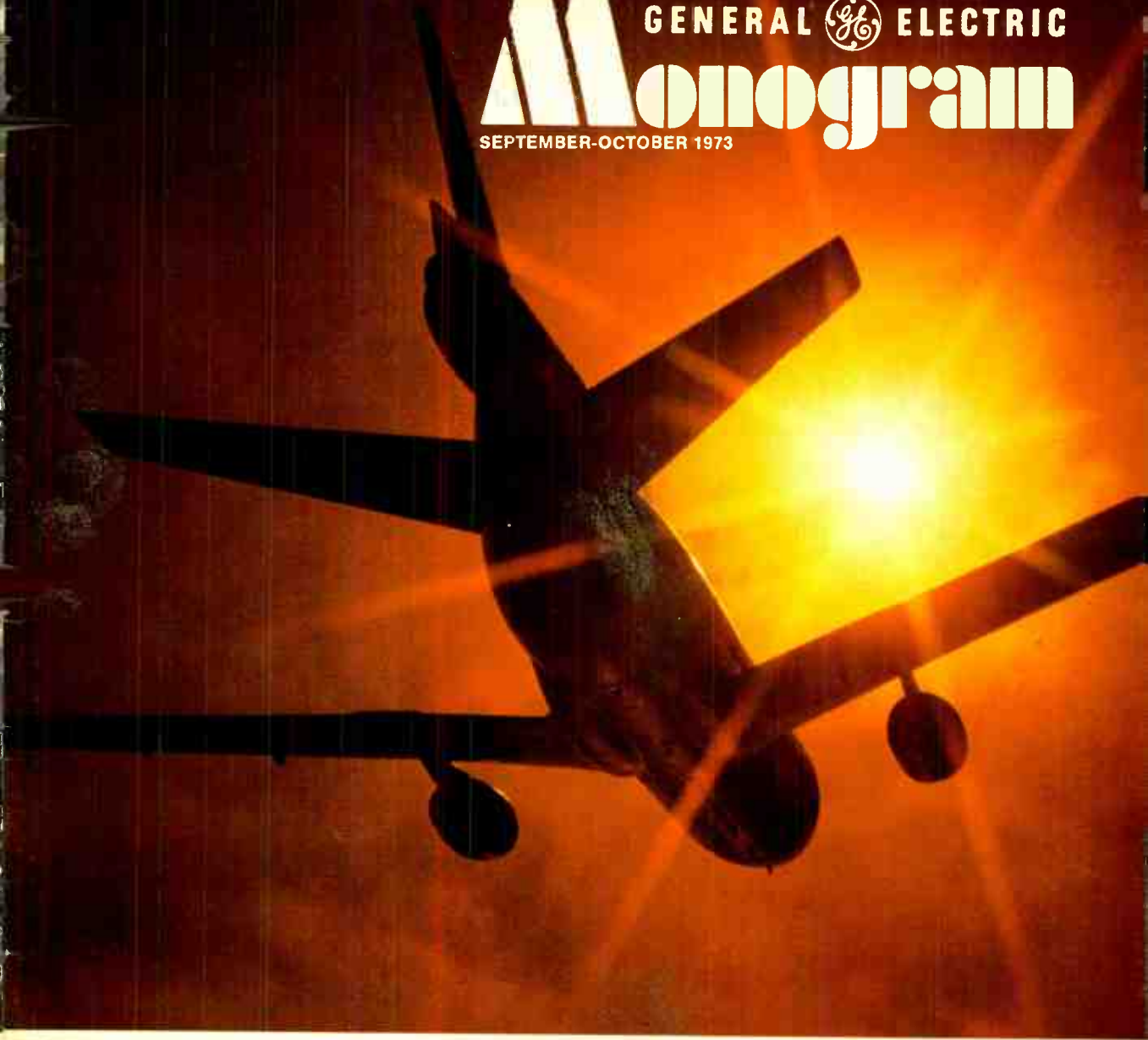


GENERAL ELECTRIC Monogram

SEPTEMBER-OCTOBER 1973



**GE JET ENGINES:
NEW PLACE IN THE SUN**

**HOME IDEAS FROM
GE HOME EXPERTS**

Plus: New TV season,
Fairfield preview,
Top engineers'
perspectives

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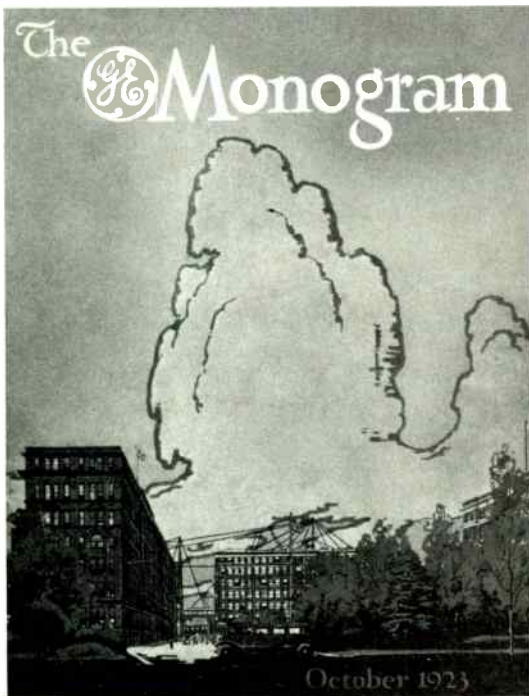
The Monogram's purpose is to keep its readers informed on General Electric activities so that they may more effectively represent the Company in its relationships with the public. It is published bi-monthly by Corporate Public Relations Operation—Douglas S. Moore, Vice President. Editorial Supervision is by David W. Burke, Manager, Public Relations Programs, and J. Hervie Haufler, Manager, Corporate Editorial Communications. Permission for reprinting articles should be obtained from the Monogram Editor, 570 Lexington Avenue, New York, N.Y. 10022. Copyright, 1973, General Electric Company.

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GE Monogram—50 years young



With this issue, the General Electric *Monogram* marks its 50th birthday.

The first issue, appearing in October 1923, was expected to be "interesting and instructive to our entire organization, but especially so to the sales organization." Since then GE's employee publication has undergone many changes, from the subtle to the drastic—changes in size, format, content and objective.

Monogram editors still like to think the magazine helps build GE business. But these are no longer times when GE employees or their informational periodicals can limit their vision to business alone. As the present masthead states, the objective now is, in effect, to equip GE people to be informed public ambassadors, capable of winning better understanding of General Electric.

It's a tall order for both editors and readers—in view of the reach and scope of GE operations and of the myriad public issues that affect the business. But it's also what keeps the *Monogram* growing, changing and youthful as it enters its second half-century.

THE COMPANY

GE JET ENGINES: NEW PLACE IN THE SUN

For a good many years, success for General Electric in the jet engine business wore a military uniform. Efforts to make GE a factor in the commercial engine sector sputtered and fizzled. But more recently Gerhard Neumann's Aircraft Engine Group has been building a healthy commercial structure alongside its military business. In 1973 the parade of events out of the civilian sector has turned into a triumphal march.

"Yes, it's happily true," said Brian H. Rowe, Vice President and general manager of the Commercial Engine Division, to a recent *Mono-gram* visitor in his Evendale office. "GE commercial engines have been involved in a good share of the year's most favorable developments. We've made a refreshing amount of headway toward securing a substantial market position for GE and have also accelerated our progress toward putting the business in the black."

Rowe delivers his comments in a well-modulated English accent. A native of England and graduate of Kings College—Durham Univer-



VP Rowe: jet engine success with an English accent.

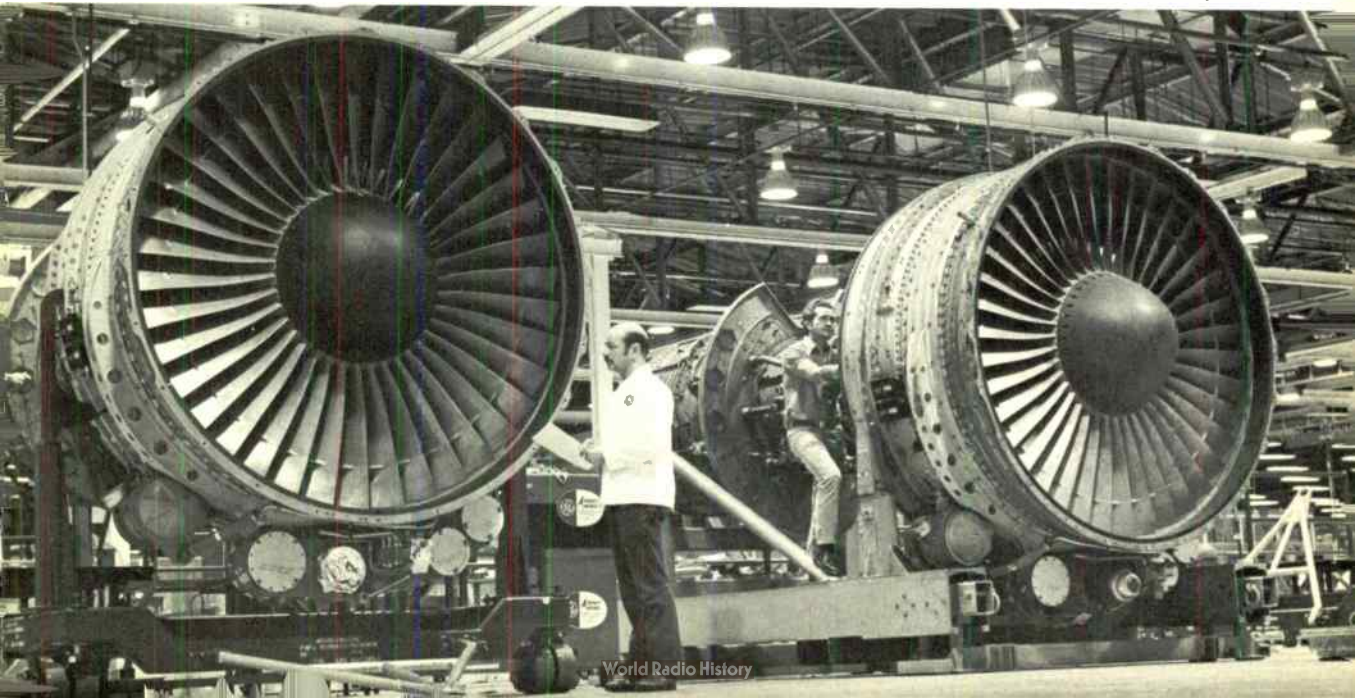
sity, he came up in the jet world with deHavilland, joining GE in 1957.

