MUELLER
Record
FEBRUARY-MARCH • 1960

"Dobbin -- do you see what I see?"

(YOU can see it on Page 4)

Recording Our Thoughts

Congratulations are in order for several employees of Gulf States Utilities Company for recent promotions. Mr. Harold E. Brown has been named executive in charge of the company's Baton Rouge division. He was formerly division manager. Mr. R. O. Wheeler, operating superintendent of the gas department, has been named division manager. Other changes announced by Gulf States include the promotion of J. C. Spengler to operating superintendent of the gas department, and F. L. Marston to succeed Spengler as distribution supervisor.

Bernard Kaapcke, special feature editor of the American Gas Association's public information staff for the past three years, has been named editor of the A.G.A. MONTHLY. He succeeds Walter H. Dyer, who resigned January 1 to join the public relations staff of D'Arcy Advertising Co., New York City.

Most of you will remember Walt Dyer as the former editor of the MUELLER RECORD. Walt left this position in March, 1957, to join A.G.A., and was succeeded by this writer. We all join in wishing him continued success.

GAS RATE FUNDAMENTALS, the first definitive book devoted exclusively to gas industry rate fundamentals and practices, is being published this month by the American Gas Association. Prepared by A.G.A.'s Rate Committee, the new, 350-page volume represents a collection of papers written by rate specialists in all segments of the gas industry and edited by the Association's Subcommittee on Training of Rate Men.

Copies of GAS RATE FUNDAMENTALS (Cat. No. 56-S) are available at $7.00 each, and may be obtained from the Order & Billing Department, American Gas Association, 420 Lexington Avenue, New York 17, New York.

The MUELLER RECORD is pleased to begin, in this issue, a series of original cartoons prepared especially for us by W. A. Fischborn of Miami Beach, Florida. Mr. Fischborn continues to insist that he is just a beginner. If such is the case, it is plain to see, by his cartoons, that he has an inherent ability for this work. We hope you like the cartoons.

Have you notified us of any recent change of address? We are quite anxious to keep our mailing list up-to-date. Many of you took advantage of our recent direct-mail effort to improve our list. We thank those persons, and urge others to keep us informed of any changes. Also, if you know of anyone who would be interested in receiving the RECORD, drop us a line. Thank you.

Our sincere thanks to Mr. Frank Kuenstler, our sales representative who is initially responsible for the Abilene story, which appears in this issue. Many of you have asked where RECORD stories come from. In many cases, our men in the field provide this writer with the nucleus of a good story, and development proceeds from that point.

Our thanks also to Mr. Henry Nabers, Abilene's City Manager, for his co-operation in making this story possible.

MUELLER RECORD

FEBRUARY-MARCH • 1960

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★

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OUR COVER *this month discloses the general reaction of many people to the happenings in downtown Abilene, Texas, during recent months. The best possible caption would read "Old Abilene Meets New Abilene."*

Contents

WANTED

MORE

AMERICAN CITIES

LIKE

ABILENE

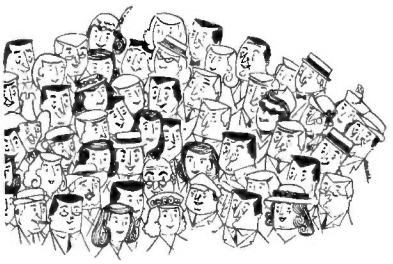
THE City of Abilene, Texas is a town situated in the central area of the plains of West Texas; its history is parallel to so many towns in the West and Southwest, inasmuch as it came into existence as the railroads and population of this nation pushed westward. Abilene's history is similar to the other rural communities only until January, 1959. Since that time, the progressive activities of this West Texas town have hardly been paralleled.

In 1940, Abilene had a population of twenty-six thousand. In 1960 the population is approximately eighty-two thousand. This accelerated growth, of course, caused many growing pains. As the population continued to increase, the pains became more and more acute, until such time as they developed into cancerous blight for the downtown area; this blight took the form of narrow streets, inadequate storm drainage, high curbs, substandard water distribution network, inadequate sanitary sewers, and other facilities that are normally situated in a downtown area.

The business located in the central downtown district felt more each year the effects of this blight, since their customers were being kept out of the downtown area due to a lack of conveniences. As this condition threatened to extend its tentacles outward from the central business district, the alert, agressive civic leaders met, recognized and acknowledged their problems. Committees were formed, trips were made, and much thought was given to remedial measures that could be effected. From these various meetings, a certain plan was developed whereby the people of the City of Abilene, particularly those property owners in the downtown business district, did seize their own bootstraps and pull themselves up to the standard they wished.

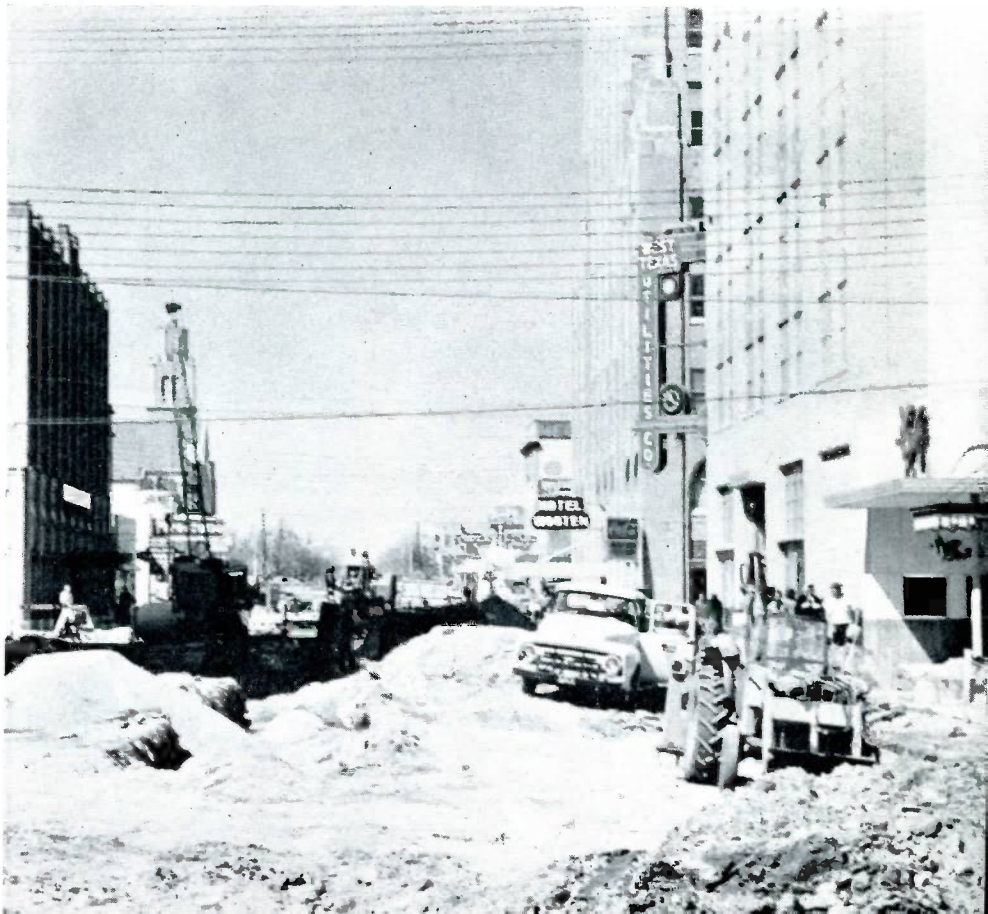
A canine resident of Abilene, Texas, says goodbye to one silent sentinel and hello to a new one, as the widening of Cypress Street progresses. Old hydrants were replaced as part of the downtown renovation program.

Above, an iron "monster" rips into the earth to prepare the way for a large storm sewer. At the right, a vivid portrayal of progress amidst confusion.



The municipal government, represented by an alert, young City Manager, Henry B. Nabers, by this time was participating in a full-time role in planning and programming of the work desired. The plan was simple; merely go into the downtown area, remove all sidewalks, all curbs and gutters, all paving, and install a storm sewer system of adequate size; have the telephone company rework all their underground conduit, the gas company revamp their distribution mains, the Traffic Division of the City Government rework their traffic system, the Sewer Department to redesign and reinstall an adequate sewage collection system, the electrical power company revamp their electrical distribution system, and the Water Department completly redesign and reinstall an adequate distribution network with sufficient fire hydrants to provide adequate fire protection; and then, repave the streets, sidewalks, and gutters. This, simply stated, was the program.

At the right: shoppers in downtown Abilene were hard-pressed to enter front doors; but resourceful merchants staged "alley sales" to stimulate and maintain business. Above: tons of earth and old pavement were uprooted to make way for the smooth new thorofares in downtown Abilene.



Mr. Henry Nabers
City Manager

Of course, there were certain interesting ramifications relative to each of these changes. Streets had to remain open for traffic in order that the downtown merchants not be penalized during the construction period. The various private utility companies had to get appropriations from their parent offices to make expenditures of the magnitude that were being talked about. They also had to have farsighted plans for this work. There would be only approximately twenty to thirty-four different construction crews working at one time in this area, and they had to be kept out of each other's way in order that all work might proceed with a minimum of delay. There were many other small considerations of this type.

Several meetings were held with representatives of the various companies who would be involved in the construction of the downtown work. Schedules and plans were worked, reworked, and talked about, and all participants shook hands one Thursday afternoon at three o'clock and apologized to each other for what might happen in the ensuing months; but, they vowed they would cooperate to their utmost in every respect, which they did.

The spirit of the founders of this plan continued to be passed down the line to the designing engineers, to the construction people, and to the man on the street. Inconveniences, and there were many, were taken in good stride by all. Many businesses kept their doors open and continued to serve their customers, with the only access being the back door in the alley.

