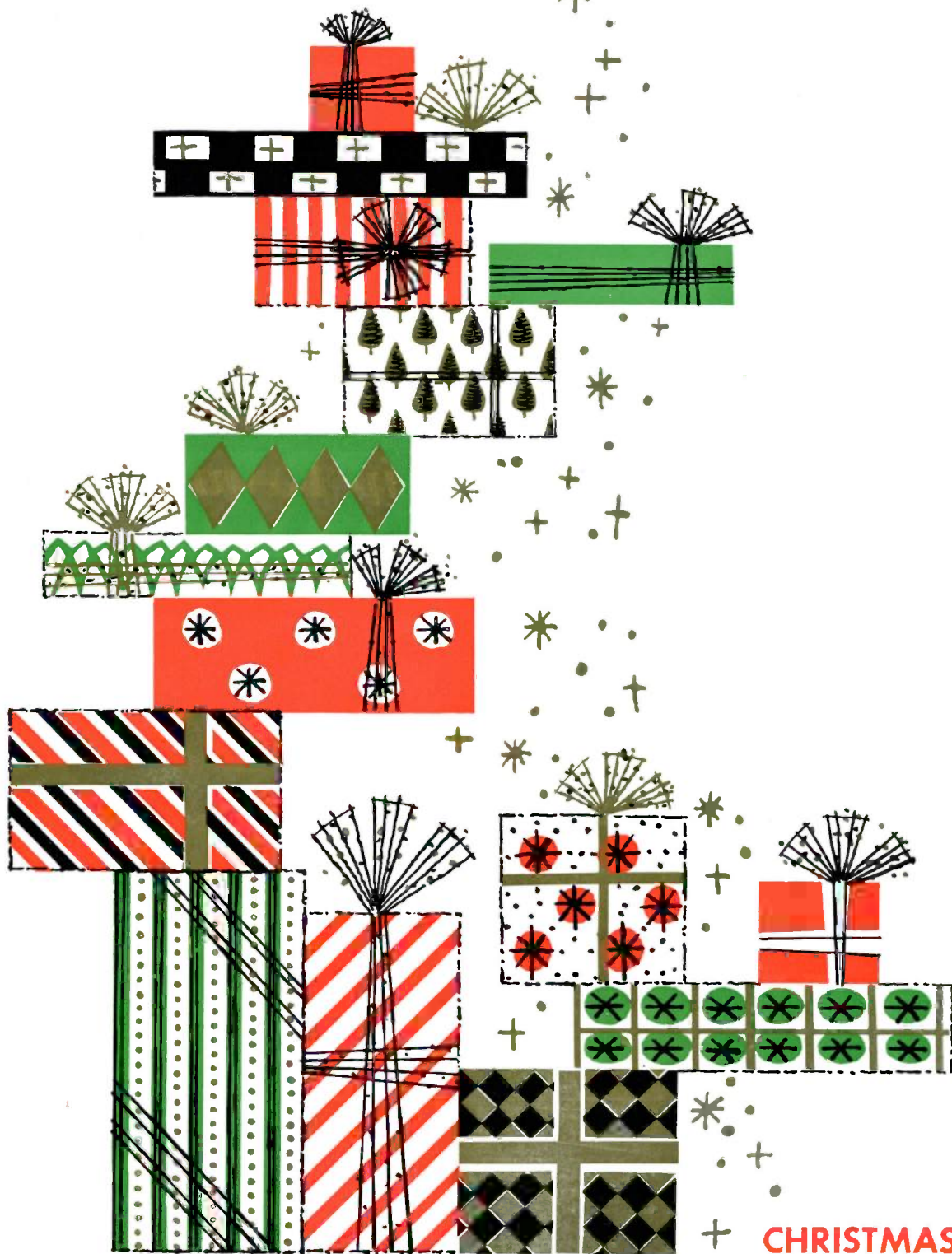


# Mueller Record



CHRISTMAS 1962

# MUELLER RECORD

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Editor  
**Jim M. Milligan**

Assistant Editor  
**Joe Penne**

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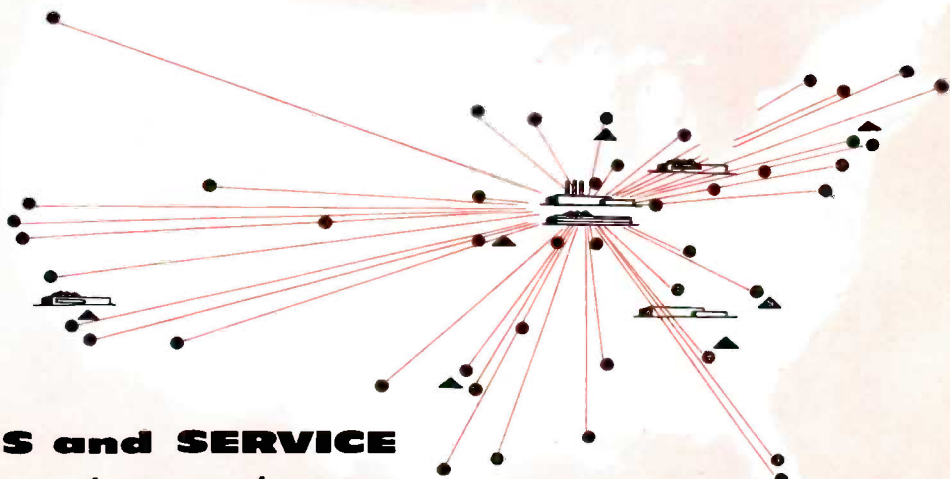
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Since 1857  
Quality Products for the  
Waterworks and Gas  
Industries

**MUELLER<sup>®</sup> SALES and SERVICE**  
*...serving the water and gas industries*



# Quality Checked

## *Control Program Aimed at Preventing, Not Rejecting*

What image comes to mind when we think of a craftsman?

This person could be personified by the Swiss clockmaker or German gunsmith who was able to convert pieces of brass, steel and wood into marvelously precise mechanisms.

The clockmaker, for example, was his own boss, design engineer, toolmaker, production worker, salesman and controller. As such, he knew every movement that went into his product and because of pride of workmanship and customer demands, he was able to produce the top-quality product. Because of this one-man operation, August, the clockmaker, was able to directly control the quality of his product.

August was the whole business. His skill may have been in his hands, but his mind directed them and the pride of workmanship was in his mind.

The manufacturing company of today is not a natural person with a mind and body, but it has thousands of hands, and its mind is a composite of those in top management.

Every division and department in Mueller Co. is involved in the blending of these attitudes of management with the production of these thousands of hands into a product that meets the demands of the customer at a price he is willing to pay.

Specifically, however, it is the job of the Mueller Co. Quality Control Division at all of the company's plants to see that this top quality is being maintained.

Most companies for many years have had quality control by inspection only, but today the inspection function is but a part of the overall quality control program.

The earlier inspection method was strictly a checking and policing process whereby parts and products were examined to see if specifications were followed or the end product did what it was designed to do.

Today inspection is used not only to discover faulty parts and products that are under production, but also to gather data which are used in the broad quality control program.

The overall program is designed to **prevent** the production of unacceptable parts, rather than to locate those that are being produced.

The inspection process will never be eliminated and its importance is still of prime value to producing a Mueller quality product.

