GENERAL ELECTRIC

Monogram

MAY-JUNE 1975

BRIGHT NEW IDEAS IN GE PRODUCTS

Plus: Greater self-fulfillment through aiding minorities; 'issues' homework; off-hours creativity; sports activism.

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Cover:

A photographic interpretation of GE "bright ideas" uses Nela Park's FlipFlash as a showcase for new television compact consoles, Housewares' smoke alarm, the FlipFlash with camera and Valley Forge's new solar roof.

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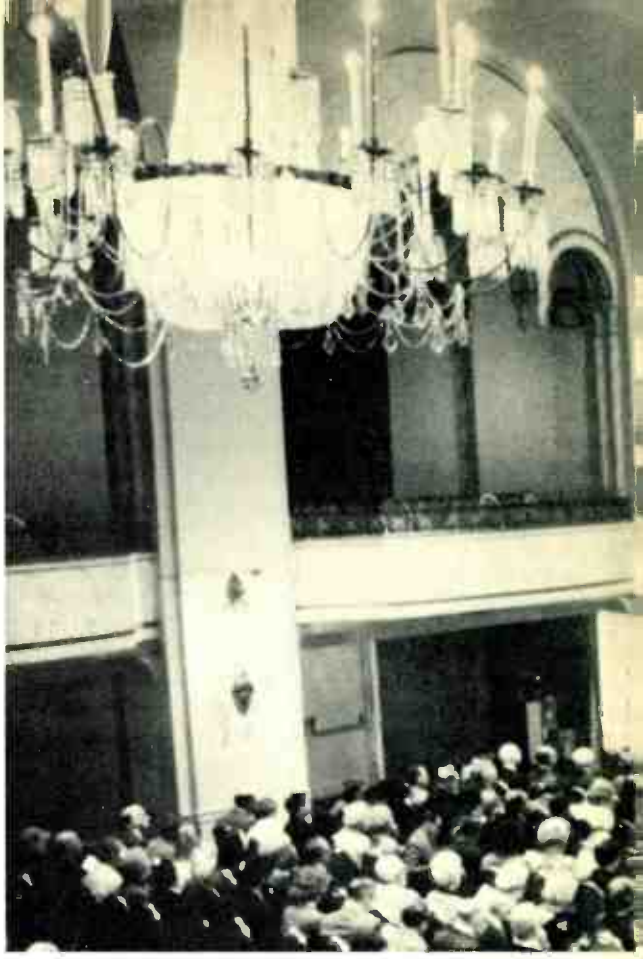

THE COMPANY:

At a share owners' meeting, GE's Chairman has to be ready to be articulate on just about any topic under the sun

General Electric's Statutory Meeting for share owners is supposed to concentrate on the matters presented in the Proxy Statement. This would have meant that in the ornate Grand Ballroom of Boston's Statler-Hilton Hotel on April 23 the discussion would have confined itself to the election of Directors, the appointment of public accountants, the elimination of preemptive rights for share owners, the B-1 bomber and the proxy card.

But Chairman Reginald H. Jones knows better than to count on it. When he bangs the gavel to start a Statutory Meeting, he knows he's in for several hours of interchange that can lunge in almost any conceivable direction.

On the issues firing line

The Boston meeting was a case in point. The discussion of public accountants somehow leaped to the Company's wage structures in "third-world" countries. Exchanges over the GE-powered B-1 bomber spun off into GE's investments in Brazil, transnational enterprises and GE modular housing units. The general discussion period opened the door to dialogues on opportunities for non-whites in South Africa, layoffs of employees, the investment tax credit, cracks in the piping of nuclear plants and incentives in capitalist versus communist societies.

In fact, when one speaker near the end of the meeting brought up such usual share owner concerns as the economic outlook and the prospects for earnings improvement, the effect and contrast were almost startling.

GE's Chairman handled them all and, in the process, made some quotes that GE-ers might well find quotable. Here, in the *Monogram's* limited space, is a selection:

The need for defense work: "I wish that we lived in a world where defense was not necessary. I wish we lived in a world where we didn't have to worry about the B-1 bombers and about Trident submarines and defense radar and all the paraphernalia of the military. But I think it is entirely unrealistic for us to say that we should disarm and leave this world entirely at the mercy of others. While we might wish for a world without armies, navies and air forces, it is just not realistic to assume that we have that situation. I think we have the responsibility—and a great majority of the share owners, as indicated by the correspondence I receive, feel the same way—that we should be responsive to your representatives in Congress, and when they say that this is what they want, and if we have the technology to provide it, then we should provide it."

Concern over layoffs: "We have no intention of discontinuing our aircraft engine business and throwing several thousand people out of work. We are, at the present time and with conditions the

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Reg Jones: "International operations have created 40,000 jobs here in U.S. General Electric."

way they are, simply breaking our backs to get every piece of business that we can get for General Electric. Nothing disturbs me more than the fact that we had to lay off some 5% of our work force in the last quarter of 1974 and an additional 3% in the first quarter of 1975. This really hurts, because of the deprivation it causes in families across the land. Our sales people and all of our management people are working just as assiduously as we know how, and as smartly as we know how, without regard to hours, to bring every piece of business into our factories that we can."

U.S. jobs and international operations: "If you look at the total results of our international trade, we have created 40,000 jobs here in the U.S. in General Electric. There are another 40,000 jobs in industries that supply us with the components that go into the products we export. Last year our total imports in General Electric—everything we brought in—were $300 million. Yet our exports—what we sent out—were almost $2 billion. So, on balance, we have created very, very many more jobs."

Watching out for half truths: "In a book called *Global Reach*, whose contents were also in the *New Yorker* magazine, it is reported that General Electric has moved jobs from Ashland, Mass., to Singapore at a reduction in labor rates of almost ten to one. This is typical of the half truths throughout the entire book. Why have these shifts occurred? It doesn't mention this.

"I would just like to refresh your memory that General Electric was the last manufacturer to give up on the production of radios in the U.S. When this market was invaded by products coming from the Far East at much lower costs and, therefore, much lower prices, and with many additional features beyond those we could produce in the U.S., we finally had to give up on manufacture in order to retain the engineering, design, drafting, marketing and distribution jobs here in the U.S. rather than yield them to the Japanese and others from the Far East. Now when it came to the matter of the timers, we stayed with these, too, just as long as we possibly could here in the U.S., and finally it became necessary to move some of these timing mechanisms to Singapore.

"What has happened as a result? Whereas, before, our markets were drying up on us because we couldn't be competitive, we are now building more and more timers and actually supplying the Japanese with their requirements, and this has retained jobs here in the design and distribution of those timers because we have been able to stay in the market."

Capital to sustain jobs: "Congress has voted a 10% investment tax credit on a temporary two-year basis because Congress itself is beginning to get very concerned about the lack of capital formation in the U.S. All the labor members of the President's Labor-Management Committee agree that the investment tax credit should go up to not 10% but 12%. Why? Because American industry has continued to lose, lose, lose in terms of its share of the gross national income of this nation, and it finds itself today in the situation where it doesn't have the profitability that will produce the capital required to employ a growing work force.

"Since 1950, the share of gross national income represented by the profits of corporations has dropped from 15.6% to 9.2%. Over that same 24-year period the amount of the national income that has gone to employees has increased from 64.1% to 75.1%.

"Last year, if you take out those phantom inventory profits that came as a result of inflation and under-depreciation, profits were just 50% of what they were 10 years ago. Last year American industry borrowed 54% of the capital it needed.

"In just ten years, our balance sheets have changed drastically in American industry. Formerly for every dollar business owed, it had a dollar of net worth. Today it is two dollars of liabilities for every dollar of net worth.

"Unless we can right this balance and improve the profitability of American industry, we are going to lose this very productive system we have had. Congress increased the investment tax credit in an effort to give some relief in this situation."

The need for competitive compensation: "Compensation is not the sole motivator of people, but it is a very significant one. We have to be on guard to retain the kind of talent that is needed to move forward a very complex enterprise, and there are all sorts of competition, as far as compensation is

concerned. We can't get away from competition. If someone has a talent to get a certain job done in our competitive society, he gets paid for getting it done.

"We have tried over the years to have a salary structure in General Electric that is fully competitive from top to bottom. It is not excessive when compared with competition but it is competitive. We think it would be a great disservice to the share owners of this Company for us to have second-class men and women in management. In this very diverse and complex Company, it is very important to have the best people we can get. By doing so we will do the finest job for the share owners."

Steps to strengthen earnings: "When the economy is down, it's necessary to cut operating costs. I can assure you we are going through our costs and expenses very carefully.

"To give you some idea of how closely we are controlling them, take a look at our corporate level expenses, our so-called 'staff' or corporate overhead. Included in that is our Corporate Research and Development Center. We feel that technology is so important to the future of the Company that we can't afford to cut our research and development expenses. In fact, with inflation being what it is we have to increase those expenses nine or ten per cent to keep the same level of research activity.

"We said to all the rest of the staff at headquarters that we were going to put the nine to ten per cent in Corporate Research and Development. We have cut all these other expenses to the point where our total staff expenses will be no higher in 1975 than they were in 1974, despite the inflation and despite the much higher research and development expenditures."

Doing the corporate homework

The main problems facing General Electric, GE's Chairman has stated, are not internal but are "external to the Company"—the myriad political, social, environmental and other forces that shape the climate in which business operates. Chairman Jones' concern on this front was evident again at the Boston meeting of share owners.

But what can be done about these forces? Merely "speak out," call attention to them and complain about their virulence?

