

TRUE RELIABILITY CANNOT BE ACHIEVED WITH POCKETS OF EXCELLENCE

How a winning training strategy can facilitate a solid reliability culture

PlantServices Special Report

How a **winning training strategy** can facilitate a solid reliability culture

by Sheila Kennedy, contributing editor, *Plant Services* magazine

When a desire to improve reliability takes shape, it's very common that few will share the vision. One or more reliability programs may be implemented and pockets of excellence may be achieved, and those efforts will surely provide a return on investment, at least for a while. Unfortunately, this is not a viable means to achieve true reliability.

Much like safety has become ingrained in the industrial culture, reliability requires a culture change. It must be fostered company-wide through training, supported with buy-in at all levels, practiced habitually, and remain top of mind long after the initial push.

With the right tools, companies can develop a comprehensive reliability improvement strategy, deliver targeted training throughout the organization, and maximize the benefits of the program by securing a lasting culture change. Improved profitability and increased personnel and environmental safety are among the more compelling benefits of achieving reliability success.

Reliability efforts tend to be limited or short-lived

The most common approaches to improving reliability provide limited benefits or fade away over time. For example:

- If just a few employees undergo reliability training, they will have to do battle with others who don't understand the need or benefits of the new practices.
- If consultants are brought in to improve reliability-based work processes, the program will start to fail the moment they leave if your employees don't take active ownership.



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- If different companies are chosen to implement root cause failure analysis (RCFA), vibration monitoring, field balancing, and other reliability components, you'll end up with inconsistent messages and mixed terminology, and a lack of cohesion in the rollout.
- If a successful program is only implemented at one plant site, the other sites will fall behind and constrain the company's full potential.
- If the plant personnel are trained but there is no attempt to seek executive support, the program and its funding will not be sustainable.

History provides the answer

A better approach is the one that led to the safety culture. Most industrial organizations today have a very pronounced safety culture. They actively and publicly work to improve metrics such as the time between safety incidents, recordable injury rates, near misses, lost workdays, and even the number of safety meetings held.

Establishing that culture didn't happen overnight – it took an aggressive, systemic effort, some degree of rote learning, and regulatory mandates in order to compel awareness of the safety imperative. Those actions transformed the mindsets and actions of everyone from the executive suite to the plant floor. It helped that the employees could readily conceive the consequences of failure. An explosion, chemical leak or structure collapse, for example, could cause them personal harm and directly or indirectly impact their families, colleagues, and potentially the community at large. At the executive level, concerns extended to critical media attention, investor fallout, insurance costs, and the hit to the bottom line. The entire industrial community responded by putting safety on the front burner.

Today, we are on the cusp of a reliability revolution that requires a comparable culture change. The business drivers are pervasive and increasingly evident, whether it's the costs of production downtime and recovery, risks to safety and the environment, consequences of negative press, or threats to the viability of the brand.

For this change to occur, employees at all levels need to recognize and “own” their personal role in ensuring reliability, and do their part to improve uptime, reduce the mean time between failure, reduce the mean time to repair, and increase overall equipment effectiveness. “Everyone contributes to ‘unreliability’ in the plant, and therefore everyone needs to get involved in the program to improve reliability,” says Jason Tranter, managing director and founder of Mobius Institute (www.mobiusinstitute.com).

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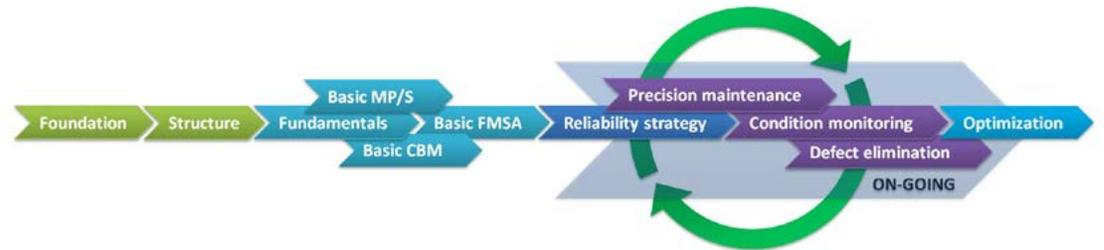


Three steps to reliability success

Reliability success is the culmination of three steps: follow a defined strategy and roadmap, provide the right training to the right people, and foster awareness and culture change company-wide.

