

Mueller Service Lines

NEWS ABOUT MUELLER MARKETS, PLANTS, PRODUCTS, PERFORMANCE, AND PEOPLE

FOUNDRY — heart of Mueller Co.

(Editor's note — This is the fourth in a series of articles that examines the various departments of Mueller Co. Through these articles, we are discovering what each department is all about and how the people in these departments contribute to maintaining the Mueller Margin. (Information for this article was gathered from the Albertville, Chattanooga and Decatur foundries.)

The constant clattering of machines . . . feet shifting on the sandy floor . . . muscles moving in mechanical rhythm . . . lift truck horns piercing the hot air . . . fiery buckets spewing red-hot liquid metal . . . a sense of pride hanging in the air. This is the heart of Mueller Co., the foundry.

The foundry is at the heart of our operations supplying the stream of castings that is the "life blood" of our entire manufacturing process. The quality and quantity of the castings produced here have direct bearing on the quality and availability of our finished products. Basically, here's how the foundry process works.

The foundry uses the patterns from the pattern shop (described in our last article) to make molds

that are used to give the first physical form to almost every product we make. It's essential that these molds be made carefully because a defective mold produces a defective casting.

Making molds

In the foundry, patterns are put on molding machines. A flask, something which resembles a box without a top or bottom, is placed over the pattern. The pattern then serves as the bottom of the box.

A special type of sand that we buy in car loads and mix with a bonding agent to make it more "moldable," is poured into the flask and rammed (packed down with pressure) by the molding machine. The machine then lifts the flask and the packed sand (which is now a mold) from the pattern and deposits them onto a conveyor. The pattern remains with the molding machine to be used over and over again.

The molds are made in two parts. One is the cope, or top half, and the other is a drag, or the bottom half of the mold. The machine turns out copes (tops) and drags (bottoms) alternately.

Continued on page 2



"Mueller Co. is an outstanding company that has done an excellent job of capturing a major role in the marketplace," observed Fred C. Ausnehmer, new V.P. of Finance and Chief Financial Officer.

New V.P. of Finance and Chief Financial Officer, Fred C. Ausnehmer

Fred C. Ausnehmer (Aus-namer) has been appointed to the newly created position of Vice President of Finance and Chief Financial Officer of Mueller Co.

The responsibilities of this position were previously spread throughout the Mueller organization. Now they have been centralized into the responsibilities of one individual.

In this position, Ausnehmer is responsible for all aspects of the financial activities of the company. This includes budgeting, the regular collection and payment of bills and payroll, plus other accounting functions such as review of expenditures, ensuring that pricing of Mueller products is reasonable and advising operational managers in financial matters.

Ausnehmer describes his main responsibility as assisting operating management in "getting the maximum value for the company's money." He explains, "The result of most business processes are expressed in a numerical fashion of some sort, frequently in financial terms of dollars and cents — like costs for materials, overhead and inventory. And the primary measurement of the success of any business is its net income."

After being with the company for 6 months, Ausnehmer observes that, "Mueller Co. is an outstanding company. Mueller has done an excellent job in capturing a pre-eminent role in the markets which it serves."

"It's a strong company, regarded as the industry's best in several areas — not only in a good product line; but also in business functions; development processes like engineering; quality manufacturing processes; and a terrific sales force. I've been told that Mueller has the best sales force in the industry. And I've heard that from people both in and outside the company. With more than 120 years of success in the industry, it's obvious that the company has been doing a lot of things right over a long period of time."

Ausnehmer is a graduate of Colgate University and was formerly with the General Electric Company. His professional background has always been in finance.

The Ausnehmer family — Fred, his wife Ellen, their children, Lynne, Doug and Jeff, (and a pet Bassett Hound named Happy) — have recently moved to Decatur from Homewood. □



After cores have been made of sand, they are placed on a conveyor to pass through an oven to be baked.



After cores have been baked, skilled workers clean the edges of the cores to prepare them for use in molds.

FOUNDRY continued

On the way along the conveyor, people carefully place cores made of baked sand into those molds requiring cores. (If you recall from the last article, a core is used to make a hollow shape within a casting.) Other people carefully place the copes and drags together.

Our people who work along the conveyor have a very important part in the quality of our products, as does everyone who works in the foundry. If a defective mold slips through, a "bad" casting could be made which would produce a reject part later in the manufacturing process.