GE's answer has, by now, begun to come clear. It amounts to adopting positions that are based on masses of careful corporate homework. The Company, in effect, seeks to earn the right to be listened to by conducting the in-depth analyses and marshaling the information that will put a firm foundation under every forensic position and every public proposal.

The focus is not just on argument but on action: constructive steps that need to be taken, changes in direction that deserve being accepted, if the nation is to remain strong, productive and competitive in world markets.

The two examples that follow illustrate how GE positions on major issues are backed by intensive corporate homework.

Capital formation: trying to close the gap

When GE's Chairman became concerned about the inability of business to raise money for new productive equipment, he did more than just talk about it. He set Corporate Strategic Planning economist Walter K. Joelson and his associates to work on finding out just where the capital is going and what will result from present trends.

The staff team under Joelson's direction dug deeper into a situation they had already foreseen

Walter Joelson

(continued next page)

in long-range strategic planning. They compiled masses of data on capital needs, industry by industry, problem area by problem area, and documented thoroughly the true proportions of an emerging national issue: the widening gap between demand and supply in the capital that will enable U.S. industry to meet society's future needs. It's a gap that can reach the huge total of $50 billion annually through 1980.

Says Joelson: "Our competitor for the same pot of money is clearly the government. They can tax the funds away as they are already doing more and more, or they can compete for it and win it away by paying any interest rate they want to. By contrast, private industry has constraints on the amount they can profitably pay for capital."

GE leadership in calling attention to this impending capital crunch began to have concrete results. On May 18, 1974, Chairman Jones became the first businessman to testify on the subject before a sub-committee of the Joint Congressional Economic Committee.

Since then, GE people have kept up a constant drumfire of informed commentary. "On this issue of capital formation," Joelson says, "there's no question that General Electric has become the most knowledgeable source in business, and GE's Chairman the most listened-to business spokesman."

Can this sort of homework have an effect on the external problem? Joelson believes that in the case of capital formation it already has had an impact. "Mr. Jones is now on President Ford's Labor-Management Advisory Council, coordinated by Secretary of Labor John Dunlop," he says. "The top labor leaders on the Council have now also become convinced that the capital shortage is a critical issue and have explained their joint views to the President on several occasions. Most significantly, the Tax Reduction Act of 1975 includes significant help by increasing the investment tax credit from 7% to 10% for two years. Some of the credit for getting that through has to be given to this unified management-labor support that is based on sound information, carefully resourced."

Line-of-business reporting: raising serious questions

Not all the Company's issues homework gets equal exposure in the public arena. One challenge to GE and other companies, with far reaching economic and legal implications for the future, has been pursued intensively since last August, but without attracting much press attention.

The challenge came in the form of a fill-in-the-blanks questionnaire from the Federal Trade Commission, which proposed to force 345 large corporations to submit detailed accounting profitability data for over 220 arbitrarily defined lines of business. Doing the homework on this case are Winston H. Pickett, special counsel for the Corporate General Counsel and Secretary's Office, and Sidney D. Spencer, consultant-External Financial Information for Corporate General Accounting Operation.

Win Pickett, left, and Sid Spencer.

Pickett: "Joining with 11 other companies, we filed suit questioning the validity of the survey and now have over a hundred more involved in this issue. We believe the data requested can in no way provide the reliable economic measurements of competitive performance the questionnaire professes to seek."

The issue is complex and even a little obscure, but its implications are important and worth the careful man-hours necessary to be constructively critical, Spencer feels. "We have to ask the FTC several questions," he says. "Would the numbers on the detailed form you gave us reflect how real markets are performing, particularly when they do not coincide with your line of business classifications? How could they be comparable and aggregated with numbers of other companies since there are numerous and equally acceptable different accounting procedures? If non-comparable for accounting purposes, how could these data be used to formulate sound policy?"

Has the logical, step-by-step approach to a common solution made any progress? "Well," says Pickett, "we can't report the FTC has dropped the inquiry, but then that's not our purpose. They have issued a revised proposed questionnaire upon which we are extensively commenting in the hope the Commission will be more responsive to our fundamental concerns."

Own your own gas well

That's how Lamp's Ravenna plant is solving one energy problem

The energy shortage reached GE's big lamp plant in Ravenna, Ohio in the form of gas curtailments. Management, however, had an answer: drill a natural gas well right on the property.

The Lamp Business Division's Energy Council, organized last year in anticipation of energy supply problems, had considered installing auxiliary oil-burning systems for heating and manufacturing processes at several of its 13 plants and actually equipped two facilities with reserves of propane gas.

"Out of these efforts grew a general awareness that our best solution to the problem of potential gas curtailments was to try to develop alternate sources of natural gas," says H. J. Killmeyer, Jr., Lamp's manager of Energy Development and Conservation.

Without an alternate source, the entire Division would be vulnerable to gas curtailments, since much of the fuel is delivered to Lamp's 13 plant locations by one supplier, East Ohio Gas. As anticipated, temporary gas curtailments have already commenced, with the first one, in February, calling for an 18% reduction in the monthly allocation.

Since East Ohio Gas supplies GE on a system basis, with each plant allotted a fixed quantity per month, curtailments at one or more locations can be compensated for by voluntarily decreasing the allotment at those plants, such as Ravenna, that have their own gas supplies.

Once the decision was made to give Ravenna a well of its own, Lamp wasted no time getting the job done.

"The characteristics of Ohio's geological formations are such that the chances of striking gas, according to the geologists we consulted, are two out of three if you analyze and drill carefully," says Killmeyer.

Apparently the experts are right. Drilling started in mid-February and on the tenth day, in the first hole, the drill bit met natural gas at 4400 feet.

Pleased by the success of its $95,000 investment, Lamp plans to take further advantage of the numerous low-volume, low-risk pockets of natural gas which lie relatively near the surface in Ohio. The current drilling program calls for eight to ten wells per year.

In each instance, the wells will be capped and valved. The gas will be piped into each plant's heating system, but not used. These alternate supplies are of limited volume and will be held in reserve against the day when they are needed to offset curtailments instituted by the gas company.

The well at Ravenna contains an estimated total of 250 million cubic feet of natural gas, which is typical of this type of well, according to Killmeyer.

What about the $95,000 price tag? Says Killmeyer: "We could recover the entire cost of drilling the well in one year if we operated it at top speed, producing approximately 35 to 40 million cubic feet per year." To consume the gas at such a rate, however, would totally deplete the well's contents in only seven years or so, negating its intended function as an emergency reserve.

The drilling program has wider social implications, too. By discovering and maintaining such reserves of natural gas, the Lamp Division helps to provide its lampmakers with the assurance of continued employment, despite the impact of the pervasive energy shortage.

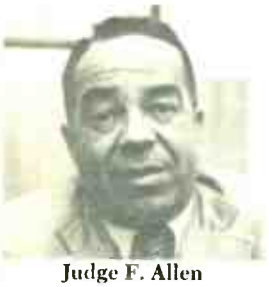
Minorities: two GE keys to progress

For minority people to receive greater opportunities for business careers, affirmative action programs are essential. General Electric recognizes this with a broad range of corporate and component support programs: from a written policy that makes minority progress a basic measurement of management to greatly increased minority participation in the Company's personal development programs; from sponsorship of the Expo-Tech mobile van to the programs of the General Electric Foundation, which allocates about one-third of its grants to strengthening academic opportunities for minority youth.

But there is another key to progress: the personal commitment of individual employees. The basic question persists: what can I do? I as a concerned individual wishing to put my own energies behind the corporate and component programs?

Here are a few of the many ways these questions are being answered by GE people, supplying the two keys of corporate and individual commitment that are opening up new opportunities for minorities.

On loan for Black Capitalism



Judge F. Allen

GE corporate support has been flowing to the Opportunities Industrialization Center ever since Philadelphia's Reverend Leon Sullivan formed the OIC in 1964. In fact, General Electric is credited with making the first contribution to OIC, in the form of machine shop equipment and the time of instructors to train blacks in using it. That this cooperation is continuing is indicated by the picture at right.

But one of Reverend Sullivan's original goals was to spur "Black Capitalism"—minority people with the knowledge and resources to build successful businesses.

For the past three years a GE man, Judge F. Allen, has been working full-throttle to make Black Capitalism a reality.

His opportunity for this intensive self-involvement came as the result of a 1972 meeting between Reverend Sullivan and Mark Morton, VP and Group Executive of the Aerospace Business Group. Sullivan wanted help in launching a new OIC subsidiary, the Zion Investment Trust; Morton "loaned" him the services of Allen.

Today, with the Trust firmly on its way, Allen has returned to his work as an employee relations specialist at the Valley Forge Space Center. He looks back over his OIC years with a great deal of personal satisfaction.

Zion Trust was formed, he says, on the Biblical parallel of the loaves and fishes: feeding many with little. Members of Sullivan's church contributed $10 a month each for 36 months (the 10/36 Club) to purchase shares of stock in enterprises to be developed by the Trust.

"It was exciting," Allen recalls, "because for the first time significant sums of money were coming from the hands of poor people, coming from the inner city, for a community project." After Sullivan received approval from the Securities and Exchange Commission, Allen began to shape the Trust into a community development operation.

