

Lean Thoughts

Inspired People

Robust Processes

Lean Operations

February 02, 2004

For all **Consortium** events – Contact Richard for more information.. For other events – contact directly

Important Consortium Dates to add to your calendar

The Consortium Benchmarking tour schedule has been reestablished. This is an excellent opportunity to have your folk's network with peers in other companies to share ideas. Remember the purpose of the benchmarking tours is to create vision and inspire your employees while accelerating your journey.

- Feb 05, Consortium Tour, **Kromet International**, contact Richard Kunst, Richard.Kunst@Kromet.com
- Feb 12, Consortium Tour, **Kraft Foods**, contact Mariela Castano, Mariela.castano@Kraft.com
- Feb 19, Consortium Tour, **Stackpole AGD**, contact Cindy Grolleman, cindyg@stackpole.ca
- Feb 26, Consortium Tour, **Stackpole CSD**, contact Gerry Ward, gerryw@stackpole.ca
- March 04, Consortium Tour, **Eaton Cutler-Hammer** contact Joe Fisher, JoeRFisher@eaton.com
- March 11, Consortium Tour, **Messier-Dowty**, contact Richard Evans, Richard.Evans@Messier-Dowty.on.ca
- March 18, Consortium Tour, **CGL Manufacturing** contact Dave Desker, daved@cglmfg.com
- March 25, Consortium Tour, **CTS Corp.** contact Bob Garces., Bob.Garces@ac.ctscorp.com
- Apr 01, Consortium Tour, **Morrison Lamthe**, contact Tony Vita, tvita@morrisonlamthe.com
- Apr 08, Consortium Tour, **Kromet International**, contact Richard Kunst, Richard.Kunst@Kromet.com
- April 15, Consortium Tour, **Kraft Foods**, contact Mariela Castano, Mariela.castano@Kraft.com

Consortium Direction 2004

At a recent directors meeting hosted at CGL Manufacturing in Guelph the group has decided on the following direction for the consortium.

Benchmarking Tours ... after the current schedule has been exhausted benchmarking tours in the current format will be discontinued. Consortium members can arrange for benchmarking tour to take place on an adhoc basis.

Team Time ... The replacement for benchmarking tours will be implemented. Team Time will commence at 1:00pm on a designated date and location. Visiting consortium members will be assigned to projects that will enable the host company to advance their manufacturing excellence program. During this time, team members could be assigned to 5S+1 enhancements, Set Up reduction or participate in audits including documentation. The spirit now migrates from identification of 3 good ideas to assist in application of the best practices.

Practitioner Circles ... internal champions of specific action teams will meet on a quarterly basis to exchange concepts, templates and programs that are working well. Members of practitioner circles may elect to instigate Kaizen Blitz's within Consortium member companies. Each Consortium Member company must champion 1 practitioner circle on behalf of the consortium. It is not necessarily required that the theme or topic being championed is a current best practice.

Measuring Success ... It was agreed that Consortium Members will continue to use the Eaton Business Lean Assessment tool to measure and monitor progress of advancement.

Communication ... "Lean Thoughts" our weekly consortium e-newsletter will be the primary tool of communication of Lean education and awareness. A consortium corner will be added to communicate consortium member success stories.

Recognition ... building on last year's outstanding success of Consortium Shreshowcase their will be a repeat performance in the fall of 2004. This year's host for the event will be the Eaton facility located in Milton.

Membership ... It was agreed that membership will be limited to the current active members and is site specific. Lack of active participation will automatically cancel membership in the consortium. There will be a quarterly director's meeting to reflect on direction and determine if any policy decisions are required.

Collaboration ... at times a consortium member may introduce a guest company or other consortium to participate in a specific activity if the quorum of consortium directors are in agreement and that the invited guest is not viewed as a direct or indirect competitor to a fellow consortium member.

No need to Play the Blame Game

When something goes wrong, people in some organizations set off on a witch-hunt -- asking "who" instead of "how." Then, they quickly pin the blame on some poor soul, hang him or her in a public lynching and return to work thinking the problem is solved, right? Well, it's not that easy. Blaming and punishing, satisfying as it may be, doesn't prevent problems from recurring.

The truth is that everyone makes mistakes. Shigeo Shingo developed a solution that eliminates scrap, rework and repairs caused by simple human mistakes. His approach, which he calls "mistake proofing" and not "fool proofing," is free of finger pointing and

Lean Thoughts

accusations. Instead of ridiculing people for making mistakes, Shingo begins with educating people on why defects occur. He cites five basic reasons:

- Inappropriate procedures or standards
- Excessive variability in operations
- Damaged or excessive variation in materials
- Worn machine parts, tools and equipment
- Simple human mistakes or tasks carried out incorrectly

These five situations correlate to causes identified in the cause and effect diagram: man, machine, material, and methods and sometimes measurement or environment. These examples illustrate the need for a methodical approach to ferret out the root cause of problems and not attributing them to mere incompetence.

It's important to remember that an error is not the same as a defect. An error is what happens to cause the defect. Rather than detecting defects that have already happened, the key is to catch the error before it turns into a defect. Shingo's mistake-proofing approach has four principles.

