

FOCUS ON MANUFACTURING



Helping Tennessee companies achieve a sustainable competitive advantage

Spring 1999

Everybody wins in the Saturn/TMEP supplier development project

Henry Ford, so the legend goes, would load iron ore into one end of his factory and ship completed cars out the other. Everything in

between, from headlamps to steering wheels, was produced on site.

The story is somewhat exaggerated. But if it were true, Mr. Ford is probably the only automaker in history who wouldn't appreciate the benefits of the Saturn/TMEP supplier development project.

Little things mean a lot at Huf North America

Walk into the plant where Huf North America makes automotive locksets, and the first thing you'll notice is how *small* things are. Stainless steel springs as frail as an eyelash. Electronic transponders the size of a grain of rice. Brass tumblers not much thicker than tin foil, sized to fit cylinders the diameter of a lipstick.

It's no wonder that when Dr. Subramaniam Deivanayagam ("Dr. Deivy") visited the Huf plant last summer, he focused almost exclusively on the ergonomic issues associated with picking up, placing, twisting, pulling, pushing and squeezing such tiny components.

"With the very small parts being assembled at Huf, I looked first at how the parts were supplied. In some cases, the workers were reaching back 150 degrees to take cylinders out of a bin or off a conveyor. These parts are not heavy, but when you reach

out like that, your shoulder muscles are supporting your shoulder and arm for that length of time, and it's stressful," said Dr. Deivy, professor of industrial and mechanical engineering at Tennessee Tech and one of the state's first certified ergonomists.

"If you're doing it only a few times a day, it's not a problem. But when you do it 500 times a day at intervals of 30 seconds or less, it can cause stress leading to injuries over time." The same principle applies, he said, whether the operator is pulling down on a lever, turning keys in a test lock, or feeding a key ring through a set of keys.

continued on page 2



Huf engineers Jerry Waybright and John McHan adjust a new finger-triggered, pneumatic arbor press that replaces hand-cranked models.

Forging strong links in the automotive supply chain

The project had its beginnings several years ago,

when Saturn Corporation, the General Motors subsidiary in Spring Hill, Tenn., began looking seriously into supplier quality and development. Like most auto manufacturers, Saturn makes many of its own components, including the cockpit, space frame, powertrain and molded body components. For everything else—door locks, seat frames, brakes, window glass and countless other parts—Saturn relies on more than 380 outside vendors. Roughly 42 of them are located in Tennessee.

continued on page 2

INSIDE:

Transform your company through work force development

Auto conference comes to Tennessee

Learn to teach your own health and safety courses

Calendar

1999: "Year of the Small Manufacturer"

Produced by **T·M·E·P**
The Tennessee Manufacturing Extension Program

A service of The University of Tennessee Center for Industrial Services and the Tennessee Department of Economic and Community Development



Saturn project, continued from page 1

There are obvious advantages to working with sub-tier suppliers: a deeper labor pool, greater product expertise, faster production times, lower capitalization requirements and so on, all contributing to a superior final product. Still, it begs the question: how do you make sure you're getting exactly what you asked for?

That was the question posed by Saturn's supplier quality development team early last year during

Huf, continued from page 1

Another concern was the height of the workstations. Thirty-nine inches may be comfortable for most men, he noted, but not for a workforce that is predominantly female. "Huf provides very good quality chairs," Deivy noted, "but most workers don't adjust them." As for the handful of workers who prefer to stand, Deivy recommended Huf consider also making the tables adjustable.

A third concern was adequate lighting, important both for quality and for preventing back and shoulder strain. "Huf has generally good lighting from above," Deivy said, but the pitched ceiling means that lights in the center of the room are several feet higher than those closer to the walls. Deivy recommended dropping all light fixtures to a uniform height and adding localized task lighting at the workstations.

Huf has implemented many of Dr. Deivy's suggestions, said senior manufacturing engineer Jerry Waybright, and when production begins soon for Saturn's first midsize sedan, the line will incorporate more of Deivy's recommendations.

