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Looking for ways to do a lot, lot more with a lot, lot less? Here's a personal perspective on how to start things rolling in a big way.

Anyone involved in maintenance and reliability knows that for every issue, there are probably one or more programs, tests, techniques, acronyms and/or buzzwords, among other things, that should remedy the problem. For example, reliability engineers are expected to: find the root cause of failures; increase MTBF (Mean Time Between Failure); decrease MTTR (Mean Time To Repair); boost equipment output; reduce maintenance spending; improve OEE (Overall Equipment Effectiveness)...These types of things reflect the technical aspects of our business; they're our focus. If, however, you're working on the managerial side of maintenance and reliability, you have a number of other things on your mind as well.

Besides *managing* the technical side of maintenance and reliability (see above), you're also probably managing budgets and people, or, to be more specific, managing the allocation of maintenance hours. That's a game-changer. While the overall goal may be the same—*increase reliability, fix things faster, spend less, etc.*—the buzzwords are different. The key phrase? "Do more with less."

I speak from experience. During my stint in a managerial role, I dealt with personnel cuts, resource reallocation and bringing on new hires. In light of market conditions at the time, overtime was essentially not allowed. Pieces of equipment were temporarily taken off-line, which meant the other equipment had to run more reliably in order to meet the required production. To top it off, the mix of product steadily increased in size and weight, putting more strain on our already stressed, older equipment. I quickly realized that too much work was left at the end of my available maintenance craftsman hours. I was pushing people to not only fight all the fires, but to make things better. Still, there were just too many equipment failures to deal with.

For us, time to make improvements was much like the Loch Ness Monster—*it rarely surfaced, and when it did, only a few people were around to see it*
. Those lucky enough to "catch a glimpse" were rarely prepared to deal with it. That's when it hit me: My singular goal was not just to extend the time between failures (or engage in some other narrowly focused mission). It was to somehow "steal" craftsman hours back from the inefficiency of firefighting, and use those hours to begin building a snowball of progressive improvements.

The snowball effect

Times are tough all over. The economic slump has hurt most sectors. Those of us in the maintenance arena need to ensure that we're using those resources that we have managed to retain in the most efficient and effective way possible.

All the acronyms, programs, techniques and technologies need to be viewed in the perspective of the "snowball effect." If you can implement a technology that makes a piece of equipment run just one hour longer between failures, that one craftsman hour may be used to implement an equipment modification that leads to increased production capacity. The increased production capacity may allow slightly more production flexibility and, combined with the available craftsman hour, may allow for more in-depth and/or more accurate preventive maintenance (PM) tasks—*even, perhaps, open up an opportunity to just do a PM*. You can see the pattern.

Where to start

If your maintenance department is like most, trying to squeeze some time out of your team's days to implement some great new "something or other" might seem virtually impossible. It's not.

To start, put your attention on items that don't require much in terms of workforce time-input or budgetary expenditures. As improvements are made and the results realized, more time- and dollar-intensive projects can be implemented. For example, if your MRO stores have always just "been there," you may be paying unneeded up-charges to "overnight" parts when critical machinery fails. A review of your critical equipment with respect to spare parts may reveal some glaring discrepancies that could lead to large, unnecessary costs in the form of lost production, downtime and the price of and/or expediting of parts. Savings from those things alone would most likely pay to ensure that the parts are in stores when you need them.

That said, what are some things you can do to help boost the effectiveness and efficiency of your maintenance workforce? First, know your equipment. This is essential in being able to concentrate your efforts where they make the greatest impact. After that, the possibilities are virtually endless. It all depends on how "outside the box" you can and are willing to think—*and how far outside that box you are allowed to go*
. Here are a few idea generators:
n A thorough analysis of PM tasks can help eliminate antiquated, unneeded and, in some cases, "knee-jerk" tasks. Such an analysis can also help ensure that
any missing tasks that would add value are put into
the system.

- As mentioned previously, a project that ensures the right number of the right kind of critical spare parts are on hand can eliminate a lot of unneeded resource expenditures and unnecessary loss of production.
- Automating aspects of maintenance through the use of tools such as automatic lubricators can recoup small amounts of man-hours that will add up to a sizeable amount of "extra" maintenance time per year.
- A more costly example would be installing real-time analytical tools, such as vibration transmitters, temperature probes/monitors, flow and/or pressure switches or on-stream lubricant moisture sensors. The real-time analysis can help an organization catch and/or track undesirable conditions, a slow-progressing failure, a major upset or an impending catastrophic event. This allows for the repair or replacement of equipment before an unexpected failure occurs—or, at least, allows for a plan to be developed to calmly and systematically handle a failure should it happen.
- Transforming small maintenance inspections and tasks into operator-based maintenance tasks (with necessary training) not only can get craftsman man-hours back, it could also lead to improved information collection— *operators typically being in day-to-day contact with their equipment.* Such tasks could include checking oil levels, match marks, alignment settings, etc., as well as making minor adjustments, adding oil or grease and tracking machine conditions through the use of analytical tools. This approach can be taken in both union and non-union environments.

The previous bullet points are just a start. The list of strategies for capturing and eliminating inefficiencies goes on and on. Like anything, the more you put in, the more you get out. If resources are limited, focus on the biggest bang for your buck—*and know the initial returns may be small or slow.* This is the
snowball effect...

Start rolling
You just need to get your snowball rolling. Over time, it will develop into an avalanche of

recovered man-hours, reduced costs and improved production. With limited resources, make sure you don't waste your time on the smaller things, or on trying to perfect a project like a PM task or spare-part optimization to the nth degree.

Also remember that you can't do this alone. The phrase "pushing a rope" is very apt. You must have buy-in from all parts of the organization. If management doesn't buy in, you'll have no backing. If the operations or production side of your business doesn't buy in, you'll have a hard time implementing anything at best, and may create an adversary at worst. Finally, if the maintenance organization doesn't buy in, implementation of anything could be difficult and slow—*and improvements could be doomed to failure.*

Develop a plan. Think into the future, as far you can with what you know. Envision your defined goal, and tailor the actions to achieve it despite your work constraints. As you develop your plan, make sure you are working with all stakeholders in the organization to promote understanding, build relationships and gather input. A little "politicking" goes a long way. Present the goal so that those affected by it want to follow you-—*that's true leadership.*

Remember, typically the less a project costs in terms of craftsman hours and maintenance dollars, the more time and energy it requires of the reliability engineer and supporting staff. Steel yourself. It may take lots of personal input to propel your small snowball in the right direction. Still, if you stick with it and bring the organization along, the result will be of a size, shape and momentum of which you can be proud. **LMT**

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