The Mueller Luboseal and Ori-seal valves, for example, go through many inspections and tests during production. These begin with an inspection of the foundry cores and end with an air test of every valve that comes off the production line.

Statistical quality control is a relatively new method for attacking the quality problem. It employs statistical principles and methods with samplings which have been designated to assess the magnitude of chance cause variation and to detect variations which have an assignable cause.

Charles W. Moore, Mueller Co Manager of Quality and Materials Control at all plants, said that variation is always present in the measured quality of manufactured products. Variation that is due to assignable causes can usually be detected and corrected by appropriate methods. Variation due to chance causes is inevitable, he said.

The fact that assignable cause variation can be detected by these methods makes it possible to install statistical controls at various stages in the production of a product just for this purpose, he said. Before the introduction of statistical quality control, quality assessment of a product was normally confined to finished product inspection with the result that poor quality material might have been produced before the trouble would be detected and corrective action taken. As a result these "rejects" had to be scrapped or re-worked, Mr. Moore said. "Now it is possible to couple statistical controls to in-process inspection and take corrective action which will control and



**Micrometers often are associated with precision and accuracy. Close measurements and constant checks are important in producing a quality product. The photos on the succeeding pages reveal some of the methods used in production processes to produce a quality Mueller product.**

improve the quality of the product as it is produced," he said. "Quality must be built into a product, not inspected into it."

The use of statistics is not the answer by any means to all quality problems, but it has greatly reduced the number of tests that must be run in many cases.

Let's quickly run through just one quality control report on one item in one Mueller foundry.

Elmer Fawley, Quality Control Supervisor at Decatur, and Harold Peer, Quality Control Technician, studied foundry scrap reports for a six-month period to discover the area that needed the most attention.

Once the area for study was determined, the quality control team analyzed the nature of the defects. Were the defects in this particular casting due to dirt, slag, wrong temperature of the molten metal, bad molds, mis-runs, etc.?

At this point the investigation by factorial experimentation began and the various factors that could cause this particular defect were analyzed. Factorial experimentation uses the statistical approach of analyzing several variables at one time. A small random sampling was used to reveal which of the variables had significant effect in causing the defect.

Once the cause was found, the next question was how to eliminate the cause. The variables that are most likely to contribute to the defect, such as the methods for pouring the metal, temperatures of the metal, the height of the ladle above the mold and the content of the metal, were studied.

From these four variables, 16 combinations were tested and from the compilation of figures at the end there was no doubt about the corrective methods needed to eliminate this particular problem.

Once the remedy was found, the next thing was to put it into practice. Foremen and workmen directly connected with this operation were called together and the entire study was explained to them and the results and recommendations were discussed. From this point the men in the plant took over.

Mr. Fawley said that the understanding and co-operation of the

men in the shop are imperative to a successful quality control program. "The job of one man in a long production line may seem insignificant, but each operation is most important to the final product," he said.

This example is but one of the areas in which quality control methods can be used.

Total quality control begins with the design of the product and ends only when the product has been placed in the hands of a customer who remains satisfied, Mr. Moore continued.

Total quality control falls into four classifications.

The first job of quality control may be termed new-design control. It involves the establishment and specification of the most desirable relationships between quality and cost, performance and reliability, including the elimination or location of possible sources of quality troubles before the start of formal production.

Another area that is included in the broad term of quality control is incoming-material control. This involves the receiving and stocking of only those parts or raw materials that conform to the specification requirements.

The third area of concentration



Each core produced is individually cleaned and inspected before it goes to the foundry.



Without an exacting pattern to start with, most castings would be incorrect. Pattern Shop Foreman Ollie Fortschneider checks the alignment of a pattern to be sure that it is without .001 of an inch.



would be in the actual production of the product. This broad phase includes the selection of proper tools, processes and machines, supervision in the shop, adequately trained operators and workmen. right through to packaging and warehousing. These operations come under the supervision of the manufacturing divisions but all are part of the overall quality control program. For example, Mueller Co. quality control men have recently sampled a number of stops, which were packaged and in the warehouse, to see if they were unchanged from the way they came from the production center.

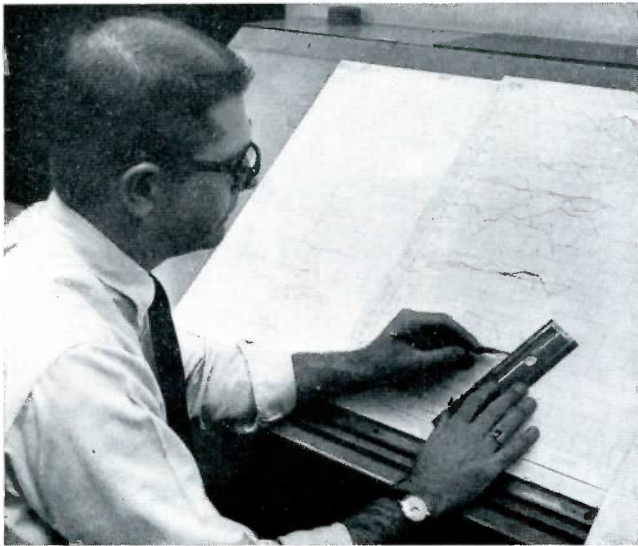
The fourth area of total quality control involves special process studies conducted to locate the causes of defective products and to determine the possibility of improving product-quality characteristics.

These four broad concepts of quality control seem rather remote from our clock-making artisan mentioned earlier. This isn't the case, however, because August wouldn't think of designing a clock that he couldn't produce. He certainly made sure that he had the right tools and materials and he eliminated parts that weren't made "just right." In the fourth cate-

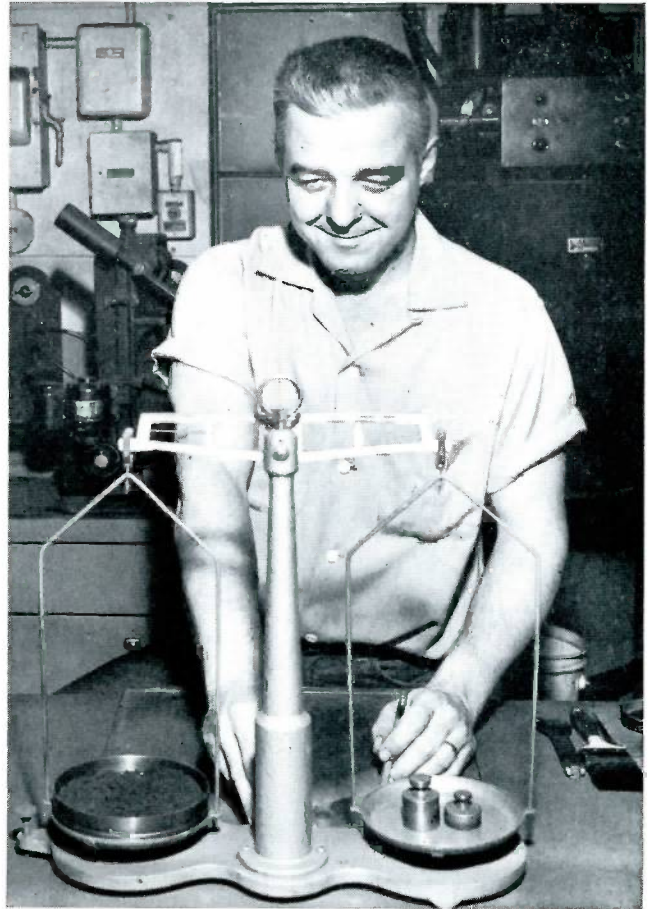
gory, we can assume that he attempted to improve his product and to eliminate problems.

