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Improving quality through good change: Metcam tackles kaizen

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WWW.THEFABRICATOR.COM DECEMBER 2014

January 9, 2015

All manufacturers seek to improve processes and ROI. Alpharetta, Ga.-based Metcam, a fabricator of sheet metal components and assemblies, has seen significant improvement since beginning its kaizen initiative in late 2013. What follows is the company's blueprint for kaizen success.



One of the kaizen projects involved reorganizing and creating a management system for the turret punch tool center. The improvement enhanced the efficiency and workflow of the turret punch cells and facilitated maintenance and inventory improvements.

In late 2013 Metcam Inc. brought in two experienced *kaizen* consultants to identify small but significant improvement initiatives that would yield meaningful results and ROI. This effort was the first step in our plan to implement *kaizen* practices into our operation.

Kaizen is a Sino-Japanese word that literally means "good change" (*kai* = change; *Zen* = good). In the business world, it has come to describe a system of continuous improvement based upon the principle that making small, positive changes on an ongoing basis can lead to big results.

That has indeed been true at Metcam. We are now in our second year of *kaizen* improvements, having completed our

first nine in-house-led *kaizen* initiatives successfully. In every case, we have experienced quantifiable financial benefits—in some instances, we have reduced time, costs, or both by as much as 30 percent. More important for our mission, we have reduced error rates and increased the sustainability of our operations. By sharing our story, I hope to inspire those who read this article to make their own "good change."

Ready for Positive Change

Metcam has always operated with a focus on quality and lean principles, but that doesn't mean positive change was always easy to achieve. At the time we decided to undertake *kaizen*, we were seeking new mechanisms for implementing changes and ensuring they would stick.

In 2012 we had orchestrated thousands of hours of training for key personnel to provide them with the skill sets to build work teams that would embrace the principles we espoused. After that effort, management came up with ideas for improvements and implemented them, only to discover that problems sometimes crept back in a few months later. We needed a better system.

When the *kaizen* consultants arrived, they spent a week analyzing processes at our plant. They returned to us with 12 projects they calculated as offering positive ROI. Cumulatively, they would cover the cost of the consultants many times. These suggestions were not detailed road maps for how to achieve the improvements. Rather, they were observations of processes that, if improved, would provide the desired results.

Our first initiative began on Jan. 13, 2014, and was the first of two projects led by our consultants. For those projects, Metcam had two key team members observe and participate, with the plan that they would pick up the ball and run with it after the consultants departed. After completing those first initiatives in January-March, we were on our own.

Generating Good Change

When it was time for us to begin our in-house effort, we set up a Kaizen Executive Management Team (KEMT). However, with the exception of Metcam Quality Manager Richard Uber, the team's job was (and is) only to guide the process in terms of scheduling and priorities. The KEMT does not participate in the *kaizens*, nor are its members involved in the idea-generation process. Those pivotal roles fall largely to the production personnel, who know best what can be improved.

When we launched the first in-house improvement effort, we created a process that we have adhered to, with little to no deviation, ever since.

- First, we form the *kaizen* team. The team membership includes two in-house facilitators and several personnel from the "event" area, which generally is a defined work center or production cell. We then add a few members that have participated in previous *kaizens* and who come from other production areas.
- The *kaizen* team spends the first day reviewing the steps to be completed, the "tools" and methods to be used, and the overall goals of the event. Specific project descriptions and objectives are brainstormed and prioritized, so that an achievable scope is defined.

During this important phase of the project, the team involves and listens to everyone in the event area and incorporates as many of their ideas and suggestions as possible. It is important for everyone to understand that all problems cannot be solved in a single *kaizen*. Over time additional *kaizens* will be conducted in the same event area.

- The team develops specific goals for the project. For example, the *kaizen* goals might include improving throughput, decreasing overtime, and decreasing scrap rate by a specific target percentage.

