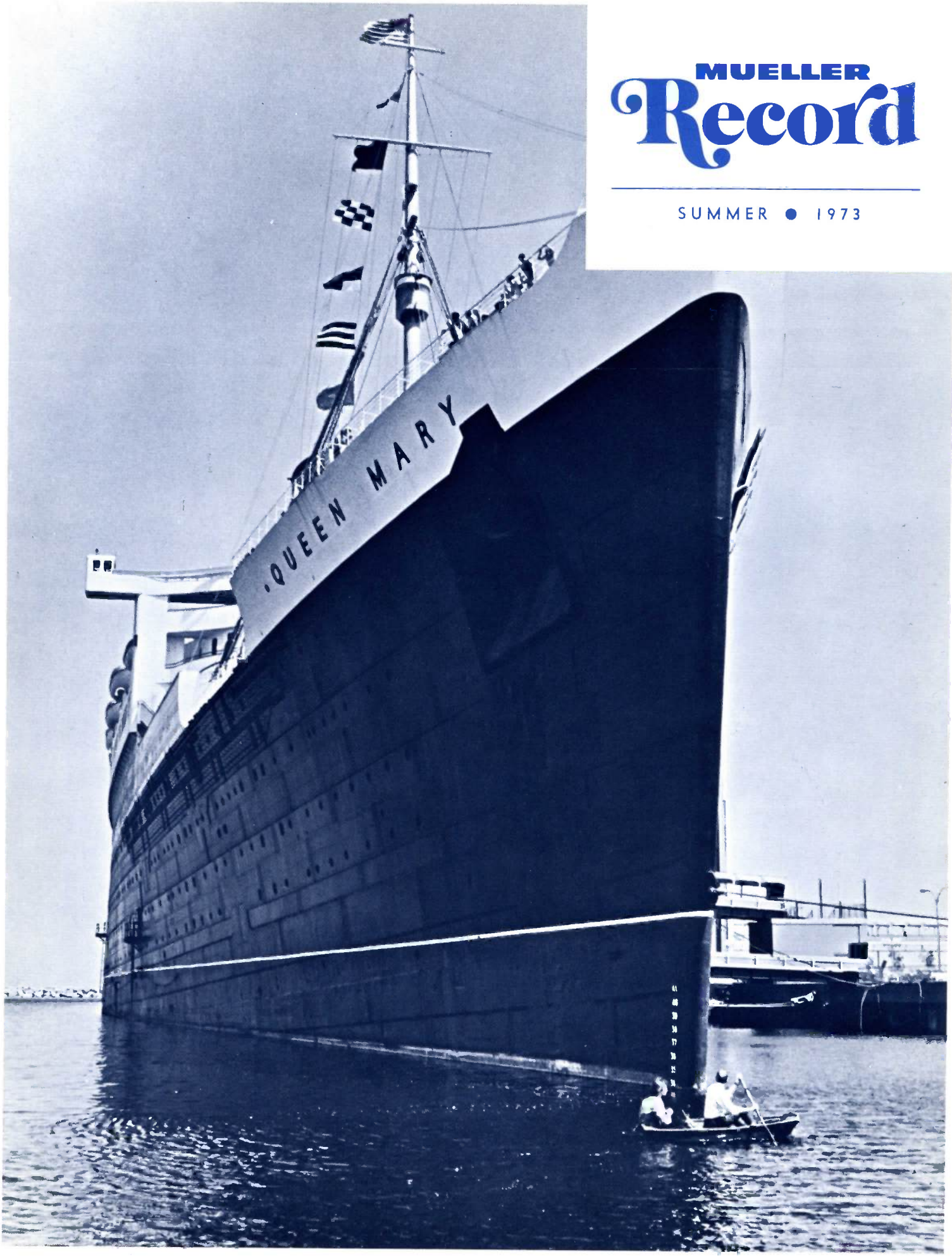
MUELLER Record

SUMMER • 1973



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OUR COVER shows the Queen Mary at rest in Long Beach Harbor. See Page 7 for the story about the liner's most recent adventure.

Contents

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Serving the water and gas industries since 1857

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Joe Penne
Editor

Long Beach Gas

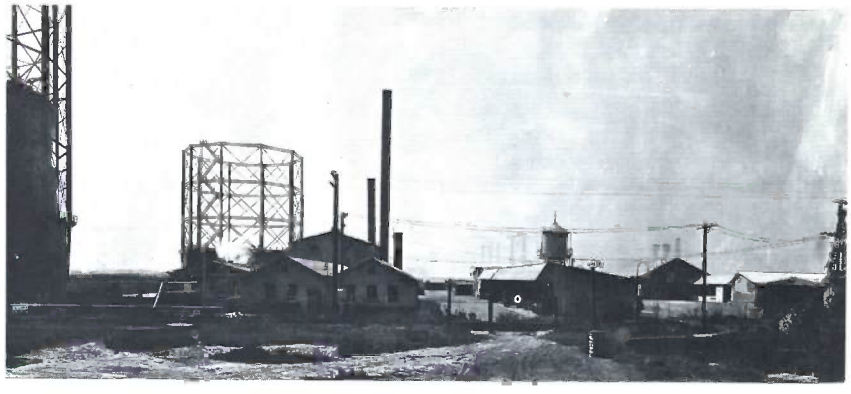
The fountain and the gas flame in its center make an attractive scene at the office building of the Long Beach Gas Department's new headquarters.

Dedications, Retirements Written Into Recent History

EACH year events occur in every organization to be indelibly written into its history because they are symbolic of change, progress or character. For the Long Beach (California) Gas Department the dedication of its new centralized headquarters plant in 1971 and the retirement of General Manager L. L. (Benny) Bendinger in 1972 have to be singled out as two such important developments in a review of the department's operations.

The dedication of the new headquarters culminated about six years of planning and hard work in the Gas Department. Its design and location reflect concern for the greatest utilization of the department's manpower and equipment. Except for the Commercial Division which remains in the Municipal Utilities building downtown, the 73,000 square-foot complex, centrally located in the geographic heart of Long Beach, houses the administrative, engineering, warehousing, home service center and construction operations of the department.

A few months after the official dedication of the center, Mr. Bendinger retired, completing 22 years



This 1929 photo of Plant No. 1 is in stark contrast to the modern facilities just completed.

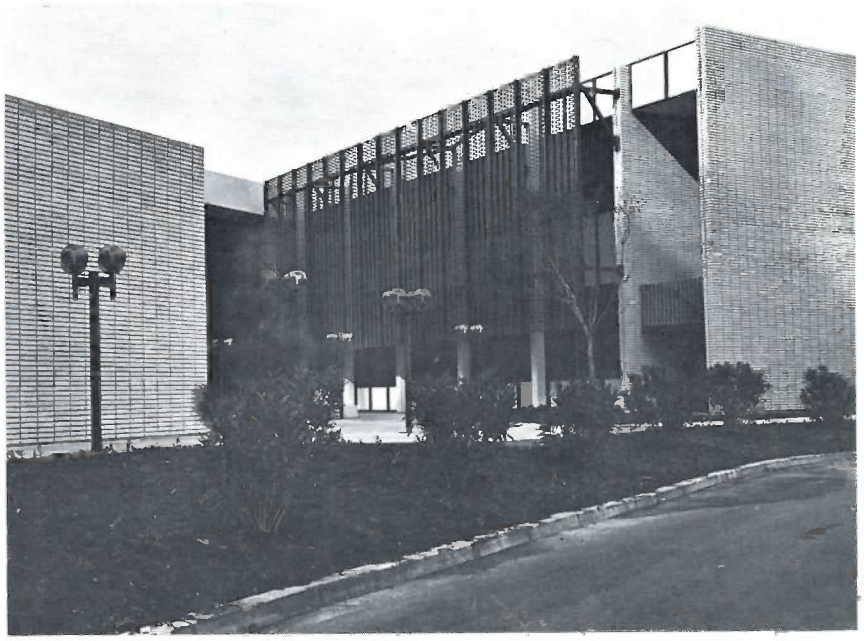
of outstanding service with the Long Beach Gas Department. His leadership and dedication have taken the department from a time when it was supplying a population of just over 250,000 to where, today, the Department efficiently serves more than 390,000 persons.

Mr. Bendinger began his career with the city when he was appointed assistant superintendent in the gas department in 1950. He moved up to superintendent or general manager, as it is currently known, in 1951. "Benny" was born in St. Louis, Missouri and came to Long Beach with his family in 1916 as a youth.

L. L. BENDINGER

He attended UCLA and started in the energy business with Lomita Gasoline Co., Long Beach. From there, he entered a partnership in the Signal Pipeline Construction Company, a firm specializing in utility work. When the company was sold, he joined the Long Beach Gas Department.

