

# 10 THINGS A MAINTENANCE SUPERVISOR CAN DO TODAY TO IMPROVE RELIABILITY

*By: Doug Plucknette, Worldwide RCM Discipline Leader*

A few months back, I wrote a blog resulting from a conversation I had with a group of Maintenance Technicians who were attending the International Maintenance Conference (IMC) in 2011. While the group was enjoying the conference and learning some new things, the general consensus was that they felt they would not be able to apply the tools and techniques they were learning because “management will say they support reliability, but when it comes right down to it, talk is cheap.”

The resulting blog listed ten things Maintenance Technicians could start doing today to improve reliability regardless of the level of support they received from leadership.

Today, I have decided to follow up on that blog with one that addresses ten things a Maintenance Supervisor can do today to improve reliability. Having spent my entire career in the field of maintenance and reliability, I can boldly state that the Maintenance Supervisor has a key role in the health and viability of reliability and continuous improvement in his/her area of any plant site. As a result, it is extremely important that the people working in this role understand how their leadership and behaviors will be the driving force that demonstrates the importance of maintenance and reliability.

That being said, here is my list, in no specific order, of things a Maintenance Supervisor can do to improve reliability.

**1. Focus on Failure Modes** – To those who know me, it's no surprise that I would start here. A failure modes-based maintenance strategy is the only way to ensure the inherent designed reliability of your assets. Yet, time and time again companies around the world attempt to manage and build a maintenance plan by trial and error. The problem with building a failure modes-based strategy is that it takes time, and while there are some things you can and should do to accelerate this process, remember the words “continuous improvement”. As a Maintenance Supervisor, when it comes to failure modes, you need to first understand the term and then begin to use it on a regular basis. You then need to ensure that each of your Maintenance Technicians understands what a failure mode is and how to identify failure modes. Understand that in the past decades, the role of the Maintenance Technician has changed as well; the culture of emergency and demand maintenance has morphed your Technicians from skilled tradespeople into a group of component replacers who are rarely asked why the component failed and are instead reinforced for quickly changing failed equipment.

Your first assignment is to learn about failure modes, and I happen to know where you can get a book that will teach you just that!

**2. Understand Equipment Criticality** – Having been there and done that, one of the most frustrating things to deal with as a Maintenance Supervisor is maintaining a schedule that allows your team to complete planned work, including PM and PdM tasks, while still contending with the unscheduled emergency and demand work. The best way to begin dealing with this is to perform a sound equipment criticality exercise so you can prioritize work based on criticality. You need to make sure that what you are working on is important and a good equipment criticality assessment will do just that. Just as important here, the assessment must be performed by a cross-functional team of people from operations, maintenance, quality, and safety personnel.

**3. Demand Precision Maintenance** – I could write an entire book on the importance of precision maintenance when it comes to operating a world-class manufacturing facility, but for a blog I am limited to a quick paragraph. Precision maintenance has everything to do with how long your equipment lasts, especially rotating equipment: pumps, motors, gearboxes, conveyors, and mixers. Anything that rotates needs to be designed and installed with precision regardless of how fast it turns. Precision maintenance includes precision alignment, balancing, and torqueing, as well as using the right tools and hardware for each job your crew performs. Looking at data from RCM analyses I have performed over the years, as high as 70% of the failures experienced in manufacturing are a result of not using precision maintenance techniques. From gearboxes to proximity switches, if you want it to last a long time, do it right the first time!

**4. Put the Right Tools in the Hands of the Right People** – I have a few favorite questions I ask each RCM team I work with, and the one I ask every group is, “how many of you have your own set of torque wrenches in your tool box?” In 9 out of 10 companies I work with, the answer to this question is, “we have one in the shop, but it’s under lock and key.” The next question is, “when is the last time you used it?” That one is followed up by, “when was the last time it was calibrated?” The concept here is quite simple: if people don’t have the right tools to do their job, they will use what they have available. I also want to say here that about half of the people I ask come back with a reply that even if they had torque wrenches, they would not have the time to use them because they are slower. Really... How much slower? We then begin the RCM analysis and within the first 5 failure modes someone will tell me, “the pulley failed because the bolts came loose from vibration.” Again, really...? When is the last time a bolt from the drive train on your car or truck came loose? Your vehicle vibrates like crazy from bumps in the road, so how come several times a year you don’t have to pull over to the side of the road and get your precision channel locks out to tighten things up?

Precision maintenance requires the right tools; make sure people have them and use them. Your second assignment, purchase the tools and put them to work!