Much was written in the local paper to keep the entire public as informed as possible, and all news media informed the people nightly what streets would be open for traffic the next day and did their best to keep everyone in as good a humor as possible during the entire proceedings.

Sidewalk superintendents were in their hayday, for there was some type of construction that would interest anyone going on at some point in the downtown area. On one occasion, in one of the weekly meetings of the construction people, one foreman vowed that it would be necessary for him to place red caps on his men to prevent other foremen from diverting them to their projects. The crews, though every effort was made to keep them as far as possible from each other, on most occasions, were working adjacent to each other.

GOOD NEWS!

Water Superintendent Cleo C. Whitlock, Jr., kept on the move throughout the renovation, often directed his crews via radio-phone.

The Water and Sewer Department of the City of Abilene decided to make an effort to perform all of their own work on this downtown project without attempting to prepare plans and specifications and letting a contract. They felt that by using their own crews, they would have greater latitudes in coping with problems as they arose. This proved to be very accurate, and Mr. Cleo Whitlock, Water and Sewer Supt. did a most exceptional job in the eyes of all persons that worked on the project.

The water network in the downtown business district was a portion of the original system installed in the City, and there were many unknowns as to valve locations, sizes etc.

The Water Department began their work some two and a half weeks before any of the other construction crews started, for it was their job to lower, remove, reroute, and reinstall any and all mains and services that would in any manner detain or hamper the progress of the work. This water construction crew would be considered similar to the shock troops of the invading force. As they progressed down the streets changing services, relocating fire hydrants, and disrupting little or no service to the consumers, enthusiasm began to build up with John Q. Public. The Water Department feels the opportunity of the general public to observe their crews in operation has been one of the most successful public relations ventures they have ever attempted. Everyone in the downtown area had nothing but compliments for the diligence and systematic manner in which these men worked.

This project began in February and was totally completed by September 1—some seven months later. Appoximately $1,750,000.00 was the total expenditure for the project.

The citizens of Abilene now enter their downtown business district on wide, smooth paving; they park at a very slight angle (24 degrees), which allows the opening of all four doors of an automobile and does not interfere with parking in the adjacent parking space; and they shop leisurely in the downtown stores, which have embarked on still another phase of the downtown rejuvination—the remodeling of the exteriors and interiors of their stores. The downtown merchants now advertise as an organization and call their downtown district the newest and most complete shopping center in the City.

For a birds-eye view of the finished project, turn the page—the NEW ABILENE!

As a result of the new water distribution network of adequate size (two fire hydrants on every corner, individually valved) and other up-to-date improvements of this network, the City has been successful in reducing its fire insurance key rate by five cents per thousand, which will pay for the water installation in the next 25 years.

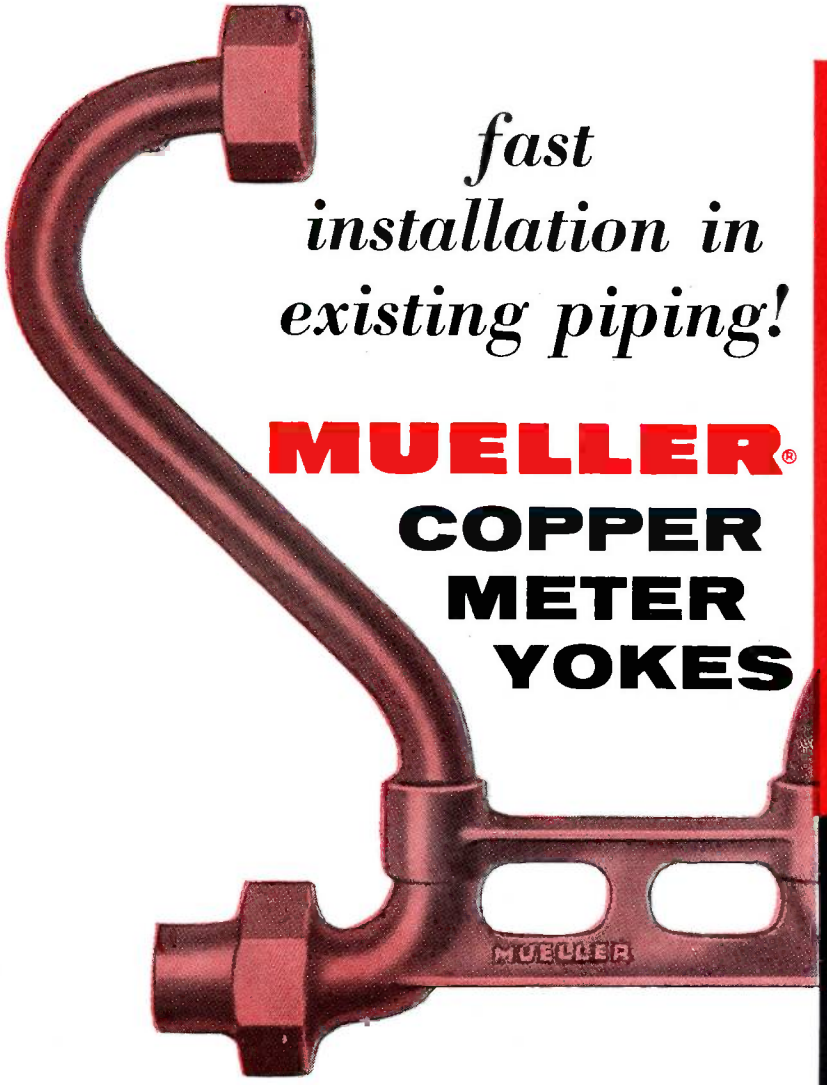
All in all, the renovation program of the City has stimulated a new and different kind of pride, not only among those who participated in this project directly, but also in the average citizen of the community. The Chamber of Commerce feels that their work has been greatly reduced since there are now eighty-two thousand enthusiastic salesmen for the City, any one of which is happy to expound at length on the progressive attitude and spirit of this community. City Manager Henry Nabers is called upon continuously for information regarding this project, and he beams with pride each time he relates this progressive plan and points out the pitfalls that must be avoided.

(Our sincere appreciation is extended to Mr. Henry B. Nabers, Abilene City Manager, and to Mr. Cleo Whitlock, Water and Sewer Superintendent, whose co-operation made this story possible.—Ed.)


HOLLY
LEVINES

fast installation in existing piping!

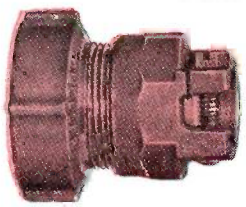
MUELLER® COPPER METER YOKES



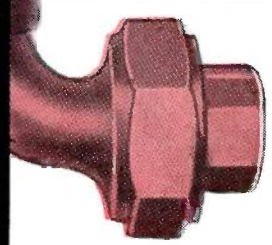
NEW!

Compression Coupling with locking nut for steel pipe (Regular nut available)

NEW!

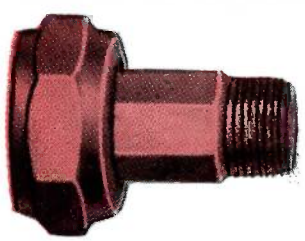


Compression Coupling with locking nut for copper pipe (Regular nut available)



Combination Tailpiece with inside I.P. Thread for steel pipe and flared connection for copper pipe.

Body Coupling Nut for copper pipe.



Tailpiece with outside I.P. Thread.

Now, Compression Couplings are available for Mueller Copper Meter Yokes with Multi-purpose Ends.

These new, time-saving couplings can be quickly installed in any existing piping without cutting threads or sweating joints. Simply cut a short section from the pipe, slip the compression couplings over the ends of the pipe, assemble the yoke to the couplings and tighten the compression coupling nuts.

Compression couplings can be furnished for steel pipe or copper pipe in both the regular compression nut design or the locking nut designs shown. The locking nut type positively prevents any movement of the yoke on the pipe and insures continuous electrical bonding of the service line.

The addition of these four new end couplings greatly increases the versatility of Mueller's proven Multi-purpose End Connections.

Write for complete information and specifications.

This simplified system of installing copper meter yokes is a typical result of the constant attention to detail and more than a century of experience in research, design, engineering and manufacturing that is an integral part of all Mueller fittings and equipment.

Copper Meter Yokes are just a portion of Mueller's complete system of quality-matched water distribution products.

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The DeHavilland DH-9, a single-engine two-passenger aircraft, flew the world's first regularly-scheduled air route—Amsterdam to London—in 1920. The route was initiated by KLM Royal Dutch Airline, the world's oldest airline. The pilot, without today's complex instrument panel, took his bearing from the landscape below.

For Your Reading Pleasure

WRONG WAY CORRIGAN—

And Why He Went That Way

Though most of us regard pilots and their planes with respect verging on awe, rising through the skies has its lighter side. The list of airmen who found themselves up in the air by no means begins or ends with Wrong Way Corrigan. Dirk J. Koeleman, Vice-President and General Manager for the U.S.A. of KLM Royal Dutch Airlines, has a particularly long string of amusing memories involving some of the most famous names in aviation history.

The earliest laugh recalled by Mr. Koeleman is on his own airline in its pioneer days. Though KLM was organized on October 7, 1919 —which makes it the oldest airline still operating under the same name—it literally could not get off the ground till the following spring, because early planes weren't built for winter weather.

With the opening of the Amsterdam-London run on May 17, 1920—first scheduled air route begun by an existing airline—some strange sights began puzzling the birds of the air and the man on the street. To advertise itself, KLM dressed its passengers in flying gear and drove them in an open car through the streets of Amsterdam. Right after starting the motor, the driver opened the exhaust, not only to attract the attention of the people in the streets, but to accustom his passengers to the noise they would have to endure in the plane. On arrival at Schiphol, KLM's famous airport, passengers were **carried** by husky porters to the plane, because the ground was generally so muddy.