The mold "express"

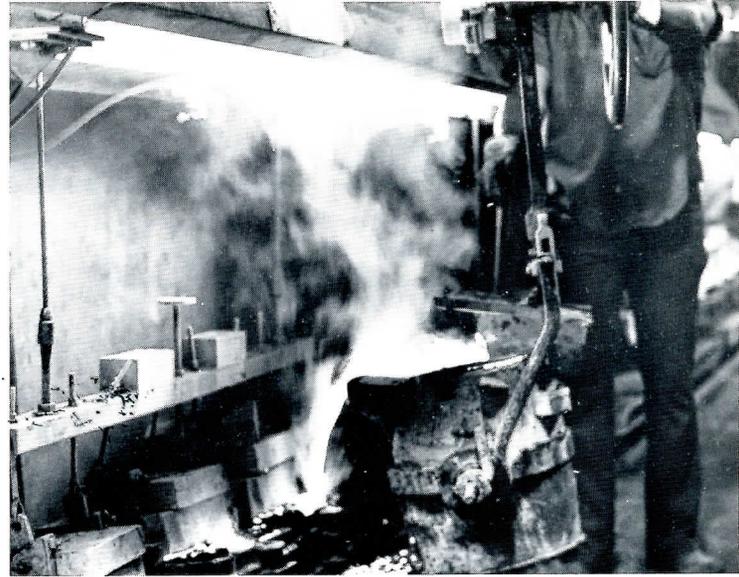
After the copes (tops) and drags (bottoms) have been placed together, the molds are transferred onto a special conveyor that resembles a train. The train runs on a track and even has a whistle that signals when the

train is ready to depart from each of its stations in the foundry. The train stays at each station for about 5-1/2 minutes.

From the molding machine area, the train carries the molds to the pouring deck. The pouring deck is the place where metal is melted in huge electric furnaces and poured from very large ladles into the molds.

We pour brass, bronze alloys, cast iron and ductile iron. The bronze we use in our foundries is an alloy developed years ago by Mueller Co. for waterworks products. In fact, our bronze alloy has become the standard alloy for the waterworks industry. We produce our bronze by melting carefully controlled proportions of brass, zinc, tin and lead that we buy in ingot form. Most of the iron we use comes from scrap.

Most of the brass and bronze is poured in Decatur and the parts cast are the smaller ones such as



Ladling molten metal requires a lot of caution and skill in knowing how to pour at just the right rate. Metal poured too fast or too slow will result in a defective casting.

corporation stops and other brass valves. Albertville also pours a small amount of bronze for those parts that go into gate valves and fire hydrants. Both Albertville and Chattanooga pour large amounts of iron. The medium to large cast iron parts are poured in these two foundries, mostly gate valves and fire hydrants.

People working at the pouring deck must be very skilled in their jobs. To produce quality castings, molten metal must be poured at exactly the right temperature at exactly the right rate. This means that the people operating the furnaces must carefully control the temperature and metal composition, and the people ladling the

molten metal must pour at a steady, specific rate. Also, working with fire-hot molten metal calls for a lot of caution.

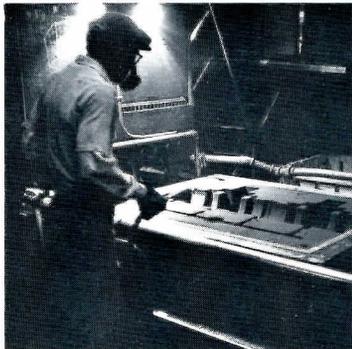
Tumbling, sorting, grinding

At the toot of the train's whistle, the train pulls away from the pouring deck so that another load of molds may be filled. The filled train will stop down the tracks in a waiting area to allow the metal to cool and solidify. Then the train will move on to a machine where the sand molds, castings and all, are dumped in. The castings are shaken in the machine which knocks off the sand molds and crumbles the cores inside (if there are any).

Continued on page 3



Workers along the conveyor very carefully place cores into molds for castings that require hollow interior shapes. Every person working in the foundry affects the quality of the end result — our products.