- The team then begins its analysis, taking historical data and adding future requirements for each product family. The current-state process is then mapped, using video of the process and Post-it notes (this makes changing the process much easier). The team also determines which steps take the most time or effort by getting current cycle time and looking for roadblocks that slow things down. We set these items as targets for improvement.
- Then, if possible, we shut down the event area for one week and give the *kaizen* team the green light to begin implementing changes to the event area layout and processes. Some events require the team to work around production, taking opportunities during breaks, lunch, and after shutdown to move equipment and inventory.
- If the team needs approval for new storage racks, computers, lighting, tools, or anything else, the KEMT acts quickly to secure what is needed and provides the resources to meet the team's requests.
- On Thursday of that week, the workers report back to the team regarding their progress. Often they report back sooner—on Tuesday or Wednesday—and they have already come up with a better process and have a plan for achieving it.
- From that point we make the change permanent and then retrain line workers to adopt it. We also perform checks after 30, 60, and 90 days. The first two give us a chance to address any unforeseen issues that crop up. The 90-day follow-up ensures that all changes remain in place and that personnel are executing the new processes per their training.
- Finally, we encourage the workers to continue thinking of even more ways to make the processes leaner and more efficient. By its very nature, a *kaizen* effort cannot be static.

Changes That Work

As of this writing, Metcam has completed all 11 of its initial *kaizen* improvements, nine of which have been in-house-led. We have made numerous improvements to assembly and materials processing, completely reorganized and revamped our tool storage and handling procedures, changed packaging processes, and more.

Currently our *kaizen* teams are aligned with processes, such as materials delivery, tool management, press brakes, and assembly cells. However, *kaizen* can be used to change not only physical activities, but also systems, such as scheduling. Consequently, we are beginning to make changes to our administrative and operations processes as well.

Any Metcam employee can make suggestions to anyone on the KEMT. We get together every few weeks to evaluate the ideas and prioritize them. So far, all of our *kaizen* projects have come from those in the department that are doing the work. As each project moves from designing to mapping the process, making the changes and writing the final report, upper management is not allowed to give any input.

Getting everyone in the company involved is a core goal, as opposed to completing a specific number of *kaizens*. We want to build momentum and buy-in for these improvements to incite enthusiasm among our workers for being lean with top-down support, more than top-down direction. We want to help all employees improve the skills they need to continue this journey of improvement and position them as change leaders.

The objective is to change the culture to one of "bottom-up lean," where success isn't dependent upon a lean expert telling people what to do.

The *kaizen* effort hasn't been without some problems, but those usually were caused by changes in production processes, new people coming aboard, and other variables not present at the time of the original improvement effort.

Overall, we have found that if workers come up with the ideas, they take ownership of them. They either succeed or fail with the ideas they suggest. So far, they have succeeded very well.

About the Author

Bruce Hagenau co-founded Metcam in 1989, turning a bankrupt fabricator into an ISO 9001:2008- and ISO 14001-certified, advanced metalworking company known for its customer service and lean, sustainable operating model. Hagenau is deeply invested in Metcam's mission of sustainability and lean practices, and he speaks on environmental issues and sustainability. Hagenau is a founding Board Member of the Manufacturing Society of the Technology Association of Georgia and holds advisory or board positions with numerous well-regarded technology, sustainability or commerce organizations. For more information, visit www.metcam.com.

Little Steps; Big Rewards

With so many projects under our belt, I don't have room to detail all of them. Instead, I have picked a few highlights to share with you.

- On one 10-person assembly cell dedicated to a particular customer's products, one of the workers had an idea to make the line more efficient. We went from two separate assembly lines to a single-piece flow, repositioning two people to achieve the change. It shortened the assembly line by 10 feet, reduced worker foot travel by more than 4 miles a week, and increased throughput by 36 percent. The end result was a zero-step line and workers who were not tired when they went home.
- On another assembly for a large customer, by reorganizing the line into three different stations and rearranging the storage racks to improve material flow, we went from 10 people working overtime to eight with no overtime. At the same time, we increased throughput by up to 15 percent and reduced the error rate to near zero.
- For our turret punch cells, we began color-tagging tools and storage racks for sheet metal based upon the job performed by the matching, color-coded turret punch where the tools and material are scheduled. Turret operators collectively save days of time, each week, not looking for the tools and the sheet metal they need for their next job.

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