

Workshop Report: Canadian Region

Building on the Past at Tridon-Oakville

Proud of initial progress and ready for the next round of improvements.

Lea Tonkin

Increasingly competitive markets are no surprise to Tridon Limited Canada. Tridon's first operating loss in September 1988 was something else again, according to Paul Davidson, Tridon's president and chief operating officer.

Senior management at Tridon, which had \$175 million in sales of polymers, electronic, and mechanical products, considered shutting down the Oakville, Ontario facility. Being the industry leader as the largest worldwide producer of plastic windshield blades offered little comfort. Drastic action was needed. As described by Davidson and others, the changes launched in late 1988 were dramatic:

- A new management structure and team assumed leadership.
- Top management trucked off to an inexpensive motel to work out a new vision for Tridon. When they came back to town, they wasted no time calling for a complete turnaround in Tridon-Oakville performance.
- Employees at Tridon were asked to buy into a new way of working together — Davidson calls it "substantive and lasting change." The organization chart turned upside down, with management at the bottom of an inverted triangle supporting employee teams above. Management moved out of plush offices onto the shop floor. "We believed that, to achieve world-class manufacturing, we needed to unleash the potential of all our people,

working in teams with appropriate training," Davidson says.

- One year into the world-class manufacturing program, Tridon-Oakville people slashed lead-times, reduced inventory, and improved product quality. Not content with this progress, they're setting new targets. Bill Adams, vice president of manufacturing and technology, describes Tridon's World-Class Manufacturing (WCM) objectives as:
 1. "Awesome quality" — clearly superior to the competition
 2. Legendary customer service — responsive to customer needs
 3. Competitive pricing — the right price at the right time in the right market — based on quality and service.
- Tridon had a \$6 million turnaround, before tax, in fiscal 1989, largely through the active use of world-class manufacturing concepts, and the 1990 outlook is promising.

Getting to Know You Can be Uncomfortable

Managers, engineers, purchasing people, accounting staff, and others in the attractively-furnished executive offices — some of whom had worked for years to gain their private domains — were asked to surrender their peace and quiet. In return, they gained elbow-to-elbow comradery with one another and employees on the shop floor. To enable and empower rather than direct and control, many of Tridon's managers encouraged more give-and-take among employees about

their work, on company time.

All employees were asked to learn about the overall business strategy, and about teamwork and sharing ideas for improvement. *Everyone* at Tridon was to share good ideas for better ways of working together, and responsibility for progress. The traditional top management claim to this turf and the credit for achievement — or failure — now rested equally on everyone's shoulders.

A New Mission Statement, and the Commitment to Change

Equality in problem-solving wasn't for everyone. Misunderstandings arose about changing roles, despite company training efforts and management's good intentions. "Until we knew where we were going, it was difficult to focus other people," said Dave Albinson, vice president of human resources, about management challenges. The Tridon "vision" of world-class operations needed clarification. "So six of our managers trotted off again to the \$30-a-night motel, for a three-day weekend, to develop a 'mission statement.'" It emphasizes excellence through trust, teamwork, self-management, innovation, and leadership.

"Now, in each decision we make, we say that if it fits in with our vision and mission statement, we'll go ahead with a new idea," Albinson says. "We adamantly believe that unless we are committed to adding value to a product, we will not be in business very long."

Everyone at Tridon likes to talk about significant performance improvements from employees' commitment to the new mission, notes Walt Twyford, director of operations. But there were also significant headaches along the way.

For starters, the traditional organization chart was scrapped. Not only did managers find themselves supporting plant employees, but *everyone* discarded the "boxes" (narrow functional descriptions) traditionally defining their responsibilities. "We took away their boxes, organized all plant employees in teams, and told them, 'Learn more about other functions. We want a flexible organization,'" Twyford recalled.

Oakville managers found their ranks reduced from 47 positions to 32. Traditionally-trained managers who could not adapt to the new mission didn't last long. Many salaried people left voluntarily for other jobs, dismayed by the changes. With 36 salaried people still on board — four more than the number identified for world-class operations — three quality assurance people and another employee in production and inventory control who didn't fit Tridon's new descriptions of job functions were asked to leave in mid-1988. Overhead for salaried positions was trimmed 32 percent.

