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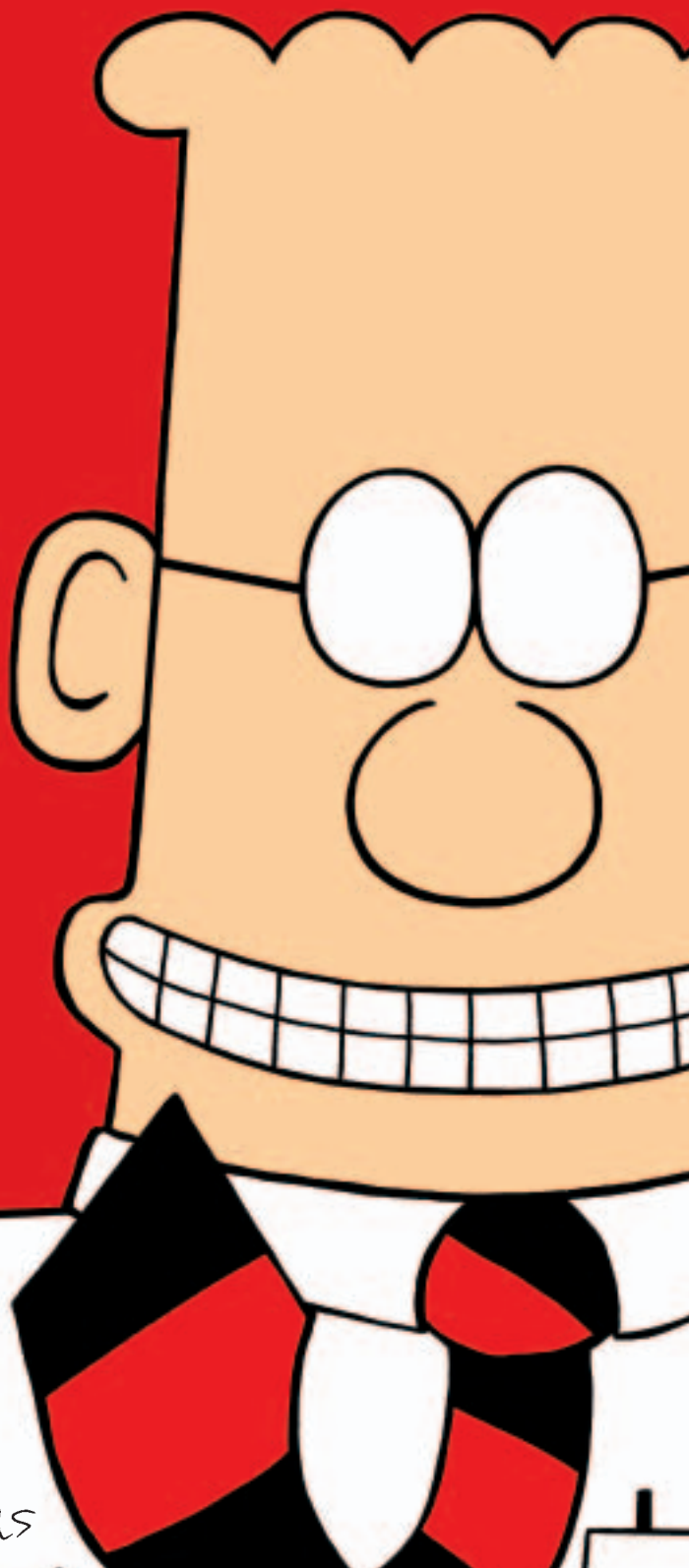
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# FORTUNE

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2004 SPECIAL REPORT

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# The struggle to get lean

At auto-parts giant ArvinMeritor, efficient production takes steady effort—and is key to survival. **BY PHILIP SIEKMAN**

**A**s corporate-takeover wars go, this one was starting to look like a medieval siege: the defender up on its battlements hurling down insults; the attacker dug in, launching an occasional barrage of sharp remarks and repeatedly demanding surrender. The battle was joined six months ago when ArvinMeritor in Troy, Mich., made an unsolicited and definitely unwelcome \$15 a share, \$2.2 billion offer for Dana, its Toledo rival in the auto- and truck-parts business. That \$15 was nearly 50% more than Dana's stock price a month earlier, but Dana rejected the offer out of hand. ArvinMeritor remained belligerent for months and in November bumped the offer to \$18. When Dana's board sniffily said it still wasn't interested, ArvinMeritor finally abandoned the bid and struck its tents.

