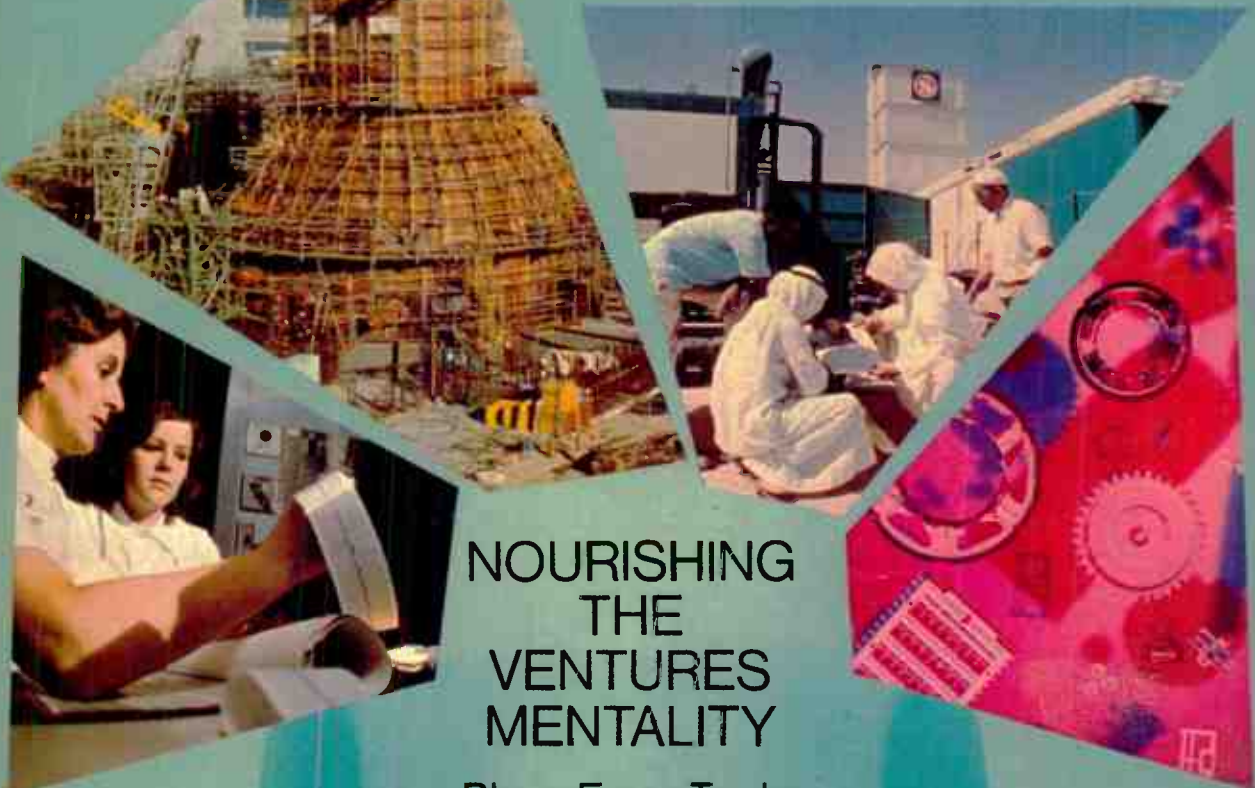


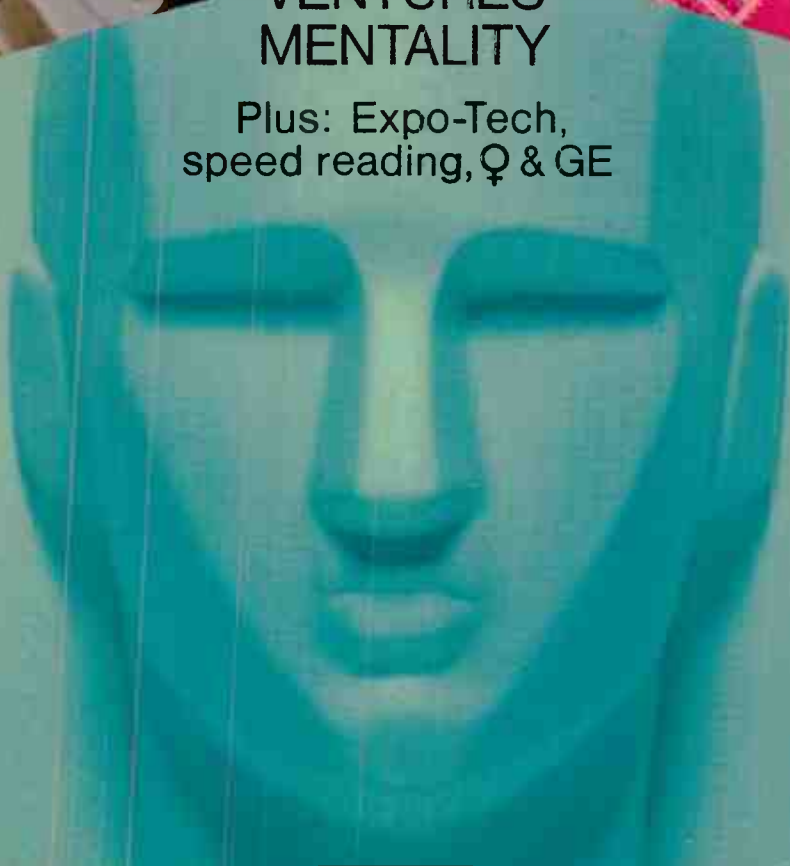
GENERAL ELECTRIC **Monogram**

MAY-JUNE 1974



NOURISHING THE VENTURES MENTALITY

Plus: Expo-Tech,
speed reading, Q & GE





VOLUME 51, NUMBER 3

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THE COMPANY

NOURISHING THE 'VENTURES MENTALITY'

It's a special state of mind that GE is taking special care to develop. Here's an in-depth report.

"It takes a certain breed to grab an idea and have the vision to push it into a successful business . . ."

"We don't measure by the clock. If we have to be here 60 hours a week to get the job done, that's what we do . . ."

"Strive for \$20 million in sales, but instead of reaching it in four years, do it in two . . ."

"They're coming up with some of the most innovative ideas, markets and product needs previously unknown to our business. But it's working. Everything just meshes . . ."

"My neck is on the line. I know I've got to make this business go—fast—or I haven't done the job. But if it does go, I'm going to have a lot better job two years from now . . ."

"You push and push . . . Luck you don't believe in . . . You gotta make it happen . . ."

These are the words by which a special group of GE people describe themselves and their missions. They're "venturists"—those businessmen/entrepreneurs who are committed to take their ideas and businesses and push them under forced draft into growth-oriented, profitable ones. Their goal is to do the things that are normally done in growing a business but with greater concentration of energies and resources; to condense the time cycles and accelerate the growth curves; to accomplish through sheer drive and nerve and stick-to-it-iveness what others might achieve over a much longer span. Their discipline is that of a balanced risk-taker.

How important is this venture attitude to General Electric? "Very," is the answer, from Chairman Reginald H. Jones on down. "The shape and profitability of General Electric ten and twenty years from now," says Jones, "will

to a major degree be determined by the ventures we succeed in identifying and developing today."

In response, the Company is currently giving special attention to ventures and to the ventures mentality. A corporate task force made ventures its specific focus. New mechanisms have been put in place to provide additional financial support and recognition to selected ventures. Senior officers have taken up the cause of the venturists and are emphasizing their particular needs at the corporate level.

What is a venture?

But first, what are the qualities that distinguish a venture from any other business operation?

"What a venture is *not*," says Jack Welch, Vice President and Group Executive of the Components and Materials Group and chairman of the Ventures Task Force, "is an itty-bitty untried idea tucked away in a laboratory or conceived by some self-proclaimed entrepreneur off in his corner. A venture is the faster growth segment of an enterprise. For this segment to be identified as a venture, it has to be highlighted at all levels of the organization and receive the total commitment. Highlighting the venture with clear-cut accountability increases the likelihood of appropriate resource allocation and enhances the probability of the venture's success."

Is a venture inevitably tied to newer sectors of the business? By no means, Welch says. "A venture is independent of size and age and can exist anywhere in the product life cycle. Within some of our oldest businesses we have ventures." In the Components and Materials Group alone he has identified some 18 to 20 ventures.

The element of balanced risk, and awareness of it by venture managers, is perhaps one of the most evident features distinguishing ventures. In several interviews, the *Monogram* was told that while risk-taking was greater in ventures, it acts as a stimulus rather than a deterrent to business growth. The venture manager who spoke of having his neck "on the line" made clear his expectations that success will lead to quicker realization of promotional opportunities.

As an example of the types of risks faced, Senior VP Oscar L. Dunn looks back to the example of the diesel-electric locomotive business. "Today we take the business for granted," he says. "But back then the risks were tremendous—after all, we were up against General

(continued next page)



GE'S VENTURES MANAGERS:
Dick Barnett; Weathertron® heat pump



Tom Bird; patient monitoring
Donn Dears; International apparatus service





VENTURES MANAGERS:
Graham Hamilton; electric locomotive



George Hupman; vacuum interrupters
Bruce Krause; Borazon[™] cubic boron nitride



VENTURES (*continued*)

Motors. To win against those odds required nerve, a lot of furious concentration and fast footwork on the part of a lot of fine people, as well as plenty of backing, financial and otherwise. We added all those elements and so the business took off. Today, as a result, we have a great worldwide business and, further, a lead in the promising ventures area of mass transit."

