

GENERAL  ELECTRIC
Monogram
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Special report: GE's World View

GENERAL ELECTRIC
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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. Request permission to reprint articles from the Monogram Editor, Fairfield, Connecticut 06431. Copyright 1975, General Electric Company.

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Cover:

GE employees and GE customers in India, Canada, Mexico, Bahrain, Italy and Japan exemplify General Electric's operations that serve people and nations worldwide.

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Historian Arnold Toynbee has noted that in the early 18th century the basic economic unit was the community or the county. "Since then," he says, "it has become the world." He sees a "misfit between the fact of global economic life and the political organization of the world" and adds: "Multinational corporations precisely bridge this gap . . . International corporations are a necessity."

As members of one of the world's leading international companies, General Electric people worldwide owe it to themselves to understand the nature of the economic contribution of international corporations that led to Toynbee's conclusion. In these days when so-called "multinationals" are being subjected to increasing criticism and opposition, it is important to comprehend how General Electric functions as a contributor to world economic growth and development.

Today it's truer than ever before: to be a member of General Electric is to be linked with the world. As International and Canadian VP and Group Executive John F. Burlingame has pointed out, GE in 1974 had business transactions in 144 countries—more than 90% of the countries listed in the *World Almanac*.

For these reasons, the *Monogram* seized the opportunity recently to take a comprehensive look at GE's worldwide operations. The opportunity was provided by a day-long International Business Re-

continued



*To financial analysts:
'GE's technologies aid
the countries of the world
in nearly every stage
of their development.'*



*Reg Jones:
'We couldn't live in isolation
even if we wanted to.'*

*Jack Parker:
in Madrid with Britain's Edward Heath:
'Let business create wealth for the free world.'*

view conducted with financial analysts in New York on June 24. The special report that follows in these pages benefits from the intensive effort that the International and Canadian Group put behind its review with the financial community.

Two earlier talks by GE spokesmen provided an appropriate preface to the June 24 analysts' meeting by presenting positive overviews of international trade and the businesses that contribute to it.

In a talk at his alma mater, the Wharton School of the University of Pennsylvania, GE's Chairman Reginald H. Jones stressed the reality of interdependence: "As we have learned through hard experience, we could not live in isolation even if we wanted to. Our needs for fuel and raw materials from around the world forbid that. We must and we do engage in world trade, essentially trading exports for needed imports, in order to keep our economy running."

As it is for the U.S., so is it for every other nation: today's economies are fueled by world trade.

Support for international enterprise also came when Vice Chairman Jack S. Parker, whose responsibilities include the Company's international operations, addressed the International Chamber of Commerce on June 16 in Madrid.

He drew a sharp distinction between "the real problems of an interdependent world" and "the fantasies" created by opponents of the free market system.

"Our real problems as businessmen," he said, "and our real responsibilities to our nations and the world, center on the creation of wealth" and on spurring progress toward that distant day "when abundance for all is the rule."

Among "the particular aspects of this reality today" cited by Parker are:

- ▶ the new problems of access to critical commodities on equitable terms,

- ▶ the non-tariff barriers and distortions which still stand in the way of expanding trade,
- ▶ the new realities of the flow of goods, services, resource materials and capital among nations,
- ▶ and what Parker called "the very real problem of ignorance of how the competitive enterprise system works on the part of many of those who would try to 'tune it' for better performance, or to replace some of its parts, such as the market mechanism, by alternative schemes that are *hoped to be* in better agreement with certain political goals."

Running through his talk was the theme of "the mutual dependence of the U.S., Europe and the rest of the world." He gave, as an example, "the opportunity to join forces in developing new technologies, in sharing the astronomical cost of research and development that new industries require by encouraging joint ventures between American and foreign companies, both in the U.S. and abroad."

The objectives of the International Business Review were discussed with the *Monogram* by VP Burlingame: "Our aim was to have the financial analysts take away three main points from our all-day review":

One: "Our strong belief in the value of what we're doing. In our view, General Electric's international operations are helping many developing countries to achieve their industrialization goals by supplying modern electric power equipment, transportation systems and industrial products, and to meet their living standard objectives by operating factories that make needed, useful products to serve local markets. Whereas, 20 years ago government-to-government aid was the main hope of many countries, today these nations are beginning to utilize their own resources and increasingly participate in the world economy, in part because of the know-how introduced by companies such as GE. These contributions make for satisfying work both for our U.S. employees and for employees of our affiliate

FACE TO FACE WITH FINANCIAL ANALYSTS: Latin America Division's VP Bill Forsyth and (right) International and Canadian Group's VP and Group Executive John Burlingame.



companies in host countries.”

Two: “The significance of our international operations to the Company. We’re contributing to the development of other countries in ways that mean jobs for GE employees and profitable growth for GE share owners. We’re mindful of the fact that we win orders that would otherwise go to our international competitors, and these orders then mean thousands of manhours of work for GE people from Lynn to San Jose—and from Bilbao to São Paulo. And our international operations enable GE share owners worldwide to participate in markets and economies that are growing more swiftly than those in the U.S.”

Third: “Our standards of performance—how GE goes about conducting its international operations.” Says Burlingame: “As we see it, a main thread that runs through these reports to the financial analysts is one of responsible operation, of people who conduct themselves in ways that are a credit to General Electric and their own countries. Our aim is to manage our businesses so that they clearly benefit our host countries as well as General Electric. They provide the means for the transfer of needed technology, the professional and managerial skills to help countries develop their resources, and the training and career opportunities for local people to develop themselves.”

In his introduction at the analysts’ meeting, Burlingame made sure the analysts understood the basic elements of GE’s international operations:

► GE’s multiple approach to international markets, he explained, covers the range from joint ventures and manufacturing-associate agreements to export sales of U.S.-manufactured products. He cited three main sources of income: export sales of products manufactured in the U.S. and sold directly to international customers or to GE affiliates for resale, often in combination with their own products; licensing of technology and knowhow, usually through agreements with non-U.S. manufacturers; and operations of affiliates in which GE has a full or majority equity. These affiliate businesses manufacture products generally for sale in their home markets and, to a much lesser extent, as a source of supply to the U.S. and third-country markets.

► Growth rates are led by exports from the U.S. While these exports account for less than half of GE’s international total, they have generated the strongest growth—about 19% annually since 1964. Affiliates’ growth has exceeded 12% per year in the same period—“a lower rate of growth than for exports, but highly satisfactory.” In total, GE’s international sales have outgrown those for the Company as a whole, rising 22% per year during the last five years, compared with about 10% for GE overall,

reflecting to a large extent the relatively faster growth rates in other parts of the world.

► Affiliates’ scale: Canada has by far the largest annual sales volume, but GE-Brazil “is well over the \$150 million point and Mexico, Spain and Italy are getting close to the \$100 million mark.” Also, affiliates in Mexico, Venezuela, Australia, the Netherlands and South Africa have sales in their local markets exceeding \$50 million.

► Leading export customers: In 1974, Japan led in purchasing U.S.-manufactured GE products, Canada was second and GE’s export volume exceeded \$50 million in nine additional countries: Germany, Saudi Arabia, Iran, France, the Netherlands, Brazil, Italy, Mexico and the United Kingdom.

► Licensing leaders: Japan also led the 1974 list of countries producing more than \$3 million in licensing receipts. Others exceeding this total: France, Germany, Italy, the United Kingdom and Canada.

► Matching GE technology to needs: One of the major factors in the success of GE’s international operations was described by Burlingame as “the ability to match the range of GE technologies with many of the needs of a country in nearly any stage of development.”

He listed the stages and the GE technologies that apply: defense needs, met by GE aircraft engines and aerospace products; development of natural resources, by products for pipeline pumping, powering oil rigs and mining; infrastructure development, by GE power generation equipment, locomotives and communications equipment; industrialization, by a host of drive systems, components and other industrial products; and consumer satisfaction, by the fact that “the GE Monogram on our major appliances and housewares products is known and accepted the world over.”

► Management breadth and depth: “To be successful in the long term,” Burlingame told the analysts, “our affiliates must concentrate on business goals and objectives that are compatible and harmonious with local economic needs and priorities. Therefore it is important to have a management team that combines a local perspective with a thorough knowledge of General Electric capabilities, strengths and objectives. We look to them as the focal point for finding the necessary match between GE capabilities and the needs of the countries in which they are located.”

John Burlingame told the analysts, in short, that GE-international has been outpacing GE-domestic, and gave reasons that included the acceleration of world trade and the faster growth rates of other economies relative to the U.S. But one main reason was, simply, “increased international emphasis by General Electric.”

