

Jamestown Container provides a closer look at how its Cleveland, Ohio, plant is tackling lean manufacturing. By Jackie Schultz, Editor

A Sheet Plant's Lean Journey

ONCE A QUARTER
THROUGHOUT THE YEAR
WE WILL UPDATE YOU
ABOUT JAMESTOWN
CONTAINER'S
IMPLEMENTATION OF
LEAN MANUFACTURING.
THE COMPANY
INTRODUCED THE
PROCESS TO ITS
CLEVELAND, OHIO,
SHEET PLANT THIS
MONTH.



In some ways, implementing lean manufacturing is like renovating a house. The more often you do it, the better you become at it. Joseph M. Palmeri, director of technical services for Jamestown Container Companies, learned this first-hand having gone through the process more than a year ago at Jamestown plants in Lockport and Rochester, N.Y.

"We cut our teeth on those plants and we're working on the first step in Cleveland right now," he says.

Simply put, lean manufacturing is reducing the cost of manufacturing through the elimination of waste. It refers to a system that has very few non value-added activities or waste. Many North American box plants have either implemented or are seriously considering the program. It's a proven method that the Japanese car manufacturer Toyota uses to reduce costs.

Some of the more common types of non value-added waste that a plant will address

during its implementation of lean manufacturing include:

- Defects • Overproduction
- Waiting • Non-utilized people
- Transportation • Inventory
- Motion • Extra Processing

"MANAGEMENT DECIDED THAT WE NEEDED SOME TYPE OF ONGOING PROCESS IMPROVEMENT ACTIVITY. WE CHOSE [LEAN MANUFACTURING] BECAUSE IT MAKES SENSE," SAYS JOE PALMERI. "THERE ISN'T AN AREA IN THE PLANT THAT THIS DOESN'T APPLY TO."

process improvement activity. We chose [lean manufacturing] because it makes sense. You're trying to reduce waste — waste not just being material — it's time and everything else. It's trying to separate what has value and what doesn't. And it compliments everything else that we're doing going back to Deming and all the other continuous improvement programs, it just all fits together."

The First Step

All of the Jamestown plants begin lean manufacturing with the implementation of 5S, a tool developed at Toyota to organize its shop floor. 5S stands for Sort, Set in Order or Straighten, Shine or Sweep, Standardize or Schedule and Sustain.



LEAN MANUFACTURING REFERS TO A SYSTEM THAT HAS VERY FEW NON VALUE-ADDED ACTIVITIES OR WASTE.

Jamestown Container, a large independent company that owns five box plants and a portion of a containerboard mill, has always been a proponent of quality programs. Since 1988, the company has been practicing the management philosophy of Dr. W. Edwards Deming and continues to apply many of Deming's principles throughout its plants.

After 17 years, Palmeri says it was time to introduce something new. "Management decided that we needed some type of ongoing

"That's really your work place organizational tool," Palmeri says.

The process in Cleveland begins in the manufacturing plant, then moves on to customer service, design, and finally the entire office.

"There isn't an area in the plant that this doesn't apply to," Palmeri says. "We're starting in manufacturing because it's more comfortable and more clearly defined by machine centers and areas of responsibility."

Employees are informed of the process

ORGANIZED WORK AREAS ARE KEY TO THE SUCCESSFUL IMPLEMENTATION OF LEAN MANUFACTURING.

Lean Manufacturing

through a series of town meetings to explain what it is and why the company is pursuing the process. But even before that, managers make a presentation to machine crews.

Palmeri emphasizes that it's important to go directly into the implementation of lean manufacturing after employees are informed rather than wait a few months.

"What we wanted to avoid was to tell everyone we're going to do 5S and then nine months later finally do it," he says. "The response has been outstanding."

Timetable

Implementing 5S in manufacturing is scheduled to take 60 to 90 days beginning Jan. 1. Palmeri admits that this is an aggressive schedule and normally takes longer,

however, experience with the lean process gives the Cleveland plant an advantage.

"We have had setbacks at the other plants because of not having the right measures," he says. "We went in and did it and walked away, and as soon as we walked away, it gradually went back to the way it was. What we're doing here is we're actually setting up all the measurements first."

Measuring involves establishing a baseline, a goal, progress and ultimately the savings. Initially, Jamestown will be measuring setup time, run time, and performance to schedule.