The essence drawn from talks with these and other GE venturists is that a venture is characterized as much by a special feeling—an air of excitement and total dedication—as it is by the foreshortening of the usual business logistics.

Why the emphasis now?

To take the longer view, General Electric began as a venture and has been nourished by ventures ever since. As a consequence, the care and feeding of the venture-minded entrepreneurial spirit has been standard operating procedure down the years. Why the special push today?

"GE has a good track record with ventures," comments Larry Burkinshaw, a member of the Ventures Task Force, "but the internal view held by some has been somewhat different—the Company wasn't visualized as a venture organization." Big ventures have received most attention at the highest levels of General Electric in the recent past, says Burkinshaw, but what the Task Force recognized is the need to broaden the number of ventures to include many other businesses. "Ventures are a regenerative activity, and unless you encourage them, they tend to die. So, first you need a favorable venture climate and broad recognition all the time, and second, a selection process through which promising ventures can receive the necessary visibility and support to make them grow."

In the wake of the Task Force report, the Company has stepped up its recognition of ventures and established a system to assure their regular review. Ventures are also regularly included in the agenda of Group-level executive board meetings and followed closely by the top-level Corporate Policy Committee. Ventures are a key part of the strategic business planning process—particularly in respect to resource allocation decisions. Recently a group of GE venture managers attended a seminar at the Wharton School, accompanied by Senior VPs Reuben Guttoff and Charles E. Reed, who are heavily involved in the Company's venture activities.

T and ®: Trademarks of General Electric Company

The criticality of this increased emphasis on ventures was underscored by Dr. Reed during the Belleair Management Conference earlier this year: "If General Electric is to grow and prosper, it must increasingly emphasize ventures," he said. "The size, complexity and profitability of the Company today is due in large part to our willingness and ability to stretch the organizational framework and venture into new territorial markets."

So corporate growth and insuring the future survival of the Company are, therefore, key reasons for the current venture thrust. Dr. Reed concurs with Peter Drucker—a virtual superstar among management consultants—that "an established company that isn't capable of innovation in an age demanding innovation is doomed to decline and extinction."

GE's Promising Ventures

Of General Electric's current ventures—about 40 thus far identified by Group Executives—12 are being given specific top-level attention. All share a commonality of high growth potential, although they presently generate small sales volume compared with other GE businesses. The Task Force on Ventures categorizes them as "C" ventures as opposed to established businesses in the "A" category—those highly-successful ventures that are fulfilling previous expectations of profitability, such as commercial jet engines, plastics or General Electric Credit Corporation.

The list of twelve includes: the Weathertron® heat pump, electric locomotives, ground fault protection devices, indoor industrial/commercial lighting, international apparatus service, vacuum interrupters, separable connectors, pa-

tient monitoring systems, Valox® thermoplastic polyesters, Borazon^T cubic boron nitride, satellite earth stations, and international sales development.

While ventures can grow from GE's historic technological strengths (over 45,090 patents since its founding in 1892), they also reflect opportunities resulting from changes in markets or the business environment. The *Monogram* selected three that are fairly representative:

At the Valley Forge Space Center, the post-Apollo era continues to offer exciting venture prospects. The booming growth of satellite communication systems, for example, presents the Space Division with a business opportunity based on GE's demonstrated strengths in space-communications technology.

Daniel J. Fink, VP and general manager, speaks enthusiastically about the business: "The growth potential is enormous. Over the next decade there will be many new satellite systems developed, and in each of them the major investment will be in the earth stations. That's where our venture is: supplying the earth stations and associated communications equipment for these new satellite systems."

The genesis of the venture was in 1970. The idea came from a small group of Valley Forge employees, who, in Fink's view, "had good ideas and persistence." A study was begun. The potential was verified. A proposal was subjected to Executive Board review, and shortly thereafter the venture was begun as a separate business section. Recently, it was elevated to department status, and Fink's firm commitment was evident when he appointed one of his top general managers—Gerry Smiley—to head the business.

(Continued next page)

Donald MacInnes; international sales development



Ronald Mathewson; separable connectors



VENTURES (continued)

The Circuit Protective Devices Product Department, meanwhile, is venturing into the new technology of ground fault protection—devices that protect people against harmful electric shocks as they work with electric power tools, barbecue outdoors with electric rotisseries, or splash about in pools equipped with electric circulation systems and lighting.

General manager Bill Longstreet explains that conventional circuit breakers found in most homes today protect against the two most common electrical problem areas: overloads and short circuits. In recent years, a new interest has been generated in protecting against a third area: shocks resulting from ground faults. So, General Electric took a strong role in developing a new, Underwriters Laboratories-listed, solid-state device that can detect when a leakage of current to ground occurs that may be creating a hazardous shock situation. The new unit quickly disconnects the circuit from the main electrical line and supplies a new third dimension in electrical safety.

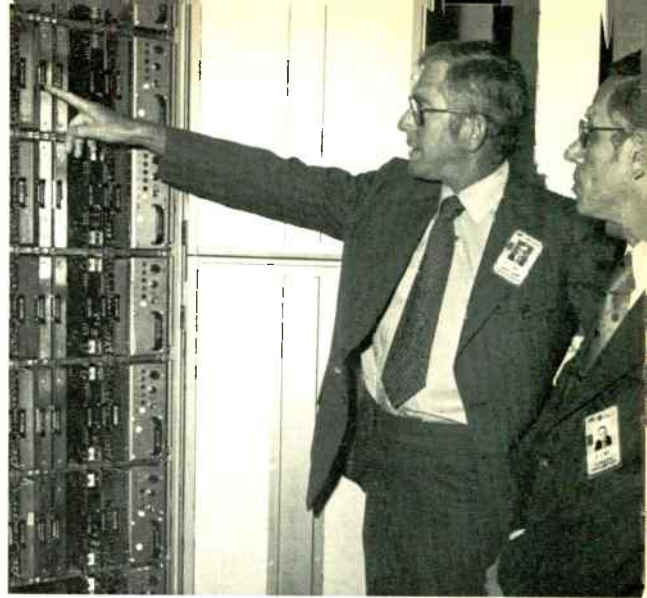
The National Electrical Code now requires ground-fault protection devices on outdoor pools, residential outdoor receptacles and construction site temporary power outlets and permits its use in other residential and industrial applications. In the future, the Code is expected to require ground-fault protection devices on circuits in kitchens, bathrooms, basements, garages, marinas and mobile home outdoor power pedestals where shock hazards are most likely to occur.

"These present and future requirements are expected to provide a solid market base for ground fault protection devices," states Bill Vineyard, the venture manager. "The growth rate is promising, and we feel strongly that GE has a fine opportunity to achieve industry leadership."

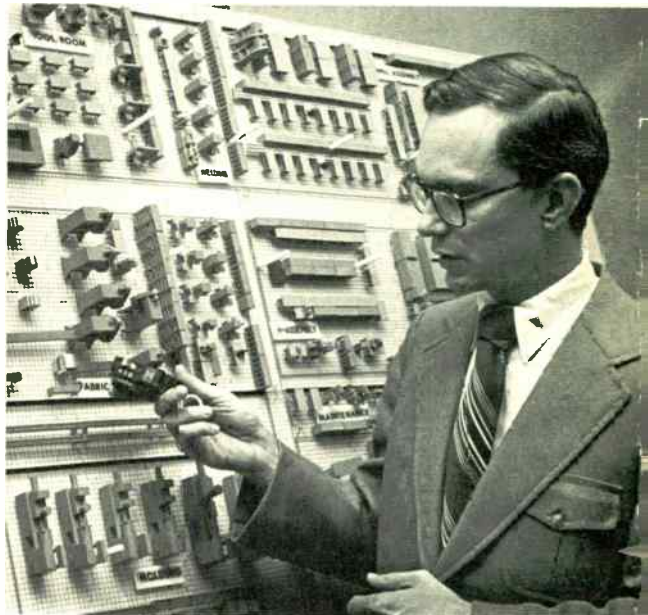
Vineyard was formerly OEM sales manager for the Circuit Protective Devices Product Department and recently was appointed Manager—Ground Fault Devices Program, a small, independent group which is autonomous to a considerable degree, but uses the total resources of the Department.

Longstreet added, "The new venture will inject a proper balance between entrepreneurial risk-taking and preserving the sound practices that have proven successful for us in the past."

GE's heat pump venture involves a product that has been manufactured since the mid-1950's, but which so far has been a business



VENTURES MANAGERS:
Gerry Smiley; satellite earth stations



Bill Vineyard; ground fault devices

Harvey Welch; indoor industrial lighting



with "great expectations." This situation is changing, according to Dick Barnett, 35, program manager—Heat Pumps. "The shortage of fossil fuels for home heating and the rapidly increasing cost of all fuels—in particular oil and natural gas—have given the heat pump an extra spurt," he says.

Barnett, who is an SMU graduate and has worked in design engineering and product planning prior to entering the heat pump venture earlier this year, says that the potential growth rate of the business is faster than any other segment of the Central Air Conditioning Products Division. "The heat pump project is a sound one," he says. "Being designated a venture insures that the business is directed to take advantage of the opportunities of the market. The heat pump is the product of the Seventies."

Anatomy of a Venture: The Valox® Story

"The Valox business hasn't begun to explode yet," says a member of GE's Plastics Business Division venture based in Pittsfield, Mass. "In the next three years we'll grow the business five times what it is today. We don't measure by the clock, and if we have to be here 60 hours a week to get the job done, that's what we do."

Portrait of a venture entrepreneur: A person in a hurry. Thinks of now, not tomorrow. Hard-driving. Results-oriented. A risk-taker.