About the time the new headquarters building was dedicated and Mr. Bendinger retired, the City also "retired" Plant 1. For almost 70 years this plant with the help of many changes, consolidations and improvements continued as the basic operational center for the Long Beach Gas Department.



The east patio is located between the employee's lounge and the home service center in the left wing and the engineering and administrative offices on the right side of the building.

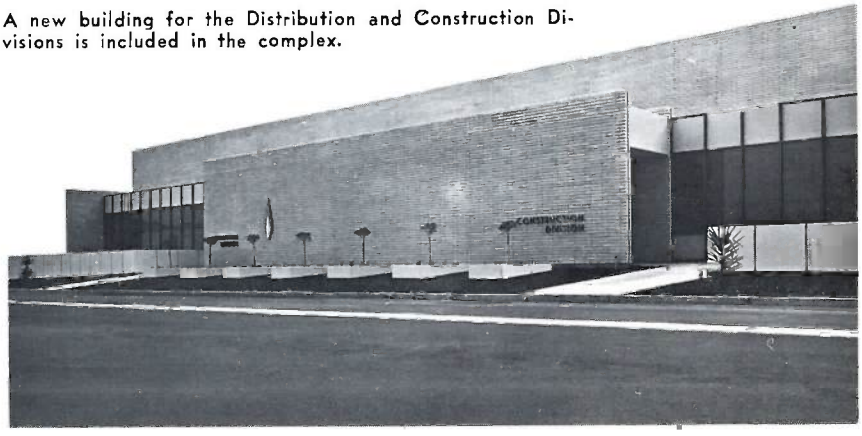
Gas service came to Long Beach in 1900 with two companies offering similar service. In 1905 a third company entered the competition and built the original Plant 1 to manufacture gas for a few thousand available customers.

There were no parking meters, no traffic signals and only one policeman in Long Beach in 1905, but the quiet lasted only a short time. In 1909 a bond issue initiated harbor development and the following year the three gas companies merged to become the Long Beach Consolidated Gas Company, listing 4,600 customers out of a population of 17,800.

In 1912 the Long Beach Consolidated Gas Company began to offer a mixture of one-half natural gas and one-half manufactured gas, but by 1915 100 per cent natural gas was introduced from the Fullerton oil and gas fields. A year later the gas company ownership was taken over by Southern Counties Gas Company.

The "Peace, Prosperity and Plenty" associated with the 1920s in-

A new building for the Distribution and Construction Divisions is included in the complex.



cluded Long Beach, especially after Shell Oil Company brought in Alamitos Well #1 on nearby Signal Hill. The rush was on and by 1927 there were 693 producing wells with oil royalties valued in the millions of dollars.

The oil strikes also hit the area gas companies. Signal Hill was producing enormous amounts of natural gas along with its oil, and City of Long Beach property was producing up to 25,000,000 cubic feet of gas a day. Since Long Beach had its own supply of natural gas, it was logical for it to want to distribute it. After months of competitive scuffling the city acquired the gas company in 1924 for $2,170,000. During its first year of municipal operations Long Beach Gas Company delivered over eight billion cubic feet of gas through 32,145 gas meters.

Long Beach grew and the gas department expanded during the next decade. In 1938 the first harbor oil well was drilled and tidelands property acquired by the City of Long Beach from the State of California in 1911 began to payoff in new gas and oil productions. From the Wilmington-Long Beach Harbor Field gas flowed to the city during World War II years and into the 1950s. Limited quantities of gas are still available locally but more and more the City now leans on Southern California Gas Company and Signal Oil and Gas Company for its supplies.

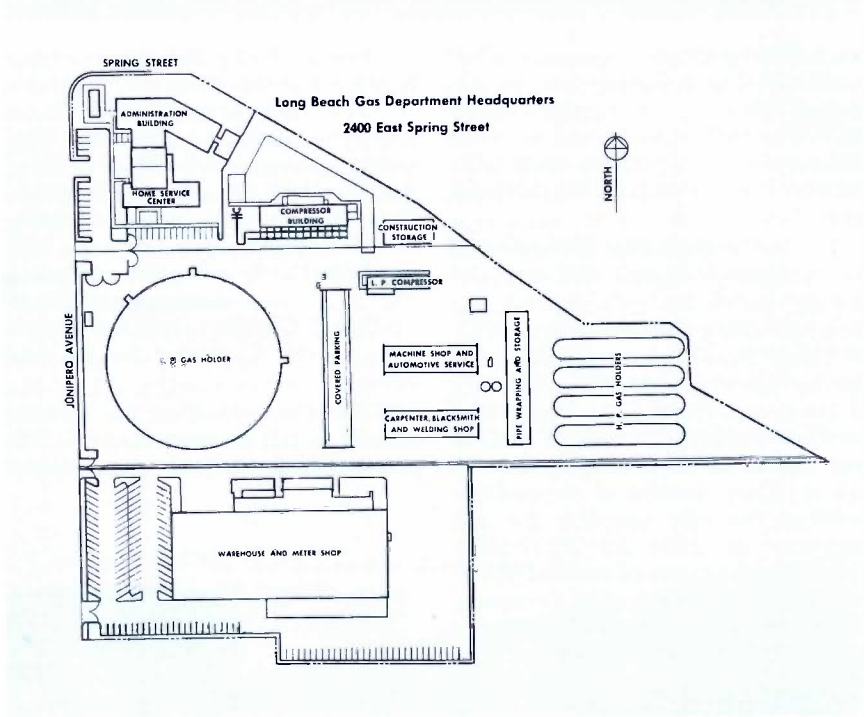
With the transition to outside suppliers, it became possible to phase out Plant 1 and replace many of its related operations with the more functional, centralized operating headquarters.

About 350 employees work to maintain service to more than 86,000 customers (services) in the 47 square miles of Long Beach and Signal Hill.

Just as a number of changes took place when Plant 1 was replaced by the new headquarters, there were some changes in the administrative staff when Mr. Bendinger retired. Edward C. Wright, formerly gas engineer, was moved up to the general manager's position. Harry E. Olson

The best available in 1914 (above) or in 1938 (below).

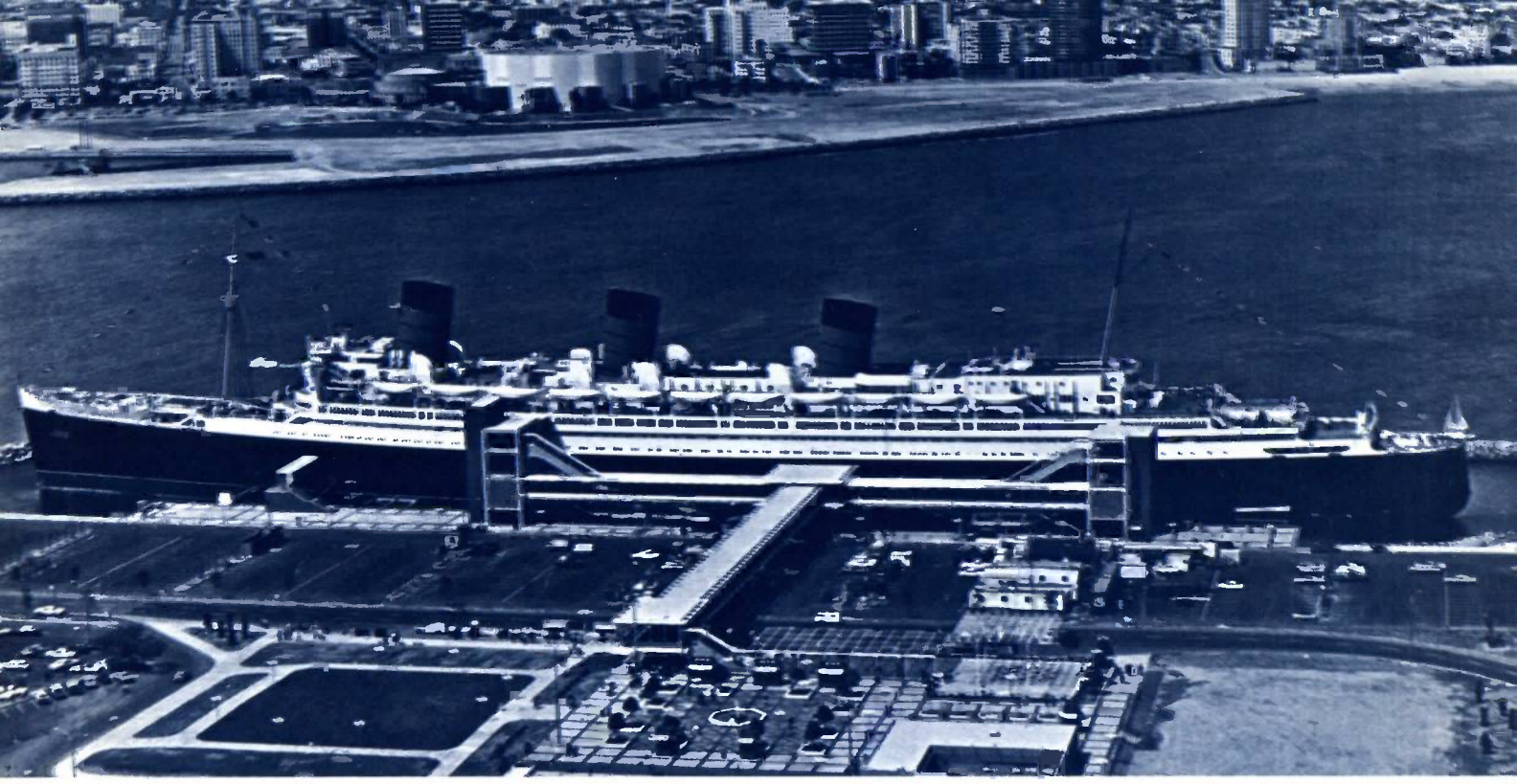
This modern warehouse is included in the headquarters complex located in the geographic heart of the City of Long Beach. Below is the lobby-reception area in the administration building.



