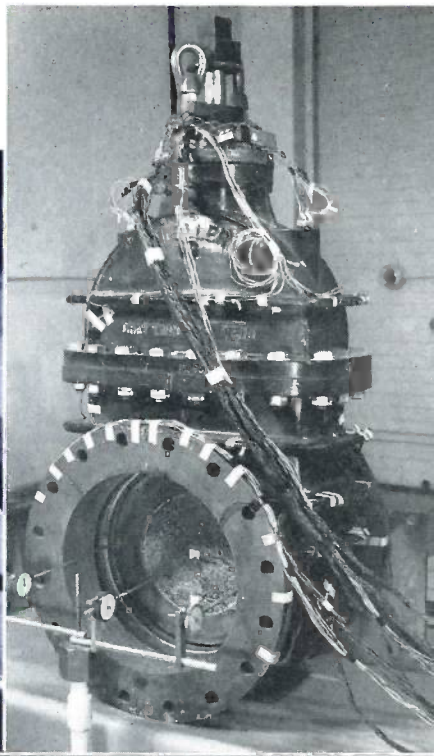
MUELLER
Record
JULY • AUGUST • 1963

HOW DOES A GATE VALVE ACT?
Mueller Engineers Find Out. See Page 3.



MUELLER RECORD

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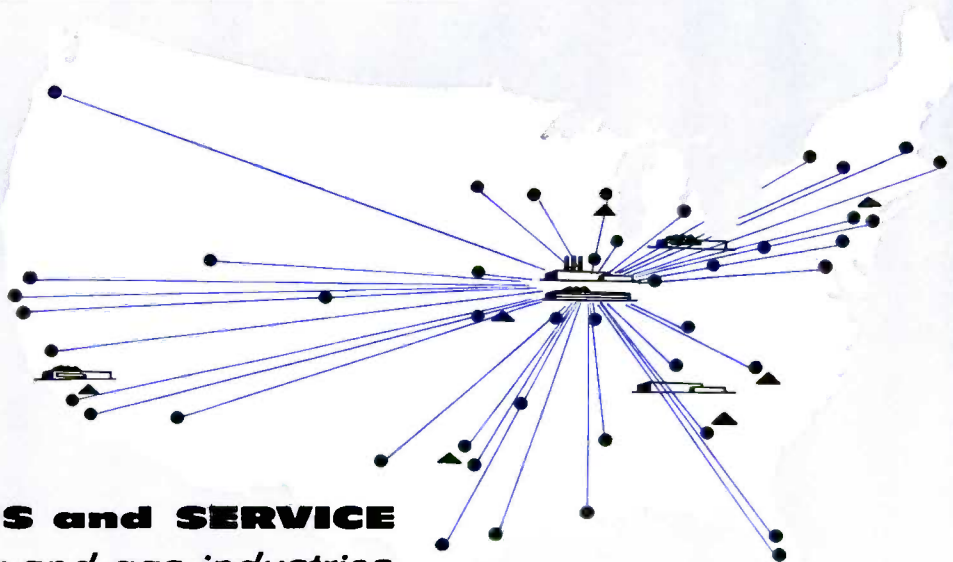
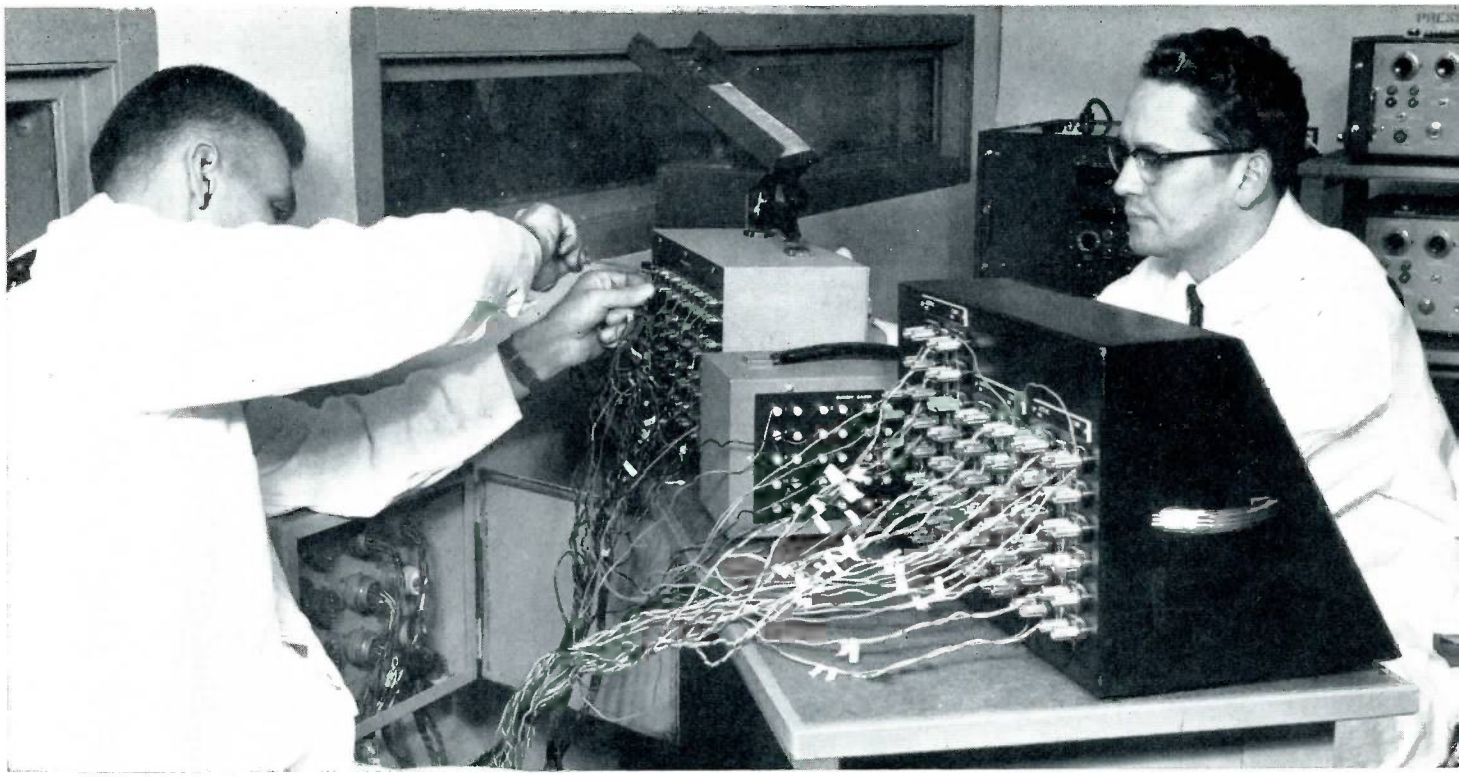
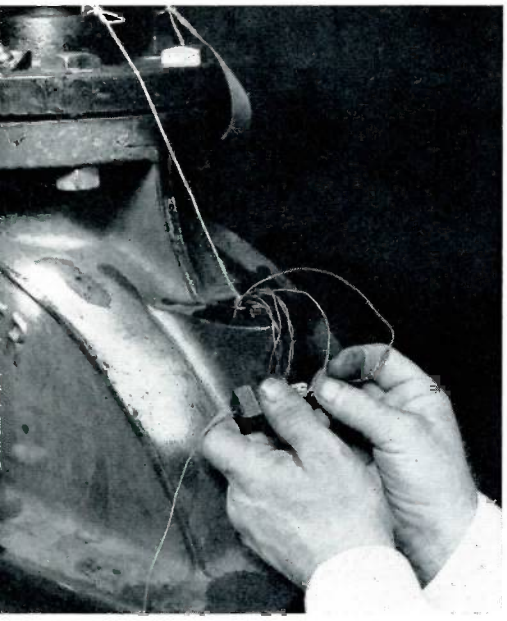
Contents

OUR COVER shows some of the action which takes place during the testing of a gate valve in the Mueller Co. Laboratory. At the top left, technicians spray the valve with the sensitive stress coat material, while in the center photo the technician slips part way into the valve body to work on a strain gauge. At the right is the valve wired up and ready for testing. Below an engineer works on some data while a technician can be seen through the control room window working on the valve.





Minute changes in a gate valve no more than 10 millionths of an inch are relayed from the valve in the burst chamber to the control room by means of this mass of wires which runs from strain gauges on the valve to this indicator. Project Engineer Robert Roos (right) checks out the system while Test Lab Operator Vern Ramsey connects a wire from one of 40 strain gauges which are mounted on the valve. Below a technician threads internal strain gauge wires through a plug in the bonnet of valve preparatory to the pressure test of the valve.



Tiny Gauges Take Pulse Of Mueller Gate Valve

"If that gate valve had a heart we could give its pulse rate and blood pressure with all the instrumentation on it," commented an observer who was watching the testing of a new 16-inch gate valve in Mueller Co.'s Test Laboratory.