It seems easy for August to practice total quality control, and it probably was, because he had one product and he was with his own design engineer, toolmaker, controller, production worker and salesman.

The spread between the one-man operation and one which produces hundreds of products, through thousands of hands at many locations, presents the problem for quality control people and as a result, modern methods must be used to keep up with modern production.



Chief Chemist Jack Parsons keeps a control chart up to date in the laboratory at Plant 4. These control charts visually tell quality control technicians how standards are being met through tests that are run continuously in the lab.



The sand used by the molders in the foundry is checked continually. Sand Technician Tony Schultz runs checks on the sand to determine if it is within rigid specifications from content to permeability.

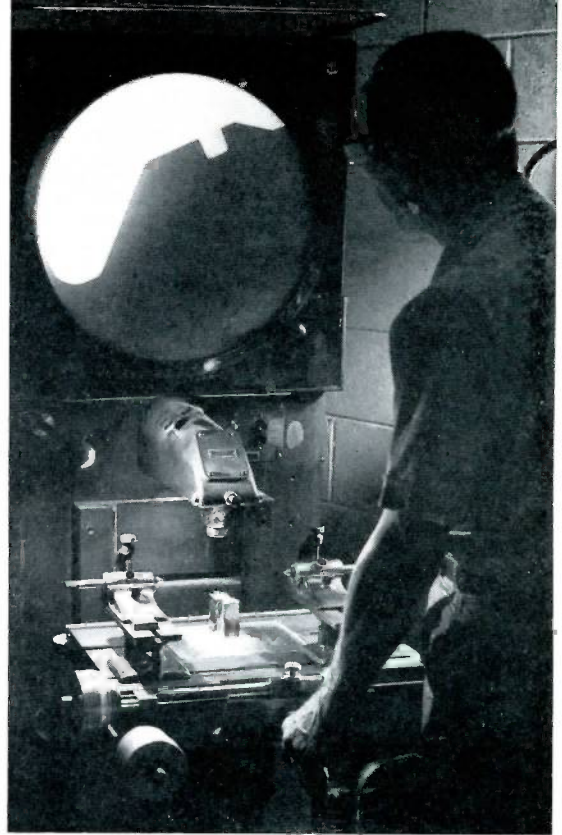


Once the rough castings have been cleaned, inspectors check each one before it goes on to the grinding and machining processes.

# QUALITY CHECKED . . .



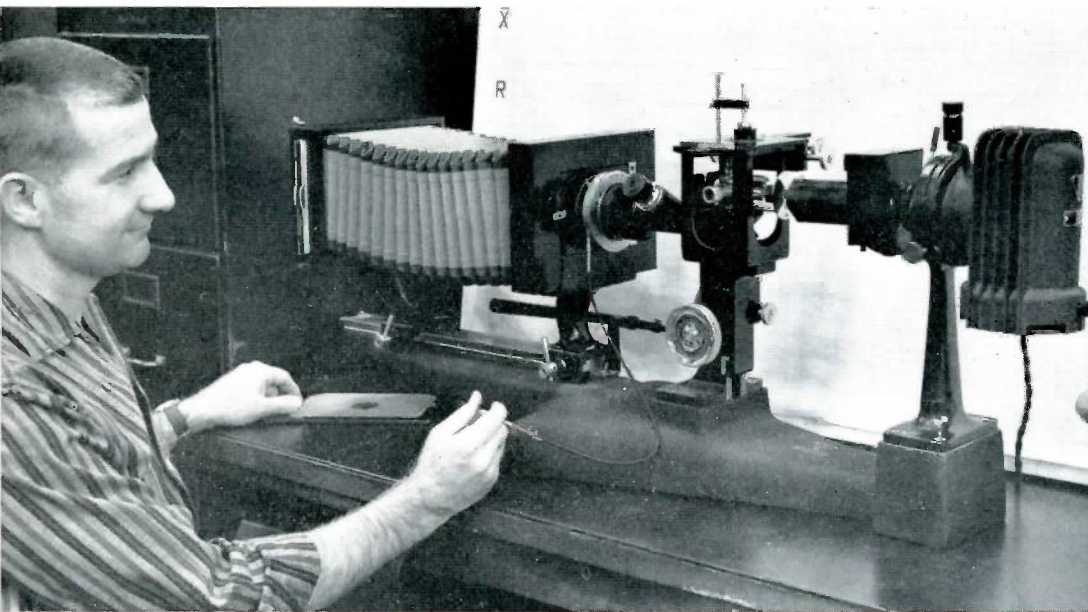
Analysis of foundry metals is continually being carried out. Lab Technician Maury Sefton checks the nickel content of brass on a spectrophotometer.



Precision parts can't be produced without precision tools. Toolmaker Bill Brunner projects a magnified image of the tool on a screen to check if the exact angle is cut into the tool. This contour projector is able to magnify a tool up to  $62\frac{1}{2}$  times. In other words, every 16th of an inch on the screen is equivalent to a thousandth of an inch on the tool.

Machine operators are responsible for the quality of the parts they produce. By using such instruments as gages and micrometers the machinists continually check their work. In addition, electronic devices like the machine (right) operated by Inspector Dave Younger, give closer inspections to samples. The instrument here checks a Luboseal key for surface imperfections measuring no more than .0001 of an inch.





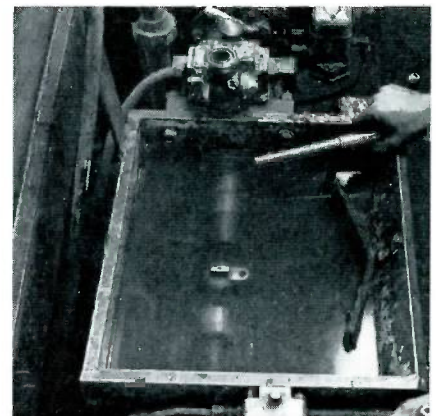
Under the high magnification of the Metallograph, Laboratory Technician Jim Keown is able to photograph the microstructure of part of a valve. At the right are some samples of a grey iron casting which were photographed. The heavy black lines in the photos are graphite formations and from

these formations technicians are able to determine the strengths and weaknesses of the metal. The Metallograph is used to check incoming raw materials as well as parts. The magnifications (from top to bottom) are: 500, 25 and 100 times.



Reviewing some statistics are three members of the quality control team. They are: (left to right) Harold Peer, Quality Control Technician, Elmer

Fawley, Quality Control Supervisor at Decatur, and Charles W. Moore, Manager of Quality and Materials Control.



At the end of the production line, every valve and stop gets an air pressure test under water to be sure that every part fits and works perfectly to assure a quality product.



KNOW YOUR INDUSTRY<sup>®</sup> SERIES

## Natural Gas --

# First With Both the Chicken and the Egg!

If it's a three-minute egg "in a hurry" or southern fried chicken, natural gas is the first choice.