One thing Jack Welch looks for in his venture managers is the ability "to compress time." Successful ones, he points out, realize that time is always part of the business equation. "It's how far, how big, how fast," he says. "We want managers who'll be striving for \$20 million in sales, but instead of reaching it in four years, will focus on how to do it in two."

How is it, being part of a dynamic young venture zooming past enviable growth records of such successes as Lexan® and Noryl® polymers? To find out, the *Monogram* talked with several managers in the Valox business.

"Valox is a marketing venture," explains manager Jim Fleming, a 39-year-old PhD (chemical engineering-Oklahoma '61) "which makes it unique among GE plastics since it doesn't have the patent or technological edge enjoyed by Lexan and Noryl."

What Valox *did* have going for it when the business was formed in May of 1971, how-

ever, says R&D manager Mort Kramer, "was something that people had been seeking for 25 years: a moldable polyester resin."

Joe Day, 29, the Valox marketing manager, recalls that Valox was designed to fill "a big, gaping hole in the GE plastics market basket. There was Lexan and Noryl, but they didn't have the lubricity or a sufficiently wide range of chemical and solvent resistance that a product like Valox could offer."

It was Lexan-creator Dan Fox who had been given the task of coming up with a chemically-resistant, lubricious, high-heat thermoplastic polyester. He did. Kramer and associates then developed the material, turning it into what they later regarded as a "world-beater of a product."

The only question in Kramer's mind was: "How fast could you bring it along and come up with a viable commercial version?"

Between June of 1971 and June 1973, Valox rapidly moved through product and market development, with full-scale production facilities brought on line in Pittsfield—one-third the time required for Lexan. The critical internal support came, however, when the project, complete with balanced risk, was reviewed and fully supported by the Group Executive Board.

Its unique combination of properties led to enthusiastic external market acceptance, and it was soon being used in automotive applications (louvers, radiator parts, body panels), electrical and electronic markets (connectors & coils), and textile hardware. Hundreds of applications were developed, and Valox began replacing its

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Jim Fleming; Valox® polyester resins

VENTURES (continued)

competitors—nylon, acetal and thermosets—in existing products.

Joe Day, who had been in Lexan market development and a district sales manager before taking over the marketing of Valox in 1973, reflects the "time compression" factor of the business: "It means people. It means advertising dollars. It means you work 24 hours a day—just an unbelievable commitment to the business—that's when a business goes from a snowball to an avalanche."

A kind of contagious commitment also exists among Valox entrepreneurs. Listen to Fred Brandt, 32, the Dartmouth MBA ('66) who was the first manager of Valox market development prior to moving into his present slot in the Plastics Division Strategic Planning Operation: "The attitude was to make it work. It was fun getting the business going because we all felt it was a great product and easy to believe in. Not everything you believe in will always work, but, boy, if you really bust, and you push and push, you usually make things happen. Luck is something I don't believe in. You gotta *make* things happen."

Valox didn't happen to grow without a herculean advertising-marketing effort to secure rapid recognition of the product among those who would buy it: plastic molders and designers. Pat Horgan, 30, who was A&SP manager of Valox before moving up to market development manager in July of 1973, radiates confidence and enthusiasm when he describes the ad campaign: "The scale of introduction in this market is faster, tighter and more exciting with each new product," he emphasizes. "With Valox, our objective was to achieve brand recognition within three years rather than the standard time frame of five years." An ambitious, heavily-backed program was launched to educate the marketplace as to the product's benefits. "The program worked beautifully," he adds.

Keeping a venture on a fast, successful track requires the best talent in the organization—a point made by both Fleming and Day. "Any business is really built around *people*," comments Fleming. "In a venture business, you're looking for a particular kind of person: one who doesn't think along stereotyped lines. You need guys who understand 'time compression' and anticipate rather than react to a situation. In a fast-growing venture like Valox, reacting isn't fast enough."

Adds Day: "One of the reasons I think the

Valox business is so successful is that the imagination of our people is limitless. They're just coming up with some of the most innovative ideas and markets and product needs previously unknown to our business. Everything just meshes—you've got the R&D guys who can build the product, and the marketing guys who can come up with the places to put it."

Such an environment inevitably attracts other good people. "The GE plastics business has a fantastic reputation as a mover," notes Fleming. "We have an enviable reputation as an aggressive team of professionals, and that's what guys want to join."

Valox sales topped budget by December of 1973 and, to meet the strong demand, additional manufacturing capacity went on line in Mount Vernon, Indiana, earlier this year. Rapidly-expanding capacity is another characteristic of the venture. Gary Whitehouse, manufacturing manager, who has led the process development work from bench scale to full plant production, points out that the critical pilot plant was increased four times in one year to meet the market demands.

As volume expands the job of building ever-larger production facilities to produce more products with consistent chemistry and quality falls to chemical engineers like Dick Miskinis, a veteran of many sleepless nights in getting GE's Noryl on stream. "Starting up a plant to produce a previously unheard of polymer is torture," he says. "The plant is obviously different from anything else. There's no how-to manual, and it gets more complex as the plant grows. You can't go to an engineer and ask him to build you a Noryl plant, because in most cases, he just looks at you and asks, 'What's Noryl?'"

A final impression that remains long after talking with the Valox entrepreneurs is the strong relationship between personal satisfaction and the success of the venture. It is articulated well by Joe Day, who emphasizes, "If you're committed to a venture, then you're committed to making it a success, not just domestically, but on a world-wide basis." And, he adds, "If you *do* make it a success, then why can't you be a venture manager as an avenue of opportunity? If we're going to expand this business into the size and scope that I see in the future, there is plenty of opportunity for good, solid guys. The opportunities in this business are great enough to keep everybody challenged for a long time to come." ■

BURNISHING THE GE KEYSTONE

*"A GE Minstrel I,
From me you will be hearing
Some songs of engineering:
The who and what and why."*

So sang "the Bard of Belleair" in opening a three-day Conference on Technical Management that brought together 308 of the Company's top engineering and scientific managers at Belleair, Florida in mid-April.

The whats and the whys of the Conference were twofold—to examine the new operating environment for today's engineering and to reaffirm some lasting commitments on which the Company's reputation rests.

The program of speakers and seminars was devised to maximize the interaction and stimulation of technical minds on those themes. Twenty-five speakers covered topics that ranged from "Engineering in Tomorrow's Worldwide General Electric" to "The Technology of the Flashbar."

GE officers—fifteen were on hand—also identified the Conference as an opportunity to recognize the centripetal importance that technical minds have not only to General Electric but to society as a whole.

To express his point both to those present and, through them, to the more than 15,000 technical graduates at work in research and engineering for the Company, GE Chairman Reginald H. Jones paraphrased philosopher/technology advocate R. Buckminster Fuller: "It is Bucky Fuller's contention that most of the progress of the human race has come, and *will* come, not

from tinkering with social and political systems, but simply from the technology of doing more with less. Or, as he puts it: 'The technology of doing more with less—less human effort, less energy, less materials, less time—is the lever that has lifted the human race out of its ancient bondage of scarcity.'"

GE's Chairman went on to discuss the changes for engineering that have come thick and fast in the turbulent last few years. One of the most disturbing external changes, he noted, has been the rise of the anti-technology forces. "But, whatever the changes, technical expertise will continue to be the keystone of General Electric's existence, as it was in the very beginning."

The "songs of engineering" that participants heard from other top spokesmen included an address by Senior VP Thomas O. Paine that related technology to strategic planning. "No other input to GE's strategic planning process," Paine said, "is more important than your technology projection. The question—'whither technology?'—in our Company is equivalent to 'whither General Electric?'"

Senior VP Charles E. Reed came down to the specifics of how technology managers could increase the value of their technical inputs to the strategic planning process. Engineering effort, he said, can be categorized by degrees of risk just as business risks are evaluated.

Another slant on strategic planning was given by Senior VP Reuben Guttoff. His theme: At the Corporate level we have to distinguish between the varying potential earnings power of GE's

(Continued next page)



KEYSTONE (continued)

widely diverse businesses more sharply and clearly than ever before, and reinvest accordingly. In strategic planning language congenial to the technical minds listening, the concept was "a differential approach to resource allocation."

High on the list of new operating parameters for the engineers to consider was the truly global scope of technology now. GE R&D consultant Lowell W. Steele made it plain that virtually every industrialized nation today is favored with companies that are tough competitors for General Electric.



Guest speaker Pierre Aigrain, former chief technical advisor to the French government, made the point that while European companies had previously been content to let Americans stay a couple of years ahead in technology, that situation is changing.

The whimsical Bard had his view on most every nation, too. A sample:

*I love it in Sweden, a modern-day Eden—
No friendships could ever be warmer—
They smile, love, and swing—but there is just
one thing:*

Have you tried to sell them... a transformer?

International and Canadian Group's strategic planning VP William L. Lurie summed up the worldwide situation for GE: "Most GE exports have a technology edge. If your SBU wants to continue exports or continue to manufacture abroad it is essential to keep that edge... Unless you have a better 'mousetrap,' you'll find that trying to break into such markets is like beating your head against a stone wall."

The "people" part of technology was given an airing at Belleair that took up a morning's work session.

In addition to hearing talks by Group Executive and VP Gerhard Neumann and VPs James F. Young and Mark J. D'Arcangelo, the conferees divided into 24 discussion groups to concentrate on an agenda of topics that covered career development, compensation, professional atmosphere and general communications.

Conference Co-Chairman Jim Young voiced some current concerns about trends that are evident among engineers. One was the rising average age of engineering professionals. Related to this trend: "Internally, we have more of the younger talent in non-engineering-function positions and less in the engineering function itself," he said. And another: the number of experienced technical people lost to the Company, especially in the younger age groups.