▲▲

GE-FAR EAST:



Including sub-Saharan Africa, it covers 54 countries, 11 time zones and 60% of the world's population and is on its way toward becoming 'the new Common Market' of the 1980s

Burly ex-football player J. Russell Mudge, VP—Far East Business Division, needs plenty of stamina to cover his assigned area: encompassing all of Africa south of the Sahara, as well as Asia proper, Australia and New Zealand, it spans more than 27 million square miles and contains over 2 billion people who use 58 different kinds of currencies to transact trade.

How to do business in this most complex of market areas? The GE answer, as expressed by Mudge: "Our operating experience in these countries—which in some cases goes back to the 1890s—has taught us to develop for each country differentiated business strategies that are responsive to particular national needs, rather than attempt to fit a single general strategy to the area as a whole."

Evidence that this differentiated approach pays off can be found in GE's overall statistics:

▶ In spite of worldwide recession, GE's Far East sales increased 32% last year over 1973 "and we are experiencing continued strong growth in 1975."

▶ Presently, GE sales in the Far East are divided about 60/40 between U.S. exports and local manufacture. Export sales are particularly strong in power generation and transportation, with heavy local manufacturing emphasis in the consumer goods area.

▶ Today, GE's Far East businesses "are growing at a rate about double GE's U.S. rate."

▶ Export sales are over four times those of the early 1960s—and rising.

▶ The Far East accounts for about 20% of GE's sales outside the U.S. and is a growing contributor to the Company's profits from international operations.

Looking ahead, Mudge said: "We expect even further improvements in operating performance as the less developed countries start coming 'on stream'."

He then differentiated his address by taking the Far East's major countries one at a time:

Japan—third largest world market behind the U.S. and Russia. It's General Electric's largest offshore export customer and, except for Canada, produces more income for the Company than any other. While Japan's meteoric postwar rise to industrial and economic preeminence has been dulled somewhat by the current slowdown, it still promises to exceed the growth rate of other developed countries over the next decade.

continued

Report to analysts by GE-Far East's VP Russ Mudge covered successful consumer goods operations in Australia (right, above) and lamp production by GE affiliate PEMCO (Philippine Electrical Manufacturing Co.) GE-Philippines is celebrating the 75th anniversary of its manufacturing operations.







South African General Electric's operations, including the main plant shown, at Benoni, near Johannesburg, provide training and career opportunities for more than 1500 people, over half of them black.



In India, Elpro International Ltd. meets highly specific Indian needs, including x-ray products, lightning arrestors, permanent magnets and Calrod units.

Power generation equipment is a major portion of GE sales to Japan, with the Tokyo Electric Power Company ranking as both the largest utility company in the world and also GE's largest overseas utility customer. TEPCO's huge Kashima station, equipped with twin 1000-megawatt GE steam turbine-generators, is the world's largest thermal plant.

GE opened its first office in Tokyo in 1905. Today its principal means of participating in Japanese markets is via joint ventures with various Japanese companies. GE shares in a total of nine such ventures, in defense electronics, air conditioning, nuclear fuel, plastics, silicones, automated drive systems, capacitor films, vacuum circuit breakers and modular housing.

"Japan's current plans call for the expenditure by 1985 of over \$1 trillion on power generation, pipelines, transportation and housing," said Mudge. In his view, GE is in a strong position to participate in this growth.

The Philippines: GE's presence dates from 1890, when it installed the first street lights in Manila. Today, Company operations include: the General Electric Appliance Company, producing refrigerators and air conditioners; the Philippine Electrical Manufacturing Company, the leading manufacturer of lamps; and assembly of general purpose control equipment and other light apparatus at General Electric Philippines, Inc.

Singapore: The Company has established a number of modern facilities here to supply both U.S. and other world markets. The reason, says Mudge, is to enable GE to be cost-competitive with foreign competition, as well as to provide components to the many manufacturers now in the Far East.

India: General Electric has more installed turbine-generator units in India than in any other country outside North America. GE's main operations: IGE (India) PVT Ltd., a sales and service operation also acting as agent for GE imports; Elpro International Ltd., manufacturer of x-ray and other products; and Mysore Lamp Works Ltd.

Over the long term, according to Mudge, India could be a good market for additional GE products: locomotives, power generation equipment and other electrical goods.

South Africa: From a sales and distribution company formed in the 1890s, South African General Electric (SAGE) has grown with the country. Today, it includes manufacturing operations for industrial products and consumer goods.

"South Africa is another good example of how we established and built on an early presence in a developing country," points out Mudge, "and then selectively matched GE technology and know-how


with its changing economic needs." Examples include: locomotives built for South African Railways—GE's biggest offshore locomotive customer; a new \$180-million hot strip steel mill containing GE control and drive systems equipment; and a wide choice of consumer goods—from washers and other major appliances to tea kettles and irons.

Australia: This sprawling, growing country—with the area of the United States and the population of Metropolitan New York—has great mineral resources and a consumer market that's just beginning to boom. GE's product mix is heavily weighted with consumer goods, but Australian General Electric Ltd. is working with other GE operations to expand into other areas.

Transportation products, for example, are needed since much of Australia is accessible only by plane or jeep. Mining equipment and off-highway vehicles are in demand for excavating. And drive systems and marine propulsion equipment for large ore carriers and container ships will be required.

There are four other GE affiliates in Australia—two apparatus service shops and two appliance companies which serve markets that Mudge says are "every bit as sophisticated as the U.S." GE-Kirby Appliances, for example, has doubled its business in the last two years through a strong continent-wide distribution system which supplements local manufacture of refrigerators and home laundry appliances with a wide range of GE-branded import appliances.

A key to GE-Far East's success, comments Mudge, is the trust placed in local nationals for day-to-day management of GE companies. Another element has been the growing GE service shop network, also with strong participation by local nationals.

The future of the Far East Business Division, in Mudge's view, is bright. Citing the view that the Pacific Basin is likely to emerge as the center of world economic growth—the Common Market of tomorrow, he said: "We feel General Electric will be a profitable participant in this rapid growth." 

Fred Tulk— his Australian service shop is doubling sales annually, with GE help



Expanding on apparatus service as a "very important element in our Far East business story," VP Russ Mudge described GE's growing service shop network that includes one in the Philippines, one in India, three joint ventures in Australia, one in South Africa and GE's second largest offshore service company in Singapore.

Said Mudge: "We always try to identify a strong local national when interested in a joint venture, to avoid the expensive problems of starting from scratch in a foreign environment."

As an example, he chose Fred Tulk, "a young entrepreneur who built a profitable service business in Perth, Australia, on a shoestring." Tulk started out in a small shop in his garage in the late '60s. "Since then, working with us, he has seen his sales nearly double each year for the past five years."

Tulk's business has outgrown two new facilities. He now operates "the major service shop in Western Australia, servicing such complicated equipment as GE motorized wheels used in the Western Australia mining areas."

An extra but very important dividend, Mudge observed, is that service shops help "pull through" other U.S. exports. Just as Fred Tulk's shop provides this pull-through in Australia, so does GE's new joint venture in Singapore help build GE exports in Southeast Asia.

The Singapore venture: the controlling interest the Company bought last year in Watt & Akkermans, Southeast Asia's largest mechanical repair shop. GE is helping the shop add on electrical repairs and is also building new facilities in the Jurong area to accommodate gas turbine repair and encourage GE export sales.





GE-LATIN AMERICA:

Far from being a collection of 'economic zeros,' lands south of the border are generating growth rates that, in the aggregate, double those of the U.S.

In his address to the financial analysts, Willis E. Forsyth, VP—Latin America Business Division, contrasted the romantic images of Inca civilizations, snow-peaked Andes and Gauchos galloping over vast plains with “another face of Latin America”:

▶ While São Paulo, Brazil, may be thought of by some as “a quaint little village” it is (as shown at

left) a major city “of over seven million industrious people.”

▶ In Caracas, Venezuela, “new construction is springing up everywhere and the city gives you a feeling of Houston.”

▶ Bustling Mexico City resembles “a sprawling Los Angeles, south of the border, and Colombia’s Bogotá, perched high in the Andes, is starting to

continued

◀ GE sign over Brazil’s São Paulo imprints General Electric logotype on city’s seven million inhabitants by day and night.

GE-Mexico started business in 1896 with 23 employees, now employs just under 5000 people in producing industrial products, lamps and consumer goods. It’s Mexico’s largest producer of appliances.



worry about urban problems such as air pollution.”

Anyone who has not been following Latin America—and thinks in terms of some mid-1960s reports which characterized the area as a collection of “economic zeros,” Forsyth said, “is simply not aware of a dynamic growth area.”

Forsyth sees Latin America as “a fascinating group of developing countries that comprise a booming market. Its GNP—more than \$250 billion—has more than doubled in real terms since 1963. Since 1968, the real annual economic growth rate of that area has exceeded 6%, more than even the hopeful planners of the Alliance for Progress had dared project.”