Then, in July 1988, Twyford and other top managers met with all three shifts in the company cafeteria, sharing their vision about new ways of working together. "We told them everything we knew about our financial situation — we didn't hold anything back," Twyford said. Asked how the employees — members of the Tridon Employees Union — so readily accepted the need for change, Twyford said simply, "When you've been given 18 months to turn things around or shut down, you'd do the same thing."

All 32 salaried positions at Tridon-Oakville were posted as "available" (see a transition timetable in Fig. 2) that same month. Employees were asked to apply for a job where they thought they could

Components of World-Class Manufacturing at Tridon

1. Employee participation
2. Smart change (the ability to change a product line in the most efficient and safe manner — to reduce changeover times, etc.)
3. Total Quality Control/line ownership of quality
4. Total Productive Maintenance
5. Kanban — Just-in-Time
6. Group technology.

Fig. 1.

Tridon-Oakville's Transition

April 1988	Top management meets off-site to plan world-class manufacturing (WCM) changes
July 1988	All salaried jobs posted as available
July 1988	Team leaders identified in the plant
July-August 1988	Team formation in the plant
October 1988	Kickoff for WCM in all areas
December 1988	Two-year contract negotiated with union

Fig. 2.

fit in, and to describe how they could participate in the company's turnaround effort. "We knowingly created chaos in the organization," Twyford said. "When you make changes, you need to be prepared for chaos."

Many employees applied for their "old" jobs, but some asked for new responsibilities. All employees were coached about the need for flexibility and retraining. Work teams were organized by production area, and training in WCM basics began.

In these training sessions, developed and taught by Linda Harris, SPC/QA (Statistical Process Control/Quality Assurance) coordinator, and by Bill Adams, employees learned the basics of Total Quality Control (TQC), group technology, Kanban, employee participation, etc. "We began the change from a system where operators relied on others to find defects," said Harris. In 1988, SPC courses introduced employees to brainstorming, cause-and-effect diagrams, histograms, and other basic quality tools. By May 1989, all Tridon Oakville employees had received initial SPC training, and by July, 98 percent

had completed a second SPC course (data collection, control charts, etc.). Each "graduate" received a T-shirt and a certificate. Continuing education will cover problem-solving teams and other topics. Work groups now have designated trainers, and the trainer slots are rotated.

The company's "Train the Trainer" program is popular with both operators and management. Total job rotation within work cells, including the designated trainer position, ensures that everyone is trained the same way.

Results from the Shift in Quality Responsibility

Proof that the training — along with employee enthusiasm for WCM — works is in employees' improved track record. Kathy Wright, Extruded Products team leader, explained that product quality testing used to be done off the production floor in the company labs. "Now the equipment is being moved to the production floor, and operators are either being trained, or are already doing their own quality testing," she said.

The fabrication area is divided into two manufacturing teams — the Extrusion Team and the Moulding Team. The Extrusion Team supplies the Moulding Team with a finished refill — a plastic backing and a rubber squeegee. The Moulding Team then assembles the refill into a molded structure — a wiper blade. Inventory management, engineering, and quality teams work as resources, or support people,

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for the production groups.

Quality audits are conducted on both sides of the shop floor on a random basis, by Siva Gnanananthan (quality team leader and SPC coordinator) and other quality team members, including a quality assurance technician. Each team competes to be the best (see Fig. 3), and they are proud of first-year performance gains. "Right now, we are involved in training operators to inspect their own work," says Gnanananthan.

Group Technology Gains

Group technology is another essential of Tridon's initial WCM progress. Combining individual equipment in lines, or cells, and then asking operators in the cells to exchange ideas for improvement sparked a continuing series of changes. In the rubber extrusion area, and in the backing extrusion and blade assembly areas, this new way of working together enabled employees to reduce WIP (work-in-process) and improve response time. In turn, the number of rejects manufactured before a problem is found and corrected is decreasing.

Excess WIP and unneeded equipment in the rubber extrusion area disappeared, step-by-step, as operators supplied more suggestions. Out came several unnecessary pieces of equipment. The "old" 12,000 sq. ft. maze of conveyors and bins was reduced to an 8000 sq. ft. work area, as kanban carts were introduced. Added ideas

Performance Improvements

- The Moulding Team's initial systems audit results in August 1988 were 73 percent. The current rating is 93 percent. Systems audits cover whether operating instructions are present, operators are properly trained to do a quality job, checksheets are available for operators to complete, housekeeping, and other areas.
- The first quality audit for the Moulding Group showed a 90 percent rating, compared to the current 98 percent level. Employees check the product against a list of specifications.
- The Extrusion Team's first systems audit showed a 73 percent rating. The latest rating is 98 percent.
- A 90 percent initial quality audit rating was achieved by the Extrusion Team. Now they have reached 99 percent. In a quality audit in the rubber extrusion area, employees check whether squeegees are free of lumps and cut to the correct length, cured long enough, etc.
- Scrap and rework in October 1988 was 17.6 percent "of everything we made." The current scrap rate is 5.6 percent.
- Rework was 6.5 percent of total production in late 1988. Now it is 3.1 percent.