Clambering into the open, canvas-covered biplane by means of a wooden step-ladder, the passengers adjusted goggles, life jackets and hot water bottles for their feet. And they were off: The compass on the instrument panel usually spun like a top, but the pilot didn't care—he took his bearings from storm-twisted trees, from a farmhouse where the wash was always hung out at the same time, and from the long straight Calais pier. Once across the Channel, he had only to follow the Dover-to-London railroad. But he had to be careful to fly directly above the track so that his passengers couldn't see the train and complain, as they once had when a KLM plane was caught in a headwind, that the train was faster!

In 1959 KLM carried 3,000 passengers and over 80 tons of freight and mail **daily;** in 1920 the average was one passenger and 150 pounds of cargo!

But aviation everywhere was groping upward in those days. In 1919, the same year that KLM was founded, came the first airmail survey of the United States, and in 1921 the dizzying speed of 200 mph was reached. Both feats were accomplished by Bert Acosta, high-living "bad boy of aviation" who supplied aeronauts with many a lively anecdote. Take the night he and Lloyd Bertaud, another pilot were arguing about the correct time. "Wait here and I'll find out!" yelled Acosta. Did he ask a neighbor or call the phone company? Not on your rudder! He hopped into an unlit plane and zoomed off an unlit runway at Long Island's Curtiss field, heading straight for Manhattan. Diving low enough to read the illuminated numbers on the Metropolitan Life Insurance Company's clock tower, he set his watch and flew back as blind as he'd come, greeting the astounded Bertaud with just two words: "It's 11:55." . . . . . .

But if Acosta could fly without bearings, Corrigan couldn't and thereby hangs one of aviation's favorite tales. How could a skilled flyer, even in a rather beat-up craft, set his course westward—from New York to Los Angeles and wind up in Dublin? It's easy when you take off from the runway and head east. Corrigan claims he did this to avoid crashing into the buildings at the left end of the field, intending to right himself when he climbed higher. At upper levels, he encountered fog and a compass that refused to work. He set his course by a second. After 26 hours in the air, Corrigan decided he'd like a look at Los Angeles, and saw—water! Then light—literal as well as figurative—dawned.

With the visibility better than it had been at the early stages of the flight, Corrigan saw that he'd mistaken the tail end of the compass for its needle throughout the trip. There was nothing to do but land in Dublin and meet a chuckling hierarchy of Irish officials from the customs man to the Prime Minister, Eamon de Valera.

Back home, funny but famous, he met the Secretary of State and dined with the Civil Aeronautics Authority (before the flight it had been all he could do to get his nine-year-old, thrice-remodeled plane a legal license). Gifts with a punch-line began pouring in. Abilene, Texas, gave him a watch whose hands ran backwards. In the parade at Atlanta, he rode backwards on the car seat, and in Tulsa he was initiated into an Indian tribe as Chief Wrong Way. But it wasn't all brickbats. Galveston, his home town, named its airport Corrigan Field, Hollywood starred him in **The Flying Irishman,** New York showered him with ticker-tape in a mammoth parade down Broadway. On July 17, 1939—just one year after his odd odyssey—he married his childhood sweetheart. Not bad for a backward boy!

Even the most forward-looking, highly-praised pioneer flights have hit humorous snags, however. Take Wiley Post and his trouble with the Russians, Post's first round-the-world trip, made in 1931 with Harold Gatty, was virtually without a hitch till bad weather forced him down near the unpronouncable town of Blagoveschensk. His trusty **Winnie Mae,** promptly got stuck in the Siberian mud, and a Soviet tractor toiled for 12 hours to get her out. Two years later, this time winging solo around the globe, he encountered a storm and landed in Moscow. He was immediately seized by two Russian doctors who took his pulse, squirted something into his one good eye, and pushed him onto a cot.

When Post protested that he'd already slept, the doctors insisted he eat a meal with them and drink Kvass, a kind of Russian beer. Post reluctantly nibbled something, but balked at the unfamiliar brew. Back in New York in a sensational seven days and 18 hours, he could only growl that he'd have made it in four with "decent luck," presumably the absence of stormy skies and equally hard-driving hosts.

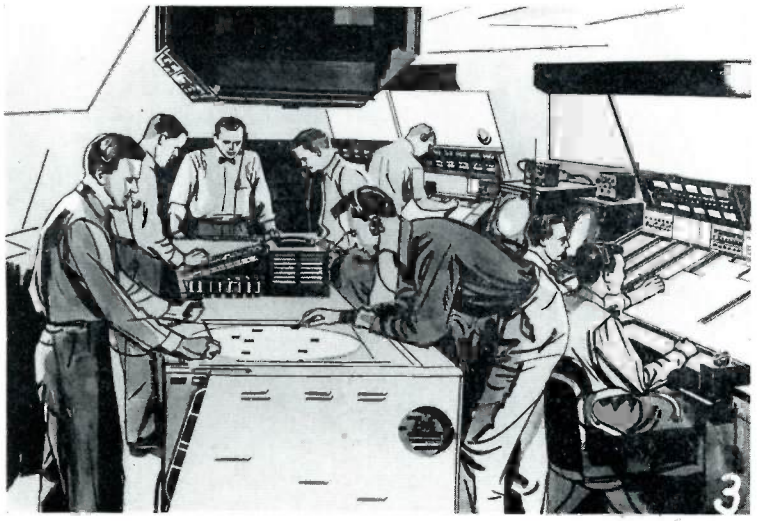
But international hospitality can pose a problem in the clouds as well as on the ground—as one KLM crew discovered. About ten years ago one passenger, an Arab sheik, was so impressed with the stewardess that he attempted to add her to his harem. Assuming that the captain was absolute master of the ship, he offered him two choice camels in exchange for the lady. The dumbfounded silence of the captain was interpreted by the sheik as utter contempt for his paltry offer, so he volunteered to add a fat sheep to the price. The captain actually refused this eminently fair bargain, and the sheik alighted shaking his head at such an unbusinesslike attitude!

(Continued on page 16)

SPEAKING OF AIR SAFETY . . .

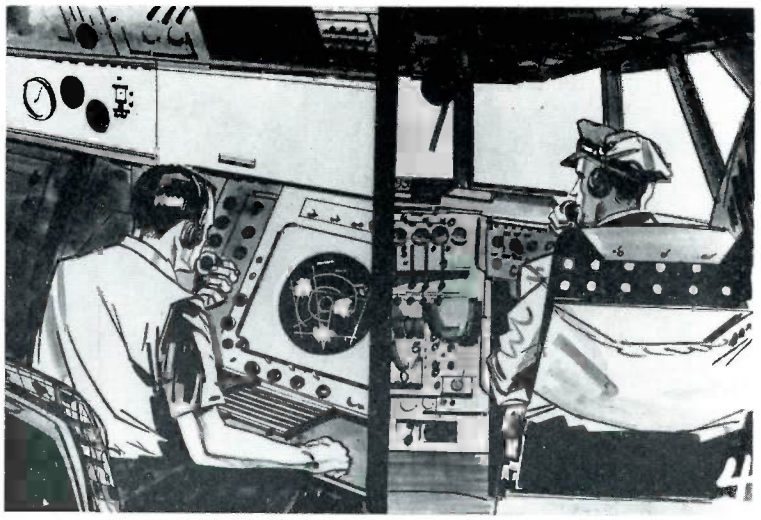
The pilot for Flight 38 fills out his flight plan, which identifies his flight, the type of plane, destination, speed, and route. This plan allows the controller to keep track of all planes in his area.

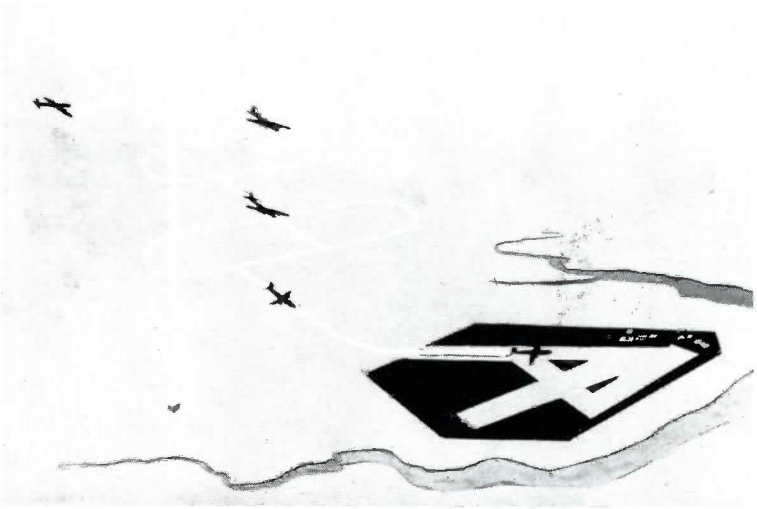
Flight 38 is cleared for take-off. He has been given the proper flight altitude to avoid other planes in the area. The men at the right are members of the Air Route Traffic Control Center, which is responsible for keeping the proper air lane clear for the safety of Flight 38.