These points added up to a renewed Company determination to do what was necessary, Young said, to make sure of "getting and keeping a fair share of future technical leaders."

VP Neumann concentrated on what it takes to hold top-notch technical people. His key: mutual respect. "Respect for your boss and his 100% confidence in you." If this element is missing, Neumann said, "it's time for someone to move."

The concern for quality surfaced as one of the Company's underlying commitments and the basis for much of its reputation. The most memorable word on quality probably belonged to veteran steam turbine engineering manager Charles W. Elston, now Manager of Operational Planning for Steam Turbine-Generator Products Division, who responded from the heart when surprised by a questioner. The question? What did engineering quality mean to Charlie Elston? "The awe-inspiring consciousness that—in the turbine business—what you design as a young engineer will still be there in the customer's hands when you're ready to retire—the Company's reputation will still be on the line, based on your work."

The Bard, making a final appearance, sang to the tune of "Casey Jones":

"Ol' Reg Jones! He turns up the throttle!

Ol' Reg Jones—is a great engineer!

Come on, Reg, and give us the message—

Give us the message—give it loud and clear!"

The GE Chairman re-emphasized his theme: "Some have argued that General Electric has become a mass producer and a mass marketer rather than a leader in technology. They say our strength now lies in financing, merchandising, management and a worldwide scale of operations. While these strengths are important, it must be recognized that technology is the keystone. If it falls, the whole structure is in danger of collapse."

And he added, in conclusion:

"Let's commit ourselves to the task of human progress and make this the most venturesome and productive enterprise in the world." ■

MONOGRAPHS

U. S. Vice President Gerald Ford visited the Opportunities Industrialization Center's Philadelphia headquarters recently, where he was briefed on OIC operations and GE's active support for OIC activities by Dr. Leon Sullivan, founder and Chairman, and GE's Mark Morton, Vice President and Group Executive—Aerospace Business Group.

OIC is a self-help program for the underprivileged. Participants are taught not only vocational skills, but job preparation and motivation, personal attitudes and grooming habits.

Mr. Ford's tour included the Philadelphia jailhouse which was the first OIC training center, Progress Plaza, a black-managed shopping center, and Progress Aerospace Enterprises, a



black-managed company which does contract work for General Electric.

The National Academy of Engineering has elected four General Electric engineers to its membership. The highest professional distinction that can be conferred on an American engineer, election to the academy honors individuals who have made important contributions to engineering theory and practice or who have demonstrated unusual accomplishments in the pioneering of new and developing fields of technology.

A total of 78 American engineers were given this honor, bringing the total membership to 507. The four GE employees selected are:

- Arthur M. Bueche, Vice President—Corpor-

ate Research and Development, Schenectady, N. Y.

- Daniel J. Fink, Vice President and General Manager—Space Products Division, Aerospace Business Group, Philadelphia, Pa.;

- Salomon Levy, General Manager—Boiling Water Reactor Systems Department, Nuclear Energy Division, San Jose, California; and

- Harold Chestnut, Consultant—Information Science and Engineering, Corporate Research and Development, Schenectady, N. Y.

Also, the National Academy of Sciences announced the election of Corporate Research and Development physicist and Nobel Prize winner Dr. Ivan Giaever among 95 new members.

A good will deed: General Electric gave away the deed to 30 of the 100 acres surrounding its new Corporate Headquarters in Fairfield, Connecticut during May. Vice President for Corporate Facilities Services Robert W. Lewis made the presentation of the beautiful wooded area known to generations of Fairfield resi-



dents as the Cascades to the First Selectman of Fairfield to be preserved in its natural state for recreational use by the people of Fairfield.

Full of wildlife, the property includes a large pond and a cascading "white water" section of the Mill River, known for its brook trout and other good fish. The Cascades adjoins both the landscaped portion of the GE property containing the new Headquarters, scheduled to open August 12, and another popular recreational lake area owned by the town of Fairfield.

Connecticut Environmental Protection Commissioner Douglas M. Costle called the Company's decision to offer the million-dollar property to the public "a signal gesture of corporate statesmanship." D. Laurie MacCuaig, Connecticut Relations Manager, noted with satisfaction the continuing good will between Fairfield and General Electric ever since the initial headquarters planning in 1971.

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A good start on 1974 results for General Electric was reported by Alva O. Way, VP—Finance, in a May 22 address to the Pittsburgh Society of Financial Analysts. Highlights:

- An unprecedented orders backlog of over \$16 billion, an increase of 35% over the level at this time in 1973, reflects orders rates that "are up substantially over a year ago."
- New orders received during the first four months of this year were "exceptionally strong for steam turbine-generators." Also, "our businesses that serve plant and equipment markets are continuing the strong trend of last year." This continuing momentum in order booking "gives us a great deal of confidence as we face the remaining months of 1974 and the years beyond."
- The slowing of the growth curve for electric energy is "a temporary situation." VP Way reported that "our own in-depth analysis and independent studies make it clear that because of the oil and gas shortage, the nation's energy needs will increasingly have to be supplied by electric power produced from our ample coal and uranium reserves." He noted that "as the U.S. moves toward energy self-sufficiency, electric energy must, in this country, displace

A time for Good Neighbors: After "a moment of ominous serenity... there was the dark funnel, dipping down from the sky and sliding across the horizon."

This description comes from a witness to one of the devastating tornadoes which swept through parts of Kentucky, Indiana, Ohio, Tennessee and Alabama on April 3, causing these states to be declared major disaster areas. Homes of a number of GE people were destroyed or damaged—particularly in Louisville.



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other forms of energy which are becoming scarcer and more expensive."

- The outlook for industrial components and systems is "very strong," based on the assumption that expenditures for plant and equipment are expected to increase about 12% over 1973.
- Other areas of strength cited by Way include a sharp increase in aerospace earnings "due in large part to the CF6 commercial jet engine" and continued high levels of exports.

Help to the stricken areas came immediately and in many forms. Aid to all victims was offered through the Good Neighbor Disaster Program that GE's Major Appliance Group has established for just such emergencies. The program offers free inspection of any GE or Hot-point appliance damaged by the storm, as well as reduced rates on repairs and purchases of new appliances to replace storm-damaged equipment. Loans were made available to employees whose property was severely damaged or destroyed. A special fund drive, conducted with the cooperation of the unions representing Louisville employees, yielded \$60,000 to be distributed among several organizations.

"The Company is doing its best to help people stricken by this disaster," said William B. Clemmens, Vice President and general manager—Major Appliance Retail Sales Division. "But we have to thank local employees for giving so much help along with dealers and servicers for their admirable cooperation with the Good Neighbor Disaster Program. The impact of this disaster will remain a long time, but we hope to ease some of the distress of those in need."

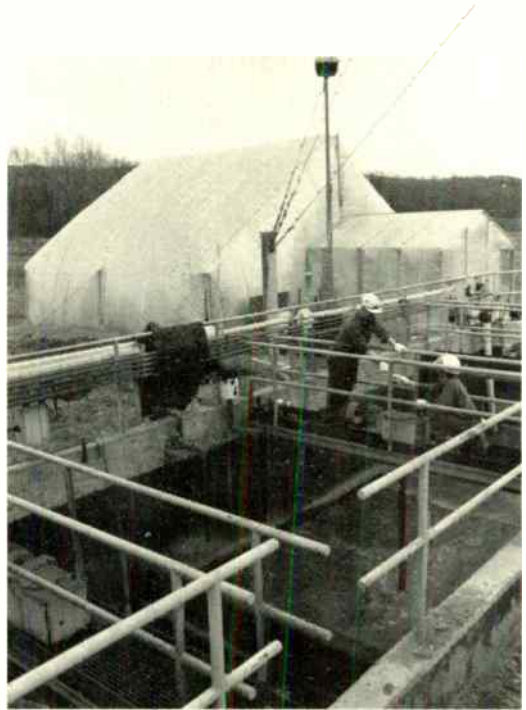
Environment: how to "bug" wastes—Ever since the Waterford, N. Y. facility of Silicone Products Business Department was built alongside the Hudson River north of Albany, a prime objective at the plant has been to eliminate any waste discharges into the river.

"We're over 90% of the way toward our goal," says SPBD's general manager, Donald E. Debacher, "and are moving on that remaining few percent. But to reach our goal we must go beyond available waste treatment technology. We have to experiment and develop techniques that haven't been tried by anyone in this type of operation before."

One of those new techniques centers in a "bughouse," an air-inflated tent full of equipment watched over by Dr. J. Steven Anderson, manager—Plant and Environmental Engineering.

"This process involves biological decomposition of organics found in discharges," Anderson explains. "It's not a new concept, but to make it work for us here we're having to give the technology some decidedly new twists."

Bacteria or "bugs" that commonly exist in wastewater, are processed through a biofiltration tower within the bughouse, Anderson adds. Discharges are pumped into the tower and filtered through the bacteria which assimilate or "eat" organic substances in the wastewater. The biofiltration tower now in use is a pilot installation. Tests are being run to examine its effectiveness, to observe the conditions required for bacteria to survive and to make preparations, if the process continues successfully, for a plant-scale tower to handle the full flow of water wastes.



"We've achieved encouraging success so far," Dr. Anderson reports. "Fifty percent of the residual organics are being removed from the discharges processed by the experimental tower, and that brings our elimination of organics up to almost 95%. Incidentally, we have already fully satisfied New York State environment regulations two years earlier than major municipal waste treatment plants under construction in the area."