As a comparison, he noted that the area’s GNP is almost one-fourth that of the U.S. and is growing twice as fast. “And the GNP of Brazil, in real terms, is surging ahead at a rate 50% faster than Latin America in total.”

In the booming market which these developing countries comprise, General Electric’s total sales have grown—in terms of U.S. dollars—over 24% annually since 1970, with 1974’s growth reaching a dramatic 49%.

In fact, Forsyth pointed out, “If you were to combine our affiliate operations in Latin America, they would easily qualify for ranking in the current *Fortune* 500, both in terms of total sales and net income—making GE the largest electrical manufacturer in the area.”

The Company has major manufacturing affiliates in Brazil, Mexico and Venezuela—“a group of countries,” Forsyth said, “which generate 65% of Latin

America’s GNP today, and where almost 70% of the area’s forecast GNP will be generated during the next five years.”

Smaller affiliate manufacturing operations are located in Colombia, Argentina, Uruguay and Chile. And the affiliates in turn hold interests in other local manufacturing companies—investments which include compressor production in Colombia, Venezuela and Brazil; hermetic motor manufacturing in Argentina; and gas range production in Venezuela.

By licensing technology to local manufacturers—for products ranging from TV receivers in Costa Rica, Guatemala and Peru, to distribution transformers in Chile, and washing machines in Ecuador and El Salvador—GE “can participate in business areas where an export or local manufacturing approach would not be feasible,” according to Forsyth.

A verbal tour of the GE-Latin America activity area, as led by Forsyth, began in Mexico, where GE started business in 1896 with 23 employees and now employs almost 5000 people—only one half of one percent of them from the U.S. He said: “General Electric de Mexico is the largest producer of consumer appliances in the country, with manufacturing backed by a growing network of service centers and effective retail marketing.”

Also produced by GE Mexico are a wide variety of lamps and contractor equipment from motors to industrial components.

Since 1970, Forsyth noted, GE Mexico’s sales have grown from \$55 million to about \$98 million,



Latin American nations are proud of their growth records, VP Bill Forsyth reported to analysts.



“Thriving consumer businesses’ in Venezuela and Colombia include GE Venezuela’s production of flat irons.

and in 1974 the affiliate earned a respectable \$6.8 million on sales, in spite of a number of business challenges, including a rapid escalation in materials prices, a wage increase exceeding 20% for the second consecutive year, and government-imposed controls on the prices of consumer products.

GE products imported by Mexican customers, he said, include engines on AeroMexico's GE-powered DC-10s, a total of 136 GE locomotives recently ordered to upgrade the Mexican national railroad, and GE automation equipment for the country's rapidly expanding steel industry.

In Venezuela and Colombia, the Company has a thriving consumer business, with the GE brand "number one" in Venezuela, where locally manufactured products include refrigerators, television sets, stereo, air conditioners, washing machines and irons.

"And Venezuela also provides a solid market for U.S.-made gas turbines and power delivery products to support its growing petroleum-related businesses," Forsyth added.

Calling Brazil "the world's fastest-growing economic power," Forsyth pointed out that General Electric do Brasil is the Company's second largest affiliate (behind Canada), having grown an average of over 25% a year for the past five years.

"Our locomotive manufacturing facility in Campinas—the only locomotive plant in Brazil—recently increased its capacity by 33%. Last year, we were awarded the largest Brazilian locomotive order ever placed: for 195 diesel-electric units—benefitting both GE-Brazil and U.S. operations in Erie, Pa."

GE-Brazil generators help harness the country's vast hydro resources, and an industrial systems operation was recently established there to lead GE efforts in industrial markets created by the mining of iron and non-ferrous ores.


Also made in Brazil are meters, integral motors and switchgear, incandescent and fluorescent lamps, refrigerators, TV sets and housewares.

And "a rapidly expanding and profitable apparatus and consumer products service business helps to assure local customers of fast repairs—a significant selling support factor," Forsyth said.

Smaller affiliates in Argentina, Uruguay and Chile manufacture an assortment of GE industrial and consumer products, Forsyth reported, but difficult environments in those countries have curtailed plans for expansion of GE operations there at the present time.

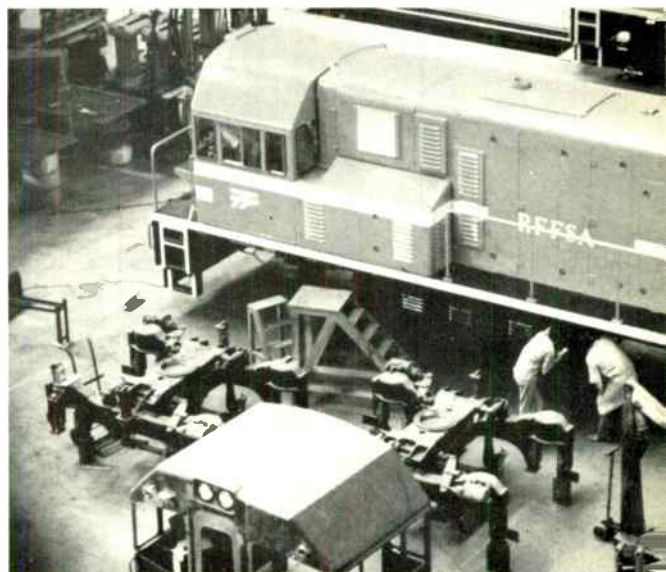
The Caribbean, Forsyth told the analysts, has become increasingly important to the Company's business. "On Puerto Rico and other islands, GE gas turbines and other equipment help to satisfy increased electrical demands from the area's rapidly growing industrial base."

GE's future in Latin America is a bright one, Forsyth believes, estimating that during the next five years "about 36% of the economic growth will be in Brazil—while another 24% will be in Mexico, and 8% in Venezuela."

His conclusion: "General Electric's geographical strengths overlay this projected growth very well and position the Company to serve successfully Latin America's growing markets." 



Largest GE affiliate in Latin America is General Electric do Brasil S.A., whose product range extends from watt-hour meters and consumer goods to heavy power apparatus and transportation equipment. It operates Brazil's only locomotive manufacturing facility.



GE-EUROPE:



Assigned to compete in the West's sophisticated markets, to penetrate the 'Business Curtain' of Eastern Europe and to expand trade with resource-rich LDCs, it has been growing sales more than 25% per year



Telling analysts about GE in Europe: VP Dick Foxen.

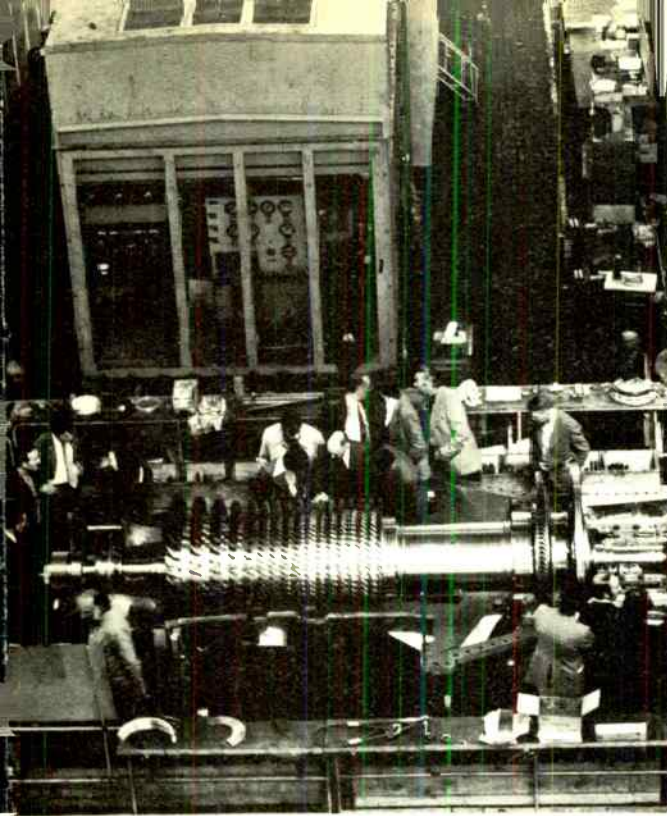
Richard W. Foxen, VP—Europe Business Division, described for financial analysts the geography of Europe “as defined by GE, if not by Rand McNally”:

- ▶ GE's Europe Business Division serves Western Europe, where it must compete in some of the most sophisticated markets in the world.
- ▶ It includes Eastern Europe, “which is currently moving aggressively to develop natural resources and improve the level of industrialization.”
- ▶ And it extends to the resource-rich nations of the Middle East and North Africa—nations that “also intend to develop industrial capabilities and improve their infrastructures.”