In Allen's view, the very organization of the Trust should reflect the interrelated problems of the cities, including housing, urban environment, employment, economics and the human spirit. He reorganized the Trust to rest on three support subsystems:

• **Physical Development.** Here Allen placed three operational arms of the Trust—a general construction company, a development company and a property management company. All three were focused on improving the physical environment of the inner city dweller in such ways as supplying the capability to rehabilitate homes, develop new structures or modify existing ones. From the development company have come shopping centers such as Philadelphia's Progress Plaza—"it brings shopping facilities back to the inner city people so that they're no

longer required to drive to the suburbs for the service." Another project: the Human Service Center, located in the Plaza, "to house the many human services of the city, state and private sectors."

• **Economic Development.** This part of the Trust's system has two main goals, according to Allen: to help minority people acquire entrepreneurial skills and to raise venture capital. As an example, the Trust established the Entrepreneurial Development Training Center. This was a Sullivan idea and, in Allen's view, is unique in the U.S.

• **Human Development.** The one component developed in this sub-system thus far is called Progress Educational Projects. It deals with minority high-school-age children who want to go to college and may need help—tutoring, college orientation or financial aid.

Does he think business is doing all it can to assist minorities? "For a while," he says, "there was a great flood of activity relating to corporate responsibility—it was the fashionable thing to do. It has leveled off a bit now. But I think that those corporations that really understand the value of the work, such as GE, are going to stick with it."

On the road with Expo-Tech

GE corporate support of PIMEG (Program to Increase Minority Engineering Graduates) takes tangible form in GE's mobile exhibits van, Expo-Tech (*Monogram*, May-June 1974), now rounding out a full year of bringing an understanding of engineering directly to some 75,000 students and teachers at 76 schools in a dozen cities.

But from the first it was recognized that the van itself needed an added personal dimension in the form of people who can begin where the van's 17 participative exhibits leave off.

That's where Arthur Sears, Jr., gets his kicks. Sears is exhibit manager for GE's Corporate Educational Communications. He's been with Expo-Tech since its formative stages and, on the road, has spearheaded its hosting and follow-up activities. In the past year he's been back to his desk at the Fairfield HQ only four times.

"Expo-Tech has done, and is doing, an enormous amount of good in just exposing these kids from the inner city to the concepts of engineering," Sears says, "and to minority people who are making it as engineers and professionals." He and his staff of

AIDING THE OIC: As one form of corporate support for the Opportunities Industrialization Center, GE has over the past two years provided managerial skill training for 192 OIC staff members. At the graduation of the tenth OIC-Management Systems Development Course class at Crotonville, OIC's Reverend Leon Sullivan (left), greets GE's Phillips S. Peter, Vice President, Corporate Staff.

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GE's Art Sears with students waiting to tour Expo-Tech: who among them will prove to be "super-motivated"?

In Philadelphia, PIMEG Chairman Wayne Owens (right) heads effort that includes special course at Drexel University (below) designed to give eighth graders a close-up of engineering.

local minority engineering students or young GE engineers who man Expo-Tech at each of its stops never forget their responsibilities as "role models."

"But it was also apparent," he adds, "that the success of Expo-Tech demanded more than just exposure. It needed careful follow-up. If the exhibits, or contacts with us, opened up the mind of a young guy or gal to the engineering possibility, there had to be ways to help that young person follow through to an engineering career."

One thing this meant to Sears was to keep a vigil on the thousands of youngsters who came through and to spot those with a special interest or aptitude. "If a young person complains that he or she doesn't have enough time during the one pass through the van, that is an indication. If they are interested enough to come back after school, or if they're curious about seeing behind the scenes, how the exhibits work—these are the signs of someone worth following up. When they come back after school, we show them things like the tapes that control the exhibits or how it takes 192 turns to crank in the van's expandable sides."

When he spots such a "super-motivated" youth, Sears gets the student's name and checks with the school's teachers on the young person's capability. If the reports bear out his estimate, Sears adds that name to his list of "high potentials" to be turned over to the community's PIMEG committee.

"It's too soon yet to weigh the impact of Expo-Tech and the personal commitments that go along with it," Sears acknowledges. "We do know that minority enrollments as freshmen in engineering schools this year are up about 30% over those for the year before. So *something* has begun to work. But the real effect is out there several years from now when we see whether all these lists and follow-up committees bear fruit. I am confident that we *will* see engineering enrollments that never would have happened without Expo-Tech."

It's been a rough year, Art Sears makes clear. "I wouldn't want to live out of a suitcase forever. But it's been rewarding. When you see kids who are really the dregs of our educational system come out glowing, their eyes opened to possibilities they didn't know existed for people like them, you know you're onto something worth doing."

A new 'Philadelphia Story'

One of the prerequisites for communities wishing to have an Expo-Tech visit is the establishment of a PIMEG committee to follow up on the promising youngsters who respond most positively to the prospect of an engineering career.

Philadelphia, Expo-Tech's first stop a year ago, already had a PIMEG committee, the nation's first

area-wide organization. Its Chairman: Wayne L. Owens, Community Affairs manager for Re-entry and Environmental Systems Division. Under his direction, Philadelphia PIMEG has blossomed into a separate non-profit corporation supported by many community agencies and businesses.

Among the recent accomplishments of the multi-faceted Philadelphia PIMEG program:

- **Lists of interested** and capable math and science students have been developed in each of the 14 target junior high schools. These students are individually monitored by an employer assigned to that school. They are given orientation tours and added incentive work in math or science.

- **Through a $50,000 grant** from the General Electric Foundation, 144 promising math students got a six-week engineering math course from Drexel University faculty and students. The group still meets monthly.

- **The PIMEG committee** has placed more than $4800 worth of new equipment in six of the target schools.

Says Owens, "It is quite sobering to realize that as hard as we have all worked on the program, most of the work is still ahead of us. The results are what count. When we can see bright students from disadvantaged areas actually being accepted at engineering schools, we'll know we're on our way."

Help for minority youth in other GE communities

There's only one Expo-Tech and it can supply a focal point for action in only a few major cities. What about all the other GE communities where there's a job to be done? Through the drive of individual GE people, minority youth in other GE cities are also being informed about technical careers.

In Syracuse, N.Y., as an example, 13 GE employees have volunteered to work with five of the city's elementary schools. They have already contacted nearly 500 fifth- and sixth-grade students.

With the enthusiastic endorsement of the city's school administrators, the GE employees go into classrooms in teams of three and conduct sessions that include open discussion and Q & A periods.

Another civic example: Memphis, Tenn. There, Michael G. Shinn, manager of Quality Control at GE's Lamp Business Division plant, helped develop the idea of Junior Engineering Technical Society (JETS) chapters in local high schools. Shinn serves as advisor and organizes student visits to GE facilities. "The idea," he says, "is to show them how engineers, and engineering, really work."

In Syracuse, GE engineer Howard Beard talks engineering to sixth graders.

In Memphis, GE's Mike Shinn (right) hosts minority students on Lamp plant tour.

Alexanderson was GE radio pioneer

Dr. Ernst F.W. Alexanderson, inventor of the high-frequency alternator which gave America its start in the field of radio communication, was 97 years old when he died at his Schenectady, N.Y., home in May.

A contemporary of Steinmetz and Marconi, Dr. Alexanderson was an engineer whose creative talent led to the receipt of 322 patents during his 46-year GE career.

A native of Sweden, Alexanderson received an electrical-mechanical engineering degree from the Royal Institute of Technology in Stockholm in 1900.

At the Technical University in Berlin the following year for post-graduate study, he read a textbook by Dr. Charles P. Steinmetz and came to the United States later in 1901 to seek work with the author, GE's mathematical genius.

Among his notable radio developments were the magnetic amplifier, the electronic amplifier, the multiple tuned antenna, the anti-static receiving antenna and the directional transmitting antenna.

And it was his pioneering work that led to the first home television reception—in Alexanderson's house—in 1927 and the first public TV demonstration one year later in a Schenectady theater.

Dr. Alexanderson was a consulting engineer in the Company's General Engineering and Consulting Laboratory when he retired in 1948.

Honors for GE-ers: President Ford has named GE's E. Sidney Willis to serve on the Advisory Committee of the Pension Benefits Guaranty Corporation, which was established by the recently enacted Pension Act. Willis is currently serving as Legislative Liaison for the Company on employee relations matters. • Four GE employees recently received special awards from the Black Achievers in Industry Project sponsored by the Harlem branch of the YMCA. GE's winners: Betty P. Brown, manager of Communications and Employee Development for the Neutron Devices Department in St. Petersburg, Fla.; Theodore Edwards, manager of EO/MR for the Transformer and Distribution Equipment Business Division in Pittsfield, Mass.; Al Hill, manager of Equal Opportunity, Urban Affairs and Hourly Skills for the Lamp Business Division at Nela Park, Ohio; and Arnold Roane, business analyst in the Power Generation Group Strategic Planning Operation in Fairfield, Conn. • Of 86 American engineers recently added to the roster of the National Academy of Engineering, three are from GE: Louis F. Coffin, Jr., Mechanical Engineer with the R & D Center in Schenectady; Nobel Prize Winner Ivar Giaever, Biophysicist with the R & D Center; and Thomas H. Lee, Manager, Group Strategic Planning Operation of the Power Generation Business Group in Fairfield, Conn.

GE waste oil not wasted: The discovery of a practical use for waste oil produced by GE's Plastics Business Division in Selkirk, N.Y. has led to a cooperative arrangement between two industries to recycle waste materials.