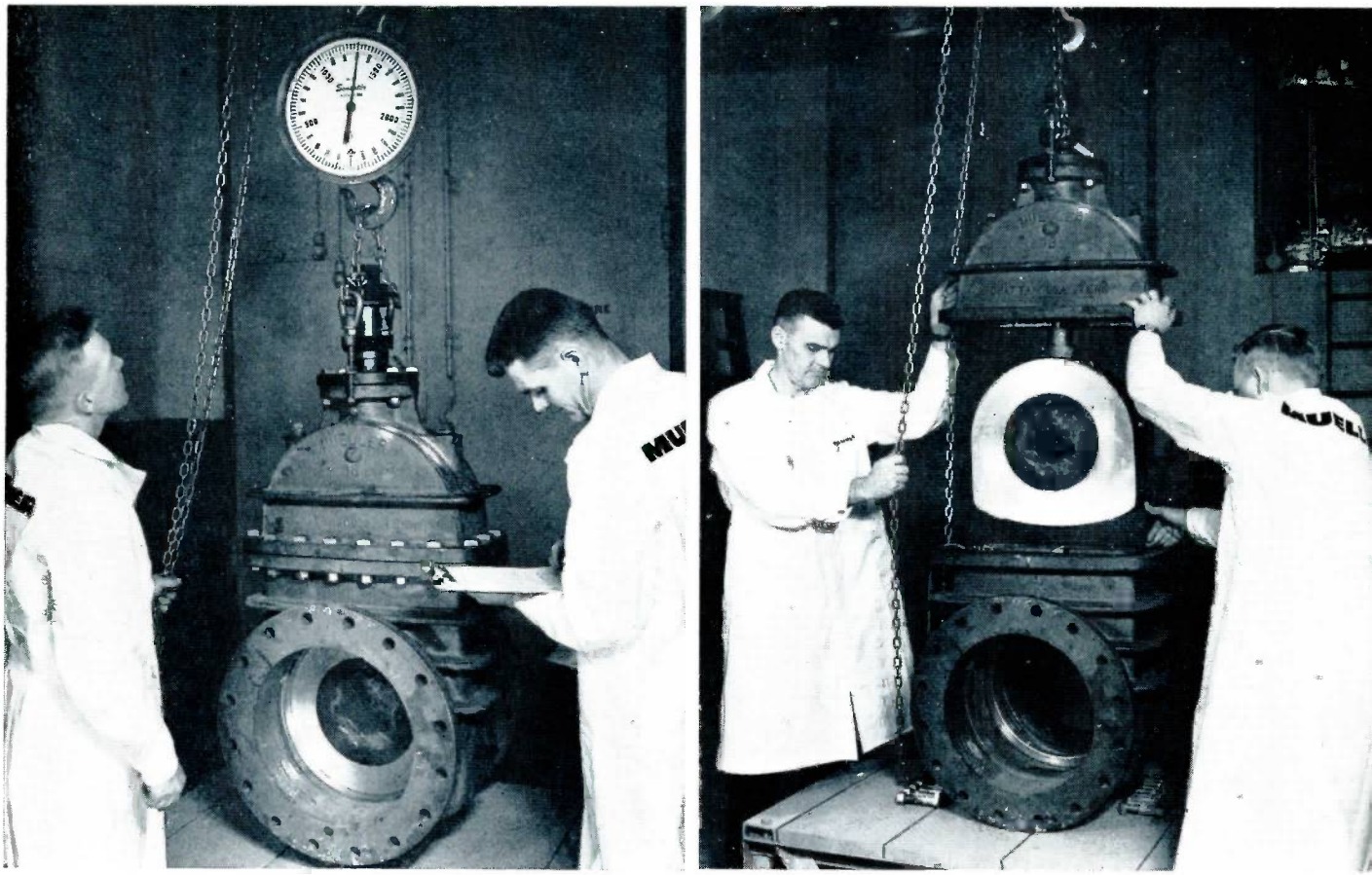
While the observer was making his comment, the equivalent of 80 tons was pushing against each disc on the gate, testing its sealing capacities, checking disc action, determining its potential, and just plain matching its strength and muscle against that of the valve.

While tremendous pressures were trying to find freedom on all parts of the valve, 40 tiny gauges were relaying to the control room each minute change and spasm that was going through this 1,300-pound creature.

Movements as small as 10 millionths of an inch were electronically registered and charted so that they could be studied and plotted in great detail by engineers after excessive pressures had caused a failure in the cast iron body of the valve.

The actual rupture takes but a split-second as water spews out of the break, gushing against the foot-thick concrete walls of the burst chamber. The preparations for this one moment take many hours and weeks of planning and work by engineers and technicians, and it doesn't end with the loud boom that marks the rupture of the valve.

The multitude of data obtained from the test is studied, evaluated and compared by engineers for weeks. A total of 195 pages of test data, plotted data, calculations and information was obtained from this investigation. This does not include the test report which is a summary of the undertaking. Later when other valves are modified or new ones designed, this information can be referred to and used, just as Mueller engineers used data accu-



One of the first steps in the test of a gate valve is to weigh it to see if it comes up to specifications. The next step for Lab Operators Vern Ramsey (left) and William Hood is to dis-assemble the valve. Here they are lifting the bonnet and discs away from its body so that the parts can be measured and checked.

mulated in past years when they worked on this new valve.

Much of the testing procedure is determined by the requirements that the valve must fulfill. These predetermined requirements are set down as the engineer begins his preliminary designing of the valve.

In the case of the semi-square bottom gate valve which was added recently to the Mueller line, general requirements were set down. Among other factors the valve should have:

1. An adequate safety factor.
2. Proper pressure ratings.
3. Shut-off capabilities which will endure repeated use under extremely high flows.
4. Strength to withstand most rigorous field tests or operating conditions so that they do not induce stresses that exceed the endurance limits of the material.

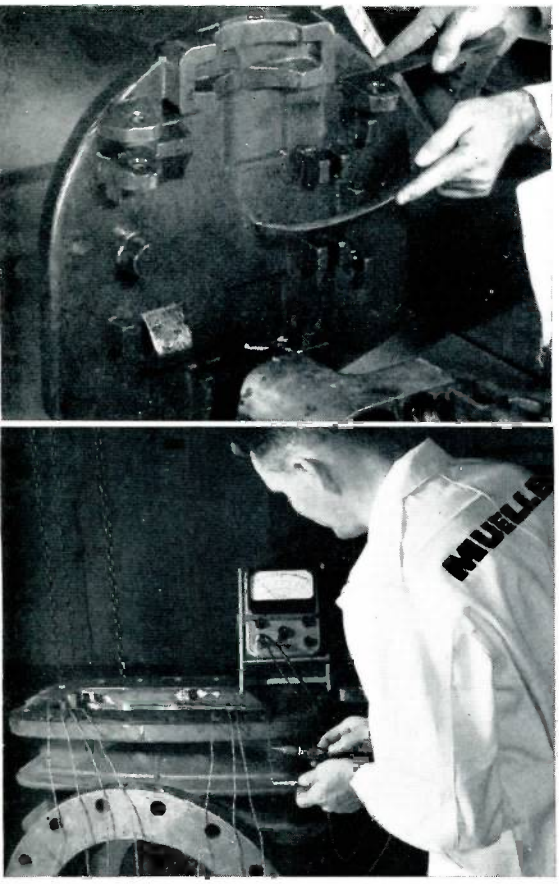
Once the requirements were outlined, engineers then called upon their experience and information gained during the past years while working on other valves, and evolved a design which they felt would meet the requirements set down. The next thing was to prove that which had been worked out on paper.

After the first model was manufactured, the initial job was to check to see that specifications had been followed. The valve was weighed and torn down. It was checked piece by piece to see that all parts conformed to drawings. Threads were measured, the body and discs were checked for proper thicknesses and for any variations that might have occurred during manufacturing.

Once it was determined that the valve measured up to the proper standards, the valve was re-assembled and the tedious task of preparing it for its destruction began.

It is first sandblasted to remove any grease, dirt or rust and then it is undercoated. Next, under conditions where humidity and temperatures are tightly controlled, a coating, which looks like a heavy varnish, is applied. This lacquer looks similar to varnish, but it has such qualities as great sensitivity, brittleness and predictability. This coating is so sensitive that it will crack at the slightest strain.

In order to evaluate the stress coat patterns produced on the valve, test bars are made and checked first. These bars are tested to determine the amount of strain it takes to make the first crack in the coating. From this, the engineers are able to calibrate the tests which follow. The stress coat material is so sensitive to change that the test bars are sprayed and allowed to set up under exactly the same conditions as the valve. Variations in drying conditions alone



In the top photo the disc thickness is being checked against specifications set down by engineering. The resistance in the internal strain gauges is being checked by a technician below.

