Looking at your world from a vastly different perspective can be an eye-opening experience. The right maintenance move isn't always the most obvious or the one based on 'gut' feelings.

Like many other admitted golf addicts, I've struggled endlessly over the years, through frustration, embarrassment, weeping and, of course, the painful gnashing of teeth, trying to learn how to play the stupid game. I've gone through all of that just to get to my current level of questionable competence.

Probably the biggest part of this struggle—*apart from my overall athletic nothingness and lack of hand-eye coordination*—has been my need to accept the fact that so much in the game of golf is counterintuitive. "Hit down on the ball to make it go up," for example. How obvious is that? And even if I can manage to accept this as plausible advice, how do I actually make myself hit down on something to make it go up?

Does counterintuitive work?

Something deemed "counterintuitive" means that it's backwards to what you think it should be. It's the opposite of what the common-sense approach would suggest to do. It's just not "natural." (According to my wife, golf is not natural. She says there's no natural reason for it.)

Counterintuitive ideas don't normally occur to most people, even the really smart ones. That

means you may never get one on your own. You'll need to learn it from someone who knows what they're doing. And you will likely have to force yourself to do it because most of the fibers of your being will be screaming that it's wrong, wrong, wrong. And you probably still won't believe it, until you yourself, personally, actually see it work.

Obsessing about the counterintuitive nature of golf (no kidding) led me to begin thinking about the counterintuitiveness of other things in my life—*including my work in the field of proactive maintenance (PM)* . To that end, I soon began to see that the biggest reason PM processes don't occur naturally in our world (and when they do occur, often have trouble being sustained) is that they're almost all counterintuitive. Examples include, but aren't limited to:

1. Replacing parts before they actually break or even begin to exhibit problems.
2. Taking the best mechanic out of the work pool to do administrative work planning.
3. Encouraging mechanics to spend time on inspection instead of repair work.
4. Having mechanics spend time documenting what they did.

Do any or all of these counterintuitive actions take place in your operation? Let's examine each of them more closely.

1. Replacing parts before they actually break or even begin to exhibit problems…

To many, this is just flat-out wasting of money. If something is still functional—*even just sort of functional* —why on earth wouldn't you want to get every minute of life out of every part that you can? It doesn't begin to make sense until someone explains the reasoning behind it. This may include references to:

- How much downtime will be caused when it does fail?
- How long will the inefficient emergency repair process take, if the part is in stock?
- What collateral damage will the part failure cause to other parts of the machine?
- What collateral damage will the part failure—*or just a worn part*—cause to product quality?
- What's the increased potential for compromised oper-ator safety when operators are required to compensate for poor equipment performance (and what about the time they lose doing this when they could be more pro- ductive doing something else)?

I've had relatively easy discussions on this topic with well-meaning mechanics who simply didn't want to waste company money by replacing parts that seemed to be working fine. I've also had much more difficult conversations with managers whose ability to grasp the concept of replacing a part before it fails did not exist. Admittedly, making parts-replacement decisions can be a judgment call, but evaluating the downside risk tells you which way to go.

2. Taking the best mechanic out of the work pool to do administrative work planning…
This is one of the toughest decisions to make. Why, despite what investment bankers and hedge-fund managers earn, doesn't everyone know that administrative work has far less value than physical work? This flawed perception—*or urban legend*—has become almost a core ideological belief in many societies.

In the real world, though, we know that taking one mechanic—*just one*—out of a pool of 10 and allowing him/her to organize, plan and schedule work for the others can potentially raise the group's productivity by the equivalent of adding six mechanics. While the lack of respect for the worth of administrative work planning may be a gut-level feeling that's hard to get over (especially for new planners), the value of such planning is proven across industry every day.

3. Encouraging mechanics to spend time on inspection instead of repair…
Some would argue (actually many, in my experience) that inspecting isn't actually doing anything. So, how can a plant afford to have people on the payroll who only inspect instead of perform real repair work? After all, wasn't one of the big realizations in quality improvement that we needed to get away from inspecting quality into the product and, instead, fix the process to eliminate the defects? (That's a counterintuitive conclusion, by the way.)