Thus defined, GE-Europe's area encompasses a total population of about one billion, in 45 countries, speaking at least 25 major languages, and accounting for more than half the world's GNP.

Faced with this complexity, GE-Europe has applied virtually every element of GE's multiple approach in order to serve its customers.

U.S. exports are important. Europe is, in fact, GE's largest export market, Foxen noted. The product range includes jet engines powering DC-10 commercial planes operated by 17 airlines of Europe and Africa, as well as numerical controls for European machine tools. Sales of industrial diamonds have doubled in two years, and GE's



General Electric's operations in Europe extend from joint development, with France's Alsthom, of a 100,000-kw gas turbine (left) to GE's Moscow Office, under Leonard Zubko, shown in Red Square.

Terminet® high-speed computer terminal has grown to a multi-million-dollar business.

In markets where "local labor content is mandated by law, or where customers insist upon local content," GE has developed manufacturing associate arrangements with European firms. This approach applies to both marine steam turbines and gas turbines. Said Foxen: "The rotating components of these types of equipment are manufactured in the U.S., and the stationary parts are produced in Europe by manufacturing associates."

This GE-manufacturing associate approach has enabled GE's designs to attain and hold a leadership position in propulsion systems for Europe's shipbuilding industry, Foxen said, and will be put to heavy use in producing gas turbines for the Soviet Union.

A cooperative manufacturing program is underway with SNECMA, the French government-controlled aircraft engine manufacturer, and with MTU of Germany. This cooperative effort has led to production of the CF6 engine for the European-made A300 airbus.

In addition, a joint project of GE with SNECMA is developing the CFM 56 engine to power a short-to-medium-range commercial airliner for the 1980s.

Still another approach: adapt GE designs to the special needs of European nations. Two important

gas turbine examples: a program with Alsthom of France to develop a 100,000-kw gas turbine especially for the 50-cycle power markets of Europe and other parts of the world; and the application of GE's LM-2500—a modified jet engine—to propel frigates and destroyers of the Italian, Danish and Iranian navies.

In the kind of globe-hopping that true international businesses can achieve, frigates for the Peruvian navy will be built in Italy using this same U.S. engine design.

In nuclear power, Foxen noted, "we use varied approaches including licensing, joint ventures and project consortia. We license our boiling water reactor technology to Sogerca of the CGE group in France, Ansaldo Meccanico Nucleare in Italy and to KWU in Germany. All told, GE and its licensees in Europe have in operation, on order including options, or under construction some 28 nuclear power plants, with another 25 in actual proposal and market development stages. The combination of our capability in boiling water reactor technology and an associate's presence and market acceptance is the basis for a joint venture with Ansaldo SpA of Italy to construct the 950 megawatt nuclear station at Caorso" (See picture on page 16).

Manufacture by local affiliates continues to offer the best approach in some market situations in Eu-

(continued next page)



GE-Europe's multiple approaches include: affiliates such as GE Española whose broad product range extends to large power equipment; U.S.-made exports, combined with local components to form the boiling water reactor sup-

rope, in Foxen's view. A plant built in the Netherlands several years ago, as an example, provides a European center for the production of Lexan® and Noryl® plastics. These are taken to market through a network of GE technical centers.

As an indicator of how the GE plastics have caught on, the TR-7 sports car includes 18 pounds of Noryl, while its predecessor had none.

As a result of this successful strategy in plastics, "Sales billed have grown rapidly during the past three years, and GE plastics has been one of the fastest expanding businesses in Europe."

Local manufacturing facilities that produce a variety of products are exemplified by two of GE's major affiliates in Europe:

► General Electric Española, 53%-owned by GE, has two major plants in Bilbao and is a local market strength in items from steam turbine-generators through capacitors.

► Cogel (Compagnia Generale Di Eletticit ) "illustrates how a local manufacturing affiliate can adapt conventional GE technology products to fill the needs of large markets, not only in its native Italy but in other countries. This is true in products such as molded case circuit breakers, industrial and power capacitors, and appliance controls and motor control centers."

But this Italian affiliate has also won a strong position in aerospace markets. Applying advanced technology, it is supplying the Italian Air Force and Turkey with airborne radar and has won a major contract to supply equipment for Helip, a program to update some of NATO's missiles in Europe.

Cogel's presence helps to "pull through" U.S. exports. The Italian Air Force, for example, is the biggest international customer for U.S.-made jet engines.



plied for Italy's new nuclear plant at Caorso, near Milan; and joint manufacturing arrangements, such as that with French aircraft engine manufacturer SNECMA to develop the CFM-56, a commercial airliner engine for the 1980s.

Through the 'Business Curtain': VP Foxen took special note of the markets of Eastern bloc countries and the Soviet Union.

"The USSR is a market of major sales opportunity," he said, "where we have the advantage of being well known since early in the Soviet regime."

He cited important breakthroughs:

► In exports, the Company has won a \$250 million order for gas turbines for USSR pipeline pumping, plus other orders for electrical wheels for large off-highway vehicles and for 20 mechanical drive turbines for ammonia plants.

► In licensing, the USSR is buying GE Lucalox® lamp know-how—"with interesting side effects": other Eastern bloc countries are now applying for similar licenses. Also, Yugoslavia is, under license, using GE's copper dip-forming process.

Middle Eastern countries and North Africa represent what Foxen sees as "some of the most exciting

new growth markets in the world." Here GE sales have been growing at a rate of almost 50% annually for the past five years.

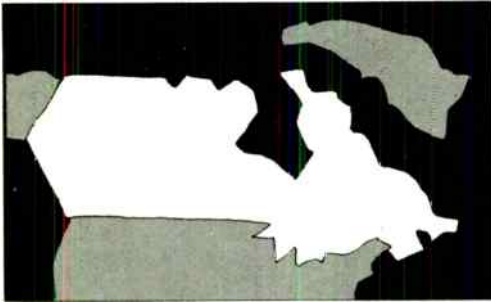
LDCs (Less Developed Countries) in these areas "are just now starting to modernize and expand their infrastructures." One of the first beneficiaries: GE gas turbines, picked to supply power along the reopened Suez Canal, for use with pipelines and to power other industrial projects.

Iran, as an example, is a market whose diversity includes jet engines, GE's prefabricated housing technology, power generation equipment, licensing of appliance manufacture and future potentials in satellite communication systems, locomotives and construction projects.

In summary, Dick Foxen told the analysts, "We face a most exciting range of business opportunities in GE's European area where sales have been growing at more than 25% a year, and profitably." **AW**



CANADIAN GENERAL ELECTRIC:



It serves the world's second largest country with products that parallel those of its U.S. parent but that also go beyond in order to meet Canadians' special needs

Both the Board Chairman and the President of Canadian General Electric Co., Ltd., were on hand at the International Business Review to report on the operations and prospects of GE's largest affiliate.

CGE's Chairman of the Board, Canadian-born Walter G. Ward, presented a profile of a country whose 3.9 million-square-mile land area makes it the second largest country in the world.

"Its population of only 22 million," he said, "suggests a sparsely settled rural environment. But in fact Canada is a highly urbanized country with two-thirds of its population living in urban areas."

Ward's profile emphasized Canada's vast natural resources: it leads the world in forestry products, is among the top three in mineral output and achieves a high degree of self-sufficiency in energy, even though its hydroelectric power is only about 23% developed.

"Canada's population," said Ward, "is growing at a fast pace. The annual growth rate to 1985 is forecast at 1.6%, compared to a 1% rate forecast for the U.S."

Similarly, although Canada's labor force of 9 million is only one-tenth that of the U.S., "it is growing at the highest rate of the industrialized countries."

He reminded his audience that the Canadian economy has been outperforming that of its neighbor: "Over the last 24 years, the real annual growth of the U.S. economy was 3.8% on average, com-

pared to 5.2% for the Canadian economy." Looking ahead, a real growth of 4% to 1985 is forecast for the U.S. economy, while Canada's is expected to grow at a 5.5% rate.

Further, the current recession has, so far, not been as severe in Canada as in the U.S. "In 1974, real growth declined by 2.2% in the U.S. and increased by 2.8% in Canada."

The political changes that affect business in Canada were also reviewed by CGE's Chairman. Foreign investment, he made clear, is under close scrutiny, and "will be controlled to insure that growth will be in directions and at a rate which meets national objectives." Before any take-over of a Canadian business by a foreign firm is permitted, for example, significant benefit to Canada must be proved.

The same judgment is shortly to be applied to the extension of existing foreign subsidiaries into fields unrelated to their present businesses.

(continued next page)

Canadian GE's advanced technology in electric power equipment was emphasized to analysts by Chairman Walter Ward. At left: large hydraulic turbine during production at CGE's affiliate, Dominion Engineering.





'Another good year for CGE' was forecast by Al Cartwright, right, President of GE's largest affiliate.