The tiny hair-like wires of the strain gauge are attached to heavier wires which are being soldered in place by the lab operator.

are enough to distort the calibrations which are taken from the test bars.

The valve is then pressurized at predetermined increments. The crack patterns caused by the stress and/or strain of the water pressure are noted and studied for each increment. The pressures in the valve are not high enough to do any permanent damage to the valve, but sufficient to crack the stress coat which pinpoints critical points of stress, stress concentration and direction of stress. Some companies use whitewash instead of the stress coat, but needless to say, its sensitivity doesn't compare with the modern coating.

Prior to the valve being pressurized, dial indicators were placed against the discs and any disc deflection was noted at the different pressure levels.

Another pressure test is the blind flange test in which pressure is applied from end to end. During this test the amount of torque required to open and close the valve was checked at different pressures.

An engineer can look at a valve design and tell the general areas of stress, but the stress coat patterns give the exact location. At the points of greatest stress are placed the external gauges. The internal gauges, naturally, had to be placed while the valve was dis-assembled.

Each gauge consists of a pair of hair-like wires which are attached to the bare metal of the valve. As the water pressure forces a change in the physical form of the valve, the wires become stretched or compressed, thus changing the resistance in the gauge. The variations in the resistance are electronically relayed to the control room where they are amplified and charted. Each change in resistance means a movement which might be no greater than 10 millionths of an inch.

During the steady build-up of pressures the valve is constantly watched for deformation, possible leaks and disc action under these different pressures.

As the pressures increase in the valve, the tension in the control room seems to rise also. As the pressure indicator inches near the anticipated rupture point, the observers, except for the engineers and technicians, slowly edge back away from the 2½-inch thick, bullet-proof windows as they seem to distrust the foot-thick walls which shield them from the shower bath that is soon to come spurting from the rupture in the valve.

Once the pumps, which are capable of producing pressures up to 30,000 psi, have stopped, engineers and technicians rush into the burst chamber, which is 20 feet long, 12 feet wide and 15 feet high, to note the position and kind of failure. Before the valve is touched it is photographed so that details are pictorially preserved after the valve is dismantled again.

Again, piece by piece, the valve is measured and checked. The threads on the valve stem are checked on optical comparators for any deformations produced by the pressures. Test bars are cut out of

valve parts and run through a series of chemical, physical and tensile tests. They are chemically checked with dye penetrants and broken down physically for analysis. The results of these tests are compared with similar tests which were run on test bars which were poured when the valve castings were produced.

A complete metal analysis is done in the area where the break took place to be sure that the failure was not the result of the physical make-up of the metal. Nothing is taken for granted.

Once the physical tests are completed, engineers begin checking data to see if:

1. The areas of greatest strain were where they were expected. If not, why not?
2. A minor revision in design could eliminate or reduce a critical zone, or greatly increase the valve strength.
3. The proper limitations were placed upon the valve.
4. Tests results were properly interpreted in relation to the material used.

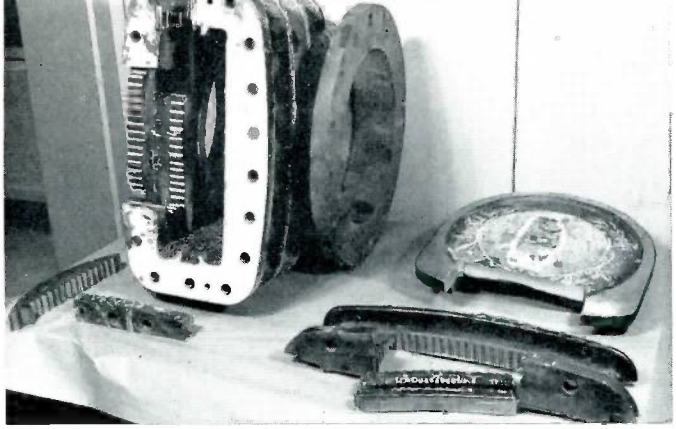
A second model valve that was produced was put out into the field and actually tested under working conditions. It was checked and inspected during rigid tests while it was opened and closed under extremely high flows.

Once it was determined that the valve conformed to Mueller quality and met the full requirements of the American Water Works Association and other governing bodies, and that it lived up to the specifications and expectations outlined by Mueller engineers, the valve was released for production and sale.

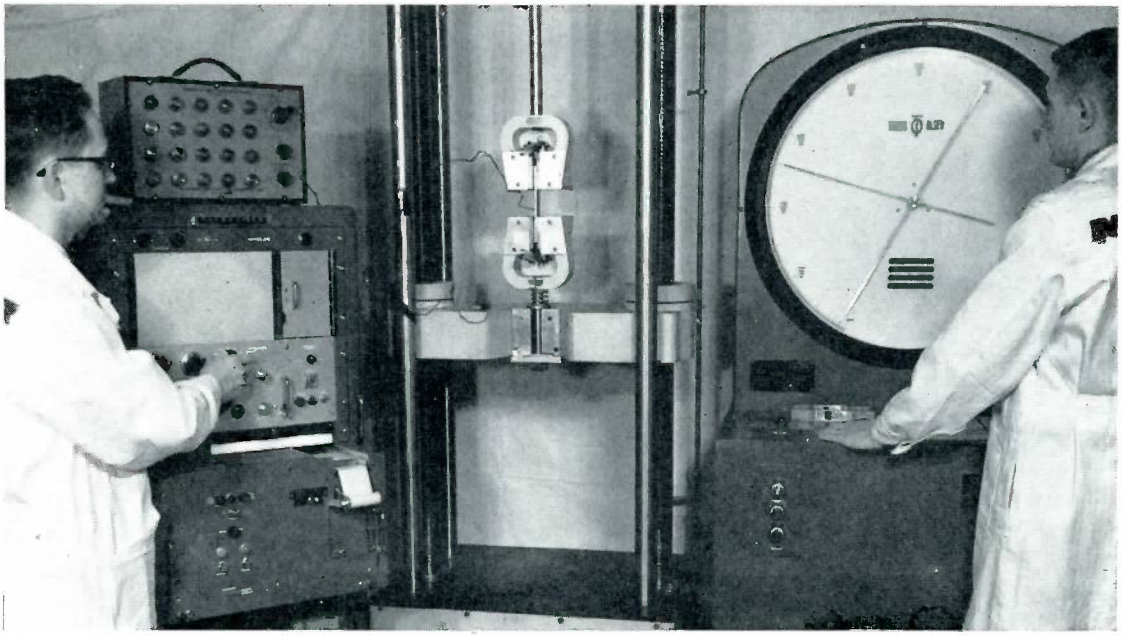
After the "autopsy" was performed on the valve body and pages of material analyzed, Mueller engineers had a complete history on the life and death of a gate valve.

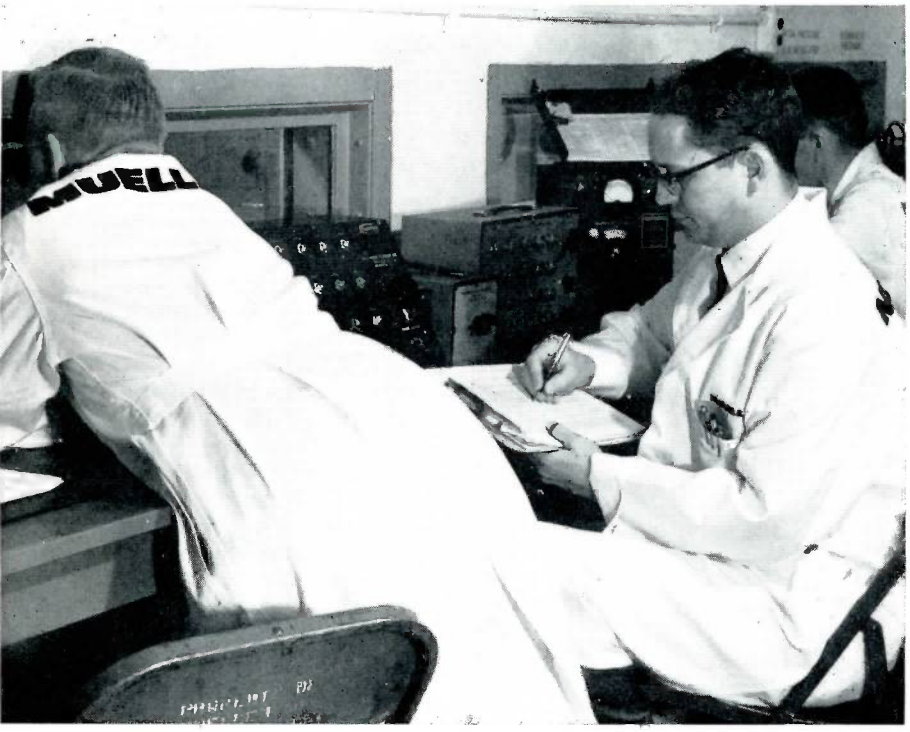
The white lines on the body of the valve are cracks in the stress coat material.