The point to remember is that in Quality work, we *always* monitor and test attributes of the product as a part of process control. Make no mistake: This type of activity is not the same as inspecting quality into the product by simply removing those with defects. In maintenance, we are inspecting in many ways to determine if defined levels of deterioration have been reached. And, just as our revelations in quality-improvement have demonstrated, we have learned that we can inspect less when our inspections show us what we need to do to improve the process— *and follow through on it.*

The inspection process is constantly changing as equipment is improved or different failure conditions are identified. Identifying equipment deterioration issues leads us away from having to make the same repair over and over and, instead, work toward eliminating the causes of

deterioration. Without constant awareness of equipment condition, there will be surprise failures. With surprise failures, equipment availability is always questionable and maintenance costs are out of control.

Then there are the needed repairs that can show up during PM inspections. In these cases, the urge often is to jump right on whatever needs to be fixed (since the crew is there anyway) and forget the rest of the PM. This makes sense, doesn't it? It certainly *feels* like the right thing to do. The problem with this approach is not the desire or action to fix problem on the spot: It's the "forget the rest of the PM inspection" part. If a repair is crucial, we need to find a way to get it *and* the rest of the PM done in a timely manner. Later, after everything has been taken care of, we can take the time to determine how that surprise failure could have been eliminated.

4. Having mechanics spend time documenting what they did…

This is often viewed the same as the previous situation: Mechanics should be out there fixing things, "supporting production," not uselessly writing or entering information into a computer. Besides, the rationale often goes, they're not good at data input because they hate doing it.

In my experience, the principal reason mechanics hate entering data is because they've learned it's frequently a waste of time: Nobody ever does anything with the information except ask why the job took so long, with so many people, and why wasn't it done differently. Sure, mechanics can be forced to enter data, but most people aren't good at mindless obedience. Conversely, many of them excel at mindful *disobedience* when told to do things they don't see as having any value.

When people see information actually being used to make a job easier or identify how to eliminate the need for a repair or reveal a need for additional training—*and they are involved in that use*—then it has value. And their collection/documentation of this data is not perceived to be a waste of time. If people struggle to enter information by hand or into a computer, allowing them to review it with somebody who's good at documentation is an effective way to get the job done. Actually, data entry doesn't really take that long—*and it's a key part of the continuous-improvement journey.* As someone once observed, "You can't get to where you want to go if you don't know where you're at." While nobody really knows who said that, in the maintenance world, it's safe to say that documenting is the only way to find out where "at" is.

Knowledge is power

Resistance to counterintuitive con-cepts can be strongest in times of crisis. For some operations, this is an everyday condition. As most of us have experienced, crisis situations typically don't come with much time for analysis. You can't gamble on a solution that may be wrong. Instead, you have to go with what your gut tells you is right—*or your boss directs you to go with his gut feel.*

In his book *Blink*, Malcolm Gladwell discusses the merits of trusting those "gut" feelings. The mind holds lots of information, he says, and processes it subconsciously. Gladwell offers many famous examples of successful gut-trusting. But he also gives examples where the subconscious got it wrong for various reasons. He makes the point that for gut feelings to contribute effectively to decisions that lead to successful outcomes, the subconscious requires a database of relevant knowledge and experience. This must exist somewhere in the brain for access by the gut-feeling mechanism. If there is no relevant knowledge in the brain, then the decisions coming from that uneducated gut aren't worth a whole lot.

This returns us to the challenge of implementing counterintuitive thought processes in a maintenance culture. Many people are uncomfortable with counterintuitive concepts because they upset and cast doubt on core knowledge and thinking processes. No one likes to question the basic stuff they cling to—*even when the clinging appears desperate, such as in trying to retrain an old golfer.*

Based on all this, moving to proactive maintenance and staying there means being able to continually convince all those above and below you that counterintuitive activities are the right thing to do. Realize that this will never be obvious to anyone (except those in the know), nor will it ever be an easy sell. To make your case, you'll need lots of true stories, lots of testimonials and lots of other believers willing to support your approach. Above all, you'll need lots of current money numbers that show continuous progress. These must indicate how effective maintenance and improved reliability can:

- n Decrease downtime.
- n Reduce the cost of maintaining equipment.
- n Improve quality and overall customer service.

Also, be prepared to emphasize that the high cost of poor, ineffective maintenance can no longer be tolerated. As another unknown soul so aptly put it, "Good maintenance costs time and money. Poor maintenance costs a lot more time and a lot more money." That's a great

statement and, to some, probably completely counterintuitive. **MT**

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