2001 Shingo Prize Winners

Robert W. Hall

The Association for Manufacturing Excellence has an alliance with the Shingo Prize Board of Governors. AME may conduct workshops at plants that have won a Shingo Prize for manufacturing Excellence, and future *Target* articles will cover some of the Shingo Prize winners.

The Shingo Prize Achievement Criteria broadly cover the practices believed to represent excellent manufacturing according to the teachings of the late Shigeo Shingo, for whom the prize is named. The criteria as structured for examinations are in the Shingo Prize Application Guidelines, which may be obtained from the Shingo Prize headquarters at Utah State University (www.shingoprize.org). Winners undergo a rigorous multi-day visit by a team of Shingo examiners.

Six plants won a Shingo Prize this year. A Prize recognizes that a plant is performing well above the norm for contemporary lean manufacturing performance.

Besides giving awards to factories, the Shingo Prize also inducts into the Shingo Prize Academy honorees that have distinguished themselves in manufacturing excellence. Shingo Research Awards go to authors of outstanding books and papers. In 2001, for the first time, a Research Award was given for developing software.

Plant Winners:
Baxter Healthcare Corporation, Renal Division, Mountain Home, AR

The Mountain Home plant produces Baxter's most diverse catalog of disposable healthcare products, specializing in medical devices and intravenous products. It is the largest medical grade plastics manufacturer in the world, and employs many advanced technologies. The Quality Leadership Process is a tool that binds the culture striving for world class manufacturing. Many traditional lean tools can be seen, such as 5S, TPM, mistake proofing, and value stream mapping. The plant ran 24 kaizen events in 2000 and is on a similar schedule for 2001.

The plant averages $9 million per year in continuous improvement cost reductions, and has many other results to show for its efforts. In addition it has won environmental awards, having recently reduced air emissions by 36 percent. It was previously an *Industry Week* Best Plants Award winner.

Benteler Automotive Hagen Exhaust Facility, Grand Rapids, MI

Benteler Automotive is a global supplier of automotive components headquartered in Paderborn, Germany. The Hagen Facility produces hot end fabricated exhaust systems. Using lean principles, manufacturing has steadily improved until inventory turns now stand at 72.

Benteler is well known for engineering. It has previously won the R&D 100 Award and the PACE Award for technical contributions to the auto industry. In addition to manufacturing, the Grand Rapids site also provides engineering design, test, and prototyping to its global customers.

Ford Essex Engine Plant, Windsor, ON

This plant produces V6 engines, plus V8 cylinder heads and V10 crankshafts. Two new lines are being developed using lean manufacturing concepts.

The Windsor Plant adheres to the Ford Production System, and has run a lean oper-

ation for several years. Policy Deployment and Small Group Activity teams drive continuous improvement. The working relationship with the Canadian Auto Workers is outstanding. A Six-Sigma program has Been launched.

Windsor has recently received additional recognition for contributions to quality, boosting Ford's J.D. Power ratings. It was the first plant to receive a Q1 Award and a preventive maintenance award. Environment performance is outstanding, a 95 percent reduction in VOC emissions since 1995, and an ecological reclamation project.

Ford Ohio Assembly Plant, Avon Lake, OH

Using the Ford Production System, this plant produces the Mercury Villager, Nissan Quest, and the body and paint for the Ford Econoline. Here one can see a work group based structure, in-station process control, in-process checks, 5S, and a visual factory. Since 1999, the Villager has experienced a 19 percent reduction in unit cost.

However, quality has also improved dramatically. Things Gone Wrong reduced by almost 40 percent, and the Econoline Van received J/D/ Power's "Best-in-Class" Award. Topping off the quality effort, the plant recently launched a Six-Sigma program.

Freudenberg-NOK Cleveland Facility, Cleveland, GA

The product is mechanical seals for automotive applications. All of Freudenbenberg-NOK's improvement initiatives are part of Growth (Get Rid of Waste Through Team Harmony). Team Harmony creates a culture that fosters daily continuous improvement according to lean manufacturing principles. In action, one can see model cell implementation and improvement, waste reduction, one-piece flow, 5S, visual controls, zero warranty costs, and Six-Sigma quality. Ppm reject rates have dropped 97 percent since 1997; and inventory turns went up 86 percent since 1998. In 2000, this plant saved $1.9 million by engaging in 340 kaizen events.

Johnson Controls Greenfield Facility, Greenfield, OH

The Greenfield Plant produces a high variety of polyurethane foam cushions for automotive seats and seat backs, in all supplying 25,000 seat part sets per day. It has maintained 100 percent on-time delivery for the past three years. Major customers are Daimler-Chrysler, Ford, Honda, and General Motors.

The technology has evolved rapidly, so this is an equipment-intensive plant. In the past two years, machine uptime has increased by five percent from a predictive maintenance program. Return on assets has improved by 249 percent since 1998.

Inducted Into the Shingo Prize Academy

Michael J. Joyce
Vice President, LM 21 Operating Excellence
Lockheed Martin

Peter Lawson
Director of Ford Production System
Ford Motor Company

Cliff Ransom
Vice President
State Street Research & Management
(Believed to be the only stock analyst that researches investment in lean manufacturing companies.)

Research Awards

H. Thomas Johnson and Anders Broms
Co-Authors
Profit Beyond Measure
The Free Press, 2000

Stephen A. Ruffa and Michael J. Perozziello
Co-Authors
Breaking the Cost Barrier
John Wiley & Sons, 2000

Paul Hawken, Amory Lovins,
and L. Hunter Lovins
Co-Authors
Natural Capitalism
Little, Brown, & Co., 1999

(Ties lean manufacturing with a sustainable economy.)

Stefan Thomke and Takahiro Fujimoto
Co-Authors
"The Effect of Front-Loading Problem Solving on Product Development Performance"
Article in *The Journal of Product Innovation Management*, March 2000

Richard Liebovitz, CEO,
Factory Logic Software, Inc.
For the development of the Streamline software package, which integrates the management of customer orders into flow manufacturing.

Robert W. Hall is editor-in-chief of Target *and a founding member of the Association for Manufacturing Excellence.*