The extreme water pressures in the valve caused the crack in the bonnet which can be seen clearly in this photo. Even though the valve is ruptured the test does not end here. Further investigation continues to determine why the valve cracked at this point.



After the valve has ruptured it is disassembled and test bars are cut out of various pieces. Below Operator Larry Bundy (right) and Engineer Bob Roos run a test bar through a tensile test.





This is the scene in the control room as the test gets underway. The valve is observed through binoculars while gauges, amplifiers and recorders chart changes in the valve as water pressures change.

A Call In The Night

Mueller Machines Help Avert Service Disruption

by
J. K. McALEER
Fieldman, Division "A"
Equitable Gas Company, Pittsburgh
Reprinted from EQUITABLE NEWS, March, 1963

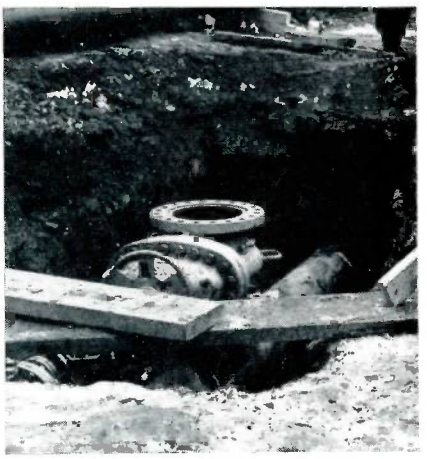
Any report of a gas leak speeds through our telephone switchboard to the Customer Service Division and Dispatch Center in a matter of seconds so that service men can be on their way as soon as possible.

Darkness gives an added urgency.

When a call was received Friday evening, December 28, reporting an odor of gas at Edgebrook Avenue near Timberland Avenue, a sparsely settled area in Pittsburgh's Nineteenth Ward, it was investigated immediately and the Night Crew of Division "A" was dispatched to excavate a spot over our 12-inch main along Edgebrook Avenue, where the odor of gas was preva-

Workmen from Equitable Gas Company of Pittsburgh (left) examine the shell cutter after making a cut in a 12-inch line. The cut was made so that a Mueller line stopping unit (right) could be used to divert the flow of gas around a break in the line. The by-pass line is shown at the right of the picture.

Below the workman watches the Mueller C1-36 drilling machine make the cut after it was bolted to the gate valve at the right.



lent. A leak on the line was discovered, and it was vented into the air for safety until repair work could be started.

In the next few days, various methods were tried in an effort to repair the leakage. The affected line was a high pressure line—the main feed into the Brookline area. With the temperature ranging from 10 to 20 degrees, some means had to be found to make repairs without shutting off service. To leave customers even for a short period without heat and adequate gas service in a critical cold spell was unthinkable.

At this point, the Mueller Co. and Columbia Gas of Pennsylvania were our friends in need. Columbia not only loaned Division "A" a Mueller drilling machine, they dispatched it from their Mollenauer Shop along with a man to operate it. The Mueller Co. representative rushed arrangements for two 12-inch line stopper fittings from Columbia Gas Company's Wheeling Shop.

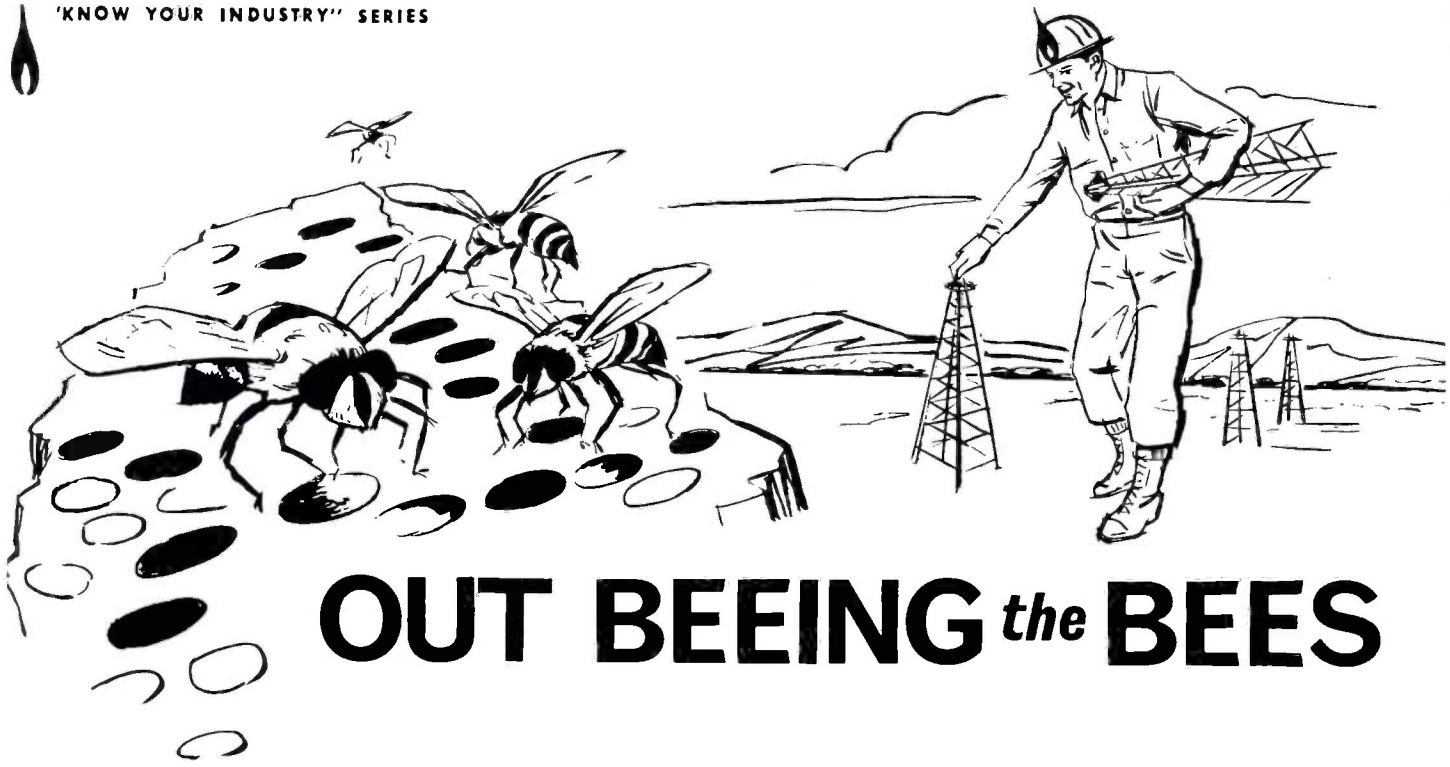
Meanwhile a 10-inch by-pass had been installed around the 12-inch valve. The Mueller line stopper fittings were then welded to the line, one above and one below the leak area, and gate valves were bolted to the flanges of these stopper fittings.

To use the special No-Blo drilling machine it, in turn, is bolted to the gate valve flange. The drill then cuts a coupon, or small section, from the line area encased in the stopper fitting and closes off the line with a neoprene covered steel wedge stopper.

When the two stoppers were finally inserted, the leak was speedily repaired. The stoppers were removed and the fittings effectively sealed with plugs and caps. With the 12-inch line back in complete, safe service, the by-pass was removed and the excavations filled in.

Not one customer had experienced any disruption of service. Working day and night, the men of Division "A" had seen to that!

'KNOW YOUR INDUSTRY" SERIES



OUT BEEING *the* BEES

The prudent bee works all summer making honey.

When snow flies, he snuggles down in his hive for a comfortable winter—with more food than he can possibly eat.

Next summer, he's back on the job. Over the years, a hive safe from the sweet tooth of man and bear will build a large reserve of honey.

In much the same way, the gas industry assures you and your family of a comfortable winter and summer by building ample reserve of natural gas.

For instance, in a recent three-year period, the industry found two cubic feet of gas for every one that was used.

Or to look at it another way, in the last two years the nation used more gas than the most widely accepted estimates of total proved reserves in 1925. Twenty years ago experts estimated our ultimate total reserves of natural gas at 170 trillion cubic feet. Since that time the nation has used more than 170 trillion cubic feet of gas — and proved reserves of natural gas are at an all time high of 273.8 trillion cubic feet.

By constantly building up the nation's store of natural gas, the industry assures today's customer of adequate supplies, assures stockholders that they have made a sound investment and prepares for the demands of tomorrow.

However, it's a tough and increasingly costly job to keep adding to our known reserves.

Unlike the bee, gas explorers must work both summer and winter—night and day. In their search they employ sciences ranging from geology to chemistry and microbiology. And they use the most modern tools. Instead of literally pounding a hole in the ground, as Colonel Drake did for the first oil well, the powerful rotary drills are used to bore deep into the earth.