Development work at the bughouse continues as part of the plant's ongoing environmental program. The latest effort involves a \$13-million appropriation to construct a new wastewater treatment facility. The plant recovers by-product HCl and converts it to methyl chloride for recycle back into the manufacturing process—and utilizes carefully controlled incineration, neutralization and settling processes to handle other wastes.

"Our drive to reduce discharges even further stems not only from tougher new Federal regulations," says Don Debacher, "but from our genuine concern to keep the Hudson clean and healthful for all who live and work in this area. We want to reduce the environmental impact of our water discharges to essentially zero within the next ten years—and the 'bughouse' is bringing us one step closer to that goal." ■

EXPO-TECH ROLLS!

How to interest a black junior high schooler from an urban ghetto in an engineering career?

The answer, as previously reported in the *Monogram*, is of vital concern. For if the supply of minority students majoring in engineering isn't greatly strengthened, then business will be hamstrung in its efforts to see higher percentages of minorities appearing in its professional and managerial ranks.

Now on the road for General Electric is an imaginative new tool designed to open up minority youths' minds to a better understanding and appreciation of the work of engineering and the vital role of engineers.

It's Expo-Tech, General Electric's educational mobile van which, like a giant transportable science fair, takes engineering career opportunities directly to minority schoolyards.

Why a traveling van? Expo-Tech's originator and General Electric's manager of Corporate Educational Communications, Jim Clark, explains: "Discussions with minority leaders such as Dr. Kenneth Clark and those from urban leagues have convinced us of the necessity of bringing our message directly to minority students rather than expecting these youngsters to seek us out. The problem, as Reg Jones so often emphasizes, is that many young blacks are turned off by the engineering profession. It's a career path for which the family background doesn't provide any lore or advice. An exhibit on wheels, however, can carry directly to minority schoolyards the exposure that engineering is a viable option in their education choices."

On its recent trial run, Expo-Tech opened its doors to the delight of minority students in Philadelphia. Jamming the 40-foot expandable van, students experimented with "hands-on" exhibits on magnetism, geometry, electronics and light and sound exhibits. Armed with previously distributed Expo-Tech fact books, area teachers along with Expo-Tech advisors were available to answer questions and to stimulate an appreciation of math and science as the necessary means to an engineering education.

It takes just 17 minutes for each student to review the 17 episodes created for Expo-

Tech. As soon as each visitor enters via a ramp at the rear of the truck he hears: "Hi! Glad you could visit Expo-Tech—what Expo-Tech is all about is engineering." Going back into man's beginning, Expo-Tech next features the first engineering efforts of pre-historic man, as well as the Egyptian, Greek and Roman. Students are requested to test and operate elementary levers and pulleys to learn about weights and balances. Another highlight is a review of the work of outstanding Black American inventors.

Motivating students to consider engineering careers during the earliest grades has been a basic thrust of PIMEG—the Program to Increase Minority Engineering Graduates initiated by General Electric two years ago. Sponsored by General Electric Chairman Reginald H. Jones and headed by Corporate Education Services manager, Lindon E. Saline, PIMEG has begun to have a substantial effect. "Certainly it contributed to last year's 30% jump in minority engineering college freshmen," says Lindy Saline. "General Electric's PIMEG has also been the source of the broad syndication of Quincy—the cartoon character created by Ted Shearer who 'tells it like it is' to grade schoolers. And above all, PIMEG has helped stimulate the formation of the National Advisory Council on Minorities in Engineering to enlist the combined weight of government, industry and education."

General Electric's Expo-Tech van carries PIMEG into new ground. As Chairman Jones explained it recently to TV columnist Victor Riesel: "Too many minorities feel that engineering is an unapproachable profession. General Electric is directly encouraging these groups through such devices as Expo-Tech so youngsters can understand exactly what kind of equipment they'll be working with if they elect engineering careers."

Expo-Tech will tour secondary schools in the greater Philadelphia area until late June. Later, it will visit Cleveland, Cincinnati and Louisville junior high schools where local General Electric operations will organize Expo-Tech follow-ups such as plant visits, science and math fairs and junior engineering club programs, all geared to PIMEG.

EXPO-TECH ROLLS! (continued)

Minority youth walking up Expo-Tech ramp enters a world where engineering principles are presented as fascinating, participative, "hands-on" games and exhibits. Engineering careers are seen not just as an equal opportunity but as a golden opportunity because of industry's great needs for minority professionals. Students' teachers are able to help through prior briefings in Expo-Tech and through varied teacher's aids supplied by GE. Minority engineers are on hand to provide explanations and serve as "role models." As the show's finale, students view an "opportunity theater" which pictures engineers at work. Out of some 500 students pouring through Expo-Tech in a day, GE's Art Sears is compiling a list of those who show special interest and aptitude—the list to be supplied to the PIMEG committee for follow-up.





Expo-Tech brings understanding of engineering directly to minority youth. At left: GE's VP for Atlantic Regional Relations Donald D. Scarff joins students in exploring the exhibits. Below: GE's Jim Clark tells Philadelphia junior high school students: "We want to make sure you're exposed to the exciting prospects of engineering careers while there's still time to choose the required courses in math, physics, chemistry and the like."



Toward the Electric Economy: 2. Nuclear's tempo picks up

General Electric's conviction that "the future of energy is electrical" has led the Monogram to a new series—a one-by-one examination of the factors that are increasingly pointing toward an energy economy based on electricity. Electrified railroading led off the series in the March-April issue. **Installment #2: a progress report on the changing prospects for nuclear power.**

General Electric has been talking up the advantages of nuclear energy for years—and steadily winning converts.

Now in the wake of last winter's "energy crisis," the process of focusing public attention on the merits of going nuclear has been accelerated. With gas and oil in short supply, and with the burning of coal environmentally curtailed, nuclear is gaining momentum as the best answer to energy needs.

The GE-sponsored Index of Company Relations, surveying a broad cross section of public opinion, summarizes its latest findings: "The increasingly favored solution to electricity shortages is more rapid construction of nuclear plants." Seventy-two per cent of the public are now in favor of the option to "allow nuclear generating plants to be built more quickly"—a gain of six points since the last quarter of 1973. Opposition, conversely, has dropped from 14% to 9% in the same period.



Finished uranium fuel bundles, left, await shipment at the Company's Wilmington, N.C. nuclear fuel fabrication plant, site of the April GE Board of Directors meeting and tour, above.

The surge in nuclear activity motivated 79 security analysts to gather in San Jose in April to see GE's research and testing facilities and talk about nuclear power generation as a growth industry. The General Electric Board of Directors also selected a Nuclear Energy Division facility as the site for their April meeting and tour—the Wilmington, N.C. fuel fabrication and reactor component manufacturing plant.

Speaking to the Board of Directors in Wilmington, George J. Stathakis, Nuclear's Vice President and general manager, outlined the trends. "In the last two years the nuclear industry has seen a dramatic rise in nuclear plant orders," he said. "And the worldwide total of more than 58 thousand megawatts ordered from U.S. suppliers last year stands far and away as the biggest year in the history of this industry. Nuclear power is fast maturing as a worldwide multi-billion-dollar business opportunity for General Electric through the end of the century."

The principal new attraction for utilities is a very practical one—soaring fossil fuel costs. Although nuclear plants still cost 15 to 30 per cent more than conventional power plants to build, it can be demonstrated that lower fuel costs will offset that during the plant's lifetime. Stathakis explains: "Nuclear economics appear more favorable for the utilities with each jump in fossil fuel costs. For instance, average 1973 fuel costs per kilowatt hour were estimated at 2.1 mills for enriched uranium fuel, 3.6 mills for coal and 6.6 mills for oil. The projections for the coming years show an even greater difference," says Stathakis, "as oil costs go up toward 10 mills by 1980."

The nuclear scorecard worldwide, according to the International Atomic Energy Agency, shows 85 light water reactor plants in operation. Thirty of the operating plants and 87 of the ones on order and under construction are General Electric or GE licensee boiling water reactors. And new milestones in the industry are coming with increasing frequency. "Of special significance to us right now," says Stathakis, "is the experience beginning to come in from the world's most powerful operating nuclear unit, Brown's Ferry 1 on the TVA power system. This GE reactor set a world's record on

(continued next page)

NUCLEAR (continued)

March 21 of this year by being the first unit to reach the one-million kilowatt power level." Although nuclear-fueled power plants are cranking out about 6% of the nation's power now, that percentage is expected to grow dramatically to at least 25% by 1980.

The utilities, the Atomic Energy Commission and GE all recognize a present roadblock to maximizing nuclear's benefits in the United States is the average nine year time span between nuclear contract signing and the time the plant produces its first power. But now a well-timed breakthrough on this problem seems quite possible also. GE has been cooperating in this effort through its program to reduce licensing time for domestic boiling water reactors.

Nuclear plant standardization offers hope for a solution. The AEC is expected to act late this year on GE's proposal to make NED's basic product—the BWR/6 reactor system—the industry's first approved standardized plant design. If the AEC approves GE's specific proposal, utilities could site BWR/6's, get them licensed and start them producing needed power faster.

Signs of a maturing industry usually show up in operating figures as well as orders. One of those signs is nuclear plant operating reliability. Many members of the public would be surprised to learn the current state of nuclear plant reliability. Says Stathakis: "Overall figures comparing availability nationwide for nuclear and large fossil plants show them already about even. However, the most experienced nuclear utility, Commonwealth Edison, recently reported that its four largest nuclear units—which are GE BWR's—had a *higher* availability average than its five largest, most modern coal-fired plants during the 12-month period ending last November. The nuclear units averaged 82.6 percent availability compared to 71 percent for the five fossil units of similar size and age. And these levels of performance are going to be improved further. Our target is 90 percent availability by 1980, and we are dedicated to that goal. Clear-cut superiority in this area will be the means of earning customer preference for the BWR/6."