For instance, the new line features pneumatic presses triggered by a finger switch, eliminating the manual downstroke of the arbor press currently used to snap the spring-and-tumbler assembly into place inside the cylinder. Operators will still insert the twelve tiny springs and tumblers by hand, said Waybright, but even that will soon be eliminated.

Yet it's not as though Huf's quality or productivity suffered in the absence of these improvements. In four years of operation, Huf North America has consistently met its production quota of nearly a million locksets a year, including all of Saturn's product, half a million units for Ford, and tens of thousands more for such brands as BMW and Cadillac. Moreover, the plant has the best record in the industry for reject parts per million—zero. *Zero*. "That's not a fluke," stressed manufacturing engineering manager Bob Brown. "It's been at that level for quite a while."

Nor, added Brown, has the plant logged an unusual number of stress-related injuries or workers' compensation claims, though he admits it may be too early to draw conclusions. "Because we are so new," he said, "our ergonomic issues tend to be carryovers from previous employers."

Dr. Deivy agrees. "Some places are just not aware of ergonomic issues," he said, "but Huf isn't one of them. They've adopted many of my suggestions, but in other areas they had already made the necessary improvements on their own." In short, said Deivy, his investigations in Greeneville have been purely preemptive. "Huf has a good record. I'm just helping them avoid injuries."

one of its regular meetings with the Tennessee Manufacturing Extension Program.

"It wasn't that Saturn was having specific problems," said TMEP associate director David Hall, who was at that February 1998 meeting. "This was a proactive effort on their part." Kyle Hulen, leader of Saturn's purchasing and supplier quality team, agreed. "All our suppliers are certified QS-9000 [the international standard for quality in the automotive industry]. It's a requirement. But one of the goals of QS-9000 is 'continuous improvement.' So we were just looking for ways to make our suppliers even better."

The challenge was figuring out how. "Companies typically don't start out inefficient," said Saturn's Jack Sisk, acknowledging that many of Saturn's existing suppliers may not, at present, need assistance. But this can change as technology, the economy, Saturn Corp. and the suppliers themselves continue to grow. "As they add new lines, new machines, and new workers, the workflow can become inefficient. If you intervene early on, you can help them plan for growth.

"We have some SQEs (supplier quality engineers) who work with our suppliers one-on-one. But one of the issues we discussed with the TMEP was how to leverage the state's resources to better manage these first-tier suppliers."

Tag-team troubleshooting

One answer was the Saturn/TMEP supplier development project, a series of *ad hoc* partnerships among Saturn, TMEP, the supplier, and one or more technical consultants. To prove the concept, the group selected two companies for a test run: Reitter & Schefenacker, a lighting products manufacturer in Selmer, Tenn.; and Huf North America, maker of automotive locksets in Greeneville.

And how were the needs of these companies determined?

"We just asked them," said Chuck Beasley, the TMEP consultant who first visited Huf North America with Saturn SQE Jerome Brumfield.

"We explained what we were trying to achieve, described what we had to offer, and said we would work with them to solve any problems they had."

Added Brumfield, "We assured them that Huf was a good supplier, that we weren't there to

continued on page 3

change the way they do business, but simply that we wanted to help them improve.

“We asked them to make a list of up to five areas they felt could use attention, and we decided we could make the biggest impact with ergonomic improvements.”

Brumfield and Beasley then brought in “Dr. Deivy”—Dr. Subramaniam Deivanayagam, professor of industrial and mechanical engineering at Tennessee Tech and a certified ergonomist with 30 years experience. Deivy, who spent several hours examining the facility, videotaping its operations and interviewing its workers, submitted his recommendations a few weeks later, and many have already been implemented.

Training for success

An SQE in Saturn’s Detroit office made the initial contact with Reitter & Schefenacker (R&S), but given his lengthy commute, it fell to TMEP field consultant Russell Toone to lead the project.

