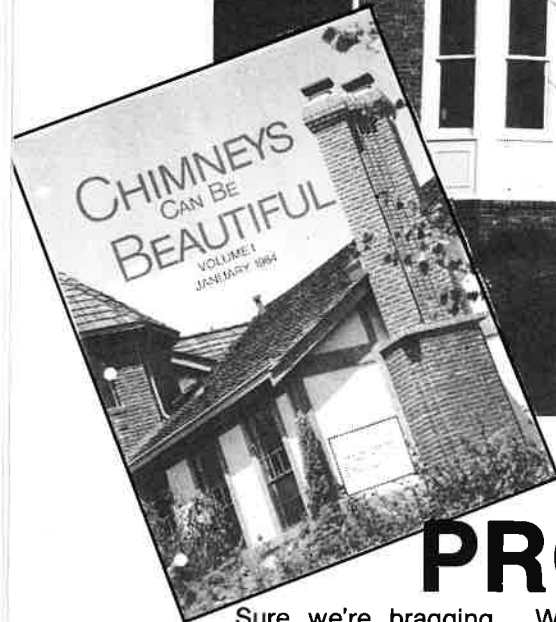


# THE BEST RESIDENTIAL



## BRICK PRODUCT LINE

Sure we're bragging. We are bragging because the members of the National Association of Brick Distributors selected General Shale as the company with the best residential product line in America.

We have over 250 distinct combinations of size, color, and texture including the fabulous

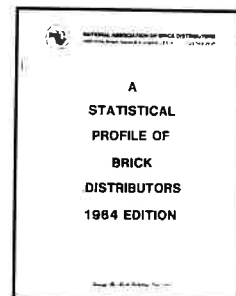
Tudor collection — lots of architectural and commercial brick, too.

We still have a few areas open to distributor representation. If interested, contact our Vice President, Marketing.



### GENERAL SHALE

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"Of all the product lines in the United States, the brick manufacturer that brick distributors feel has the best residential product line is General Shale Co."