As some of the main news breaks that have brightened the outlook for GE commercial jet operation, Rowe ticked off these developments:

- Continued gains in deliveries for the DC-10 tri-jet powered by GE CF6 engines. "McDonnell Douglas recently delivered the hundredth GE-powered DC-10 to Western Airlines," Rowe says. "Nineteen airlines are now operating the DC-10 and 27 airlines have ordered more than 200 altogether. Our CF6 engines on DC-10's

(continued on next page)

Two CF6-50 engines on the floor at Evendale, Ohio. The CF6 engines, quieter, virtually smoke-free, with distinctive bypass fans in front, are the Company's ticket to success in the commercial aircraft engine industry.





Four GE powered jet newsmakers. Above: first Boeing 747 equipped with GE engines takes off near Seattle. Left: DC-10 Trijet, now operated daily by 19 airlines. Below left: Airbus Industrie's A300B in test flights over France. Below, right: new Sabre 75 business jet, powered by GE CF700 engine.

JET ENGINES (*continued*)

will exceed 1 million engine hours in revenue service before year end with 99.7% engine reliability."

- The first Boeing airplane in years to offer GE engines completed its first flight. "The airplane is a more powerful version of the 747, called the 747-300," says Rowe. "The first one flew in June of this year, ahead of schedule."

- The first Airbus Industrie A300B airplane, powered by CF6-50 engines and assembled in France. "We flew that one in June of 1972, two weeks ahead of schedule, and in cooperation with SNECMA and MTU have shipped our first production engine," says Rowe.

- In June the White House cleared the way for continued partnership with the French engine maker SNECMA. "We're working with them on the CFM56 engine in the 20,000-pound-thrust class, and we believe it's an important potential engine for the next generation of medium range airline transports," Rowe reports.

Largely responsible for these achievements are the CF6 engines Rowe helped develop. Known as high-bypass turbofan engines, they were derived from the TF39 engine used for the Air Force's C-5A transport. They are big—each CF6 develops at least 20 tons of force—and the engine inlets are 7 feet in diameter. The high-bypass means that most of the thrust comes from huge fans in the front turned by the core engine, the gas turbine, rather than from the hot gas exhaust. GE has been the first manufacturer to make it work either for the commercial or the military.

"The CF6's are the most mature engines to enter commercial service," Rowe says. "Reliability, ease of maintenance and fuel consumption are measurably better than on any other high-bypass airline engine. And, of course, the low noise and visible smoke-free operation of the CF6 family are a simultaneous achievement greatly respected in the industry."

What are the marketing strengths behind this success story? Comments Rowe: "We've concentrated on service and support of the product. One thing that people don't realize is that an airline essentially buys an engine twice—once on the original installation and then an equivalent amount of spare parts over 15 or 20 years—so it's a pretty long-term investment from their point of view and they need good service and support. We've come up with some warranties that are new to this business, that have given the airlines confidence in us. With the CF6 we've met all our commitments, engine weight, engine power, engine reliability."


There are some key design differences between excelling in military engines and commercial engines. Rowe elaborates: "A military engine gets used about 400 hours a year; an airline engine gets used about 3000 hours a year. The military is concerned with light weight and high performance, but the airlines need an engine that will operate over 15,000 starting cycles with low maintenance costs. It's really a trade-off between weight and long life."

Then there are the complex managerial decisions. "Under Gerhard Neumann," Rowe says, "we use a functional organizational setup that separates manufacturing from design and marketing. It has helped our potential for profitability. With a functional organization you have the flexibility to get in with a task force, solve a problem quickly and return the people to their regular duty with only an incremental cost rather than a continuing program cost. Profitability in the engine business consists of controlling costs right from the beginning. Your costs are largely fixed once the engine is built. And we try to help the airlines control *their* costs—so they will be more profitable and order more airplanes."

Can the dramatic increase in GE's share of the commercial market continue? "It can and we expect it to," says Rowe. "We base that on several concrete possibilities. In the near future we expect airline and military orders for the 747-300. We're working now with Boeing on the engines for the so-called 7X7 and with Douglas on several advanced planes. We've gotten some encouragement from a European consortium called Europlane for the use of the CF6-6 on a twin engine plane."

Then there is the intriguing question of replacements for present airplanes: "Coming down the road, there has to be a DC-9 replacement," predicts Rowe. "It might well use one of the GE-SNECMA CFM56 engines. And, of course, a long way off is the eventual replacement for the 707 and 727. They are the workhorses now but I think you will see the DC-10 and others become the workhorses of the airline industry."

There's also the Supersonic Transport. "I'm convinced the U.S. will eventually build the SST, with government help, and we will be in there competing on it."

As GE's greatest resource for the future, Brian Rowe cites AEG's people. "We have technical depth, 20-year people at the section level, and we have a great team of young people. We have given them responsibility, we know they represent our future, and we believe in them." 

NEW HQ: future inhabitants gain a preview

The sleek scenicruiser bus took two tries and thousands of clutch-chattering rpms to get started up the steep and dusty construction road where, next year, employees' cars will sweep smoothly to underground parking berths.


Inside, 50 New York headquarters employees sat forward in their seats for a first view of a pair of buildings looming ever more importantly in their lives—General Electric's new corporate headquarters, overlooking the Merritt Parkway in Fairfield, Connecticut.

The visitors were there as one stage in their efforts to make some basic personal decisions before the big headquarters moving date, anticipated in August of 1974. Since GE will retain its Manhattan tower and consolidate there present operations scattered over New York City, many present headquarters employees have to decide whether to stay in New York or move to Fairfield. The bus tours are one of a number of

steps taken by HQ Employee Relations Manager Frisby Euell and his associates to aid GE people in their decision process.

The day trips begin with the GE buildings, then concentrate on inspecting places to live in surrounding Connecticut: high-rise apartments in Bridgeport, a residential garden-type condominium in Fairfield, an adult condominium with a golf course in Stratford, and apartments on Long Island Sound in Milford. All in all, a wide variety of housing to choose from.

GE Relocation Communication Manager Ronald M. Kleiman and Relocation Center Staffer Ann Bolkin, as well as the volunteer realtor aboard, did a brisk business in serious conversations about urban versus country lifestyles.

The most hopeful note was sounded by a secretary: "Fairfield is close enough to New York City . . . we'll have the best of both worlds." 





MONOGRAPHS

Retired GE executives earn award for GE:

Chairman of the Board Reginald H. Jones has accepted, on behalf of the Company, an award honoring the voluntary efforts of more than 20 retired GE executives in support of businesses in developing countries.

The International Executive Service Corps (IESC), an "investment of people" in economic growth abroad which was founded in 1964, gave GE its first award to any company. In presenting the award to GE's chairman, IESC President Frank Pace praised the Company's volunteers: "GE and GE people have played an active part both in the creation of our organization and in our day-to-day management."

GE volunteers have contributed management experience to more than 34 projects and businesses in Brazil, Chile, Colombia, Greece, Iran, Korea, Mexico, Nicaragua, Panama, The Philippines, Taiwan and Turkey. IESC is currently working in 52 countries and is supported by 200 U.S. companies and 200 overseas companies.

Left to right, at the award ceremony are Chairman Jones, GE Employee Benefits Manager E. Sidney Willis, President Pace, William C. Wichman—IESC Headquarters Staff Advisor and a former GE VP, and former General



Electric Board Chairman Philip D. Reed, now an advisor to IESC.

GE's Chairman Jones has also been honored by an appointment by Secretary of the Treasury George P. Schultz to a new advisory committee on reform of the international monetary system. Inaugurating the panel, Secretary Schultz remarked: "I think it particularly appropriate and important that the government officials concerned keep in close touch with experienced and expert members of the private financial and business community to help assure that reform is realistic, practical and effective."

Big new commitments for Africa: GE's International businesses have scored new breakthroughs in support of developing countries in Africa.

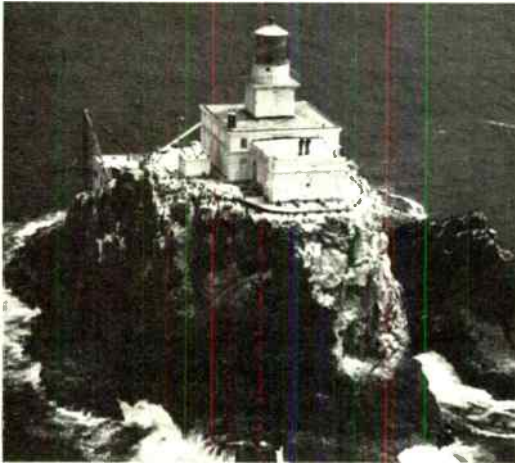
One new GE commitment is a record order for power delivery equipment to be supplied to a 1,140-mile HVDC power transmission line in Zaire (new name for what was once familiar as the Belgian Congo).

The Zaire order for \$10 million worth of HVDC transformers, reactors and current devices went to the Power Transformer Department for delivery in 1976. The transformers and allied equipment will be integral parts of a pioneer HVDC line from a hydro-electric plant at the Inga Dam on the Congo River to Kolwezi in the mining district province of Shaba. Prime contractor for the project is Morrison-Knudsen International Co. It is the department's largest single order ever.

A second major new order is for equipment to be supplied to a liquefied natural gas (LNG) pipeline across the Sahara Desert in Algeria.