Step 1: Map your strategy

To achieve reliability improvements, a strategy is needed that defines what to do and when to do it. It must reflect an understanding of the organization's current state; its strengths and weaknesses; what reliability initiatives and process changes need to be put in place; potential roadblocks and how to overcome them; and a roadmap showing the order in which to roll out the program.



For example, given your company's present state, does it make sense to implement a suite of condition monitoring technologies in-house right away, or should you start by introducing concepts such as the importance of reliability, how the various options work together to improve reliability, and the types of benchmarks and key performance indicators that will measure the program's success?

It is also necessary to consider what resources will be used, how to ensure a consistent training message, and how to sustain momentum in the rollout so that the pockets of excellence don't wither before other phases are implemented. The latter is a particular concern for multi-site organizations if the training is not rolled out concurrently and consistently.



Having a single source of training ensures consistency, simplifies the learning process, and promotes user adoption.



Step 2: Target your training

Improving reliability requires more than just training specific skill sets. A collective of knowledge is needed in order to properly address reliability challenges. Management needs to understand the financial justification for the reliability program. Program managers and reliability specialists need to know how to communicate and implement the program, and how to conduct tasks such as RCFA and criticality analysis. Detailed skills training may cover topics such as the proper alignment and operation of machines; how to use condition monitoring techniques such as vibration analysis, oil analysis, infrared thermography and ultrasound; and how to perform precision maintenance tasks such as balancing and lubrication.

Additionally, skills training should be observed and tested through some feedback mechanism in order to assure competence on the subject matter, and refresher training should be provided periodically to keep the knowledge sharp.

Step 3: Change your culture

Steps 1 and 2 are both very important, but achieving true reliability requires commitment and participation at all levels of the organization. This is the most overlooked step, and yet it is perhaps the most vital. It is essential to brief everyone, from senior management to the craftspeople and the operations and maintenance personnel, on the importance and benefits of a reliability program, and to routinely reinforce the awareness. It is likewise essential that the senior management send a clear message to the rest of the organization that reliability matters.

“Training is the number one weapon in the fight for culture change,” says Tranter. “If everyone doesn’t get the message of reliability the same way that they got the message of safety, then the reliability program will never thrive. It is well understood at the highest and lowest levels that safety is a priority. That same understanding is needed for reliability.”

This step involves initial and ongoing awareness training that uses strong, clear, and

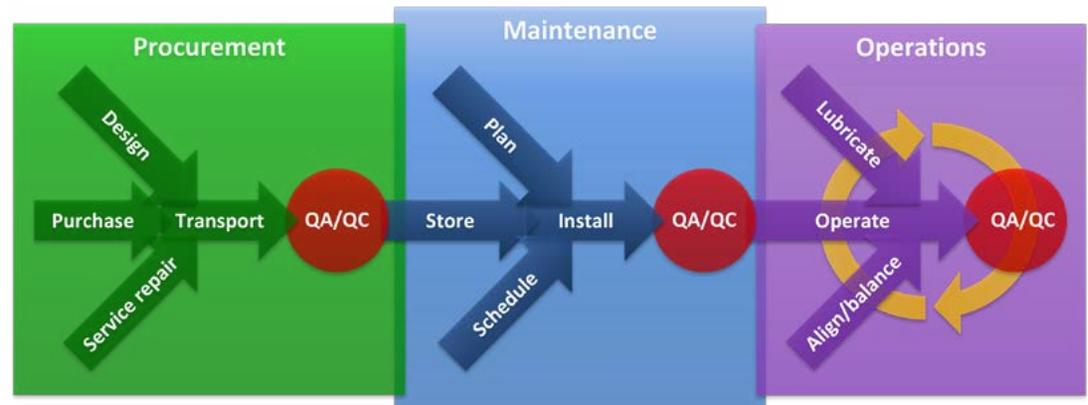


A reliability culture, much like a safety culture, will improve profitability and reduce safety and environmental incidents – goals that every organization should aspire to achieve.



consistent messaging in order to maximize buy-in and the ultimate success of the program. Strive to enlighten even those whose jobs are not immediately affected, because it will encourage them to support their peers and seek opportunities that might not have been considered. Specifically:

- Spell out the overall goals of the program, because it is never safe to assume they are self-evident
- Explain how reliability improvements will solve specific problems at an organization, department, and individual level
- Introduce how the chosen processes and technologies work collectively to improve reliability, and how they will be rolled out
- Reinforce how everyone has a role to play in reliability, much like they do with safety, and they need to be on board because it is a team effort



Tailoring the message to the audience will capture their attention. For example, executives will be interested in how reliability problems impact product delivery schedules, customer satisfaction, insurance, safety incident costs, and profitability. On the other hand, points that resonate for plant floor personnel include personal injury risks, loss of performance incentives, product quality deficiencies, and work schedule and overtime impacts.