**5. Reinforce the Right Behaviors** – As I stated earlier, improved equipment reliability can only come from identifying and mitigating failure modes and sustaining that improvement will depend on your ability as a leader of this combined effort. As your people begin to apply precision maintenance techniques and also begin to identify the causes (failure modes) of component failures and eliminate or mitigate them, it is important to reinforce these behaviors. Remember, in the past they have been continuously reinforced for quickly putting out fires and getting the equipment running. To change this behavior, you have to reinforce the new skills as they occur and continue to reinforce them forever. The power of positive reinforcement is a skill every Supervisor should have in their tool belt, and the best place to learn and begin to use these skills can be found in

*Performance Management: Changing Behavior that Drives Organizational Effectiveness*, by Aubrey C. Daniels and James E. Daniels. I took a two-week course several years back from Mr. Daniels and can say his brand of leadership had a profound impact on my career.

Assignment number 3, read Aubrey Daniels' book and put this skill set to work!

**6. Stick to the Schedule** – Good maintenance takes discipline and this starts with planning and scheduling work. While the Maintenance Supervisor is neither the Planner nor the Scheduler, he/she must be engaged in maintaining the schedule and working with the operations team to ensure that all necessary work is being completed. This includes daily emergency demand, planned corrective maintenance, and especially PM and PdM tasks. Regardless of what some might want to believe, your Maintenance Technicians will assess your commitment to reliability on how hard you work with operations to ensure that the proactive maintenance tasks are getting done.

**7. Support Your Team** – Remember the conversation I had with the group at IMC? They felt the only thing that was keeping them from using the tools and techniques they had learned was management support. As their leader, you have to fight for the extra time it takes to perform precision alignment, you have to support the PdM data they deliver indicating potential failures and replace the equipment before it fails, and if they don't see you fighting to make sure these things get done, they will revert back to the old bad habits. It is a proven fact that fighting fires pays more when you are a Maintenance Technician. Companies who perform a high amount of emergency and demand maintenance work substantially more overtime. More overtime means more money for the Technician. Some of the people at your plant will even ask why the Maintenance Technicians would want to improve reliability. The answer is simple, good Technicians take pride in their work and they take pride in eliminating failures. You need to be the leader they want to work for!

**8. Demand Good Data and Use it Openly** – Going back to the questions I like to ask as I facilitate RCM analyses, on a scale of 1 to 10 with 10 being the best, how would you rate your company's CMMS? The typical answer here is around a 3 with the maintenance folks, and as I dig a bit deeper I hear statements like "it has never done what they promised it would do, it's confusing, and it's nothing but a black hole. We enter our time, buy what parts we can find, and nothing ever comes out of it." Your CMMS should be the foundation of your maintenance organization. It needs to be able to accurately capture failure history and support effective planning and scheduling by having an accurate bill of materials, equipment hierarchy, job plans, procedures, drawings, and criticality ranking. In most cases, the data that was uploaded to start the process was inaccurate or well short of what is needed to make the system work properly. Your job will be to demand that the system be brought up to par and use it. This again is a huge category, but you will need this tool to support continuous improvement in every aspect of maintenance and reliability.

Your fourth assignment is to find an organization or department that is effectively using their CMMS and start making the changes you need to run your business. More important than this – show the Maintenance Technicians how you are now using the system and getting value from it.

**9. Locate and Update Drawings** – I worked with an RCM team just last year on a machine where the last dated revision on the drawings we used in the analysis was June of 1972. How accurate do you suppose this drawing was? Even more incredible, with today's digital media and software, the ability to store and revise drawings is easier today than it has ever been; yet this is a very common problem. Almost no one has any idea who owns company/department drawings and who is responsible for making revisions. So now, take a drawing that is out of date by several years and as a Maintenance Electrician try to troubleshoot what may have caused your machine to shut down without warning or alarm. The clock is ticking and as each minute passes your machine is no longer making money, yet you are the person responsible for getting it up and running again. What do you do? I can tell you what most people tell me; "I replace components until I find the one that was failed!"

Assignment 5 is to make someone responsible for storing your drawings and make each of your Technicians responsible for making revisions. Accurate drawings are a HUGE time saver.

**10. Be the Face of Maintenance Reliability** – I know, this sounds exciting, especially to a young Engineer who has been thrown into the role of Maintenance Supervisor as his/her first career advancement step. Understand, this job will not be easy, you will be leading a crew of people who typically know more about the process and machines you are now responsible for; those same people also know that you have little knowledge about what they do, how they do it, and if they are any good at it. And, if you don't become engaged in the entire maintenance process, they also know that you will fail miserably at it and you will be replaced by the next young Engineer in line. The key is to become engaged in the process; learn the business by leading your team. I have to say I see this all the time and if I were a young Engineer who was tossed into this role, I would only do so by working directly with the tradespeople as a pair of hands for the first 3 months. You have to know the tools, technologies, and techniques to support them, and if you are not granted the ability to work hand-in-hand, then find a good experienced mentor to guide you. If you are one of the lucky few who cut their teeth in the world of maintenance and reliability before becoming a Supervisor, don't feel too lucky; this same crew will have even higher expectations for you.

So there you have it, two heaping fists full of advice with hopes that you recognize the journey in front of you and that the road you choose is not only important to you, but to those you have stepped up to lead. Here's to a safe and prosperous 2013!