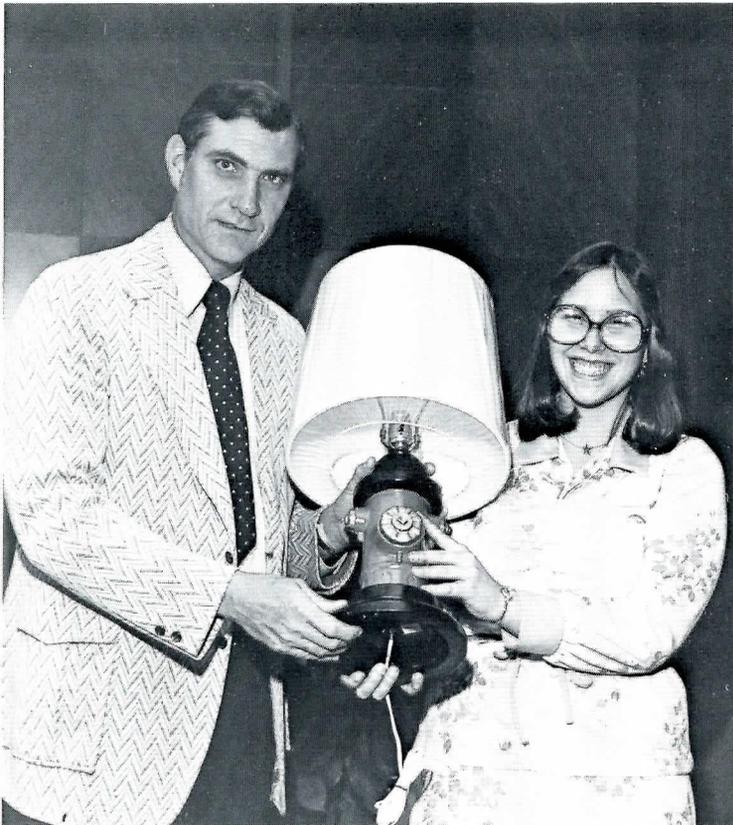
Molds are checked as they come out of the Mold Master machine. If a defective mold slips through at this point, a reject casting could be made later.



People working at the sorting areas save a lot of time by making sure the right parts get into the specified bins at this point. This saves time in sorting misplaced parts later.

Strictly Personal Decatur

NEWS ABOUT MUELLER CO. EMPLOYEES AND THEIR FAMILIES



Laurie Mintun, Vice President Manufacturing of Lampco, presents a fire hydrant lamp to Mr. Powers, President of Mueller Co.

Lampco, a Mueller Co. sponsored Junior Achievement company, recently completed a very successful year. Among the highlights of the year were; \$2000.00 in company sales, Junior Achievement Product Award, Blue Chip award, and top sales in the Junior Achievement Trade Fair.

Lampco's product was a fire hydrant lamp cast out of molding plaster. The lamp, which stands 2 feet high is a replica of a Mueller Improved hydrant. Mueller Co. employees who served as advisors were: Alice Jestis, Joni Niemann, and Don Lindstrom.



Walter (Wally) Salefski receives his retirement check from Charlie Moore, Vice President Manufacturing



Roy Wall receives his retirement check from friends and well-wishers in Dept. 80. Roys retirement notice was in the last issue of Service Lines



Tom Little, our sales representative in Southern Florida, sent us this picture of Chuck Schroeder, enjoying his retirement at Inverness, Florida. Someone should tell Chuck about the fishing in Florida.

Man on Moon Has Accident on Earth

Neil Armstrong, first man on the moon, lost his finger in an accident at his suburban Cincinnati home. His left ring finger was torn off when his wedding ring caught on a door as he jumped from a truck. Fortunately, surgeons were able to reimplant it.

How many employees in your plant are wearing wedding band or other jewelry that could cause permanent or long lasting injury?

SERVICE AWARDS

- | | |
|-----------|--|
| 10 years: | John D. Merold
James D. Stead
Melvin C. Rubin
Roy G. Hanks
Richard R. Bruns
C. Robert Fisher
Doris M. Usinger |
| 20 years: | Vern M. Beatty
J. William Coffey
Paul K. Clark
Harry Barton
Nolan Hower
James M. Jackson
Joseph V. Keck
Robert H. Vaughan
Robert P. Fisher
Eugene R. McKinney
Leo F. Chase
Robert E. Weaver |
| 30 years: | Glen M. Burrows
Harold W. Ruppert
Martin L. Puckett
George A. Roady
Earl E. Wood |
| 40 years: | Earl R. Collins |