WORLDWIDE INDUSTRY LEADER OF THE BRICK, REFRACTORIES, CLAY PIPE AND EXPANDED AGGREGATE INDUSTRIES

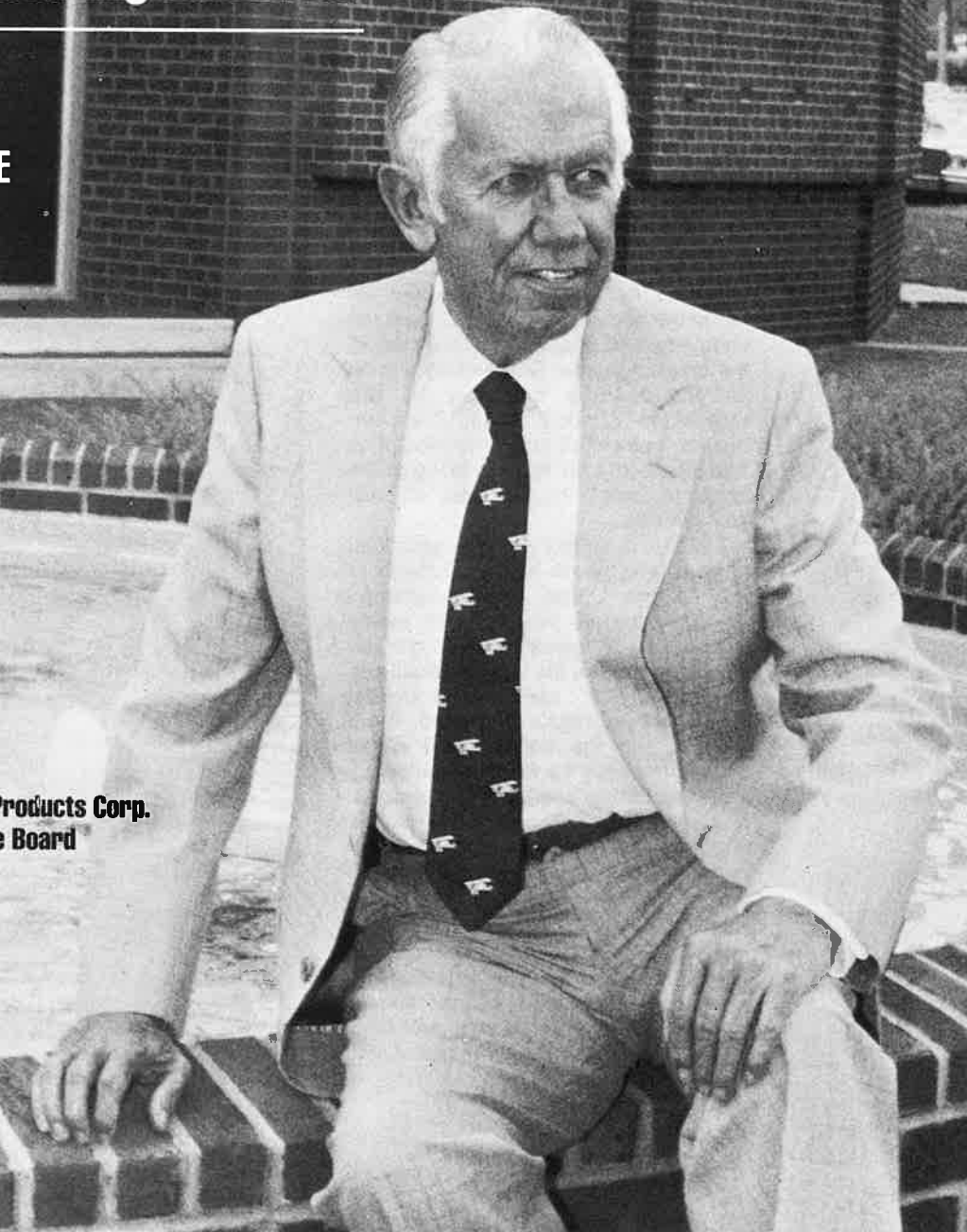
# Brick & Clay RECORD

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### General Shale Products Corp.: Manufacturing Innovator

### MATERIAL HANDLING SHOWCASE

General Shale Products Corp.  
Chairman of the Board  
George C. Sells



# General Shale Creates MANUFACTURING RING MAGIC

Manufacturing innovations coupled with a willingness to share make this Tennessee firm an industry leader

*By Wayne A. Endicott, Editor in Chief*

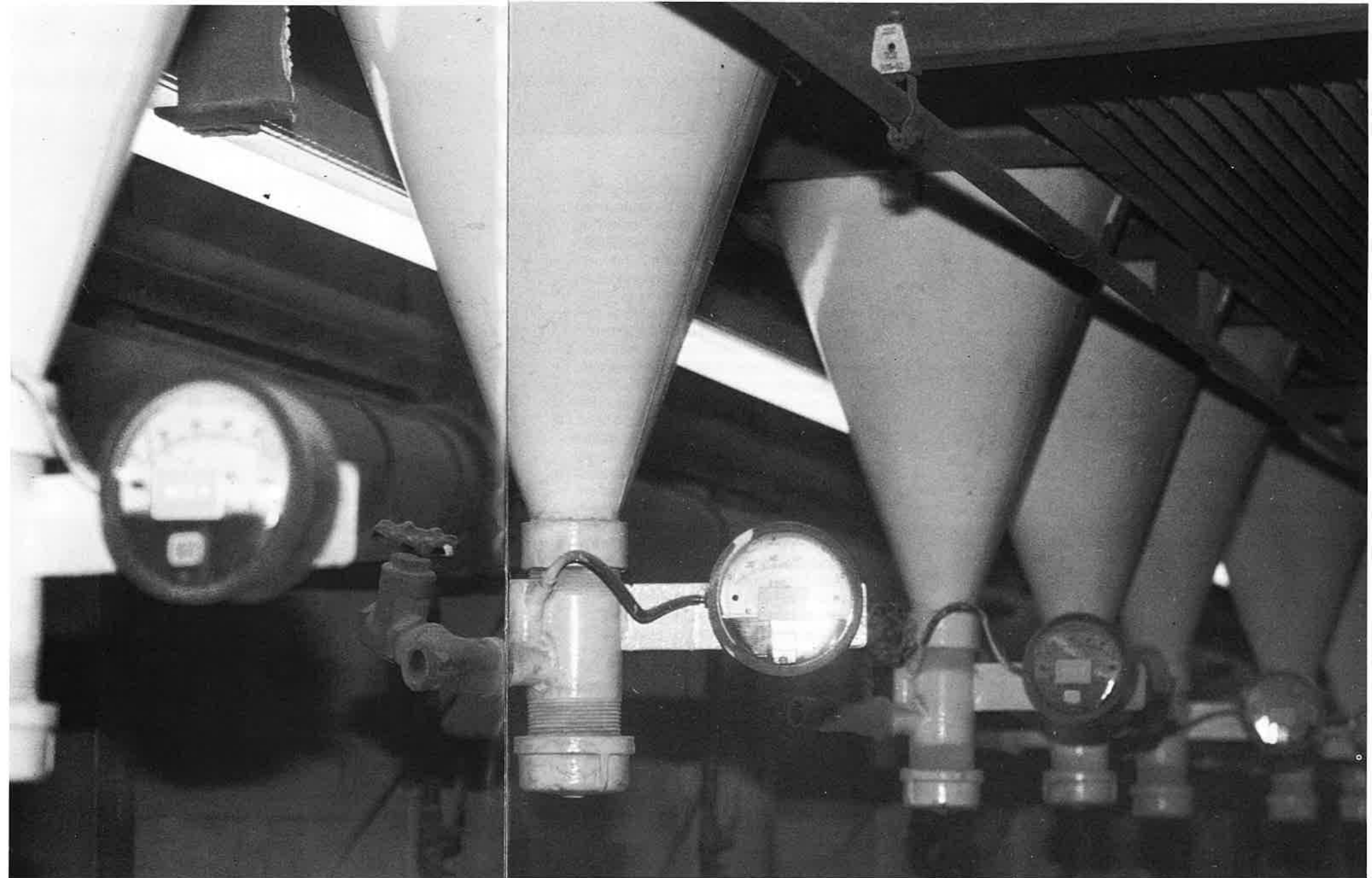
General Shale Corp., Johnson City, Tenn., has been building better mousetraps for most of its corporate history. Manufacturing innovation today remains the backbone of its amazing success as one of the brick industry's leading companies.