In Wilmington, N.C., where the Board of Directors watched the fabrication of 14-foot-tall fuel rod bundles which form the heart of the reactor, signs of expansion are everywhere. Already the largest nuclear fuel plant in the world, the GE facility is being doubled in manufacturing capability. "Our reliability goal here is no



Security analysts listen at NED's Vallecitos facility.

less than 99.98 percent manufacturing perfection for BWR fuel," Stathakis told the Directors. "That figure is nearly unheard of in quantity manufacturing and to help achieve it and prepare for the future we have put in place a computerized Manufacturing Information and Control System which keeps a permanent record on every fuel rod from raw material to finished product."

GE is putting heavy emphasis on public understanding of nuclear power through an active program of management spokespersonship on the key issues in public forums. The Company is also working closely with nuclear customers to help them spread the message of nuclear's promise.

NED's Stathakis sees a strong link between winning the battle for public backing and clearing the red tape with regulatory innovations like plant standardization: "As we have seen many times in this nation, particularly in recent months, public opinion wields enormous influence," he says. "We can counter the critics with facts but we've got to get out on Main Street to do it. If constructive regulatory reform is backed by the industry and demanded by an aroused and informed citizenry, nuclear will deliver on its promise as our primary electrical energy source in the decades to come." □



GECC's President Klock... retailing money and motivating people.

GECC: It started with financing GE appliances but, baby, look at it now...

Money is an essential ingredient that makes every General Electric business go. But at General Electric Credit Corporation—a GE service business wholly unlike any other—money and creative people are the *only* two ingredients.

Applying these two ingredients—7,000 dedicated employees and a capital-raising capability that runs into the billions of dollars—GECC President and general manager Charles G. "Ticker" Klock has stirred the mix and come up with one of GE's fastest growing businesses.

GECC is now one of the country's largest financial services organizations, a member of that exclusive club of gilt-edged financiers who each lend several billions of dollars per year to lubricate the gears at every level of the U.S. economy. GECC returned over \$41 million in profits to General Electric last year, and has grown at a rate of 19% a year, compounded, for the last 10 years—or slightly faster than IBM.

The money ingredient, says Klock, is a basically simple concept. "We buy it at wholesale—many of our notes in the millions of dollars come due every 20 days—and then we retail it with imagination, integrity and superior service."

Carrying out that concept successfully has required special agility in recent money markets, however. Last year the cost of short-term wholesale money (based on the so-called commercial paper rate) rose an unprecedented 45%. "For a manufacturing operation," says Klock, "that would be like having your material costs shoot up 45% in a six-month period." Interest costs have realized a new high in 1974, increasing GECC's operating costs heavily. "We were able to produce improved net earnings for the share-owner in 1973 in the face of these money market developments," says Klock, "but only by expanding our portfolio of receivables at a

record rate and accepting a lowered return on investment. It looks as if 1974 will be a repeat of 1973, only more so."

But more important to the success of the business than the *money* ingredient, Klock believes, is the *people* ingredient. He attributes the aggressive growth of GECC since he took over in 1960 to a philosophy of getting good people, motivating them highly for successful entrepreneurship and extending the incentives of the profit motive deep within GECC ranks. Klock: "Our philosophy is to create a maximum number of positions in which the objectives and job characteristics are essentially synonymous with those of the corporation as a whole." Approximately 1,400 of 2,000 exempt positions are now in this incentive category and have P&L responsibility.

Before Klock took charge of GECC, he was in Marketing Services in charge of Sales and Distribution Planning for former Board Chairman Fred J. Borch. Back in the mid-50's he headed a three-year research study of consumer goods distribution in the United States. From these activities, Klock envisioned the development of a broad-based financial services organization serving practically all industrial and consumer clientele in the country. A couple of years later, in 1960, came the surprising mandate from Borch—go to GECC and implement that plan. "It's been one long exciting experience ever since," says Klock, who has now seen the dimensions of his original long-range plan far exceeded. Today, GECC still finances GE products from appliances to locomotives, but they represent only nine percent of GECC's business.

The other 91% of GECC's \$4 billion business ranges across the American economy from the financing of a \$3.98 purchase on a department

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GECC (continued)



Billions in GECC lending power are spread across the economy, from the smallest purchase on a private label credit card to the largest industrial lease—a GECC-owned tanker.

store charge card to the \$71 million purchase lease of the largest oil tanker ever built in the U.S., the Brooklyn.

GECC is divided into two department-level businesses, Consumer Financing and Commercial and Industrial Financing, plus a newer insurance component.

One of the fastest growing of the new businesses under Consumer Financing, for instance, is the financing of mobile homes. Families often finance new mobile homes through their mobile home dealer and much of the money comes from GECC, now the second largest financing agency in this field.

GECC's Consumer Financing Department also includes:

- Home Products, the original appliance financing business, now broadened into almost every kind of major durable goods. This is still GECC's biggest business.

- Installment Loan—making cash available directly to consumers through 170 offices in 36 states, under the name "Homemakers."

- Revolving Credit—established as a separate business in 1969 to serve department stores and retailers who have their own "private label" credit cards.

Consumer Financing Business Department VP and general manager S. Dewey Medhus has traditionally competed with some 100 finance companies, 10,000 commercial banks and 25,000 credit unions for his business. To these have now been added such geometrically grow-

ing giants as BankAmericard and Master Charge in the revolving credit field.

But the greatest new problems in the last four years have been in keeping up with the new state and federal consumer laws—the widely differing restrictions placed on credit grantors by almost every one of the 50 states and the federal government. Medhus is all for consumerism and full disclosure of the cost of credit. "Being responsive to the needs and wishes of consumers has been our way of life," he says. "But consumerism has probably impacted our Department more heavily than any other in the General Electric Company."

GECC's other half—the Commercial and Industrial portfolio—is highlighted by the ultra-sophisticated new industrial leasing field under which the tanker Brooklyn came into GECC hands. Says Commercial and Industrial Financing Business Department VP and general manager John W. Stanger, "There aren't a great number of people in the whole country who thoroughly understand industrial leasing. We're fortunate to have people who have made themselves experts in this field and it is a very lucrative business for us already."

Industrial leasing involves the purchase of items like Boeing 747's, DC-10's, railroad box-cars, multi-million-dollar computers and sometimes whole manufacturing plants. The equipment is then leased to the operator for eight to twenty-five years. Because of tax attributes associated with large transactions, GECC re-



coups its investment in a shorter period of time. GECC specialists rarely look at a deal in the leasing business under a half-million dollars.

The benefits of leasing include so-called residuals, the amount the leased equipment is still worth after the period of the lease. Full ownership stays with GECC in all cases.

So among the many types of expertise necessary to GECC is the ability to dispose of used merchandise—construction equipment, machine tools plus a host of consumer products. Seven million dollars in used ice cream trucks presented a real challenge a few years ago, but they were moved—some abroad.

Other Commercial and Industrial Financing businesses include:

- Accounts Receivable—a relatively new business providing revolving funds to small and medium-sized companies that assign their receivables and inventories as collateral.
- Equipment Sales—financing purchases for businessmen of everything from bulldozers through hotel/motel color TV's.
- Real Estate—loans with one to ten year maturities on apartment houses, condominiums, industrial parks. This is another GECC business started since 1970.

Insurance companies—two of them now—are the latest complementary businesses to be brought under GECC's entrepreneurial wing. On the last day of 1970, GECC bought The Manhattan Fire and Marine Insurance Company, a property insurer which writes insur-

ance on most everything GECC finances. Then, in March 1973, Klock completed arrangements to purchase the Puritan Life Insurance Company from Connecticut General Life. Puritan Life has \$1.8 billion of insurance in force across the U.S. Ronald C. Ade, President of Manhattan and Chairman of Puritan, is general manager of GECC's insurance operations.

The creative juices that nurture so many new businesses at GECC are helped to flow by the ease of launching a new financial service, admits Klock. "Like most service businesses," he says, "we can try out an idea on a limited scale without excessive cost. You don't do that with a manufactured product until you're sure of success of the tooling costs because your mistakes will drive you right out of business."

Klock mixes his creative people and multi-million-dollar ingredients with an eye to future long-term stability and growth, in the GE tradition. Two casual facts dropped in the course of conversation with the GECC general manager underscore his careful financial foundation for future growth. "We have," he says, "an allowances fund for write-offs—that means any bad debts—that's over \$75 million now. And did you know that GECC would still have future earned income of over \$700 million coming in for some time if it stopped lending money right now." That event is unlikely—GECC people seem constitutionally unable to let anything—particularly money—sit idle for any length of time. **AW**

Speed reading— does it work?

Evendale participants answer, mostly, yes.

Courses in speed reading have become big business, with new reading laboratories and clinics springing up constantly. The lure is that of sure-fire help in coping with the masses of communication that modern civilization generates—promises are made of doubling and even tripling one's reading speed.

But do the courses deliver on their promises? Does a pick-up in the amount of print covered mean a drop-off in comprehension or retention? Are these courses cure-alls for the problems of sheer information-absorption that beset most of us today?

For answers the *Monogram* went to six GE people who participated in a 12-week after-work speed-reading course offered several years ago at the Aircraft Engine Group facility in Evendale, Ohio and asked them to assess its effects and lasting value.

The course scored a high approval rating with all six—five engineering managers and a union relations negotiator. Reading speeds rose dramatically. But so, these GE people feel, did comprehension and retention.