Toone recalls that, like Huf, it didn’t take R&S long to name its priorities. “They needed some help with ergonomics,” Toone reported, but what they really needed was training. “They were investing in new robotics equipment for their first Saturn line,” said Toone, but they didn’t have anyone trained to use it. At the time, they didn’t even have a training coordinator.”

Toone not only found a teacher of the sophisticated technologies; his expert from the McWherter Center of Advanced Industrial Technologies at Jackson State Community College, was willing to bring the training to Selmer.

Today, with the Saturn line ready for launch, R&S has a team of technicians standing by who can program, maintain and troubleshoot the new equipment. It also now has a training coordinator.

“It’s win-win on all sides”

As pilot projects go, the Saturn/TMEP supplier development project can be declared a winner. In fact, as everyone involved in this effort says, “It’s win-win on all sides.”

Saturn wins, of course, by helping assure that

the cars it will produce this year contain the highest quality components.

TMEP wins by working with some of the fastest growing companies in Tennessee and by providing a model program that is already being copied by manufacturing extension programs elsewhere.

On-site training eases growing pains at Reitter & Schefenacker

Duane Ormes stood before a backup-light assembly machine at the Reitter & Schefenacker plant in Selmer, Tenn., punching numbers into a programmable logic controller (PLC) panel.

“When we first found out about [the Saturn/TMEP supplier development project],” said Ormes, watching intently as robotic arms began moving, “we were right in the middle of building all this machinery for the new Saturn line. So I knew right away what two of our needs were going to be: PLC and robotics training.”

Reitter & Schefenacker USA supplies light assemblies, mirrors and other injection-molded parts to some of the world’s biggest car makers, including General Motors, Mercedes and Volkswagen. This year, it will launch four new lines. The largest of them, scheduled to go into production April 4, is for Saturn. The Saturn launch is part of an aggressive growth spurt that began in earnest about three years ago when the company bought the ITT Automotive plant. By the end of the current year, says finance and administration director Duane Prentice, Reitter & Schefenacker USA expects to

gross \$58 million, with as many as 270 workers on the payroll.

Such rapid growth made R&S an ideal candidate for the supplier development project, said TMEP field consultant Russell Toone. In addition to ergonomic modifications to existing machinery, said Toone, one of the most pressing needs was for employees able to program and operate the state-of-the-art robotics designed specifically for the Saturn line.

“The manufacturer of these machines offers training at its plant in Ohio,” said Toone. “But R&S has been growing so fast, they couldn’t spare

continued on page 4



Duane Ormes watches as launch coordinator Jamison Damron prepares to do a test run on a PLC machine at Reitter & Schefenacker. Richard Skelton trained Ormes who then trained Damron.

Huf wins, not only because it has improved worker safety, morale and productivity, but also because it may soon export Dr. Deivy’s innovations to its plants in Europe. Reitter & Schefenacker wins because it can approach the Saturn launch with confidence and because its workforce now has skills that will transfer readily to other machines and other products.

And Jackson State wins because the course in Selmer served it as a trial run for industrial, on-site training throughout the region. ■

R&S, continued from page 3

the employees to go away even for a week.”

So Toone contacted the McWherter Center at Jackson State Community College. Here he was introduced to Richard Skelton, formerly an engineer with Johnson Controls, Ford Motor Company and Trico Industries, and now chair of the department of electro-mechanical engineering. Skelton also oversees curricula in PLC and robotics.

When Toone asked about customized training for R&S employees, Skelton had an even better idea. The McWherter Center had been wanting to take its programs on the road, so to speak,

offering short-term, on-site instruction to companies throughout West

Tennessee. If R&S

would send him to Ohio for the necessary training, said Skelton, he would personally conduct the classes right there in Selmer.

R&S was happy to oblige, but there was a hitch: Despite all the renovations at the plant, there wasn't a room available that would be adequate for the training sessions.

