

Workshop Agenda Continued

Wednesday, May 9, 2007

Implementing Lean Manufacturing for the Wood Products Industry

7:30 AM	Breakfast (provided)
8:00	Value Stream Mapping (continued) Future State Value Stream Mapping
10:00	Creating continuous flow with work cells and kanbans Continuous improvement (kaizen) methods
12:00	Lunch (provided)
1:00 PM	Creating continuous flow (continued) Standard work procedures Sustaining improvements and common pitfalls Leadership training and organizational culture
3:30	Summary and Workshop Evaluation Adjourn

The **Natural Resources Research Institute** was established in 1983 to encourage economic growth for Minnesota's natural resources-based industries while keeping watch over that growth's impact on the environment. Our Forest Products staff is committed to serving the forest products industry in Minnesota and across the Midwest region. Our vibrant research programs focus on five key areas to include lean manufacturing, housing systems, composite materials and residues, nondestructive evaluation technologies, and industrial outreach. Our programs are designed to work with companies by evaluating their products, processes, and technologies to enhance and secure their competitiveness. Please visit NRRRI at www.nrri.umn.edu.

The **Wood Education and Resource Center (WERC)**, located in Princeton, WV, is a USDA Forest Service facility with offices, training facilities, and a rough mill. WERC's mission is to facilitate interaction and information exchange with the forest products industry to enhance opportunities for sustained forest products production in the eastern hardwood forest region of the United States. WERC's vision is to be a respected and sought after source for essential hardwood manufacturing and utilization information. WERC's primary goals are: Improve the knowledge, skills, and capacity of the forest industry management and workforce. Increase communication, cooperation, and collaborative problem solving within the forest products industry. Improve efficiency in forest products manufacturing and wood utilization. WERC serves the primary and secondary hardwood manufacturing industries located in the 33 states of the eastern hardwood forest region. For more information please visit <http://na.fs.fed.us/ea/werc/werc.shtm>.

Location and Lodging

The workshop will be held at the Wood Education and Resource Center (WERC) in Princeton, West Virginia. WERC is easily accessed from I-77. Take Exit 14 (Concord University Exit). Go west on Athens Road for 1/4 mile. Take a right onto Cornbread Ridge Road. When Cornbread Ridge Road turns to the left, continue straight onto Hardwood Lane. WERC Parking is 200 feet on the left. For additional information about WERC, please call 304-487-1510 or visit <http://na.fs.fed.us/ea/werc/werc.shtm>. Princeton, WV is located 91 miles from Roanoke Regional Airport (ROA) and 95 miles from Charleston WV Airport (CRW).

Lodging is at the Holiday Inn Express in Princeton, West Virginia. The Holiday Inn Express is easily accessed from I77. Off I77, take exit 9 to Rt. 460 West. Off 460, take a right onto Ambrose Lane and the hotel is located just ahead at 805 Oakvale Road. Participants are responsible for making their own reservations. Lodging rooms are being held until April 20, 2007 at a reduced rate of \$84 plus tax. To reserve a room, please call 304-425-8156. Be sure to mention the name "Virginia Tech" for the reduced rate. Other area hotels include the Hampton Inn (for reservations call 304-431-2580) and the Comfort Inn (for reservations call 304-431-2580).

Fees and Registration

The 3 day workshop fee is \$625 which covers registration, instructional materials, continental breakfasts, coffee breaks, lunch, and dinner on May 8. To register, complete the attached registration form and return with payment to the address indicated. Registration forms are available online at www.forestindustries.vt.edu. You may also register online at www.forestindustries.vt.edu. Your registration should be received no later than April 23, 2007. Register early because registrations are limited to the first 20 applicants. For additional information, contact Earl Kline at 540-231-8841 or email kline@vt.edu.

Refund Policy: Request for refunds will be honored when received seven calendar days prior to the program. However, another person may be substituted at any time for this program. A \$25 administrative fee will be deducted for cancellations. In the unlikely event that this program is cancelled or postponed due to insufficient enrollments or unforeseen circumstances, your registration fees will be fully refunded. However, Virginia Tech cannot be held responsible for any other expenses, including cancellation or change charges assessed by airlines, hotels, or other related travel organizations.

The **Forest Industries Center** at Virginia Tech seeks to promote the global competitiveness and sustainable growth of America's diverse forest industries. Global competition requires the continuous improvement of each segment in the forest industry supply chain and the linkages that bring these segments together. This improvement can be brought about through innovative business models that are responsive to market and consumer demands, technology transfer to enhance manufacturing processes, and a labor force with enhanced skills. The center's research, technology transfer, and workforce expansion programs will examine technological advances from the consumer's perspective at all levels of the supply chain and develop innovative business models that are firmly grounded in specific industry-related issues.