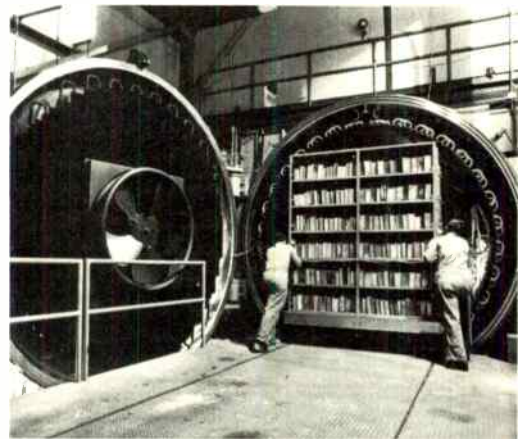
The Algerian order for 20 14,600 HP turbo-compressors at five LNG compression stations was part of a \$70 million contract awarded by Sonatrach, the Algerian national oil company, to a U.S. consortium headed by GE. The International Sales Division, Comstock International (U.S.A.) Inc., and General Electric Technical Services Co., Inc. (GETSCO) are partners in the consortium, which will build the compression stations on a turnkey basis. They will pump natural gas from deposits at Hassi R'Mel in the Sahara Desert to an LNG plant at Arzew on the Mediterranean Coast. This order for 20 machines represents the largest offshore order for gas turbines purchased under a single transaction from General Electric.

At the LNG plant, now being built by the New York based Chemical Construction Corporation, 24 previously ordered General Electric steam turbines will be used to drive compressors which will liquefy the gas. On completion of the project in 1975, the plant will ship one billion cubic feet of liquefied natural gas per day from Algeria to the east coast of the United States.



No man is an island, said Poet John Donne. But one GE man now owns his own island, complete with lighthouse. He's George H. Hupman, manager—Vacuum Interrupter Products Operation in Philadelphia, and his island is known as "Terrible Tilly," for no-longer-operative Tillamook Lighthouse on a one-acre rock 1 ¼ miles out to sea from Seaside, Oregon, reachable only by helicopter. Hupman became interested while on assignment as GE's project manager for the Pacific-Northwest HVDC intertie and bought the island as a possible future vacation retreat. In the meantime, NBC is planning a film; a Los Angeles radio station wants an interview; and other media are planning features.

Space salvages a library: Resembling a bank vault, a space simulation chamber at GE's Space Division works overtime to dry out thousands of books that became waterlogged during fire-fighting operations at Temple University Law Library. The 60,000 damaged volumes were stored in freezers to prevent the formation of mold. Under contract from Recovery Services International, the frozen books have been moved to Valley Forge to dry out in GE's 3,000-cubic-foot chambers, primarily used for testing spacecraft, in 4,000-volume loads. The project ranks among the largest book salvaging operations ever undertaken and is expected to take over six months to complete.



Meet the Maxi-Meter: It's four feet high, weighs 200 pounds, has a carousel-size rotor—and really works. The super-size wathour meter custom-built by the Meter Business Department in Somerworth, N.H., is a star performer at the new Electric Energy Exhibit at Boston's Museum of Science.

The exhibit, sponsored by Boston Edison Company and five other area utilities, was designed to provide people, especially young people, with basic information about the electric power industry. The show's 30 units aim at building understanding of nuclear energy, future power sources and electricity and the environment.

Share owners' gain: The Board of Directors approved an increase in the annual dividend rate to \$1.60 per common share and declared a quarterly dividend of 40 cents per share of common stock payable October 25, 1973 to share owners of record at the close of business September 24, 1973.

The previous annual dividend rate was \$1.40 per common share. The quarterly dividend per share of common stock was 35 cents.

GE'ers swamp IR-100 competition: General Electric scientists and engineers continued a trend by earning eight of the coveted "100 most significant new technical products" awarded by Industrial Research, Inc. at ceremonies September 20 at Chicago's Museum of Science and Industry. Since the beginning of the award program in 1963, GE has won 78 awards, twice the number of its nearest competitor.

Of the eight awards, two went to Lamp Business Division, four went to Corporate Research and Development, with one each going to Nuclear Energy Division and Medical Systems Division.

Refractory Metals Products Department was the winner for its Project VV development of an automobile windshield and rear window de-icing system. The new de-icer system, which also functions as a defogger, uses ultra-thin tungsten wires to heat the glass window surfaces.

The second IR-100 award to Lamp Division was shared jointly by two Nela Park researchers and three scientists at Corporate Research and Development Center. Nela Park invented a process for making coiled carbon filaments from an R&D Center developed polyacetylene fiber.

The four R&D Center awards were for development of a gas-bearing turbine-alternator, a new air particulate analyzer using surface ionization detection methods, an industrial diamond tool material tradenamed Borazon® CBN Compax^(T), and an inverter thyristor. Switchgear Department shares the honors for the thyristor.

A nuclear waste incinerator developed at Nuclear Fuel Department in Wilmington, North Carolina gathered the honors for Nuclear Energy Division.

Medical Systems Division, Medical Ventures Operation and consulting physicians collaborated on an award-winning "DuaLung" membrane oxygenator system.

New TV season: GE's 'Great Entertainers,' new GE Theater



At work for GE: Sammy Davis, Jr.

"A real coup in what appears to be a race to the stars for the home electronics industry has been scored by General Electric—which has signed up Sammy Davis Jr. to promote its audio line and another oldtime TV personality, Jackie Gleason, for its TV line." So says a leading industry journal about the fall series of GE commercials and specials expected to give an extra sales boost to two already healthy consumer product departments.

Jackie Gleason is coming out of retirement on behalf of the 1974 line of GE television receivers. His commercials will be featured in television spots on NCAA College Football and NFL Monday Night Pro Football.

Jackie will also star in a one-hour prime-time comedy special on CBS on October 11 at 9:00 p.m. sponsored by the Television Receiver



Jackie Gleason for and on GE TV.

Products Department. The program marks Jackie's return to television spectaculars after a three-year retirement.

Sammy Davis, Jr. is starring in four new 60-second TV commercials sponsored by the Audio Electronics Products Department. They are on prime-time network TV during 28 major sports programs for a 14-week period ending December 16. The new commercials promote Audio Electronics' portable radio with TV sound band, a two-piece portable stereo 8-track tape player, a new portable tape recorder with built-in mike and 4-channel audio system.

Sammy Davis, Jr. has also been signed up for a one-hour coast-to-coast TV special on November 16 at 8:30 p.m. on NBC called, appropriately, "Sammy!"

Both departments are cooperating under the national advertising theme: "GE Presents . . . The Great Entertainers."

Major Appliance Group's Room Air Conditioner Product Department has also recently been airing a TV commercial featuring a familiar and popular household name—Arthur Fiedler of the Boston Pops Orchestra.

Said the noted conductor in the 30-second commercial seen on top-rated shows over the past summer: "Peace and quiet is an essential part of my life. That's why I'm impressed with my GE Slumber-Line air conditioner. General Electric tells me it's the quietest compact they ever made . . . After all, I don't want to hear my air conditioner . . . I want to hear my music."




Arthur Fiedler for GE Slumber-Line

A New GE Theater premieres: a series of 90-minute dramas filmed on location will be appearing on television this fall as a revival of the distinguished GE Theater series hosted by Ronald Reagan which ran successfully from 1954 to 1962. GE Theater will replace the GE Monogram Series of documentaries presented during the past four seasons.

The first production, "I Heard The Owl Call My Name," will be seen December 18, from 9:30-11:00 P.M. EST on the CBS network. "I Heard The Owl Call My Name," is the story of a young Anglican priest who is unaware that he has only a short time to live. He is sent by his Bishop to a remote Canadian Indian village where he learns the meaning of death. The film also focuses on the tensions among Indian young people.

"I Heard The Owl Call My Name" was adapted for television by Jerry DiPego from Margaret Craven's book. Tomorrow Entertainment Inc., GE's entertainment affiliate, will produce the show with Roger Gimbel as Executive Producer and Darryl Duke as Producer/Director. It was shot on the coast of British Columbia in September.

"The GE Theater will emphasize strong dramatic entertainment," states David W. Burke, manager, Public Relations Programs at New York headquarters. "We will present drama that illuminates contemporary events and hopefully helps bring a better understanding of our times." 

a MONOGRAM special

HOME IDEAS FROM GE HOME EXPERTS

General Electric's businesses that serve the consumer are staffed with bright people who conduct a constant search for new ideas their customers can put to use. For GE people this search has a double benefit: the boost to sales of consumer goods contributes to the Company's overall success; and employees can apply the experts' ideas and new products to enhance their own lives. In this special section, the *Monogram* reports on ideas for better living gleaned from talks with a number of GE home specialists.

IDEA #1: Switch to electric heat

GE people who choose to heat their homes electrically share in a decision that is becoming increasingly popular—because it is increasingly practical.

Last year, 33% of America's new homes were electrically heated, according to the National Association of Homebuilders—a considerable jump from the 14% reported just five years ago. The number of electrically-heated homes in the U.S. is rapidly approaching six million, according to *Electric Heat* magazine, which reports that utilities are revising growth estimates upward, projecting nearly 12 million electric heat customers by 1980 and 15 million by 1985.

Several factors explaining this switch to electric heating are cited by Stanley A. Gorski, general manager of GE's Central Air Conditioning Product Department: "Fossil fuels such as gas and oil are in short supply currently, and so more builders are installing electric heating systems. The benefits resulting from this shift are certainly positive, because electric heat is a very efficient approach, and one that's environmentally appropriate in terms of energy conservation. It also offers comfort—and in the case of our GE Weathertron® heat pump—is a reliable and cost-competitive approach to year-'round air conditioning."

One builder cited by Gorski as being confronted with growing gas shortages is the Ryland Group, Inc., a major builder headquartered in Columbia, Maryland. Ryland built no electrically-heated homes in 1971, yet anticipates that 25% of its construction this year will include electric heat, according

to Wallace Borger, manager of corporate purchasing for the firm.

General Electric has been a leader of the electric heating industry since it began manufacturing equipment some 40 years ago. Today, GE products include electric furnaces and baseboard systems, a variety of heaters plus Weathertrons. It is the Weathertron heat pump that Gorski and his associates point to as the promising star in their product portfolio: an efficient, ecologically-ideal system that is, in effect, a reversible air conditioner. In cooling it operates exactly like an air conditioner because it absorbs



Checking heat pump thermostat: Stan Gorski, left, general manager—Central Air Conditioning Product Department and Mel Cole, marketing manager.

heat from inside a building and discharges it outside. In heating, the heat pump reverses and absorbs heat from the outside, discharging it within the building.