Toone put his ear to the ground once more, and soon found a solution. There *was* space, he learned, at Spectrum Acquisitions, just around the corner from R&S. Spectrum blends and

packages lubricating oils for products such as chainsaws and lawnmowers, and uses PLC machines to do so. Even better, Spectrum's maintenance manager, Garry Miller, had been looking for additional PLC training for his own people.

And that's how it happened that for six weeks last fall, two nights a week, employees from both companies crowded into the Spectrum conference room to learn more about programmable logic controllers. The cost of the training, which included video presentations, class discussion, plenty of handouts and a workbook compiled by Skelton himself, was shared by the two companies.

The fruits of this effort were apparent during a recent visit. As a small group looked on, one of Ormes's technicians demonstrated the machine that joins the backup-light assembly to the license-plate holder. The robotics ferried the parts forward, carried them along the gluing gamut, opened and shut the glue valves, brought the two parts into alignment, and pressed them together for a precise length of time and with the proper amount of pressure. The entire cycle took less than one minute.

When it was over, Ormes retrieved the completed assembly, studied it critically for a moment, then held it out for a visitor to inspect. The visitor, suitably impressed, nonetheless had one last question.

Could you have done this without the TMEP/Saturn pilot program?

“Even if we could,” said Ormes, “probably not as quickly, and not while helping everybody else at the same time.”



Eric Shoemaker, the new R&S training coordinator, and Duane Ormes stand atop the 1800-ton press that will produce tri-color taillights for the new Saturn sedan.

A new OSHA forklift standard took effect on March 1, 1999. Forklift training for and evaluation of employees hired before December 1, 1999, must be completed by December 1, 1999. Training and evaluation for employees hired after December 1 must be completed before the employee is assigned to operate a powered industrial truck.

If you have questions about the new standard or need help fulfilling its training requirements, please call TMEP safety consultant Bryan Lane at (615) 532-4590.

Small manufacturers, continued from back cover

What kind of impact is MEP having on America's small manufacturers?

The U.S. Census Bureau surveyed 4,412 firms served by MEP centers in 1997. These companies reported increases in sales totaling \$236 million, a reduction of \$31 million in inventory, and a savings of \$24 million in labor and materials. They also created or retained 6,755 jobs and invested more than \$193 million in modernization. They attribute these results directly to the

assistance provided by the manufacturing extension programs.

In Tennessee alone, clients reported more than \$52 million in economic benefit in 1998 from services provided by the TMEP.

Throughout the Year of the Small Manufacturer, MEP and its nationwide network of centers will be celebrating the achievements of small manufacturers. Look for more information about events that will take place in Tennessee in future issues of *Focus on Manufacturing*. Or, visit our website at www.cis.utk.edu. ■

How developing the potential of your work force can transform your company's performance

A recent TMEP survey confirms that a majority of Tennessee manufacturers have serious concerns about workforce issues. *Focus on Manufacturing* spoke with Stewart Chason, TMEP workforce development consultant, about ways to develop a more productive workforce.

Q: Why should a company care about workforce development?

Experience and a large number of studies show clearly that manufacturers benefit when they invest in their employees. When workers participate in their own development and in the development of their company, the results are improved morale, commitment, and creativity. Time and time again, we find that companies that integrate their human resources (HR) practices with the company's mission are rewarded consistently with increased productivity, lower turnover, higher product quality, better employee relations, and higher customer satisfaction.

Q: What is your goal when you help manufacturers with workforce issues?

Ideally, we want to improve employee performance. This can be accomplished through a comprehensive program that balances technology and production needs with HR practices that improve employee communication, training, and health and safety. We're especially interested in programs that encourage worker involvement in decision-making, link skills and knowledge, and recognize and reward employee performance.

In many smaller companies, long-term goals that focus on employee skills and communication take a back seat to serving customers and meeting a weekly payroll. Smaller companies also often have difficulty finding and keeping good workers. And in many cases, smaller companies simply don't have the information they need to change their current practices and tap into the full potential of their work force.