Three main markets served by Canadian GE, as pictured below: (left) consumer goods, including products such as electric lawn mowers and humidifiers, made exclusively by CGE; heavy industrial and power machinery such as the Papriformer, developed by CGE for world paper-making industry; and power transmission and construction products such as transformers.

Ward was reassuring about CGE on this front: "Canadian General Electric is well positioned because of the diversification of our resources and operations which should allow us to expand the business profitably, continue our contribution to the objectives of General Electric and fully comply with the letter and spirit of Canadian national goals."

A quick sketch of CGE history was presented by Chairman Ward. Established in 1892, the same year GE was incorporated, "the Canadian company, like GE-U.S., represented an amalgamation of the Thomas Edison and Thomson-Houston interests with a local company—Toronto Electric Supply." Initially, CGE consisted primarily of patents, patent rights and license agreements, plus a small manufacturing plant in Peterborough, Ontario. During the first years, employment at CGE totaled only 500.

By contrast, CGE is today "one of Canada's largest corporations and the largest diversified manufacturer, with 20,000 employees and 30 plants at 20 locations. CGE participates in 17 basic industries with sales in 1974 of over \$700 million and orders for the first time in excess of \$1 billion, in products and related services for power generation, transmission, distribution and application of electric power to a full range of industrial, home and farm needs."

Ward completed his profile by describing how CGE is organized to serve three broad markets:



► Its Apparatus and Heavy Machinery Division meets the needs of the market resulting from resource extraction and processing, power generation and primary manufacturing. The Division's operations include power generation equipment extending from hydraulic and steam turbine-generators to nuclear fuel and components. Its industrial apparatus parallels the GE array of motors, drive systems and process controls. Included in this Division is Dominion Engineering Works, Ltd., a wholly-owned subsidiary of CGE that is a leader in the engineering and manufacture of heavy mechanical equipment for industry.

► CGE's Transmission and Construction Products Division covers power delivery equipment, communications systems and services, the construction market and the chemical, metallurgical and plastics businesses.

► Its Consumer Products Division is Canada's leader in supplying the markets for major appliances, home entertainment products, lamps and housewares.

The technology of CGE was reviewed by President Alton S. Cartwright. He acknowledged that in such primary areas as steam turbine-generators and steel mill drives CGE's prominent position in the market "has been achieved mainly by building on GE technology."

But he took special pride in pointing out sectors where CGE is taking the technological lead. Among them:

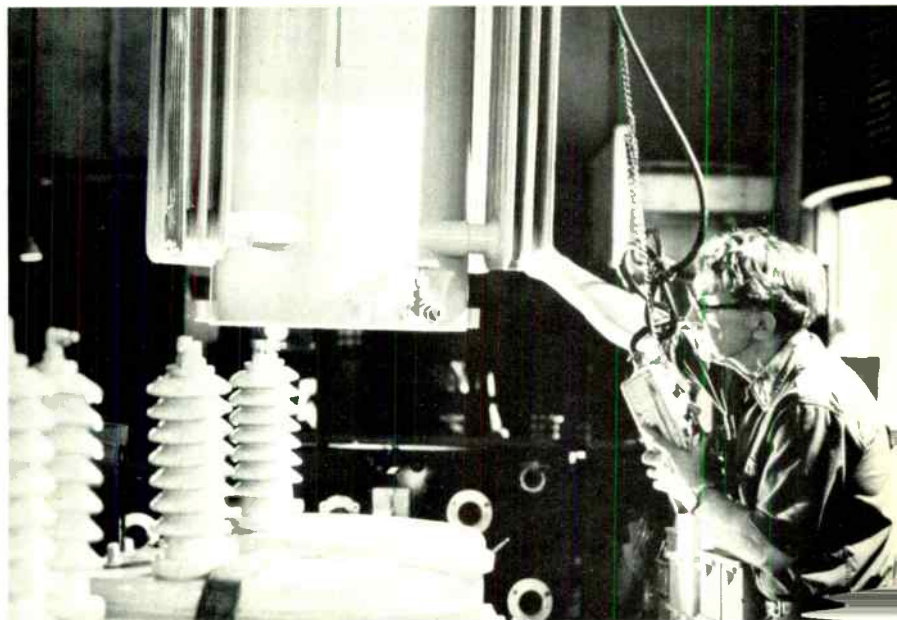
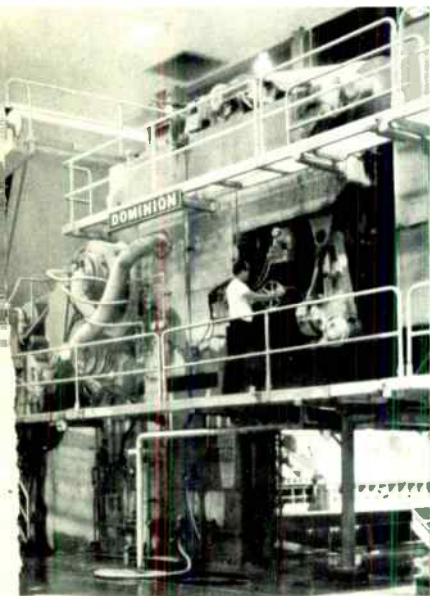
► "CGE is a world leader in the design and manufacture of hydraulic generators. CGE competes successfully in the international market. It recently obtained an order against Japanese, Russian and American competitors for the three largest hydro-generators ever produced, which are to be installed at Grand Coulee Dam."

► CGE's Dominion Engineering has developed the Papriformer, a paper-making machine that is winning orders in the U.S. and other countries, as well as in Canada.

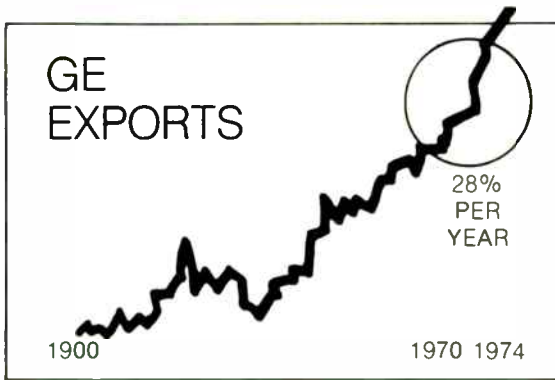
► About one-third of CGE's housewares sales are of products developed "independent of GE for specific Canadian needs." Examples: home humidifiers—a necessity for winter comfort in cold climates, electric mowers—a viable product to an urbanized population with small lot sizes, and electric kettles, which CGE also supplies to U.S. markets through the GE distribution system.

The business outlook for CGE, as summed up by the affiliate's President, includes both negative and positive elements. The negatives: "Worsening economic conditions and continued inflation." CGE businesses serving consumer and construction markets will not be able to match last year's level of operations in 1975. "On the positive side, sales of apparatus and machinery to utilities and other capital equipment customers will exceed 1974 levels, based on orders now on hand."

The balance: "In total, we believe 1975 will be another good year for CGE in both sales and net income." ▲



U.S.-MADE EXPORTS:



They 'really took off' in 1970, have zoomed to a \$1.5 billion sales volume, and orders in '75 are up again

An interesting and significant change has come into General Electric's burgeoning business of exporting U.S.-made products to customers overseas, Kristian H. Christiansen, VP—International Sales Division, reported at the International Business Review.

The change: instead of finding export markets only for its high-technology products, GE is also competing today in *equal-technology* areas.

This change is the result of the devaluation of the U.S. dollar: in relation to other currencies of the world, U.S.-made products are a much greater bargain than they once were.

The meaning to GE people is clear: good products that don't fit the high-technology classification have become attractive to international customers; a greater span of GE operations are now able to compete in world markets.

Christiansen pointed out, though, that the bulk of GE's export sales continues to derive from high-technology products such as the big generator pictured at right. Other prime export products: aircraft engines, gas turbines, steam turbines, transportation systems and nuclear steam supply systems.

World needs for these technically-oriented products have touched off what Christiansen called "an unprecedented boom" in GE export sales in the years since 1970. "This growth has meant thousands of jobs for Americans; it has added billions of dollars to the nation's balance of payments; and it has earned good profits for our share owners."

He called analysts' attention to the benefits that accrue from the "contra-cyclical" nature of GE exports, citing the example of heavy-duty gas tur-

bins. "With the energy crisis, domestic utility demand for these machines declined sharply. But export orders more than doubled. Gas turbines—used overseas for power generation, gas and oil pipeline pumping and worldwide ship propulsion—helped keep our factories busy in Maine, Massachusetts, New York, North Carolina and South Carolina."

Similarly, when the housing industry was hit by the economic downturn in the U.S., the export market became more significant. "Major appliance exports rose nearly 60% last year, with a good portion of the increase coming from air conditioners, top-of-the-line refrigerators and ranges bought by the oil-rich desert countries."