Fueled by a constant demand for better methods from George C. Sells, its energetic and charismatic chairman of the board, General Shale today stands as the leading company in the technology of coal firing. The firm recently completed the conversion of its final plant to coal firing, making it the industry's single biggest user of solid fuel systems.

The firm is more than just a collection of coal fired plants located throughout the eastern United States. Although approximately 80 percent of its nearly \$60 million in sales in 1983 can be attributed to brick, the firm also produces concrete block, ready-mix concrete, lightweight aggregate and sand. From those sales, the firm realized a net income of nearly \$4.4 million that year.

General Shale employs 1114 persons, and of those, 757 are hourly people engaged directly in the firm's brick business. In all, approximately 1000 persons spend most of their working day

*General Shale continues to be a leader in change. The company recently finished converting all 12 brick plants to coal firing, making it the industry's largest user of solid fuels.*







The General Shale research committee, which includes sales, production, accounting and upper management personnel, meets regularly to consider new products, colors, textures and the like.

on the company's brick producing operations. Said Sells, "That's still about 400 less than in the boom years of the late 70's."

Today, the firm boasts 12 brick manufacturing plants. At those plants, General Shale mines its raw material with scrapers, which place the material in stockpiles until it can be reclaimed with front-end loaders. The clay then is brought to the various plants in General Shale's own fleet of highway haulers. Haulage distances range from as little as 150 yd at the Louisville plant to approximately 28 mi in Knoxville, Tenn. For longer hauls, like for some of the fireclays used in Kingsport, Tenn., or the buff clays used in Atlanta, Ga., General Shale turns to the railroads for delivery.

In this respect, General Shale differs little from most of the other brick manufacturers in the country. But few would make the mistake of assuming that General Shale represents the usual in brick manufacturing.

#### Innovation a company tradition

Until 1970, General Shale was a lot like other manufacturing concerns in the brick industry. In that year, the firm banded together with several other manufacturers in a joint venture to develop a single-layer kiln. Working with partners Boren Clay, Bickerstaff Clay Products and Acme Brick, the firm developed the completely automatic system that featured brick stacked just one high on kiln cars.