Q: How can smaller companies with limited resources keep up?

First, they need to know they're not alone. More than half the companies in the U.S. have fewer than 50 employees. Most of them have struggled with workforce issues and, through

those challenges, have paved the way in identifying and developing sound, effective HR practices.

A wide range of options is available to address workforce issues. One good approach is benchmarking, in which a company's HR practices are compared to those of other, similar companies.

Q: How can benchmarking help manufacturers with their work force?

Benchmarking can help determine how well a company's HR policies are working. It often highlights specific areas for improvement and can give the company a sense of the overall health of its work force in conjunction with the overall health of the company. From that analysis, we usually can suggest a series of steps that will help a company identify workforce development practices that will be of greatest benefit.

Q: What other approaches can companies take?

Companies also should consider conducting a needs assessment to identify workforce-related strengths and weaknesses. This helps companies get a handle on how they function, as a whole and within specific departments. In assessing workforce development and productivity, we usually look at management practices, training and development, health and safety, recruitment, compensation, and employee relationships.

Q: How are benchmarking and assessment done?

Several tools are available to help identify what works in developing employee skills to build a high quality, high performance company. These tools also can help the company correlate HR practices with a variety of measures, such as turnover, output, sales, and profits.

Some benchmarking and assessments can be done by the company's staff. In most cases, though,

TENNESSEE MANUFACTURING PLANTS BY CITY (1999)

Memphis	706
Nashville	572
Knoxville	390
Chattanooga	356
Cleveland	139
Johnson City	114
Cookeville	111
Morristown	106
Jackson	105
Murfreesboro	100

Only Jackson and Chattanooga are home to more plants (three and two, respectively) in 1999 than in 1998. All other cities listed have fewer, with Memphis leading that group also with 11. Knoxville lost seven plants; Nashville and Cookeville lost six each.

*Manufacturer's
News, Inc.*

continued on page 6

Workforce, continued from page 5

they'll probably want to find someone with special training to conduct more comprehensive assessments, usually someone with an occupational development background and some technical experience. In fact, we have that capability at the Tennessee Manufacturing Extension Program.

Q: What kind of information do benchmarking and assessments provide?

Just a few of the questions that can be answered include: How do the company's job requirements and compensation packages compare to those of other companies? To what extent does the company focus on broad performance measures? How

effective is the company's employment recruitment? Has the firm created an understanding of external and internal business conditions? Is there regular discussion with employees about, for example, machine tool programs, equipment layout, or customer relations? If so, to what degree do workers contribute to decision making in these areas? Should the company purchase, lease, or update computer hardware or software, including HR management information systems? Would worker productivity benefit through the purchase of other types of equipment? Does the company provide opportunities for on-the-job training?

Q: What else should company managers think about?

We strongly encourage managers to start thinking in the long term if they don't already. What customer needs do they anticipate? How will this dictate the skills their workers will need and the equipment the company owns or leases? Where does the company want to be in one year? Five years? Ten years? It's a lot to think about, but it's important to keep these issues on the front burner.

Q: How do you help companies match workers with production needs while developing work force potential?

An interesting problem facing companies today—even with extensive downsizing—is an apparent lack of trained, experienced workers. We

hear this all the time. And what we tell our clients is that building and maintaining a strong work force is an ongoing process. Management needs to go beyond simply looking for the "right" workers for current projects. The company must commit to a variety of policies and practices that engage workers in the company and in their jobs. The goal is to build a climate of co-ownership in which employees at all levels feel involved in the company's operation and success.