Earlier this year, the Noryl Products Section of PBD set out to find a useful way of disposing of waste oil produced by its manufacturing processes. With the help of the State Department of Environmental Conservation, GE learned that the Atlantic Cement Company in Ravena, N.Y. was seeking a substitute for the #6 grade imported fuel oil needed to heat the large kilns used in its cement manufacturing process. The two companies got together and tested the oil. Results showed that the waste had characteristics similar to the #6 fuel oil and that it produced similar burning qualities.

As a result, GE oil waste is being trucked to Atlantic, and an estimated 375,000 gallons will be delivered in 1975. Atlantic is able to reduce its need for imported fuel oil by one gallon for every gallon of GE waste used, and the Plastics Business Division has found another way to recycle its waste.

MONOGRAPHS

Help from the handicapped: Two GE-ers with uncommon commitments are achieving satisfying fulfillment of personal goals they established despite serious handicaps.

Ed Ingham, a math analyst in the Sunnyvale, Ca. office of Space Division's Information Systems Programs, has won an Emmy award for outstanding achievement in producing a weekly variety show, "Silent Perspectives," for the deaf in his community. Ingham himself is deaf, and his commitment and motivation have been based on a desire to help other deaf individuals.

"Silent Perspectives," produced by Ingham on his after-GE-hours time, has also won a Broadcast Media Award for excellence in Community Service Telecasting, and has been nominated for national recognition by the Corporation for Public Broadcasting.

In a different way, Douglas Boyce has made a significant accomplishment in his life. In a high school wrestling tournament seven years ago, Boyce suffered a spinal injury that left him a quadriplegic—paralyzed from the shoulders down, except for wrist movement.

In between 35 surgical operations, he earned a high school diploma and then an associate degree in data processing technology/computer programming.

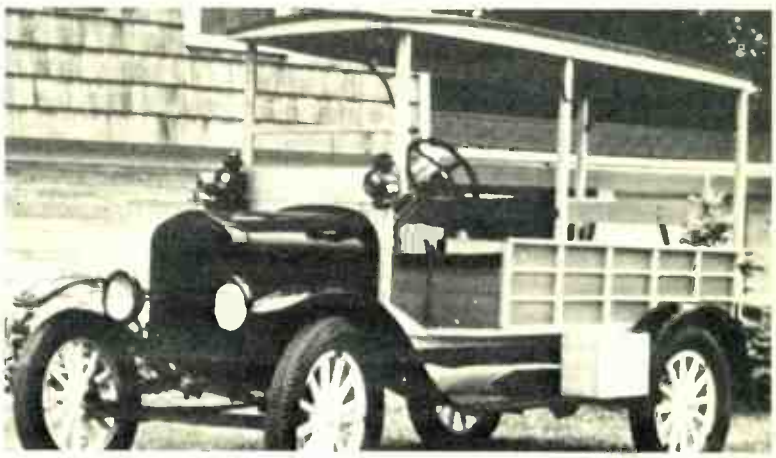
Now, Boyce is successfully into his second year working with the Communication Systems Business Division in Lynchburg, Va. as a computer programmer. He can't travel to work because of his disability so he works in a room in his home which has been rewired to accommodate a Terminet® terminal that ties into GE computers in Lynchburg and Schenectady.

New lift at AEG: At Aircraft Engine Group's headquarters in Lynn, Mass., there is a shift from the disappointment that has been keenly felt at the plant since a rival plane won the first round of contracts for a new lightweight fighter plane. Reason: the Navy's announcement that it has selected the F-18, powered by two GE F-404 engines, to become the new Navy Air Combat Fighter. Edward Woll, VP of the Group Engineering Division, cautioned that winning this competition did not automatically insure production of either aircraft or engine, but expressed confidence that the program will proceed. Final contract negotiation is still pending.

Creativity: For GE people it takes many forms

After-hours as well as on the job, GE people apply their creative energies in highly individualized ways. An earlier issue of the *Monogram* (January-February 1974) sampled the creative output of GE's "Sunday Artists" who work with paint and canvas. But painting is only one medium by which employees express their creativity.

Webster defines art as "the conscious use of skill, taste and creative imagination in the production of esthetic objects." As shown on these pages, GE people apply their skill, taste and creative imaginations to materials as diverse as metal scrap and rocks, and to projects as varied as wood sculpture and antique automobiles.



Three restore antique cars

Rebuilding vintage automobiles from hulks of deteriorating metal is the hobby of three antique automobile restorers in Cleveland's Lamp Business Division.

Utilizing their mechanical and electrical expertise, John Anthony (left), a now retired development engineer, Nelson Fitzgerald (center), a design specialist and Glenn Anderson (right), a field service engineer, work as a group in a building erected on Anderson's property and labeled the "Anderson Coach Works." There they rebuild, from the frame up, anything from a 1930 Packard Roadster to the 1923 Ford Model T Depot Hack shown above after restoration.

The greatest challenge, the three agree, is in making their reproductions authentic. "It takes a lot of research," says Anderson. "We collect old manuals and books to help us form some parts from scratch." Anderson was recently declared legally blind but has been able to continue with both job and hobby due to special training.

"Some people do this strictly as an investment," says Anthony, "but we consider ourselves purists. We do the work for our own pleasure."

Historic militaria are his craft

Robert F. Van Allen has a special interest in antique militaria from the Revolutionary War period. He has completed several hundred restorations of military items including the sword at right. Called a Lion's Head sword because of the design on the hilt, it was once owned by an Inspector General of the Continental Army. Van Allen puts its worth at "$50,000 but historically priceless."

A 24-year employee, Van Allen is a technician specialist in the Design Engineering Section of the Aerospace Electronics Systems Products Department in Utica, N.Y. He is also consulting curator at the Mohawk Arms, Inc. Historical Museum and is director of the Oneida Historical Society, among other groups, where he identifies, restores and catalogs military items.

A house of treasures

"More than half of my house is furnished with antiques restored by my wife and me," says Jack Osborne, an accountant in Syracuse's Electronic Systems Financial Operation.

Osborne has been collecting and buying castoff or damaged antiques and refurbishing them to original beauty for more than 30 years. His hobby entails stripping old finishes, sanding, glueing, soldering, painting, scrollwork and final finishing to recapture the old beauty. The cradle at left is from the mid-1800's period.

Some of his prized items have been shown in antique exhibits. This year Osborne is chairman of the Cazenovia Rotary Club's antique show.

"These objects," Osborne says, "represent historical eras—it's certainly worth the time and effort to restore and preserve them for the future."

Salvage into sculpture

"I like to create things with different media to see what happens," explains Lorraine Allen, a certified kitchen designer in Louisville's Major Appliance Group.

Ms. Allen draws, paints, creates collages and, most recently, has delved into salvage art—sculpting different forms from metal scrap. In competition, Ms. Allen has won 59 prizes and numerous honorable mentions. She has held 14 one-woman shows to date and has had her work on local television. The five-foot-by-four-foot "Terrace of the Moon" at left commemorates the space program.

A wood sculptor

Already a two-time winner of "Best-in-Show" and one "Artists' Choice" award for his sculpture, Lynchburg GE's Francis Moorman says that he's beginning to realize the fruits of a life-long ambition.

"I wanted to decorate my home in an African motif," he says, "and wood carving appealed to me."

Moorman is employed in the Graphics operation of the Communications Systems Business Division. He has also done some private work in the media of oil painting and papier-mâché. Eventually he wishes to exhibit much of his sculpture in a one-man show.

His wood piece at far right, entitled "Our Father," is a four-sided figure portraying a religious story which won a "Best-in-Show" award.

A Florida lapidary

Chris Foran is a lapidary—a precision cutter of gems—which he also mounts in jewelry. His interest in geology, rocks, crystals and artifacts has taken him to all fifty states and other parts of the world.

A tool and die maker in Gainesville, Florida's Battery Business Department, Foran has a home workshop with equipment he fashioned himself.

At top left are several examples of stones already faceted, polished and placed into settings by Foran. Top photo: a natural oval aquamarine from Brazil and a synthetic pink sapphire. Below: three oriental jade cabachons ornament a bracelet.

"Many delicate processes are involved in faceting stones," Foran says, "but with a little determination and the proper equipment, anyone can master them. I've had some fine compliments along with offers of commissions to cut gems—this is proof that any dedicated amateur can learn to do a professional job."

PRODUCTS

Bright new ideas in GE products

One of the ways to help put the recession to rout is to offer customers new ideas that are too intriguing to resist. That's what a number of General Electric operations are doing, as indicated by this *Monogram* sampling.

But there's more here than just new product gimmickry. These GE developments represent bold new moves that will enable the Company to compete more aggressively in major markets—photography, ship propulsion, home security, television and the long-term market for solar power.

FlipFlash—it fights 'red-eye'

One of the objections to cameras whose flash attachments are near the lens is that the color photos sometimes show people's eyes looking like red holes in their heads. FlipFlash, GE's new photoflash development that greatly reduces this "red-eye" effect, has so excited Kodak that this leader of the photographic industry has made it the basis for five new pocket cameras—the Trimlite line and the Tele-Instamatic. Other camera manufacturers are expected to follow.

FlipFlash helps do away with red-eye by serving as its own extender, increasing the angle between bulb and lens. When the top four bulbs have been flashed, the photographer flips the array to fire the remaining four.

Clever circuitry, making use of piezoelectricity generated when a small ceramic cube is tapped by a tiny hammer linked to the shutter release, fires the bulbs without need for flash batteries. Another advantage: a "Go Dot" signal system on the back of the unit shows at a glance how many flashes are left and which one is the next to go.

