

How to Create a Culture Change in your Maintenance Department

By Ricky Smith CMRP

Is your maintenance crew in a reactive mindset? Check out a list of qualifiers to find out and learn how to change it.

Maintenance Cost as % Replacement of Asset Value (Source: SMRP Glossary)

Replacement Asset Value (RAV) Definition. The monetary value that would be required to replace the production capability of the present assets in the plant. It includes the replacement value of the buildings and the grounds if these assets are maintained by the maintenance expenditures.

World Class Maintenance Cost as a % of Replacement of Asset Value = 2.0 – 3.4%

Typical Maintenance Cost as a % of Replacement of Asset Value = 4.5 – 11.2%

“Cost between World Class Maintenance vs Reactive Maintenance”

It's difficult to manage a maintenance crew effectively in a reactive environment. We're either unaware we're in a reactive mode or we don't know how to get out of it.

The following list of qualifiers determines if your crew is reactive:

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- PM labor hours stay the same (or increase) and emergency labor hours trend upward.
- PM work orders lack specifications, procedures and other data.
- Yesterday's maintenance problems and reliability issues consume 90% of daily maintenance meetings.
- The maintenance supervisor is a hero one day, and a no good the next.
- The maintenance supervisor must work late at least twice a week.
- Maintenance crews don't know what equipment they'll be working on tomorrow.
- The maintenance supervisor routinely expedites parts for emergency work.

- Equipment reliability issues prevent the plant from operating at targeted capacity.

If these points seem too close to home, you're probably operating in a reactive maintenance environment. The challenges and obstacles you face are many. I know, I was there and faced these issues daily. The toughest challenge was a cultural one – my maintenance crew was resistant to change.

Now, as a consultant, I find that in many plants neither Production nor Maintenance feel responsible or accountable for equipment reliability. Instead, the maintenance department focuses its effort on time-based PMs that don't work anyway, doing too much too soon and doing too little too late.

Remember these words of wisdom: “You know you're in reactive mode when you continue to perform preventive maintenance on equipment that continues to fail” or use the one shown below.

Insanity:
“Performing Preventive Maintenance on Equipment that Continues to Fail”

SKF classification adapted from ISO 15243-2004

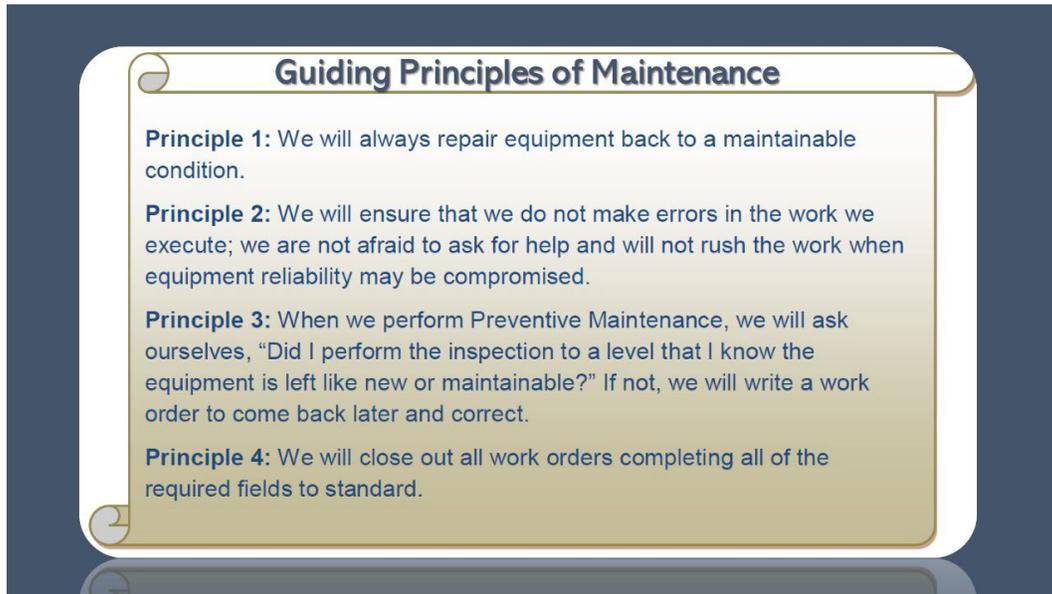
It is all about the “Failure Modes”