A report by the Electric Energy Association notes the heat pump's ability to extract heat from the outside air to heat a residence. It says, "Electricity is required to effect this transfer but, on the average, only about half as much as would be required for resistance heating of the space. Thus the heat pump provides a heating equivalent to approximately twice the electricity input, doubling the net conserving influence of electric heat."

The total comfort provided by the Weathertron is another big selling point stressed by CAC marketing manager Melvin H. Cole: "The heat pump delivers air closer to room temperature than fossil-fuel heating systems; there are less temperature fluctuations, and it reduces air stratification and stagnation associated with standard central furnaces. And, since the Weathertron is a flameless system, it produces no fumes, soot or smoke to dirty home furnishings; only filtered air circulates through your home."

The Weathertron was first introduced in the '50s, before it had wide field testing. So, says Gorski, in 1962 the Company withdrew from the northern market, returning the Weathertron to the laboratory for tough environmental tests more severe than anything experienced in the field. As a result, changes

were made that improved performance.

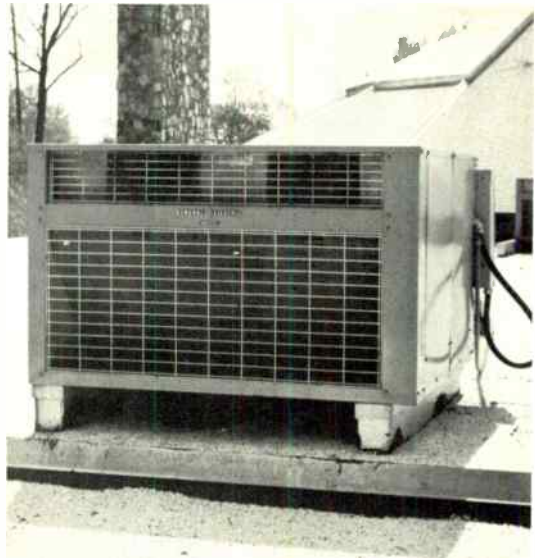
Today's Weathertron is highly reliable, says Gorski. He emphasizes that it equals the reliability of conventional fossil fuel heating with electric cooling—a fact recently reported in *Electrical World*—and the current cost of a GE Weathertron service contract is the same as one for a comparable gas or electric furnace with air conditioning, and less expensive than for an oil furnace with electric central air conditioning.

Alabama Power Company, which has experience with heat pumps dating back to the 1950's, is enthusiastic about their advantages. W. Roy Barron, General Sales Manager of the utility says that "General Electric heat pumps have proven to be reliable and efficient performers."

As to relative operating costs, these can vary somewhat by location, but builder Frank Sadler of Lexington, Ky., past president of Kentucky Home Builders' Association, told the *Monogram* he found little difference between gas and heat pump heating costs. "We took two similar houses—one heated with gas and the other one by heat pump—and actually looked at the utility bills," he reports, "and found that the year-'round heating and cooling costs were almost identical." Both Sadler and Barron agree with Gorski's estimate that most future homes built with central air conditioning will undoubtedly include a heat pump.



A "deep freeze" is one of the exhaustive laboratory tests that General Electric's Weathertron heat pumps must endure.



Roof-top installation of Weathertrons provide year-round comfort. Four units supply 25 tons of heating and cooling capacity.

IDEA #2: Borrow from GE "Idea Homes"

As one aspect of his job, GE's Gerald M. (Gerry) Macari, manager of customer relations for the Contract Sales Division, regularly draws together groups of people interested in home building and encourages them to pool their best concepts in an "Idea Home," which is then built—naturally making liberal use of GE and Hotpoint products.

One such project, sponsored by *Parents'* magazine and the Division, sought the ideas of 63 members of the Women's Auxiliary of the National Association of Home Builders. Their ideas were incorporated in the home pictured at right, built in the Houston suburb of Huntwick. Some of the main ideas of this Houston "idea home":

- It's designed to have "curb appeal"—that is, to look visually exciting from the street, an important consideration for transient Americans thinking in terms of resale.

- It's two-story, to hold down building costs (a stipulation was that its price tag could not exceed \$45,000, excluding land).

- It includes "growing room." As panel moderator and *Parents'* Family Home Editor Jane Randolph Cary put it: "the home proves once again that it's important to start with a sound basic floor plan that includes all necessities and provides for adding individual luxuries later."

- Its interior completely separates living and sleeping areas. Adults can have party

times, for instance, with minimal disturbance of children's sleeping hours.

- It makes great use of bright modern colors, vivid contemporary graphics and accessories. The family room, as an example, is kept bright and cheerful by light paneling, color schemes in yellows and golds and airy wicker furniture. Instead of an all-white ceiling, the kitchen breakfast room has a cocoa-colored ceiling with surprising white beams. In the boys' bunk-style bedroom, an orange-and-yellow "supergraphic" climbs the wall and crosses the ceiling.

- It pampers the parents with luxurious master bedroom-bath quarters, including a large dressing area with double sinks, a built-in dressing table and outsized walk-in closets.

- Mother is further pampered by her own "mother's room," where she can enjoy her own desk for menu planning or sewing, a built-in ironing board, automatic Hotpoint washer and dryer, deep tub for soaking and a closet for hanging permanent press garments as they come from the dryer to prevent wrinkles from setting.

- The house has central air conditioning—by General Electric.

- And of course the kitchen has the best in appliances and housewares. The Houston Chronicle called it "a homemaker's dream with plenty of cabinet and counter space, and Hotpoint built-in appliances, including a dishwasher, disposal, double-oven electric range, trash compactor and an upright freezer that has been placed in the adjacent 'mother's room.'"

GE's Gerry Macari and Parents' magazine's Jane Randolph Cary teamed up in sponsoring panel of National Association of Home Builders Women's Auxiliary members in planning their own "idea home."

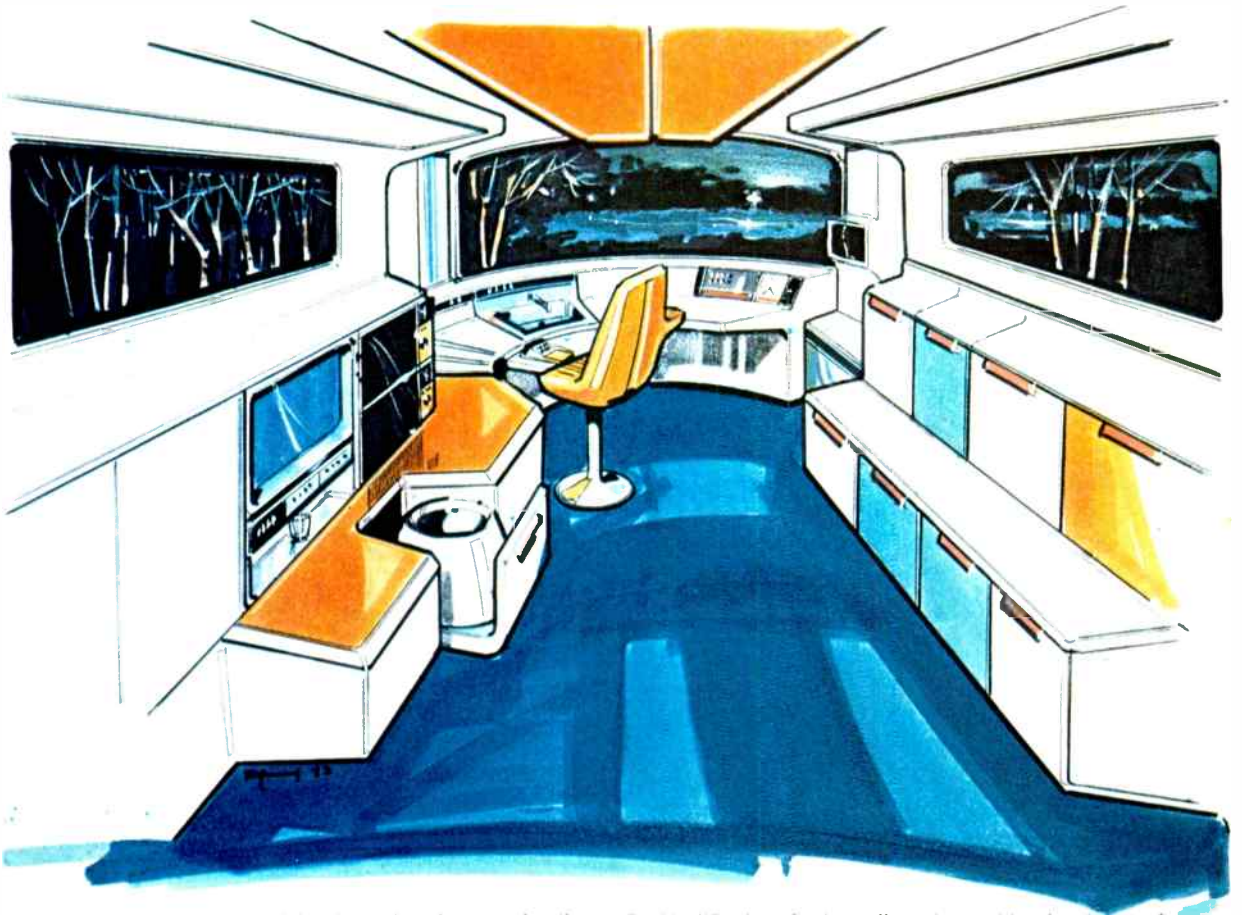




Houston idea home's "curb appeal" is provided by adaptation of New Orleans French exterior design. Easy-access U-shaped kitchen features a full team of Hotpoint work-savers, from self-cleaning wall oven to trash compactor. Left: "mother's room" gives homemaker her own cheerful area for hobbies, menu planning, sewing, laundry duties.