FlipFlash, latest in a series of over 35 new flashbulbs introduced by GE in the past 45 years, resulted from some 100 man-years of R & D, led by the team of Photo Lamp Department engineers at left: (left to right) Robert M. Anderson, Richard L. Hunder, Dr. David H. Green and Richard Blount.

A gas turbine that can reverse itself

A camera built around a GE flashbulb is one thing. How about a ship designed around a GE development? It could happen as the result of Gas Turbine Products Division's successful development of the world's first reversing gas turbine.

Developed under contract with the U.S. Maritime Administration, the GE turbine would eliminate the reverse-gear transmissions or reversible-pitch propellers required by conventional gas turbines used in marine applications.

The design also is intended to enhance the maneuverability of gas turbine-powered vessels by providing a smoother, faster transition from ahead-ship to astern-ship operation. Gas turbine vessels now in service use either reversible-pitch propellers or electric drive for astern operation. In the new GE design, an alternate gas path in the turbine's second stage permits either clockwise or counter-clockwise shaft rotation at a variety of speeds, to provide either forward or reverse power directly to a ship's propeller.

John Rucigay, program manager for the reversing turbine, described the recent test-stand performance of this modified MS 3002 unit as "equal to or better than standard production machines."

During recent tests, the direct-reversing machine accumulated a total running time of approximately 110 hours. Now, says Rucigay, comes the task of distilling and analyzing the performance data to find out, among other things, the reversing feature's effect on fuel consumption. The results, of course, will determine the economic feasibility of building larger, commercial reversing turbines.

(continued next page)

Smoke alarm adds to GE's home security aids

Employees to get first crack at new smoke detector

Staffers of the *Monogram* watched a convincing demonstration recently at Housewares and Audio Business Division's HQ in Bridgeport. A single sheet of notepaper, lighted and dropped into a metal waste basket, set two of the new ceiling-mounted Home Sentry™ Smoke Alarms into action within seconds, even though hardly any smoke could be seen.

The new GE units rely on ionization to detect fire in the earliest stages of combustion, before any flame, heat or smoke is visible. In fact, some ionization alarms on the market have proved so sensitive they cause false alarms. The Home Sentry reduces this possibility by employing dual ionization chambers. When its piercing 85-decibel alarm goes off, you are virtually assured it's because there is a real fire danger.

The Housewares designers seem to have thought of everything. In terms of appearance the battery-powered unit blends inconspicuously against a ceiling. As for testing its operation, a touch of its red test button checks out the complete unit. And it's fool-proof in warning when its specially-designed battery is running down. For at least seven days it keeps a horn beeping every minute. But what if this happens when the family is away? Home Sentry provides a double check: it thrusts out a red warning flag.

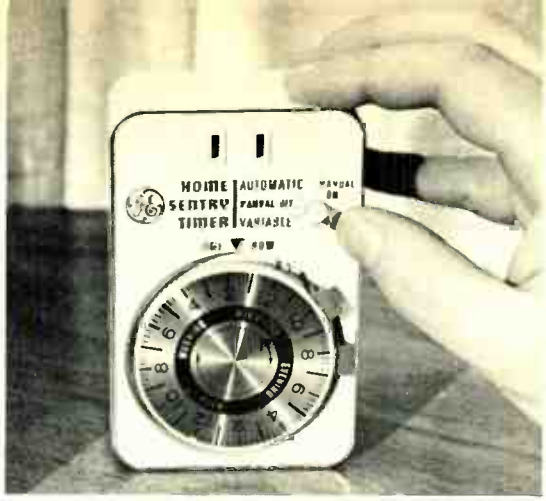
With production of the Smoke Alarm now underway, first shipments are to be made available to GE employees. Units list-priced at $54.95 will be available through employee stores at a special employee price of about $39.95 each. Employees not near an employee store can send a check or money order for this amount to: GE Smoke Alarm Offer, P.O. Box 450, Bridgeport, Conn. 06601. Be sure to give your full name, street address, community, state, GE Department and zip code.

Wiring that protects children

Electrical outlets have a fascination—unfortunately—for children. Now GE's Tamper Guard™ extension cords, developed by the Wiring Device Department, are available to help avoid shock hazard.

Tamper Guard's rotating covers discourage children from inserting foreign objects into the outlets. Although neither children nor adults can easily turn the permanently attached outlet covers with their fingers, the units are quickly opened and closed with a standard two-prong electrical plug.

Tamper Guard extension cords are available through most employee stores and retail outlets.



Variable timer keeps them guessing

Another security device from Housewares is the GE Variable Home Sentry™ Timer. It confuses would-be burglars by turning lights and radios on and off at different times night after night.

Lighting is one of the most effective and least expensive deterrents to burglary, but lights left on continuously invite break-ins because they are sure signs of an unoccupied home. Adding the sound of a timer-controlled radio adds to the impression that someone is at home, so burglars scouting for an easy job are likely to look elsewhere.

The new variable timers are available for approximately $6.75 at employee stores.

Protection against electric shocks

Did you know that a healthy adult can be fatally injured by an electric shock as small as one-third of an amp and lasting one tenth of a second?

To protect against the hazard of electric shock, GE's Circuit Protective Devices Department has added a GTR Ground Trip Receptacle to its line of ground fault circuit interrupters which detect stray currents flowing to ground and shut off the power in one-fortieth of a second, fast enough to prevent injury.

For information, write: General Electric Co., Circuit Protective Devices Dept., 41 Woodford Ave., Plainville, Conn. 06062, Attn. GFCI.

When lightning strikes, GE protects

Against that old destroyer, lightning, GE's Protective Equipment Products Department offers a safeguard. It's called, simply, The Protector, and it's GE's low-cost answer to those damaging electrical surges caused by lightning that strikes or passes near an overhead power line.

It should be installed only by a qualified person. Employees interested can order units directly from R. C. Bailey, General Electric Co., Protective Equipment Products Dept., Pittsfield, Mass. 01201, with an accompanying check or money order for $13.95 per unit payable to General Electric.

(continued next page)

For GE, two solar 'firsts'

Solar power, that form of energy that relegates other energy sources to being "secondhand" fuels, has become a battleground. Many of its proponents want to force society to rely on it, ready or not. Other experts believe that too-sanguine hopes have been raised for the immediate benefits of solar and that it will be some years before solar technology will make a meaningful contribution.

In the meantime, demonstrations and experimental installations have the virtue of broadening the base of knowledge and experience with solar energy. This is the direction in which GE's Space Division has been providing leadership, as indicated by these two new 'firsts' in solar technology.

Solar on an industrial scale

Valley Forge, where Washington's army suffered its longest winter, has become a new center for harnessing the energy of the sun. One wing of the main building of GE's Valley Forge Space Center now is testing this country's first privately initiated, industrial-scale solar heating system.

According to Bob J. Tharpe, manager of GE Advanced Energy Programs, the 203 eight-foot-long panels mounted on the roof will collect enough energy from the sun—approximately 3.5 million BTU's per day—to provide 75% of the heat and hot water used in the cafeteria-kitchen area.

The system, which collects heat whenever the sun shines, even on the coldest days of winter, is expected to save some 12,000 gallons of fuel oil. It can heat the large cafeteria area for three consecutive sunless, 10-degree days.

Tharpe points out that this concept of solar heating, successfully applied by GE last year at a junior high school in Boston, is still in an experimental stage of development.

Solar for mobile homes

Filling the need for a solar heating system that could rapidly be relocated for experimental purposes, GE's Space Division, under a National Science Foundation program, has equipped a mobile home with solar heating as well as solar air conditioning.

A standard 12-foot-by-60-foot mobile home was modified by adding extra insulation and enclosing all necessary plumbing for the system, including a 400-gallon hot water storage tank, in wall spaces and one large closet. On the roof, GE installed 19 eight-foot-by-three-foot solar panels, which provide 95% of the hot water and 80% of the heating and air conditioning.

"As energy costs rise, use of solar heating and cooling becomes an attractive alternative to other energy sources," says Lee L. Farnham, General Manager, GE Space Systems.

Now it's 'compact consoles' in GE TV

For your living room or family room, you don't like the appearance of a small portable, complete with carrying handle mounted prominently on top? But a console TV is too big for your room?

Try General Electric's new "compact consoles."

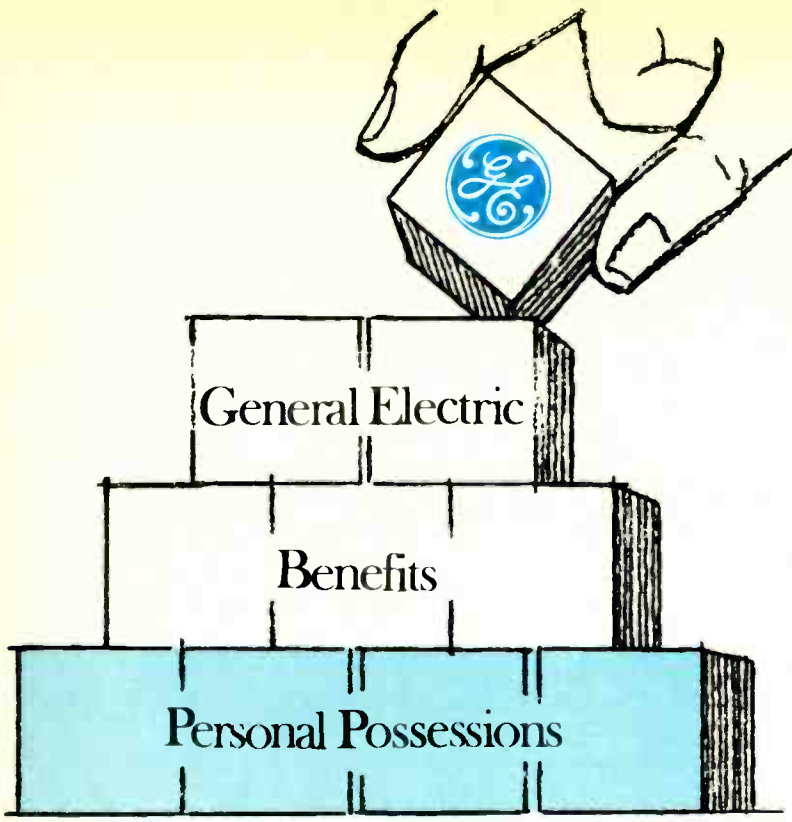
They're GE's Television Department's bright new idea, offering a screen size large enough for family viewing, with cabinetry like the bigger consoles, yet of a size that is in scale with the decor of smaller living rooms and family rooms.