succeeded Mr. Wright as gas engineer and Kenneth S. Flaig was named superintendent of distribution to succeed James A. Mathers.

N. E. (Norm) Savidge, assistant general manager, also retired in 1972 and completed 32 years of service. He was succeeded by Robert J. O'Donnell, who had been with the city's Department of Oil Properties.

In every viable organization changes in people and plants are expected. Lasting contributions remain after individuals have gone, giving their successors a stability upon which they build their own endowments.



Aerial view of the Queen Mary at her permanent berth at Pier J with the downtown Long Beach shoreline in the background.

Long Beach Gives Berth To Queen Mary

Famous Liner Finds Permanent Home

This story doesn't follow the usual fairy tale pattern, but at least it comes to a happy conclusion. Instead of the poor, unkept chamber maid in distress, the story opens with the Queen needing a home, acceptance and a new regal outfit.

Our "Queen" is the luxury ocean liner Queen Mary probably destined for the breakers yard (scrap heap) until an innovative rescue by the City of Long Beach saved this grand lady of the high seas. It took several million dollars, rather than the wave of a wand, but the heroine of our tale has regained much of her world-wide stature, welcomed two million subjects aboard last year and the queen is becoming the sweetheart of the city.

She's all dressed up now, but she can't go any place. After a 1,001 crossings of the Atlantic it seems a shame she is so tied down, but her permanence is her salvation. The City of Long Beach, California, purchased the Queen Mary in 1967 for $3.45 million and since then she has been transformed into a floating convention center, museum and shopping complex complete with restaurants, bars and stores.

Although she has lost her ability to sail she retains her majesty. Her mighty turbines are stilled, her propellers dead, but the sounds of thousands of happy visitors and shoppers, as well as shouts of children, are the welcome noises heard both above and below decks today.

One of the early decisions made by the City of Long Beach when it purchased the Queen Mary was to have a natural gas fueled central heating and cooling plant located near a new permanent docking site to provide steam and chilled water for the ship's environmental controls.

The resulting plant is unique in a couple of respects. First, it is the only onshore installation in the United States serving an offshore ship. Second, and perhaps more important, it is doing so at a spectacular saving of natural gas, recovering the waste heat from each of its engines in heat recovery mufflers, serving as auxiliary boilers to beef up the steam supply to the ship.

Employing natural gas as its primary fuel and recovering large amounts of the energy in the form of "waste heat", the system contributes virtually no harmful effects to the water or the air. Ohio Energy Systems, Inc., was selected to design and operate the facility under a 25-year contract. In the spring of 1972, the city exercised an option in its contract with OES and purchased the onshore plant for $1,895,000. Long Beach Gas Department assumed operation on July 1. Edward C. Wright, general manager of the Long Beach Gas Department, said his organization maintains both the onshore facility and the underground lines running to the ship more than 2,500 feet away.

The Queen Mary story can be seen in part in this display area below deck.

The downtown skyline in Long Beach changed on Feb. 27, 1971 when RMS Queen Mary was moved to her permanent berth at Pier J. For many years she had been queen of the seas, epitomizing the grace and elegance of shipboard travel while carrying thousands back and forth between Europe and New York.

Her luxury travels were interrupted for a time during World War II while she crisscrossed the Atlantic with more than 700,000 troops. In 1947 the Queen Mary was reconditioned to renew her pleasure trips and for about 15 years she reigned again with her sister ship, the Queen Elizabeth. A wave of rising costs and the speed of airplanes almost swamped both of the ships, forcing Cunard Lines finally to take them out of service.

The fate of the Queen Mary was uncertain until officials across the sea and a continent away offered to buy her for the innovative complex planned in Long Beach. She sailed for southern California in 1967 and finally in 1971 she moved to her permanent docking.

After three years of construction, the $9.6 million permanent docking site is a showplace in itself. It is a unique 50-acre area engineered to accommodate as many as three million visitors a year. Its cost represents about one-fifth of the $49 million in Long Beach tidelands oil funds spent on the total project. About 16 acres were filled in to provide mooring and in this area the city has built parking spaces for 4,000 cars, service areas and a twin-towered boarding facility housing 14 gangways. A stone breakwater protects her from strong currents.

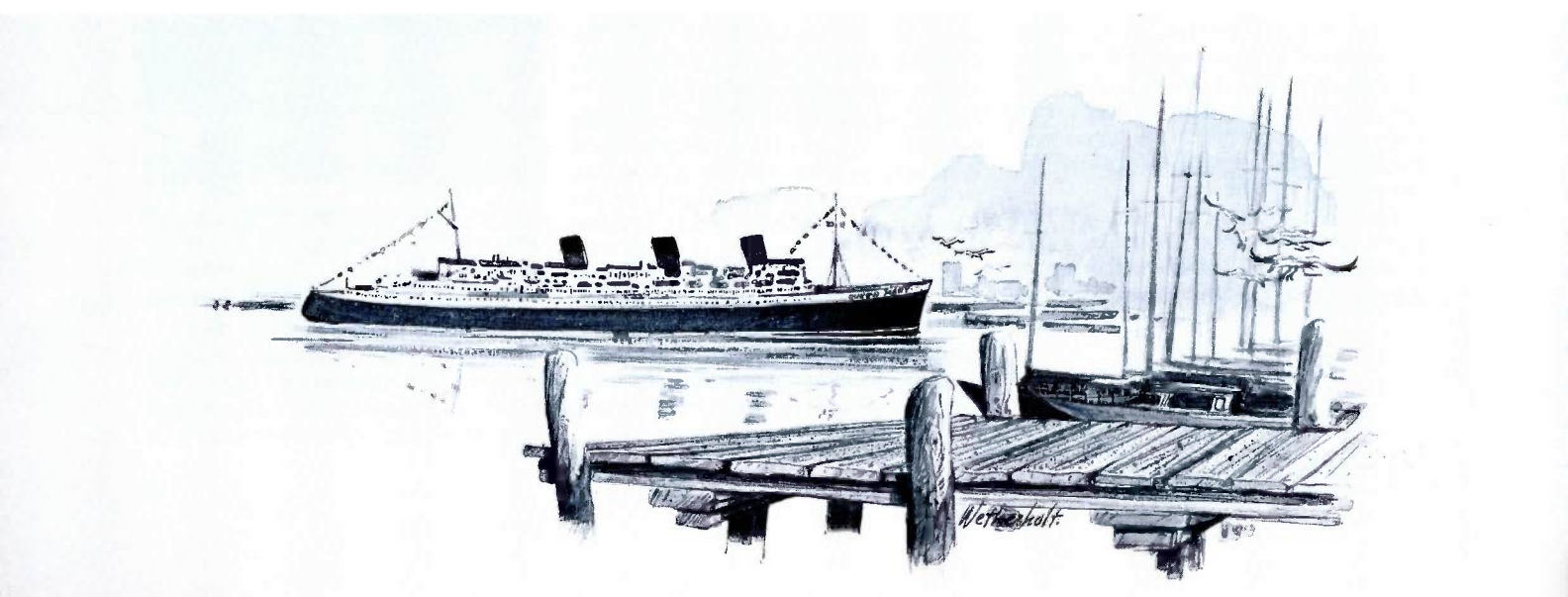
While work was being done on the site, major remodeling and rebuilding were being done on the ship. Two of her decks were removed and about 25,000 tons of material taken out, including steam turbines, generators and boilers. About 300 tons of paint were blasted off before three coats of fresh paint were applied. The great Queen is again an imposing sight with her pure white superstructure glistening above the decks of her jet-black hull that stretches more than 1,000 feet. Her three vermillion stacks jutting 150 feet into the air have become landmarks for shoppers just across the Los Angeles River in downtown Long Beach.