All the way from one-man hot dog stands to giant kitchens serving thousands of meals daily, gas is as vital as bread and meat. Nine out of ten meals served to the public are cooked with gas. This includes some fourteen million meals served daily in schools and colleges, and millions more for factory workers. Gas-cooked meals nourish the country's armed forces in mess halls, forts, airfields and service academies, the sick in hospitals and high-flying airline passengers.

Cooking, however, is only one phase in the versatile commercial career of natural gas.

Like the chicken and the egg, gas is first with hot water.

Flaming silently under tens of thousands of tanks, urns, boilers, and cauldrons, gas provides millions of hot water daily for hotels, stores, restaurants—even the car wash.

And gas often plays a dual role.

As vital teammate of the laundry, gas provides an abundant supply of hot water and steam. In addition, giant tumblers that dry tons of clothing in a matter of minutes depend on natural gas for the exact degree of heat required to do the job best.

Long recognized as a superior heating fuel, gas also provides year-round air conditioning. Skyscrapers and small shops are rapidly discovering the advantages

of 12-month climate control which only gas provides effectively and efficiently.

Gas-fired radiant heaters quickly melt sidewalk snowbanks. They permit window shopping in complete comfort on the coldest day of the year, make outdoor dining a pleasure and drive-in banking a 12-month operation. They keep railroad switches free of snow and ice during the most severe blizzard.

Smokeless-odorless gas incinerators are another boon to commercial customers. The versatile blue flame disposes of pathological wastes at hospitals, garbage at restaurants, and mountains of trash at department stores—without smoke or odor.

Inside or outside, gas lights are as practical as they are charming. They provide a distinctive atmosphere at hotels, motels, restaurants and all types of commercial businesses. Dependability, low operating costs and reduced glare also make gas lights ideal for lighting airport runways. These same attributes make gas signs a strong merchandising tool for business.

Flexible, efficient and controllable natural gas has become the sole source of power in a modern shopping center, motel and office building. Using a gas engine or gas turbine to drive the generator, some businesses depend on natural gas for electricity as well as heating, cooling, cooking, lighting, hot water, steam and trash disposal.

To sum it up, natural gas is

America's commercial "Fuel of All Trades" and better still, gas is "Master of them ALL."

Long distance pipelines—some extending more than 2,000 miles—now make modern natural gas available to 97 per cent of the nearly 34 million residential, commercial and industrial customers, served by the gas pipeline and distribution industry.

Gas distribution service is one of the nation's pioneer public utility industries, the American Gas Association reports. When the first gas company was established in Baltimore in 1816, gas distribution preceded horse-drawn railroad transportation by 14 years, central telephone service by 63 years, and electric distribution service by 66 years. Only water antedates gas as a public utility.

Over the years, the leadership in gas production has shifted from state to state as producers discover and develop new supplies. Pennsylvania was the major producing state in 1900, but the lead shifted to West Virginia in 1909 and to Oklahoma in 1923. Since 1929, Texas has retained its position as the production leader, with Louisiana a close second. Nearly half of the 13 trillion cubic feet of natural gas produced in 1960 was found in Texas.



# Blue Flame Whispers

## \$7.5 Billion Expenditure Seen For Gas Construction

The gas industry will spend \$7.5 billion on construction in the next four years, E. H. Smoker, immediate past-president of the American Gas Association, said.

From 1958 to 1961 the expenditure was \$6.9 billion.

"In 1962 alone, gas utilities and pipeline companies throughout the nation are expected to spend \$1,671 million," he said.

"The gas industry is planning these expenditures on new plants and equipment to help meet the nation's growing energy requirements," said Mr. Smoker, who is president of The United Gas Improvement Co., Philadelphia.

Total plant value of the nation's sixth largest industry climbed to \$23 billion in 1961, when construction outlays reached \$1,662 million, the A. G. A.'s Bureau of Statistics survey showed.

The peak outlay during the 1962-65 period is expected to occur in 1965, when more than \$2 billion will be spent on construction, he said.

Distribution companies, which directly supply the nation's 34.5 million customers, plan to spend \$693 million this year and a total of nearly \$3.1 billion through 1965, according to the survey. The latter figure is 20 per cent higher than the amount spent in the previous four-year period.

## Turbine To Provide Gas Pavilion With Portion of Energy Needs

Part of the power, heating and cooling in the gas industry's building at the 1964-65 New York World's Fair will be supplied by a gas turbine energy package, Gas Inc. announced.

Gas Inc., formed by the nation's gas industry to operate the "Festival of Gas" pavilion, said the system will be used to heat, cool and provide electricity for the 250-seat restaurant, which will be a major feature of the building.

In addition, the natural gas turbine will power a moving sidewalk, which will operate in the display area of the \$6 million exhibit.

The energy package, designed and built by The Garrett Corporation's AiResearch Manufacturing Division in Phoenix, Ariz., will be driven by two natural gas jet turbines. Exhaust heat from the turbines will be used for heating, cooling and water heating.

According to Walter Dorwin

Teague Associates, the designers of the building, air curtains will make the walls almost invisible, thus creating "an entirely new architectural technique."

The structure's entrance and exit will have the largest air curtain wall ever installed. The restaurant will have air walls on three sides.

The 40,000-square foot pavilion will be completely air-conditioned by gas. The two-story structure will be 50 feet high and measure 300 feet in length and 130 in width. The major area of the building will be enclosed with plexiglass.

Exhibits in the gas industry building will show exploration for natural gas, well drilling pipeline construction, utility distribution of gas to homes, and uses of gas for commercial, industrial and residential purposes.

# IT'S A FACT..

## NATURAL GAS IS LIGHTER THAN AIR!



**Y**ET NATURAL GAS SOLD IN THIS COUNTRY EACH YEAR  
IS MORE THAN **TWICE** THE **WEIGHT** OF ALL  
STEEL PRODUCED BY UNITED STATES MILLS.

SOURCE - AMERICAN GAS ASSOCIATION



Mt. Clemens, Mich.

## A Plan For Survival

The Cuban crisis has caused complacent Americans to stir anew. West Coast supermarkets reported a "run" on canned goods and dried foods. Newspapers published lists of buildings in each city which were considered effective fallout shelters. Civil Defense officials at all levels of government were besieged with calls from anxious residents for materials dealing with methods of survival in the event of nuclear attack.

During such a crisis period, water is no longer taken for granted. Even persons who drink less water each day than is recommended by health officials suddenly realize the importance of storing water for use in fallout and bomb shelters.

But, will water be available in the event of nuclear attack for those persons who have failed to store an adequate supply? Do most water utilities have a plan which allows for rapid resumption of water distribution as soon after an attack as possible?

It is easy to say that a water department employee's first responsibility is to the public in times of crisis. It is

quite another thing to keep that employee on the job at the water plant during an attack, if his thoughts are with his family, and if he is concerned that they be in a position to survive the crisis.

Are we asking too much of an employee by demanding that he stay on the job when, and if, an attack comes?

Robert E. Hansen, superintendent of water in Mt. Clemens, Michigan, answers "yes" to that question. He has considered the human element, and admits that the protection of their families would be of primary importance to his men.

Armed with that knowledge, he has begun to devise a "crisis plan of operation" for his water utility. Bob states his reasoning this way: "As responsible employees of the public, we cannot afford the luxury of pessimism—thinking that everything is lost if the war starts. We must plan that there will be survivors, and those survivors will need water. We will do our best to continue to supply it."

