



Manufacturing Extension Partnerships

Throughout the past year we've discussed many topics related to Lean and printing and have even answered a few questions along the way (keep those coming). Many questions have had one central theme: "How? How do I get started?" Well, with a single phone call you can access a national network of Lean coaches and trainers who can be your guide along this Lean journey.

For 20 years, the National Institute of Standards and Technology Manufacturing Extension Partnership (www.mep.nist.gov/) has focused on providing manufacturers in the United States with the tools, tips, techniques and technology to increase productivity and to compete globally.

In Connecticut, CONNSTEP (the Connecticut State Technology Extension Program) has worked with print and graphics firms to reduce cycle time, streamline order fulfillment, and open capacity on equipment that was previously considered "booked out."

Using SMED (Single Minute Exchange of Die) principles, one firm was able to slash 43 percent off press makeready time. Often, significant reductions in machine changeover or makeready times can be realized using nothing more than a little preparation. Having materials staged and ready to be brought to press (or a slitter/rewinder) reduces the amount of time the equipment sits during the actual changeover, which is usually only 5 percent of the total time the press is idle during the change.

A Midwestern state's Manufacturing Extension Partnership (MEP) assisted one company in reducing overall lead time on a time-critical product by 44 percent, while at the same time reducing the distance the product traveled inside the facility from nearly one-half mile to less than 200 feet. A six-figure reduction in inventory was also achieved, cutting the space required to store work-in-process by half, and inventory turns shot from 15 to 48 times per year.

Inventory management can be achieved using simple visual controls, such as creating first-in, first-out (FIFO) lanes that regulate how much product should and can be produced, and kanban signals to connect suppliers or supplying processes with customers or consuming processes.

In one Eastern state, the MEP affiliate provider worked with a printer to increase capacity on a press that was staffed 24 hours per day, seven days a week. This press consistently had a backlog of three to four weeks, costing the company significant opportunities for new business. After reviewing videotapes showing the current setup procedures and then developing a new standard work procedure, this printer was able to reduce set up time by 78 percent, while

at the same time reducing the amount of paper scrapped during set up by 44 percent. Faster changeovers opened up enough capacity to bring in hundreds of thousands of dollars in new work on just one press, while at the same time cutting the cost of set ups by reducing the amount of paper scrapped. Higher sales, less cost.

Another MEP affiliate worked on projects with a printer to eliminate the number of occurrences that a press or packaging line had to be stopped due to issues with corrugated: Incorrect sizes, quantities, and carton labeling were leading to hundreds of stoppages per month. All of this led to longer lead times, stock outs and excessive inventory, and very frustrated employees.

Using simple visual controls and a new standard work procedure, this Pennsylvania firm was able to reduce the number of line stops from hundreds per month to less than three, a reduction of more than 99 percent. A bonus was that the company was able to reduce inventory by 42 percent.

In the Southeast, an MEP affiliate provider worked with a commercial printer who was running several pieces of equipment 24 hours a day, seven days a week, and capacity was sorely needed.

Using SMED as well as some simple 5S and visual controls, this printer was able to reduce press changeover times by 69 percent. As was the case in Connecticut and Pennsylvania, thorough preparation and standard work procedures were all that were needed. In fact, this shop actually shut down one of its presses in order to allow the operator to become a floating setup specialist, assisting the main press operators, and production went up immediately.

A press operator from another plant, which operated the same equipment, participated on the Georgia team. On the first day back at his own facility, using what he learned in Georgia, he set a personal record for production that day; his press set a new record, as well as his entire shift. There was no need to reinvent the wheel at this other facility – he used the same techniques and standard work procedures and smashed long standing production records in one day.

In the central US, an MEP affiliate provider worked with one label converter to reduce the total lead time for a customer with hundreds of SKUs of one product type. This product was printed, converted, bundled, and packed in line.

Using POUS (Point-of-Use-Storage) along with spaghetti mapping the operator's work sequences, the team was able to reduce the total amount of travel distance that the operator had to walk by 300 miles per year. Not only did this make the job safer and easier for the operator, but eliminat-

ing 300 miles of walking also eliminated between 100 and 150 non-value added hours, which the operator could now put to productive, value added use.

Out West, a screen printer worked with the state's MEP affiliate provider to reduce changeover time to increase capacity as well as reducing the frequency of defects.

Using standard SMED techniques, spaghetti mapping, and an emphasis to "go and see" what was occurring, the team was able to accomplish an 88 percent reduction in changeover time; a 95 percent reduction in defective product; a 95 percent reduction in the operator's travel distance (walking); and was able to show that the company could increase its revenues by a staggering 125 percent without any additional resources.

In the upper Midwest a commercial printer was shown that an ounce of prevention can prevent a pound of headaches. This particular location had a long-standing standard practice that stipulated that the blades used on wash up trays were changed once per month. It was felt that this was an effective cost control measure. At the same time the plant was looking for ways to add much needed capacity by reducing changeover time. A baseline measurement

for cleaning time showed that it was taking 12 minutes to wash the rollers on each unit. Changing the blade on the wash up tray cut this time to one minute and 25 seconds, an 88 percent improvement, and the overall change over reduction that was achieved exceeded 63 percent. These improvements, when spread over the entire facility, opened up several million dollars of new capacity.

These are just a few of the many success stories that label converters and commercial printers have had using a National Institute of Standards and Technology Manufacturing Extension Partnership-affiliated service providers. All 50 states and Puerto Rico have at least one MEP center ready to assist you with your Lean journey. To find your local MEP office, visit www.mep.nist.gov/centers-near-you/index.htm. ●

Tom Southworth is a business development manager with CONNSTEP, Connecticut's Manufacturing Extension Partnership (MEP). He is a senior member of ASQ, an ASQ Certified Manager of Quality & Organizational Excellence, and is an SME Lean Bronze Certified-Sensei. He can be reached by email at tsouthworth@connstep.org.

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