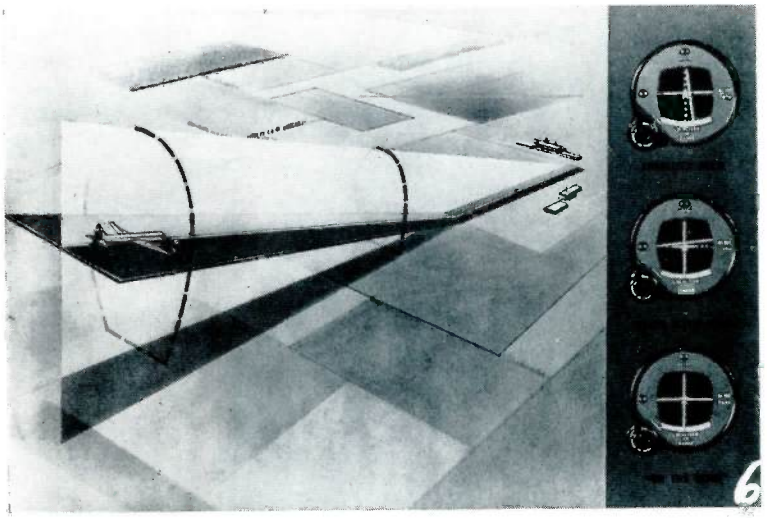
The Control Center of Point A (Flight 38's departure point) continues to track and keep in touch with Flight 38, and prepares to notify Point B (Flight 38's destination) that the flight is about to enter Point B's control area.

Now in Point B's area, Flight 38 and Point B's Control Center maintain contact. As Flight 38 nears Point B's terminal area, the Center clears the flight to contact Approach Control. Approach Control indicates bad weather over the field, and instructs Flight 38 to fly into the "stack."





The stack consists of a holding pattern several levels high, depending on the amount of traffic. As Flight 38 reaches the bottom, the tower gives its pilot a heading to line the plane up with the Instrument Landing System.



The Instrument Landing System consists of two radio transmitters on the airport which send out beams to guide the instrument landing. One beam (localizer) tells pilot whether he is right or left of runway centerline. The other beam (glide scope) shows him correct angle of descent.

As Flight 38 breaks out under the weather, the pilot is further aided by a row of high intensity approach lights extending several thousand feet from the end of the runway. After landing, Point B's ground controller directs him onto a taxiway and to the terminal. Flight 38 and its passengers, despite bad flying weather, are home safe!

(Continued from page 13)

The captain turned down the trade for purely sentimental reasons, for transportation of the animal down payment would have been no problem. Among its other distinctions, KLM is known as the world's leading animal air carrier, with a luxurious "Animal Hotel" at Schiphol Airport and veterinary-stewards to keep them comfortable abroad. Refusing to be beastly to non-human customers, KLM once financed a research program to determine why elephants were such nervous travelers. It developed that they became restless when they traveled alone—and that the companionship of a hen put them at ease! Now every pachyderm passenger has its own hen along for company.

But the million bipeds who used KLM weren't neglected, either. Seventy seven-course dinners are served on every flight; airport kitchens prepare an annual total of 500,000 hot meals, 70,000 deep-freeze breakfasts and 750,000 sandwiches. Food for the mind includes an annual total of 250,000 magazines and fully 1,000,000 newspapers distributed abroad the aircraft. Every four and a half minutes one of these well-stocked planes takes off for one of the 105 cities in the 74 countries covered by KLM's route network. Pampered by the hostess, lulled by a smooth-riding engine, the passengers who alight can't boast the excitement of a trip with Acosta or Corrigan. They don't even get a swallow of kvass, though champagne is flowing freely on first-class flights. But at least they can never complain that the trains are faster!

FRANK C. AMSBARY, Jr.

Frank C. Amsbary, Jr., 59, vice-president, general manager and a director of the Long Island Water Corp., passed away at 2 a.m. Sunday, January 31, in Mercy Hospital, Rockville Center, Long Island.

Mr. Amsbary was born April 15, 1900, in Champaign, Illinois. His introduction to the waterworks industry occurred when, just out of the eighth grade, he painted Champaign's fire hydrants for his father, who owned the utility there until 1927.

Mr. Amsbary was a summer employee of the utility from 1914 to 1923, and its supervising engineer from 1923 to 1927.

He became manager of the Champaign system on January 1, 1927. In 1940, he was made vice-president of Northern Illinois Water Corporation, assuming responsibility for overall direction of several of its plants. He became a director of the company in 1954.

His selection as vice-president and general manager of the Long Island utility came November 1, 1958. In addition to holding a seat on the board, he was a member of the executive committee.

Mr. Amsbary, through his many and varied activities, became a national figure. He was president of the American Water Works Association in 1955-56, and was made an honorary life member of the Association in San Francisco last July.

He was widely-known throughout the industry as a man who espoused all that was vital and progressive for the waterworks field. His insistence on improvement of standards, supply sources and revenue measures was of great material benefit not only to the firms with which he held a direct association, but for the entire industry.

Mr. Amsbary, despite a crippling attack of polio in his earlier years, was a person of considerable vitality. His associates held his judgement and foresight in great respect.

Our deepest sympathy is extended to the Amsbary family, and to the industry which has lost a friend, an advocate and, above all, a sincere and devoted worker.

WISTER H. LIGON

Into the SIXTIES

By Wister H. Ligon
President, American Gas Assn.
and
President, Nashville Gas Co.

With annual sales revenues exceeding $5 billion for the first time, the gas utility and pipe-line industry moves full-speed into the Sixties, confident that gas will continue to strengthen and expand its position as a major energy supplier for a growing nation.

As 1960 opens, the industry's 1,350 distribution companies and 100 transmission companies serve a record-breaking 32.6 million customers. Annual sales of gas have reached a new peak of more than 87 billion therms.

A record year climaxed the greatest decade of expansion in the 143-year history of the gas business. Sales, revenues and gross plant have more than doubled since 1949. Customers have increased by 39 percent in this period, and the number served with natural gas has doubled. While gas use has climbed to an all-time high, proved reserves also have advanced to a new peak, assuring adequate long-range supplies.

Record construction outlays of $1.8 billion during 1959 for new facilities to serve more customers reflected the confidence of an industry which expects to more than double in the Sixties. In the four-year period 1959-62, nearly $8 billion will be spent for construction and expansion projects, compared with $6.3 billion in 1955-58.

Completion of the $160 million Texas-Florida natural gas pipeline was a major construction development in 1959. The 1475-mile line, which began delivering large volumes of gas from the Southwest at mid-year, should make a substantial contribution to Florida's industrial and residential growth.

The development of transoceanic natural gas shipment by tanker ranks among the industry's greatest achievements in recent years. The feasibility of transporting liquid methane was demonstrated early in 1959 when the "Methane Pioneer," a converted cargo vessel,

carried low-temperature liquefied natural gas from Louisiana to Great Britain.

Customer Increase in 1959

The gas industry served an average of 32.1 million customers during the year, representing a 2.6 percent increase over the 1958 average of 31.2 million. The year-end total is 32.6 million.

Utility customers receiving natural gas averaged 29.1 million to register a 3.9 percent gain over the 28 million served in the previous year. At year's end, natural gas was being delivered to 91 percent of the industry's customers. Manufactured and mixed gas customers averaged 2.8 million, showing an 8 percent year-to-year decrease as former users of these fuels continued to convert to natural gas.

The number of gas utility customers is expected to increase steadily throughout the Sixties, climbing to an estimated 43.3 million by 1969, including nearly 40 million residential users.

Gas continued to improve its position as the major heating fuel for homes in 1959. The industry's househeating customers now total about 20.4 million, up 6.8 percent from 1958. The number is expected to exceed 21 million in 1960 and 33 million in 1969. Heating customers currently represent 66.1 percent of all residential gas users, compared with 63.4 percent in 1958.

Sales and Revenues

Revenues from utility and pipeline gas sales passed the $5 billion mark during 1959, advancing 11.3 percent above a year ago. Sales produced revenues of $5,085 million compared with the previous record of $4,568 million in 1958.

Natural gas revenues increased 12.6 percent to $4,751 million, compared with the 1958 total of $4,220 million. Manufactured and mixed gas revenues totaled $319 million, down 4.2 percent from 1958's $333 million.

The volume of gas sold climbed to a new annual high of 87.4 billion therms, nearly 9 percent above the 80.3 billion therms sold a year earlier. Natural gas sales rose to an all-time peak of 85 billion therms, up 9.2 percent from 77.8 billion therms in 1958. Manufactured and mixed gas sales of nearly 2.4 billion therms were off 1.4 percent on a year-to-year basis.

Industrial Gas Sales

Many of the year's greatest gains were recorded in industrial sales, despite the nationwide steel strike. The number of industrial customers served by the gas industry advanced nearly 2 percent in 1959, and sales jumped more than 10 percent. Sales yielded revenues of $1.4 billion, or 14.5 percent more than the $1.2 billion produced by 1958's industrial sales.

While statistics on the relative proportion of firm and interruptible industrial gas sales are unavailable, A.G.A. estimates indicate that only about one-third of all industrial gas is sold on an interruptible basis under which deliveries may be curtailed during periods of high residential heating demand. The remainder is sold under firm contracts.

Underground Storage and Pipelines

The growing popularity of gas for residential heating has given tremendous impetus to the development of underground natural gas storage facilities. The gas industry had 205 underground storage pools operating in 19 states at the beginning of 1959, compared with 125 in 15 states a decade ago.

Storage facilities with an ultimate capacity of 2.7 trillion cubic feet are located primarily in the Middle Atlantic and East North Central regions. The amount of gas actually in storage reached a new high of nearly 1.8 trillion cubic feet, with a maximum daily output of 9.8 billion cubic feet.

The industry's capital investment in underground storage advanced to $685 million in 1959, up from $570 million in 1958. We anticipate spending an additional $118 million for such facilities during 1960, and total outlays during the Sixties are expected to exceed $1.8 billion.

Natural gas pipelines and distribution mains continue to extend into new areas and to increase deliveries into residential and industrial areas already served. More than 24,000 miles of pipe was added to the nation's gas network in 1959, bringing the total to 595,600 miles at year end.