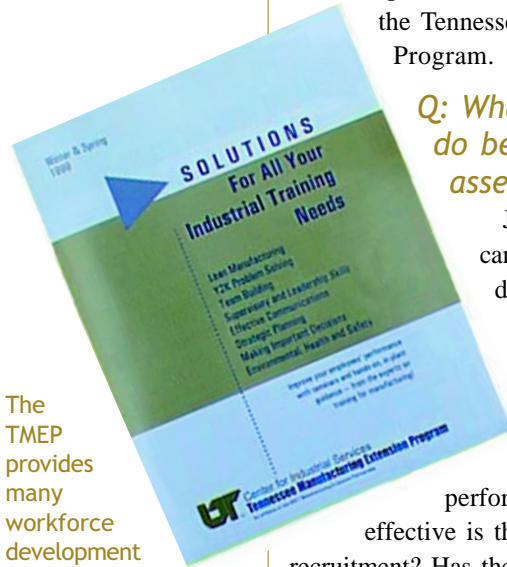
Companies can achieve this through any number of ways that have been shown to build a strong employee base: Recruit for the appropriate skills and provide comprehensive orientation, training, and skills development. Align compensation and benefits packages with performance objectives, and develop a reward or incentive program. Involve employees by using their knowledge and creativity, trying the team approach to problem solving, and giving workers authority to make decisions. Ask employees their ideas on how to improve certain tasks, and promote discussion between management and workers. Share the risks and rewards as well as responsibility for improving the company's performance through a profit-sharing program.

These approaches have been shown, again and again, to improve worker satisfaction, which, in turn, improves a company's overall performance.

Such strategies also help attract and keep employees. Today, however, this isn't always easy. That's why we often suggest a three-pronged approach to recruiting and retaining employees: 1) clearly define job competencies and compensation/benefits packages, 2) assess the skills of current and potential workers, then 3) match workers' skills with the jobs available. A number of tools are available to help companies pull these tasks together.

Q: What else can improve worker development and productivity?

Employee training, involvement, and recognition improve a company's responsiveness. Uncover, develop, and reward workers' skills, motivation and problem-solving abilities. And use on-the-job training. Supervisors or skilled workers can provide one type of hands-on training. In-house training also may involve rotating employees through different jobs or tasks to enhance their skills. ■



The TMEP provides many workforce development services, including in-plant training. If you'd like a copy of the TMEP training catalog, please call us at (615) 532-8657 or toll-free at (888) 763-7439.

If you would like more information about how the TMEP can help you improve the productivity of your workforce, please call us at (615) 532-8657 or toll-free at (888) 763-7439.

Tennessee Firms Get Special Treatment at *Automotive News* Conference

The second Nashville event sponsored by *Automotive News*, the "New American Manufacturing Conference," will be held May 24-26 at the Renaissance Nashville Hotel.

Manufacturers, suppliers, and retailers will meet to identify future supplier roles and innovative media and marketing opportunities. Discussions will center on key issues affecting automotive manufacturing, global sourcing, pricing and other aspects of this dynamic industry.

Attendees receive admission to all speaker presentations and meals. And in recognition of the significance of Tennessee firms to the growing Southeast auto industry, employees of Tennessee companies who register by May 1 will receive a \$170 discount off the \$495 registration fee. **To obtain the discounted admission, call toll free (877) 576-9933.** For the latest information, visit the conference web site at www.ips.utk.edu/namc.

Schedule of Events

Monday, May 24, 1999

- 8:00 a.m. Golf tournament, Springhouse Golf Club at Opryland (\$50 fee)
 12:30 p.m. Tour of Nissan plant
 5:30 p.m. Reception and dinner with keynote speaker, **J.T. Battenberg**, president, Delphi Automotive Systems

Tuesday, May 25, 1999

- 7:00 a.m. Continental breakfast
 8:00 a.m.* **Cynthia M. Trudell**, president and chair, Saturn Corporation
Norbert Reithofer, president, BMW Manufacturing Corporation
 Noon Lunch
 1:00 p.m.* Panel discussion:
Richard Gilligan, executive vice president and COO, Mitsubishi Motor Manufacturing of America
Emil Hassan, senior vice president, Nissan North America
Wes Vance, managing director, Arvin Exhaust North America, Inc.
 5:30 p.m. Reception and gala dinner with...
Don Sundquist, Governor, State of Tennessee
Helmut Petri, managing board member, DaimlerChrysler Corporation
 Entertainment by **Chely Wright**

Wednesday, May 26, 1999

- 8:00 a.m. Deloitte & Touche breakfast presentation
 8:00 a.m. Tour of Saturn plant
 9:30 a.m. The University of Tennessee Automotive Mini Summit #3

* additional speakers to be announced

CALENDAR

New American Manufacturing Conference, May 24-26, Nashville. Sponsored by *Automotive News*. See story at left.