Follow the awareness training with constant refreshers to keep the reliability program from falling by the wayside. “Initial training and annual continuing education is essential to building and maintaining a sustained equipment reliability and asset management program,” says Eddie Nolte, senior equipment reliability engineer at APS Fossil Generation Engineering (www.aps.com).

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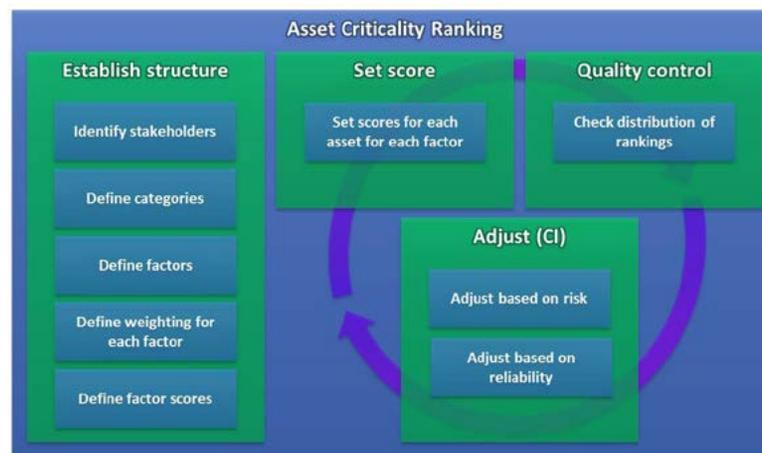
Change enabler

To address the need for holistic reliability training, Mobius Institute developed iLearnReliability, an online industrial training tool. “You could achieve reliability and reduce downtime with the help of consultants or by using independent training courses; ours is a third alternative,” says Tranter. “It gives companies the strategy, the training so they can follow the strategy, and it helps them to achieve culture change.”

Using iLearnReliability, companies can follow a defined reliability improvement roadmap and roll out the training at their own pace. A champion or group of people within the organization can drive the training and culture change using the interactive and media-rich training tool, which supports multiple learning styles. For instance, the “Establish the Asset Criticality Ranking” training module not only explains the process, but it includes a link to a supporting presentation that illustrates how the ranking is done.

Training modules exist for all levels of the organization, including senior management briefings, plant floor briefings, program manager training, and very detailed skills training. Having a single source of training ensures consistency, simplifies the learning process, and promotes user adoption. Web-based accessibility helps to overcome logistical concerns and allows larger organizations to roll out their reliability program across multiple sites in parallel.

“The greatest challenge for training our Reliability team here at Arizona Public Service (APS) has been the logistics of coordinating training efforts for seven fossil plant sites located across Arizona and parts of New Mexico. Our diverse fleet has different training levels and needs that are not easily met with most traditional training methods,” says Nolte.



“We are currently deploying the iLearnReliability modules to our corporate Reliability and Plant Support Engineering team to better educate those people on their role in the Fleet Equipment Reliability and Asset Management programs,” adds Nolte. “I have used the iLearnReliability modules to train plant support engineers on the detailed vibration and infrared technologies, in addition to management modules to inform engineering managers and supervisors about the importance of the overall Reliability program to the Asset Management process. I feel that the iLearnReliability software package has allowed me to deploy the different levels of training to the various facets of the power plant personnel, such that each member gets the training they need to understand their individual role in the Fleet Reliability program,” he explains.

Regardless of what training method is used, following the three steps to reliability success will provide pronounced and sustainable benefits. A reliability culture, much like a safety culture, will ultimately serve to improve profitability and reduce safety and environmental incidents – goals that every organization should aspire to achieve. ☒



REVIEW

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Mobius Institute Board of Certification is ISO 9001 certified and is an ISO/IEC 17024 and ISO 18436-1 accredited certification body that provides globally recognized certification to Category I-IV vibration analysts in accordance with ISO 18436-1 and 18436-2.

Mobius Institute has offices in Australia, Belgium, Costa Rica and the United States, and authorized training centers in more than 50 countries. For more information, call (615) 216-4811 (GMT -5), email us at learn@mobiusinstitute.com or visit www.mobiusinstitute.com.

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