Yet even with the aid of modern science and tools, the search is risky.

For example, vibrations from an explosive charge at a shallow depth are reflected back in varying patterns from rock strata beneath the surface. Skilled geological mapmakers transform these patterns into drawings of the earth below. These drawings can indicate "possible" gas bearing structures.

However, only the drilling bit can determine the actual existence of natural gas.

The search is not only risky but expensive.

A deep wildcat well—a well drilled in unexplored territory—costs from $100,000 to a million dollars. Although deep well drilling becomes costlier by the foot, it often pays off. In some areas where gas has been produced for many years, ever deeper drilling locates still more gas.

The gas industry is investing millions of dollars annually to develop known sources of natural gas. In addition, millions of dollars are being spent to discover and tap new reserves.

Experts say there are countless trillions of cubic feet of gas stored under our tidelands, especially in the Gulf Coast area. Modern equipment designed to "go to sea" seeks out these storehouses. Already important gas fields have been located below the ocean floor.

To sum it up, the gas industry, like the prudent bees, is preparing for the future.

Brand "X" Bargain

By

GERALD H. LAMPREY

Operations Engineer and Purchasing Agent, Consumers Water Company, Portland, Maine

Every day seems to bring more vexing problems to those of us charged with making buying decisions. Problems like these:

—Will 1963 see recession — or growth — in the economy, and how will this affect price trends?

—Are inventories too high, or too low, considering the state of the economy?

—What new products may replace the ones we have been buying?

—What advantages and disadvantages have we been reaping from contract buying?

Unfortunately, there is no cure-all for problems in the utility purchasing field. Through the years, our industry *has* developed certain standards and specifications which make our purchasing task easier. Yet, when one manufacturer surprises us with a really low price on a product, he may test our buying know-how until it strains at the seams.

Today I am going to generally confine my remarks to one factor of purchasing which, sad to state, is receiving some neglect; that is, the aspect of quality. A historian looking back on the 1960's may well entitle this period "The Decade of Junk": A time when price dictated choice, and products need only be "Good Enough".

We have only to look at the household appliance field, where some products do indeed tend to be *good enough:* just good enough, that is, to survive the 90-day warranty period!

To home-makers who are taken in by easy terms or a seemingly cheap price, the "Good Enough" criterion often proves to be an expensive disappointment.

The pressure, unfortunately, has been on price—to the detriment of quality. We are reaping a harvest of gadgets that fall apart, "Work-Savers" that don't work, and a public-be-damned attitude when it comes to service.

To reverse this trend, we must learn to distinguish between "Price" and "Value". We must beware of "Bargains" that are not really bargains.

As the "Good Enough" philosophy spreads, it puts the quality-minded manufacturer in a pretty pickle! How can he continue to build quality products in the face of irresponsible competition? The truth is, he can't—unless we as buyers adhere to sound purchasing principles—unless we as buyers remain alert to the difference between "Price" and "Value"!

If we are *not* alert, the conscientious manufacturer is faced with bleak alternatives:

1. He can lower quality standards to remain competitive.
2. He can accept domination of his industry by one big manufacturer.
3. He can accept governmental regulation of business and prices.

Fortunately for us in the water utility industry, most manufacturers are still able to say "No Thanks!" to all of these alternatives. Instead most declare: "We will continue to make the best products we know how, using all the tools of modern technology at our command."

This sense of responsibility stems from an industry-wide demand for products which will pass the test of time. The very nature of the service we perform *requires* quality equipment to provide long-term value.

Certainly we are interested in obtaining a fair and competitive price. But we must affix a trained and critical eye on any price-trimming, for fear that our suppliers will lose their ability to serve us according to the high standards of our industry. A price that is too low to enable them to budget the necessary service, research and development programs is definitely *not* to our advantage as utility operators.

The talent for lowering price *without* impairing quality is considerably more rare. You have to achieve lower unit costs by sharpening marketing and sales techniques, by raising volume, and by developing more efficient production methods. You must research for new ideas so that you can develop new and better products that still meet the competition of the market place.

This is not an easy task. Indeed, it is most difficult; but we in the purchasing field share the responsibility to see that it not be *impossible.*

We can meet this responsibility by asking the supplier whether, in designing the product, he has considered such factors as installation cost, maintenance, or how we might improve our operating methods.

Careful, informed questioning may expose the fact that his main selling point is a low price . . . a low price for a second-rate product that we will have to install, service ourselves, rebuild when it breaks down, and then—keep our fingers crossed until it finally is consigned to the scrap heap where it belongs!

In the case of the utility managers, it might be thought that their hands are tied to a degree by public bidding laws. As a matter of fact, it has been pointed out that most city charters require that the lowest *and best* bid be accepted. The courts have backed up this concept by holding that city councils should be permitted the discretion to distinguish between a "responsible" and unresponsible bidder.

In the water utility industry then, we will not as a rule, hesitate to choose a ten-dollar widget over a five-dollar widget if we are convinced it is designed and constructed with better materials. When we are buying equipment that we are going to bury six feet underground, we must be assured of dependability and long life. Therefore, we should encourage the manufacturer who spends hundreds of thousands of dollars to improve his products and enable us to upgrade our service to our customers.

This is the manufacturer who produces *real* value for us. He is the fellow we'd like to keep in business.

—Reprinted from the *Journal of the Maine Water Utilities Association,* March, 1963

The first floor includes a lobby (below) and customer service desk as well as business offices and other departments. The handsome stairway leads to the second floor which houses engineering and administrative offices such as the one shown above. The bubbling pool (inset) is situated beneath the stairway.

This modern, attractive building is the new headquarters of the Baton Rouge, La. Water Works Company. The two-story glass, aluminum and brick building has about 16,000 square feet in it.

Baton Rouge, Louisiana

New, Modern Building Houses Water Works Company

Along with the speedy growth of Baton Rouge, La., are the rapid advancements made by the Baton Rouge Water Works Company.

To continue this growth pattern and to provide greater customer service, the privately-owned utility has constructed a new headquarters building in the heart of the city.

This modern look in water company offices is a pleasing arrangement of glass, aluminum and gray brick. The two-story building has approximately 16,000 square feet and is equipped with a drive-up window and a night depository. The first floor has a lobby, general offices, customer service department, accounting department, business machine and data processing department, and a records and office supply storage room. On the second floor are the board room, administrative offices and the engineering department.

The building is on a 15-acre tract that is near both the geographic and population centers of Baton Rouge. The property has been owned by the water company for many years and has been the location of the company's construction and maintenance departments, shop, materials and supplies warehouse, and storage yard.

As the city grows, so grows the water company. Baton Rouge's population has now reached 158,000 and during the past 15 years the water company has more than doubled in the number of active accounts and the miles of main. Approximately 73 per cent of the company's plant investment has been made within the past 15 years.

The original water system began in 1888, consisting of only six miles of main and serving very few customers. Today, it has 793 miles of main and 55,000 customers. Fifteen years ago the daily average pumpage was 10 million gallons and today it is about 21 million. The 34 wells which supply the system have a capacity of 41 mgd.

The present private company was organized in 1910 and its offices were located in the downtown area until the new office building was completed.

The company is rated Class I by the National Board of Fire Underwriters. This rating enables the City of Baton Rouge to obtain an overall rating which results in fire insurance premium savings to the people of Baton Rouge of about one million dollars a year.

FPC Chairman To Address A.G.A.-P.C.G.A Convention

Joseph C. Swidler, chairman, Federal Power Commission, will address the 1963 Convention of the American Gas Association and Pacific Coast Gas Association Oct. 13-16 in Los Angeles.

Mr. Swidler, an attorney who was formerly general counsel and secretary of the Tennessee Valley Authority, will speak at the opening general session Oct. 14 in the Biltmore Hotel. He will be the only speaker, and following his talk there will be a question and answer period. The FPC chairman also spoke at the 1962 A.G.A. convention.

John E. Heyke, Jr., president of A.G.A. and of The Brooklyn Union Gas Co., will preside at this initial session which will begin with gala ceremonies featuring movie and television stars. The association will also present its annual awards at this session.

The stars of the Lawrence Welk Show will be featured at a "Night in Hollywood" Oct. 14 in the Palladium Ballroom, according to Ludlow Shonnard, Jr., chairman of the Entertainment Committee, and vice president of Southern Counties Gas Co. This will be the highlight of the entertainment program. In addition to the floor show, there will be dancing.

A feature of the convention will be the "GIDea Trading Post", a variation of the highly-successful "Idea Trading Post" at the 1962 Convention in Atlantic City. This year entries will be based on efforts of companies to further the aims of the Gas Industry Development Committee.

* * *

Chandler Is Nominated For A.G.A. Presidency

Marvin Chandler, president, Northern Illinois Gas Co., Aurora, has been nominated for president of the American Gas Association.