"Y2K Action Planning Workshops" The Y2K problem will affect virtually every business in the world. Every computer, computer network, and electronic product with a microchip is vulnerable to the Y2K bug. The TMEP offers a simple computer program that walks you through Y2K planning in four steps. You'll leave this workshop with the tools, know-how and confidence to lead your company to a Y2K solution. Visit www.cis.utk.edu for a current schedule of Y2K workshops, or contact the TMEP at (615) 532-8657 or (888) 763-7439.

How to Win and Service Government Contracts. In a series of courses held across Tennessee, you'll learn how to bid on government contracts, how to do business with the federal government electronically and other "ins and outs" of government contracting. Visit www.cis.utk.edu for an up-to-date schedule or contact the Procurement Technical Assistance program at (615) 532-8657.

 The TMEP offers numerous courses on topics such as team building, leadership and supervisory skills, analytical skills, and environmental and safety compliance. Call (615) 532-8657 for course catalogs, or visit our web site at www.cis.utk.edu.

Would you like to teach health and safety to your employees?

Two courses to be held in Nashville in August will qualify you to teach construction or general industry safety courses. You'll learn all about the applicable OSHA standards as well as the most effective approaches for teaching adults.

The courses are authorized by the OSHA Training Institute of the U. S. Department of Labor and are led by staff from Georgia Tech's OSHA Training Institute. The course fee is \$675 for either the 40-hour OTI 500 (construction) course or the 40-hour OTI 501 (general industry) course.

For more information, call Georgia Tech at (404) 894-2547.

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Secretary Daley declares 1999 the Year of the Small Manufacturer

U.S. Secretary of Commerce William Daley has proclaimed 1999 the Year of the Small Manufacturer in recognition of the enormous contribution small manufacturers make to the nation's economy.

Daley said, "Small manufacturers are critical to the competitiveness of the entire manufacturing sector and are vital to the U.S. economy." He added, "We are proud the Manufacturing Extension Partnership, a program of the Department's National Institute of Standards and Technology, is

"In Tennessee alone, clients reported more than \$52 million in economic benefit in 1998 from services provided by the TMEP."

playing a key role in helping these companies solve problems, increase productivity and achieve higher profits."

The Tennessee Manufacturing Extension Program (TMEP) is an affiliate of the national Partnership.

"In our opinion, there is nothing more important to Tennessee's economic well being than our family of manufacturers—small *and* large. They are the backbone of the state's employment, revenue and growth," said David Hall, TMEP director.

Started in 1989 with three centers, the MEP now is a nationwide network of more than 400 manufacturing extension centers and field offices providing

business and technical assistance to small manufacturers in all 50 states, the District of Columbia and Puerto Rico.

Whom does the MEP help?

Here are a few facts about America's small manufacturers:

- More than 380,000 U.S. manufacturing firms have fewer than 500 workers.
- These companies employ more than 12 million people—over 65 percent of the U.S. manufacturing workforce.
- Small manufacturers produce over half of everything made in the U.S.
- Small manufacturers account for over \$185 billion in payroll.

While small manufacturers are critical to the U.S. economy, they are less likely than larger firms to know about and implement new technology, modern manufacturing processes and current business practices. Each MEP center works directly with area manufacturers to provide expertise and services tailored to their most critical needs, including process improvement and worker training. In 1999, MEP is placing particular emphasis on helping small manufacturers find and assess problems caused by the Y2K problem.

continued on page 4