- 5.1 Fatigue
 - 5.1.1 Subsurface initiated fatigue
 - 5.1.2 Surface initiated fatigue
- 5.2 Wear
 - 5.2.1 Abrasive wear
 - 5.2.2 Adhesive wear
- 5.3 Corrosion
 - 5.3.1 Moisture corrosion
 - 5.3.2 Frictional corrosion
 - 5.3.3 Fretting corrosion
- 5.4 Electrical erosion
 - 5.4.1 Excessive current erosion
 - 5.4.2 Current leakage erosion
- 5.5 Plastic deformation
 - 5.5.1 Overload deformation
 - 5.5.2 Indentations from debris
- 5.6 Fracture and cracking
 - 5.6.1 Forced fracture
 - 5.6.2 Fatigue fracture
 - 5.6.3 Thermal cracking

Numbering follows ISO 15243-2004 subclause numbers.

Also, I've found some plants never meet capacity projections. In fact, I've seen management formally reduce production projections and even change the name from “projections” to “stretch goals.” Shouldn't we admit that if we have a stretch goal, it really means we don't believe we'll ever meet it? Nevertheless, as maintenance and manufacturing costs continue to rise for no apparent reason, maintenance comes under pressure to do something quickly.

So, quick fixes are tried and tried again, but they never really work reliably. Maybe it is time to establish Maintenance Guiding Principles and follow them.



So how do you get out of a downward spiral and move your crew from reactive to proactive? I changed my crew's behavior by convincing and proving to them that there was a better way – being proactive in maintenance. And, I had to convince them there was an easy way to get there, and they would benefit personally from the change.

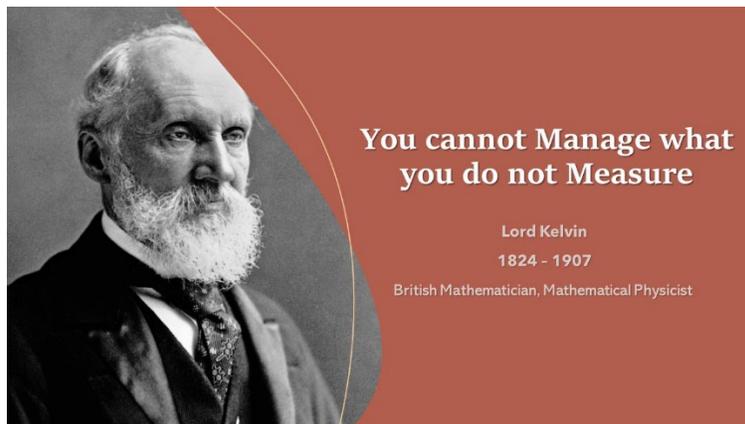
Before starting this culture change initiative, I had to gain support and sponsorship from plant management. The only way to get that prerequisite is to develop a compelling business case. Believe me, it will be compelling – a reactive environment leaves big dollars sitting on the table.

Moving from reactive to proactive will reduce maintenance costs by at least 20%, depending on the severity of the problems. In addition, capacity will increase because you're improving reliability. I've seen asset reliability raise capacity by as much as 10% to 15%.

Then, armed with management support, I needed true believers. I had to prove to my crew that life was better in a proactive environment. To make the biggest impact quickly, we took one of our worst performing assets and focused on changing our process to improve its reliability. We changed the day-to-day activities and behaviors of the people in Maintenance and Operations and ensured that people understood what to do.

The people who operated and maintained the asset owned and executed the asset reliability program, conducting proactive inspections at designated frequencies. We got some expert help in developing the asset reliability program (there are many work identification methodologies available). We didn't invest in heavy statistical analyses, nor did we use an abundance of additional predictive technologies, but we validated those we had in place when we developed the asset reliability program to ensure we were focused on the right work.

Within six months, we had tuned up the reliability and performance of that asset. We put key performance indicators in place to manage the process and kept it going. The team knew they were successful, and they felt great. The change had occurred. Sure, it was only one asset, but now others wanted a ride on our success train.



We found the establishment of a Maintenance Dashboard helped motivate everyone to focus on results along with knowing the “Score” of their actions.



You don't have to tolerate managing maintenance in a reactive mode. Developing a proactive asset reliability program and focusing on a process to implement it is the key to success in changing from a reactive organization to a proactive one.

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