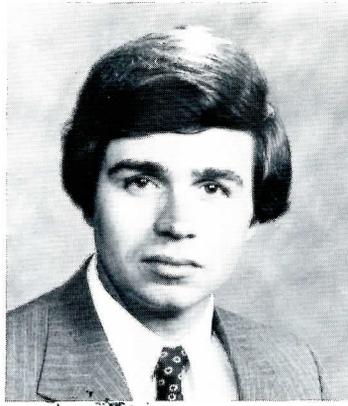
RETIREMENTS

Walter F. Salefski, Ground Key Assembler, Department 80, 45 years, 10 months, 7 days. June 28, 1979

Robert C. Workman, Bench Assembler, Department 70, 38 years, 8 months, 23 days. July 27, 1979

John Robert Auvil, Shell Core Machine Operator, Department 50, 30 years, 2 months, 27 days. July 31, 1979

NEW FACES



Mike Henekhan has joined Mueller Co. as Plant Controller, Decatur operations. In this position he will report directly to the Corporate Controller and work closely with the Decatur Plant Manager.

Noel Penk has joined the Mueller Co. Corporate M.I.S. Staff. Noel will hold the newly-created position of Corporate Systems Analyst - Financial, and will head up the corporate financial system implementation projects for Data Processing.

David Drescher has joined Mueller Co. as Manager of Credit and Collections. In this position he will report directly to the Secretary - Treasurer.

Dennis Hutchinson has joined Mueller Co. as Data Processing Operations Manager.

Mike received his B.S. Degree from Millikin in accounting in 1970 and his M.B.A. from Governors State University (Park Forest South, Illinois) in 1974. Mike has an extensive accounting and financial background and has held a similar position with VARCO Inc.

Noel received his B.A. Degree from the University of Minnesota in 1961 and comes from Emerson Electric Company, Data Division, St. Louis. He has extensive financial systems background both at Emerson and Sangamo Electric.

Dave has his B.S. Degree in Marketing and Management from Miami University, Oxford, Ohio, and his M.B.A. Degree from Xavier University, Cincinnati. He has been with Procter and Gamble Co. for the past eight years in various credit capacities.

Dennis has attended ECPI Data Processing School and has almost 10 years of experience in programming and computer operations, most recently at Winnebago Industries in Forest City, Iowa where he was D.P. Facilities Manager.

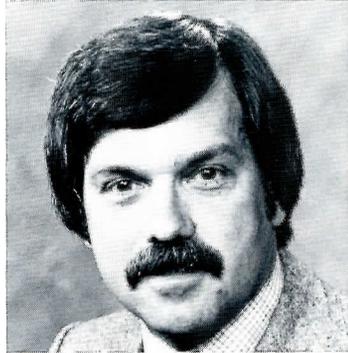
Welcome to Mike, his wife Gayle and their two children back to Decatur, their hometown.

Mueller Co. welcomes Noel, his wife Kay and two children to Decatur.

We welcome Dave, his wife Diane and their two children to Mueller Co. and to Decatur.

His wife Mary and son will be joining him in early July when they move to Decatur into their new home.

Welcome to Dennis and his family to Mueller Co. and to Decatur.



James R. Ehnborn has joined Mueller Co. as Manager Accounting Systems and Procedures. In this position he will report directly to the Corporate Controller.

Donald Orr has joined the Mueller Co. Corporate M.I.S. Staff. Don will hold the newly-created position of Corporate System Analyst and will work on designing and implementing an overall corporate M.I.S. plan.

Jim received his B.S. Degree in Business Administration from Bradley University in 1961. He is a Certified Public Accountant and a Certified Internal Auditor. Jim has extensive experience in the financial and accounting areas having been employed at Bell and Howell, Montgomery Ward and in the public accounting field. His most recent experience has been Assistant to Director of Budgets with the Agrico Chemical Company in Tulsa, Oklahoma.

Don received his B.S. from Southeast Missouri State College in 1962 and comes from Kaiser Permanente Medical Group, Los Angeles. Don has broad experience in programming, system development, EDP auditing, and data processing management both from Kaiser and previous employers - Emerson Electric, UMC Industries, Coopers and Lybrand, and McDonnell Automation Company.