The results of the rebuilding are apparent to the ship's visitors. Highpoint of the visit to the Queen Mary for many people is Jacques Cousteau's Living Sea exhibits above and below the waterline in the central portion of the ship. The 10 exhibits represent the famed oceanographer's personal view of the conquest of the ocean. The Queen Mary Museum portrays dramatically through models and displays the construction, launching, and career of the renowned Queen of the Atlantic. In addition, tours through once off-limits areas of the ship add excitement to a visit.

Master lessee, Specialty Queen Mary Inc., operates five restaurants and nearly two-score shops aboardship, and another, PSA Hotels, Inc., is preparing 400 hotel rooms.

The current use of the Queen Mary in Long Beach has been a way to extend her life. It continues her tradition of being a place of enjoyment, but it also fulfills a prediction made by an astrologer when the ship was launched.

In 1934 Lady Madel Fortescue-Harrison said, "Most of this generation will be gone, including myself, when this event occurs. However, the Queen Mary, launched today, will know her greatest fame and popularity when she never sails another mile and never carries another paying passenger."



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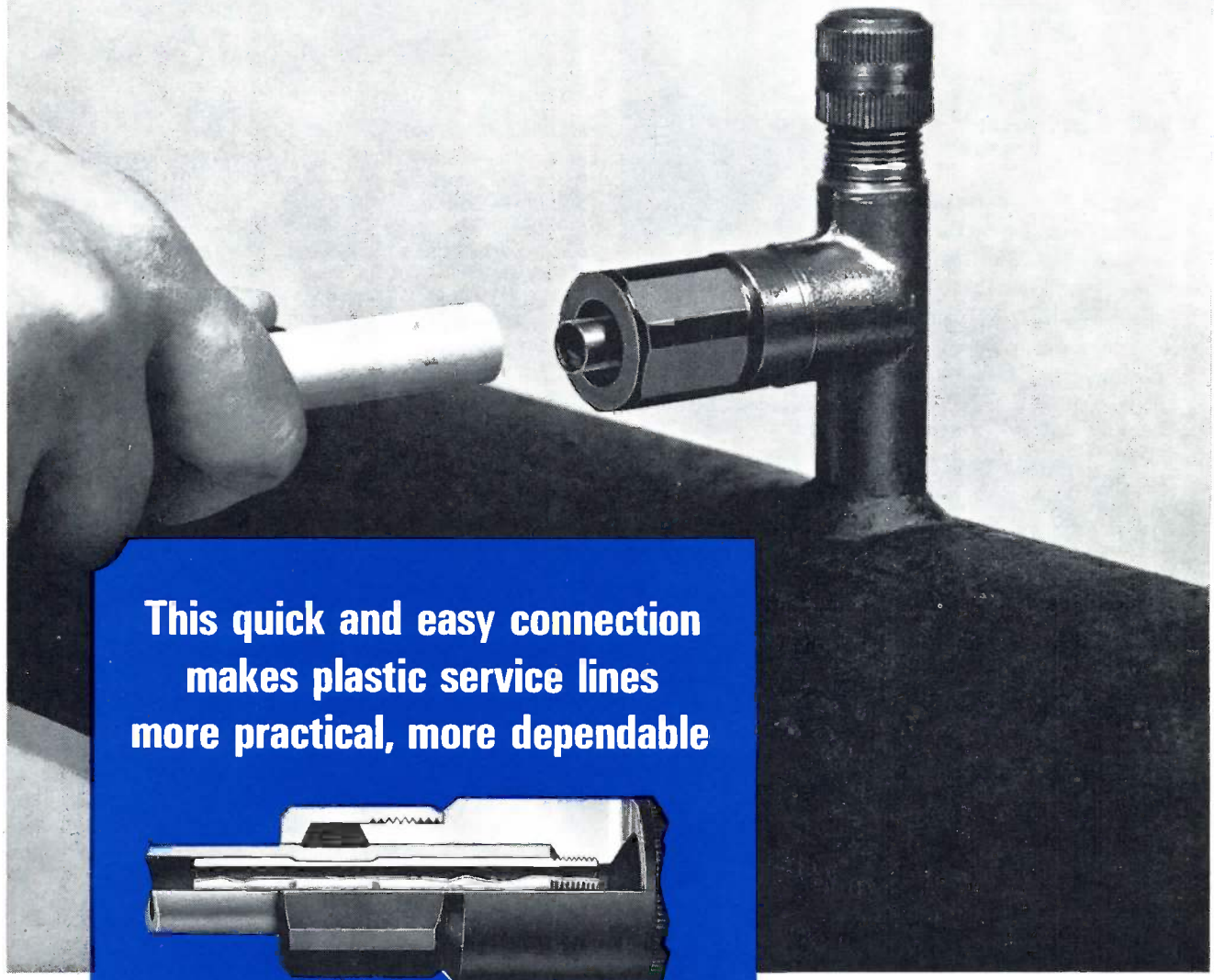

This quick and easy connection makes plastic service lines more practical, more dependable

You get two big pluses with the 112 Connection—ease of installation and extremely reliable performance.

An inexperienced workman can easily install the 112 Connection in less than a minute. Just cut the plastic pipe or tubing reasonably square, stab it fully into the connection and tighten the nut until a metal to metal contact is made between the nut and the shoulder of the fitting. That's all there is to it. There's no heating, no flaring, no cementing, no threading, no special tools needed. And no loose parts to lose or install incorrectly.

The resultant connection is leak-tight and highly resistant to pullout. Positive sealing in the 112 Connection is assured by a totally confined gasket that eliminates creep or cold flow. An annular machined indentation in the integral steel liner locks the plastic pipe or tubing securely in place, providing extremely high resistance to pullout from line stresses, fill settlement, back filling, line pressure, or accidental disturbance.

You can get the 112 Connection on Mueller Autoperf® Tees, No-Blo® Valve Tees and Transition Fittings with a variety of inlet connections. Ask your Mueller Representative for all the facts on the 112 Connection, or write direct for further information.

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From Where I Sit

GLENNON DOYLE
(GAMA Chairman)

A view of the gas industry's marketing practices as seen by Glennon J. Doyle, President, Caloric Corporation, Topton, Pennsylvania. These remarks were delivered before the A.G.A. Marketing Conference, New Orleans, March 27, 1973.

It is certainly true — and this may be the only point I will make this morning on which I expect that all of you can agree — that where you stand on any issue depends on where you sit. Your chair necessarily affects your perspective, for that is where your self-interests are centered.

From where I sit, as a manufacturer of a broad range of consumer products — both gas and electric — I view your marketing activities, or lack thereof, in what may be an entirely different manner than you do.

I make this point for the simple reason that I should expose my biases — and the limitations of my perspective — before speaking perhaps critically of the approach to marketing some of you are taking. My view of your problems cannot be as clear as yours, just as your view of mine may not be in sharp focus.

As separate segments of the gas industry, we followed for years parallel or complementary marketing practices. You were our outlets, our distribution centers. You aided and supported our dealers, and to an extent that I should acknowledge, you still do. Together, we developed a tremendous market for the sale of gas, and gas-burning appliances and equipment. When our activities were so closely tied, we had a better understanding of each other's problems. Our seats were close together and our stands on marketing issues were also close.

DRIFTING APART

But let's face the fact directly. We are not as close today. Our understanding of each other's problems is less exact. What I say may, therefore, offend some of you — but most assuredly I do not mean to be offensive. I may be wrong in some respects, because my seat today is not alongside of yours. If I am wrong, I want you to tell me so — and tell me why. And, to the extent that I may be right, I merely ask that you consider the points I shall try to make in charting a future marketing course. If you do agree with me, as I obviously hope you will, I would expect our chairs to move closer together, and to find our points of view more closely aligned than they have been in the recent past.

There are some of you who are taking marketing approaches I like — and there are also some who are taking approaches I deplore, and which I suggest may be incompatible with the realities of today's market. It is not the same market that it used to be — it's a rapidly changing market — it's a process of change of the market we must adjust to at the risk of being left at the post.

There are factors in the present and prospective situation that are working for us. We have good products, the best fuel. We are still a growth industry. But, we've got work to do — and primarily in the area of adjusting our marketing approaches to the realities of a rapidly changing market — changes, of course, that are for the most part associated with the energy supply situation.

I get a lot of questions about the gas shortage, but I have yet to get my first one on the shortage of electricity. I hear gas shortage — but never shortage of electricity. I see articles like this one, headlined "Gas Remains Short, But Not Electricity." It is this sort of thing that in less polite circles causes my language to become what some might call "colorful."

I see bill stuffers that turn-off gas appliance customers, like this one used by an Eastern company which threatens to shut off customers' gas meters. What a way to run a railroad!