Another plus: the new compacts have the look, but not the price, of a console.

GE's TV experts think their new designs are just the ticket for today's TV market, especially for the generally smaller rooms characteristic of condominiums, town houses and apartments.

The 19-inch, solid-state, modular color television receivers will be offered as the Townhouse Collection in contemporary, country oak and country pine styles. In the GE view, these 1976 Townhouse sets can become an integral part of virtually any home decoration scheme.

All of the models feature a 100% solid-state chassis powering a black matrix picture tube which delivers high-quality images 25% brighter than GE's former 19-inch model. They also feature GE's Custom Picture Control that lets the viewer adjust the contrast, brightness and color simultaneously with a single knob. And they have GE's Automatic One Touch Color® System which combines pre-adjusted controls to provide a sharp color picture with a touch of a button.



Estate planning: more relevant than you may think

Estate planning—it's only for the wealthy, the rich, all those higher-ups who have to worry about how they pass their estates on to their heirs. Right?

Wrong! Nearly any General Electric employee who is participating actively in the Company's employee benefit programs today has, whether or not he knows it, an estate that is large enough to deserve proper planning and may well be subject to high estate taxes.

That's the message from a recent *Monogram* discussion with Paul L. Moyer, manager of Corporate Employee Benefits.

Estate planning is, Moyer makes clear, a subject that can be complex enough to serve as a whole career field for many attorneys, accountants and other advisors. What Moyer covered with the *Monogram* was more in the nature of setting basic estate planning priorities, the prelude to gaining professional planning help.

Action on this front can be critically important, making a great difference in how much of your estate goes to your heirs and how much of its gets tapped as federal and state taxes. And although the odds that you will die while an active GE employee are low, the fact is that 873 employees covered by the GE Insurance Plan did die last year.

"Few employees sit down and total up the estate they would leave behind if they were to die suddenly," Moyer says. And when they do, the obvious things come to mind first: the mortgaged house, the family car (or cars), furniture, bank accounts, life insurance and the myriad personal possessions collected over the years.

But what may get overlooked, Moyer points out, is in most cases the largest item of all: the General Electric benefits, which can readily swell the total to six figures.

Just tick off the ones that apply to you:

- *Basic Life Insurance*—two times your annual salary or three times if death is accidental.
- *Additional Life Insurance*—up to two times your annual salary.
- *Personal Accident Insurance*—at least $100,000 available if death is accidental.
- *Money from the Pension Plan*—a refund with interest if your Company service is less than 15 years of credited service under the Plan; otherwise either a lifetime pension to your surviving spouse or pension payments to your beneficiary for five years.
- *Savings and Security Program*—savings bonds, stock and fund units you have accumulated, plus Company contributions and income.
- *Savings and Security Program Insurance*—the most substantial benefit for younger employees with families; for example, for those in

the 30-34 age bracket, it pays 60% of your salary annually for 30 years to your beneficiaries.

Says Moyer: "You can quickly begin to see, if you add up your estate-connected GE benefits, why estate planning has become a relevant item for the typical employee, not just for top managers. This speaks extremely well for the Company but, at the same time, it poses an additional challenge to the employee: are you willing to arrange all your potential benefits so that your family can get the most out of them? We can't do that for you."

To the employee who wants to run a check on his estate, Moyer suggests several steps.

First, review the GE benefit plans you have already elected. Are you taking sufficient advantage of the benefits available to you? "The substantial Company contributions," Moyer says, "plus the group insurance rates and the 'favorable experience' on plans like the S & S Program Insurance, have made possible an estate package that literally cannot be matched on the outside for many times the money."

Second, review with your employee benefits specialist the benefits you have elected.

Other steps:

- *Estimate their present "estate worth,"* using the benefit booklets from employee relations and the *Estate At A Glance* list printed with this article.
- *Study the alternatives and pitfalls,* some of which are outlined on the following pages.
- *Consider taking a record of all the components of your estate*—including your GE benefit package—to a lawyer or estate-planning specialist for advice.

For employees with an interest in estate planning, the *Monogram* offers the following as very basic introductions to four concerns connected with estate planning.

First order of business: a will

More than half of American adults have not executed a simple will to protect their wishes in the event of death. And the proportion of single persons who have no will runs much higher than half. "This omission can be a very expensive one for your estate, even though your GE benefits are passed outside the scope of your will," says Paul Moyer. Dying without a will can, for instance, tie up any singly-owned possessions so they cannot easily be sold, because most states award property to both spouse and children if there is no will.

Inconveniences aside, however, the most obvious disadvantage of not having a will is that your estate will be divided up according to state law, in a way which might not meet your needs.

The most urgent piece of estate planning business then, say the experts, is to have a will, see to it that your spouse has a will, and make sure that the will includes provision for the guardianship of your children in the event of a common disaster to you and your spouse.

Your Estate at a Glance*

	$
Personal Possessions	
Equity in house, cars, bank accounts, investments, furniture, etc. (less debts)	_____
Private Life and Accidental Death Insurance (less any policy loans)	_____
General Electric Benefits	
General Electric Insurance Plan (Life and Accidental Death)	_____
Additional Life Insurance	_____
Personal Accident Insurance	_____
Pension Plan	_____
S & S Funds	_____
S & S Plan Insurance (lump sum value)	_____
Total Estate	_____

*greatly simplified

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Protecting your estate outside your will

Since you have named beneficiaries on all your private insurance policies and GE benefit plans, such benefits would pass directly to them outside your will in the event of your death. These benefits are far and away the largest item in most employees' estates.

"The matter seems to rest right there for many people," says Richard M. Drake, consultant in Corporate Tax Accounting. "But with the size of the average GE insurance-created estate, it's not quite that simple if you want your beneficiaries to get the most out of the insurance you have accumulated."

Without giving direct advice, Drake outlines some of the Federal estate tax provisions which can cause "tax lightning" to strike a middle income GE employee's estate. "There is an exemption of $60,000 for estate tax purposes," says Drake. "But beyond $60,000; the Federal estate taxes rise very steeply. By the time you get to $200,000, for instance, taxes are already over $30,000. There is an important additional protection for married persons called the marital deduction, which cuts a taxable estate in half if the estate is arranged properly. Careful attention should be paid to beneficiary designations and settlement option elections under the various GE group life insurance arrangements, to make sure they qualify for the marital deduction, because insurance proceeds are subject to estate tax. Younger employees should pay particular attention to S & S Program insurance, because this could be the largest item in their estate. Other possibilities which merit consideration for estate tax saving include making the group life insurance proceeds to be payable to a trust or giving away all of the incidents of ownership in the policy. Needless to say, legal advice should be obtained."

Joint ownership: Have you outgrown it?

Joint ownership of property is commonly practiced by husbands and wives, because it seems to be a neat and simple solution to the problem of property inheritance. All jointly-owned property under most state laws goes to the survivor automatically. A will has no effect on this immediate and outright transfer.

"The advantage of joint ownership in bank accounts and home ownership," says Moyer, "might be outweighed by some surprising disadvantages for the GE employee who has created a sizable benefits estate and must consider estate taxes. Jointly-owned property may not be put in trust or removed from a taxable estate in any way unless it can be proved that the survivor helped pay for it with his (or her) own money.

"While joint ownership may well be advantageous in some instances," counsels Moyer, "don't depend on it to solve all your estate problems. It may actually increase your problems. You should review it with a lawyer as part of any good estate planning session."

Are trusts worthwhile for the average employee?

"Consider the use of a so-called 'living trust' to distribute some of the proceeds of your sizable General Electric estate," urges Moyer.

For example, suppose a GE employee is killed accidentally, leaving a young family and cash insurance proceeds of more than $100,000, plus a 30-year monthly income that adds up to $200,000 from S & S Program Insurance. The spouse is left to manage the lump sum and because of bad advice, ends up losing most of the principal. The children receive no help with college expenses or income to help them get started because the surviving spouse needs the remaining income to live on.

Benefits manager Paul L. Moyer

"The advantages of a trust in this case could have been substantial," says Moyer, "even leaving aside possible tax advantages. In a trust, the money could have been set aside and invested by an experienced administrator with the income going to the surviving spouse. In later years the principal could be given to the children or divided any other way."

Moyer concludes: "The Company has helped considerably in giving you the opportunity to create a generous estate. We hope you take the time and modest expense of arranging this wisely."



In the Boston Marathon from GE (l. to r.): Gage Hotchkiss, Billy Albers and Jerry Williams.