Jim's wife and their three children will soon be joining him in Decatur.

Mueller Co. welcomes Don, his wife Diane and two sons to Decatur.

WINTER JACKETS

Yes, we will have Mueller heavy jackets for this winter! That's right -- a pile-lined, hooded winter jacket! A warm jacket for any outdoor activity.

100% DuPont 66 oxford nylon outer shell.

Padded Byron collar. Matching color 100% Acrilan® acrylic pile lining.

Drawstring hood fits inside lining pouch.

Action-cut raglan sleeves with quilted lining.

Slash pockets.

Heavy-duty knit cuffs.

Drawstring waist.

Snap front closure.

Available in these sizes only: extra small, small, medium, large, extra large and double extra large.

See Herb Ashmore for prices and complete details. Don't wait. Order now and be sure of having a jacket in plenty of time for this winter season.

CONGRATULATIONS

Leo Chase of Department 80 has been elected the new Vice President of the Decatur Evening Lions Club. Leo assumed his new duties July 3, 1979.

TO DECATUR EMPLOYEES

We are requesting more stories, news items and photos from our employees and their families for the Decatur "Strictly Personal" Service Lines.

Please submit all details and photos to Jim Cussins or Dick Curtis, Advertising Dept.

1. Marriages
2. Births
3. Special honors (employee or family)
 - a. Elected officer of an organization
 - b. School honors (Valedictorian, etc.)
 - c. Awards for special achievement
4. Unusual stories or news of interest to our employees

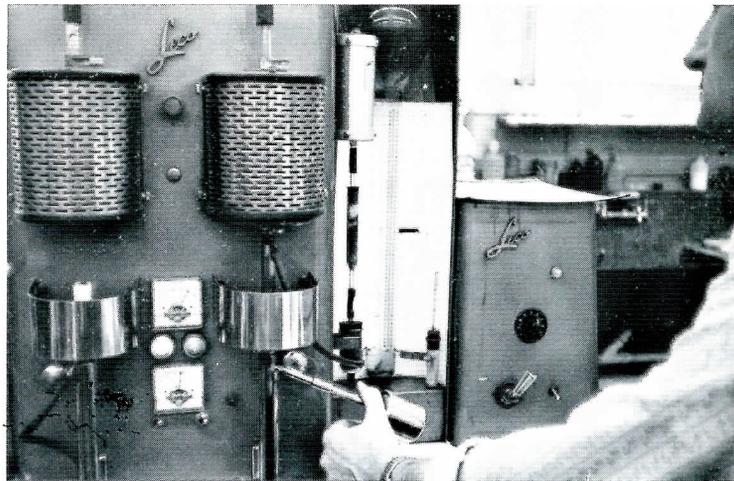
All stories will be used at the discretion of the Editor.

BIRTHS

Dick and Karen Shelby are the proud parents of a baby boy. Shawn Richard was born May 4, 1979 and weighed 8 lb. 13 oz. Karen is a secretary in the sales office.



This worker is skilled in knowing just how much to grind as he operates a grinder to clean excess metal from a cast iron Lub-o-Seal Valve body. It's another important step that adds a little bit of the Mueller Margin to our products.



In the metal analysis lab, a sample from a melt of metal is analyzed in a machine called a Carbon Determinator. This test identifies the percentage of carbon present in the metal. It's important to know the level because the tensile strength of cast iron requires a specific percentage of carbon present in the metal.

FOUNDRY continued

The crumbled sand falls out and all that is left are castings.

People are stationed at the "shake-out" machines to cut off excess metal from the castings. Then the conveyor brings the castings up to the tumbling machine that is full of shot that cleans the castings of any clinging sand. The clean castings are carried off to a sorting table. At this point, all the various castings produced by a given pouring deck are grouped together.

Sorters at the sorting table pick out the various parts and toss

them into specified bins. The sorters can make a big difference on wasted time in the foundry. By getting the right parts into the right bins at this point, time is not wasted later to resort misplaced parts.

Bins of sorted parts are sent to people operating grinders to grind off the final bits of excess metal from the foundry process. These people are skilled in that they have to know exactly how much to grind. Too much grinding could make the casting a candidate for rejection later.

This is the preliminary grinding to prepare the casting for the next step, which is the manufacturing process. We will look at this in more detail in the next issue.