Mr. Chandler is currently first vice president of the gas industry's national trade association. He heads a list of 30 executives of gas distribution, transmission and manufacturing companies nominated to serve as officers, directors and section chairmen in 1963-64.

Elections will be held in Los Angeles at A.G.A.'s annual convention, which is scheduled this year for Oct. 13-16 in joint session with the Pacific Coast Gas Association. Names of nominees were announced by William G. Hamilton, Jr., president, American Meter Co., Inc., Philadelphia, and chairman of the A.G.A. General Nominating Committee.

Others nominated as officers are: first vice president, Ed Parkes, president, United Gas Corp., Shreveport, La.; and second vice president, Guy W. Wadsworth, Jr., president, Southern Counties Gas Co., Los Angeles. Charles H. Mann, treasurer, The Columbia Gas System, Inc., New York, was nominated for re-election as treasurer.

Nominated for the A.G.A. Board of Directors for two-year terms ending in October, 1965, are: D. M. Bailey, executive vice president, Southern Union Gas Co., Dallas; W. M. Jacobs, president, Pacific Lighting Gas Supply Co., Los Angeles; Theodore H. Kendall, president, South Jersey Gas Co., Atlantic City; W. L. Lee, president, Atlanta Gas Light Co., Atlanta; Frank Nunlist, president, Worthington Corp., Harrison, N. J.; Fred R. Palin, president and general manager, Union Gas Company of Canada Ltd., Chatham, Ont.; A. B. Ritzenthaler, vice president—Sales, The Tappan Co., Mansfield, Ohio; G. J. Tankersley, president, Western Kentucky Gas Co., Owensboro; and William B. Tippy, president, Commonwealth Services, Inc., New York.

Six members of the board were nominated for re-election to two-year terms. They are: Donald S. Bittinger, president, Washington Gas Light Co., Washington, D. C.; Henry A. Eddins, president, Oklahoma Natural Gas Co., Tulsa; Gerald T. Mullin, president, Minneapolis Gas Co.; Richard A. Puryear, Jr., president, Alabama Gas Corp., Birmingham; R. J. Rutherford, president, Worcester Gas Light Co., Worcester, Mass.; and S. L. Sibley, vice president and general manager, Pacific Gas and Electric Co., San Francisco.

* * *

Canadian Gas Association Elects

David Norman Cass-Beggs, general manager of the Saskatchewan Power Corporation, has been elected president of the Canadian Gas Association at the association's 56th annual meeitng at Jasper Park, Alta.

The 600-member organization is the coordinating body for the natural gas utilities, pipeline companies, contractors and appliance and equipment manufacturers who make up Canada's $2,300,000,000 natural gas industry.

Mr. Cass-Beggs, who was born in England and educated at the University of Manchester, has been head of the Saskatchewan Power Corporation since 1955. He was previously an assistant associate professor at the University of Toronto and a professor of electrical engineering at University College in Swansea, England.

Elected the association's first vice-president was J. W. Kerr, chairman of the board and president of Trans-Canada Pipe Lines Limited, Toronto. Elected second vice-president was B. F. Wilson, president of Northwestern Utilities, Limited, and Canadian Western Natural Gas Company Limited, Calgary.

* * *

Million Homes To Install Gas Heating In 1963

Nearly 1,150,000 homes in the nation are expected to install gas heating this year, bringing the total customer heating with utility gas to more than 24,740,000.

The results of the American Gas Association's 15th annual gas house-heating survey forecast that 727,000 installations would be in new homes and the remainder would be in homes converting from another fuel.

This million-home annual increase would continue a decade-long trend. When A.G.A. began its house heating surveys in 1949, there were 7,443,000 such customers. This number had tripled by the end of 1962. According to the latest U. S. Census, 43 per cent of all homes in the U. S. are heated by gas.

Blue Flame Whispers

No-Blo Method

Mueller Co. Introduces Meter Change Equipment

To help the gas industry combat the high costs of meter changes, Mueller Co. has developed a new, proven, No-Blo method of changing meters without interrupting service.

Since there is no blowing of gas or disruption of service, it is not necessary to purge house piping or to relight pilots.

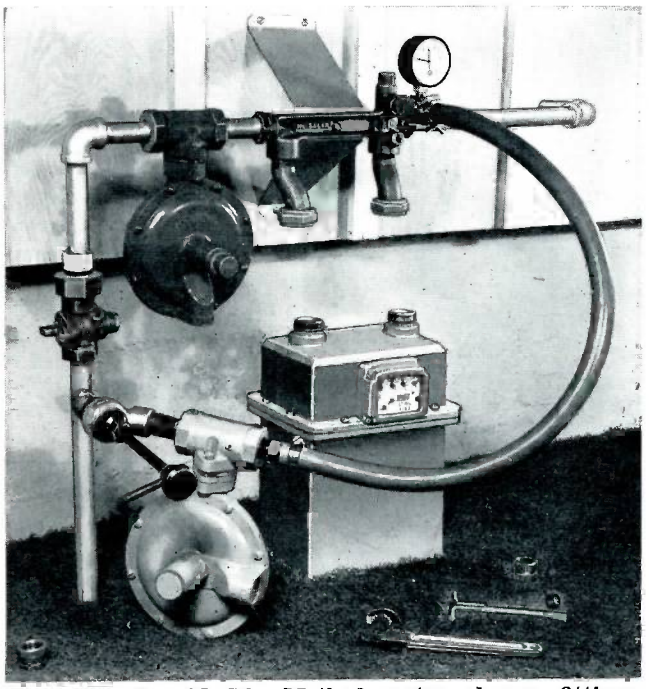
The recently-introduced line of fittings and tools to do the work provides a flexible auxiliary line built into the meter change tool which works in conjunction with special fittings. By diverting the flow of gas around the regulator and meter, servicemen are able to work on the meter and/or regulator.

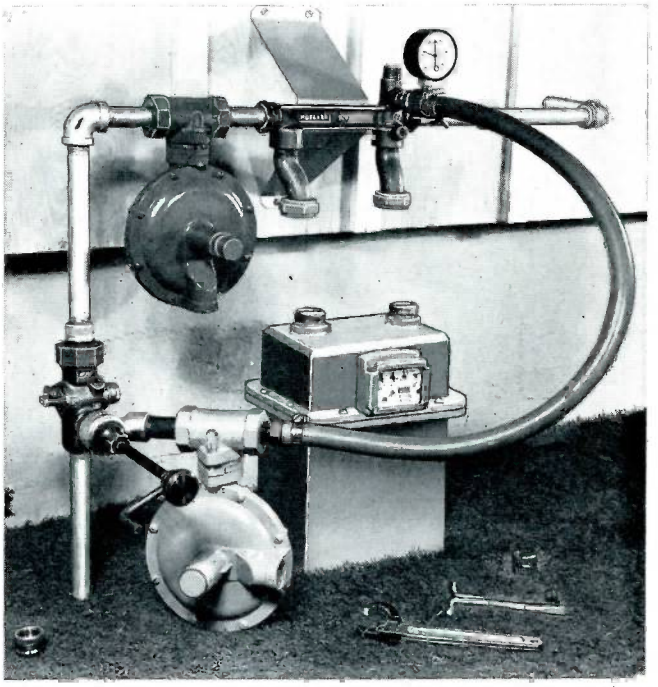
One change method makes use of a new Mueller LubOseal meter change stop and a Mueller meter bar with meter change fitting. The meter change tool is attached to the stop and fitting by means of special connections. The tool allows the serviceman to divert the regular supply of gas from the service line through the by-pass line. The meter stop then can be closed, isolating the section of the line between the stop and meter change fitting on the meter bar. While the work is being done on the meter or regulator, gas is flowing to the customer through the meter change tool.

In the case of a meter setting where a Mueller meter change stop has not been installed, a meter change connection is welded to the service line ahead of the stop. This connection is then drilled and the meter change tool is connected to it instead of the stop. The other end of the tool is coupled to the meter bar with the meter change fitting and the auxiliary line is then operable. The stop is then shut off and the mechanism in the change fitting is closed and the meter portion of the line is again isolated.

If the temporary source of gas is to be independent from the regular service line, such as bottled gas, only a modified meter change tool and a meter bar with a meter change fitting is needed. The tool carries the gas from the independent source to the fitting. The fitting, which is downstream or behind the meter, keeps the gas out of the meter and directs it toward the needs of the customer. With the stop turned off the meter is free to be worked on.

A number of safety features are incorporated into the meter change equipment. The connection and stop each has a tamper-proof plug so that only qualified people with the proper tools are allowed to work on them. An integral part of the meter change tool is a gauge which keeps the serviceman constantly aware of pressures in the service line to the house appliances?





These Mueller No-Blo Method meter change fittings, methods and equipment permit the gas company to continue house service safely while the meter is being repaired or replaced. The meter change tools for high pressure services (shown above) permit regulators as well as meters to be replaced or repaired. The Mueller meter change connection and equipment is shown at the left, while at the right is the Mueller LubOseal meter change stop.