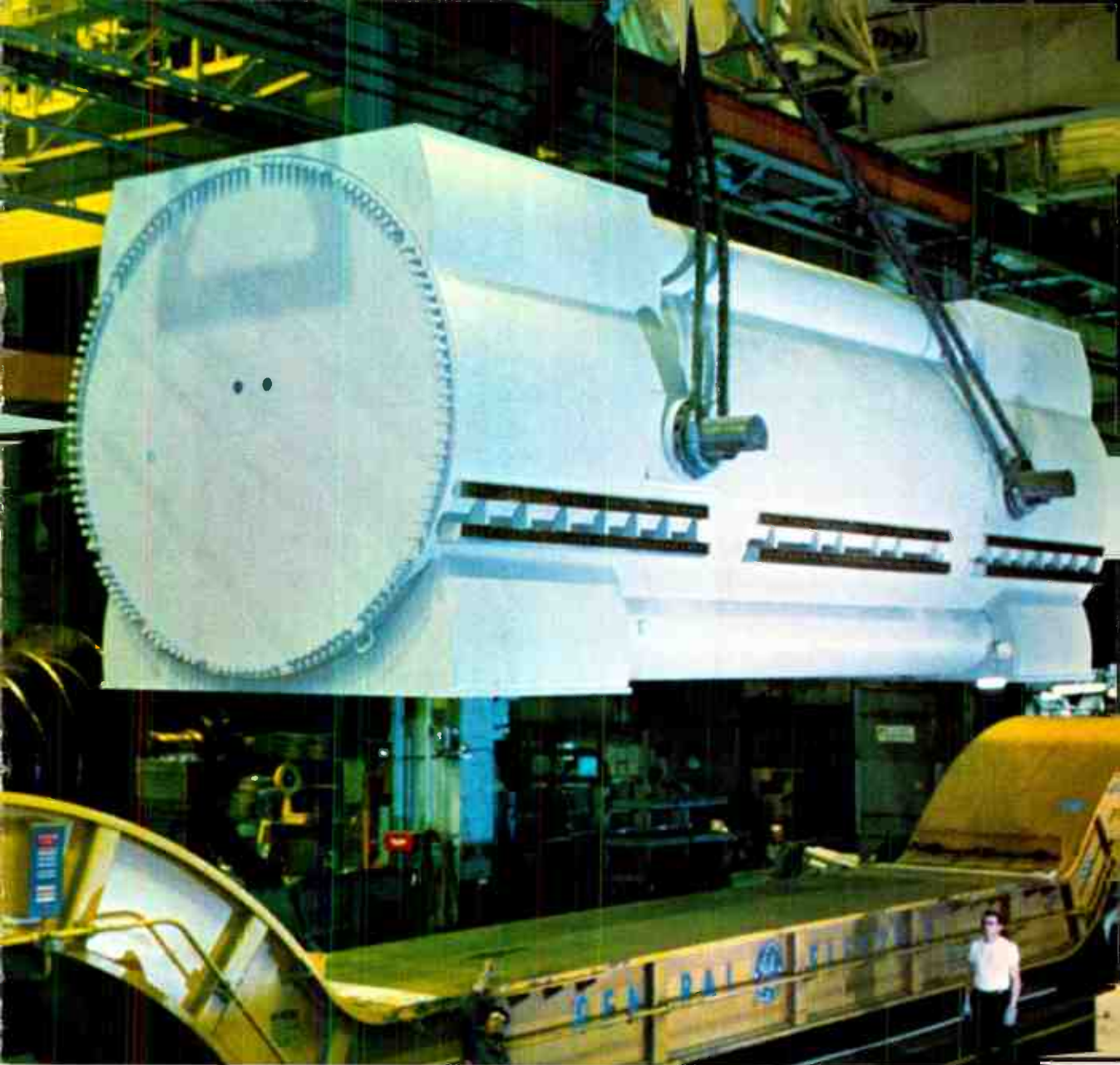
For some GE operations, he reported, exports are critical to the success of the business: "Some of them—steel mill drive systems, transportation systems, and marine turbines and gears, to name just a few—sell more than one-third of their entire output overseas, and exports account for about one-half of sales of our gas turbine and synthetic diamond businesses."

Still another dimension: "Nearly one-half of all the businesses in GE doubled their export volume in the past three years."

As a result of these growth trends, Christiansen said, GE exports are now leaving the U.S. at a level of about \$1.5 billion worth a year. "This accounts for one out of every ten GE sales dollars and represents nearly one-half of the Company's total international sales volume."

Taking an historical perspective, he noted the long, slow climb—from the Company's beginnings to after World War II—before GE exports sur-

continued



**FROM SCHENECTADY TO TOKYO:
KINGSIZE POWER-MAKER**

It's believed to be the largest single piece of equipment ever shipped from the Port of New York—this 410-ton stator for a GE generator. Schenectady-built, the stator is designed for the Tokyo Electric Power Company's Fukushima Station. Mated with a GE nuclear steam turbine it will produce a million kilowatts—the third such million-kw order received from the big Japanese utility.





Topic: exports, as Kris Christiansen (right), International Sales Division VP, talks with financial analyst.



passed \$100 million. The growth rate picked up between 1945 and 1970, with total sales volume passing \$600 million in 1970.

"Then," said Christiansen, "things really took off. Between 1970 and 1974, export sales increased 28% per year."

While the growth trend was led by big-ticket, high investment items, he observed, "our exports included a wide variety of other products. They ranged from major appliances to lamps to medical equipment, from electronic components to diamonds, from information services to apparatus parts and service."

The Company's export success, however, is not tied just to sales of single products, Christiansen explained. "Even more importantly, it reflects our ability to develop specialized packages to meet specific customer requirements worldwide. We have a systems strength which extends to virtually every major industry."

Studded through his talk were facts and figures designed to amplify analysts' understanding of GE's export trade:

- ▶ More than 3000 GE diesel-electric locomotives are now in service with 100 of the world's major railway systems.
- ▶ One of every four large steam-powered merchant ships is equipped with a GE propulsion system.

Dollar devaluation makes U.S. exports a bargain. GE products enlarging their foreign markets include air conditioners (on containership, left) and gas turbines (below) for Mid-East pipeline pumping.



tem from Lynn, Mass., and “we do business with shipyards in 18 countries.”

▶ GE is the leader in steel mill drives—installing these in nine important hot strip mill complexes outside the U.S. since 1967—“a record that exceeds that of all free world competitors combined.”

▶ More than 40 GE gas turbines supplied for oil drilling and pipeline systems represent about 50% of the total installed power in the North Sea oil fields—an area that has a sales potential, over the next five years, of over \$500 million for GE-type products.

▶ The order for 65 gas turbine compressor modules from the Soviet Union also includes a wide range of other GE products and services: controls from Virginia, renewal parts from North Carolina, and service engineering by Schenectady-based specialists. “The Russians already are planning 8500 miles of additional gas and oil pipelines, which means many more compressor modules.”

▶ Of the 48 LNG (liquefied natural gas) ships now on order, 19 will use GE propulsion equipment—one already in service is “the world’s first gas-turbine-powered LNG carrier.”

▶ GE-designed power generation products—steam, gas, hydro and nuclear—are now operating in over 70 countries.

▶ GE leadership in High Voltage DC transmission is leading to worldwide business—with major projects in Canada and Zaire and additional HVDC projects in feasibility stages in eight other countries.

▶ GE’s network of apparatus service centers—both GE-owned and GE-franchised—has grown to 155 centers in more than 50 countries.

▶ The Company maintains a pool of over 3000 field engineering personnel, with 350 of them permanently assigned to overseas locations.

As to the future, Kris Christiansen told the analysts that “about two-thirds of the opportunities for GE-type products and services are outside the United States.” The Company has a substantial international orders backlog on the books, much of it resulting from orders of nearly \$2 billion received last year. And, for the first four months of 1975, the GE export orders rate was running ahead of last year’s record pace.

Licensing: another way to serve international markets

Why does General Electric license offshore firms to produce GE designs rather than build the products itself for export from the U.S.?


It’s a question for which the International Business Review supplied several authoritative answers.

First and foremost is the fact that in many countries today the export channel for a specific product or technology may simply be closed to U.S. producers because of protective buying habits, high transportation costs or excessive import duties. Said International’s VP John Burlingame: “Where trade barriers and other factors inhibit straight imports, the licensing of our technology is often the best business approach.”

Second, licensing “produces substantial income on the basis of available technology without further capital investment.” Burlingame pointed out that to match \$3 million of licensing income, a manufacturing operation would have to generate \$40 million in sales on which it realized a 7% profit.