Chances are that this won't be ArvinMeritor's last foray onto the acquisition battlefields. Its executives believe that they have no choice but to get bigger—if not by friendly persuasion, then by conquest. CEO Larry Yost insists that consolidation of motor vehicle suppliers is "inevitable" because only more globally based companies with broader product lines are going to survive.

That's a point few people would dispute. Making parts for

the world's car and truck manufacturers is a high-investment, low-margin business. Participants are continually squeezed by a shrinking group of customers worldwide. Suppliers no sooner figure out a way to make a buck than the assemblers demand lower prices and better service, such as in-sequence parts deliveries to the assembly line. Built-in annual price reductions, so-called cost-downs, force suppliers to cut prices from 2% to 5% a year. In its fiscal 2003, ended Sept. 30, ArvinMeritor recorded sales of \$7.8 billion but couldn't squeeze out even as much as a retailer's 2% after-tax return on sales. Its net profit was a piddling \$136 million, and even that surpassed larger competitors Visteon and Delphi, which have been losing money.

Achieving economies of scale through merger is one way to survive in the morass. Ultimately, though, ArvinMeritor must drive to offset customer demands for lower prices by doing things better in its factories. Using a favorite ArvinMeritor expression indicating that the house is in danger of going up in flames, Tom Gosnell, head of the commercial-vehicle-systems business, says, "Cost-downs drive a burning platform into this business."

To reduce material, labor, and overhead costs, ArvinMeritor has begged, borrowed, and spent so that it could assemble what is probably one of U.S. industry's most complete packages of new programs and methods. In the words of Sean Wright, vice president of continuous improvement, the company "has taken

distance, time, and space out of work.” If you’ve heard about it—Kaizen, Kanban, 5S, Total Quality—it’s likely that Arvin-Meritor has tried it and is probably still using it. As the company’s 2003 results show, it hasn’t been able to cut costs faster than customers force price cuts. Yet it has remained profitable, and, says Gosnell, “We’re not done yet. Continuous improvement is always an uphill walk.”

ArvinMeritor is the product of a merger in mid-2000 between Arvin, which traces its history to a company that built car heaters and mufflers in the 1920s, and Meritor, another old-timer in the industry with a lineage going back to 1899. The two companies, themselves agglomerations of previously independent businesses, were nicely matched. While Arvin made some truck parts like heavy-duty shock absorbers, it largely supplied exhaust systems and other parts to automobile assemblers. Meritor was almost the reverse. It generated about 70% of its revenues from sales of axles, transmissions, and the like to truck builders and made up the rest of its business largely with automobile doors and sun-roofs manufactured and sold mostly in Europe.

Both sides of ArvinMeritor’s business are under pressure. Its operating margin on car parts has been cut by more than half since 2000, from 7.3% to 3.4%. The trend in the truck business hasn’t been quite so bad, but it is heading in the same direction. ArvinMeritor barely broke even on commercial-vehicle systems in 2001, then recovered a bit in the past two years. But the operating margin in this part of the business in 2003 was just 5%, a third lower than in 2000. Truck customers have increased their pressure on prices following a rash of consolidation and globalization—particularly in the most important market segment, Class 8 truck tractors, the kind you call semis.

ArvinMeritor’s two biggest truck customers are DaimlerChrysler and Volvo, which rank No. 1 and No. 3 in sales worldwide. All that market power in the hands of two giant customers gives them a huge edge. “When I started,” says Gosnell, “if you lost a piece of business ... you had more places to go to offset it. That doesn’t happen today. When DaimlerChrysler or Volvo negotiates a five- to seven-year deal, you don’t want to lose, because when you do, you’re out for five to seven years.”

Trying to offset price pressure by becoming more efficient is nothing new at the company—one or another part of ArvinMeritor has been experimenting with productivity programs for at least a decade. What’s changed have been the methods and the level of acceptance by the workforce. At Meritor, Gosnell says, production-improvement efforts often were no more than the “program du jour.” Says he: “Management would go in at 40,000 feet, drop big bombs, then fly off over the horizon. Anybody who didn’t want to buy in just got in a foxhole, waited for the dust to clear, and then came out and started acting the way they always acted.” No more. The next stop for anybody who acts that way today, executives suggest, is likely to be the unemployment office.