In a mimeographed memorandum to employees dated

October 24, Bob outlined his initial thinking on this problem. The memorandum was titled: "Emergency Civil Defense Plan for the Mt. Clemens Water Purification and Pumping Plant."

In essence, this memorandum suggests that his men work out a plan whereby some of them drive to work each morning, and others leave their cars home for their families. If "Mrs. A." has the family car at home when an attack is imminent, it is her responsibility to pick up "Mrs. B.," who has no car. Everyone then proceeds to the Purification & Pumping Plant, which property has been deemed adequate protection from fallout or distant blast.

Mr. Hansen has requisitioned cots, blankets and other major needs, but the employees and their families are expected to bring their own food supplies and clothing.

The memo continues: "We want all of you to participate in this plan. This rough draft may be improved on greatly, so let us hear your opinions and criticisms. We want to make as foolproof a plan as possible. MOST IMPORTANT OF ALL, KEEP YOUR HEAD! DO NOT PANIC! IF YOU GO ABOUT THIS PLAN IN A METHODOICAL MANNER, YOU MAY HURRY, BUT YOU SHOULD BE ABLE TO CONTROL YOUR EMOTIONS AND YOUR REASONING POWER. YOU WILL HAVE ENOUGH TIME. PANIC WOULD ONLY RESULT IN LOSS OF TIME."

One can have only admiration for Bob Hansen's concern and action. Mt. Clemens is only a few miles north of Detroit, which is generally thought to be a major target in the event of all-out nuclear war. Here again, however, Bob has fully considered the human element. His plan is based on the hope that (1) Detroit will not be hit by a missile in the high megaton range, or (2) that the bomb will explode south of Detroit, resulting in little more than fringe damage in Mt. Clemens, or (3) that any Russian missile aimed at Detroit will fall a distance away from its target, thus making Mt. Clemens no more than a fallout area.

Bob's memo is optimistically written. He expresses the hope that all of us feel: that the nuclear attack will never come. At the same time, he insists on the readiness of his people to prepare not only for their own survival, but the survival of his customers who are caught without an adequate water supply.

We are sure that other utilities throughout the country have precise civil defense plans either in effect now, or soon to become activated. The Mt. Clemens plan, however, is the only detailed plan of which we are aware.

You will remember that, more than a year ago, the AWWA Advancement Program urged water works managers to co-operate with their local Jaycee chapters or other interested civic groups in the production of a local film entitled "PRICELESS WATER." What an appropriate title in any discussion of nuclear war! Can there be many things more vital to human survival than a safe water supply if war comes? Is there any other natural resource which is a more important target for foreign sabotage or total destruction?

We applaud Mr. Hansen's efforts, and we express our sincere hope that all water utility managers are able to develop a plan suitable to their own geographic area.

At this writing, the tension concerning the Cuban issue has somewhat lessened; but, with two major powers growing stronger almost daily, it is safe to assume that crises will occur again. When they do, will YOU be prepared to supply your customers with PRICELESS WATER?

Saratoga Springs, N. Y.

## Some Hints For Handling Mueller Products

Some helpful hints on the methods used by the City of Saratoga Springs, N. Y. were forwarded to us by Bob Murray, Superintendent of Water Maintenance there. Mr. Murray refers to these pieces of equipment as M-G devices. The M is for Murray, (the designer) and G is for Mr. Gay, (a public works welder who fabricated these devices). The project, during which these pictures were taken, included the laying of 4,000 feet of 10-inch pipe, five main line valves, five valved hydrant laterals, and three valved street laterals. Mr. Murray said the job took 10 men, 10 days to complete.



One of the devices used by the City of Saratoga Springs for lifting Mueller Improved fire hydrants is shown above. This is installed by removing two bonnet bolts 180 degrees apart.

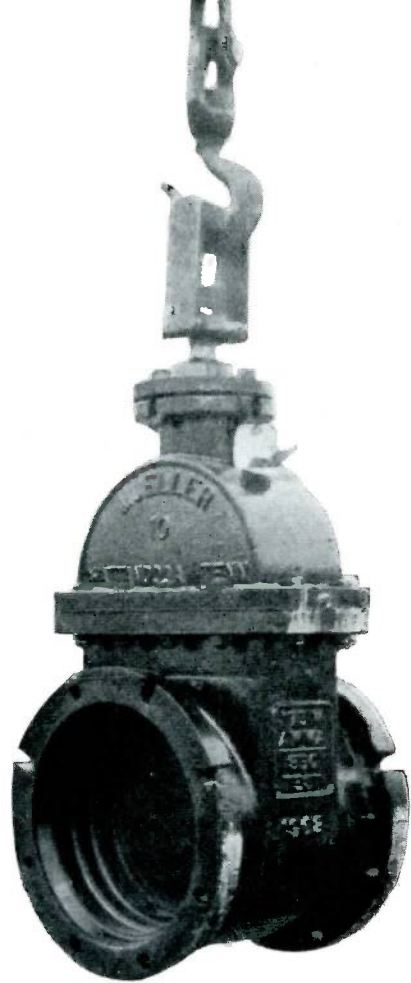


Standard pipe tongs are one of the three basic tools used in the extensions of water mains for this New York utility. Workmen are shown maneuvering a

piece of 10-inch pipe that went into a recent expansion.



The simplicity of the two devices designed for handling valves and hydrants is shown in this close-up. The tool for handling valves is above at the left and the hydrant handler is on the right.



A 10-inch Mueller gate valve is set in place with little lifting by workmen (left). The tool slips over the crane hook and under the operating nut on the valve (above). The lip of the tool is built up so that the valve can't slip off.

# \$17 Million Water Expansion Changes Outlook From Gloom to Boom

One part foresight plus two parts determination equal water for burgeoning Monroe County, New York.

Faced four years ago with an immediate water shortage that would soon become urgent, the Monroe County Water Authority today is riding a wave of optimism.

A \$17 million expansion and improvement program, designed to meet a 20 per cent population increase and near incredible industrial expansion since 1950, will be in operation by mid-1963.

The object of this enormous project is to provide one of the nation's fastest growing areas with water—the one element vital to that growth. (Recent projected population figures call for a 50 per cent increase in Monroe County's population by the year 1980.)

The post-war boom obliged the City of Rochester (Monroe's county seat) to build a water treatment plant on Lake Ontario in the early 1950's to supplement its supply

from Hemlock Lake, south of the city. At that time the entire county was suffering the same growing pains, but to an even greater degree.

As the problems increased, the state legislature created the Authority and charged it with providing an adequate water supply. In March, 1959, the Authority purchased the existing facilities from a private water company that was serving the area and set out to remedy the water supply problems in Monroe County.

Peak demands for water have reached 41 million gallons per day, but the Authority facilities produce only 18 million per day. The remainder is purchased from the City of Rochester, which informed the Authority that very little additional water would be available after 1963.

In fact, the total combined facilities of the Authority and the City would be inadequate by 1963,

George R. Williams, Authority chairman said.

In December, 1960, the Authority adopted the recommendation of Metcalf and Eddy, their consulting engineers, that a water facility expansion be undertaken immediately. The Authority promptly began working on the project.