IDEA #3: Individualize your kitchen

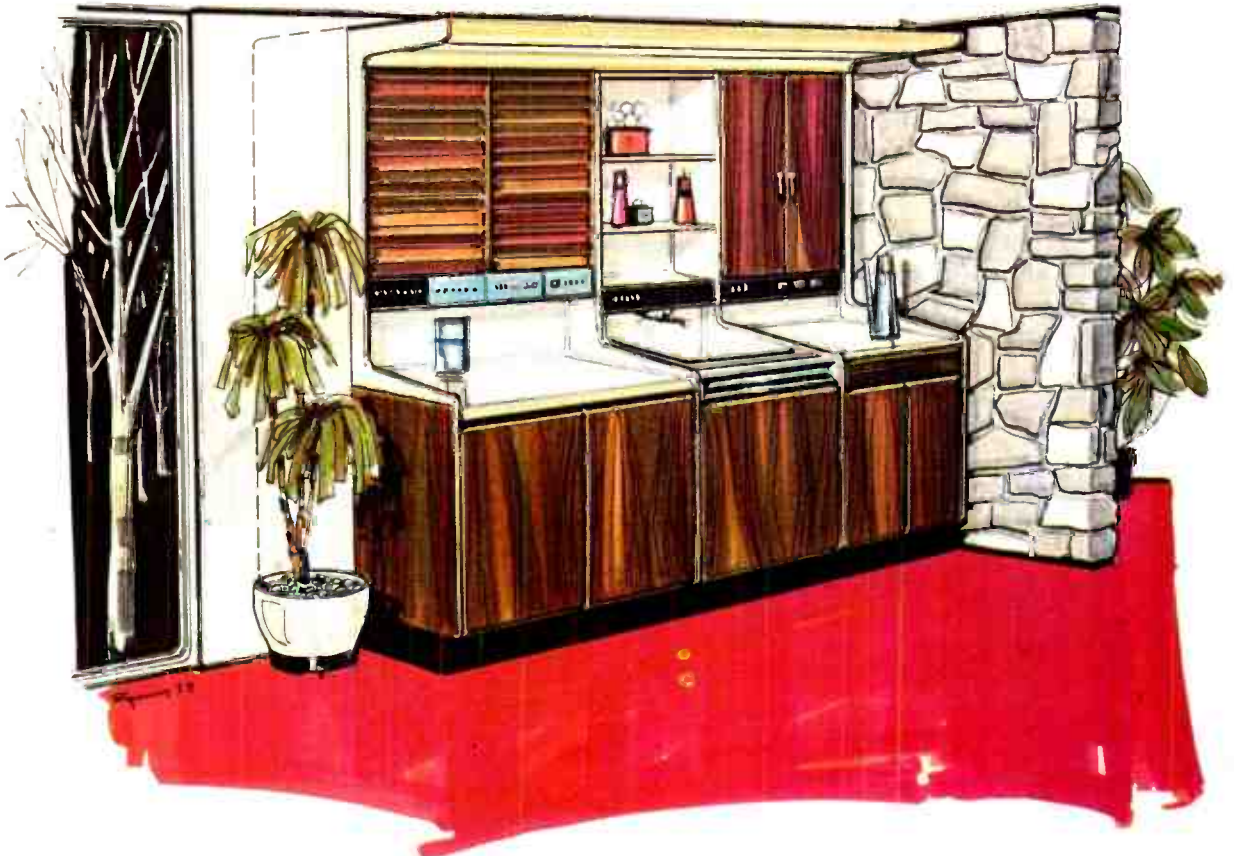
Does the kitchen have to be a rather standard, generalized part of the house or can it be tailored to the homemaker's specific situation and life style? Industrial specialists at Appliance Park's Applied Research and Design Center are inclining more and more to the second answer: make the kitchen fit the individual. Take, for example, young swingers living in low-rise apartment complexes. Main meals are probably eaten at restaurants. Meals at home are simple, snacky, with a minimum of fuss. Parties and cookouts are important. As part of a free-wheeling creative program called Project Lodestar, GE's designers, under Dr. Arthur N. BecVar, manager of Industrial Design Operation, have planned a kitchen specifically for swingers—emphasizing a single, furniture-type appliance. Two other Lodestar ideas are shown below.



For retired people living in mobile homes, Appliance Park's "Project Lodestar" projects this circular work area with a mechanized rotating seat from which the homemaker can reach all the appliances.



While Project Lodestar ideas are still "blue sky," Appliance Park has already begun to market its "Kitchen System" concept in limited areas of the country. Into this compact new unit are crowded many special conveniences: cabinets that provide one-third more shelf area than conventional cabinets; special drawers for storing pots and cans; built-in soffit lighting to illuminate both counters and upper-cabinet interiors; adjustable upper cabinet shelves; and easy-to-clean vinyl-clad cabinet interiors.



For professional couples with no children, this GE kitchen of tomorrow emphasizes simplicity of pre-prepared food storage, handling, preparation; deliveries can be made from hall while couple is at work.



Housewares' gallery of versatile home products include, clockwise: Toast-R-Oven, Lighted Make-Up Mirror and Mist/Conditioner Speedsetter, Heated Shave Cream Dispenser, Cordless detangler, Styling Dryer.



IDEA #4: Use housewares to enhance your lifestyle

Do you regard electrical housewares essentially as gimmicks or as real contributors to your lifestyle?

Unless you've chosen the second option you're missing out on the benefits of hundreds of hours of consumer testing that go into every GE housewares product, according to Barbara Tucker, Manager of Home Economics for the Housewares Division.

Barbara offers *Monogram* readers some specific examples of how to use housewares to enhance your living patterns:

- Capitalize on the full versatility of such products as the Buffet Skillet and Toast-R-Oven™ Toaster. "The working homemaker can use these two appliances, teamed up," she says, "to do a lot more than just heat up convenience foods. In the Toast-R-Oven, for example, you can quickly whip up tomato hors d'oeuvres using halved cherry tomatoes, grated parmesan and bread crumbs. At the same time these are top browning, you can work on a quick beef stew with vegetables in the skillet. Go back to the oven for hot bread to serve with the stew. Next night try a cheese fondue in the skillet—it will hold the cheese at exactly the right temperature."

- If you're squeezed for space in a small apartment kitchen, use only multi-functional

appliances—housewares that can do several jobs. Ms Tucker: "A portable mixer can do many of the jobs that a large mixer can do. The Dutch Skillet can fill in both for a griddle, a deep fryer, a roaster and a popcorn popper."

- Explore the world of new personal care products. "They can really make a difference. With hair care, the basic rules for bright, lustrous hair are easier to follow, faster, with the new dryers, stylers and detanglers. The GE Cordless Detangler can be your best ally in pursuit of healthy hair. Not only should you use it after washing your hair, but also to remove teasing, backcombing or backbrushing before bed. Teasing is hard on hair and should not be left in place overnight."

- Put on your make-up, she says, for where you're going, not where you are. "The GE Lighted Make-up Mirror is a very simple device, but it can add a new dimension to taking care of your appearance because it can simulate outdoor daylight, harsh office fluorescent lighting, home incandescents or soft evening lighting for nights out."

- Men have personal care products they can put to use, too—styling combs, styling dryers and the Heated Shave Cream Dispenser. "Men tell us that a morning shave with warm lather can get the whole day off to a better start."

- A lot of Housewares thinking has gone into making clocks more useful. "The new Ever-Set alarm clock relieves you of the repetitive worry about whether you've set the alarm. You set it once a week, say on Sunday night, and then it rings only on the days of the next week when you actually want to get up early. Or if you're one of those people who wake up at night and wonder if you've set the alarm, there's the 'View Alarm' clock that tells you 'Yes, I'm set.'"

Homemaker as well as professional home economist, Barbara Tucker runs a well-equipped lab in Bridgeport where GE housewares are tested. Her staff goes over and over each product before preparing the tips and techniques contained in the instruction manuals. She makes recommendations to the product planners for future models, based on her evaluation of present models—ideas such as non-scratch legs for appliances and push buttons that can be operated by a woman with long fingernails.

"The human engineering aspects of GE housewares are our prime interest," she says, "and we take our responsibility seriously."



Barbara Tucker: "Benefit from our hours of testing."

IDEA #5: Make better use of light

At Corporate Market Development Operation (CMDO) in Louisville a GE lighting expert is at work to assist builders and architects with illumination ideas. She's Elizabeth (Betts) Meehan.

While the basic source of new lighting ideas is GE's Nela Park, Betts provides suggestions and frequently brings groups involved in major programs to Nela's Lighting Institute to see these new ideas come to light.

Questioned about enhancing the home environment through creative lighting, Ms Meehan says that the biggest fault in most homes is that lighting receives only the most casual planning. Little real thought is given, she says, to what planned lighting can do to make tasks easier, improve safety, create a cheerful family environment and play up color schemes and decoration.

"How many kitchens I've seen where windows are relied on for light during the day, with only a single electrical fixture available at night. Typically, the sink is placed under a window. The result is that in daytime there's too much light there, and not enough at the range and counter areas located away from the windows. Forgotten is the fact that for a large part of the year the main meal of the day is prepared after the sun has set, more often than not under inadequate lighting."

The thing to do, in kitchens as in other rooms, she says, is to plan two categories of lighting—general and local. General lighting should provide diffuse over-all illumination and create a comfortable living and working environment by reducing contrast in brightness between lighted work areas and surrounding areas which are not as bright.

Local lighting should be specifically planned for a work area. In the kitchen, for example, there should be high levels of shadowless light for specific seeing tasks, such as cleaning vegetables, chopping or slicing, browning meats, reading recipes, mixing, and scouring pots and pans.

In the family room, flexibility in lighting is the goal. "Lighting can do exciting things to make a family room more livable. It can switch a room's mood and function in a second—from an efficient workroom for sewing or ironing into a restful spot for watching TV or a



CMDO's Betts Meehan: "Adopt a state of mind of what lighting can do."

gay setting for a party. One way to achieve this flexibility is with dimmer controls. Dimmers sized to replace toggle switches are readily available. And make sure that floor areas are well-lighted, because that's where the children spend a lot of their playtime."

In bedrooms, a common mistake is to relegate old lamps there from other rooms—producing light that neither flatters the room, the decor or the occupants, nor that provides light to see by.

The answer Ms Meehan recommends is, again, to provide both general illumination, for soft background lighting, and local illumination, to light specific tasks. "One without the other is insufficient. Combined in a bedroom, they create a pleasant, flexible, useful retreat from the rest of the world."