The one major quibble they express is that speed reading doesn't really help with the material that bears most directly and importantly on one's own work. It's great for processing the peripheral reading matter more swiftly, but for an engineer it doesn't apply to technical reports, and for a union relations man it isn't very effective in reading labor contract language. Even so, as one manager noted, the improved ability to cope with everything else supplies more time to be spent on what really counts.

Out of the talks with these six Evendalers came several overall observations:

- **The key to speed reading** is to read down the center of the page, never from one end of the line to the other. Use a finger or a pencil to guide your eyes down the page in a straight-down, diagonal or figure-S path.

- **Read groups of words**, not single words. This reduces the number of eye fixations or stops and markedly increases the mind's ability to grasp content and meaning.



"Ever since he's learned to speed-read Newsweek, Business Week, Fortune Time, U.S. News and World Report, Barron's, The Wall Street Journal . . . he doesn't know what the hell to do with himself."

Courtesy of Saturday Review World Inc.

- **In the 'don't' category** are lip moving, reading aloud and going back and re-reading phrases and sentences. Also, don't move your head. Let your eyes do the moving.

- **Vary your reading speed** according to the complexity and difficulty of the material. Most people, it turns out, have a relatively fixed reading speed, regardless of what they read. Speed-reading graduates tend to be more flexible—to shift speed according to the type of reading matter. The ideal rate, say the instructors, should be in the 300-word-a-minute range with a comprehension rate of about 80%. If comprehension or understanding begins to slip below this point, slow down. If comprehension is above this level, read faster. In practice the rate for careful or study-type reading can be as low as 100 words a minute, with the rate for skimming or scanning a newspaper or other light matter as high as 1,000 or more words a minute.

- **Actively seek out key words**, phrases and ideas, even while scanning. Eye and mind coordination can be improved through practice so that the eyes leap almost instinctively to the real meat of a sentence or paragraph.



In terms of specific reactions, Robert W. Holland III, manager of Engineering Design Support at Evendale, cites his inability to apply speed reading skills to highly complex reading matter. "The course didn't satisfy my technical reading requirements," he says. "Maybe I was expecting too much. There is no substitute for slowing down your reading pace when you pick

up material that requires full understanding.

"When I took the course," he adds, "the pressure to step up my professional and personal reading speed wasn't as strong as it is today. My work now covers a wider range of functions. This means a lot more reading to keep management up to date on what's happening in such fast-changing fields as the worldwide move toward metrification and developments in computer printout of engineering blueprints."



Charles T. Nussbaum, Union Relations Negotiator, says he reads four or five times faster, admitting that he was a below-average reader before taking the course. "My new speed level, however,

is strictly for general reading matter: mail, newspaper clippings, things like that," he says. "When I read labor statistics or a labor contract I take it word for word, line for line. There's too much at stake to do it any other way. Missing a single word can make a big difference."

Before taking the course, Nussbaum used to "lip read." "That's a 'no no' that I had to unlearn," he recalls. "It wasn't an easy habit to break, but it was worth the struggle. It proved to be the breakthrough to achieving my present high reading speed."

Knowing speed reading techniques is not enough, he claims. "You have to practice, and practice consciously every day to keep the skill alive. I still trace a figure S down the center of the page with my finger on some reading material."

Nussbaum emphasized that he doesn't speed-read good novels or poetry. "But sometimes it's hard to slow down. The techniques seem to become an integral and often unconscious part of the mental process."



Peter G. Belitsos, manager of Group Drafting Quality, also notes difficulty in slowing down his pace when reading good literature. "I used to dawdle and savor a particularly beautiful and moving

phrase or sentence in a novel, poem or play. Now my patience for slow reading is gone

and frankly it bothers me. You might say I'm reading more but enjoying it less."

But reading faster has its compensations, too, he quickly adds. "It's helping me do my job more effectively. I get lots of documents and mail across my desk each morning. Step one is to separate the material in order of importance. Air Force discrepancy reports, which require careful attention, are assigned a high priority and fall into a slow-reading category. Letters and memos first get a quick skim-through for the key message. What happens next depends on the message.

"With my general reading speed increased three to four times my pre-course level, I cover a lot more material in a lot less time. My wife still can't quite understand how I can read so fast. 'I can't believe you read that entire letter from your son,' she says. Then I tell her what was in the letter. She just looks at me and shakes her head."



Another speed reading enthusiast is Arthur C. Connelly, manager of Indirect Manufacturing Expense. Like Belitsos, Connelly first subjects his material to a preliminary reading. "It's like separating

the wheat from the chaff," he says. "If a section is important I go back and read it more carefully, and that usually means more slowly."

Connelly utilizes the same technique in quick-reading a major project report or a book. "I look at the author's background, skim through the foreword, check out the table of contents and chapter headings and flip through the book, stopping to scan any sections that catch my eyes. This gives me a good 'feel' for the content, continuity and organization of material. It's a great time-saver.

"The decision not to read every word of an article, especially a technical one, can be traumatic for an engineer. We're always battling that I've-got-to-read-everything-on-the-subject syndrome. I think I've licked that problem, thanks to my ability to read faster with greater comprehension. I can be more selective on the first round of reading. If I change my mind, I can go back and pick up the material without severely breaking my thought pattern. Call it selectivity or flexibility or simply greater confidence in my own reading skills. Whatever it is, it works for me."

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One manager who got more from the speed reading course than he expected is Larry G. Wilbers, manager of Metal Process Development and Process Technology Laboratories. "I

didn't realize I was such a slow reader until I started the course. My reading speed was low, I discovered, primarily because I often stopped reading when I encountered a particularly intriguing idea. I used to take the idea and expand it right there and then. It was an essentially creative impulse, but those interruptions were killing my ability to read at a reasonable speed and to comprehend and retain what I was reading. Looking back, I probably got stalled on those concepts because I was afraid I would forget them if I kept on reading. The basic issue was comprehending and retaining not simply speed."

Wilbers concedes that his reading speed rose only moderately. But more important, his comprehension and retention levels showed dazzling improvements. "Those rapid reading techniques helped me develop the necessary discipline to concentrate on my reading and, as a result, to read more efficiently."



Some of the sharpest words on speed reading's ineffectiveness in helping the reader cope with complex material came from R. N. Radziwon, manager of F101 Configuration Control. But he also made a strong

case for rapid reading methods properly applied.

"Speed reading simply doesn't work with heavy, work-related, technical material that requires maximum comprehension and retention. And that's the kind of reading matter that engineering personnel are faced with most of the working day," he explains. "But it's excellent for newspapers, magazines, fiction, some trade journals and office mail.

"The most important benefit of speed reading to technical people is indirect," he adds. "It permits us to get through required light reading more quickly, thus giving us more time to read professional material." ■

ORGANIZATION CHANGES

CORPORATE

Robert L. Fegley, *Staff Executive—Chief Executive Officer Communications.*
Herman D. Pocock, M.D., *Associate Medical Director—Occupational Medicine and Environmental Health, Corporate Medical Operation.*

AEROSPACE BUSINESS GROUP

Clifford J. Kronauer, *General Manager—newly established Technical and Support Services Department.*
Thomas I. Paganelli, *General Manager—Electronic Systems Products Division.*
Gerald T. Smiley, *General Manager—newly established Earth Stations Products Department.*
Ladislaus W. Warzecha, *General Manager—newly established Ground Systems Products Department.*

COMPONENTS AND MATERIALS GROUP

Frank R. O'Keefe, *General Manager—Laminated and Insulating Materials Business Department.*
Henry J. Singer, *Manager—Plastics Strategic Planning and Ventures Operation.*

CONSUMER PRODUCTS GROUP

William C. Broeffle, *Manager—Group Technical Resources Operation.*
Richard L. Heckman, *Manager—Home Entertainment Strategic Planning Operation.*
Edward J. Russell, *Manager—Group Strategic Planning and Review Operation.*

INDUSTRIAL GROUP

William T. Luedke, *Manager—newly established Group Financial Planning and Analysis Operation.*

INTERNATIONAL AND CANADIAN GROUP

Richard W. Foxen *elected a Vice President.*
Allan E. Matlick, *Manager—newly established European Power Generation Operation.*

MAJOR APPLIANCE BUSINESS GROUP

Wayman O. Leftwich, Jr. *elected a Vice President.*

POWER DELIVERY GROUP

A. Eugene Schubert, *Vice President—newly established Group Technical Resources and Power Transformer Project Operations.*
William M. Nave, *Manager—newly established Group Manufacturing Support Operation.*

POWER GENERATION BUSINESS GROUP

Roy H. Beaton, *Vice President, appointed General Manager—newly established Energy Systems and Technology Division.*
John A. Urquhart *elected a Vice President and appointed General Manager—Power Generation Sales Division.*
Thomas H. Lee, *Manager—Group Strategic Planning Operation.*

SPECIAL SYSTEMS AND PRODUCTS GROUP

Peter E. Fuerst, *General Manager—Food Service Equipment Business Department.*



EXPANDING OPPORTUNITIES FOR WOMEN

by

JACQUELINE PINCKNEY,

Manager—EO/MR Program Development
Corporate Employee Relations Operation

Someone once said there's nothing quite so powerful as an idea whose time has come. But perhaps even more forceful is an idea that won't go away.

The movement toward equal rights for women is such an idea. It's not an aberration or a passing fad doomed to fade quickly from the scene. At times it may take the form of a trivial debate about addressing a woman as Ms, Miss or Mrs., or the hotly contested issue of girls playing Little League baseball. But in the work environment, EEO (Equal Employment Opportunities for Women) is serious business.

