Plant Services

MOBIUS INSTITUTE

4 maintenance myths that are costing you time and money

Unlocking world-class maintenance

In this Big Picture Interview, Drylock's maintenance manager offers keys to PM success and nixing superhero syndrome.

Jason Anderson is maintenance manager at Drylock Technologies, an Eau Claire, WI-based manufacturer of diapers and other hygiene products for children and adults. In May, at a Fluke and eMaint Roadshow event in Chicago, he shared his experiences in helping guide Drylock from a largely reactive, unscheduled maintenance culture to a proactive one where maintenance work is planned, scheduled, kitted, and documented – without losing the support of team members who appreciate the adrenaline rush of emergency repair work.

PS: Your facility went from scheduling almost no maintenance work to having the pieces in place (literally and figuratively) to schedule a full shift. How did you get there?

JA: I started out by scheduling two work orders per tech per shift. That doesn't sound like much, and many people would look at it and say, "That's it? Why so little?" But the biggest reason was going from nothing to something If I gave them 10 hours of work or 12 hours of work for their shift, going from 0 to 12, they're going to say, "That's too much." And so we started out just doing that.

I scheduled two work orders per shift and I just started emailing them out. I wasn't using the work-order system for the scheduling yet because our system at the time didn't do that very well. Emailing them the schedule allowed them to know what to work on, and they got it done every time. Over time I slowly added. At first I only added with night shift, because day shift had so many more people – you had all of the engineering and product development people, so you had more stuff happening; they were already busier.

Then I added the weekend work to their schedules, and then over time I added the day shift, and I started building (our) scheduling up, so instead of doing two work orders a shift, I bumped it to four. I slowly started bumping it up more and more to where we are today. We're far from perfect, but today we have the capability of scheduling a full shift of work when we have it ready.

We're in a fast growth stage right now, so we're growing faster than our labor can support repairs at times, but we have more prepared work now than we ever have before, and that has allowed us to be a lot more efficient with how much work we're managing through the system in any given time and more importantly minimize impacts to production.

You're never going to find a marathon runner that just started running marathons. You have to build up to it. Culture change is really a lot of the same thing. You have to find a way to make it comfortable for people to adapt to the change.

(With preventive maintenance), I've also set a goal with my team where we've tried to break it all up into tasks that aren't longer than an hour. There are times when you can't do that, but wherever you can, what I've learned is the attention to detail and the focus that the technicians put in a job in that first hour is usually much higher than in hour two, three, or four. So by breaking it up into sections, it ensures you're more likely to finish the PM and have more attention to the details in it. We've seen some nice dividends from that change.

PS: What was the reaction of the maintenance team to this shift in strategy and attitudes?

JA: We had some mixed feelings. There were some people who didn't feel it was going to work. The production manager and I agreed to set up a locked preventive maintenance schedule so we assign a block of time every week on each machine. We locked that time every week so on one machine we have a four-hour block of maintenance time every Monday from 1–5. So there's no question in production's mind and no question in maintenance's mind, Monday from 1–5, there's a PM on this machine. Another piece we worked out with production is keeping operators with the machine when it is down for the PM so they're incorporated into preventive maintenance. When the machine stops, they all have work assigned to them as well as the maintenance techs.

You've still got the knights-in-shining-armor-riding-in-to-save-the-day scenario present; there is some natural excitement for some people in that situation. It's a big job; you dig into it; and when you're all done you stand back and you got the machine back running and everyone feels really good that they accomplished this really big repair. I've worked with some folks that missed that hero mentality, and to them the new style doesn't feel like we are accomplishing as much, until they see the numbers, which show significant gains.

More recently we've had some repairs that were urgently needed, and we identified them early enough to plan it and put a team on it. We have a limited amount of time to do the job, so the challenge shifted to, "How do you do this job that's normally six or seven hours unplanned in four hours and still maintain the full quality and integrity of the repair without taking any shortcuts?" I think that has filled the gaps on some of those guys that like that hero feeling. Because now you're saying, all right, we've got a critical PM, this is like a NASCAR pit scenario. You've only got this much time; it's critical it's done right. Tools and parts are kitted on a cart. You guys are set to go, and production's going to page you 15 minutes ahead so you know exactly when they're shutting down. You can take that same type of anxiety and shape it into completing the job in a planned downtime event instead of an unplanned downtime event sometimes twice as long.

At times early on we were firefighting so nonstop that (the technicians) had an impression that the machines were actually busier than they were. We've shown them what our outputs and scrap rates were and how they've changed. Our outputs now are higher and our scrap rates are now lower. So even though it doesn't feel like we're as busy or working as hard, the machines are actually putting out more product at lower scrap.

One thing I've learned going through the process is it's not linear. It's very up and down. If you ask my team this week, they would tell you the gains we've made are a lot different than what they would have told you even two weeks ago. It's important to step back and look at your indicators. Your short-term ones are telling you one story, and your long-term ones are telling you another story. Ultimately between the two stories, are you making the gains that you want, and if you're not, what influencers are preventing you from it? ☐

4 maintenance myths that are costing you time and money

Don't let misinformation ruin your reliability program.

Running a maintenance department can sometimes feel like an unending game of Whac-A-Mole. Every day, it sometimes seems, a new problem arises that needs to be addressed. But with a strong condition monitoring program in place, you can address emerging problems before they result in failures and communicate the importance of equipment reliability to the rest of your plant.

In a recent Plant Services webinar, Jason Tranter, CEO and founder of Mobius Institute, explored the maintenance myths that are preventing plant workers from properly understanding and repairing their equipment.