And third, licensing leads to other business opportunities. “Licensing of a technology,” he explained, “brings with it the opportunity for prototype and component sales, and sometimes establishes the basis for a joint venture or partnership arrangement where our technology can be exchanged for an equity position.”

For GE licensees, the benefits are considerable. Licensees can reap the benefits of GE’s research and development efforts at a fraction of the cost of financing their own experimental operations. By working with GE, licensees can turn out more useful products sooner, with fewer problems and greater productivity than they could by working alone.

GE results from licensing were reported by Edward F. Roache, Manager of International Administrative Operations. “Licensing income continues to remain strong and has been experiencing an upward trend,” he said. “This uptrend is also true,” he added, “of the levels of activity both with on-going licensing arrangements and with negotiations currently in progress.” 



GE in the news

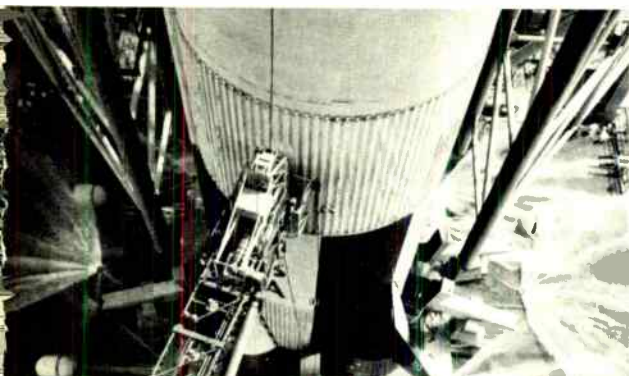
Another CLIO: GE's Fairfield-based Corporate Advertising has won a CLIO award for the best Corporate TV Commercial of the year. The winning TV ad, "Bull in the Lexan Shop" (January-February 1975 *Monogram*), depicted how a rampaging bull was unable to break any Lexan® items on display in a shop. This is the second year in a row that GE has won a CLIO—the Award for Advertising Excellence worldwide. The competition, judged by advertising professionals, is designed to recognize outstanding international, national, regional and local advertising of the past year in all media. Shown with the awards are (l. to r.): Hubert M. Snider, Project Leader—Corporate Advertising, with Robert W. Montell, Copy Supervisor, and Robert B. McLoughlin, Associate Creative Director, both of Batten, Barton, Durstine & Osborn, advertising agency.

GE women gain recognition:

- Lily Garner, a Major Appliance Group tool room apprentice with GE-Hotpoint in Chicago, was recently interviewed and filmed for a TV news spot on Chicago's WLS-TV. Apprentice Garner is the first woman to attend the Tool and Die Institute in that city and is the first female tool room apprentice in the state of Illinois.
- Vivian Manuel, Press Representative—Business/Financial in Corporate Public Information, was invited by the Financial Executives Institute to be one of a panel of three women to speak about the changing work force at the Institute's 1975 Eastern Area Conference.

In her talk Ms. Manuel outlined for the attending financial officers of major American companies affirmative action programs to be taken by business in order to use its female work force effectively. "Womanpower is here—intelligent, skilled," she explained. "Effective use of womanpower is good business . . . it means giving women options and the opportunity to pursue those options."





The Apollo-Soyuz space mission, representing a dramatic hands-across-space gesture of cooperation between two nations at opposite ends of the globe, was highly dependent upon GE ground systems support equipment for the accurate control and checkout of the facilities used in the July 15 launch of Apollo.

GE's broad range of equipment monitored the spacecraft, launch vehicle and launch facilities before the spacecraft blasted into earth orbit. Shown here is a test of the water control system used for cooling and quenching the launch site and storage areas before, during and after the launch.

Honors for GE'ers have come to the following in recent weeks:

- Arthur M. Bueche, VP—Research and Development, has become president of the Industrial Research Institute in New York City. The Institute is a company-membership management association composed of some 235 companies that are engaged in industrial research.
- Dr. Robert L. Fleischer, a physicist at the Research and Development Center, has been elected a Fellow of the American Geophysical Union.
- D. Laurie MacCuaig has been appointed by President Gerald R. Ford to the Committee for Purchase from the Blind and other Severely Handicapped. MacCuaig recently retired from GE as manager—Connecticut Relations Operation.



- Edward Woll (right above), VP—Group Engineering Division of the Aircraft Engine Business Group, has received the Dr. Alexander Klemin Award from the American Helicopter Society for his "years of leadership in design of the U.S. Army T700 turboshaft engine."

GE'S inflation course goes on tour: A course on "Managing in an Inflationary Economy," begun last year at the Management Development Institute in Crotonville, N.Y., has stirred up such interest that it has taken to the road.

The two-day program is designed to help managers understand just what inflation is and how they can come to grips with it.

In addition to the sessions still being conducted at the Crotonville Institute, classes have been held in Louisville, Syracuse and for GE components in

Mexico. It will be extended to London in September. Thirteen sessions have been held to date, with an attendance of some 400 GE people, including group executives, department general managers, finance managers and strategic planners.

"We have, conducting the program, distinguished in-house and external businessmen and economists," says Paul J. O'Sullivan, Program Manager—Manager Development Programs. "The course is geared to be as responsive as possible in helping our management people understand the difficult forces with which they must deal."

(continued next page)



GE's commitment to technology was confirmed by the Company's Board Chairman, Reginald H. Jones, in his talk to the 18th annual Group on Solid-State Applications and Measurements (GOSAM) symposium held in Syracuse.

"Technology is the central strength of the Company" and "continues to be the keystone," Chairman Jones told the members of GOSAM—an organization of about 3000 GE engineers, scientists and technical planners devoted to the advancement and interchange of knowledge about solid-state electronics and digital techniques.

Several hundred individual engineers, scientists and researchers involved in solid-state methods also attended the symposium and heard the GE Chairman commit the Company "to sustain a high level of investment in advanced research and engineering in spite of the bad times."



70th anniversary for Hotpoint. Hotpoint, an integral part of General Electric's major appliance business, is this year celebrating its 70th anniversary.

Technically, the Hotpoint trademark was not registered until 1914 — 61 years ago. But the Hotpoint name was so well identified by the public before then, that the true anniversary is attributed to the development in 1905 of the company's first electric iron with the "hot point" from which the firm's name was taken.


Hotpoint no longer markets electric irons and other portable appliances, but its name appears on innovative major appliances purchased by millions of Americans.



New 50-year man. The two GE employees who claimed the uncommon record last year of reaching 50 years service with the Company will now share that distinction with a third.

Thomas J. Bozzone, supervisor of traffic services in the International Sales Division, celebrated his 50th anniversary with the Company this past April and retired in June, becoming one of some 600,000 GE retirees.

To celebrate the occasion, Bozzone became the key figure of "Tom Bozzone Day" at ISD's New York City headquarters. Lexington Avenue, the street in front of the GE building, was renamed "Bozzone Boulevard" for the day.

Bozzone spent all his 50 GE years in the Company's export activity in New York City—a position that, in his view, "has shown me how international business builds jobs in the U.S." 

Historical Notes

The interest in national artifacts stirred by the Bicentennial spirit touches General Electric in a number of ways:

(1) Two General Electric components have possibly the only known manufacturing facilities in the nation that own and maintain Revolutionary War-period burial plots on their properties. The Silicone Products Business Department in Waterford, N.Y. and the Noryl Products Section of the Plastics Business Division in Selkirk, N.Y. became heirs to two cemeteries when they purchased land to build their manufacturing facilities.

The Waterford graveyard contains about 30 plots; the Selkirk one, about 12. Although time has marred some of the tombstones, readable dates go back to the late 1700s.

(2) At the Saratoga National Historical Park north of Albany, N.Y., site of a great battle during the Revolutionary War, GE's silicone rubber is being used to make molds of engravings on original artillery on display in the Park. The molds will preserve the inscriptions in case the markings should wear away with the passing of time or the artillery be destroyed.

(3) The original 5000-kilowatt Curtis steam turbine, manufactured by GE in 1903 for Commonwealth Edison Company of Chicago, has been designated a National Historical Mechanical Engineering Landmark by the American Society of Mechanical Engineers. The turbine is preserved and on display in front of GE's Steam Turbine-Generator Products Development Laboratory in Schenectady. It is only the sixth landmark designated by the ASME.

(4) Even older than the Curtis steam turbine is a GE-made DC motor, recently submitted to the Company for inspection by a Central Valley, N.Y. resident. The motor has turned out to be a relic manufactured in Schenectady by the Edison General Electric Co., GE's forerunner, between 1888 and 1892. The 1/12th-hp, slow-speed fan motor was brought to the Schenectady Instrumentation Service Shop when a retired general contractor inherited it as part of the estate of his late brother, once a GE employee. It required only a bit of cleaning and the reconnection of several broken wires to make it operable.

