

# Viking Drill & Tool, Inc.:

## "A Work in Progress: The Road to a Lean Transformation"

**Sharing improvement experiences, challenges along the way.**

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Change is a way of life at Viking Drill & Tool, Inc., St. Paul, MN. Employees there recently shared "lessons learned" about their transition to a lean organization, in an AME workshop: "A Work in Progress: The Road to a Lean Transformation." Following are selected areas they discussed during the educational event.

### **Changes Must Happen**

Manufacturers of high-speed industrial drills used in MRO markets, Viking Drill & Tool managers noted a large number of domestic

twist drill producers being sold to multinational corporations or going out of business in the early 1990s. They realized that survival meant change. Dennis Jungemann, vice president of engineering and quality, said the company had already made the shift from selling on price to the focus on quality products, with modified cosmetic features.

After benchmarking other companies in their region and consulting contacts through trade groups and other associations, management launched a "lean" journey about three years ago. Although many of

their lean efforts focus on 5S (Sort, Set in order, Shine, Standardize, and Sustain) workplace organization and visual controls/communication (see Figures 1 and 2), they also rely on Kanban replenishment systems. They are starting to set up Kanban on their top-moving parts plus part families that can be segregated from others.

Most employees have received formal training in lean fundamentals. Setup reduction, flow manufacturing, and kaizen (improvement) projects touch the day-to-day activities of many associates (5S became 6S with the addition of safety as a criterion).

### **Challenges**

One of the challenges of "going lean" is the need to decrease inventory and build sales, without stagnating the work on lean, said Jungemann. "We are a build to stock company. We have a 98 percent on-time service rate, and that

### **In Brief**

As in many other organizations, Viking Drill & Tool associates have made significant progress during the first few years of their lean transformation — and found many challenges that will continue to draw improvement efforts. This story reflects some of their successes and "to do" improvement list items. The company's employee involvement and "servant leadership" philosophy are notable.

**About Viking Drill & Tool, Inc.**

Started in 1951 in St. Paul, MN by engineering types who built their own machines, Viking Drill & Tool, Inc. has undergone various transformations over the years — new ownership, shifting product lines, the number of employees rising and falling, then stabilizing at about 180 people in the union shop. Annual sales are approximately \$26 million of high-speed industrial twist drills used primarily in MRO (maintenance, repair, and operations) markets.

As of fall 1999, the company ownership transferred to employees through an ESOP (employee stock ownership plan).



**Figure 1.** Easy-to-use troubleshooting guides (such as margin adjustment and variation) are readily available.

is the reason for not dropping inventory," he said. Formal sales and marketing planning meetings are held twice yearly (one to plan and one to revise). They use distributors with a commission on sales.

Finished goods Kanban is a work in progress. Green, yellow, and red cards are used to indicate when inventory should be replenished. One challenge is building a set, which may contain 29 different drills, complicating the bin replenishment system. They are also working with a two-bin system. When one bin is empty, the next bin begins to be used and the empty one is returned for production and filling.

Jungemann said associates use 35 different bar stock sizes to make about 80 different drill sizes. Everyone here is a material mover. Defects used to run approximately eight percent. "We are trying to find defects at the point where they occur, rather than at final inspection," Jungemann said. "We've driven defects to four percent." More

improvements are projected in quality performance as well as inventory reduction, work travel distances, and material handling.

**"Servant Leadership" Philosophy**

The commitment to mutual respect and a willingness to improve starts at the top at Viking Drill & Tool. A "servant leadership" philosophy prevails. "Management support of lean and of employees is important," according to Dave Swanson, director of operations. That means "rolling up your sleeves and supporting them," he added. Photos of leaders who are the appropriate contact for questions/suggestions/requests are posted in the plant. Lean leadership is more than wall posters or newsletters, however. Managers are encouraged to be part of the team efforts they lead.

Strengths include a Kanban visual priority system, employee involvement in the success of the business, employee recognition,



**Figure 2.** Takt times and other metrics posted in work areas reflect the visual management emphasis at Viking Drill & Tool, Inc.

cross-trained employees, a clean and well-lighted work environment, visual counters, kaizen efforts tackling specific performance improvements such as rearrangement of work centers or cells and raw material handling and storage, and other factors. The skills matrix also helps to encourage growth in learning new operations and assignments. As the associates learn more, they in turn feel better about themselves as well as become more valuable to the company.