Major elements in the expansion are the Lake Ontario Water Intake, a low lift pumping station, a new water treatment plant, three transmission lines and five booster pumping stations.

The intake pipe projects 8,200 feet into Lake Ontario from the Town of Greece, northwest of the City. This \$1,500,000 pipeline is made of prestressed, 72" - 78" concrete pipe. It can draw 140 gallons of raw water daily to supply both the Authority's treatment plant and the water needs of the City of Rochester.

Final sections of this pipe were laid this summer, and the pipe will



This is an architects' sketch of the new Monroe County Water Authority's treatment plant under construction. The 5½-million dollar plant is scheduled for completion in the spring of 1963. The area to the right is for sedi-

mentation basins. The center front area will contain the filters and the building to the far left will house the high-lift pumping facilities.

go into operation when the new treatment plant is completed next year.

The low lift pumping station, also scheduled for completion in mid-1963, will take water from the intake and pump it through a 54" force main under adjacent Round Pond to the treatment plant. Initial pumping capacity of 50 million gallons is planned, with provision for later expansion to 100 million gallons per day.

Cost of the pumping station is \$885,000 and the force main is \$400,000.

The new water treatment plant is being built on high ground at 4800 Dewey Avenue, in the Town of Greece. The \$5,500,000 plant will provide chemical treatment of the water, settling, filtration and disinfection. It will be able to produce 50 million gallons a day with expansion possibilities to 100 million.

Leading south from the treatment plant are the westside transmission main and the southwest extension transmission main.

The six-mile long westside main, involving 60-inch pipe, will serve sections of the county to the west and south. The \$1,785,000 westside was completed this fall.

The southwest main will serve as a primary distribution main to the southwest portions of the county.

Its cost was \$1,320,000 and it will be completed by spring of 1963.

The third transmission main, the Crosstown, is complete and in operation despite a difficult crossing of the Genesee River which bisects the city. This six-mile long main runs from the westside main in Greece to serve the Towns of Brighton, Penfield, Pittsford and other eastern areas. This was a \$1,650,000 job.

The five booster pumping stations, scattered throughout the county will help bolster water pressures in both the new and the old systems. All five booster stations will be completed by mid-1963. Total cost—\$1,166,000.

The construction program assures the area of an abundant water supply until 1971 and a base for future expansion which would be adequate until 1987.

The Authority financed the project with a \$17,500,000 bond issue, resulting in rate increases of about 35 per cent to direct residential customers and 18 per cent to water districts which also sell water to direct customers.

In addition to the major expansion, the Authority is continually adding new mains throughout its territory. Last year 23 miles of pipe were laid, most of it the replacement of 8" line with 12" line to insure better pressure.

This spring the Authority authorized its engineers to begin working on five additional projects to bolster existing water systems in some areas of the county and create new supplies in others. The total cost of these five projects is \$300,000 and all will be completed during 1962 and 1963.

Authority chairman, George R. Williams, commenting on this phase of expansion said that, "These projects supplement our capital construction program and will bring water service improvements to many areas without resulting in any rate increase or new bond issue. In some undeveloped areas, new water districts will need to be formed to help carry the financial burden of the projects. The Authority is always ready to consider other projects which will extend service to customers throughout the county."

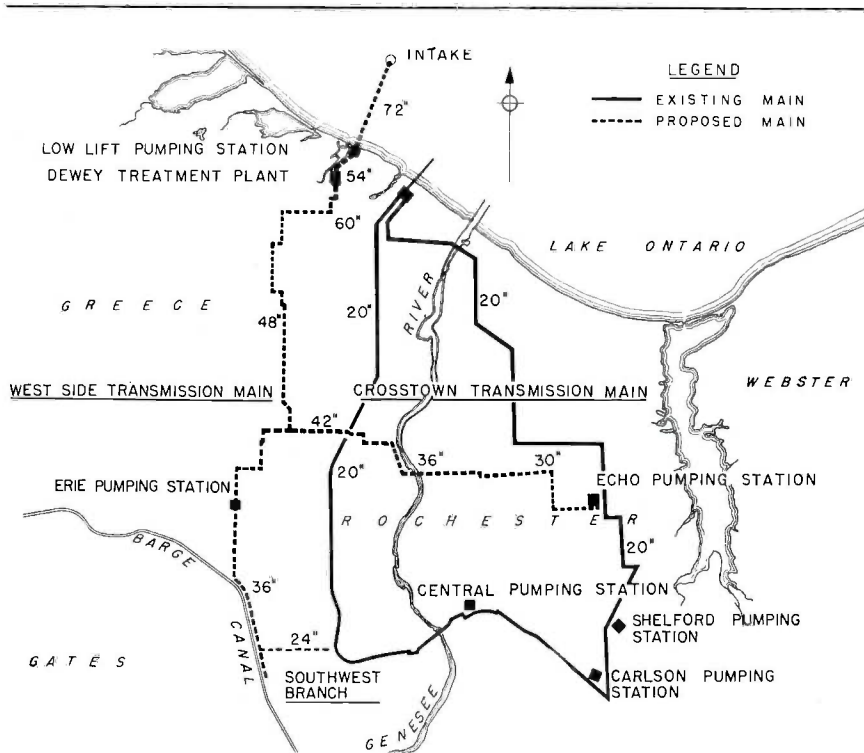
A year from now the entire new system will be completed and in operation. When the work is finished, the Authority will have been in existence for barely four years.

Fortunately, this Authority was responsible and progressive. They refused to sit back apathetically and let water problems become more serious—problems which could have been a major threat to the residential and industrial expansion of the entire area.

The Authority took the initiative, surveyed the situation, made sound, long-range plans and carried them out with the \$17 million improvement program.

Through positive action, the blueprints of the past are rapidly becoming the pipelines to suburbia, the \$5.5 million water treatment plant and all the other projects in the Authority's program.

Businessmen, industrialists, builders, residents—everyone with a "stake" in the future of Monroe County can look ahead optimistically to an excellent water situation, wholly because of the the great strides taken by the Monroe County Water Authority.