"The project was a technical success," Sells said, "but, the patient died. We were able to work at an 11 min push rate on 10 ft cars. These cars spent just eight hr in the kiln. But the cost of

#### General Shale Factsheet

- General Shale Products Corp., Johnson City, Tenn.
- Capacity of 12 brick plants: 637 million
- Delivered 545 million brick in 1984
- Total 1983 sales: \$59,218,000
- In addition to brick plants, firm also operates three concrete block plants, four ready-mix plants, one sand plant and one lightweight aggregate plant
- Sells 52 percent of production through a network of 300 distributors and 1300 dealers throughout the United States
- Employs 1114 people including 757 hourly workers in brick plants and approximately 1000 in positions relating directly to the brick business.
- In 1983, completed conversion of all 12 brick plants to coal firing.
- Chairman & Chief Executive Officer: George C. Sells
- President & Chief Operating Officer: W.E. Hawkins, Jr.

refractories just ate us up. It also proved to be fuel intensive, and the automatic unloading system we installed just didn't give us the blending we needed.

"At that point we decided to pull in our horns, and there we stayed until the oil embargo of 1973. Faced with the thought that we would not have enough natural gas to keep our plants operating, we were galvanized into action. Actually, we started in 1972 to convert to solid fuel firing, but we really began to move in 1973. Over the next 10 years we converted every one of our plants, finishing in 1983 with the Louisville facility.

"Actually, we're now back to firing one of our kilns in Kingsport on gas, part time, for buff brick only. But that's not representative of what we're generally doing."

The conversion of its plants to coal firing has cost General Shale approximately \$12 million, Sells said. Has the effort paid off? "We're very satisfied with our coal conversions," Sells said. "The payback has been less than two years. At Knoxville, our fuel costs are at about \$5.57 per thousand brick (based on a 3¼ lb face brick). At Marion, Va., where we're firing a 5 lb paver, our fuel cost is \$10.06 per thousand brick."

Although coal firing provides General Shale with its greatest recognition as an innovator, the firm has not been quiet on other technological fronts. At Johnson City, for example, a new "Systems Exhaust" approach has resulted in even greater fuel efficiencies. And the firm has worked long and hard to lower electrical input, thereby reducing utility bills.

Where does this technological innovation originate? "We have a research committee that meets every two to three months," Sells explained. Comprised not only of production people, the committee also includes sales and financial personnel. Together they explore ways and means of improving the company in all areas.

#### Sales the new frontier

Despite its devotion to things technical, General Shale found itself in a totally new dilemma in 1981, Sells said. "We discovered that our newest frontier to attack was not manufacturing, but sales," he said. "At that point, we started beefing up our sales organization.

"We began to spend more money on promotion. Our cost for preparing samples skyrocketed—we spent \$750,000 on that program in 1984 alone. We added salesmen and beefed up our marketing program.

"The results have been most gratifying. In 1981 we suffered a \$6 million operating loss. In the first nine months of 1984, we experienced a \$6 million pre-tax profit. For the entire year we expect to earn between \$8 and \$9 million."

One area of marketing that has proven tough to crack is in changing the firm's marketing mix, Sells said. General Shale long has been recognized as a leader in the sale of brick for the residential market. Sells said the firm would like to get more involved in the architectural market, primarily since firms which specialize in such products best survived what he calls "the Volcker depression.

"Those firms, however, had a niche in the architectural market. We're too big to fit into a niche," Sells said. "But we still would like to see more sales in that area. The residential market ranges from acute to dead in the Northeast to booming in Texas. We're somewhere in between here."

#### Expanding distribution network

To strengthen its marketing position, General Shale also is changing its pattern of distribution. In 1980, about three quarters of its sales were local (within 100 mi of its various plants). The remainder reached the market through a distributor network. Now the equation has changed drastically—fully 55 percent of the firm's sales goes through



President W.E. Hawkins Jr., is the chief operating officer.

distributors.

"We believe that we should go through distributors whenever possible," Sells said. "Factory outlets are not much good beyond the local marketing area. We used to have several yards, but we've closed them down. The strength of a distributor lies in the diversity of the lines which he handles. All a manufacturer can offer is what he makes and at a set price."

#### Field sales staff

Hugh Underwood, vice president of marketing, explained further the General Shale sales organization. The sales effort operates under the direction of an assistant general sales manager, a regional sales manager and seven

district sales managers. The full-time sales staff now totals 26, Underwood said.

