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REDEFINING RELIABILITY THROUGH LEAN PRACTICES

by Aaron Black

The concept of reliability changes from business to business. No one definition is correct because reliability needs change from one business to the next. However, personnel in charge of a reliability program should have a clear answer to what reliability means to them. This article helps define what reliability means to an organization, shows where flaws can develop in the program, explains how reliability responds to evolving business needs and demonstrates how lean principles can relate to these processes.

WHAT IS RELIABILITY?

To date, reliability has focused on rigid metrics and goals. The problem with this is that it doesn't provide the flexibility businesses need to thrive. Assigning unyielding metrics based on the current data set limits programs to only what can be envisioned in the present. If reliability programs cannot change, they quickly become outdated as the business environment changes. Static reliability programs can shift from a useful, cost-saving system to an expense.

To combat this, a program champion is needed to guide reliability efforts. The program champion concept has been bandied about a great deal over the years, but the general perception is someone who understands reliability principles and how to apply them correctly. This person has the knowledge and experience to identify critical information gaps, especially when current activities are not sufficient for the required task. A program champion should be empowered to adjust a reliability program to the needs of the business.

Additionally, technicians need to understand the concepts used in their reliability programs and how other reliability tests complement the testing they perform. They do not need to be experts in the science behind the analy-

sis they perform, but with the proper training and encouragement, can assist the program champion in triaging results and suggesting when additional testing could be beneficial.

WHERE DO YOU GO FROM HERE?

After assembling the right personnel, a program needs to be put together. A basic reliability program is easy to set up using articles, instructions and other resources available today, but it must be based on goals that will aid the overall success of the business. The program champion or an executive needs to examine how equipment reliability will best serve the short- and long-term goals of the business and develop reliability goals that serve the business's needs.

However, this is easier said than done. There are many questions that need to be resolved in order to customize an effective reliability program. What are the goals that management wants to accomplish? Are they attainable within the budget? What are the tools available? Are there informational gaps? In many cases, the answers to these questions are more complex than expected. The key to success is not just finding the answers, but to reevaluate at set increments to make sure reliability measures are working and the goals are attainable.

WHAT ABOUT LEAN?

Flexible reliability programs need an environment where program champions and technicians work together and balance each other. Lean processes provide the flow and structure needed for effec-

reliability has focused on rigid metrics and goals



tive, lasting, process change. However, to apply a lean idea properly, you need to understand the term. Like the often misunderstood program champion term, many use lean concepts ineffectively.

A fundamental flaw in the application of lean practices starts with how you use the term. Lean is not a destination. It is a process, a way of thinking and shorthand for the concept of continuous improvement. It is sometimes defined as doing more work with fewer resources, but a more accurate definition would be performing tasks in the most appropriate way for a specific situation. Fairly often, more work is done using fewer resources, but the real goal is to improve the overall outcome.

Lean applies to reliability by helping the program change and making sure the change is appropriate to the situation. Changes in lean organizations are more organic because they only occur when the reliability program has a need for change. Lean helps an organization see the need for change and make the correction. The two do not always move in the same pattern, but the lean process helps a reliability program remain relevant to business goals.

When a reliability program is static and has no process to make changes, the staff discovers better ways to perform their jobs, but they need to circumvent the outdated goals of the reliability program in order to do what's best for the company. If they remain devoted to the reliability program's goal, it can ultimately work against the business and absorb resources needed elsewhere. While savvy companies will see the disconnect and correct it, others will question the validity of predictive maintenance and return to their preventive or reactive reliability strategies.

This is such a common occurrence, it is practically cliché. Facilities that have experienced this are easy to spot when talking to employees. They report programs that start and do well before slowly trailing off to a quiet death.

Nobody truly understands why a sound concept failed, so it is revived again years later in a new initiative and the cycle begins again.

The reliability world needs to be closely aligned with the people using the equipment, working on the production line and those trained on lean principles. A reliability program champion with lean training or a lean champion working in a reliability program is the most effective at creating and sustaining a successful program. These champions naturally identify principles disconnected from company goals, perform a failure analysis and enact the change needed to address what caused the failure. In addition, they follow-up on the fix to see if it worked and identify what else needs to be done.

WHAT'S NEXT?

This collaboration between lean and reliability can and does happen. The combination is incredibly impactful, so it's easy to see the concept becoming the next major focus in maintenance. Leaders in this up-and-coming field will be able to streamline their reliability programs and become effective in ways businesses have only just begun to see.



Aaron Black has 20 years of experience in oil analysis and reliability in both a laboratory setting and in-the-field work, with an overall specialty in microscopic analysis. A member of the POLARIS Laboratories® team since they opened in 1999, Aaron collaborates with customers to improve the impact, uptime and reliability of their equipment and maintenance programs. www.polarislabs.com



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