In the larger projects in which CMDO becomes involved, Betts Meehan is called on to create indoor and outdoor lighting systems that not only enhance a project's esthetics but help provide greater safety and security against crime. "Lighting on this scale poses more difficult problems, of course, than that for a home. But the principles are the same. The main thing is to adopt a state of mind, a consciousness of all that lighting can do, and then apply common sense. Figure out where your visual highspots have to be and, if these mean 'peaks' and 'valleys,' fill in those areas with general illumination."



Nela Park's Lighting Institute emphasizes flexibility in today's home lighting. In the residential area, flexibility is provided by general lighting—with lighting of vertical surfaces making the room appear larger—and with recessed ceiling floods to highlight decorations, flower arrangements, tables and other furnishings.

Dining room lighting demonstrates objectives stressed by Betts Meehan. Different moods can be created with eight recessed lamps to light the table setting and two eyeball units to focus attention on the draperies. Both systems are on dimmers. Fluorescent lamps are used in the valance and built-in china cabinets.



IDEA #6: Get the most out of your appliances

Into GE's Consumers Institute in Louisville pour customer inquiries and requests by the thousands daily—"Last year alone we answered over 290,000 inquiries," reports the Institute's new manager, Jane Franz Butel.

Not content with a purely receptive role, Jane Butel and her associates travel widely to participate in consumer workshops, keep fresh information flowing to radio, television and other news media, and represent the Company at meetings of ecological groups, business organizations and associations of home economists.

Out of all this, what are some of the useful ideas that GE people can put to use in *their* roles as consumers?

"The main point of our Consumers Institute activities," she says, "is to help consumers make better use of their appliances and thus to diminish their dissatisfactions. The advice we give out is as appropriate to a GE homemaker as any other."

Institute staffers urge the importance of choosing the right appliance to meet a family's particular needs. "With the proliferation of appliances, models, styles and sizes, the task of selection can be quite perplexing. The stake for us is that the buyer who selects the wrong appliance may result in an unhappy customer."

The first step, as in other consumer decisions, is thoughtful evaluation of the family situation, short-term and long. Ms Butel: "Appliances should be considered as long-term investments. Consequently the homemaker, before making a purchase, should look ahead to how the family's needs are likely to change. If a family is going to see its children go away to school in a couple of years, does it really need a second oven? Conversely, if the family is growing does it make sense to rely on compact appliances whose capacity will soon be overwhelmed?"

In selecting a freezer, the Institute tells consumers, the homemaker should use as a rule of thumb at least three cubic feet of freezer space for each family member. "That should result in a well-filled freezer—which is an economical freezer."



Consumers Institute Manager Jane Butel:

Or, with freezers, the determinant may simply be the space available. "We think families are better off choosing a smaller unit than in buying a large one which they then have to locate in the garage. Refrigerators and freezers last longer and perform better if the temperature remains relatively constant—and the freezer will be more useful if it's close to food preparation areas."

With other appliances, the right selection includes choosing the unit with the right extra features or options. "Obviously, the homemaker with a large family can make better use of a top-of-the-line spread of special features than a bachelor or bachelor girl. A rotisserie option on an oven may be lost on a family that's small or that eats out often. If you regard a specific extra as a 'frill,' you probably don't need it; leave it for the homemaker who sees it as a real work-saver."

It can be a mistake, and a needless frustration, for a family to hold onto a limited old appliance when a new one may have features the homemaker will find enormously useful. "Take the new GE clotheswasher with the Dispensall™ system that automatically releases laundry pre-soak materials, deter-



"New Dispensall™ may make replacement desirable . . . choose a smaller freezer that will fit in the kitchen."

gents, bleaches and fabric softeners—each at the right time in the right cycle. It can be a great new source of freedom for the homemaker with heavy washing needs. Together with GE's Filter-Flo® and Mini-Basket™ conveniences, it may well justify replacement of a unit that does nothing but wash."

In their travels, Consumers Institute staffers preach "Know your appliance." Ms Butel: "Many service calls are unnecessary—they would be avoided by a careful scrutiny of user manuals. In fact, appliance users can avoid a lot of unhappiness by paying closer attention to their 'use and care' manuals." But when service *is* needed, there's nothing in the industry—Institute staffers are quick to point out—to compare with GE's "Customer Care Everywhere" service program.

In these days of energy shortages, a main theme for the Institute is power conservation. "We stress that homemakers could save energy, and reduce their electric bills, by wiser use of appliances. The sort of tips we pass on are, for example, in the use of ranges. Cook all foods for each meal in one area—on top of the range, in the oven or under the broiler. If cooking a small quantity, use a por-

table appliance instead—an electric skillet, for instance. Try not to operate an oven for only one food—use the extra capacity for cooking other foods for later meals. The average oven heats within ten minutes, so don't preheat longer. With air conditioners, select a moderate rather than a high cooling setting, remembering that for every additional degree of cooling, your air conditioner uses more electricity."

Another way to save money as well as electricity, Jane Butel says, is by practicing regular preventive maintenance. "A door gasket on a ten-year-old refrigerator may have hardened with age and cracked, allowing cold air to leak out and making the compressor work longer hours to maintain the desired interior temperature. Dirt and dust around condenser coils may also be forcing the unit to work harder. Defrost whenever frost builds up to one-quarter inch—frost is an insulation which can cause the cooling system to run longer. We tell our audiences that plain old good housekeeping is one important way to conserve energy, save money, extend the life of electrical appliances and avoid having to call the service man." ❏

MINORITIES STAR IN NEW GE BOOKLET

A new publication released by Corporate Public Relations achieves several corporate purposes—principally, informing minority youth of the opportunities GE provides them for professional and managerial careers.

But what comes through most strongly are the people themselves—the 28 representatives from General Electric's minority professionals and managers.

They come through so strongly because of an unusual tripling of communications techniques: excellent photographs; third-person summaries of their careers; and excerpts from their own candid comments about minorities in business.

At the heart of this distinctive layering of im-

pressions is the work of award-winning Photographer Burk Uzzle. Commissioned by GE for the assignment, Uzzle did more than snap the hundreds of pictures from which those in the book are drawn—he also tape-recorded what were often hours-long interviews with the 28 GE professionals.

Out of this wealth of source materials, Public Relations editors and designers developed three-faceted portraits, samples of which are shown on these pages.

GE components interested in obtaining copies for recruiting or community relations purposes should contact Corporate Editorial Communications at the New York Office.



Roland Abner was a high-school dropout, experimented with hard drugs and was given the choice of the Marine Corps or reformatory. He chose the former and started on a road that has led him to a position as a union relations negotiator with GE in Pittsfield and a Phillippe Award winner. "There must be opportunities for others as well as the Superblacks," he says, "young guys and girls who will fight their way into college and who may come out in the lower spectrum of their class . . . but who are good achievers."




Barbara Oliver began her GE career as a secretary, is now Manager—Communications and Community Relations for the Information Services Division in Bethesda, Md. She says to black youth: "Don't dwell on past injustices and become bitter...bitterness destroys you first and not your opponent."



Arnold A. Watchempino, member of the Acoma Tribe of Pueblo Indians, plans to work on his MBA through the GE Tuition Refund Program. Working with electrical controls and drive systems, he says "In a big company like this, you have a capacity to move . . . it's up to you and your efforts."

Robert J. P. Fresneda was born in Cuba and first came to the United States in 1948. He's now a field engineer for the Installation and Service Engineering Business Department. "Field engineering is my bag," he says. "There's plenty of opportunity for a big job in that area of GE."



Thomas H. Lee, starting as a Test Engineer with International General Electric in Shanghai in 1946, is now Manager—Technical Resources Operation for the Power Delivery Group. "We haven't done enough," Dr. Lee says, "but I haven't seen anyone try harder for equal opportunity than GE." 



STEINMETZ: AFTER HALF A CENTURY

He was an immigrant, born deformed as a hunchback. He created artificial lightning, hurling man-made thunderbolts at will. He expressed the complexities of alternating current in mathematical terms and assigned 201 patents to General Electric. He was a naturalist and recognized humanitarian. He was Dr. Charles Proteus Steinmetz, who died 50 years ago this month. The Monogram asked Joseph Steinmetz Hayden, son of Steinmetz' adopted son and now owner of his own photocopy business in Schenectady, to look back over half a century to the memories of his illustrious "grandfather."



In family pose, Joe Hayden is seated on running board of Steinmetz' electric car.

BY JOSEPH STEINMETZ HAYDEN

He seems, if anything, more widely known and respected today than he was then. I'm particularly aware of him now because of the Companywide competition for Charles P. Steinmetz Awards to recognize outstanding technical achievement.

But mostly my recollections are on a more personal plane. Because, while he was my grandfather through adoption, he was also my closest friend and confidant.

Six weeks before his death I had been his roommate on a whirlwind coast-to-coast speaking tour that "Dad" (as everyone in our family called him) had carefully planned to be a big family vacation. I was just 17 then.

The trip west turned out to be a triumphal affair. At every stop, crowds waited to see him—including mayors, governors and other celebrities. The list of stars on hand to greet him in Hollywood included Douglas Fairbanks and

Mary Pickford. While Dad was amazed that such personalities wanted to meet him, I simply basked in his reflected glow and felt very grown-up.

Young people quickly took to him, after accepting the fact of his odd appearance. The reason was that he himself was so childlike in many ways. My mother always treated him like one of the children—looking after him, buying his clothes, disciplining him if he misbehaved. Like us, he would receive no dessert if his plate wasn't clean.

He was generous to a fault. An example I'm fond of recalling goes back to when we were returning from the trip west—the day before I was due to report to prep school. "Now be certain to write home once a week," he told me, "and if there's something private you want to say to me, say it in the Morse Code I taught you at camp last summer." The "something private"

consisted, as he knew it would, of requests for extra spending money. Mother suspected that that was what my Morse Code messages were all about but she couldn't prove it because we refused to teach her the code.

He was generous not just with money but with time. He always had time to answer our questions. One night he left Henry Ford alone in the living room while he read us a bedtime story. Henry had a long wait because that night, instead of reading his favorite author Jack London, he read us *Dracula* with such spine-tingling force that it was hours before I drifted off to sleep.