To meet the ever-increasing requirements of gas customers and the anticipated demands of future consumers, the industry has increased its pipelines and utility mains by more than 231,000 miles since 1949. An additional 283,000 miles will be built during the Sixties, bringing the total to 878,000 by the end of 1969.

Construction in 1960 alone will add 24,500 miles, a near-record figure exceeded only by the 28,500 miles built in 1956 and the 26,200 miles built in 1955. Expansion programs will cost an estimated $1.9 billion this year, compared with $1.8 billion in 1959 and $1.2 billion in 1950.

Industry Gross Plant

The gross plant of the gas industry at year's end is approximately $19.7 billion, up 8.8 percent from $18.1 billion in 1958. Gross plant is expected to reach $21.5 billion in 1960 and will more than double during the next 10 years, advancing to at least $45 billion in 1969. Gross plant has nearly tripled since the beginning of 1950 when the industry total stood at approximately $7 billion.

Natural Gas Reserves

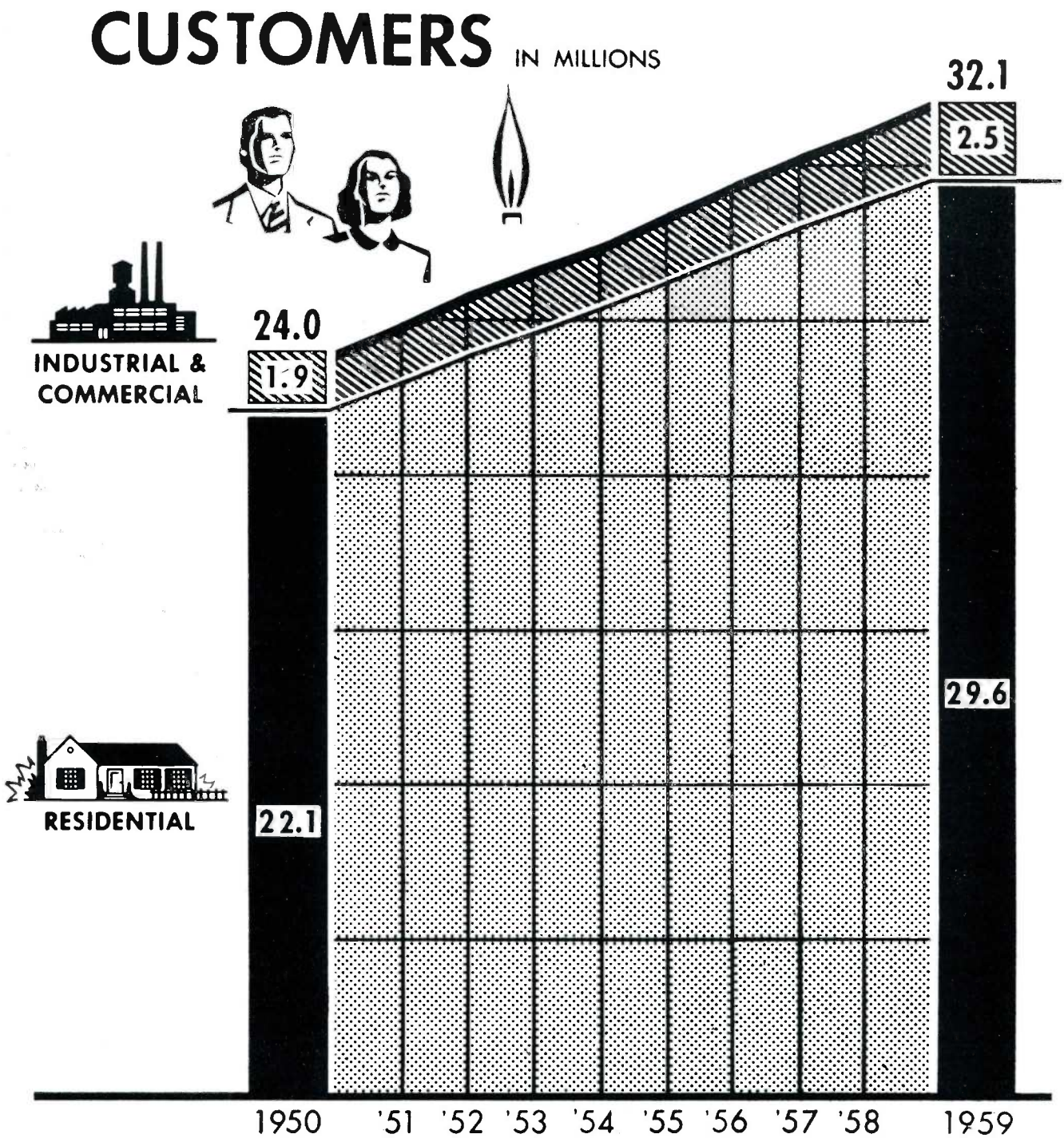
The nation's proved recoverable reserves of natural gas reached an all-time high of 254.1 trillion cubic feet at the start of 1959. While net production amounted to nearly 11.5 trillion cubic feet in 1958 (the last year for which official statistics are available), reserves showed a net gain of 7.6 trillion cubic feet for the same period.

Gas Appliances and Equipment

The industry's 1959 gains in customers and sales were accompanied by a brightening of the gas appliance sales picture as manufacturers made a strong recovery from the 1957-58 recession.

The Gas Appliance Manufacturers Association reports sales were generally above 1958 levels, despite the steel strike's impact upon fourth-quarter operations of appliance manufacturers. Unit sales totaled nearly 8.8 million, compared with approximately 7.8 million in 1958.

Automatic hot water heater sales exceeded 3 million units to set an all-time high, and gas range sales topped the 2-million mark.



TREND OF UTILITY GAS CUSTOMERS (1959 DATA ESTIMATED)

SOURCE: AMERICAN GAS ASSOCIATION

New records also were achieved in sales of built-in ranges and gas central heating equipment. Built-in range sales were 56 percent higher than in 1958, while central heating showed a year-to-year gain of nearly 24 percent.

Home laundry manufacturers report a record year for gas dryer sales, with unit volume climbing 26 percent above 1958 levels, compared with a 12 percent annual gain among competing dryers. Gas dryers now in service total approximately 2,750,000 including an estimated 480,000 sold in 1959.

Appliance manufacturers now expect sales of most of their products to be as good or better in 1960, with the largest increases forecast for ranges and central heating equipment. Water heater sales are expected to approximate 1959's record high.

The number of gas refrigerator manufacturers increased to three in 1959, and a fourth company will market gas models in 1960. Current manufacturers include Norco, Inc., Kirk Industries, and the Whirlpool Corp., which brought gas refrigerators back to the market in 1958 after acquiring the former Servel refrigerator. The 1960 entry in the field will be Borg-Warner's Norge Sales Corp.

Important new developments in appliances and components reflect the industry's increased emphasis on the design and production of modern, competitive gas equipment.

New low-temperature controls incorporated in 1959 models of domestic ranges maintain oven temperatures as low as 140 degrees, permitting homemakers to prepare meals well in advance and hold them at proper serving temperatures for hours.

A new 30-gallon automatic water heater enables the homeowner to vary the unit's recovery rate to suit changing hot water requirements in the home. Adjustable burners with gas input settings ranging from 36,000 to 60,000 BTU per hour provide hot water recovery rates comparable to 40 and 50-gallon models.

Direct-spark ignition for clothes dryers, also incorporated in 1959 models, eliminates the need for a constant-burning pilot or electric glow-coil ignition system.

Schwank infra-red burners are featured in a new verticle broiler for domestic ranges approved by A.G.A. in 1959. Both sides of steaks and other meats may be broiled simultaneously between the radiant burners, resulting in greater convenience and reduced broiling time.

In the commercial field, a new high-speed oven uses the forced convection principle of heating to increase output by cutting roasting and baking time. Hot air currents circulating throughout the oven's interior at high speed reduce production time by as much as 40 percent.

Also availble to commercial gas users is a new hot water heater with recovery rates ranging from 375 to 2,125 gallons per hour through a 100 degree temperature rise. The unit applies a new principle of heat transfer, obtaining faster recovery through use of intermediate water coils which act as a heat exchanger. Gas input may be varied 390,000 to 2,215,000 BTU per hour.

A.G.A. Laboratories

Appliance approval testing and field inspection, research and the preparation of standards continued at an accelerated level at the Association's Laboratories in 1959.

More than 5,000 gas appliances and accessories were tested, and the Laboratories' "Blue Star" approval seal or Listing Symbol were authorized for display on items complying with rigid gas industry standards.

Heating equipment accounted for more than 50 per cent of the appliance models approved, and the Laboratories staff noted a trend toward design of heating equipment incorporating sealed combustion chambers.

The Laboratories intensified its field inspection program, adding six inspectors to its staff. More than 800 announced and unannounced factory visits were made to verify conformance with the standards of Laboratories-approved models. Inspectors traveled more than 150,000 miles during the year to inspect appliances and accessories at the point of manufacture.

Revisions and additions to 20 approval and listing standards, and a new standard covering gas-fired absorption-type summer air conditioning equipment, were adopted by the Approval Requirements Committee and approved as American Standard (ASA).

Also approved as American Standard was the third edition of installation standard Z21.30. This publication, made available late in the year, was extensively revised to include recent advances in gas utilization and provisions covering the installation of piping and appliances for use with undiluted LP gas.

Late in 1959, approval specifications for water heaters, central furnaces and floor furnaces designed for installation in trailer coaches and mobile homes became effective. These specifications permit Laboratories approval of such equipment for the first time.

Laboratories' research included 20 PAR projects in the domestic, industrial and commercial fields. These projects included development of a high-speed domestic cooking unit, a transistorized spark ignition device, and the demonstration model of an all-gas furnace.