Use source inspection to catch errors and provide feedback about them before they become defects. When an operator makes a mistake, he or she detects it immediately rather than passing it to a downstream operation.

Use 100% inspection at the source to check all operations and products. This is different from statistical process control that relies on inspecting only a sample.

Provide immediate feedback, thereby shortening the time for corrective action. Traditional inspection methods generally happen at the end of the process or after several operations are done. This causes delays in the time it takes to discover defects. Meantime, the process creates more defective products and the information may never get back to the place where the problem began.

Use mistake-proofing devices to carry out the checking function rather than relying on operators to catch errors. Mistake proofing, or poka-yoke devices as they are sometimes called, are installed in the machine to perform source inspection and give quick feedback 100% of the time.

Poka-yoke systems use electronic sensors or passive devices to regulate the production process and prevent defects in one of two ways. A control system stops the equipment when a problem occurs or locks and clamps the workpiece to keep it from moving downstream when it does not complete the process.

A warning device signals the operator to stop the machine and address the problem when it arises. A control system is more certain because it doesn't rely on operator intervention. However, it's not always feasible to install a control system. In such cases, a warning system using flashing lights or sound may trigger the operator to stop the machine and fix the problem.

Poka-yoke systems use three methods for mistake proofing:

Contact, Fixed value, or Motion step.

1. Contact

Contact methods work by detecting whether a product makes physical contact with a sensing device. One example of a physical contact method is the use of limit switches. A limit switch is pressed when a screw is installed in a product. The switch is connected to a cylinder that holds the product in place until all the switches are pressed. If a screw is left out, the product will not be released for the next operation. Contact methods may use energy-sensing devices like photoelectric beams that don't physically touch a product but sense when it's positioned correctly.

Some of the best contact methods are passive devices such as guide pins, which prevent the product from being seated in the wrong position. Using different size guide pins prevents incorrect assembly because the larger pin will not fit in the smaller diameter hole. Other contact methods take advantage of parts designed with an irregular shape or a work piece with a hole on only one end. Using a jig that matches the shape ensures the work piece is positioned correctly.

2. Fixed-value

Fixed-value methods are used when a fixed number of parts must be attached to the product or when a fixed number of repeated operations must be done at a workstation. Using this method, a mechanical device counts the number of times something is done. The device releases the product only when the required number is reached. The fixed-value method may use limit switches that are tripped with each movement, sending a signal to a counter that detects when the

Lean Thoughts

right number of movements occurs. Another approach is to count the correct number of parts needed. If there are parts left over, then the operator knows that some were left out.

3. Motion-step

The motion-step method senses whether a sequence in the process was carried out. It uses sensors like photoelectric switches connected to a timer. If a movement doesn't happen when it should, the switch stops the equipment or a warning is given. For example, a label-dispensing machine uses a photoelectric switch to stop the line if a label is not removed within the machine's cycle time. The sequencing aspect of the motion-step method is frequently used to help assemblers select the right parts for a particular product they're putting together. For example, a device dispenses a single part. The part stops in a small tray until it's picked up by the operator and installed in the assembly. A sensor prevents the machine from completing its cycle until the operator removes the part from the tray.

Poka-yoke systems need not be sophisticated or expensive. Some of the best devices are developed by operators -- the people who know the machines and processes the best. Dr. W. Edwards Deming is noted for saying that 85 to 90% of all mistakes are caused by management. He was merely pointing out that management is responsible for the system and that poorly designed systems cause the majority of mistakes.

Contrary to attributing mistakes to sabotage, incompetence or laziness, mistake proofing requires a methodical approach for identifying and removing the underlying cause of mistakes.

By Fletcher Birmingham, Director of OPMA and professor of business at the University of Phoenix. He can be reached at fletcher@opma.us

The difference between an entrepreneur and an administrator is that if they were partners in business, the entrepreneur would be quite happy to leave and start again

Richard Pratt

First-year students at Med School were receiving their first anatomy class with a real dead human body. They all gathered around the surgery table with the body covered with a white sheet. The professor began the lecture by telling them: "In medicine, it is necessary to possess two important qualities as a doctor "The first is that you not be disgusted by anything involving the human body". To illustrate, he pulled back the sheet, stuck his finger in the anus of the corpse, withdrew it, and stuck it in his mouth. "Go ahead and do the same thing," he told his students. The students freaked out, hesitated for several minutes, but eventually took turns sticking a finger in the butt of the dead body and sucking on it. When everyone finished, the professor looked at them and said, "The second most important quality is observation." "I stuck in my middle finger and sucked on my index finger. Now learn to pay attention."

Submitted by Gail Grimaldi from OCAPT

AME Australia's first Pacific Rim Conference

The initial conference program planning phase is completed with 14 confirmed international presenters from North America and Asia. Most of the top rating presenters from the Toronto Conference have agreed to present in Melbourne from the 18th to the 21st of May 2004. Add in some of the most knowledgeable local Australian practitioners and this will be one of the best Lean learning experiences of 2004.

The full conference program has been released and can be obtained on the 'net or by emailing ame@pams.org.au

See www.x2xconference.com

Good Training Rules to Follow