*Sloan Foundation
Forest Industries Center
at Virginia Tech*

and

*University of Minnesota Duluth's
Natural Resources Research
Institute*

presents the 8th

*Lean Manufacturing Workshop
Series for Wood Products*



Virginia Polytechnic Institute
and State University



*Reaching
higher*

May 7-9, 2007
Wood Education and Resource Center
Princeton, West Virginia

www.forestindustries.vt.edu

Sponsored by

USDA Forest Service's Wood Education
and Resource Center (WERC)



Sloan Foundation Forest Industries Center at
Virginia Tech

University of Minnesota Duluth's Natural Resources
Research Institute (NRRRI)

About the Workshop

Lean manufacturing, simply defined, is a method of doing more with less. Specifically, lean manufacturing can produce high quality products with half the effort, space, inventory, and product development time compared with traditional mass production. Lean manufacturing principles encompass a systematic approach to identify and eliminate all the steps in the production of a good or service that do not add value to the final customer. The lean manufacturing approach is the most comprehensive of the popular production management improvement initiatives because it simultaneously addresses customer, product, process, and human related issues in the production system. Studies have shown, while many companies claim they are “lean” or managing production according to TQM, JIT, Six Sigma, etc., few are actually implementing the lean philosophy. In fact, while many understand the basic concepts of lean manufacturing and have tried various implementations as “quick fixes” to problems, most miss its full and lasting potential. The full capability of the lean philosophy involves creating a culture of observing and learning and an ability to implement, to innovate, and to continuously improve.

This workshop is the 5th joint offering of Virginia Tech’s and the University of Minnesota Duluth’s Lean Manufacturing Workshop Series for the wood products industry updated with learning simulations and industry examples applied to primary and secondary wood products manufacturers. This workshop will help managers in wood products businesses identify target opportunity areas in their company for lean manufacturing, provide a step-by-step guide for the implementation of “lean systems” and direct you toward a philosophy of continuous improvement needed for today’s increasing business competition.

Who Should Attend

This course is designed for upper and mid-level production managers who want to learn how to successfully implement Lean Manufacturing concepts in their business. Participants should possess knowledge of value flow through their operations from supplier to customer and have identified a particular product and/or group of similar products (products which travel through similar value streams) to be value stream mapped.

Topics Covered

Principles of Lean Manufacturing – Live simulation of an actual wood manufacturing process to illustrate understanding and implementation of lean concepts.

Topics Covered (Continued)

Organizational Culture – Participants will receive guidelines and hints on how to develop a favorable culture for change and continuous improvement.

Identifying Waste – Participants will learn how to see critical forms of waste in wood products manufacturing, which result in increased production costs.

Value Stream Mapping – Each participant will map the value stream for a product family to identify opportunities for waste reduction and decreased production costs.

“Push” vs. “Pull” Production – Methods will be given for transitioning operations from a batch or “push” production system to a customer demand-based “pull” system.

Smoothing Production and Creating Continuous Flow – Participants will learn how to reduce production variation and move toward continuous product flow through their own manufacturing system.

Cellular Manufacturing – Work cell design basics will be discussed for increased production flexibility and where they apply in wood products manufacturing.

Standard Work – The concept of standard work, which is a key component in reducing variation and sustaining continuous flow through manufacturing cells, will be demonstrated.

Implementation of Lean Manufacturing – A lean manufacturing implementation plan will be presented with emphasis on wood products manufacturing.

Course Instructors

Earl Kline is a Professor in Forest Products Manufacturing Systems Engineering and a co-director of the Sloan Foundation Forest Industries Center at Virginia Tech. He has over 15 years experience in industrial systems engineering for wood products manufacturing.

Brian Brashaw is the Director of the Wood Materials and Manufacturing Program at the Natural Resources Research Institute, University of Minnesota Duluth. Brian is an accomplished manager of an R&D team that emphasizes product development and improvement, process and technology development and improvement, and technology transfer leading to economic development. He has worked closely with manufacturers in Minnesota, Wisconsin, and Michigan, helping them implement lean manufacturing and conduct continuous improvement projects.

Workshop Agenda

Monday, May 7, 2007

Introduction to Lean Building Blocks

7:30 AM	Registration and Continental Breakfast
8:00	Class begins Introductions
8:30	Traditional batch production Forms of waste, 5S, visual controls, plant layout, teams, batch reduction, point of use storage, standard work, quality at the source
12:00	Lunch (provided)
1:00 PM	Pull/Kanban systems, quick changeover, continuous/cellular flow, continuous improvement process
3:00	Value Stream Mapping Present state and future state maps
5:00	Wrap-up and homework

Tuesday, May 8, 2007

Lean Manufacturing Concepts Applied in the Wood Products Industry

7:00 AM	Continental Breakfast (provided)
7:45	Depart for Plant Tour
9:00	Tour Merillat in Atkins, Virginia (winners of the 2003 Shingo Prize for Excellence in Manufacturing). <u>Merillat reserves the right to approve all tour participants.</u>
12:30	Lunch (provided)
1:00 PM	Plant tour observations and discussion Group Value Stream Mapping exercise, Present State Value Stream Mapping
4:00	Successful implementation examples of lean manufacturing in the kitchen cabinet, furniture industry, and millwork industries.
5:00	Wrap-up
6:00	Dinner (provided)