Promotion, Advertising and Research

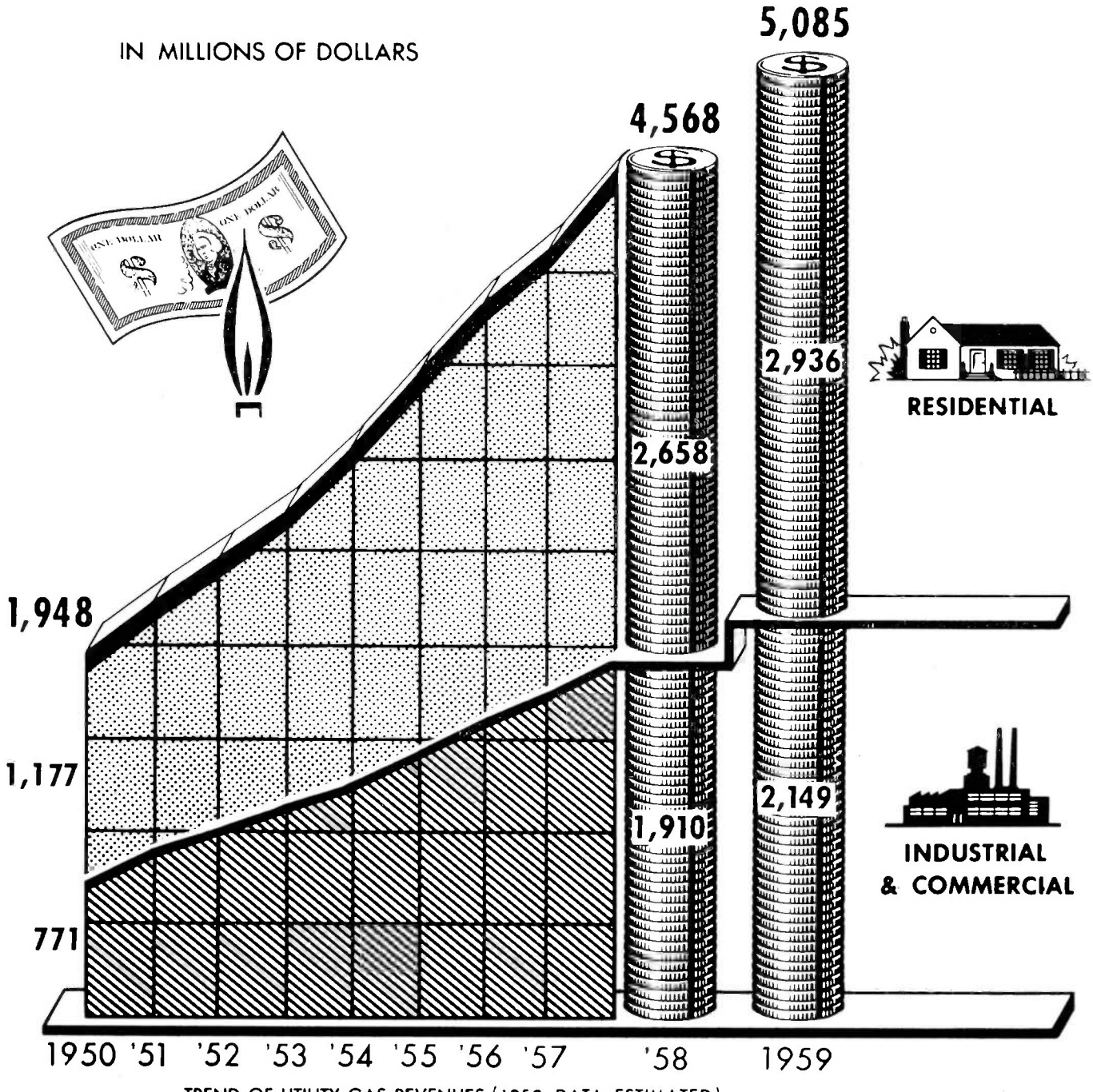
A.G.A.'s highly effective Promotion, Advertising and Research program (PAR) has completed its 15th year of coordinated gas industry sales promotion, research and public information activities. Hard-hitting national programs in these areas represented outlays of more than $7 million in 1959.

PAR's national print advertising programs placed more than $1.8 million worth of ads in the nation's leading consumer and specialized publications, and more than $3.2 million was invested in the industry's national television program.

In its alternate-week format, "Playhouse 90" carries the gas industry story into nearly 12 million homes at the height of Thursday's peak viewing hours. By sponsoring the prime first half-hour, the industry is able to direct its demonstrations and sales messages to the greatest number of decision-making viewers. Broader participation in

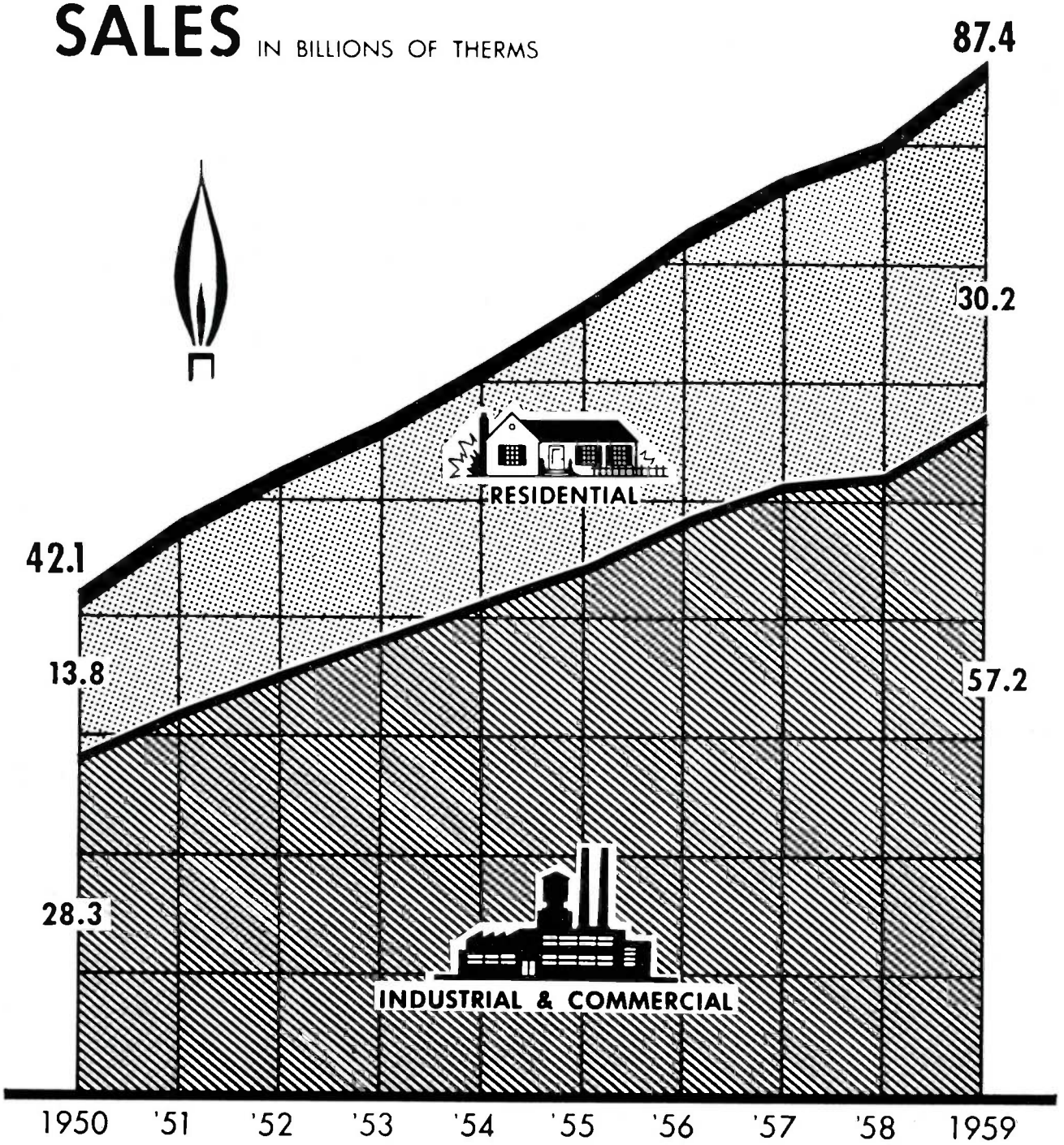
REVENUES

IN MILLIONS OF DOLLARS



TREND OF UTILITY GAS REVENUES (1959 DATA ESTIMATED)

SOURCE: AMERICAN GAS ASSOCIATION



TREND OF UTILITY GAS REVENUES (1959 DATA ESTIMATED)

SOURCE: AMERICAN GAS ASSOCIATION

the program by more companies in all segments of the industry now permits A.G.A. to sponsor 32 "Playhouse 90" shows, compared with 26 in the 1958-59 season.

The increased partcipation in PAR's national sales promotion programs by gas utilities, pipeline companies and manufacturers demonstrates in positive terms the industry's growing determination to maintain and extend its markets. This determination has helped lay the foundation for an entirely new era of gas promotion in which the industry can undertake total promotion of its products and services.

Gas, as an industry, now can conduct major sales campaigns and support them week after week with powerful advertising and promotion at both national and local levels. Gas can bring to bear the combined force of network television, consumer magazine ads, dealer and builder publications, local newspapers and radio, outdoor advertising and point-of-purchase merchandising displays in one coordinated selling package.

The first application of this potent new selling technique is demonstrated in telling fashion by the Gold Star Award campaign. Launched in 1959 on behalf of top-quality gas ranges and eventually to be extended to all gas appliances, the Gold Star program is the largest and most successful gas promotion ever undertaken.

