

Water Spiders

One of the things that keeps Lean manufacturing from being boring to the amateur linguist is the many odd-sounding words that make up the Lean lexicon. Kamishibai. Heijunka. Pareto. Yamazumi. Takt. Andon. Jidoka. Kaizen. Pokayoke. Gemba. And don't even get me started on the acronyms.

Then there is this thing called the Water Spider. The Water Spider position is often confused with a simple material handler or an entry level "go fetch" person. Far from it, the Water Spider needs to be thoroughly familiar with the materials, tools and methods of the process they are supporting. My teachers used to say the Water Spider role was a "right of passage" to becoming a supervisor. The Water Spider is an honored and critical role in making continuous flow and a smoothly functioning Lean system a reality.

But what's in a name? Why Water Spider? People often think this word comes from the insect that skims the surface of the water (water strider) but technically this is not correct. The water spider is the beetle that moves about inside the water, not on the surface. What makes this confusing is that the word "mizusumashi" in Japanese at times refers to both.

A good way to remember this is that while the water beetle dives into the water (dives into the process, gets close to the cell, even goes into the cell to do occasional relief work for operators) the water strider skims across the surface and does not go under the water (close to the process). The Water Spider in Lean manufacturing must be intimate with the process or cell they support, not just a pick-up-and-drop-off material handler.

Who cares? Is this distinction important? Why are we talking about beetles?

The similarity between the Water Spider (the person who moves about the factory or assembly line) and water beetle (swims under the water) was explained to me as how they move in the water or move about the factory. This explanation by itself might lead to the misunderstanding that the Water Spider is a typical material handler.

But here's another theory. Water spider is "mizusumashi" in Japanese. This is written phonetically as みずすまし or in kanji script as 水澄まし. The word literally means "make water cleaner" or "purify water". I don't know if this little beetle actually cleans the water or not. You would have to ask an entomologist. The water beetle does have little broom-like fibers on its rear legs, so perhaps that's how it "cleans the water". Or perhaps it was noticed that water spiders only lived in the clear water so they were given credit for making it clean.

If we suppose that the water spider (beetle) makes the water clean or keeps it clean, the water spider (human) also keeps the flow in the factory or in the flow line clean and smooth by taking on the occasional tasks (tasks that do not happen every cycle,

Where Lean Thoughts can become Reality

"Unless you try to do something beyond what you have already mastered, you will never grow."

Ronald. E. Osborn

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such as material replenishment or making shipping containers). A clear process flow and defined work sequence (clear flowing water) is also a requirement for designing the workload of the Water Spider position.

The strategy of using a Water Spider methodology can go beyond the designation of people. You can also use the methodology to allocate specialty equipment that may have a sporadic requirement within a work center.

For example, you have completed your work/balance charts and assignments and find that a specific process has a sporadic requirement within the cell. The specialty equipment is cost prohibitive to be included in staple supply of equipment. The natural tendency would be to have the part transferred to another work area where the unit could be completed but this would potentially create a “Disturbance to Flow” and we want to keep our team members focused within their work area.

The alternative, would be to have the unit placed into a designated “additional work area” spot within the work center. Using a prior prescribed route design the “Water Spider” would walk the route and perform the designated work without interrupting the work flow within the cell.

A slight variation of the Water Spider methodology can be applied to set-up and supporting quick change-overs. This would employ the use of a change-over cart and Visual Standard Work Instructions (VSWI). We recently witnessed this methodology in action with amazing results. The Change-Over cart was made from Mini-Tec and was outfitted with several pneumatic drivers equipped with different size tools and varying torque settings. When a set-up was required the cart was rolled to the work station and the cart was connected to the air lines and ready to go ... no hunting for tools or setting up different torques values. At the work center, VSWI's designated for change-overs were printed on a different colour of paper (Blue) and linked to the Water Spider cart. Using this methodology the company was able to reduce their change-overs from hours to minutes.

Contact us if you are interested in creating some Water Spider carts. We will e-mail you some pictures based on the application your desire (ie; packaging, set-up, labelling etc.)

ACCESS To INFORMATION

Learning used to mean listening to lectures. Lecturing has been used to educate for hundreds of years - expecting students to go to a lecture hall at a prescribed time and sit still while a professor talks for an hour.

Today, our society no longer learns only through books and classrooms. We are now visual and spatial learners. Information comes in a variety of dimensions, text-based, graphical, musical, audio and visual. For example;

- * 3.5 million songs on iTunes
- * 4 million books on Amazon
- * 60 million blogs online
- * 4 million entries on Wikipedia
- * 100 million user accounts on MySpace
- * 6 million videos on YouTube

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