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SPECIAL REPORT ON THE U.S. ECONOMY

Will 'Made in USA' Fade Away?

Yes, we'll still have factories, and great ones too. We just might not have many factory workers. Why those jobs are never coming back.

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By Nelson D. Schwartz



Eastman Machine's
Charles Tirone
(Photo: Greg Miller)

In today's Darwinian business environment, Robert Stevenson and his family-run company, Eastman Machine, seem like living fossils. Sitting at the same roll-top desk in the same office in downtown Buffalo where his great-grandfather sat a century ago, Stevenson works just a few steps from where his employees churn out the machines for cutting fabric that Eastman has sold for 115 years. The red-brick building in which they toil was once surrounded by factories that thrummed with thousands of workers making everything from windshield wipers to men's suits; now Eastman is the sole manufacturer left in the area, and the whine from its machine shop is an echo from a bygone age.

Like many U.S. manufacturers, Eastman is beset by some big challenges—low-priced competitors in China, soaring health-care costs, and flat sales of once-hot products. But even as it has trimmed workers and fought thinning margins, Eastman Machine has thrived. Over the past five years Stevenson has pushed his company to innovate, expanding aggressively into the market for highly automated, software-driven cutting machines that foreign rivals don't know how to replicate and that carry far higher pricetags than Eastman's old line of manual cutters. It hasn't been easy—or painless. Eighty workers now produce what it took 120 to make a decade ago, and Stevenson expects that number to keep shrinking as the new high-end machines account for more and more of Eastman's \$30 million in annual sales. "We took our expertise in cutting and said, Let's get out of the commodity business and move into a custom niche business, where we can be competitive for years to come," says Stevenson.

Stevenson's experience isn't unique. Despite the headlines proclaiming the "hollowing out" of America's manufacturing base, the calls for protection from the steel industry, and rhetorical attacks on China that would make you think Beijing is a bigger threat to us than Baghdad ever was, the truth is that America's manufacturing sector isn't about to collapse. Yes, there is real pain out there—2.8 million factory jobs have been lost since the summer of 2000, shrinking total manufacturing employment by 16%, to 14.6 million. Manufacturers bore the brunt of the recent recession, suffering a one-two punch brought on by slack U.S. demand and a strong dollar that hurt American exporters. And even innovators like Eastman continue to fight overseas competition that's far from legal—Chinese rivals have copied Eastman's older but still patented machines down to the smallest details, producing knockoffs that sell for a fifth of the price and carry names like "Westman."

But the fact is that American factories are producing more than they ever have, even the steel and automobile manufacturers that were consigned to extinction decades ago. The problem for American workers is that factories are experiencing huge gains in productivity—companies now need far fewer employees to churn out all those cars and steel slabs and machine tools. For all the talk of how technology has revolutionized the white-collar office with e-mail and the Internet and PDAs, it's in the blue-collar sector where high-tech has dramatically altered the landscape. (This is not a U.S.-only phenomenon. A recent study by Alliance Capital found that productivity improvements have been eliminating factory jobs around the world.) Between 1995 and 2000, productivity in the manufacturing sector rose by an average annual rate of 4.3% compared with just 2.2% for the overall nonfarm economy, according to the Department of Labor. An excellent example is Intel. At Intel's newest U.S. semiconductor plant in New Mexico, the same number of workers can produce 2 1/2 times as many chips as at facilities opened just five years ago. That kind of productivity is one reason Intel is still building factories in the U.S. Ten of Intel's 14 factories are in this country, including four of the five high-end wafer-fabrication plants Intel has built since 1999 at a cost of \$2 billion each. (The fifth is in Ireland.)

Even the steel business, long the paradigm of a dying Dickensian industry better suited to the 19th century than the 21st, has undergone a revolution. The workers who once manually guided ladles full of hundreds of tons of glowing liquid are gone; they've been replaced by one man behind a computer with a joystick in an air-conditioned "pulpit." Overall production of steel in the U.S. has actually gone up over the past two decades, rising from 75 million tons in 1982 to 102 million tons last year. It's just that instead of 289,000 steelworkers nationwide, it takes

only 74,000 workers to forge that hot metal today. That kind of change, as we'll discuss later, has enabled new producers like International Steel Group to thrive. But it's caused wrenching pain for communities that depended on plentiful, high-paying blue-collar jobs—despite the downsizing, steelworkers still typically earn between \$18 and \$21 an hour. In many cases, retirees have lost their pensions and health benefits as old behemoths like LTV and Bethlehem collapsed while new players like ISG picked up their assets—but not their employees' benefits.

