilfrid E. Johnson, who was general manager of Hanford Atomic Products Operation until his retirement in May, has been appointed a member of the Atomic Energy Commission. Mr. Johnson joined General Electric following his graduation from Oregon State College in 1930, and served at Hanford from 1948 until this year. Pictured with Mr. Johnson, who is on the left in the photograph below, are Glenn T. Seaborg, (center), AEC chairman, and Charles K. Rieger, vice president and group executive, Electric Utility Group.

Group Plan: When Thomas J. Flowers of the Major Appliance Division's South Texas service center in Houston visited a local high school radio-television vocational program, he was quite impressed. In fact, he gave all six of the classmates a GE job, and asked their instructor to help out during the summer. Said a local educator: "These are competent young men and GE will benefit from their services."

Elected: Chairman Gerald L. Phillippe was elected board chairman of the Council for Financial Aid to Education at the annual meeting of the association held in Washington. Mr. Phillippe becomes the third board chairman of a major corporation to head the Council's board of directors since it was incorporated in 1952 by executives who believed that business had an important stake in the future of higher education.

Fine Prospect: With parades, straw hats, music, and epidemic merriment going throughout Brooklyn's Prospect Park, crowds paused to observe the park's 100th birthday, and to crown "Miss Prospect Park." The charming young lady selected was 17-year-old Cathy Condon, the daughter of Mrs. Raymond Condon, an employee of the Company's headquarters building luncheon lounge in New York. On the platform for the crowning were: (from left in photograph) Congressman Emmanuel Celler, Mayor John Lindsay, Parks Commissioner Thomas Hoving, and Brooklyn Borough President Abe Stark.

New Dealer: One of the newest Hotpoint dealers in Cicero, Ill., is Jim Mazur, who can claim above-average knowledge of his products as a result of being a Hotpoint employee for 14 years. Mr. Mazur was a specialist-distributor

AEC MEMBER JOHNSON (LEFT); MISS PROSPECT PARK AND FRIENDS

LOUISVILLE'S 'CHICK' TAYLOR
Others watched as he saved a life.

contact in Hotpoint's order service section before he decided to leave the Company to open his own appliance store. "It was a big decision," he said, "but I've always wanted to give it a try." Looking back on his Hotpoint service, he said that his association over the past 14 years has been very good, and that he really doesn't feel that he's leaving the Company since he'll be selling Hotpoint appliances.

Heroism: A crowd of 100 was watching a burning accident-damaged automobile in Louisville as Appliance Park employee Charles "Chick" Taylor (see photo) stopped to investigate. When he heard someone in the crowd say that a woman was trapped in the flames, he ran quickly to the car, and with the help of a 17-year-old youth, pulled the woman motorist safely from the car only seconds before the gas tank exploded, spewing flames in all directions . . . Jerry Rhoton, a service technician at the X-ray Department in Tulsa, recently rescued a fisherman who had tumbled from his boat into deep water. Mr. Rhoton's lifesaving record is now six, having previously pulled two boys from a river, and saved three other persons while a lifeguard in Norman, Oklahoma.

IGE Girls: Two female members of the Company's training programs arrived at IGE Export Division this summer for their first assignments, and both were noteworthy. Claire Berka (at left in photo) is the first woman to work at IGE and among the first women in the Financial Marketing Training Program (formerly the BTC program). Joan Horutz (at right) is the first girl to join the Company's Technical Marketing Program. Miss Berka is a graduate of the University of Vermont and Miss Horutz holds an electrical engineering degree from Brooklyn Polytechnic Institute.

Honors: Dr. C. Guy Suits, recently retired vice president and director of research will receive the ASM Medal for the Advancement of Research from the American Society for Metals. . . . An honorary degree of Doctor of Engineering was presented to Harold Chestnut, manager of the systems engineering and analysis branch of the Research and Development Center by the Case Institute of Technology.

TRAINEES BERKA AND HORUTZ
Attractive additions to IGE Export.

TALKING POINTS

Tube Blitz in Chicago

With a thousand IEEE design engineers heading for Chicago—a town in which about a half-dozen television manufacturers are headquartered—what an opportunity popped up to really promote GE Compactron tubes!

And, since Owensboro was introducing five new GE Compactrons designed for use by TV manufacturers (to reduce size and increase reliability), the time was ripe.

So, during the late June meeting at the O'Hare Inn, the Tube Department displayed a special billboard nearby, and leased prominent billboards right outside the plant gates of the key Chicago television manufacturers. (Richard D. Kennedy, sales manager for entertainment tubes is shown below with the billboard near Motorola).

The blitz was backed up with ads in trade magazines, and mailings of miniature versions of the billboard. The campaign was a brainchild of the Advertising and Sales Promotion Department, Louisville.

WELL-PLACED CHICAGO BILLBOARD
Super-Selling in the windy city.

Good Show

Things were pretty hot at the recent National Plastics Exposition in the New York Coliseum when the building air conditioning system wilted in the heat.

Fortunately for show-goers, GE's Chemical and Metallurgical Division was exhibiting a new GE Fashionette 5000 room air conditioner in their booth to show its Lexan® thermoplastic outer case.

The cool, fresh air from the air conditioner was almost as big a hit as the line of GE engineering plastics on display.