Another part of the foundry is the metal analysis lab. Metallurgists in the lab analyze samples from each melt of metal. That means that everytime a new batch of metal is melted in the furnaces at the pouring deck for casting, a small sample casting is made and sent to the lab. The metal is carefully analyzed to be sure it has the needed characteristics to make strong, durable products.

The samples are also magnified and photographed, labeled and kept on file for twenty years. The records are kept for reference in case of a casting failure, which is very rare.

Hundreds of hands are involved in the foundry process at Mueller Co. Many, many people have the responsibility to see to it that the foundry, the heart of our company, turns out the quality castings that help make our products the best there are. It's the Mueller Margin that those hundreds of hands are helping to add to our products. □

Test your energy awareness

It seems that everybody talks about energy and it's all we see in the papers, magazines and on t.v. But how much do we really know about energy, particularly information that applies to our everyday living? Test yourself with these twenty energy thought-provoking questions.

- One drop of water each second dripping from one faucet will waste how much water each month?
30 gallons 200 gallons 100 gallons
- The heat lost each month through one door without weatherstripping is enough to heat an average house for...
2 hours 8 hours 14 hours
- A three-degree reduction in the temperature setting for your home furnace saves how much fuel?
3% 10% 50%
- Optimum insulation of your house will save what percentage of your heat bills?
5% 20% 40%

- The U.S. with 6% of the world's population consumes what percentage of the world's available energy?
10% 20% 32%
- A returnable bottle is reused how many times?
2 6 15
- What percentage of the energy it takes to manufacture an aluminum can does it take to recycle it?
3% 15% 50%
- How much energy stored in crude petroleum is lost in the series of processes between the oil well and a moving car?
20% 60% 90%
- The amount of electricity used by all small appliances — including radios, toasters, shavers, etc. — is what percentage of the total amount of electricity used in our homes?
10% 30% 75%
- How many years did it take nature to make a pound of coal?
100 years 1,000 years 1,000,000 years

- In the U.S. what percent of our energy comes from non-renewable fossil fuel reserves?
50% 75% 98%
- Over the lifetime of a refrigerator, what percentage of its total costs — buying it, maintaining and operating it — are energy costs?
10% 25% 60%
- Assuming some energy is released as heat, what percentage of the energy do we get as visible light from an ordinary 100-watt incandescent light bulb?
90% 35% 5%
- What percentage of the total U.S. energy consumption is used in food processing?
1% 4% 15%
- To grow, process, and deliver food to the consumer takes how much energy compared to the food energy we get from eating it?
the same amount
one-half the amount
ten times the amount
- Between 1946 and 1968 the population of the U.S. grew by about 50%. In that same period

- how much did electric power consumption increase?
same as population growth
twice as much
over five times as much
 - One ton of average municipal solid waste contains the energy of how much coal?
one ton 1/2 ton 1/4 ton
 - If in 1980 one-half of the cars on American roads were to have an average fuel economy of 22 mpg (compared to today's average of 14 mpg) the annual fuel savings — assuming the same number of cars — would be...
17 thousand gallons
17 million gallons
17 billion gallons
 - If we use energy equivalents of calories expended and BTUs in a gallon of gasoline, how many miles does a bicyclist get per gallon?
15 m.p.g. 400 m.p.g. 1,100 m.p.g.
 - How many calories will a leisurely walk burn each hour (One pound of body fat equal 3,500 calories.)
100 200 500
- (Answers are on page 4.) □

PRODUCTIVITY is not a four-letter word

What is productivity?

Productivity, simply stated, is the output of products or services a worker can produce in an hour. Productivity, particularly the slowdown of productivity, is an issue that President Carter has become increasingly concerned about, one that affects all of us. That's because, as President Carter feels, sagging productivity is closely linked with inflation — the rapid increase in prices we are experiencing. Slower productivity reduces our nation's ability to create more jobs to ease unemployment and it reduces the opportunity for all of us to improve our standards of living.

How much of a productivity lag has our country had?

Well, from 1947 through 1967, productivity in our country rose at an annual rate of 3.3%. That was a period of relatively stable prices and improved living standards. But productivity started to lag and during 1978, productivity increased only 0.4%. That's quite a lag compared to the 3.3% of the '50s and '60s.

What has caused this productivity lag?