GAS FOR ELECTRICITY

I see reports like this one in which the President of St. Joseph Light and Power Company, a combination utility, describes the success of his electric heating promotions, and in the same breath brags about using clean-burning gas for 90 percent of his electric generation fuel requirements.

I see companies like VEPCO, another combination company, promoting electric heating, using as the basis for their sales pitch the thought that fossil fuels are going to be more expensive and in short supply, so buy electric today in order to be assured of ample energy at a reasonable price in the future. Is this an objective approach? Not only "No," but "Hell, no."

In short, I see the electric utilities doing one hell of a marketing job — even to the point of being an unconscionable job. I see only a few gas companies — PG&E, Minnegasco, Southern Cal, Lone Star, Arkla, Atlanta Gas, Oklahoma Natural and many of the New England utilities are examples — but there are others — taking positive, constructive, competitive marketing actions — actions fairly reflecting the nature of the overall energy situation.

With all that is being written and said on the energy problem, the fundamental fact that all forms of energy, not just gas, are in short supply has not been absorbed by John Q. Public. Our customers, actual and potential, are basing purchase decisions on mistaken fact. They have been conditioned to think gas shortage — not electric shortage, or energy shortage. To a large extent, this conditioning has been accomplished by aggressive electric utility promotion. They deserve the credit for their success. They are still working the street.

This misconception of fundamental fact will be corrected in time. The true nature of the situation will disclose itself. But should we wait, and continue to lose a share of the market — or should we give the

truth a push? My answer to that question must be obvious to you.

I predict that you will see more and more the federal and state regulatory bodies concentrating on the need to conserve energy. Conservation is becoming a key word. The State of New York and California are engaged in developing conservation programs, and may provide requirements having conservation objectives. Other states will follow, as will the federal government.

MORE REGULATION

Consider what this may mean to us. What a tremendous marketing advantage emphasis on conservation of primary fuel resources will give us. What better way is there to stretch our primary fuel resources to the limit than by promoting the use of gas for space heating, cooking, water heating and clothes drying. I might, however, suggest that this inherent efficiency is not enough. We must prepare for the change to a conservation-conscious market by developing products having still greater efficiency — by supporting all methods of energy conservation — and by discouraging and working against wasteful uses and practices, whatever the form of energy involved.

I know many of you — with good reason — reject the concept of end-use controls. If there were any other way of solving the problem, no doubt we would all prefer it. If there were another alternative, I most definitely would prefer it. But the fact is, or at least I believe it to be, that no alternative is available. It takes regulation to distribute a shortage. There is no other way.

So, I see as a major factor of change in the market the regulatory actions that are in the process of development which will redirect gas from low-form uses to high-form uses. The pattern is becoming clear. Residential and commercial uses for gas will enjoy a priority over other uses. Small users will have rights superior to those of large users. The trend is definitely away from the use of gas as a boiler fuel. High priority industrial applications will be distinguished from low priority, with process and feed-stock uses enjoying a somewhat higher priority than other industrial uses.

This is the shape of the market of tomorrow and should point to logical objectives for our industry's marketing efforts.

HIGH FORM MARKET

I would even suggest that the utilities who do not prepare for the change I see coming may see some of their gas being directed, for national policy reasons, to *other* utilities in *other* regions who have wisely developed a high-form market structure in anticipation of future regulatory policy. The continued development of low-form uses — and some of you are still building industrial and boiler loads — may lead to your having the gas serving that load taken away, and made available to others who have shifted their effort, and adjusted their promotions as necessary, to build a high-form market.

That briefly is the changing nature of the market as seen from where I sit. Some of you may disagree but I suggest that this could also be a way you might want to look at the market from where you sit. If so, there is a basis for rebuilding the close and cooperative relationship we enjoyed — and under which we prospered — in years past.

I would like to see us — together — move in toward more positive marketing. Nothing would seem more appropriate to me than a rebuilding of your marketing staffs, many of which have been dismantled or dismembered. I think there is a job to be done in which we have a mutual interest and the best way to define that job is to suggest the most important marketing objectives that I think need addressing.

POSITIVE MARKETING

FIRST, let's do all we can to get John Q. Public to understand the correct nature of the energy problem. Let's work against an unfounded anti-gas bias. This is important to all of our market areas, including the replacement and new construction residential markets. There is no need to sacrifice either.

SECONDLY, we need to influence those who are the regulators. They need to be better informed. It doesn't make sense in my book to accept bans on all promotional activities when there are some promotional activities which are clearly in the public interest in this era of energy shortage. A certain discreteness of regulation is required, and we should promote an understanding of this requirement.

THIRDLY, we should not let go unanswered the misleading and sometimes deceptive promotional activities of the electric industry. We are not anti-electric, and we should never take an anti-electric position. But we should demand a fair shake and insist on objectivity.

FOURTHLY, we should start actively promoting conservation. Conservation is a concept which we will see flourish — especially as the need to conserve becomes better understood. The opportunities here are very great, indeed. We should take advantage of them, particularly when doing so supports the national need to conserve, as well as our own self-interests.

FIFTHLY, we should take the "negativism" out of our promotions. For example, "curtailment" is a negative word. It develops the thought that something is being lost, taken away. But not so, at least for the residential and commercial customers who stand to benefit, not lose, from the distribution plans placed in effect during temporary shortages. For high-form users, the plans are consumer protection plans, if you will, plans which should inspire confidence rather than scare. "Curtailment" is a bad word.

AND FINALLY, we should anticipate the changes new regulatory or end-use policies will affect in the composition and structure of the market, and promote accordingly.

In my judgment, we have a wonderful future. I only hope we can be sufficiently foresighted to bring it into being. I think we can.

Just one closing thought. Why should I, a manufacturer of gas and electric appliances, give a hoot? I can make as much on an electric range as I can on a gas range. I can meet my corporate responsibilities by going in either direction and, if necessary, I will. But the answer to the question is quite simple. I think the route we are going is fundamentally wrong, and I would rather see it righted.

Thank you.

GAMA

A Vital Name In The Gas Industry

As a representative of manufacturers of nearly all of the residential, commercial and industrial gas appliances and equipment produced in the United States, the Gas Appliance Manufacturers Association has become a leading spokesman in the natural gas industry and a strong force working toward solutions to the nation's energy crisis.

Its membership of more than 500 also includes makers of equipment used in the production, transmission and distribution of natural and synthetic gas, consequently its unique representation of this broad segment of the American industry has made it the forceful organization it is.

GAMA's annual meeting recently in Boca Raton, Florida, touched on many areas of activity, indicating the interests of the membership. General session speakers discussed energy supplies, occupational safety and health, product safety, advertising and marketing, governmental affairs, and national economics. There were also 19 product division sessions scheduled through the three-day meeting at which members discussed a variety of topics including standards, statistics, consumer affairs, pending national and state legislation, and promotions.

As a national trade association GAMA has a proud history. More than 50 years ago it originated as the Manufacturers' Section of the American Gas Association. In 1935 the manufacturers organized as an independent trade association under the name of Association of Gas Appliance and Equipment Manufacturers. That designation was simplified in 1946 to Gas Appliance Manufacturers Association.

In 1967 GAMA acquired the Institute of Appliance Manufacturers, whose history dates back to 1872, giving GAMA a background of more than 100 years in the appliance and equipment industry.

The association is equipped to deal — and over the years has in fact dealt — with practically every problem its member firms are likely to face in the future, from product development through manufacturing, distribution, transportation, promotion, advertising, sales and service.

The year 1970 marked a turning point in the activities of GAMA. After 35 years of being headquartered in New York City, GAMA consolidated its offices in Arlington, Virginia. The association also acquired a new top full-time executive, Harry Paynter.