In recent weeks there have been some signs that the outlook for manufacturers is brightening. In early November the Institute for Supply Management reported that its index of manufacturing activity hit its highest point since January 2000, while its measure of manufacturing employment signaled that the long jobs drought may be easing. "The cyclical forces have turned very positive," says National Association of Manufacturers economist David Huether. "That translates into stronger manufacturing output in the short term."

Over the long haul, though, the challenge to manufacturers—and their employees, both blue- and white-collar—will remain. Regardless of whether Huether is right about the cyclical improvement in the manufacturing economy (and the smart money says he is), the bottom line is that we will continue to "make more with fewer workers," says University of Michigan economist Donald Grimes. "Even if manufacturing holds on to its share of GDP, we are likely to continue to lose jobs because of productivity growth. I'm not sure there's that much we can do about it. It's like fighting a huge headwind."

Tellabs' factory in Bolingbrook, Ill., an hour south of Chicago, is a world away from the brick-and-wood home of Eastman Machine in downtown Buffalo. The low-slung gray-cement building with its mirrored-glass windows and high-tech equipment sprung up out of the cornfields a decade ago to supply the Baby Bells and Global Crossing and other fast-growing telecom companies with the hardware they needed to modernize and expand their networks. Tellabs, based in nearby Naperville, watched its orders explode in the middle to late 1990s, and the factory in Bolingbrook poured out the products that helped make Tellabs one of the best-performing stocks of the 1990s. With 963 workers operating in three shifts, the factory ran 24/7, and at the end of each quarter Wall Street analysts would count the trucks at its crowded loading docks to see just how boffo a quarter Tellabs enjoyed.

It wasn't only high-tech hardware makers that enjoyed strong growth in the past decade, either. Buoyed by the productivity

gains noted earlier, the overall manufacturing sector boomed in the 1990s, contributing as much to GDP growth as software and retailing combined. And while overall manufacturing employment dipped slightly, from 17.7 million in 1990 to 17.3 million in 2000, that figure camouflaged the strong employment gains in sectors like auto parts and high tech. Former Rustbelt states were among the biggest winners, says Grimes. In Michigan, manufacturing employment rose from 838,000 to 897,000 between 1990 and 2000.

The slowdown that began in 2000, though, dealt manufacturers a particularly brutal blow. The mainstay of manufacturing growth, capital investment, slackened sharply in the U.S. and Europe. As profit margins shrank, U.S. manufacturers moved marginal jobs overseas or pushed productivity initiatives harder than they might have when business was robust (that's among the reasons manufacturing productivity rose a stunning 8.6% in the third quarter of 2003). The final element was the collapse in high tech, where productive capacity was exploding even as demand was falling.

The experience of Tellabs, and its plant in Bolingbrook, follows this arc exactly. In the fourth quarter of 2000, Tellabs had sales of just over \$1 billion. It'll be lucky to see that level of sales for the entire year in 2003. Meanwhile, as Tellabs stock dropped from \$70 at the end of 2000 to a recent price of \$7.60, the company lost hundreds of millions of dollars. Tellabs has been forced to redesign some products as prices fell by as much as 70% over the past 18 months. But even as telecom demand plummeted and competitors outsourced production, Tellabs held on to plants in Illinois, New York, and Texas as well as in Ireland and Finland. "We just couldn't pull that trigger, because of the people and because we knew if a customer wanted something in two days, we could do it." Indeed, when Verizon desperately needed new gear to repair Manhattan's battered infrastructure after Sept. 11, the Bolingbrook plant ran overtime and Tellabs got the order to Verizon within 24 hours.