He spent most of his working hours in the lab that GE built to his specifications behind our home. There he spent long hours working with a dozen or more engineers. But even there he never missed a chance to answer questions brought to him by hoards of students from Union College. He made himself one of them—sharing their cults, joining a social fraternity, rarely missing an athletic game and even establishing a student extension course that assigned engineering students some of the specific problems being worked out in his lab.

He recommended a broad education to all his students, once writing: "I am strongly of the opinion that a broad education, a good general knowledge of English, literature, history and natural sciences, and possibly at least one other language, is of far more importance and value, for the future success of the engineering student, than instruction in the numerous de-

tails of his special profession... which the student could learn just as easily and often better after graduation in his engineering practice."

Getting Dad away from his associates at the lab was always difficult but he could be persuaded to spend late evenings at our cabin at Camp Mohawk. He loved the outdoors and was surrounded by favorite plants and pets. Mother said he was able to make friends with animals as easily as he made friends with people. At Camp he liked to crouch in a canoe, with his papers spread on a board across the gunnels, and float there for hours, working with a slide rule. In fact it was at Camp Mohawk that he developed the scheme to produce artificial lightning and later the first effective lightning arrester.

At Camp he loved to play cards. Poker was his favorite game and, although he played for small stakes, he gave the impression of taking it all very seriously. If a player failed to contribute his ante, he always knew who was negligent and could even tell the order in which the chips had been thrown in. He was a tough opponent because he could remember exactly how many cards each player had drawn, who had opened the pot, and so on. He called his poker club "The Society for the Equalization and Distribution of Wealth."

On October 26, 1923 he was referred to as the "Supreme Court" of General Electric and as the "wizard of electricity" to the whole world. To us he was Dad and our family continues to draw strength from his memory. ❧

ORGANIZATION CHANGES

CORPORATE

Mark J. D'Arcangelo, *Vice President—Corporate Employee Relations.*

AEROSPACE BUSINESS GROUP

Ralph D. Ketchum, *General Manager—Aerospace Instruments and Product Support Department.*

COMPONENTS AND MATERIALS GROUP

Walter L. Robb, *General Manager—Chemical and Metallurgical Division.*
Eugene C. Pauly, *General Manager—Electronic Components Sales Department.*

CONSUMER PRODUCTS GROUP

Robert R. Frederick, *Vice President and Group Executive—Consumer Products Group.*

MAJOR APPLIANCE GROUP

Richard O. Donegan, *Vice President—Group Strategic Planning.*

Wayman O. Leftwich, Jr., *General Manager—Dishwasher and Disposal Products Division.*

SPECIAL SYSTEMS AND PRODUCTS GROUP

Richard P. Gifford, *Vice President—Communications Projects.*

Christopher T. Kastner, *Vice President and General Manager—Communication Systems Business Division.*

Erwin M. Koeritz, *elected a Vice President.*

Walter C. Meibaum, *General Manager—Transit Systems Products Department.*

TOP GE ENGINEERS DISCUSS THE METRIC

With 90% of the world's population using the metric system, Congress is considering several bills that would switch the United States from the current English system, with its familiar inches, ounces and quarts, to the metric system's centimeters, grams and liters. The Monogram talked with James F. Young, vice president—Technical Resources, about the implications of such a change.

Mr. Young, has General Electric taken a position with respect to metric conversion in this country?

We're on record as favoring a paced adoption of the metric system in the United States and the governmental measures needed to bring about this change. Recently General Electric expressed its thoughts on the subject to the House Sub-



VP Jim Young:
"Adopt the metric system or the U.S. will stand alone in the world."

committee on Science, Research and Development headed by Congressman John Davis.

Why do you think that going metric is a necessity for the United States? Couldn't we continue with our present system?

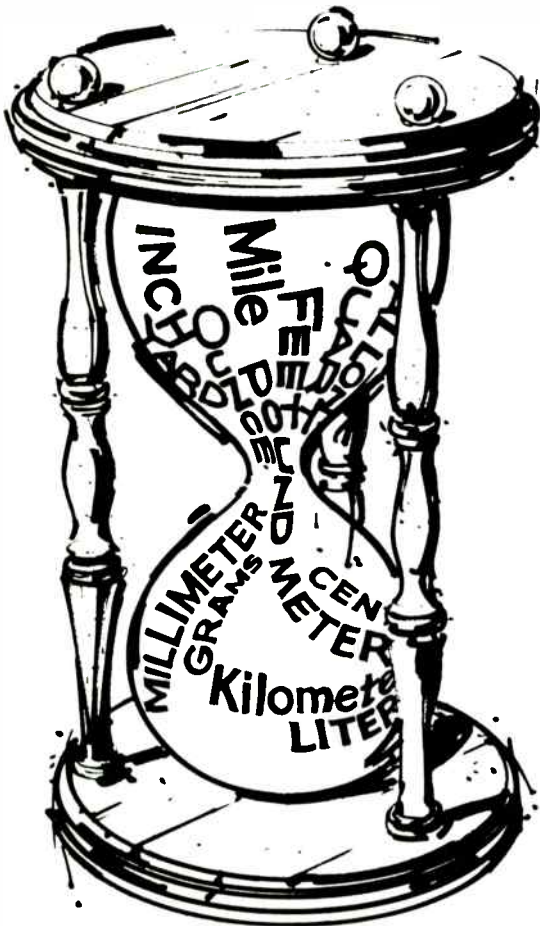
I do think that in the long range the metric system has to be adopted by this country, because otherwise we're going to be standing alone in the world—a world in which we need more exports in order to balance our imports. For example, while there has been a lot of discussion about the current energy shortages and the amount of oil that we'll be bringing into this country by 1980 and the import imbalance of payments this creates, we should also recognize that we're also highly dependent on external sources of such basics as nickel, cobalt, tin, iron ore and copper.

What are some of the problems in converting to metric?

First let's define conversion—because there are two ways of doing it. One is merely to identify what you make now in the present English system with metric terminology. You might take an eight ounce bottle of Coke, for example, and just indicate how many cubic centimeters it is: 236.6.

Initially this involves use of dual dimensioning—as on drawings or packaging, in weather broadcasts or on road signs (now under trial in Ohio). Dual dimensioning can be helpful in familiarizing the public with the metric system.

A second method of converting is to change the sizes and ratings that have been the standard of the industry and choose new sizes or modules in rounded-off metric measures. Motors, for instance, that have been manufactured in horsepower ratings—and fractions such as half-horsepower—might be rated in integral number



CONVERSION...I TRIPLE E'S MANDATE FOR CHANGE

of kilowatts. With this kind of conversion to metric modules, the change must be sequenced with coincident changes by both suppliers and users throughout the whole pattern of trade. To assure greater economy in the changeover, and to get the greatest benefit from the change, requires careful planning of the metric module starting at the bottom of the supply tier and progressing as the effect can be accommodated upstream.

How much would metric conversion cost industry?

A tremendous amount. The generally-accepted estimate is that the overall cost would be about one-half of one percent of sales per year over ten years or some \$60 billion for the entire U.S. The cost of conversion within General Electric would probably be consistent with the overall rate, but would vary according to the business. Some products in our Company simply wouldn't lend themselves to metric conversion. A turbine blade, for example, could be identified in metric form, but the cost of proving that new metric blade would be very, very large. To throw away present turbine blades and go through the development cycles just to prove new metric versions doesn't make any sense economically. On the other hand, some businesses—such as those in the chemical or medical markets—are already heavily metric. Many electrical and nuclear measures are already metric.

Then the timing of conversion would be different according to industry?

Yes. I hope that the program we adopt in this country will include a flexible, economically-timed conversion timetable that will have the most economic benefit and the least economic penalty for this country. We also should be concerned with the vulnerability to imports that some domestic business will face during their metric conversion. While the Company favors free, fair trade, it may be necessary to impose temporary tariffs or input quotas as a means of protecting industries during metrication, and to encourage their changeover.

Would this be regarded by foreign nations as a trade barrier?

I don't think so if our government emphasized the temporary nature of the tariff or quota. We

might say that our present non-metric measurement system is, in effect, a trade barrier for the United States. To add a temporary tariff to keep costs equal for all sides during conversion could represent an acceptable price for others to pay to eliminate the present barrier.

Who should develop a conversion plan?

General Electric has suggested that an independent board composed of representative members from government, labor, science, consumer groups and industry be authorized to develop a conversion plan. Members would be appointed by the President. Although the board would have no compulsory power, it should be authorized to develop a conversion plan through use of recommendations from supplier-user groups who have openly worked out, for specific areas of commerce, the timing and other details that are economically feasible.

Talk with IEEE's President



IEEE's President Hal Chestnut: "Members want to make engineering skills serve society at large."

For this calendar year, Dr. Harold Chestnut, Consultant—Systems Engineering on the Corporate Executive Staff, is feeling another demanding responsibility: he's President of the Institute of Electrical and Electronic Engineers, or IEEE, the world's largest engineering society. He and the IEEE Board of Directors are in the midst of carrying out what they see as a mandate from the Institute's 165,000 members. In November of last year, IEEE voted on a new constitution and approved it overwhelmingly. As the first President with a full year to devote to this new constitution, Dr. Chestnut feels that it's his responsibility to help set the Institute on the new paths the constitution has charted.

(continued on next page)

One basic change is the “expansion of the overall mission” of the constitution. “I triple E began as a scientific and educational organization, focused primarily on service to its members,” Dr. Chestnut says. “It will continue to place primary emphasis on the scientific and technical advancement of electrical and electronic engineering. But the new constitution also broadens our objectives to include not only service within the organization but also toward making engineering skills serve society at large, the broader needs of mankind.”

Further, the constitution calls for more of a worldwide outlook. “Today’s problems aren’t limited to one country. Neither are the technological solutions. I triple E members plainly want the organization to serve as the means by which engineering expertise can be brought to bear on the problems of people everywhere on earth.” Electrical and electronic engineering accomplishments have demonstrated the synergistic effects of developments from many different countries.