The government's Council of Economic Advisors cites two factors that have helped cause the lag in productivity. One, since 1965, more women and young people — who generally have little work experience — have entered the job market.

A second cause is the lower rates of private investment by business. Businesses aren't investing as much in research and new product development as they have in previous years. That's partly because they have shifted some of those funds into research to meet government regulations. It's also getting more expensive for a business to create a new job. An average of \$40,000 must be saved and invested by a business for *each* new job it creates. It takes an initial investment of as much as \$125,000 for each new job created in the petroleum industry. The money to create these new jobs often must be used in other areas.

What can be done to help solve this problem?

If the productivity lag is fueling inflation, then it only stands to reason that a productivity gain is needed to help turn the problem around. A productivity gain is an increase in the average output of goods and services per hour of labor. Increased productivity is the only way that businesses can absorb higher wage demands and other costs without forcing prices on goods and services up (which causes inflation).

Who will benefit by an increase in productivity?

Unions and their members will benefit from an increase in productivity because increased productivity generates future wage increases and continued job security. The industry and our nation will benefit from increased productivity because it helps offset cost increases, and helps keep inflation down. This helps keep U.S. goods competitive with goods produced competitively abroad. It all adds up to a stronger, more profitable American industry which can support steady employment and improved living standards for its people.

A final thought on productivity: The amazing technological advances which helped make our country the world leader in productivity growth, have been matched and in many cases exceeded by foreign competitors. Without an increase in productivity, our country may find it difficult to keep its envied position as an industrial world leader.

Another view on productivity

Everyone has their own opinions as to what is at the root of this productivity lag. Some point their fingers at the government, some point their fingers at business, some point their fingers at the unions. But the truth is, we are all — each one of us — responsible for the solution to the lag. And that's increased productivity.

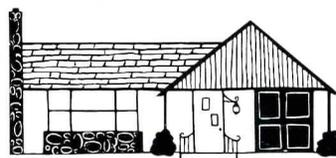
Peter Passell of THE NEW YORK TIMES made an interesting observation about productivity:

"Recent inflation has produced few winners and many losers because the total economy has been expanding so slowly. The real problem is that productivity has been growing sluggishly since the 1960s; it actually declined between 1973 and 1976. Concern about productivity is often dismissed as right-wing patter. That is unfortunate, for the issue is neither conservative nor liberal. *Increased productivity builds backyard tennis courts in Scarsdale, but it also pays for home pool tables in Bensonhurst and food stamps in Harlem.*" □

**You make
the Mueller Margin.
The Mueller Margin
makes sales.
Sales make profits.
Profits create
better benefits
and more jobs.**

**It all
starts with you.**

We make our products with that extra margin of value — the Mueller Margin. The Mueller Margin is what helps make the sales of our products. Sales make profits which are used to create more jobs and to give us better benefits and raise our standard of living. But none of that is possible without you because you make the Mueller Margin. And it's your productivity that keeps our company going. □



Squeeze ease in the '80s

Even though housing starts have fallen off slightly from the 1978 level, U.S. NEWS & WORLD REPORT magazine (June, 1979 issue) feels that the housing squeeze will be eased in the 1980s through new styles and trends and better financing.

The magazine predicts:

- The demand for homes will greatly increase as the full force of the "baby boom" population hits the housing market. In the 1980s, an estimated 42 million Americans will reach the prime home-buying age of 30. That figure was only 32 million in the 1970s.
- Production of new homes will not be able to keep up with the demand.
- More, smaller, attached homes — townhouses, condominiums and the like — will be built.
- New types of mortgages will be developed to make home-buying a little easier. □

ANSWERS TO TWENTY QUESTIONS

1. 200 gallons
2. 14 hours
3. 10%
4. 40%
5. 32%
6. 15
7. 3%
8. 90%
9. 10%
10. 1,100,000 years
11. 98%
12. 60%
13. 5%
14. 4%
15. ten times the amount
16. over five times as much
17. 1/4 ton
18. 17 billion gallons
19. 1,100 m.p.g.
20. 200

MUELLER CO.
DECATUR, ILL. 62525

Factories at Decatur, Ill., Chattanooga, Tenn., Albertville, Ala.
MUELLER LIMITED, Sarnia, Ont., St. Jerome Que., Canada.
Sales office and Western Service Center, Sparks, Nevada.

servicing the water and gas industries since 1857