The beginning of the change can be traced to a decision in the spring of 2000. Randy Renz, Meritor’s vice president of operations and now in the same job for the combined company’s commercial-vehicle systems, had been looking for ways to cut costs with programs that would prove more than temporary exercises in management enthusiasm. To help he had asked a Carmel, Ind., consulting firm, Kaufman Global, to improve manufacturing operations in parts of the company’s U.S. and overseas plants. When those projects paid off, Renz asked Kaufman, an expert in lean manufacturing tools, to mount a full-court press at a single site in order to create a template and benchmark for all of the company’s truck and auto parts plants.

For the pilot project Renz chose a plant near the Asheville, N.C., airport that builds front and rear truck axles for commercial and military vehicles. Its most important customers are the Class 8 truck-tractor assemblers: DaimlerChrysler’s Freightliner, which accounts for half the site’s sales, followed by International Truck and Volvo. Renz picked Asheville not because it was in trouble, but because it wasn’t. He figured that it had less distance to go to become world-class, as measured by such metrics as lower scrap rates and fewer customer rejections of parts.

Asheville’s managers already knew something about lean manufacturing and other modern production systems. One of several plants built in the 1980s, when Rockwell moved South to escape organizing efforts by the United Auto Workers, the facility has a culture of labor-management cooperation. All its workers are on salary. Nobody has a reserved parking spot. To eliminate the “It’s not my job” syndrome, management has reduced the number of job classifications from a couple of dozen to just seven. By the summer of 2000, however, Asheville’s managers were trying to cope with plummeting sales. The plant’s most complicated and expensive products are the two rear or driving axles on three-axle Class 8 truck tractors, which weigh about 600 pounds apiece.

Within a year production fell from more than 1,700 axles a day to fewer than 600. (Daily output now is back up to about 1,025.) Freightliner and other customers began shutting down their assembly lines for a week or two, usually giving ArvinMeritor only a couple of days’ notice. That wasn’t enough time for it to adjust production lines or prevent a buildup of inventories and a nose-dive in profits. At the same time the sharp decline forced other changes on the factory floor. In the late 1990s, when the truck market was rolling in overdrive, Asheville had outsourced a lot of work to sister plants in the U.S. and overseas. As sales slowed, it pulled back production of axle housings, gear sets, and other parts that had been made as far away as Turkey, Brazil, and Sweden. With its market cut about in half, Asheville laid off several hundred temporary workers and reduced the permanent payroll from about 540 employees to 450.

While their market was collapsing, Asheville’s managers were coping with a plan—devised in better days—to subdivide the plant. While keeping the original 20-year-old factory to make parts, they had started to move assembly to new, outlying “customer value centers.” The centers are easier to run in lockstep with customers’ production lines and are staffed with assembly workers who need fewer skills and are paid less than the craftspeople in the parts plant. The first center opened a few miles from the main plant in late 1999 to assemble front or steering axles. A second assembly facility for rear driving axles opened in May 2002 in a newly constructed plant about 45 miles away.

Given the market collapse, worries about union organizing, and the operational changes, the Kaufman team was less than welcome when it arrived. As many as four on-site consultants joined with four ArvinMeritor people to lead lean manufacturing and continuous-improvement programs and to train both production workers and supervisors to run such projects on their own. A steering committee of senior managers was organized to track progress and dismantle roadblocks for teams working to improve materials flow and other projects. As sales and profits tanked, the Asheville managers, desperate to cut costs, became more enthusiastic about the program. They started trolling other Arvin and Meritor plants for new ways to build products—a sharing of ideas that was new to the company. Site manager Fred Harbinson says that when he visited a former Arvin automobile shock absorber plant in Toronto,

he got his first look at a “management-at-a-glance system,” an easy-to-see display that compares a manufacturing cell’s output with its targets for that day or shift.

The consultants remained on the job for 38 weeks. During that time Asheville got a full shelf of new tools and techniques. Kaizen workshops—multiday sessions to rework a line or production area—produced cost-cutting changes throughout the plant. “Supermarkets” for parts were set up on the plant floor near production lines to “feed the beast”—get the right parts in the right amount to the right spot at the right time rather than pulling them from storage. On a big press pounding out axle housings, improvements, including revamped materials handling and better maintenance procedures, cut annual costs in that section of the plant by \$339,000. The press stamps out heavy axle housings for considerably less than it costs to do the same job in the company’s plants in Brazil and Mexico.

Results have been impressive. By the time the Kaufman consultants pulled out in May 2001, annual cost reductions from the new programs had comfortably topped \$2 million. By the end of fiscal 2001 the savings, net of the consultants’ fees and other program expenses, amounted to more than \$4 million, a 26% cut in costs from the prior year. By 2002 the plant had doubled inventory turns and cut customer complaints nearly in half. One assembly line became so efficient that it took work from another ArvinMeritor plant in Mexico, which was then closed. Says Gosnell: “We’re not done yet. We’re going to get a lot better.”