Having a Ball

In a colorful effort to raise some $250,000 to refurbish a century-old mansion, the Junior League of Stamford-Norwalk (Conn.) planned a "restore the mansion" party.

Candles would certainly add a touch of 19th century elegance to the dance, thought the young ladies, but their idea seemed snuffed out by local fire laws.

Turning to General Electric for help, the party chairman also found that the electric outlets in the house were inadequate to consider using electricity to solve the problem.

The solution came from the use of six-inch facsimile candles powered by GE rechargeable nickel-cadmium batteries. Some 250 candles—replicas of the real thing—were leased for the black-tie event.

College Bowl Benefit

Miss Raga Mohammed of Khartoum, Sudan, the first student from that country to attend Mount Holyoke College in South Hadley, Mass., will continue her studies thanks to fellow students who appeared on GE College Bowl. Part of the $3,500 won on the program is being given to Miss Mohammed to continue her education.

ROBERT C. WILSON

PHIL S. POTTS

ORGANIZATION

Consumer Electronics

Robert C. Wilson, General Manager of the Consumer Electronics Division, has been elected a Vice President of the Company.

Mr. Wilson became General Manager of the Division in 1963. His General Electric career spans 25 years. Division headquarters are in Syracuse, N.Y.

Defense Electronics

The Armament and Control Products Section, located at Johnson City, N.Y., has been renamed the Avionic Controls Business Section.

Electronic Components

Philip R. Milroy has been appointed General Manager of the Electronic Specialty Capacitor Business Section at Irmo, S.C.

Industrial Drives Systems

Phil S. Potts has been appointed Manager of the Drives Systems Sales and Engineering Operation.

Industrial Sales

The Pacific and Western Regions have been discontinued and replaced by a Western Region, Industrial Sales Division, and a Western Region, Agency and Distributor Sales Operation. The geographical area and the Manager of each new region are the same as for the discontinued regions.

Nuclear Energy

The Atomic Products Division has been renamed the Nuclear Energy Division.

Power Generation

Warren H. Bruggeman has been appointed General Manager of the Machinery Apparatus Operation.

LETTERS

(Continued from inside front cover)

are 31 GE instrument items aboard including the mass fuel flow rate and fuel consumed flowmeter system, tachometer indicators and generators, surface position indicators and transmitters, plus the complete complement of electric quantity measurement instruments.

How you could overlook this $5000-plus Instrument Department contribution to the Jet Commander and yet find the air conditioning motor in the Lear Jet is a mystery to us.

WILLIAM J. CAHOON
Defense Programs Division
Dallas, Tex.

Let's Try Harder

EDITOR: It appears that General Electric is missing an opportunity to promote its name, at least indirectly, and also help to reduce some of the confusion that exists.

The IEEE Standards Group that promulgated the name Hertz for a cycle per second should be brought to task. How much easier would it have been to honor the real A.C. man and call it a Charles Proteus Steinmetz? By so doing, we would not have all the churning and drawing changes. We could merely abbreviate the above definition to C.P.S.

GERALD J. GLASER
Light Military Electronics Department
Utica, N.Y.

First Things First

EDITOR: In the May *Monogram* you wrote, "El Paso Natural Gas Company, which bought the Company's first gas turbine . . .". Correct me if I am wrong, but if I recall correctly the *first* General Electric industrial gas turbine is (or was until recently) installed in the power room in Building 49, Schenectady.

JAMES H. CARLL
Special Information Products Department
Syracuse, N.Y.

That's right. El Paso Natural Gas Co. bought the first gas turbine for pipeline power.—Ed.

EDITORIAL

Getting Off the Drawing Board

IT SEEMS incongruous that a drastic change in the consumer electronics industry could be stimulated by a tiny chip only 1/32 of an inch square. Yet, that's the case with the little microcircuit being incorporated into a new clock radio being marketed by the Consumer Electronics Division (see story page 8).

These tiny "chips" (as they are called by the industry) make some pretty big contributions to the end product: small size, increased reliability, and maintenance of a competitive unit price.

Manufacturers using these chips — which usher in a third generation after tubes and transistors — will naturally command awe and enthusiastic approval for the product miniaturization resulting from their use, but there is more to the story.

It is significant that at this time in the consumer electronics industry a microcircuit is being manufactured with a price low enough to allow its use in a consumer product.

Subminiature circuits have actually been in existence for a few years. They were first offered for sale in 1960, but the price at that time was about $475.00 each. The price just wasn't right.

Semiconductor Products, working with the Radio Receiver Department, concentrated on development of high-speed mechanical assembly techniques that eventually pushed the cost of a microcircuit to under one dollar. The cost breakthrough not only made a new consumer product possible, but by next year the number of microcircuits manufactured will be sufficient to create a new business of serving outside customers.

Developing the microcircuit and its initial consumer product application represents a significant team effort extending far beyond the initial idea. Headlines frequently emphasize the scientists and inventors who develop exciting but still-promising ideas while ignoring the many engineers, production, manufacturing, and other people who later work to get those ideas off the drawing boards and into production. Both groups are important.

Teamwork that translates good ideas into good products is a vital ingredient. It's needed in every department; on each job. It's important to the success of our Company.

How well we can keep good ideas coming and then match them with the teamwork and follow-through to make them work is the key to staying competitive in a dynamic, changing world.