Fig. 3.

being reviewed can cut the area to approximately 6500 sq. ft.

In the blade assembly area, employees have worked out cell-type assembly tables for reduced handling of the product, faster defect detection, and decreased WIP and floor space. The 4-5 weeks' worth of blades (WIP) has decreased to four hours, as lot sizes were reduced to ten (plans call for lot sizes of five and then single-unit production). Just as important as the WIP and floor space reductions is the evolving teamwork spirit, according to Mike Sherwood, team leader in Moulded Structures and Mike Shepherd, manufacturing engineer.

Communication: "The Goal is to Have Everyone Speak"

In addition to team assignments for performance improvement, employees are asked to participate in employee meetings in the company cafeteria. A one-hour meeting is held every Friday afternoon for the day shift, and the night shift employees attend 6 a.m. meetings, every three weeks. Twyford notes that the night shift — all of whom volunteered for the shift — meet less frequently because the shift rotation allows them to participate in the "day-shift" sessions at intervals.

These meetings were begun in

1988 as a means of quelling rumors about layoffs and dealing with misunderstandings about the new ways of working together. Sessions may include presentations about customer service or new product development. At first, people in the plant found it hard to believe that management would shut down or pay overtime to explain the changes at Oakville and listen to employee criticism. As time went on, more employees began asking questions or calling for change. Although little may be said at times, there are Fridays when "all hell breaks loose — usually when the president and a few VPs are present," Twyford said. He's glad that employees feel free to criticize: "The goal is to have everyone speak," he said.

Among the employee participation ideas shared by Twyford:

- The buzzer which used to blast at every break and at each shift was silenced. "It's dehumanizing," Twyford said. "Employees are mature adults. We don't have any major problems with excess breaks."
- Employees receive a "coin of recognition" for doing more than expected, or coming up with good ideas, or breaking a pro-

About Tridon . . .

Tridon, with corporate offices in Burlington, Ontario, Canada, manufactures and distributes products to the automotive OEM (original equipment manufacturer) and aftermarket, transportation, and industrial markets. Products fall into three main categories: polymers, electronic, and mechanical. Polymers includes injection molding of windshield wiper structures and extrusion of rubber squeegees. Electronic products include automotive signal flashers and relays. Worm gear hose clamps and other fasteners are in the mechanical products group.

The company has two Canadian plants, in Oakville (Polymer Division) and Burlington, Ontario; and a Tennessee facility. It was started by Chairman and Chief Executive Officer Don Green's father and grandfather in 1923 as the Hamilton Clamp and Stamping Company, based in Hamilton. The Tridon name was assumed in the 1960s. The company is the largest producer of plastic windshield wiper blades and hose clamps worldwide.

duction record. The coin can be kept or exchanged for lunch in the cafeteria.

- An SPC (Statistical Process Control) training course identified the need for more education (including an understanding of English). Through a partnership program with a local school, 46 employees achieved a "Diploma for English" and another 20 employees are enrolled in a computer course.

Changing Relationships

Purchased material accounts for a significant portion of Tridon's manufacturing cost. A newly-created Purchasing and Supplier Development Team unites Tridon's purchasing and traffic functions, explained Etta Shields, manager, supplier development. Supplier development aims to build partnerships with suppliers.

Stronger ties with a reduced number of suppliers and Just-In-Time (JIT) deliveries of selected

materials are "in progress." Internal improvements to aid the JIT transition include:

- Commonality of parts
- Modularity of product design
- Knowledge of specifications necessary for product fit and function of the product.

Kanban scheduling, "smart change" efforts, and improvements

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in maintenance are added elements in the world-class improvement process at Tridon. Tridon Chairman Don Green believes that company-wide commitment to continuing improvements on all fronts came none too soon. "Now that we are in a constant state of change, nothing will ever stay the same," he vows.

Author:

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