Estimates at the end of the Gold Star program's first year indicate that between 200,000 and 250,000 more top-of-the-line ranges have been sold in 1959. Gas Appliance Manufacturers Association figures on free-standing range sales for the first nine months of the year show that dollar volume increases ran 38 percent ahead of unit sales increases. Dollar volume was up 9.1 per cent from the corresponding period a year earlier, and unit sales were 6.6 per cent higher.

Other major promotions in 1959 include the new "Blue Star Home" program, in which gas companies representing 21 million meters are establishing the "Blue Star" symbol as the buyer's guide to new homes featuring modern gas living.

As the PAR Public Information program completed its fifth year, A.G.A. activities in developing better public relations for the industry earned national honors for the second time in two years, winning a major award presented by the American Society of Association Executives. Named Grand Award winner in the large national association class, A.G.A. was cited for its "outstanding activities for public service."

A vital area for industry action has been mapped out by a national public opinion survey completed in 1959. Armed with its first detailed appraisal of public knowledge and attitudes regarding the gas business, A.G.A. is spearheading a comprehensive study of the industry's essential public relations needs. This definitive, objective audit will analyze current national and local programs in 1960, making strong, documented recommendations for public relations actions at all levels.

Major emphasis in 1959 was placed on investor relations, telling the facts on government in gas, employee recruitment, a series of six regional public relations workshops, and greater stimulation of coordinated local PR action.

The third annual A.G.A. Public Relations Achievement Award was won by Michigan Consolidated Gas Co., which also earned top honors in the School Activities category. The Detroit gas utility's winning entry was based on its unique educational exhibit, "Gasarama," which in one year was viewed by nearly 150,000 Michigan high school and college students.

The gas industry took another major step forward in 1959 by preparing to treble its research efforts during the next five years. This expansion was recommended by Battelle Memorial Institute following a comprehensive survey of current gas industry research and estimates of future technological needs.

Impressive gains in the Fifties have strengthened the competitive position of gas in the "battle of the fuels," and even greater strength and growth will come as the industry accelerates and expands its activities in research and sales promotion. On these and on all fronts, the gas industry is moving full-speed ahead, confident that 1960 will be the forerunner of a decade of tremendous progress.

FANCY THAT!

Endeavoring to rest after an exhausting day, poor father was being bedeviled by an endless stream of unanswerable questions from Little Willie.

"What do you do all day down at your office, Daddy?"

"Nothing!" shouted the father.

After a thoughtful pause, Willie asked, "Daddy, how do you know when you are through?"

—::—

Dan and Peter were helping their dad to shift the furniture. Dan was sweating, carrying a wardrobe uphill, when his dad called out: "I thought Peter was helping you move that!"

"So he is, He's inside, carrying the coat-hangers."

—::—

Sweet young thing (on her first fishing trip): "How much did that red and green thing cost?"

Boy friend: "You mean the float? Oh, about 15c, I guess."

Sweet young thing: "Then that's what I owe you—mine just sank."

—::—

The application blank for a new driver's license carried the following question: "Have you ever been arrested?" The applicant put down "No."

The next question was, "State why?" The applicant put down: "Never been caught."

—::—

And then there was the fellow who dreamed he was eating a 40 pound marshmallow, and when he woke up his pillow was gone!!

—::—

A girl applied for a job as a stenographer, and was given a test in spelling.

"How do you spell Mississippi?" she was asked.

"The river or the state?"

In December, the boards of Mueller Co. and Mueller, Limited, met in Decatur. One member was elected to the board of Mueller Co. at that time.

Ebert B. Mueller, Port Huron, Michigan, was elected to the vacancy created by the death of his mother, Mrs. Robert Mueller, last March.

Mr. Mueller was born and raised in Decatur, and was graduated from Sheffield Scientific School at Yale University in 1923. After graduation, he was employed at Mueller Co.'s iron foundry in Decatur for two years, and then entered the time study department. He moved to Sarnia, Ontario, Canada, in 1934, and lived there until 1942, when he moved to Port Huron.

Mr. Mueller has been with the firm's Canadian subsidiary, Mueller, Limited, since 1934. He has also served on the board of directors of Mueller, Limited, since 1939.

Mr. Mueller married Bessie Irene MacDonald in 1936. He has three sons—James Frederick, John Scott and Robert Eugene. Robert is a concert pianist, and lives in California.

All other officers and directors were re-elected.

MUELLER CO. BOARD OF DIRECTORS

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W. H. HIPSHER
EBERT B. MUELLER
FRANK H. MUELLER
MRS. PAULINE V. MUELLER
MRS. CHARLOTTE MUELLER SCHLUTER
MRS. LENORE MUELLER SCHMICK
FRANKLIN B. SCHMICK
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ALBERT G. WEBBER, JR.
LEO WIANT

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LEO WIANT ..... Administrative Vice-President
FRANK H. MUELLER ..... Vice-President and Director of Engineering
DAN R. GANNON ..... Vice-President and General Sales Manager
LEROY J. EVANS ..... Vice-President in Charge of Eastern Sales
LYLE R. HUFF ..... Secretary-Treasurer

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R. J. SKIPPON ..... Vice-President and Manager of Engineering
R. M. NICOLSON ..... Vice-President and General Sales Manager
J. MILNE ..... Secretary
C. S. BROWETT ..... Assistant Secretary and Plant Controller

MUELLER, LIMITED, BOARD OF DIRECTORS

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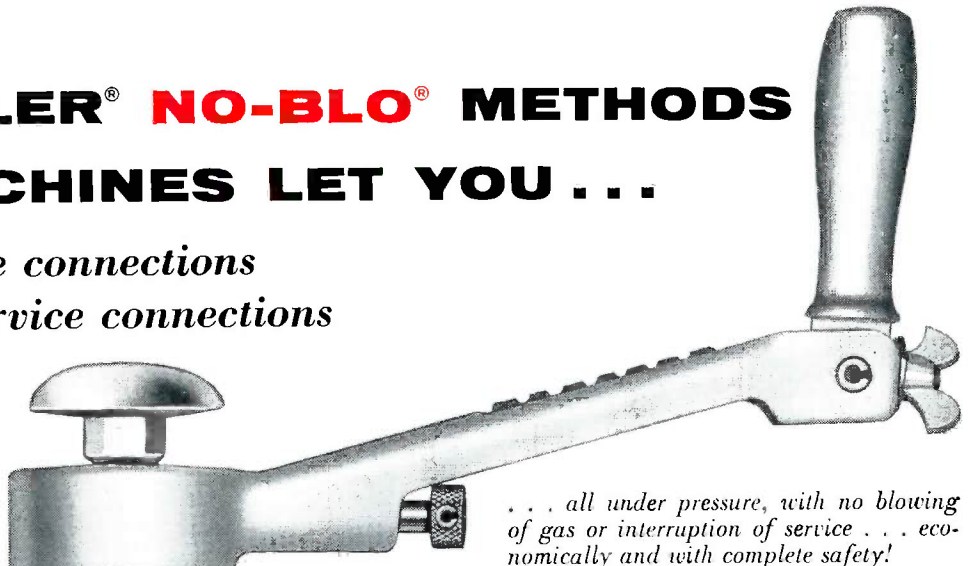
MUELLER® NO-BLO® METHODS AND MACHINES LET YOU . . .

- *make service connections*
- *maintain service connections*

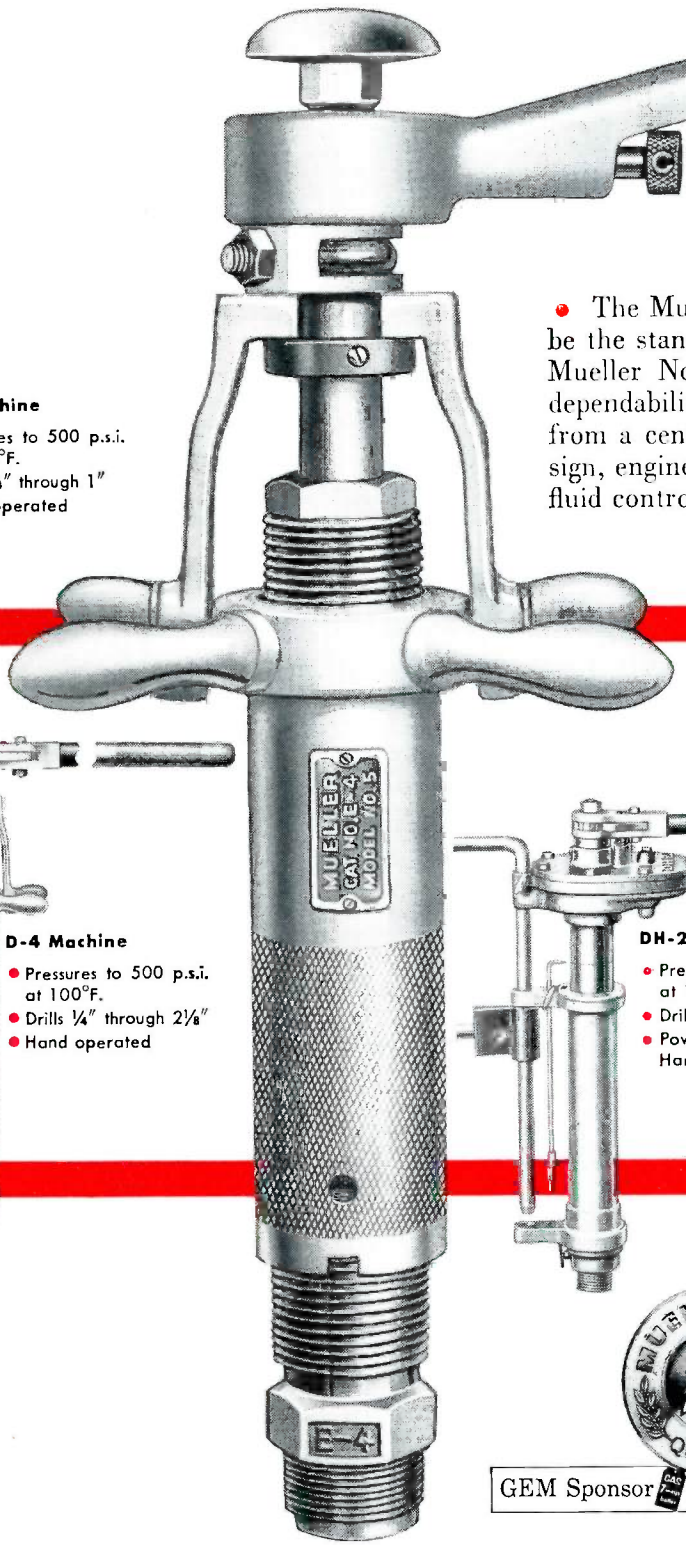


. . . all under pressure, with no blowing of gas or interruption of service . . . economically and with complete safety!