GE's sports activists

In the midst of major marathons, on the ice in hockey battles, and on the slopes in ski competition are GE people who take their sports not via the tube, but actively, vigorously and, at times, victoriously.

When the 79th Boston Marathon—"the world's most prestigious footrace"—was run on April 21, no fewer than eight GE employees were among the starters. What's more, all eight finished the grueling 26.2-mile race and all were well under the $3^1/_2$-hour qualifying time.

Top GE competitor in the race was Jerome D. Williams, 28, a Schenectady Advertising and Sales Promotion Operations publicist who crossed the line in 2 hours, 36 minutes to join the first 200 finishers out of 2392 entrants.

"The start was the worst I've ever been in anywhere," says Williams. "Thirty-five seconds after the gun went off, I still hadn't taken a step because of the crowd of runners at the line."

A fierce competitor who trains so hard before a marathon that he gets "real mean," Williams has been winning races since early elementary school. A veteran of three Boston Marathons and three Philadelphia Marathons, he says he runs "for the pure enjoyment of it."

Does he have any advice for would-be marathoners?

"Running relaxes and eases the mind," says Williams. "It's difficult to get started, but once you're in shape, you'll find that running doesn't tire you out anymore. The key to building stamina, though, is to run every single day, no matter what the weather—just dress appropriately and go."

Another Schenectady entrant was E. Gage Hotchkiss, 43, of Steam Turbine-Generator Division administration. Says Hotchkiss: "The Boston Marathon is the only sports event in the world where an average guy like me can compete with the world's greatest. After all, you can't simply go and enter a grand prix auto race."

At 185 pounds, the six-foot former University of Pennsylvania champion weightlifter and wrestler is heavy for a marathoner; most weigh just two pounds per inch of height. He started running six years ago after learning from a book on physical fitness that body-building exercises like weightlifting do not promote health or long life, "and that nobody ever died because he didn't have 18-inch biceps."

Running one mile per day at first, he now covers as much as 13 miles before breakfast and adds another five during lunch hour (he skips lunch). For the last four years, he has averaged 3000 miles per year.

How long will the 43-year-old GE-er run?

"I'll run until something gives out—my heart, a leg, or whatever." Hotchkiss finished the April 21 race with a time of just over three hours.

Also from Schenectady was William F. Albers, 43, of the Knolls Atomic Power Laboratory. He ran his best of eight Boston Marathons this year.

Allen D. Maddaus, 29, of the Steam Turbine-Generator Division in Schenectady, not only

(continued next page)

Burlington's skaters lost to Canadian GE, but their skiers compensated by winning recent Pico Peak event.



practices at lunchtime but also runs 10 miles to work and back twice a week.

The Company was also represented at Boston by a 26-year old systems designer, William F. Mullen, of New York's International Sales Division. Running 10 miles a day and 20 miles on Saturdays helped him prepare for the course, which he covered in 2 hours, 48 minutes, his best time for the four Boston Marathons he has entered.

From Aircraft Engine Business Group in Everett, Mass., came John A. Wallace, 48. He runs in 30 races per year and finished with a creditable time of 2 hours, 52 minutes in his seventh turn in the event.

Wallace led two Lynn River Works employees: 23-year old Wayne J. Bingham, a trainee in the Aircraft Engine Group, and 49-year old Arthur J. Frongello, a quality assurance specialist for AEG's Defense Contracts Administrative Services.

Frongello, whose time of 3 hours, 14 minutes was 15 minutes faster than last year, has lost "25 pounds and one waist size" since he started running four years and three Boston Marathons ago.

An international hockey 'first'

For the first time in GE sports history, two employee hockey teams from different countries recently faced each other, on Burlington, Vt. ice. The Mics from Burlington's Armament Systems Department, who have lost five games so far this season, met the Quebeçois from Canadian GE's Major Appliance Department in Montreal. The Canadian skaters won.

"This is just the beginning of international competition between GE teams," says the Mics' coach, Roger Baillargeon. "Next year, we hope to play a return engagement in Quebec as this cross-border competition continues."

During ceremonies at the rink, the visiting Canadians gave each American team member an Olympic pin symbolizing good will and Montreal's hosting of the Summer Olympic Games in 1976.

Burlington skiers score again

In the 15th Annual GE Interdepartmental Ski Meet, held at Vermont's Pico Peak, the Burlington GEAA Ski Team outraced competition from Pittsfield, Mass., Rutland, Vt. and Utica, N.Y. to win the championship for the sixth year in a row.

All day long, 65 men and 35 women entrants whooshed through Pico's packed powder, most of them hoping to unseat the long-time leaders. By the end of the day, however, Burlington team members had acquired enough gold, silver and bronze medals to outpoint their competition and take home the grand prize trophy.

"It was a good meet and I think everyone participating enjoyed themselves," said Robert G. Turner, a Heavy Weapons Projects engineer and Burlington's team captain. "We were up for the meet and we'd practiced hard, which helped our performance. Next year, we plan to compete and win again."

ORGANIZATION CHANGES

CONSUMER PRODUCTS GROUP

John S. Chamberlin, *Vice President, appointed General Manager—newly established Housewares and Audio Business Division*

INDUSTRIAL AND POWER DELIVERY GROUP

Donald E. Perry, *Vice President, appointed General Manager—Industrial Sales Division.*

Leonard C. Peterson, *Division Counsel—Contractor Equipment Legal Operation.*

INTERNATIONAL AND CANADIAN GROUP

Gerald T. Smiley *appointed President and General Manager of General Electric do Brasil S.A.*

John J. Barron, *Division Counsel—International Sales Legal Operation.*

POWER GENERATION BUSINESS GROUP

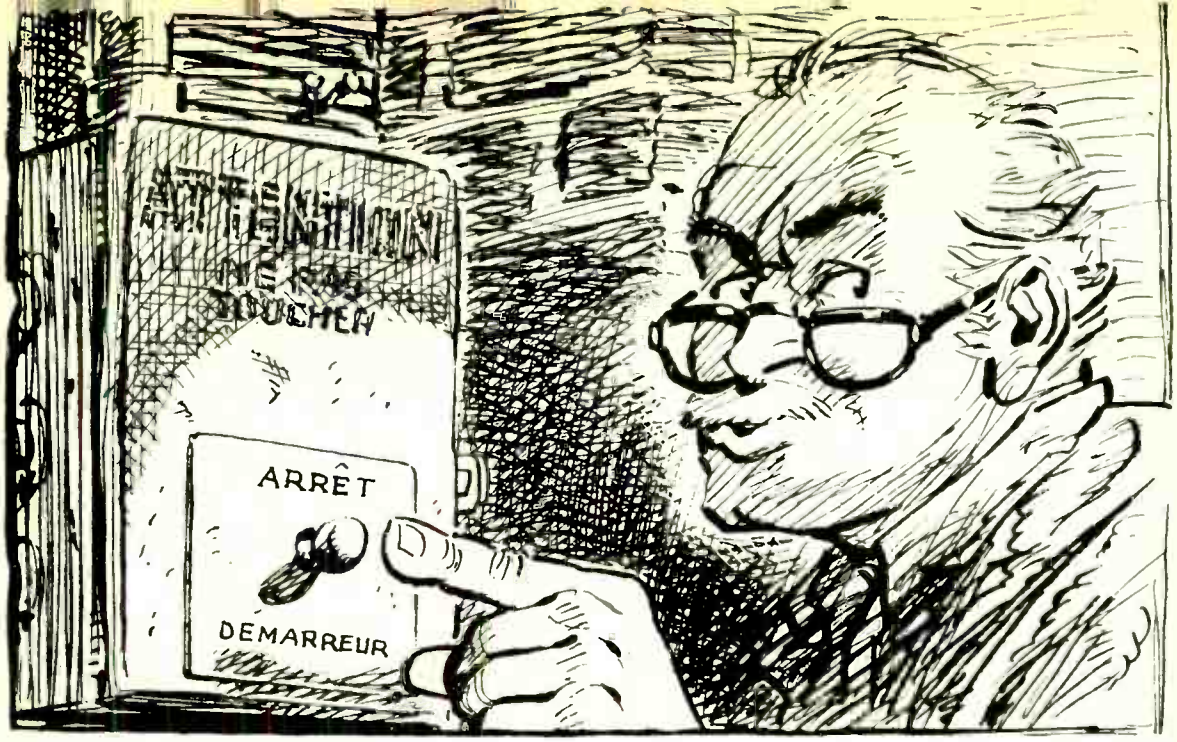
Salomon Levy, *General Manager—Boiling Water Reactor Operations.*

Henry E. Stone, *General Manager—Boiling Water Reactor Systems Department.*

Abdon Rubio, *General Manager—Nuclear Energy Control and Instrumentation Department.*

SPECIAL SYSTEMS AND PRODUCTS GROUP

Robert T. Bruce, *General Manager—Industrial Heating Business Department.*



TENDER BUTTONS– an electrical vignette from France

By John Bovey

Dependable electrical service can be taken pretty much for granted in the U.S. It takes something such as this whimsical account of electrical adventures and misadventures in rural France to remind us to count our blessings. Author Bovey is a GE share owner and former American Foreign Service Officer who now lives with his wife in Paris and in a small village in the Cévennes mountains.

Near the bridge below our village in the Cévennes sits an ancient transformer, whose walls are daubed with the slogans of the Occitanian separatists. One of them, "*Lucha o creba*" (struggle or perish), is an apt battle-cry for our encounters with the electric current.