Around The Water Industry

Atlanta Produces Hydrant Manual

The Department of Water Works, City of Atlanta (Ga.) recently published a 16-page training manual for fire hydrant servicing. According to General Manager Paul Weir the booklet is part of the department's in-service training program. The hydrant portion of the program includes a 15 to 20-minute lecture, illustrated with colored slides. The booklet relates, step-by-step, proper procedures for replacing a main valve, inserting extension section, replacing safety flange, inspection and positioning hose nozzles.

* * *

Westerner Heads Canadian AWWA

Vancouver's T. V. Berry was elected president of the Canadian Section of the American Water Works Association at its annual conference in Quebec City.

The new vice chairman is Waldo A. Wheten, city engineer and manager of water works, Hamilton, Ontario.

Mr. Berry, commissioner of the Greater Vancouver Water District, became the first British Columbian, and only the second westerner to be elected president of the Canadian Section of the 43-year-old association. William G. Hurst of Winnipeg was president in 1952-53. Mr. Hurst was president of the entire organization last year.

There are 900 members of AWWA across Canada.

Mr. Berry, who is also commissioner of the Greater Vancouver Sewerage and Drainage District, joined the Water District in 1926. He became commissioner of both the water and sewerage boards in 1926.

The new trustees elected by the convention are George Hodge, superintendent, Water Works Distribution System, Edmonton, Alta., and William L. Barret, city engineer of Fredericton, N. B.

DAVE WALTHALL

Retired Water Supt. Elected Mayor of City

Homer, Louisiana is one city where the mayor doesn't have to be advised of water department operations—he knows them. For 33 years J. D. (Dave) Walthall was superintendent of the light and water works there. Now he is mayor in this community of about 5,000 persons which is situated near the Arkansas-Louisiana border. After 33 years as superintendent he retired, only to return to public service four years later as mayor. Mr. Walthall was born Jan. 27, 1891 in Athens, La., and at 15 he started utility work. He did private electrical and plumbing work until 1925 when he took on the superintendency at Homer.

East Bay Dedicates "Giant M" Aqueduct

East Bay Water dedicated the "Giant M", the third aqueduct connecting the East Bay with the pure Sierra snows, at outdoor ceremonies in Orinda, Calif., May 23.

Adding to the celebration was recognition of East Bay Water's 40th anniversary.

The "Giant M", which will bring 181 million gallons of water daily to the East Bay, is the first major project to be completed in the $283 million Water Development Program authorized by the voters in 1958.

"The need for this new aqueduct has become increasingly apparent during the past year," said Louis J. Breuner, president of East Bay Water's Board of Directors. "The average daily consumption last year was 160 million gallons, but the two existing aqueducts could only deliver 157 million gallons daily, necessitating the use of local storage. The 'Giant M' will be able to deliver an additional 181 million gallons daily," he said.

The pipeline, more than seven feet in diameter, stretches 90 miles from Pardee Reservoir in the Sierra foothills to Orinda, and includes seven tunnels, the longest of which bores three miles underneath Charles Hill between Orinda and Lafayette.

The majority of the aqueduct is constructed of 20-ton, 40-foot sections of cement coated, mortar lined steel pipe. More than 12,500 such sections were used and the aqueduct contains more steel than the San Francisco Bay Bridge, Breuner commented.

Present at the dedication ceremonies and the anniversary celebration were civic officials and community leaders from Alameda and Contra Costa Counties, the 13 cities in the District, and representatives of various state agencies.

Former Salesman, Ward DeWitt, Dies

Ward L. DeWitt, retired Mueller Co., Sales Representative, died recently in Dallas, Texas following a heart attack. Mr. DeWitt worked in the Mueller Sales Division for 33 years and retired in 1956. He started to work in 1923 as a salesman on the West Coast. Later, he was named manager of the Dallas branch office. When the Dallas office closed Mr. DeWitt stayed in the area as the Mueller representative. During the last few years he divided his time between his Dallas home and a small ranch in east Texas. He leaves his wife, Gertrude, three sons and nine grandchildren.

Marietta, Georgia

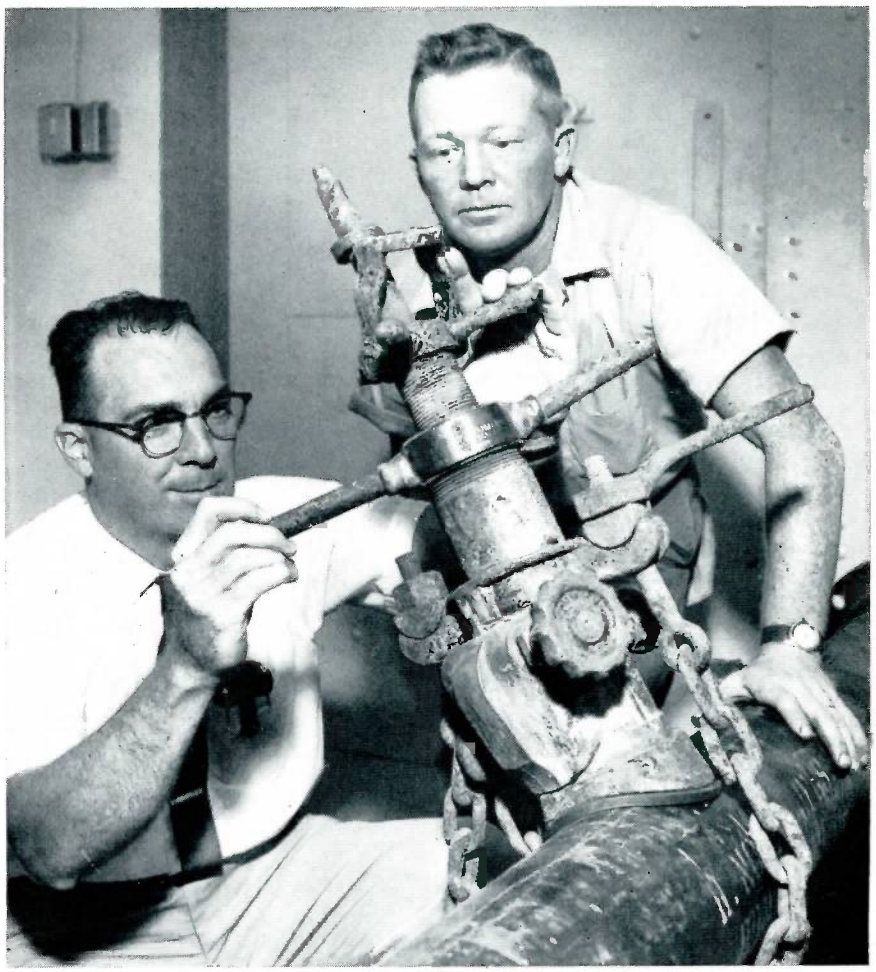
Workmen Uncover Old Machine

Machine Buried

At Least 30 Years

Found To Be

In Good Shape



This Mueller Columbian No. 1 drilling and tapping machine, which was buried for at least 30 years, is being examined by John J. Smith, Chief Products Engineer, left, and William Hood, Test Lab Operator. Two handles on the feed yoke were broken when the machine was taken from the main in Marietta, Ga., and except for the missing rachet handle, the machine is about complete.

Many Mueller Co. products are buried as standard practice and they are manufactured with this in mind. Water and gas departments around the country daily bury corporation stops, curb stops, gate valves and fittings, but never drilling machines —or at least we didn't think so until recently. A crew working in Marietta, Ga., however, came across a Mueller No. 1 Columbian drilling and tapping machine that was still strapped to a main that had been out of service for 30 years.

According to John J. Smith, Mueller Co.'s Chief Products Engineer, this model machine was produced between 1910 and 1917, so it has to be at least 46 years old. The length of time it has been buried is open for speculation but Claude Bishop, Marietta Water Superintendent, said the main has been in the ground at least 60 years. Bearing in mind the age of the machine and the time the main has been out of service, it is likely that the machine has been buried from 30 to 50 years.

When the machine was found the upper chamber was attached to the lower chamber and a corporation stop assembled on the boring bar, ready for insertion.

The remarkable thing about the discovery is the condition of the machine. Mr. Smith felt he could make a tap with the machine if he replaced a couple of gaskets and a screw, and added some lubrication. Except for the missing ratchet handle, the machine is about complete. Even the chain wrench was still on one of the chain hook nuts.

The threads are still good on the two chambers and they can be assembled easily by hand. Although the boring bar is discolored, it is movable. The exterior of the machine is pitted and rusted, but there is still evidence of paint on the chain yoke and feed yoke.

The big question unanswered is: Why was the machine left on the main?

As one wag put it: "If more utilities did it, it would certainly be great for our drilling and tapping machine sales."