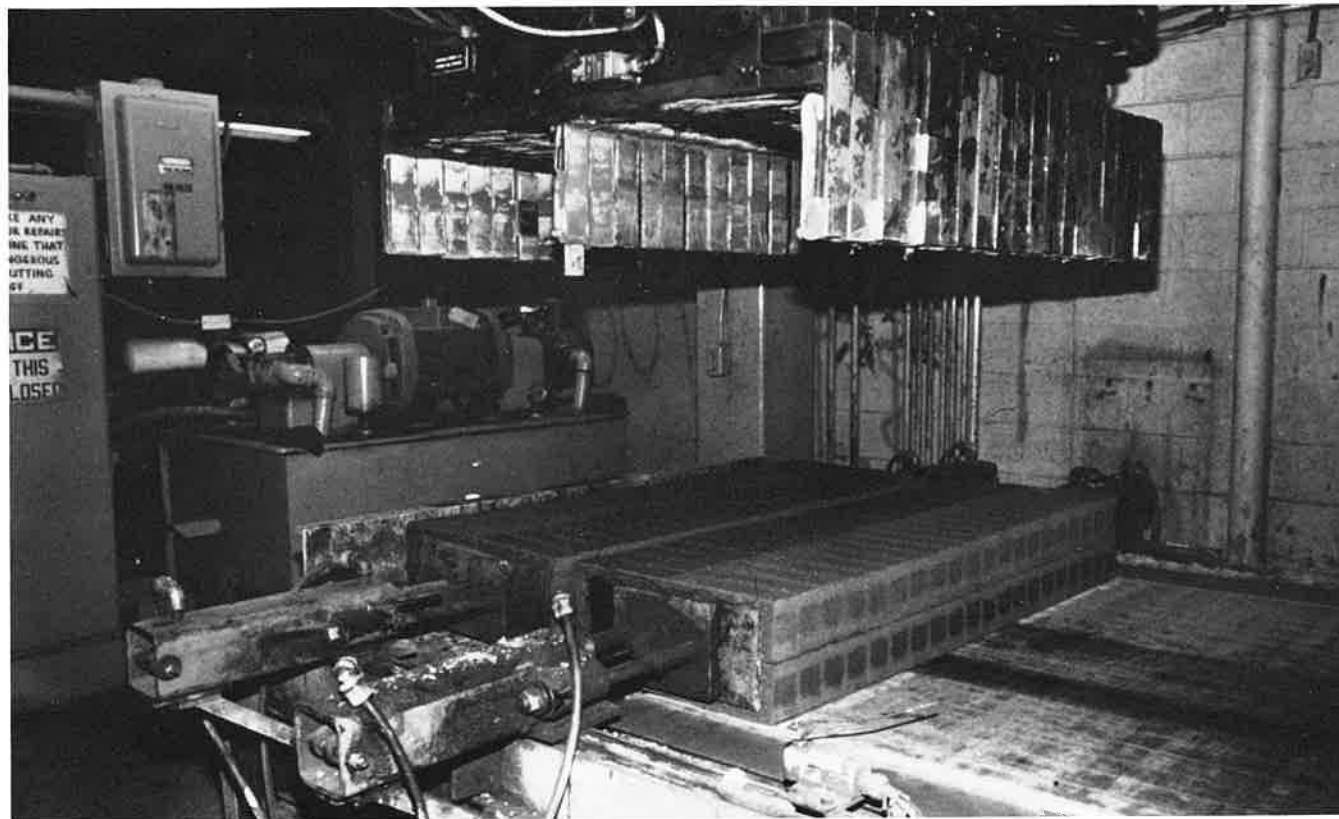
"We now have 300 established distributors and 1300 dealers," he said. "The dealer/distributor is our lifeline, our blood. We realize that there is no way that we can go into a market area and do the kind of job a hometown guy can do."

Underwood said that recent deregulation in the trucking industry has made servicing of a dealer/distributor network a much simpler task than in the past. "Deregulation has been a real revelation to the brick industry. We're now shipping to about half of our distributors by truck. It provides the distributor with a real inventory control measure.

"Brick now arrives at the distributor in better condition. Also, we are able to ship much of the product by truck direct to the jobsite. Not only is shipping by truck better, it is usually cheaper than shipping by rail."

#### Production leads the way

Despite this new trend toward greater emphasis on sales, most brick people think of production first when they hear the name of General Shale. President W.E. Hawkins Jr., discussed the firm's production setup. "All of our production falls under the supervision of Phillip E. Garland, vice president of production," Hawkins said. "Under him, we have two divisional superintendents. Superintendents of the various plants report to the divisional superintendents. Depending on the facility, we will also have assistant



Equipment is retrofitted to improve efficiency. This setter at the Johnson City plant recently underwent a modification.