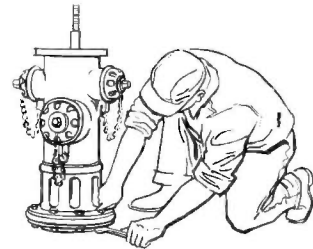
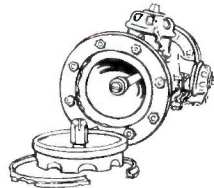
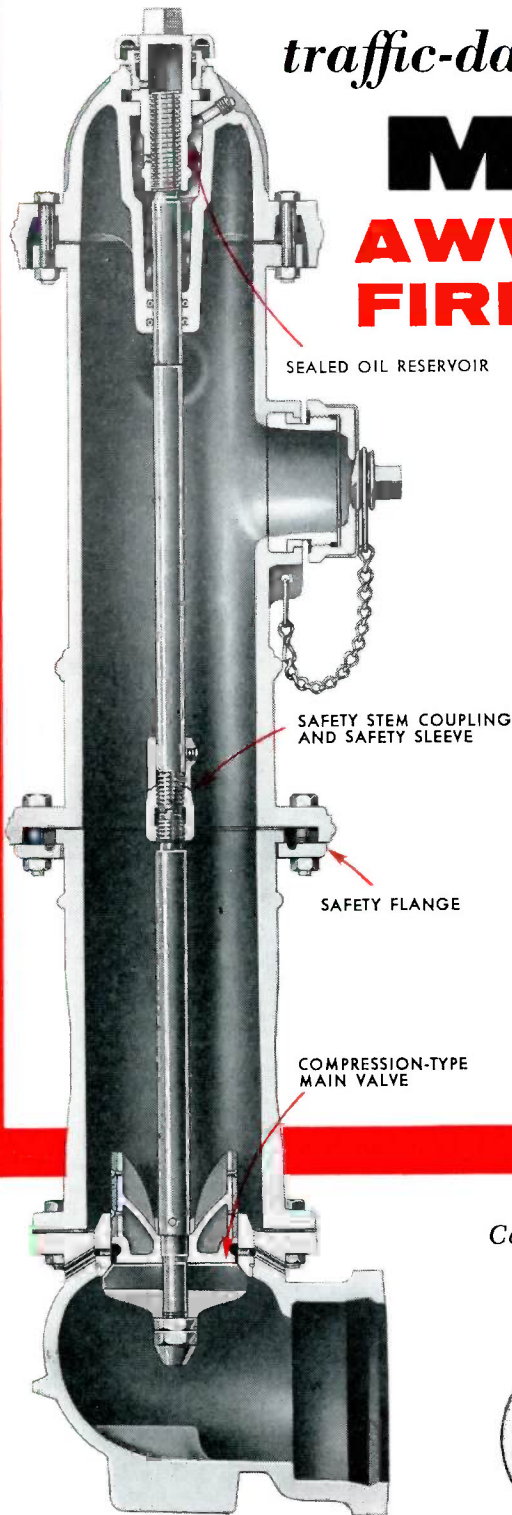


# IN MINUTES...

*traffic-damaged*

## **MUELLER®** **AWWA IMPROVED** **FIRE HYDRANTS**

*are back in service!*



On impact, the Mueller AWWA Improved Fire Hydrant separates instantly and cleanly at the safety flange. The safety flange breaks, preventing damage to hydrant barrel and the safety stem coupling opens, so that valve stem is not bent. Water pressure keeps compression-type valve closed, preventing flooding.

Without digging or shutting off the water, the Improved Hydrant can be repaired with a simple, inexpensive repair kit. Complete protection is restored and the Hydrant is ready for service in a matter of minutes.

*Consult your Mueller Representative or  
write for complete information and specifications  
on Mueller AWWA Improved Fire Hydrants.*



**MUELLER CO.**  
**DECATUR, ILL.**

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



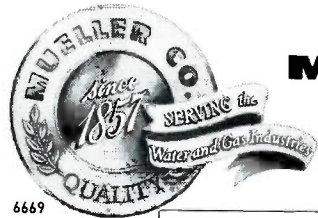
... the **MUELLER**® "T" machine  
 for wide application—  
 easy operation— **NO-BLO**® safety



- Drills 1/8" through 3/4" holes in mains under pressures to 125 p.s.i.
- Inserts and extracts plugs, stems, stem and bushings in tees, line stopper fittings and drilling nipples.
- Makes stop-offs in service tees and line stopper fittings.

■ With the low-cost, easy-to-use "T" Machine, safe service connections can be made under pressure without blowing of gas or interrupting service. Hand operation with a minimum of attachments assures ease of operation.

■ Contact your Mueller Representative  
 or write direct for complete information.

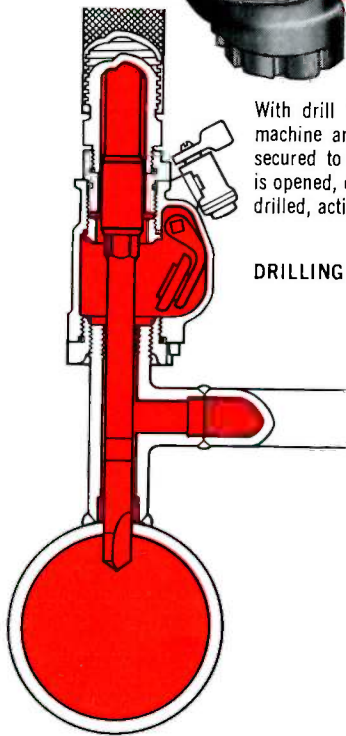


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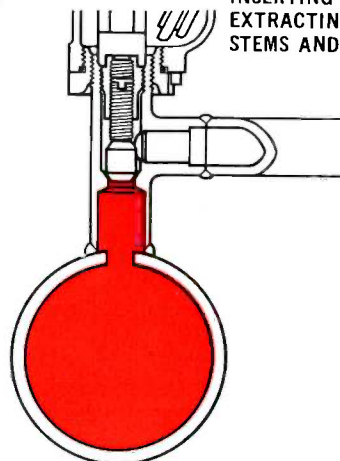
GEM Sponsor

*the inside story*

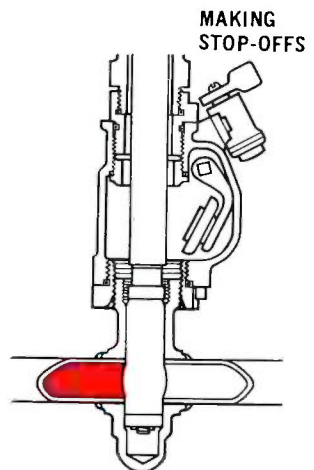


With drill attached to boring bar, machine and control chamber are secured to service tee. Flop valve is opened, drill advanced and main drilled, activating service.

**DRILLING MAINS**



**INSERTING AND  
 EXTRACTING PLUGS,  
 STEMS AND BUSHINGS**



**MAKING  
 STOP-OFFS**

Rubber shut-off tool is attached to boring bar, and machine and control chamber are secured to line stopper fitting. With flop valve open, boring bar is advanced, expanding stopper, shutting-off flow.

## Mueller Co. Names 2 New Representatives

### *To Michigan, To New England*

Two sales representatives were added to the Mueller Co. sales force Dec. 1.

Raymond N. Gentry has been named representative for the states of Maine, New Hampshire, Vermont and the western one-third of Massachusetts.

Carl G. Liberg will represent the company in the northern portion and the western half of the state of Michigan. He will also cover the northern-most tier of counties in Indiana.

Mr. Gentry's territory in New England was formerly covered by Stanley B. Johnson. Mr. Johnson will continue to serve his customers in Rhode Island and the eastern two-thirds of Massachusetts.

Mr. Liberg's territory, for the most part, was formerly covered by W. R. Augustine.

Dan R. Gannon, Mueller Vice



**RAYMOND N. GENTRY**  
To New England



**CARL G. LIBERG**  
To Michigan

President and General Sales Manager, in making the announcement said, "The appointments are due to a realignment of territories for better service to our customers."

Prior to joining Mueller Co. a few months ago, Mr. Liberg was a sales engineer in an allied field for 23 years. He is from the Philadelphia area and attended Drexel Institute of Technology in Philadelphia where he majored in mechanical engineering. He served as a Naval aviator for four years during World War II and now holds

the rank of Commander in the Naval Reserve. He is married and has a daughter and two sons. Mr. Liberg and his family will live at 2134 Monroe St. N. W., Grand Rapids, Mich.