"We started manufacturing from day one, and we did it for 28 years," says Tellabs founder and CEO Mike Birck. "We held out till the very end." By mid-2003 the company had no choice but to shut down Bolingbrook, the last of its U.S. factories. Prodded by his chief of North American operations, Steve McCarthy, Birck turned to Sanmina-SCI, a San Jose-based contract manufacturer for high-tech companies. Sanmina has production facilities all over the world. So beginning this November, much of the equipment that used to be made in Bolingbrook will now come from Sanmina's operation in Guadalajara, Mexico. The workers in Mexico earn a fraction of the \$15 to \$20 an hour Tellabs paid its employees, and because of huge economies of

scale and purchasing power, Sanmina can also deliver substantial savings on the cost of parts. All told, outsourcing with Sanmina reduced Tellabs parts expenses by well over 20%, says McCarthy. These days, says Tellabs spokesman George Stenitzer, "the loudest sound in the building is crickets."

A smaller number of the company's jobs, however, have shifted to Kenosha, Wis., where Tellabs engineers and managers can work closely with Sanmina production employees on cutting-edge equipment that requires time to test and develop. Even if telecom demand rebounds, however, Tellabs won't be reopening its factories. "We've got 300 people hoping and praying for that," Birck says. "But I doubt seriously we would ever go back to the full manufacturing process." The shuttering of the Bolingbrook factory and other Tellabs offices has rippled through the surrounding communities, hitting both blue- and white-collar workers hard. At a nearby Home Depot, former project engineer Pete Trumpis earns \$29,000 working in the hardware department, less than half of the \$68,000 salary he made at Tellabs. "I'm not one of these people who are sitting around and waiting for their old job to come back," says Trumpis, a sandy-haired 54-year-old who holds an MBA as well as a bachelor's degree. "I don't believe in not working."

It's ironic that a century-old plant stamping metal in Buffalo is still humming while Tellabs' ten-year-old high-tech factory has grown cold. But it's a trend that's entirely in keeping with the breakneck pace of innovation in telecom and other tech sectors. "We create new products, and when they become mature, much of the production moves overseas and we move on to the next big thing," says Erica Groshen, an economist with the New York branch of the Federal Reserve. Indeed, economist Grimes estimates that manufacturing employment in the computer and electronics sector has fallen from 1.8 million in 2000 to 1.4 million this year, a 22% drop. (On a percentage basis, that's a bigger loss than in sectors like automobile assembly, where employment has declined from 291,000 in 2000 to 271,000 today.) So while Intel's state-of-the-art fabs are likely to remain in the U.S., easier-to-replicate tech manufacturing is likely to continue to move to other countries. "Tech is great," says Grimes. "But a lot of it can be made anywhere."

David Zummak is just happy to have a job. As a 57-year-old steelworker in Indiana who started working with hot metal straight out of high school and the Army, he knows the odds are stacked against him. The plant where he works in Burns Harbor on the shore of Lake Michigan may be the youngest integrated steel mill in America by several decades, but he's watched as its workforce declined from more than 5,000 in the 1980s to 3,260 today. Zummak's plant, which used to be part of Bethlehem, was

acquired last May by International Steel Group, a new company backed by New York financier Wilbur Ross. Led by veterans of Nucor, ISG is trying to completely reinvent the labor-intensive process of making steel. Less than two years old, ISG has acquired huge plants in Ohio, Indiana, Illinois, Pennsylvania, and Maryland, and it now controls roughly 15% of the country's steelmaking capacity.

After taking over Burns Harbor in May 2003, ISG set out to replicate the cost savings it achieved following the purchase of LTV's assets in 2002. The new managers have insisted on greater flexibility from the union, so now welders can stand in for pipefitters or maintenance technicians. "A person doesn't just have to run a tractor or a crane," says the plant's top manager, John Mang. "All the boundaries are being taken down, and workers are being retrained with additional skills." Since ISG has taken over the plant, the number of man-hours needed to produce a ton of steel has dropped from 2.9 to 1.9; Mang's goal is to get it down to 1.75.