"Right now we're surveying and rating operators and machines, and posting the scores," he adds. "The scores may be 30 percent, 40 percent, it doesn't matter, but the behavior is there so that has been set up. It's one of the things we've learned. We just set the mechanism up to make sure it's in place."


In establishing 5S, Jamestown uses an evaluation form that ranks everything from how clean the equipment is to the arrangement of tools and supplies. (See form on facing page) Supervisors conduct these evaluations weekly. Each category is rated from one to 10 with one being "Needs Improvement" to 10 being "Excellent."

The Cleveland plant runs two shifts. It has scheduled down time and Saturdays for implementation of 5S.

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5s + 1 Evaluation Form

Area:	Date:	Auditor:
A. Removal of Unnecessary Items	Needs Improvement →	Excellent
1. Only items that belong at workstation are present (tools included).	1 2 3 4 5 6 7 8 9 10	
2. Only items that belong at work area are present (tools included).	1 2 3 4 5 6 7 8 9 10	
B. Equipment Is Cleaned and Painted	Needs Improvement →	Excellent
1. All machines and workstations are clean.	1 2 3 4 5 6 7 8 9 10	
2. All machines and workstations are painted.	1 2 3 4 5 6 7 8 9 10	
C. Floor Cleanliness, Aisle Markings & Maintenance	Needs Improvement →	Excellent
1. All floors are clean and swept.	1 2 3 4 5 6 7 8 9 10	
2. Work area is clearly defined.	1 2 3 4 5 6 7 8 9 10	
3. All aisles are free of materials and obstructions.	1 2 3 4 5 6 7 8 9 10	
4. All moveable items have clearly defined "parking" areas.	1 2 3 4 5 6 7 8 9 10	
D. Emergency Access	Needs Improvement →	Excellent
1. Power boxes and circuit breakers are accessible and clearly labeled.	1 2 3 4 5 6 7 8 9 10	
2. All machine stops are easily accessible, identified, and working	1 2 3 4 5 6 7 8 9 10	
E. Storage and Arrangement	Needs Improvement →	Excellent
1. Tools and supplies clearly identified and stored properly	1 2 3 4 5 6 7 8 9 10	
2. Nothing is placed on top of machines.	1 2 3 4 5 6 7 8 9 10	
3. WIP is not excessive and storage locations are indicated.	1 2 3 4 5 6 7 8 9 10	
4. There are no bottlenecks for material in or out of the machine	1 2 3 4 5 6 7 8 9 10	
F. Racks, Shelves and Desks	Needs Improvement →	Excellent
1. Racks and shelves are labeled and clean.	1 2 3 4 5 6 7 8 9 10	
2. All items in racks are stored neatly and safely.	1 2 3 4 5 6 7 8 9 10	
3. Racks and/or shelves are not damaged.	1 2 3 4 5 6 7 8 9 10	
G. Safety	Needs Improvement →	Excellent
1. There are no trip hazards on the floor.	1 2 3 4 5 6 7 8 9 10	
2. All people are wearing the required PPE.	1 2 3 4 5 6 7 8 9 10	
3. There is no excessive bending and/or twisting.	1 2 3 4 5 6 7 8 9 10	
4. Machines and nip points are properly guarded and painted yellow	1 2 3 4 5 6 7 8 9 10	
H. Sustain Routine	Needs Improvement →	Excellent
1. All of the above is maintained by a daily routine.	1 2 3 4 5 6 7 8 9 10	
(Total Score) / (2.2) = Final Score		Final Score: %

Comments

THE CLEVELAND PLANT USES THIS FORM TO RATE ALL PRODUCTION FLOOR AREAS. EVALUATIONS ARE DONE WEEKLY.

