



A Road Warrior's Observations Part 2: Ergonomics and Process Engineering, Safety, Kaizen and Real Leadership.

Insights

2.13.15

Ergonomic Analysis Can Make a Business More Profitable and Safer

As I finally flew home last week, I sat beside Jeff Smagacz, the owner of an engineering firm, RMG. Jeff explained that RMG spends 75% of its time analyzing manufacturing and distribution processes to make them faster, more efficient, require less employees ... and to lessen employee exposure to ergonomic injuries. About 25% of their time is spent in more traditional “ergonomic work” like designing ergonomically efficient devices such as curved keyboards. I was struck by RMG’s approach to first address the overall manufacturing or distribution process, and do so to improve performance, rather than myopically focusing on one worker or task and addressing ergonomic issues.

We tend to think of retaining ergonomists to study a job in a vacuum, and engineers to do process engineering, but not to use my approach of process engineering for safety improvements. This approach also satisfies OSHA’s required hierarchy of first tackling hazards by engineering efforts, than by administrative actions, or only as a third step, providing PPE. We need to quit putting safety, HR and engineering in separate silos. ([LINK to article by RMG in Industrial Lift and Hoist.](#))

I especially liked Smagacz’ linking of ergonomic process engineering and “lean manufacturing” efforts:

“Implementing lean manufacturing is a proactive approach to ergonomics supported by many ergonomists. Companies find ergonomics is critical to the success of their lean initiative. When ergonomics is not considered during workplace design or while making job changes, companies may experience increased injuries after they “lean out” a work cell. However, those that consider ergonomics as part of their lean initiative find that ergonomic improvements result in up to 20 percent additional waste elimination, as well as reduced injuries, which can save companies millions of dollars.”

Smagacz went on to provide examples:

- An ergonomics project at a water bottling facility reduced floor space utilization by 40 percent, securing the facility’s viability in the United States (versus Mexico) and creating an opportunity

for production expansion at the location. This \$20,000 investment in ergonomics yielded hundreds of thousands of dollars in potential.

- During a recent ergonomics Kaizen Event at an automotive company, reduced the cycle time of a process by 6 percent, which translated into an approximate annual productivity gain of nearly \$225,000.
- At a building products manufacturer, a dozen ergonomic improvements saved more than four hours of employee walking per day, eliminated several safety hazards, eliminated a quality tampering point, and reduced manual lifting by 25 percent.
- A food manufacturing company applied ergonomic principles on a packaging line and identified a \$20 improvement that eliminated 100 percent of ongoing sweeping/shoveling activities under the equipment, which presented significant ergonomic risk and injuries to the shoulders and back. The improvement eliminated pasta from falling on the floor, leading to a \$6,000 saving per year due to increased product yield.

Kaizen, Gemba and Genuine Leadership

I have a labor lawyer's cynicism about consulting theories, especially those awarding "belts" because my "belts" were earned over years as a fighter. However, while no new theory is a panacea, many of these ideas do work if properly implemented and revisited to avoid stagnation. I've been especially impressed by one plant manager's use of Gemba. As mentioned above, safety efforts should be linked to Lean Manufacturing whether it be a Gemba, Kaizen or other effort. One underlying the principle of the Asian driven theories is that Japanese top leadership is expected to regularly be on the floor meeting employees and not isolated in executive suites.

From Industrial Terms:

Gemba - long version

Gemba is a Japanese term meaning "the actual place" or "the real place". Japanese detectives call the crime scene gemba, and Japanese TV reporters may refer to themselves as reporting from gemba. In business, gemba refers to the place where value is created; in manufacturing the gemba is the factory floor. It can be any "site" such as a construction site, sales floor or where the service provider interacts directly with the customer. In lean manufacturing, the idea of gemba is that the problems are visible and the best improvement ideas will come from going to the gemba. The gemba walk, much like MBWA or

Management by Walking Around, is an activity that takes management to the front lines to look for waste and opportunities to practice gemba kaizen, or practical shop floor improvement.

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Now let's discuss the similar Kaizen analysis, as described in a paper from RMG. It was a productive flight during which Jeff and I swapped theories and experiences!

The best knowledge resides with the operators who actually perform the work. They know the problems and often the solutions. During a Kaizen event, small teams of operators and maintenance employees make the recommendations on how to improve the process as well as then make the physical changes to the processes. These teams support and continue the process after the event is over.

Because operators know the process, work the process, and are involved in the change process, there is tremendous buy-in and ownership of all improvements. Changes created through the Kaizen Event are very sustainable. The processes rarely revert back to the less safe and less efficient way of doing things.

A typical Kaizen event is three to five days long, comprised of a cross-functional team usually with 12 to 15 employees. The team is composed of people who are in the process to be reviewed, such as the lead operators, and supervisors. Additional resources from other departments such as maintenance and safety are assigned to support the event. Even personnel from local vendors/suppliers can be included.

Many executives recognize the need to devise and act on specific plans to involve employees, but truth but do not act on it either because they are swamped or are not really convinced that these efforts genuinely add to the bottom line. Want to largely eliminate your need for labor lawyers? Figure out a way to harness your employees' energy. Won't be easy, but might just help.

Howard

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Howard A. Mavity
Partner
404.240.4204
Email