While consultants worked with the Asheville managers, other efforts at improving efficiency were being made elsewhere as integration teams composed of former Arvin and Meritor people figured out ways to pull together the newly merged company. One former Meritor manager says efforts to consolidate manufacturing-improvement and worker-training programs were the most passionate and contentious. Arvin managers preferred to work out changes on their own and were skeptical about consultants like Kaufman. Meritor managers, on the other hand, thought Arvin spent too much effort on training and not enough on putting knowledge to work.

Former Meritor managers now concede that Arvin was further ahead in adopting lean manufacturing practices. Meritor had pockets of lean techniques but it was stronger in what Debra Shumar, senior vice president of continuous improvement and quality, calls the “softer side of things—making people feel comfortable and a part of making decisions.” Change has come steadily in the past couple of years. The company has combined the lean efforts with the softer approach and mixed in lessons from Asheville, creating a package of continuous-improvement tools.

The package, says Gosnell, “has enabled us to sweep off the table what might have been 30 or 40 programs with various adoption rates and say, ‘Okay, that’s it. This is our program, our culture, our way of life.’ ” At any given time in any one of the company’s plants, one team may be trying to learn the 5S system of workplace organization (sort, set in order, shine, stabilize, sustain), another may be involved in a process improvement effort to reduce tool changeover time, while yet another may be applying statistical quality-control techniques to reduce rejects.

ArvinMeritor is now spreading its continuous-improvement performance system through all of its 122 plants in 27 countries. Meanwhile, its managers continue to improve the system

itself. Training, for example, has become more “learn and do.” Formerly employees would spend four days training; today groups of workers are trained one day in, say, 5S, and then sent back to their area of the plant or office to try it out.

The most intensive educational effort is “flight training.” The name and process were adapted from sessions that Kaufman initiated to train groups, or “flights,” of lean-manufacturing specialists. It has morphed into a 13-week program during which some 20 individuals from different parts of the company are trained to become continuous-improvement leaders. They are then assigned to a plant reporting directly to a site manager to work at it full-time. People chosen for the job agree to serve at least 18 months. Eventually nobody will get to be a plant or site manager without having served first as a continuous-improvement manager.

Enthusiasm can wane and managers can backslide. To keep attention focused on improvement, ArvinMeritor has adopted a program called 20 Keys, which sets increasingly tough annual targets in 20 areas and then measures progress in achieving them. “Continuous improvement” is just one of the keys, which also include such categories as safety and health, managing change, teamwork, customer focus, and supplier development. Teams and production sites aim to move up in each key area by stages: from business as usual to “learning,” then to “leading,” “world-class,” and finally “best in class.” Progress is measured by a mix of quantitative and qualitative measures.

The targets are difficult to hit. Teams and plants pick a handful of keys to work on each year, and their progress is checked quarterly by continuous-improvement steering committees. The average ArvinMeritor plant is still “learning” in most categories. The main Asheville plant, though, has become world-class in several categories, including communication and managing change, and it has reached best in class in environment after qualifying for ISO 14001 certification, proof that its efforts to ensure clean operations meet international standards.

For all the effort, the continuous-improvement gospel at ArvinMeritor hasn’t been completely accepted throughout the company. Says Terry O’Rourke, ArvinMeritor’s COO: “There have been cases of insufficient embracing of the program. You go through coaching and educating, and if nothing works you suggest that maybe there’s an alternative”—that is, looking for another job. National cultures have made a big impact on acceptance. In the company’s German plants, says Deb Shumar, “they’re very staunch. They don’t want to get even near the touchy-feely kind of thing.” China is different. “You give them freedom of thought and purpose, and these people grab it,” says Shumar.

ArvinMeritor shareholders probably also have mixed feelings. At around \$22, the stock is selling for nearly \$5 more than at the time of the merger in mid-2001. Company executives feel they can wring still more efficiencies out of manufacturing. Says O’Rourke: “The plant floor is where the action is.” But while managers and workers continue to wrestle with the “continuous” part of continuous improvement, CEO Yost is likely to continue to seek out acquisitions or merger partners. Though Dana proved unwilling to listen, somebody else might be. Squeezing decent returns out of auto parts requires multiple efforts; ArvinMeritor is clearly determined to try them all. **F**