Those changes will enable Burns Harbor to avoid the fate of other shuttered Midwestern mills, but they come at a substantial price. For starters, ISG reduced Burns Harbor's payroll by nearly a quarter. Following ISG's takeover, 100,000 Bethlehem retirees and their dependents also lost their medical coverage, and they will get only a fraction of their original pension benefits. Avoiding those expenses, known as legacy costs, will save ISG more than \$400 million a year. It's a brutal process, Mang admits, but making these hard choices is the only way American steel, and by extension American manufacturing, can continue to be viable. "Burns Harbor is the flagship of ISG and the flagship of the entire industry from a profitability point of view," says Mang, a second-generation steel man. "There is money to be made in steel, and this plant will definitely do that."

Wall Street is betting that Mang is right about steel's potential. Before the end of the year ISG is expected to go public in an offering led by Goldman Sachs, the Street's premier underwriter. If the IPO is a success, it will represent a remarkable turnaround for an industry long regarded as the investing equivalent of toxic waste. And for steelworkers like Zummak who have been fortunate enough to hold on to their jobs, steelmaking remains a career in which blue-collar workers can enjoy a middle-class life. Zummak typically works a 44-hour week, earning \$18.50 an hour plus regular bonuses. He gets medical benefits and five weeks' vacation. "I'm very fortunate," he says. "To keep medical coverage and a job after Bethlehem went bankrupt? That's all a guy could ask for."

As a new company, ISG has the ability to start afresh and escape

Bethlehem's legacy expenses, and that's a big reason it may indeed reinvent American steelmaking. For long-established giants like U.S. Steel, GM, or Ford, simply walking away from crushing benefit and pension obligations isn't an option. Last year, for example, benefits for retirees cost Ford over \$2 billion, which is more than the company's earnings so far in 2003. For smaller manufacturers like Eastman Machine, paying for health benefits is a bigger worry than new competition from China. "One of the reasons we're looking at outsourcing is medical costs," explains Stevenson. "Energy and taxes are peanuts compared with the cost of health insurance, and it's something I have no control over." Insuring his employees and retirees costs nearly \$80,000 a month, up from \$40,000 five years ago. Revenues, meanwhile, have remained flat at about \$30 million.

While Washington debates whether to take on soaring medical costs, Stevenson is strongly opposed to another nostrum coming from Capitol Hill—protectionism. "This company depends on free trade," says Stevenson, noting that in the last week of October alone, Chinese customers inked deals for two automated cutters. "That's a \$150,000 order," he adds, pointing out boxes destined for buyers in New Zealand, Israel, Italy, and Turkey as well as Grand Rapids. Currently 50% of Eastman's business comes from overseas, with China and the Pacific Rim accounting for 75% of that. And over the next few years the proportion of Eastman's products going abroad is only going to grow. "If we sit here and whine about China overtaking us because of their lower cost of labor, that's a game we're never going to win," Stevenson says. Because Eastman innovated and developed new products like automated cutters, says Stevenson, "we're thinking about whether a fifth generation could succeed in this business."

It's hard to say what Eastman's product line will look like if and when that fifth generation takes over. No matter what, the company is going to need fewer people to make its machines. For workers in Buffalo and communities across the country, that's going to cause even more wrenching economic pain. And for older employees like Pete Trumpis, who works at Home Depot for a fraction of his original Tellabs salary, the transition is especially painful.

But we've been here before. In 1900, 38% of Americans still worked on the farm. Today, agriculture accounts for just 2% of employment, yet we produce enough food (more than enough, in fact) to feed ourselves and much of the world. Despite that profound change in the way we work, America didn't inherit permanently high unemployment rates. Over time, Americans moved off their farms and into cities and suburbs and found jobs in burgeoning new industries. "Does it cause a lot of dislocation?"

Of course it does," says the University of Michigan's Grimes. "But in the end we've adjusted." He notes that European countries that have tried to hold back these changes through tariffs and subsidies have actually found themselves with higher rates of joblessness. The only answer is for the U.S. to do what it has always done—adapt, innovate, and create new products, just as Stevenson is doing at Eastman's century-old factory. There's no reason to think Eastman—and America—won't be any less successful at that in the next hundred years. "I've got young people who wouldn't be here if they didn't think there was a future," says the 52-year-old Stevenson. "And if I weren't optimistic, we wouldn't be investing the time and money to stay in Buffalo."

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