## Customer complaints come to plant superintendents

superintendents and department supervisors.

"The sole exception to our normal setup is that the Atlanta plant is directly responsible to Phil Garland. The plant superintendent is directly responsible for the entire manufacturing process, up through loading trucks or rail cars.

"I might say here that we hold the plant superintendent responsible for customer complaints. He's our quality control expert. We expect him to correct any quality control problems and see to it that they do not recur. We expect him to work closely with the sales department in this area. That even involves going into the field to check out complaints.

"But checking out complaints is not enough. He must be willing to go back into the plant and do something to ensure that such problems will not happen again."

Another major responsibility vested in the production personnel involves maintaining all plant equipment, up to and including the machinery used to mine the clay. Hawkins outlined the procedure. "Each department superintendent is responsible for the machinery in his own department," he explained.

"We feel that this is the right place to assign responsibility. These people work with that machinery on a daily basis and are more aware and more concerned about its condition than somebody here

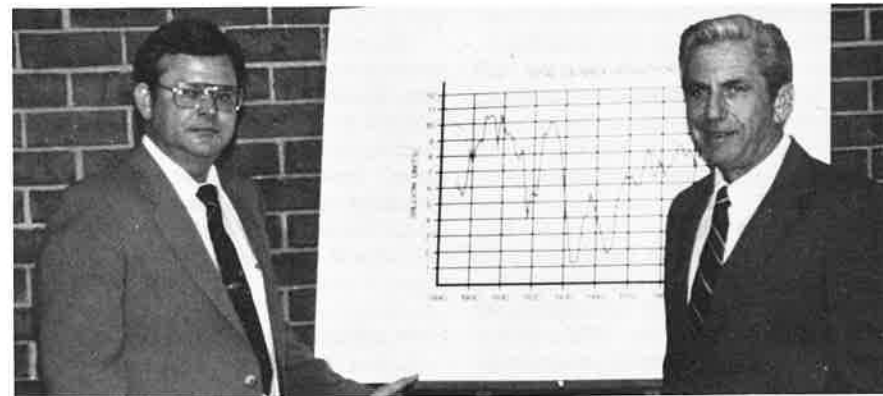
in the home office. Maintenance schedules on all equipment are established by the plant superintendents based on manufacturer's recommendations.

"We now employ the most sophisticated techniques possible in maintaining our equipment. For example, we take oil samples on all our heavy equipment and send them out for analysis. We keep complete records on the cost of maintenance for every machine and get monthly and year-to-date reports on them. This allows us to spot problem machines and take steps to replace them when they no longer operate

efficiently.

"Frequently, we are able to move older machines into less severe applications and thus extend their useful life. We entrust the purchase of new equipment to the local management—based, of course, on budgets set up each fiscal year. We will assist them in getting price quotations, where appropriate. But we prefer to purchase equipment locally when possible because of the service aspects. All invoices flow through the home office where we check them to make sure they're competitive.

"We handle purchasing for expend-



Treasurer James L. Perkins, left, doubles as vice president of finance. Production problems find their way to the desk of Vice President P.E. Garland.



Manufacturing innovations are shared with the industry. Here a clay column moves toward the wire cutter.

able items on a central basis. This would include such items as strapping, chipboard, etc."

This does not imply that local supervisors have carte blanche to purchase anything they desire, Hawkins emphasized. The corporate office reviews all purchases exceeding \$1000. For equipment purchases up to \$100,000, the chief executive officer bears responsibility. Purchases above \$100,000 but below \$200,000 go to the executive committee. Anything over \$200,000 must go to the full board of directors for approval, Hawkins said.