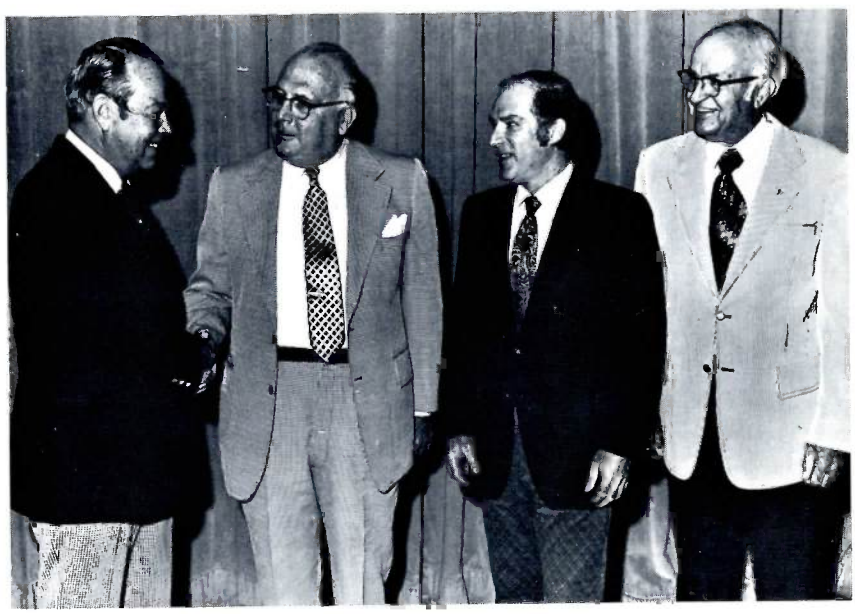
Gradually, but purposefully, GAMA underwent major changes in the years that followed. Today the association is more responsive to its members' needs and more effective in serving the industry than it ever has been. At the forefront of these have been the problems caused by the full-supply/demand imbalance. GAMA has provided a clear and effective voice in urging that every source of increased quantities of energy be aggressively pursued and that reasonable rules and actions be applied when curtailment of available supplies have to be enforced.

GAMA is administered by President Paynter and a professional staff who receive guidance and policy direction from the Board of Directors and its Executive Committee. The Board is composed of current officers, and chairmen of the product divisions, 10 past presidents and six directors-at-large.

Glennon J. Doyle, president of the Caloric Corporation, recently succeeded Arthur T. Woerthwein, group vice president of International Telephone and Telegraph Corporation, as the organization's board chairman. The GAMA Board voted to realign the executive structure of the association and changed the title of the elected head from president to chairman.

Elected with Mr. Doyle were: Joseph W. Adams, vice president of Bettcher Manufacturing Company, Cleveland, as GAMA first vice chairman; David W. Hoppock, pres-

Official greetings are given David W. Hoppock (left) on his election as second vice chairman of the Gas Appliance Manufacturers Association. Extending the welcome is GAMA Chairman Glennon J. Doyle. Joining in the well-wishing are Joseph W. Adams, first vice chairman, and Robert H. Norris (right), who was re-elected treasurer of the national trade group.



ident of Bryant Air Conditioning Company, Indianapolis, second vice chairman, and Robert H. Norris of Dearborn Stove Company, Dallas, who was re-elected to his fourth term as treasurer.

Elected to two year terms as directors-at-large were: William N. Austin, president of Gaffers & Sattler, Inc., a subsidiary of Magic Chef, Inc., Los Angeles; Richard E. Miller, president of the Flow Control Division, Utility and Consumer Products Group of Rockwell International, Pittsburgh, and Everett S. Todd, vice president and general manager of the American Appliance Manufacturing Corp., Santa Monica. Miller and Todd were re-elected and so are now in their second terms as directors-at-large; it is a first term for Austin.

Members of the GAMA Board actively participate in the affairs of the association through a number of committees. Currently reporting to the Board are the Consumer Affairs Board, Gas Availability and Supply Committee, Legislative Committee, Technical Committee on Mobile and Modular Homes and Recreational Vehicles, Standards Advisory Committee, and Forward Planning Committee.

While the administrative work of the association is carried on largely by its full-time professional staff, much of the detailed work is guided by more than 200 committees, each of which has specific responsibilities and objectives. Committees are made up of member company representatives who volunteer their time and talents for the benefit of the entire industry and the individual members.

An example of the activities of a member-company representative is William E. Murphy, executive vice president at Mueller Co. Mr. Murphy was elected the first chairman of the General Equipment Division, (GED) which he helped form in 1967. He currently serves as a member of the executive committee of that division, which consists of manufacturers of equipment used in the production, transmission, and distribution of natural and synthetic gas.

Relating to the GED activity, he is the manufacturer advisor to the Operating and Engineering Services Managing Committee of the American Gas Association. In addition, Mr. Murphy is a director-at-large on the GAMA Board of Directors, and a member of the Gas Availability and Supply Committee and Legislative Committee. He also serves as a member of the Joint Task Force on Energy Legislation.

BILL MURPHY

HARRY A. PAYNTER

The organization recognizes that its principal purposes for existence are to serve and represent its members and the industry which they supply. The association has established a fine track record in both of these areas, and is dedicated to expanding these benefits by adding well-conceived and necessary programs.

In fulfilling its responsibilities, GAMA serves as:

A forum for solving common problems

A voice in government

A contact with consumers and consumer groups

Representation before legislative bodies

A force for product improvement

A source for marketing statistics

A means of product promotion and industry publicity

A link to groups with common interests

Professional representation before freight rate-making bodies

A sponsor of product exhibits before customer groups.

GAMA is divided into 20 product divisions, with each division considering its own problems independently, electing its own officers and, in many respects, being considered almost an association in itself. Each has its own separate committees which work with and through GAMA headquarters, under the direction of the division chairman.

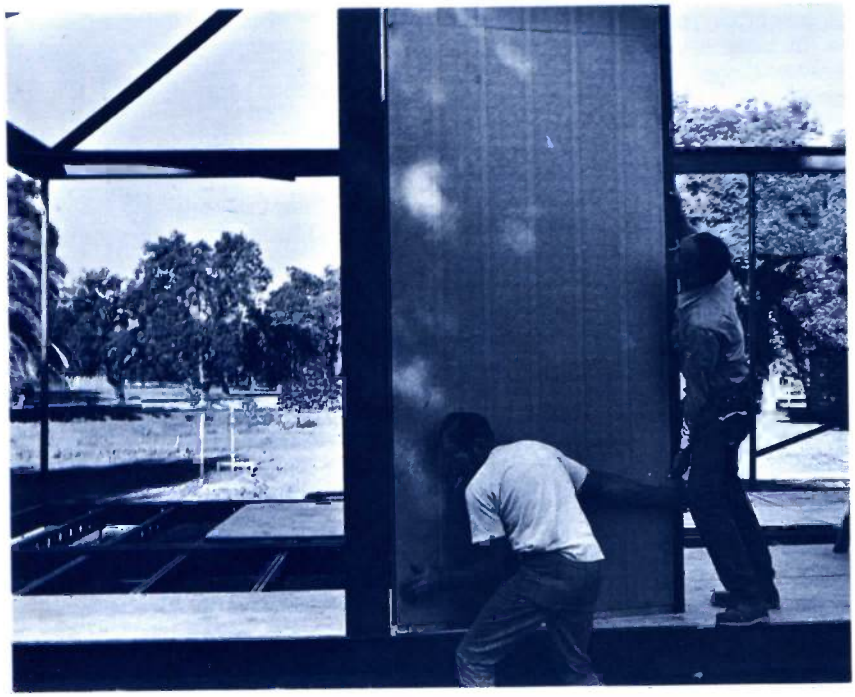
The headquarters staff of 30 full-time employees is headed by Mr. Paynter, who is in his fourth year with the organization. Recently his title was changed from managing director to president in order to increase his effectiveness as the administrative head of the national trade association. Paynter was a career officer in the U.S. Air Force and upon retirement held the rank of colonel.

Second-in-command on the staff is Administrative Director Edward R. Martin, a 37-year veteran of the industry, who also serves as secretary of the association.

Others on the headquarters senior staff are Adrian P. Conway, director of public relations and promotion; Pauline B. Dunckel, director of consumer services; John P. Langmead, director of technical services; William H. Loving, associate director of technical services; Wynne A. Stevens, Jr., director of legislative services and Vincent W. Veno, director of member services.

Wife Can Literally —

RE-ARRANGE THE HOUSE



Many times as you walk into the living room you find the furniture has all been moved by your wife. She released that pent-up anxiety by moving the couch away from the window and now the light is poor for reading. Be prepared! It may get worse.

According to a study by the Stanford Research Institute, Menlo Park, California, the little woman may be able to re-arrange the entire living room — walls and all in the home of the future.

Of course, few people need to move their living rooms, but the ability to assemble, disassemble and then reassemble a building economically has obvious advantages for land use, urban renewal and wives who like to redecorate.

Although the concept is not in actual use today, a prototype system, using a somewhat less flexible design, has been tried out, successfully in the New Town of Jonathan, Minnesota. Obviously such a bold idea is bound to meet with some initial resistance, however, the proponents of the flexible dwel-

To build a flexible dwelling, a steel frame is erected (upper left) and then sections of the walls (lower left) are slid into place. Kitchens in the flexible dwelling are componentized too, allowing standard appliances to be modified slightly and hung on a support structure (above).

ling believe it could spread throughout the housing industry within 20 years.

The house is built by hanging standard components on a steel frame in a variety of combinations. The components include wall, roof and floor sections and packages of wiring and plumbing elements. Standard fasteners attached to each component allow rapid assembly and disassembly of the entire house. Since a few components can be combined in many different ways, each house can be designed to reflect the needs and tastes of its occupants.