Mr. Gentry joined Mueller Co. in 1961 and has been going through the company's training program since then. Mr. Gentry is also from the Philadelphia area and has four years of sales experience in the heating industry. He is married and has two sons. The Gentry family will live in Portland, Maine.

## Strictly *Off the Record*

The irate patient called his dentist about his bill for a tooth extraction. "It's three times what you usually charge," he complained. "Yes. I know," said the dentist. "But you yelled so loud you scared two other patients away."

"And now, gentlemen," continued the Congressman, "I wish to tax your memory."

"Good Heavens," muttered a colleague, "why haven't we thought of that before?"

\* \* \*

City Slicker: "Is 'Ballpoint' really the name of your pig?"

Farmer: "No, that's just his pen name."

\* \* \*

"When I applied for a job today," complained Eileen, "the manager

had the nerve to ask if my punctuation was good."

"What did you tell him?" asked Mabel.

"Why," said Eileen, "I told him that I'd never been late in my life!"

\* \* \*

"My grandfather plays the piano by ear."

"Well, if we must boast — my grandfather plays with his beard."

State Department personnel like to tell the story about one anti-Castro islander. A Cuban named Garcia was lost in the abortive uprising. The citizenry followed a custom of dropping flowers upon the waters in his memory. One villager offered to do all the flower dropping for the entire village. He took a small boat, paddled across the lagoon into a bay, dropping petals all the way, murmuring. "For Garcia, for Garcia." As the Cuban shoreline became more distant, he pulled the oars faster, altering his murmur: "For Miami, for Miami."

\* \* \*

"I've got a job at last, Dad," the young actor reported, "I take the part of a man who has been married 20 years."

"Fine, son," said the father. "Maybe next time you'll get a speaking part."

\* \* \*

Doctor, "Why do you have that A5967 tattooed on your back?"

Patient, "That's not tattooed. That's where my wife ran into me while I was opening the garage door."

\* \* \*

"Would you please repeat what you just said," the psychiatrist asked the man who telephoned for an appointment. "I said," answered the confused man, "for some reason nobody seems to like me. Why don't you listen and pay attention, you big fathead?"

\* \* \*

Shivering wife in rowboat to duckhunting husband: "Tell me again how much fun we're having—I keep forgetting."

\* \* \*

Several months after breaking her leg, the frail old lady telephoned her doctor to see if the cast could be removed. "Can I climb the stairs now?" she hopefully asked. "Sure," he replied. "Goodie, she chortled. "I'm tired of climbing up and down the drainpipe!"

\* \* \*

The parsons met little Bobby in the village. "I'm so pleased that you like going to Sunday School, Bobby," he said. "What do you expect to learn today?"

Bobby answered brightly: "The date of the picnic."

The cavemen were once discussing the horrible weather and finally one observed, "You know, we never had weather like this until they started shooting all those bows and arrows."

\* \* \*

A man and his wife were out playing golf. Teeing off, the man sliced his drive over to the next fairway hitting a woman who was playing there. Her husband became indignant and stormed over to the first golfer.

"Do you know what you just did?" he thundered. "Your ball just struck my wife."

"Dreadfully sorry," replied the first golfer. Then handing a ball to the irate husband, "Here, old chap, have a shot at mine."

\* \* \*

Wanting to outdo the lavish presents of his brothers, he gave his mother, on her birthday, a \$50,000 mynah bird with a 40,000-word vocabulary in several languages.

"What did you think of the bird, Mother?" he asked after her birthday.

"Delicious," was the old lady's reply.

The minister answered his phone. "Hello," came a voice he recognized as belonging to one of his parishioners. "Please send over four dozen beers and a bottle of gin." "My dear lady," he retorted, "This is not the liquor store, this is your minister." Instead of an apology, the indignant voice rejoined, "Indeed! And just what are you doing at the liquor store?"

\* \* \*

Young artist: "You are the first model I have ever kissed."

Model: "Really? How many models have posed for you?"

Artist: "Four. An apple, a banana, a vase and you."

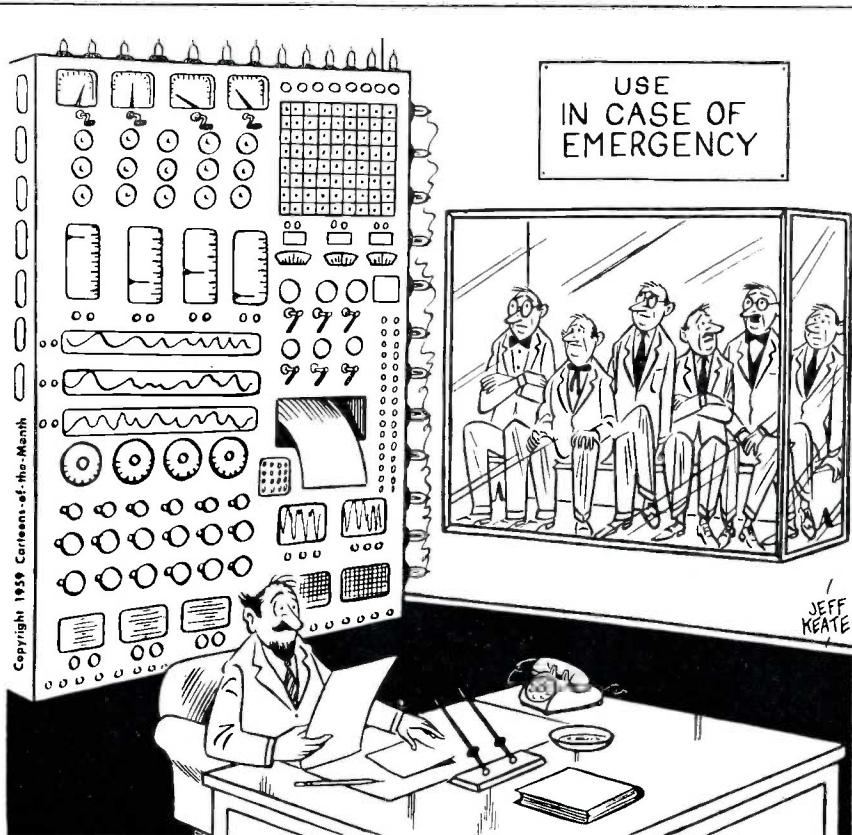
\* \* \*

Where there's uniformity of opinion, you'll find that part of the crowd isn't thinking.

\* \* \*

A junior executive complained to his wife of aches and pains. This went on for two weeks. One day he returned home feeling better.

"I found out what was wrong," he told his wife. "We got some ultramodern office furniture two weeks ago, and I just learned I've been sitting in a wastebasket."



MUELLER CO., DECATUR, ILLINOIS

RETURN REQUESTED

BULK RATE  
U. S. POSTAGE  
**PAID**  
DECATUR, ILLINOIS  
Permit No. 1

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*Mueller Co. wishes to extend to all of our good friends  
in the waterworks and gas industries, and related fields, our  
warmest wishes for a Happy Holiday Season.*

*We are grateful for the many considerations shown  
us during the past year, and we look forward to 1963 and  
its opportunities for continued association with our many  
friends.*

*To you and your loved ones . . . . .*

***A HAPPY AND PROSPEROUS 1963!***