This global perspective extends to a stepped-up effort to attract international members. “Most technical organizations are national in scope, extended perhaps by an international federation. I triple E is trans-national. Members from all over the world belong to one organization—with some 10% of total membership coming from outside the U.S. We avoid having national interfaces by building the society around ten regional organizations and by having important meetings on a regional basis, pulling together members from a number of countries.”

This interest extends beyond the Iron Curtain. Dr. Chestnut has traveled for the IEEE to Russia and Hungary to explore the interest of engineers in those countries in participating.

What about the language problem? “I triple E provides a means by which an engineer’s ideas can be pooled on an international basis. Most of this information is published in English. English is becoming the world’s technical language.”

Dr. Chestnut has an additional reason for pursuing these worldwide goals of the Institute so vigorously: they coincide with beliefs to which he himself assigns high priorities. “I’m personally convinced that we have entered a time in which we must emphasize the utilization and application of existing technology rather than counting on a continued high rate of great discoveries. We are approaching or are reaching

irreducible limits—for instance, in the U.S. we’ve gone from 25% of the population engaged in agriculture in the 1930s to less than 5% today. We can’t hope to go much further. But across the world there are great inequalities in applying the technologies we have available.” He sees IEEE contributing to greater technical equalization—to the benefit of men everywhere.

“Along with this,” Dr. Chestnut adds, “I see the computer giving us vast new potentials in better understanding men’s needs and better managing our resources here on earth. We can simulate or model very complex situations and exert a much greater measure of control over the variables. I’m intrigued by the prospects for more meaningful computer modeling on a national scale—not just of the economy but of the whole structure of social needs and of how best to organize to meet them. Right now we don’t know how to assess the consequences of present actions and decisions—the long-term consequences, for example, of the government’s drastic cutting back on R&D expenditure. What will be the effect five to ten years out? Similarly, national decisions on such things as the SST sometimes have been made on the basis of very inadequate technical data. These are the types of problems that we can begin to resolve by more adroit use of the information available.”

Coming back to the more immediate interests of the IEEE, Dr. Chestnut is giving close attention to the question of engineering professionalism. More activity in this area is taking place in response to the expressed wishes of the great majority of its members.

“One thing we want is to continue strengthening our opinion survey techniques so as to be up on changing attitudes among engineers regarding such things as pensions. The concept of an engineer signing on with one company for the rest of his life is no longer valid in many volatile segments of industry now. We’ve got to try to see to it that pension laws reflect the changing needs. At GE, employees receive vested rights to pensions after ten years. But in many other companies the engineer isn’t so fortunate. Engineering and professional societies have to work with lawmakers to provide a means of pension stability for the engineer who changes from job to job.”

In taking on these concerns, Hal Chestnut is aware that his largest single audience is right at home. “In terms of I triple E membership, General Electric is number one, with some 4,000 GE engineers of all categories, as well as a number of scientists from other disciplines, on our rolls.”

MORE GE AID TO ALCOHOLICS



I congratulate the editors of *Monogram* for bringing aspects of the costly problem of industrial alcoholism to the attention of our fellow employees. As the article (July-August *Monogram*) indicates, this is a problem involving broad consequences not only for the alcoholic himself, but for others who share his or her environment.

I regret that while the article highlighted GE management's support of a strong alcoholism program, it failed to put

internal efforts into the larger context of national concern about the problem, and particularly to point out the role of General Electric as support contractor to the National Institute on Alcohol Abuse and Alcoholism (NIAAA) for the operation of the National Clearinghouse for Alcohol Information.

As you are aware, the U.S. Congress authorized and the Executive Branch implemented, through the NIAAA, a total program to embrace all aspects of the disease: diagnosis, treatment, rehabilitation, prevention and education. The NIAAA is placing special emphasis on solving the industry and occupational alcoholism problems through use of proven techniques and development and application of innovative approaches.

Physically, the Clearinghouse is a GE-leased 25,000-square-foot building in Gaithersburg, Maryland. It is operated by 60 professional and semi-professional people under the leadership of Ken Campbell. . . .

R. E. LEDBETTER
Manager-Civil Systems
Space Division
Arlington, Virginia

HOW DID G DOUBLE E EVER HAPPEN?

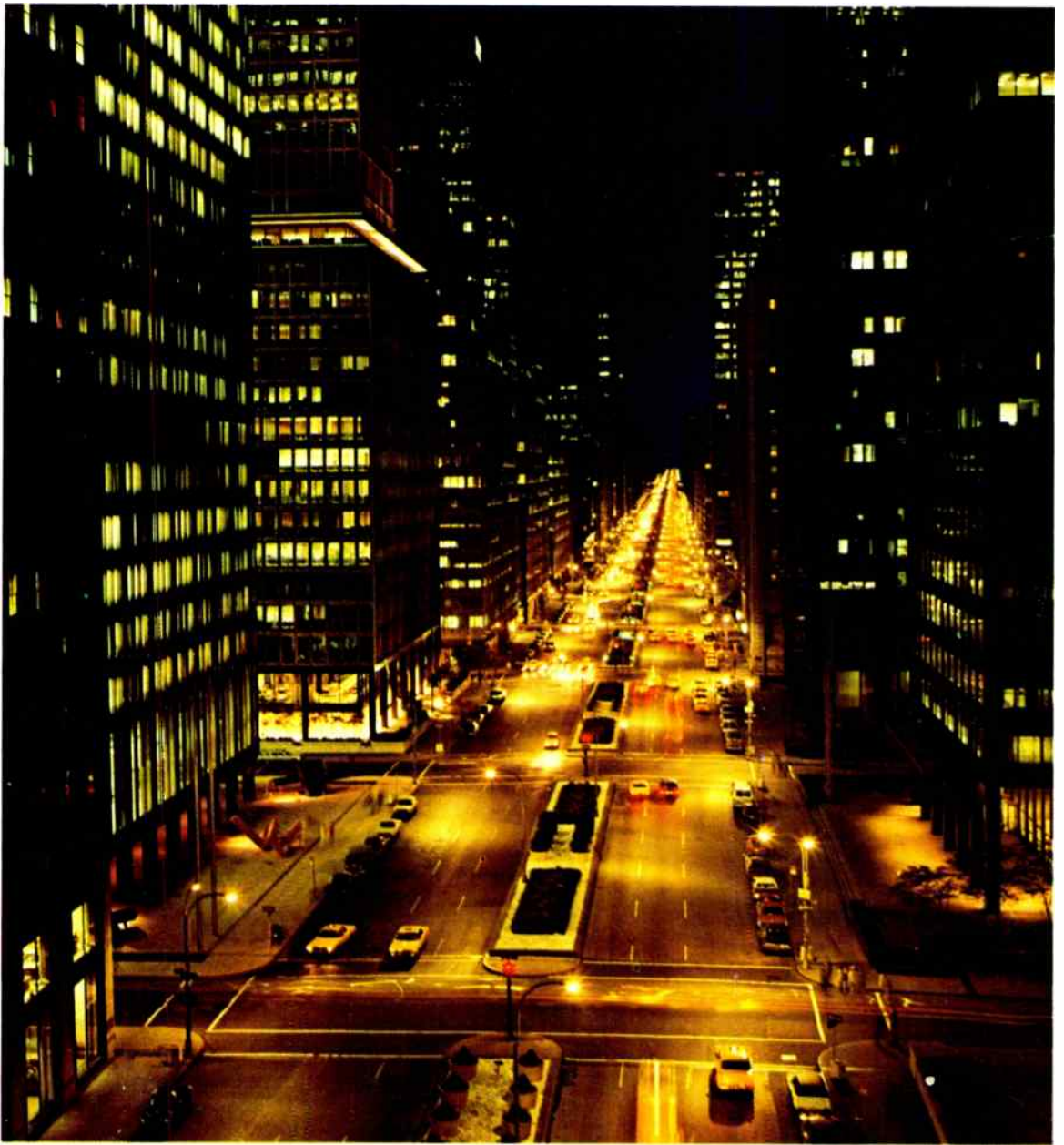
Your July-August 1973 article: "At the sign of G Double E" starts with the sentence "To U.S. eyes it seems strange. . . ." To the Trade-

mark Counsel of the Company, charged with the legal protection of the (GE) monogram, it seems even stranger. The origin and adoption of the double E mark is shrouded in mystery. General Electrica Española was founded in 1929 by three Spanish and one French Company and International General Electric Company to manufacture railway electrification equipment in Spain. IGE owned a majority interest in General Electrica Española only for a brief period in 1941 and it is interesting to note that the Spanish Company applied to register the GENERAL (GEE) ELECTRICA ESPANOLA trademark in Spain during that time.

The question arises why an affiliate was permitted to register a mark so closely related to that of the parent company. This can be explained by two factors: the greater effective distance between countries and markets and the more limited nature of markets at that time. Thus, GE also did not object to the registration of (AGE) in 1929 in Australia in the name of the Australian subsidiary, not to speak of the 1904 (CGE) mark in Canada in the name of Canadian GE. Both of these marks are now owned by GE and it has been Company policy, at least for the last 20 years, to retain ownership in all GE marks.

Exclusivity is the cornerstone of trademark ownership. Exclusivity in one country is a condition of ownership; worldwide, it is an ideal to be achieved. This goal is harder to reach if the mark is not an invented word such as LEXAN. Overall, the Company has done very well in preserving its worldwide rights in its corporate marks, and must continue to guard this cornerstone. As far as Spain is concerned, our trademark relations are governed by two agreements. One dated 1961 in which (GEE) agrees not to assert any rights against our trademarks in Spain and not to use the G double E mark outside Spain. The second agreement dated 1972 gives the Spanish company the right to use the General Electric corporate trademarks, in Spain and other countries. These agreements together with General Electrica Española's affiliation with the Company substantially secure GE's trademark position in Spain.

PAUL HOFFMAN
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Corporate Legal Operation
New York, New York



Lucalox' biggest challenge: At year's end, GE Lucalox® lighting systems will have brightened over 2,000 miles of New York City streets in the largest street lighting program in history. The project, part of the City's anti-crime drive, represents an extension of the originally scheduled 1,200 miles of reighted streets announced by Mayor John V. Lindsay last fall. Shown: nighttime revival for New York's posh Park Avenue.