Who is Responsible

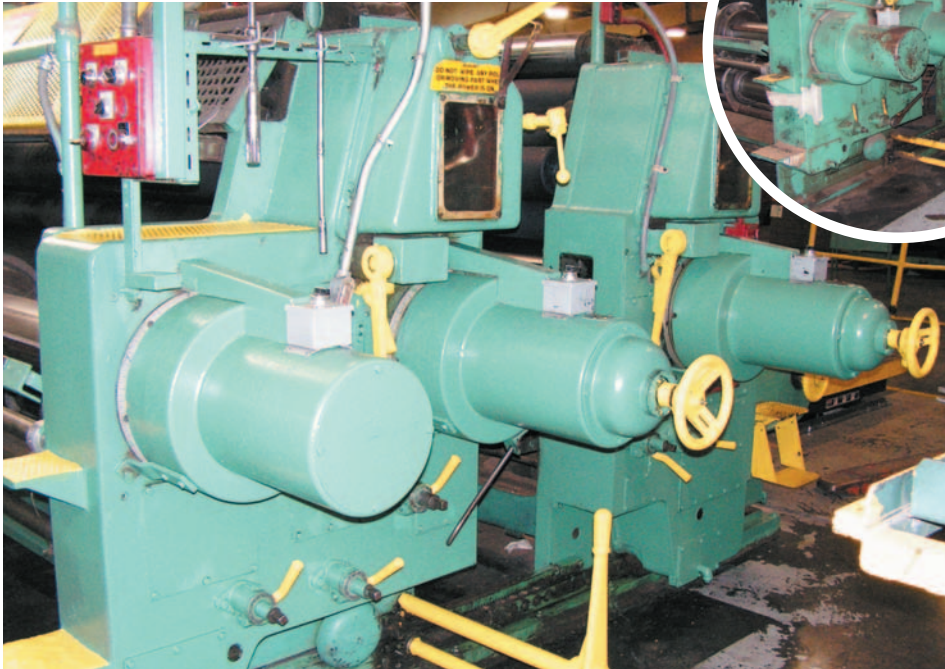
Palmeri manages the lean process from a corporate standpoint for all five of Jamestown Container's plants. In addition, there are two other individuals, Chuck Gullo

and Chuck Markee, who oversee it as well. All three attended training to learn how to implement lean manufacturing. Palmeri attended a course at Ohio State University sponsored by Productivity Inc. Gullo and Markee went to a course at the University

of Buffalo. In terms of successfully implementing lean, everyone at the company is involved.

For anyone just beginning the process of lean, Palmeri recommends some outside training for key personnel.

Lean Manufacturing



BEFORE AND AFTER PHOTOS SHOW A HOOPER PRINTER/SLOTTER THAT WAS CLEANED AND PAINTED AS PART OF THE IMPLEMENTATION OF THE "SHINE" REFERENCE IN 5S. ALSO, THE SURROUNDING AREA OF THE MACHINE IS BETTER IMPROVED.



Resources and Tools

All of the Jamestown plants are networked and employees can log onto a computer and access the lean folder, which lists all of the machine centers. There are 5S before and after pictures, scores, charts, and current goals and objectives.

There's not a lot of paperwork, however, there is a lot of analysis, Palmeri says. "There are a lot of Excel files and different documents that we'll create. We also have flow charts and different software to analyze the process and keep it coordinated."

In addition, plants develop a value stream map, which examines all of the actions required to bring a product from placement of the order



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to final delivery. This is used as a roadmap for future improvements.

In terms of tools needed, Palmeri says they usually can be found in a box plant's maintenance shop or at the local hardware store.

After 5S is Established

Once 5S is complete on each machine, Palmeri will focus on key pieces of equipment, machines that the plant runs a lot of volume through on all shifts and look at setup reduction.

"It makes more sense to do work on a flexo first than the stitcher, which we only run occasionally," Palmeri says. "Every single piece of equipment, no matter how often it runs we will do. We'll videotape the crews on all shifts doing setups, analyze the tapes and come up with recommendations."

The goal is to separate internal and external activities. Internal activities are those that can only be done when the machine is stopped.

"We'll look at tasks that may be internal now. What can be done while the machine is currently running through this order? Plates can get staged. We can take an internal and shift it to an external. That's what we're trying to do."

The rules of lean manufacturing are to increase efficiencies and reduce the amount of time it takes to setup and run an order.

"We only have a fixed amount of time we're here everyday," Palmeri says. "If our goal is an eight-minute setup and there's a crew of three, we want to divide the setup so each guy has eight minutes of setup. We will break the setup down and list all the tasks and divide them between three guys so the time equals out."

This process never stops. "Once we go through 5S we cycle back around and

do it again," Palmeri explains. "We'll reduce the setup time and cycle back around and we'll hit the other machines and we'll come back and we'll reduce it again. And as you're doing that you're adding more and more capacity."

Advice for First-Timers

Palmeri offers this advice for anyone just beginning the process of lean: "Get a plan, get a vision of what you want to do, even if it's just 5S," he says. "The same presentation we would show the crews, we give our managers and supervisors first. Managers have to lead it." He also recommends setting the measurements and getting buy-in from the top.

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