The capital equipment budget is

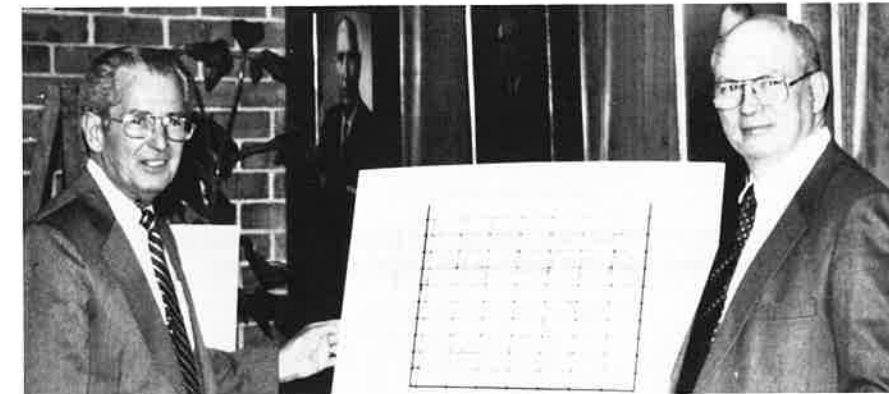
established each year after input from several parties, including plant personnel and the engineering department. It is reviewed by a committee consisting of the vice president of production, division superintendents, the chief financial officer, vice president of engineering and research, the chief engineer and Hawkins. Last year, this capital equipment budget exceeded \$7 million. An additional \$9 million-plus was budgeted for parts and supplies. "We'll spend about \$300,000 for lubes, oils and grease and another \$450,000 for diesel fuel and gasoline when we're operating at or near capacity," Hawkins said.

In addition to the more conventional machinery of the brick trade, General Shale also owns its own corporate airplane. "Some might look on an airplane as a needless extravagance," Hawkins said. "But, if utilized properly, it can be a real tool for a company.

### Finding the right people

Any business which employs as many people as General Shale needs to have a strong recruiting program to attract and hold the right staff. That task falls to Ken Parham, manager of personnel, and Bill DeBoard, vice president of personnel and labor relations specialist.

Continued on page 26



H.H. Underwood, left, vice president, tackles the marketing programs for General Shale. His counterpart in personnel and labor relations is W.L. DeBoard, also a vice president.



Real estate and government relations are overseen by Vice President Walter Banyas.





General Shale mines and stockpiles its own raw materials; here, a scraper works its way through a cut in one of the firm's pits.



Forklifts remain a staple of any brick operation. Here one of General Shale's dozens of forklifts moves a pallet of brick into storage before being loaded on a truck for transit to a dealer.



## Recruiting program seeks top-flight people

"Our heaviest recruiting load falls in the area of the first line supervisory group," Parham said. "We look for the above-average individual—mostly that person who has some technical background combined with management training. One place we've found such people is in the industrial technology program at East Tennessee State and also at Hocking Tech. We've also had some limited success in going to the ceramic engineering schools.

"Once we find the individuals we want, we put them through an on-the-job training program. We assign them a specific area of responsibility and someone to work closely with them. We give them some laboratory schooling—have them bring samples of a material in to our laboratory. We provide them with some basic ceramic training.

"We also provide them with a basic company orientation within the first six months to a year. We make extensive use of seminars at various schools and universities—for example at Clemson. These can vary from ceramic skills to supervisory training to exercising of

basic human relations skills."

A different type of person is sought for sales positions than for those dealing with manufacturing, DeBoard said. "Here, we look for someone with sales aptitude—someone who has good interpersonal skills. We usually start such people in the customer service area, then when possible promote them to field sales positions. In fact, whenever possible, we promote from within.

"We give sales people a little time to get up to speed. It takes time to familiarize themselves with the product and our specific product line. We also expect them to know what goes on inside a plant. We send them to various plants to learn their product lines. But, we think that perhaps the most important part of their training is the time spent on the customer service desk."

### Safety a major concern

Once General Shale hires people, the firm goes to great lengths to keep them happy. One area of great concern to all employees is safety. General Shale has compiled a safety record of which Sells

is justifiably proud. "Our incidence of lost-time accidents is now below the national average for our industry. In fact, we've lowered our incident of lost-time accidents by 90 percent in just eight years," he points out.

"Safety must begin at the top," he said. "Here at General Shale, we put the full weight of the president's office behind our safety program. But it also has to happen at the grass-roots level. We make each plant superintendent responsible for the safety program at his own plant. He is the plant safety officer. We also involve all of the people.

"Of course, we have a written safety program. But it merely is there to provide guidelines. The real work comes in the form of plant inspections, incentives for safety records, training of supervisors who in turn teach their people. We keep and circulate extensive records to our top management. If the numbers get out of line, we take corrective action.

"Safety is more than just protecting your people. It's also good business. We spend a lot of time and money hiring and training a good work force. It's important