Jason Tranter, CEO and founder of Mobius Institute

Myth: If the maintenance department was good at its job, then machines wouldn't break

The maintenance department has a very important role to play when it comes to machine performance, but everyone at the plant is responsible for reliability, from the design process through to production. Before the equipment is even installed, we have to make the right decisions to help prevent future failures. We must make sure:

- The design is correct
- Cheap spares are not purchased
- The machine is in working order before it arrives at the plant

Once the equipment has reached the facility, it must be protected from a range of additional factors that could cause failure. This includes:

- Contaminated lubricant
- Installation of damaged or incorrect parts
- Incorrect installation
- Unnecessary PMs
- Inexperienced or poorly trained contractors

To be successful, you need to establish a culture of reliability. You need to design and make purchases with reliability in mind as a priority.

Myth: Equipment wears out. We just need to replace it before it fails

Once they've escaped the reactive maintenance cycle, a lot of companies jump on the preventive maintenance bandwagon. They reason that bearings, for example, are going to fail, so they might as well just replace the bearings every few years or so before the bearings fail. They'll replace the bearings, and other equipment, during a scheduled shutdown, believing that they are getting ahead of their problems. Unfortunately, that is inaccurate.

Ninety percent of failures are not age-related. So when you perform maintenance tasks based on equipment age or the number of production cycles, you may not only be not wasting time, spares, and production time, but also you can also be inducing failure. During scheduled shutdowns, many people perform maintenance on equipment that is operating perfectly, only to have the machine fail shortly after starting back up. These instances are called infant mortality failures. Often, it is better leaving functioning equipment alone, as long as you can perform a test to see that it's in good condition.

To learn more, watch the on-demand webinar: https://info.plantservices.com/webinars-2017-mobius-how-can-you-improve-reliability-overnight-mnt

Myth: We don't get much warning before equipment fails

There is a misconception that machines just fail out of the blue, and that's not the case. They usually give us plenty of warning. One day your equipment is operating normally, delivering the service you expect, and then, without your even realizing it, a defect is initiated from contaminated lubrication or improper operation, etc. This does not mean, however, that your equipment will suddenly fail. All that this means is that there is now potential for that machine to fail, and we can detect it.

You can use condition monitoring technologies to warn you that a machine is in distress. Rotating machinery, for example, will emit a high-frequency vibration for months – even years – warning that a bearing is starting to experience problems that will lead to failure. This warning allows us the time needed to order the spares, plan the work, and schedule the work for the time that suits us. The earlier we detect and deal with the problem, the lower the risk and the costs.

Another way to detect potential problems, especially on electrical equipment, is through temperature differences. We can perform special tests on motors, for example, where we can look at the voltage supplied to it, the health of the stator, the rotor, the windings, the connections, and other things. We can see what's going on and be forewarned about problems, all while the equipment is running.

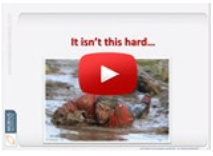
Myth: Condition monitoring improves reliability

Condition monitoring can be extremely beneficial, but it doesn't improve equipment reliability. Think of condition monitoring like visiting a doctor. The doctor tests your blood, checks your reflexes, takes your temperature, and much more. But undergoing these tests doesn't make you any healthier. It's only once you make changes to your level of fitness, begin eating better, or take a new medicine that your health will begin to improve. Condition monitoring is great, but we need to do more than just monitor the equipment. ◻

Additional Resources

FIVE ESSENTIAL ELEMENTS OF A RELIABILITY INITIATIVE

Building a reliability improvement initiative is not rocket science, but there are five key elements that are required to ensure the program will achieve the greatest benefit and be sustainable. Can you just focus on maintenance? No. Can you pass the buck to consultants? We don't think so. In this Webinar, we will reveal the five elements, justify why they are so important, and explain why (in our experience) the best programs are driven from within.



CLICK HERE >> http://bit.ly/2rW7neo

CONTAMINATION CONTROL: THE KEY TO GEARBOX RELIABILITY

If you are not controlling contamination of your lubricants, then you cannot achieve the maximum service life of your rotating machinery or your lubricants. Using lots of 3D animations and animated illustrations, this presentation will focus on gearbox lubrication, explaining why contamination reduces the life of the gears and bearings (and the oil itself), how much the service life is reduced, how to reduce contamination, and how to remove unavoidable (and avoidable) contaminants.

CLICK HERE >> http://bit.ly/2qNGSKl

BEARING FAILURE, DETECTION AND PREVENTION

In this webinar, we discuss the most common reasons why rolling element bearings fail, including lubrication problems, lubricant contamination, excessive loading, and installation and handling. Next, the webinar summarizes how a variety of condition monitoring technologies can be utilized to determine the condition of rolling element bearings, including basic and advanced vibration analysis, oil analysis, wear particle analysis, and thermography. And finally, and most importantly, we discuss how to make changes in order to extend the life of rolling element bearings through precision maintenance techniques.

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E-LEARNING: ILEARNRELIABILITY [ENTERPRISE]

iLearnReliability [Enterprise] provides reliability improvement training for reliability professionals, an entire industrial facility or your whole enterprise. iLearnReliability is unrestricted, online training that provides strategic guidance, plant-wide buy-in, and skills development. iLearnReliability™ includes awareness training for plant management, reliability program manager and technical skills training, and toolbox talks to build support and buy-in from the plant floor. Now you can now make "Reliability a Reality".

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