Process Changes Help On-Time Delivery Soar at Crane Stationery

A GBMP Client Case Study

Crane & Company is a family-owned business with origins dating back to the 1770's, when Stephen Crane founded the Liberty Paper Mill in Milton, Massachusetts to provide the paper for the currency of the American Revolution. In the early 1800's Crane & Company was founded in Dalton, Massachusetts by Stephen's son, Zenas Crane, and in 1879 the company began producing the paper for all U.S. currency and continues to do so today.

However, it is through Crane's stationery products that most people know the Crane name today. Items from the Crane Stationery Division have been the product of choice for many distinguished individuals, from Queen Elizabeth II to Franklin and Eleanor Roosevelt. Today boxed and personalized Crane Stationery products are produced at the plant in North Adams, where Crane has printed its stationery since 1959.

In 2012 Crane's Stationery Division, under the direction of VP of Operations Paul Waterman, began working with Pat Wardwell, COO of GBMP, to apply lean principles and methods to the production of stationery products, both personalized and boxed. "When I joined the division I recognized that we needed to take a serious look at how we were flowing material and information through the plant," said Mr. Waterman. "There was way too much inventory at rest, and not enough undergoing value-added steps such as thermo-printing, engraving, embossing or the like. We were very busy, but not necessarily doing things that would move the order closer to shipping. To top it off we are a pretty seasonal business and our delivery performance, especially during peak periods was, let's just say, not exactly stellar," continued Mr. Waterman.

Using the impending consolidation of two operations into one as a springboard, Mr. Waterman and Ms. Wardwell challenged a Stationery Division cross-functional management/employee team to think in entirely new ways about process flow, plant layout and the best use of resources. Using the principles and methods of the Toyota Production System/Lean Manufacturing as a guide, the team began their journey by delving into the details of customer demand in order to understand the required pace of production, and developed a comprehensive part/process matrix to understand the most frequent flow routes required to fulfill orders. The team was introduced to the concepts of flow and pull production as an alternative to their traditional "push" production, and were challenged to develop compact layouts and visual process indicators that would help them to quickly see when a problem arose.

With the peak holiday season but a few weeks away, consensus was reached on a new layout that called for "pulling" each order logically through a pre-designated work cell with little or no stops/starts once it hit the shop floor (work cells were arranged to reflect required processing steps and also accounted for customer demand as well as designated print colors). Changes to the physical plant quickly started to unfold. Clean and purge efforts began in earnest, floors and walls were scrubbed and painted, equipment moves were orchestrated and inventory feed areas and kitting operations were established in close proximity to the production cells. At the same time significant changes were made to the flow and presentation of information in order to allow for level loading of cells on a daily basis, and the best sequencing of work for production operators given current equipment constraints. A water spider route was also designed to link kitting, production and shipping, and visual boards were established to track hourly output as well as process problems.

The cross-functional project team trained the rest of the plant on the changes to come, and, at Pat Wardwell's direction, took on the task of "gemba coaches," spending a great deal of time on the floor helping to train and support the operators and team leaders as they exercised the new pull processes in the first weeks of operation. This activity was instrumental in helping overcome early problems, and instilling confidence in operators that change was not simply being "done to them."

"We came through our latest holiday peak so far ahead of the prior year," said Paul Waterman. "In 2011 the plant was averaging about 30-40% on-time delivery during the holiday season, and that was with scads of overtime. During the 2012 holiday season we averaged greater than 85% on-time delivery and many days we were in the 90%+ range. We finished the bulk of the holiday load several days earlier than usual and seasonal overtime was far less than in prior years. We instituted a system of daily checks to understand misses/near misses in delivery and monitored order progress with a whole new level of intensity. We shared a lot more information with our associates about the daily work, and understood problems much earlier due to the visual controls the team put in place. Sure, there were some early hiccups and the occasional speed bump, but I can't imagine what the holidays would have been like had we not made these changes. Our customers and our customer service employees certainly noticed we had made a change for the better. One other thing I want to share—since the beginning of 2013 we have had several days of 100% on-time delivery. The funny part for me was hearing long tenured employees say 'I never remember seeing THAT in all the time I have worked here.' I want us to get to the point when 100% on-time delivery IS the norm. There is plenty more we can do and we are nowhere near the end of this journey."

For more information about Crane & Company please visit www.crane.com
For more information about GBMP please visit www.gbmp.org