Cévenol attitudes toward electricity are lighthearted. One day, while I was taking a walk below our house, I witnessed what looked like an imminent electrocution. Two peasants were maneuvering a truckload of hay through the narrow road of a stone farmhouse, whose ruins dominate the valley. The truck was barely visible under the bales of hay, which were piled so high that they pushed against the electric wires running across the end of the driveway. The younger peasant climbed to the top of the load and looped the wires nonchalantly over his upraised arms until the truck had swayed out into the main road. Noticing my whimpers and hand-wringings, his partner explained that electric wires, like the scorpions and adders which abound in the Cévennes, cut up nasty only when encountered on open ground. So long as one stood on hay, he assured me, they were not *méchants*. I said I was relieved to hear it and wished him a dry haying season.

Although thunderbolts often crash down upon us from the Massif Central, our village no longer lives in the age of Benjamin Franklin, and it is the harnessed product—or the lack of it—that causes our problems. Toasters, stoves, irons, heaters, even light bulbs draw heavily on the thin current that crawls through the wires to the mountain summits, so that light and heat involve a constant battle of

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wits. But in our ordeals, we are fortified by the ready wisdom of our electric company. Their trouble shooter for the region, whom we shall call Monsieur B, is a handsome black-haired man endowed with a slight *embonpoint* and the resources of the born *bricoleur*, a necessity in an area where weakness of the "*force motrice*" combines with ancient gadgetry to make life a challenge.

To arrange an appointment with Monsieur B, one calls from the house of the mayor (he has the only telephone in the village), rather as though one were summoning the doctor. Monsieur B never fails to make his house calls or to minister aid to circuits in distress. At the hour fixed, his little yellow truck appears on the slope, and shortly afterwards, tools in hand, he mounts the village steps, breathing a bit heavily at the summit. With his flat blue cap and his gold-toothed smile he reminds one of Hippolyte Foncimagne, the lady-killing postman of Clochemerle. On such occasions one offers a *petit pot*—either Pastis or *weeskee*. M. Bissot tosses these off at any hour, while he explains the mysteries of the *disjoncteur* (circuit breaker), which is the alpha and omega of life in the mountains.

This marvelous device spares you both the annoyance of changing fuses and the vexation of watching your house go up in flames. When you exceed your assigned wattage, the *disjoncteur* simply cops out, plunging the entire house into darkness. You then unplug the offending waffle iron or toaster and lean on the central green button. Light is instantly restored, although you may have to do without heat or postpone your dinner. One of our summer folk neighbors, who was tired of jumping up every five minutes to outwit the *disjoncteur*, had the bright idea of scotch-taping the green button in place. The result was a scorched wall, total blackout and a stern lecture from Monsieur B, who had to be summoned immediately.

Our main *disjoncteur* serves baseplugs, water heater and a super-sensitive pump, known as Old Faithful, that switches itself on when you draw so much as a gill of water. With an allotment of just 1500 watts (these amounts are approximate in the Cévennes) you have to watch things carefully. Ten bulbs of 100 watts bring you close to the peril point. Add an iron or, in the chill of autumn, an electric heater, and *clack!*—out pops the green button.

My wife and I used to try audacious combinations to see how long we could survive on the ragged edge of blackout. Our greatest triumph was the simultaneous operation of an electric blanket and a heater; to accomplish this feat, we had to read by the light of a single 40-watt bulb. But we had reckoned without the pump. When I turned on the tap for refreshment before snuggling down to bask in unaccustomed warmth, Old Faithful leapt into action, everything went black and we were back at square one.

On certain evenings, if we picked the hour carefully, we could turn on more devices than usual and sit in unrepentant radiance. Controlled experiments during the wine harvest led us to conclude that these blessed reprieves coincided with fêtes or special events when the villagers left their houses to gather in the town below. At such moments, everyone turns off lights and takes to field, café or, nowadays, motorbike. But at the risk of being judged anti-social, we mountain curmudgeons seize the occasion of the torchlight flower parades to do our ironing and warm our feet.

The situation is complicated by the assortment of equipment of all ages and nationalities that has brought our tile-floored kitchen reluctantly into the Twentieth Century. Most fruits and vegetables are kept in the larder, a bone-chilling stone closet with the only screened window in the house. But there is a primeval Italian refrigerator with an enameled beehive on top, which I brutally cuffed several times until a gust of cold air revealed that it was already operating, although in total silence. It produces just six ice cubes, but it keeps choice items at slightly below room temperature. Its lethargy is compensated for by the zeal of a British electric kettle that defies all adages about watched pots and comes to a boil with terrifying rapidity. There is also a toaster of the ancient drop-seat variety.

The stove is a hybrid which only Gallic genius could have produced. As a response to the uncertainties of the energy supply, especially during the violent summer storms of the Cévennes, the Cartesian mind has come up with a culinary hermaphro-

dite. Two burners are electric and two operate from bottled gas, which is kept in the safety of the vaulted cellar. The resulting array of wire, rubber hose, pilot lights, blinkers and two-toned dials recalls the cabinet of Dr. Caligari. Even French logic, however, recoiled before the possibility of a bisexual oven, and it remains irrevocably electric.

Monsieur B explained our problems with his usual courtliness. "The old *transformateur* down below," he said, "well, she is like a woman of a certain age. She is full of life still, but not always steady in her moods." He shrugged. "And of course, Monsieur, by the time the current reaches you up here on this perch, your neighbors below have skimmed off the cream."

While we digested this salad of genders and metaphors, Monsieur B, with groans and grimaces, was turning a mysterious and recalcitrant screw in the *disjoncteur*. He then proudly announced that he had just bestowed 500 extra watts upon us and that we were raised to a new rate bracket. We "branched," as the French say, the toaster, the oven and the iron, signed a new contract, and in a blaze of light, poured a round of Pastis. But as soon as Monsieur B's yellow truck rounded the brow of the mountain, out popped the green button. His magic had vanished with him.

As a concession to the American lust for household appliances and probably because he was tired of climbing the village steps, Monsieur B consented to install an extra *disjoncteur* devoted solely to kitchen apparatus. It was screwed to a wallboard beside the chimney in an enamelled box of sinister dark green. In the silence of the night, you could hear the chuckle of the turning meter. Its immunity from tampering was safeguarded by a menacing placard that warned one never to touch it, except in case of all-out disaster—*une panne totale*. But one evening in a fit of impatience when a general slowdown had put dinner an eternity away, I monkeyed around blindly and found that a short, sharp blow to the red button marked *Arrêt* (Stop) immediately speeded up the whole operation. The oven crackled, burners brightened to an even, efficient glow and our six ice cubes became hard as bricks.

I could find no clue to this paradox, although it clearly involved the witchcraft which is the obverse of French logic. Remembering the scorched wall of our imprudent neighbor, I hesitated to discuss the matter with Monsieur B. But one day after he had successfully operated on the electric kettle—*"une petite intervention"* he modestly called it—and was enjoying a Pastis on the terrace, I screwed up my courage and divulged my monstrous secret.

Monsieur B frowned deeply and laid a speculative finger beside his nose. But he was not long in finding an analogy that reinforced my belief in the conspiracy of inanimate objects. "It is like a woman, Monsieur, who is sulky or weeping," he said. "A sharp blow to the cheek—but not too heavy—and *pouf! Elle redevient normale, n'est-ce-pas?*"

Recognizing inwardly that any breath of women's lib has yet to reach these remote sectors, I said I supposed that was it.

"And after all," said Monsieur B, draining his glass, "Who are we to say what *arrêt* means? It takes a little blow now and then to get sparks out of anything."

LETTERS

SST: study continues

In the midst of general satisfaction over the clean bill of health given to the current generation of supersonic transports by recently released studies (March-April *Perspectives*), we should not lose track of the general situation. The integrity of the ozone shield is still a legitimate concern, as is also the continuing inquiry into the effect upon this shield of large numbers of powerful, high-flying aircraft.

We are not dealing with "myths" but with scientific and engineering problems that must be addressed patiently and painstakingly. Critical parameters need to be quantified. What are the dimensions of natural sources and sinks and stratospheric transport mechanisms for ozone? What limits may need to be placed on the extent and characteristics of a future worldwide SST fleet? In the event that such limits are needed, what changes in engine design can be realized that would give the green light to larger and higher-flying craft?

In an effort to arrive at some of the needed answers, General Electric, for the past four years, has been cooperating with the Department of Transportation to implement various aspects of the Climatic Impact Assessment Program.

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More dust

Editor's note: Joan Ahearn's article on the trials of being a working mother (*Dust in the Bathtub*, March-April *Monogram*), brought in a multitude of responses from career-minded women. Here's a sampling.

"It's an honest appraisal of an often unsolved situation." . . . MARY ANN MCGRATH, Cincinnati, Ohio.

"Bravo! Many thanks to a mother with insight." . . . LINDA COGDELL, Stamford, Conn.

"It sure does help to know that other mothers have been in the same situation. If you ever decide to start that club, send me an application." . . . JUDY HAUBER, Columbus, Ohio.

The President's helicopters

On a factory test pad in Stratford, Connecticut, a GE-powered Sikorsky Aircraft VH-3 helicopter, left, is being put through its paces. The T-58-400 turboshaft-powered aircraft like the one pictured above will soon be landing on the South Lawn of the White House.

The twin 1500-horsepower GE engines built in Lynn, Massachusetts are carefully tested standard production models.

President Eisenhower made the first Presidential use of helicopters in 1957 and, since that time, they have supported each of our presidents in many parts of the world.