The Mueller No-Blo Method has proven to be the standard of safety in the Gas Industry. Mueller No-Blo Machines are typical of the dependability in operation you can expect from a century of experience in research, design, engineering and manufacturing of quality fluid control equipment.

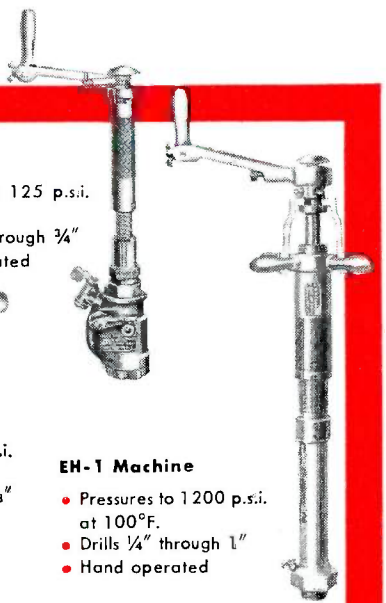
E-4 Machine

- Pressures to 500 p.s.i. at 100°F.
- Drills ¼" through 1"
- Hand operated



T Machine

- Pressures to 125 p.s.i. at 100°F.
- Drills ⅛" through ¾"
- Hand operated



D-4 Machine

- Pressures to 500 p.s.i. at 100°F.
- Drills ¼" through 2⅛"
- Hand operated

DH-2 Machine

- Pressures to 1200 p.s.i. at 100°F.
- Drills ¼" through 2⅛"
- Power or Hand operated

EH-1 Machine

- Pressures to 1200 p.s.i. at 100°F.
- Drills ¼" through 1"
- Hand operated

MUELLER QUALITY — Since 1857 — SERVING the Water and Gas Industries

MUELLER CO.

DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles; In Canada: Mueller, Limited, Sarnia, Ontario

GEM Sponsor

Strictly Off the Record

Architects cover their mistakes with ivy, doctors with sod, and brides with mayonnaise.

—::—

Grocer: "I can't give you any more credit, sir. Your bill is bigger now than it should be."

Customer: "I know it. Make it what it should be and I'll pay it."

—::—

"This crime was the work of a master criminal," said the prosecutor, "and was carried out in a skillful, clever manner."

Blushing, the defendant rose to his feet.

"Sir, flattery will get you nowhere. I ain't gonna confess."

—::—

An accused criminal looked up at Lord Bacon who, as chancellor, was trying his case.

"Your lordship really ought to let me go free. We're kin you know, for my name's Hogg and Hogg's kin to Bacon."

Whereupon Bacon replied dryly, "Not until it's hung!"

—::—

While the diagnosis of the patient, who had eaten and drunk rather generously, was proceeding, the sick man said: "Doctor, do you think the trouble is in my appendix?"

"Oh, no," said the doctor, "the trouble is in your table of contents."

—::—

"Doctor, did you ever make a serious mistake in your diagnosis?"

"Yes, I once treated a patient for indigestion, when she could have afforded an appendectomy."

—::—

"I can't quite diagnose your case," said the doctor. "I think it's drink."

"All right, doctor," the patient gravely replied, "I'll come back when you're sober."

—::—

Doctor: "You have acute appendicitis."

Chorus Girl: "Listen, Doc, I came here to be examined, not flattered."

—::—

Lawyer: "You say you want to get a divorce on the grounds that your husband is careless about his appearance?"

Client: "Yes, he hasn't shown up in almost five years."

"Bixby, on your expense account . . . 'hotel' . . . did you BUY it?"

A doctor was treating a patient for melancholic insomnia. He had tried everything, but the patient continued sleepless—and pessimistic. Finally, he decided on a new remedy.

"Get some good old Barbados rum," he directed. "Cover a lump of sugar in the bottom of a large glass. Fill with hot water and drink slowly. Repeat this every hour."

"But doctor," asked the patient, "will that put me to sleep?"

"No," said the doctor, "but it will make you not mind staying awake."

—::—

Doctor: "Look here, don't you know my office hours are from eight to ten in the evening?"

Patient: "Yes, I do, but the dog that bit me didn't."

—::—

Doctor: "I'm sorry to tell you that your wife's mind is completely gone."

Husband: "Well, I'm not surprised. She's been giving me a piece of it for twenty years."

—::—

A harried business executive went to his physician to get a prescription for sleeping pills, only to find that he was allergic to sedatives.

"What about some of this twilight sleep I've read about?" he asked.

"Oh, that's only for labor," was the reply.

"Good heavens!" exclaimed the executive, "haven't you anything for management?"

—::—

Patient (coming out of an anesthetic): "Why are all the blinds down, Doctor?"

Doctor: "Well, there's a fire across the alley and I didn't want you to wake up and think the operation was a failure."

—::—

At the police station the indignant drunk demanded, "What I want to know is what I was brought in for."

"You were brought in for drinking," the sergeant replied.

"Well, that's different, "the drunk continued, "When do we get started?"

—::—

A drunk was walking along the street, one foot on the curbstone, the other in the gutter. An officer stopped the man. "Why are you walking that way?" he demanded. "You must be drunk!"

"Drunk, am I? So that's it!" exclaimed the little fellow. "Thank heaven! I thought I was lame."

—::—

The drunk sitting at the bar was adjacent to a man and his wife. Suddenly the drunk came forth with a resounding burp.

"How dare you burp before my wife," thundered the husband.

With that the drunk unsteadily got off the bar and making a sweeping bow said, "A thousand pardons, sir . . . I did not know it was the madam's turn."

—::—

Watching a drunk try without success to unlock the door to his house, a policeman asked if he could handle the key for him.

"No thanks," the man replied, "I can hold the key—you hold the house."

—::—

The bright young high school graduate applied for his first full-time job in the railroad car department. He read the application blank which asked, "What machines can you operate?"

The youth studied hard, then wrote, "Slot and pinball."

—::—

Teacher: "Which hand is the Statue of Liberty holding over head?"

Smart Kid: "The one with the torch."

—::—

She: "That's the fifth time you've gone back for ice cream and cake. Doesn't it embarrass you?"

He: "Why should it? I keep telling them it's for you."

—::—

The housewife was interviewing an applicant for a job on her household staff.

"Do you know how to serve company?" she asked.

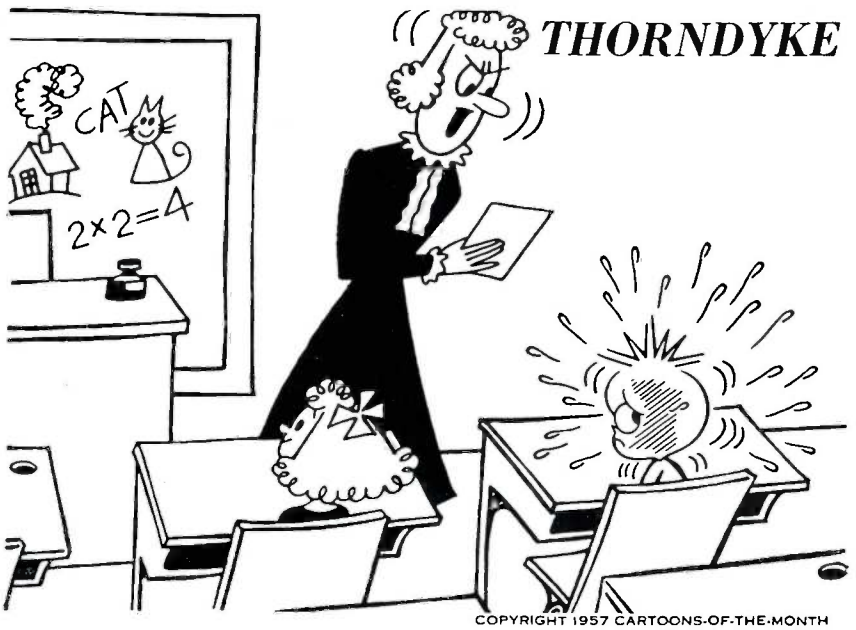
"Yes, ma'am; both ways," was the reply.

"Just what do you mean by 'both ways'?"

"So's they'll come back or so's they won't."

—::—

Character on the streetcar: "I don't have anything to worry about. My wife takes care of my money, and my mother-in-law tends to my business. All I need to do is work."



"I received this anonymous message, and I quote; 'I'll expect your resignation on my desk in the morning . . .'"

"Oh, Dear! I just KNOW I forgot to send my new address to the MUELLER RECORD editor! No wonder I didn't get last month's issue!"