The modern version of this motor, at right, is manufactured in Fort Wayne, Indiana by the General Purpose Motor Department.



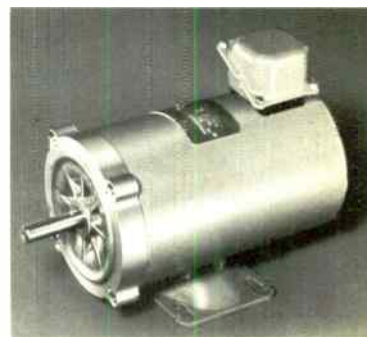
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Praise for a pioneer

When Dr. William D. Coolidge, renowned GE inventor and research scientist, celebrated his 100th birthday in October 1973, Dr. Herman A. Liebhafsky spoke at the Smithsonian Institution in Washington, D.C., on the subject of Dr. Coolidge's life and work.

Coolidge died in February of this year at the age of 101 (see March-April *Monogram*) and Liebhafsky has used his commemorative address as the first chapter in a new book on Coolidge.

Currently professor of chemistry emeritus at Texas A & M University, Liebhafsky was a scientist at the General Electric Research Laboratory (now the Research and Development Center) in Schenectady from 1934 to 1967. He knew Coolidge and worked with him and says that his purpose in writing the book was "to compare research today with research in Coolidge's time and to describe some of the major projects completed by Coolidge."

Who should read the book? Liebhafsky says, "Why, all who ought to know how research, primarily industrial research, affects our civilization."

And that should certainly include more than a few Company employees.

Single copies of "William David Coolidge: A Centenarian and His Work" are available, at \$5.00 each, from:

Communications Branch
Research and Development Center
General Electric Company
Schenectady, N.Y. 12301.

Now: do-it-yourself appliance service

If you have a "sick" GE or Hotpoint major appliance, what do you do? Call the "doctor"—a Customer Care Everywhere^T serviceman, of course.

Customers in Chicago, however, now have an alternative: they can cure the ailing appliance themselves after consultation at one of the two "major appliance diagnostic clinics" in experimental operation there.

Responsive to increased consumer interest in do-it-yourself home projects, including appliance repair, GE's Major Appliance Product Service Department has set the clinics up on a test-program basis.

They are designed, says Robert J. Kalember, general manager of the Product Service Department, "to help people who believe they are competent to make their own repairs, but would like to have a little technical guidance before beginning the work. They may be motivated by the desire to save money or by the satisfaction that comes from doing something for themselves. Either way we want to help them."

In Chicago, Edward J. Koznarek, zone manager of Product Service, says that "our primary concern is to make sure that would-be do-it-yourselfers are qualified to make the necessary repairs without hurting themselves or further damaging the appliances."

When a man or woman (and incidentally, there are just about as many women as men who have sought aid at the clinics) comes in, there's a professionally-trained field service supervisor to listen to the problem, to help in diagnosing what is wrong




GE service technician demonstrating dishwasher repair to clinic participants.

and to sell the proper replacement part, so that, according to Koznarek, "there is a reasonably good chance that the repair work will be completed successfully."

At each clinic, microfilmed diagrams of appliances are available; if consumers can't explain the problems clearly, they can easily point out to a technician just what is wrong where on which appliance. Pertinent sections of service manuals can be copied, giving the do-it-yourselfer instructions and reference material to help with the repair work. And if the appliance owner decides, after consultation, that the repair is beyond his or her do-it-yourself talents, arrangements can be made for a professional service call.

Koznarek hopes that one result of the clinic program will be to encourage "intelligent do-it-yourself appliance adjustment and repair, as opposed to tinkering. It's one thing to bring in an inoperative part or a description of what is wrong, consult with technically-trained service people, get a replacement part, if necessary, and complete the repair job confidently. On the other hand, tinkering—trying to fix something without really knowing how—can cause injury to the tinkerer and, often, additional damage to the already sick appliance."

Will there be an extension of the clinic program to other locations? Kalember says, "We'll watch them very closely and then we'll decide whether to terminate the program or expand it. We want it to succeed."

Here's the clinic schedule: 6735 South Harlem Avenue in Chicago, from 8:30 to noon on Saturday; and 10 King Street, Elk Grove Village, from 6 to 9 p.m. Wednesday. 

More discounts for employees. GE employees are eligible for discounts on parts for out-of-warranty factory service and for the purchase of service contracts for their GE or Hotpoint major appliances and television receivers. The factory service discounts do not apply to Central Air Conditioning or heating products although these items are still eligible for a 15% reduction on the price of the service contract.

General Electric provides factory service for major appliances to more than 350 cities in the United States.

ORGANIZATION CHANGES

CORPORATE

Theodore P. LeVino, *Manager—Executive Compensation Operation.*

Julius A. Mirabal, *Manager—Engineering and Manufacturing Engineering Consulting, Corporate Consulting Services.*

AEROSPACE BUSINESS GROUP

Kenneth R. Anderson, *General Manager—Undersea Electronics Programs Department.*

Howard M. Wittner, *Manager—newly established Aerospace Group Strategic Planning and Programs Operation.*

COMPONENTS AND MATERIALS GROUP

Donald E. Debacher *elected a Vice President.*

Donald K. Grierson, *General Manager—Carboloy Systems Business Department.*

John D. Opie, *General Manager—Battery Business Department.*

Patrick V. Coyle, *Manager—newly established Appliance Components Support Operation.*

INDUSTRIAL AND POWER DELIVERY GROUP

Richard W. Kinnard *elected a Vice President.*

David M. Engelman, *General Manager—Wiring Device Department.*

INTERNATIONAL AND CANADIAN GROUP

Jan M. Garvin, *Manager—Eastern Europe Operation.*

MAJOR APPLIANCE BUSINESS GROUP

Van W. Williams *elected a Vice President.*

Robert W. Fowler, *General Manager—Room Air Conditioner Department.*

Richard B. Lewis, *General Manager—Distribution Finance and Services.*

POWER GENERATION BUSINESS GROUP

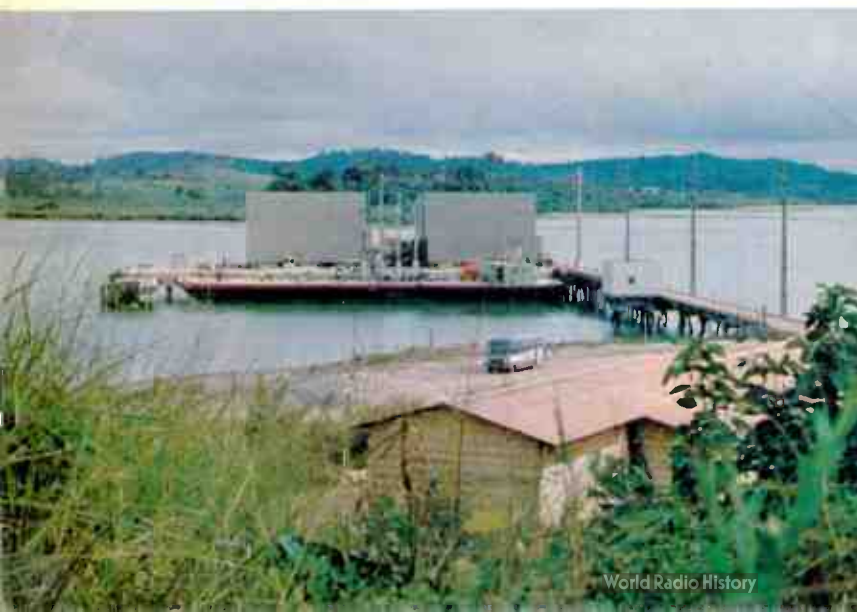
Ernest L. Kuerner, *General Manager—Gas Turbine Manufacturing Department.*

SPECIAL SYSTEMS AND PRODUCTS GROUP

Donald J. Meyers, *General Manager—Specialty Transformer Business Department.*

Andrew J. Walsh, *General Manager—Northeast Sales and Distribution Department, General Electric Supply Company Business Division.*

Charles A. Huebner, *Manager—Group Strategic Planning and Review Operation.*



Power afloat for Brazilians ashore

Helping a burgeoning Brazil grow, this barge-mounted, multiple gas turbine power system from General Electric (above and left) feeds 131 megawatts into the Centrais Eletricas Brasileiras S.A. network.

Towed by tugboat over 4000 miles of ocean from Bath, Maine (*Mono-gram* back cover, July-August 1973), the unit is now in full operation at Salvador, some 1000 miles up the coast from Rio de Janeiro.

The plant represents a cooperative sales effort by General Electric's International Sales Division, Gas Turbine International Operations Department and General Electric do Brasil, S.A.