We want to thank Mr. Bishop, Chris Chrisler and Jack Tilley of the Marietta Water Dept., for making the machine available to Mueller Co.

Strictly *Off the Record*

An American newsman was having a discussion with his communist counterpart. "As I understand it," said the American, "the basic idea of communism is to divide everything with your neighbor."

"Not quite," corrected the Red reporter. "The basic idea of communism is to make your neighbor divide everything with you!"

* * *

An American and a Russian soldier faced one another across the barriers of East and West Berlin. In time they fell into an argument.

"In my country," said the American, "I can go to the door of the White House, ring the bell, and say just what I think of Kennedy."

"So what?" said the Russian contemptuously. "In my country I can go to the gate of the Kremlin and say just what I think about Kennedy."

* * *

A pessimistic fellow read his horoscope which stated: "Make new friends and see what happens." So he went out, made three new friends, and nothing happened. Now he is complaining that he is stuck with three new friends!

* * *

Some railroad laborers who worked near a golf course were vastly intrigued by the game. They saw a golfer knock the ball into a rut and have a hard time extricating it. Then he got into a sand trap and well nigh failed to get the ball out. At length he got a good shot and the ball trickled directly into the cup . . . whereupon one laborer who had watched the previous difficulties commented sympathetically: "Now, Mister, you're really in a heck of a fix!"

* * *

Mr. and Mrs. were sitting in their boat, their lines in the water, when he suggested a bet as to who would catch the first fish. She accepted and it wasn't long until she got a bite. In attempting to pull in what appeared to be a big one, she got so excited that she fell out of the boat.

"Oh, well," he said, "if you're going to dive for them, the bet's off!"

* * *

Mrs. Jones was driving the wrong way on a one-way street and was hailed by a cop, who rasped: "Hey, lady, didn't you see the arrows?"

"Arrows? Honest, officer," she replied, "I didn't even see the Indians!"

* * *

If Mother Nature could have foreseen bermuda shorts, she surely would have done a better job on the male knee.

* * *

Joe: "How long have you been working for the company?"

Jim: "Since the boss threatened to fire me."

* * *

Two Spanish detectives were standing over the body of Juan Gonzales. "How was he shot?" inquired the first.

"I theenk eet was a golf gun," said the other.

"But what ees a golf gun?"

"I don't know, but eet sure made a hole in Juan."

* * *

Sign in gift shop: "For the man who has everything—a calendar to remind him when the payments are due."

* * *

A man who owned a hand-operated rotisserie was barbecuing a chicken in his backyard when a beatnik walked by. "I don't want bug you, dad," said the character, "but your music has stopped and your monkey's on fire."

* * *

A famous wrestler was visiting an old friend in the country village and the two spent their first evening in the local tap room. When they finally left, the host led the wrestler on a short cut through a

"I can explain everything, Doris, if you would only listen!"

pasture, forgetting there was a mean bull in it.

The pair was half way across the pasture when the bull attacked. The wrestler grabbed the bull by the horns and rolled around the field with him until the animal managed to free himself and run off.

"Too bad I had those last three or four drinks," said the wrestler to his friend, "or I would have got that guy off his bicycle."

* * *

The battle of the sexes will never be won by either side. There is too much fraternizing with the enemy.

* * *

There's a new social group in town called AAA-AA. It's for people who are being driven to drink.

* * *

Two engineering students were taking calculus for the first time and while waiting for the instructor to arrive they took a quick glance through the book. One of them came across the integral tables. "Tell me," he asked his friend, "can you read that?"

"No," replied his friend, "but if I had my flute with me I could play it."

A young man just received his college degree and rushed out saying, "Here I am, world; I have an A.B."

And the world replied: "Sit down, son, and I'll teach you the rest of the alphabet."

* * *

The mountain youth returned from college on summer vacation. "Whatja larnin', son," inquired his pa.

"Well, Pa, I'm studying geometry," replied the student.

"That's fine, son," said the old man. "Say something in geometry."

Not wishing to let his father down, the youth proclaimed solemnly: "Pi-R Square."

"Well, if that's what they're larnin' ye, ye kin stop right now!" exploded the old man. "Everybody knows pie are round — cornbread are square!"

* * *

A father putting a 50-foot extension cord on the telephone, explained: "Now that the weather is nice, I want my daughter to stay outdoors more!"

* * *

Luke says his golf game is really improving . . . the other day he hit a ball in one.

"The irony of it is, he quit his last job because they loaded him down with paper work!"

A nurse in the maternity ward asked a young med student why he was so enthusiastic about obstetrics. He said, sheepishly: "Well, when I was on medical rotation, I suffered from heart attacks, asthma and itch. In surgery, I was sure I had ulcers. In the psychiatric wards I thought I was losing my mind—but now, in obstetrics, I can relax!"

* * *

"I'd move heaven and earth to be able to break 90 on this course!"

"Try heaven, dad . . . you've already moved most of the earth."

* * *

John took Mary to the golf course the other day, thinking she knew all about the game. As usual, he sliced the first ball into the rough. Finally, after he had searched for the ball for nearly half an hour, Sally asked: "Would it be cheating if I told you where it is?"

* * *

Golfer: "My lad, do you know what becomes of little boys who use bad language while they're playing marbles?"

Small boy: "Yes, sir. They grow up and play golf."

* * *

"Now children," said the Sunday school teacher, "I have told you the story of Jonah and the whale. Willie, you may tell me what this story teaches."

"Yes'm," said Willie, "it teaches that you can't keep a good man down."

* * *

The cannibals stoked up the fire under the pot in which an explorer was being cooked.

The chief came up and asked the victim: "Do you have anything to say?"

"Yes," the explorer said, "I am smoking more now but enjoying it less!"

* * *

Mrs. No. 1: That's a lovely coat you're wearing, Mrs. Jones.

Mrs. No. 2: Oh, thank you. My husband gave it to me for my 35th birthday.

Mrs. No. 1: It certainly wears well, doesn't it?

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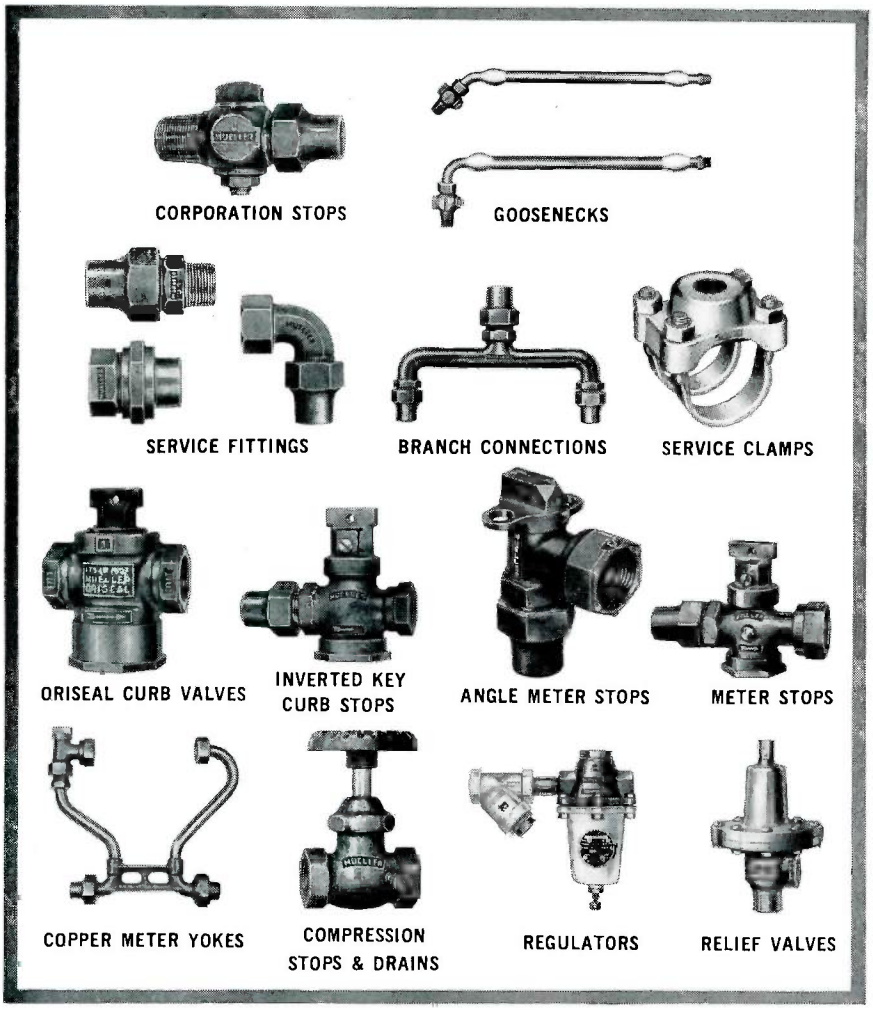

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