And with good reason. General Electric is in business for a profit in a highly competitive market that has explicit guidelines regarding EEO. These anti-discriminatory dicta are backed up by the threat of financial damages for non-compliance. Moreover, women, as the principal buyers in most families, wield considerable consumer clout. That's added incentive to exert a leadership role. In short, the issue of equality in employment must be viewed as a business problem to be solved through sound business approaches.

Such business considerations give the EEO issue high priority among the concerns of GE management. Indeed, a major thrust over the past few years is:

"To achieve progress in providing equal employment and career opportunities for women ... and to do so consistent with social and legal norms, but without diminishing progress in providing full opportunities to minority employees."

The emphasis is important—the programs for women should not be viewed as a lessening of the need to continue minority advancement. The long-range objective is to ensure that race, sex, religion, national origin, age and other non-job related factors are ignored in considering people to hire, fire, promote, demote or for other terms and conditions of employment. Within that broad framework we have defined four objectives of GE's EEO program.

(1) To be responsive to the government's requirements;

(2) To use womanpower effectively;

(3) To establish goals, priorities and measurements for management;

(4) To gain men and women's understanding and awareness of the problems both face in overcoming *existing* patterns of thought and action.

Because of deep-seated biases and the strong tug of tradition, gaining understanding and awareness continues to be the major challenge. Traditionally, since Neanderthal times there has existed a division of labor between the sexes. Men hunted for food and fended off attackers, while women tended the home and nurtured the young. As civilization developed, the divisions of labor merged somewhat as men and women worked together on the farm. But with the advent of the Industrial Revolution the sharp accentuation of differences between male and female work roles surfaced once more. And, with the possible exception of the World War II period and the advent of "Rosie the Riveter," these differences have, in the main, prevailed. Thus our attitudes and the concept of the "proper role of women" understandably bear the imprint of this societal conditioning.

How to get deconditioned? One step is to help women overcome their reluctance to ven-

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OPPORTUNITIES FOR WOMEN (*continued*)

ture into non-traditional career paths. I feel that a woman needs to explore—to consider her wants, needs and values; to examine her goals, personality, experience, interests and education; and to assess them realistically. Along with this self-examination, she should be provided with counseling to define career objectives, information on job openings and what supplementary education and training may be needed, all bolstered by an open system of transfers and promotions.

At the same time, men must be helped to resist actions and attitudes which have conditioned them to consider women primarily in supportive, subordinate roles, rather than as managers, decision-makers, machinists or truck drivers.

We have had some success in this regard through the EEOC management briefing sessions which many Company components have used to provide a platform for discussion and understanding of the issues. One very effective tool has been a one-act play, "Adam and Even," which is designed to illuminate some of the blind spots which delay and frustrate progress in EEOC. The play, the development of which was funded by the General Electric Foundation, was one of a number of extremely helpful recommendations made by GE's women's panel. This committee, with representatives from both corporate and operating components, was established in 1971 to survey the women's issues and bring the problems and opportunities to the attention of top management.

Since then we have undertaken some additional activities as part of the effort to come to grips with the problem within General Electric. Corporate



Charlene Wood: Fork Truck Operator, Protective Equipment Products Department, Pittsfield, Mass.

"Some GE women have broken new ground... venturing into non-traditional career paths."

TV Newswoman Jacqueline Maddox reporting for GE's WNGE, Nashville, Tenn.





Welder Sophia Sargent, Large Steam-Turbine Generator Division, Schenectady, N.Y.



GE's RESD Business Planning Manager, Dr. Anne D. Belfort, serving a year's assignment as Visiting Research Fellow, Harvard University.

Dale M. Van Wie: Policewoman, Plant Protection, Schenectady Utilities Operation.



Jo Ann White: Forewoman, Custom Power Component Operation, Collingdale, Pa.



guidelines on affirmative action for women were issued to operating management nearly a year ahead of the government's revised "Order No. 4" which applies to all federal contractors. And a special study, "Women and Business Agenda for the Seventies," followed in 1972 to provide GE managers with an overview of the business implications of the women's equal rights movement.

There are several ways to get from where you're at to where you want to be: revolution, gradualism and by setting goals and timetables. Following on the thought that the latter are most effective in bringing about change, equal employment goals for minority and women employees have been built into GE's management system, along with an audit, review and measurement process. Without meaningful targets to which managers are held accountable, progress would be more token than real. But with specific requirements ahead of them, performance-oriented managers come through, in their own interests and to the benefit of all concerned.

Last year's performance in EEO for women proves the point. As Chairman Jones reported at the Company's recent Statutory Meeting, there was a 33% increase in the number of women managers in 1973—their ranks have quadrupled since 1968. Similar gains were made in professional women: a 40% increase was registered in 1973, bringing their number well over the corporate goal which had been set a year earlier. Also impressive is the dramatic growth in the number of women employed as highly skilled "craftspersons," i.e. machinists, electricians.

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OPPORTUNITIES FOR WOMEN (continued)



Vivian Manuel: Financial Press Representative, Corporate Public Relations, N.Y., N.Y.

GE Space Division's Underwater Environmental Lab Director, Ruth H. Fry.



This traditionally male job category has 60% more women than in 1972, again exceeding the corporate goal.

Although some of these gains were made by the addition of 23,000 women to our payrolls, the majority were the result of promotions from within the Company, accenting the upward mobility of women. Women, who represent 28.7% of GE's employees, received 29.3% of the promotions last year. And the number of women who were promoted from non-exempt and hourly jobs into the exempt ranks was nearly three times the rate in 1971 and 1972.

There is another direction in which we need to move in order to open the widest range of options and adequately pre-

pare women for upward mobility. This involves a longer range effort to build the supply of women trained in the disciplines demanded by high technology industries. (In GE, for example, nine of every ten people in our professional ranks work in high technology functions such as engineering or technical marketing.) It means working back at the high school and undergraduate level, to remove the negative pressures that lead women down the traditional paths. For a host of reasons, including a lack of role models in other fields, many women are steered into studying for careers in elementary education and social work. This tends to limit the supply who can design a jet engine, read a micrometer, sell a power gene-

rator or who are knowledgeable about venture capital, and hinders women's ability to compete with men on equal footing.

Some General Electric women have broken new ground. We're encouraged by the progress in women managers and professionals, foremen, welders and security patrol guards. There are women on the traveling auditor staff, a female underwater environmental lab director, a test pilot and a vice president of Tomorrow Entertainment. On the corporate staff are women consultants in marketing management development, employee benefits, business planning and employee relations, and investment securities analysis. Scores of women have joined the Company on the financial, employee relations, engineering, marketing and other corporate management development programs.

The passage of the Civil Rights Act in 1964 marked a moment in history when this nation became aware that the discriminatory practices of the past would no longer be tolerated. Subsequent events, beginning with the thrust for improved minority opportunity and the current added focus on women, have sparked changes few predicted a decade ago. Civil rights and women's rights stem from the same historical roots and emerge from the same human needs—the universal quest for equality. As members of a corporation, we must recognize that the best interests of all our constituencies—employees, management, customers, share owners—will be best served by our commitment to equal opportunity. And as individuals I am positive we'll all benefit. ☐

LETTERS

Ferretting out new technology

Dr. Paine's thoughts on R&D advances in one decade which spawn a new array of products in the next, brought to mind our newest performer here in the Instrument Products Department in Lynn. It's a new type of gas leak detector.

In the short time since its introduction, The Ferret leak detector has become the most widely used instrument of its type in the United States, and is making significant inroads in the European market.



Designed to locate halogen gas leaks so small it would take a year for 1/2000 of an ounce of gas to escape, we designed it to test such diverse products as air-conditioners and refrigerators, missile systems, basketballs and aerosol spray cans.

(Frank, the ferret with the fur, was loaned to GE by the Franklin Park Zoo in Boston.)

JACK BETHUNE
Lynn, Mass.

Association Island: no whoopla tradition?

In the March-April issue of the *Monogram* you refer to the reasons for General Electric abandoning Association Island. The first reason, "the sheer burden of the undertakings," is undoubtedly correct and a major factor in this burden was the expanding size of the Company.

However, to refer to "the tradition of Whoopla" seems to me untrue.

As one who attended many Association Island Meetings I can assure you that each day contained a full schedule of valuable information about the Company's present and future plans. Presided over by the top executives of the Company, the meetings offered great inspiration and enthusiasm for the participant.

It is unfortunate that the sheer burden and expense of a rapidly expanding Company made Association Island no longer a practical answer to what finds no substitute today.

H. M. JALONACK
Cos Cob, Connecticut

Smoking: Germans say 'Nicht'

The "Cignot" article by Neil Corrigan in the March-April *Monogram* is not only very interesting, but also focuses attention on one of our national health problems.

I retired in 1960 after 42 years with GE, and my wife and I have since used our leisure to travel.

On a recent tour of Germany, my attention was arrested by a striking color poster on the academy wall, which I was able to photograph.



The thing that impressed me most about this poster on smoking was that the Germans stressed total loss of sex appeal, the ugly stained teeth and, by inference, bad breath as well as wretched health.

Sex appeal is one thing the modern younger generation strives to develop more of, not less. This type of publicity may effectively counteract the "romantic" cigarette ads designed to sell social acceptance to our youths.

JAMES H. SANTORELLI
Solana Beach, California



Put GE in your travel plans: The Company will be represented at two popular places diagonally across the U.S. from each other. The GE Carousel of Progress exhibit under construction, above, in the theme park at Walt Disney World near Orlando, Florida, will open late this year. Expo '74, the World's Fair in Spokane, Washington scheduled to run through October, offers entertainment sponsored by General Electric in the Energy Pavilion—the energetic “Up With People” singers performing several times daily.

