

# Lean Manufacturing Advisor

STRATEGIES AND TACTICS FOR IMPLEMENTING TPM AND LEAN PRODUCTION

## 'If You Can't Do It Right, Do It Wrong'

Annette Dockus and Rebecca Morgan are the first ones to tell you that they did not establish a lean manufacturing program at Neighborhood Manufacturing Corp. (NMC) in Cleveland.

That doesn't mean they failed to improve operations. During the past year, Dockus (operations manager for Neighborhood's parent company, Superior Tool) and Morgan (president of Fulcrum ConsultingWorks, Inc.) achieved significant gains. They helped establish manufacturing cells. They reduced inventory and work in process (WIP). They freed up floor space. They improved quality and cleanliness. They enabled the company to increase its contract manufacturing business.

But virtually no one at the company other than the two women understands what lean manufacturing is. There is no ongoing training program, and no official commitment to continuous improvement. Operations at NMC do not begin to approach world-class.

Morgan is not the least bit apologetic.

"If you can do it the right way, by all means do it right. If you can't do it right, do it wrong. That may be better than not doing it at all," she says. "If you can't follow the rules, do it anyway. Don't walk away from lean. Do whatever you can. Take whatever benefits you can."

She and Dockus described their experience in a presentation at the recent Shingo Prize conference in Kentucky.

### A Bad Situation

Privately-held Superior Tool sells plumbing hand tools through retailers, with annual sales of less than \$10 million. Three years ago the company purchased Neighborhood Manufacturing, one of its suppliers; virtually all of NMC's business was with Superior.

About two dozen people worked at NMC in a crowded facility of about 10,000 square feet located in a poor urban neighborhood. (The philosophy of the company had been to put its plant close to inner city workers rather than transport workers to the suburbs.) Most employees and managers had minimal education, and many spoke English as a second language. Employee attendance was poor.

Culturally, employees viewed particular responsibilities as "boy jobs" or "girl jobs," and employees of one gender never did the work of the other.

Piles of inventory and WIP were everywhere. (Employees were paid on a piecework basis, which encouraged them to produce as many pieces as possible.) Quality was unpredictable. Tracking of inventory was poor. The company had a small contract manufacturing business that Superior wanted to increase, but there was no room within the NMC building for expansion. The plant manager thought the way to add capacity was to build a mezzanine.

Near the end of 2000, Chuck Mintz, the president of Superior charged Dockus with improving operations — specifically, with improving quality, reducing inventory and freeing up floor space for expansion for contract manufacturing. But when it came to implementing lean manufacturing, he "couldn't care less," Morgan says. "He just wanted it done. The plant manager couldn't have cared less about lean. Somebody up top has to care. We didn't have that. The boss didn't NOT support it. But he didn't support it." However, Mintz did back Dockus in using whatever methods she believed would be best, and gave her the funding she needed.

So "we went to plan B," Morgan explains. That meant picking employees who could help achieve change simply because of their own abilities and interests — not because they knew anything about lean manufacturing.

### 'Just Trust Me'

For example, to achieve the cleanup goals of 5S, the company chose Luis Rosario, who "personally liked things neat, clean and orderly. It made sense to him. We didn't have to convince him," says Morgan. "He couldn't tell you what 5S is. He couldn't care less what 5S is."

Debbie Riggs was chosen to create manufacturing cells because "she had an open mind, and was willing to think a little differently," she adds. Debbie received a grand total of about 10 minutes of training on cell design, with Morgan telling her "just trust me on these things."

Debbie tackled her assignment: "she was changing the entire way they assemble the product so she could meet my criteria of designing a cell that was U-shaped and where nothing went backwards," Morgan explains. "She had no training to do that, but she knew what was possible. She couldn't tell you anything about cell design. She has no idea how she did it."

Both employees took a lot of flak because of the assignments. They were called names and ridiculed by other employees who resented the fact that they weren't working to produce parts while performing their new tasks.

"We had to stand next to them and shield them from that, because their inclination is to say 'screw this,'" Morgan says. "We told the employees, 'you may think she's nuts, but we're going to do it anyway.'"

At the same time, she adds, "we had to pick and choose our battles." For example, she explains, "we chose not to fight the 'boy job/girl job' thing."

But the efforts to improve operations proceeded, covering the first half of 2001. Gradually, the workers shifted from a culture of everyone working independently to interdependence. Incentives were shifted away from piecework. Production was changed from large batches to boxes of 12 units. Visual schedules were set up, and production was matched to demand; "they know they're making to customer order — that they understand thoroughly," Morgan says. "They have no idea what takt time is."

There were problems along the way, though Morgan and Dockus allowed the employees to make some mistakes.

"It's almost parental," Morgan says. "We know better, but we had to back off. Our job was to make sure they didn't fall and break their leg. It's OK to fall and scrape their knee."

There were also some unpleasant surprises. For example, packaging equipment that hadn't been moved in years was shifted to cells. "You find out about the duct tape and the chewing gum and the crud that's holding things together," Morgan says.

## Shades of Success

Was the effort successful? Certainly many improvements occurred.

Outside sales increased from 2 percent to 15 percent of business in under a year. "We freed up the plant manager's time to go out and do some sales," Dockus notes.

Work in process is now at zero at the end of each day, and near zero throughout the day. Inventories are more accurate. Cycle time has been reduced from days to minutes.

Some improvements were hard to measure because of the lack of baseline measurements. "We didn't have a focus on measurements. We had 'better.' That was the goal," says Morgan. "We didn't know what rework was before, because nobody tracked it, but we know it's close to zero now."

Dockus also is pleased by something that occurred this past December. "One of our vendors shipped us bad product" she explains. "Normally that was not caught right away. But the first batch immediately stopped the cell. It turned out the vendor had changed the materials he was using. We stopped production, and we weren't able to ship for three to four weeks — it took the vendor that long to fix it. But the good thing was, we didn't ship our customer bad product. In the old days, the customer would have called us."

On the other hand, a lean culture is not in place at NMC. While "we've lost virtually none of the progress we've made, we're just not going anywhere else," Morgan comments.

Dockus notes that there are many areas that still could be improved, ranging from completion of an unfinished manufacturing cell to ergonomic changes in angling of equipment.

Since his goals of better quality and greater capacity were achieved, Mintz, the company president, is "a very happy man," says Morgan. "Unfortunately, he's not a greedy man. He thinks we're done. I want somebody to get greedy. As soon as somebody does, there will be more incentive for continuous improvement."

And while employees are still not very proactive, Morgan describes one particular bit of progress:

"One day the employees said they wanted to paint the wall. You have no idea how tremendous that was. They wanted a Puerto Rican flag on it, and we had to say no to that because not everybody was Puerto Rican. But they wanted to make it look better. You have no idea the statement that makes. I don't really care what the measurement for that is."

The title for the women's conference presentation was "If you break the rules, is it still lean?"

"I don't care if you think it's lean or not," Morgan concludes. "It's successful."