Driving leadership through the ranks is important at Viking Drill & Tool. All employees are expected to view themselves as leaders. Recently, Swanson included the floor leads in a process that formulated a new production plan for the increasing finished pieces per day in manufacturing. He also led a team of cross-functional employees through an exercise in improving company leadership. The team held meetings with all of the hourly associates to help determine what areas needed change and where employees felt leadership did a good job. After putting all of this information together, the group created a "Leadership Commitment Statement" (see Figure 3) that spells out what it takes to be a leader at Viking Drill & Tool.

### **Survival Skills**

Benchmarking against other organizations such as Hearth and Home in Lake City, MN, Medtronics in Minneapolis, MN, and various other facilities has helped the company ramp up its lean performance, Swanson said. He added that rapid improvement know-how was also gained at AME workshops and other events. "We stole as much as we could and brought back what would work for us," Swanson said. "We are a work in process. We are

not there yet, but we are working hard at lean."

Swanson outlined some of Viking Drill & Tool's "how we survived" strategies during a period when much capacity moved to locations such as China and Brazil. With approximately 8000 part numbers, providing a broad array of products and offering high quality levels are critical. They've learned to do more in less space, scrapping plans for expansion. Higher productivity rates helped (the finishing cells cut lead-time by 75 percent) as well as higher fill rates to customers and better yield (the past few years have seen a five to ten percent fill rate improvement with half the number of rejects). Swanson also cited a cleaner, more organized shop as a contributor to more streamlined work flow. Trenches with (cleaned

and recycled) grinding oil delivered to machines made the transition from linear flow a challenge, but progress is being made.

Raw material storage presents added challenges to smooth flow. They employ slot racks for products used most often (a kaizen event creation), enabling employees to find materials more readily. Traceability issues remain, such as more steel than can be accommodated in a single rack (solution: multiple stacks where each stack must be used before moving to the next). Kaizen events, including a representative from maintenance, helped associates solve raw material storage problems. Swanson said they had initially focused on unloading trucks in two hours or less, which was the wrong focus. They needed to concentrate on

### **Viking Drill & Tool, Inc.'s Leadership Commitment Statement**

- *Treat others with dignity and respect.* We're all part of the same team — no more, no less.
- *Honesty.* Tell the truth. Always.
- *Ethical behavior.* Show the use of good, sound judgment.
- *Fairness, equality, and consistency.* Work against biases and pre-conceived notions about people.
- *Helpful attitude.* Make their problem your problem. Don't pass the buck.
- *Willingness to listen and work with others.* People will be part of the solution if you let them.
- *Timely responses.* Everyone's time is important — no rank, no title.
- *Hands-on style of leadership — lead the charge.* Lead from the front; be part of the team you lead.

**Figure 3.**

Viking's users on the floor, not the truck drivers.

Increased morale boosts performance. "Let people participate and be part of the improvements," said Swanson. "People feel more like part of the team. We've also looked for ways to make the place brighter and cleaner."

### A Full Improvement Agenda

Among Viking's current agenda items: possibly buying a tap plant as a means of diversifying their product offerings, and looking at other areas for more cutting tools. They also seek better ways to decrease inventory, reducing the ratio of inventory to sales. Although some shop areas feature shadow boards for easy-to-find tool location, others still have carts and cabinets that are inefficient. The process of eliminating tool bins and changing to tool boards continues, reflecting major cultural change. Not as many kaizen events have been taking place lately, because no one was assigned to make it happen or the person assigned was busy in other aspects of the business, another opportunity area. In

... *the emphasis on quality performance will not slacken.*

the flute grinding area, with about 25 setups daily, more visuals are needed to illustrate single-move setups. Quality performance has improved (30-40 percent reduction in rejects both from final audit and shop floor issues), yet the emphasis on quality performance will not slacken. A new system is being implemented to help machine operators track their quality, replacing the standard SPC charts with PSC (Product Statistical Control), a system suggested by an outside consultant to give more decision-making power to the associates operating the equipment.

Issues also include changes that don't always stick (consistent follow-through from all leadership and better attention to audits are needed) and certain work cells that do not produce to capacity and are high lost opportunity producers. Add to the list several more concerns: planning and scheduling,

managing for change, and creating a culture that empowers employees. That's quite a "to do" list, but one that both Swanson and Jungemann insist is a high priority.

Facing tough competition from overseas companies in this mature industry, Viking Drill & Tool associates understand that change will continue to be a significant part of their lives. The drive to improve operations, thus lowering costs and maintaining market share and profitability, continues.

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