The design technique could be used to construct any type of building from a single-family dwelling to a high-rise office building. It could be adapted to any architectural style, from Victorian brownstone to contemporary, and could be used with any type of building materials.

A dwelling constructed by this technique could be modified over time to meet the occupants' changing needs. Rooms could be added or removed, and interior furnishings such as wall sections could be changed, repaired or upgraded. If desired the entire structure could be changed. For example, an English Tudor could be converted to a Colonial style, or a house could be replaced by a commercial structure if the zoning permitted.

The principal difference between a flexible building and a conventional structure is not that the flexible building is componentized. Many commercial buildings are componentized, too. But in a flexible building these components are designed so that they can be economically disassembled as well as assembled.

This ease of disassembly allows the flexible home, combined with the fact that it can be individualized to meet the needs of each set of occupants, gives it an advantage over other factory housing. The disassembly process makes the building portable, allowing it to be re-built on another site. Unlike other types of factory housing, it offers a variety of options as to whether the components are assembled in the factory or on site and how the houses are distributed.

The flexibility of the new concept allows for modifications in the structure to comply with local building codes and the problem of local resistance by labor could be avoided since its method of construction fits in with standard procedures.

According to Richard L. Martin, a senior housing economist at the Institute who has explored both the technological and the economic aspects of the nation's housing needs, a system of flexible housing could be introduced in today's business climate under existing real estate practices.

Many parts and pieces already exist. Factory-built doors and windows, for example are standard throughout the building industry, and componentized bathrooms are coming into use. Steel framing, relocatable partitions and removable floor panels are off-the-shelf items in commercial construction.

The local home builder could introduce flexible construction today by subcontracting existing components from both commercial and housing suppliers and having on-site crews build such additional components as prepackaged plumbing and sectional roofing.

Mr. Martin developed this flexible dwelling concept around which the housing industry and building technology could be brought together to supply the needs of the householder and change as quickly as his needs.

"JUMBO LNG Plants Seen Multiplying by 1980" . . . "Soviets-U.S. Near Gas Deal" . . . "U.S. Firms Plan Substitute Natural Gas Plants" . . "One Of the Most Expensive Ships Ever Built Battles Rough Seas to Reach the U.S. East Coast from Algeria." . . . "Shipbuilder Plans To Expand and Hire."

Despite all of these news headlines announcing varied efforts to add to natural gas supplies, there are certain sections of the country experiencing shortages of natural gas and other forms of energy. Industrial expansion in some sections is being delayed because of needs for more gas. Commercial customers cannot get all they want. In a few places, gas companies are unable to take on new residential customers.

The rainbow design on Boston Gas Company's liquefied natural gas tank overlooking Dorchester Bay in Boston is acclaimed as the world's largest work of art since the Pyramids.

Cold Fuel Has Hot Future

The President tells the nation a sharply accelerated cooperative effort between government and industry is necessary to provide adequate energy for the country.

Energy supply generates new attention almost every day . . . from a multiplicity of congressional hearings to a flood of telephone inquiries to the public utilities.

The facts are clear. Essential fuels are being consumed at a tremendous rate. New sources are needed to prevent a depressing effect on the whole economy and setback our rising living standards.

In the case of gas, this shortage is not due to lack of reserves in the ground. The natural gas industry has developed a seven-point plan aimed at getting them to customers. The plan includes the allowance of higher prices to producers to give them an incentive to look for and develop new sources, and leasing public land for exploration.

The industry knows that alone it cannot take all the steps needed to meet ever increasing demand. It is nevertheless conducting a more vigorous, and more widely based, campaign than ever before to seek out new supplies. These steps include an unprecedented degree of involvement by the gas utilities in the search for gas in the United States; plans to build a pipeline from the North Slope of Alaska, which has been called the most expensive private construction job in history; the most costly research program ever mounted by the American Gas Association to help convert America's massive reserves of coal into a substitute natural gas; and exploration at depths underground and at distances out to sea until recently thought impossible.

Many of these projects are at the frontiers of technology. So too the development of liquefied natural gas has required a leap in technology.

Liquefied natural gas (LNG) means exactly what it says, the conversion of gas into a liquid at -260 degrees Fahrenheit. At this temperature it shrinks to one-six hundredth of its volume as a gas, so that huge amounts can be transported and stored economically. Traditionally LNG has been stored for use on very cold days when demand for gas is at its peak. Now with expanding needs for energy, it is being brought in for normal year-round usage.

World trade is growing in this new international commodity with actual or potential shipments criss-

A number of these specially designed tankers already are in service transporting natural gas in liquefied form at minus 260 degrees Fahrenheit. (Photo courtesy of Brooklyn Union Gas Company.)

LNG arrives in the United States after a trans-ocean voyage. Massive investments have been made in facilities designed to handle the fuel when it is loaded and unloaded around the world. (Photo courtesy of Boston Gas Company.)

crossing the world from the Mediterranean to the Persian Gulf, the Soviet Union, Venezuela, and even Alaska to the major industrial nations like Japan, France and the United States.

The advantage to the American gas user is clear. LNG provides a new source for heating homes, fueling factories, and keeping restaurant chefs happy. It also brings in the cleanest of all major fuels to help clean up the environment.

All aspects of the LNG program seem huge. Consider the projected El Paso Natural Gas Co. venture in which Algerian gas will be imported at a rate of 1-billion cubic feet a day for 25 years to help fill the base load needs of utilities in the Northeast, South and Midwest. This is equivalent to twice the average daily needs of New York City.

The project involves an investment of 1.7 billion dollars which would buy:

1. A gas pipeline, a plant to refrigerate the gas into a liquid, and a tanker terminal in Algeria.
2. Nine massive tankers to carry the LNG.
3. Two U.S. terminals to receive the liquid, store it and ultimately convert it back into gas.
4. Pipelines to carry the product to the main transmission lines of the three U.S. companies operating the U.S. terminals which receive the LNG from El Paso.

The U.S. shipbuilding industry, which has been taking a beating in recent years, now envisions bulging order books with contracts to build a fleet of liquefied natural gas tankers.

Robert J. Blackwell, assistant commerce secretary for maritime affairs, recently predicted that at least nine LNG tankers will be built in U.S. shipyards within a short period of time. Looking further ahead a world LNG fleet of 80 to 100 vessels will be needed by 1985.

LNG tankers have come a long way since the first 2,000 ton "floating thermos bottle" was designed in 1959 to go from Louisiana to the Thames Estuary.

The larger ships today figure to be more than 900 feet long with five or six rectangular or spherical aluminum, or nickel steel tanks 12 stories high.

The estimated cost of a ship to carry a capacity of about 5-million cubic feet of liquid gas — or about 3-billion cubic feet of gas — would be between $90 million to $100 million. (One tank load could therefore supply the city of Washington D.C. for a week to 10 days.)

In realizing that the U.S. has its best chance in decades to regain its place as a maritime trading power, the Maritime Administration recently approved contracts of more than $566 million for domestic construction of LNG ships.

Thus, the U.S. has moved into solid competition with foreign shipyards where 16 of the 17 LNG vessels now afloat were constructed.

While it will cost one-third more to build an LNG ship domestically, the U.S. has certain advantages over foreign yards. These include, (1) Some European yards are backlogged to 1977; (2) Costs for other nation's shipbuilders are being driven upward; (3) U.S. devaluation helped increase competitiveness.

While no estimate has been made of the number of jobs that will be made available, two shipbuilding corporations assigned contracts, General Dynamics and Tenneco, have announced they expect to hire 2,500 to 3,500 new employees.

Major hurdles remain in the way of construction of this complicated and highly expensive LNG system. Primarily, there are the enormous receiving terminals that must have the capability to unload the tankers, store the LNG and dispatch it either as a liquid or vaporized gas for distribution.

A project which includes the terminal, shipping and capital equipment, and the actual purchase and sale of the gas involved represents a total cost in excess of $1 billion.

LNG does have problems — among them the burden it will place on the balance of payments, the high cost of such gas and the opposition in some places by environmentalists. None of these is simple. For example, it is true that high sums will go abroad, but then the demand of gas exporters for American products will rise too and the foreign exchange will be available for them to make such purchases. LNG is high cost but then so is every other source of unconventional gas — and no one denies they will be needed. The environmentalists' argument against the locating of terminals could delay projects seriously, but the gas industry returns always to the point that only natural gas can immediately make a significant contribution to improving the environment of our cities.

Finally, there is the anxiety about becoming too dependent on foreign sources. Those supporting the LNG program respond by pointing out that by 1980 LNG will account for no more than 10 per cent of the total U.S. demand for gas — a vital proportion but not enough it would seem to subject the economy to blackmail.

Moreover, the wide search for LNG projects stretching from Algeria to Siberia, Borneo to Australia, reduces the risk of being cut off from supplies.

WHAT'S NEW and NEWS FROM MUELLER

SALES AREA SWITCHES, RETIREMENTS ANNOUNCED

Three new assignments in field sales territories have been made as the result of the pending retirement of two sales representatives.

Joe R. Haines, who has been in the Mueller Co. sales training program for the last year, will work with Ken Tohill until Ken retires Oct. 14. Haines will then succeed Tohill as the Mueller sales representative in South Dakota, Nebraska and two tiers of counties in western Iowa.

Sales Trainee William R. Koester will succeed Richard F. Kahl as the Mueller representative in the western half of Pennsylvania. Kahl will be transferring to Michigan to take the place of W. R. (Bill) Augustine who plans to retire Nov. 30.

Tohill started with Mueller Co. in 1951 as a sales representative and has spent more than 20 years calling on Mueller customers in the Iowa, Nebraska, Missouri and South Dakota area. Haines, born and reared in Iowa, worked for the Iowa Power & Light Co. in Des Moines for four years before joining Mueller Co. a year ago.

Augustine, a native of Decatur, has spent most of the time since joining Mueller in 1948 as sales representatives in Michigan. Kahl started with Mueller Co. in 1962 as a sales trainee following his graduation from Eureka College, Eureka, Illinois. Since September of 1963 he has been the Mueller representative in western Pennsylvania, headquartered in Pittsburgh.

Koester entered the company's sales training program in July of 1972, following his graduation from Southern Illinois University where he received a bachelor's degree in industrial technology.

DEL PARKS RETIRES AFTER MORE THAN 37 YEARS AT MUELLER

A. D. (Del) Parks, general sales manager at Mueller Co., retired about the middle of July, completing more than 37 years with the company.

DEL PARKS

His experience and knowledge will still be available to Mueller Co. through Del's retention as a sales consultant.

Parks, born and reared in Central Illinois, started at Mueller Co. in the plant right out of high school. He worked as a machine operator until he entered the Air Force in March, 1941. After nearly five years in service, he returned to Mueller Co. and entered the sales training program. His first sales assignment was in the Carolinas in 1947. After about a year, Parks was assigned to a territory which included Maryland, Virginia and part of Pennsylvania. From 1953 to 1957 he was manager of the Southern Sales Section with responsibility for sales activities in Maryland, Virginia, Georgia, Florida, North and South Carolina, Mississippi, Alabama and Tennessee.

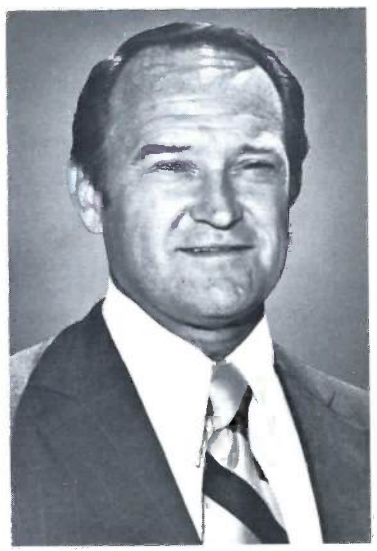
In 1957 he moved from Atlanta, Georgia, back to Decatur to become manager of outside sales for Mueller Co. For the last eight years he has been general sales manager for Mueller Co. and responsible for all the company's outside sales activities.

Del is well-known and highly regarded by friends, customers and competitors. His efforts and diligence for many trade associations and organizations, as well as his hard work for Mueller Co., have made him a welcome asset to the water and gas industries.

WARREN CRAWFORD NAMED SALES MANAGER

Warren D. Crawford, Mueller Co.'s Western District sales manager, has been named general sales manager, succeeding A. D. Parks, who retired July 14.

Crawford, originally from Atlanta, Georgia, started with Mueller Co. in 1952 as a sales representative in the Houston, Texas, area. Five years later he was named manager of the Western District and was responsible for the company's outside sales activities in California, Wash-



WARREN CRAWFORD

ington, Oregon, Nevada, Arizona, Idaho and Utah.

He has been an active member of the American Gas Association and the American Water Works Association, and served as chairman for committees of both the Pacific Coast Gas Association and the California Section, AWWA.

Warren and his wife Helen have been living in West Covina, California, since 1957.

MUELLER V.P. RECEIVES ENGINEERING HONOR

W. R. Leopold, vice president-engineering at Mueller Co., recently was elected to the grade of Fellow by the American Society of Mechanical Engineers.

BILL LEOPOLD

This honor is conferred upon a member who has made significant achievements in the field of engineering and has had not less than 10 years of active practice since his first corporate membership in the Society.

According to the award, each recipient "must have made outstanding and recognized contributions in engineering administration or the advancement of the science of engineering, or teaching of engineering — attainments beyond those expected of the average engineer." ASME is a professional society of about 70,000 members organized to promote the arts and science in the field of mechanical engineering.

Since joining Mueller Co. in 1956 as director of engineering, more than 20 patents have been issued to Leopold for devices used in the safe handling and control of natural gas and potable water. His technical papers and articles related to these two industries have been published in this country and abroad.

Leopold was honored also by being named a member of Pi Tau Sigma, national honorary mechanical engineering fraternity. The award was made at the annual initiation and awards banquet of the University of Illinois Chapter, Urbana, Illinois.

Most recently, Leopold was initiated into Tau Beta Pi, national engineering honorary, by the chapter at Rose-Hulman Institute of Technology, Terre Haute, Indiana.

Originally from Newark, New Jersey, Leopold received his Bachelor of Science Degree in Mechanical Engineering from the Illinois Institute of Technology, Chicago, and his Master of Science Degree in Mechanical Engineering from Stevens Institute of Technology, Hoboken, New Jersey.

Strictly *Off the Record*

"My dears," gushed the elderly matron at a bridge party, "my resolution this year is never to repeat gossip, so for goodness sake, listen carefully the first time."

Another sign of middle age: When the phone rings on Saturday night and you hope it isn't for you.

If you think old soldiers just fade away, try getting into your old service uniform.

A young man approached the counter where greeting cards were sold. "Have you anything sentimental?"

"Here's a lovely one," said the salesgirl. " 'To the only girl I ever loved.' "

"That's fine," said the young man. "I'll take four."

"I'm supposed to tell you that there will be a small Parent-Teachers meeting tomorrow night," explained the small boy to his dad.

"Well, if it's going to be a small one, do I have to go?" asked the father.

"Oh, yes," replied the son. "It's just you, me, the teacher and the principal."

"My husband would never chase after another woman," said the lady.

"He's too fine, too decent . . . too old!"

Mother: "When that mean little boy threw stones at you why didn't you come and tell me instead of throwing stones back at him?"

Son: "What good would it have done to tell you? You'd have missed him, too."

A panic-stricken man phoned the fire department and shouted that his house was on fire.

"How do we get there?" the fireman asked.

"Don't you have your red truck any more?" the man asked.

For more than an hour the stewardess had borne the demands of an obnoxious passenger on a transcontinental flight. She had no sooner passed out menus than his call light flashed and he gave his dinner order. To which the stewardess responded sweetly, "Thank you, sir. Will that be to take out?"

Two old-timers were speaking of the good old days with affection and current times with disdain when one exclaimed: "This is the dang-busted depression I've ever seen. Everybody's working and everybody's broke. At least we didn't have to work in the last one."

It's strange that so many people brag about being average. After all, average is the worst of the good and the best of the bad.

Now from Mueller®

Stop bell-joint leaks in cast iron mains with CARSON® BELL-JOINT REPAIR CLAMPS

All ductile iron for total compatibility with cast iron

Carson Bell-Joint Repair Clamps, a proven line now available from Mueller, provide a fast and economical way to stop leaks in bell-joints in old cast iron pipe lines and distribution mains.

Quick and easy to install, an unskilled workman can install even the largest size Carson clamp without interruption of service using only a ratchet wrench.

A specially formulated, highly resilient Neopress® gasket is confined between the front ring of the clamp and the joint of the bell, providing a leak-tight seal with high resistance to subsequent cold flow or creep. Adjustable ring segments permit the clamp to fit tightly around both the pipe and the bell, even on old, irregular surfaces. Properly adjusted, Carson clamps provide uniform 360° compression of the gasket insuring a positive seal.

All metal components of Carson Clamps are ductile iron, assuring electrolytic compatibility with cast iron pipe. Accelerated electrolysis test results confirm the minimized galvanic corrosion with Carson Bell-Joint Clamps.

To find out more about renewing your old cast iron systems, contact your Mueller Representative.

MUELLER CO.
DECATUR, ILL.

FACTORIES AT: DECATUR, CHATTANOOGA, BREA (LOS ANGELES), MUELLER, LIMITED, SARNIA, CANADA

serving the water and gas industries since 1857