Written by Bob Williamson, Contributing Editor
Saturday, 01 December 2007 00:00

Bob Williamson, Contributing Editor Maintenance & Reliability is, and has been, a woefully overlooked career. We need our nation's best and brightest young minds in Maintenance & Reliability careers NOW! What are we doing to attract and retain them?

What are we doing to train them to maintain the highest levels of equipment performance and reliability? What are we doing to promote pride in workmanship? The situation in many plants is already dire…and getting worse. You can see, hear and sense it everywhere, especially out on the plant floor.

Who's got time for training

"I learned this job years ago from one of the best. I was under his wing for nearly eight months learning all the aspects of the precision work on this one type of machinery. In the 35 years I have worked here, I have never seen such a lack of training of our new guys. They get a few days training at best. Why, we even have some of the new employees teaching the newer employees how to work on this equipment. Pretty scary if you ask me! Most of them have never even seen the manual that came with these machines, the one that I learned from years ago. The only copy we have now is locked up in the maintenance office. Doesn't anyone in top management care anymore?"

The skilled mechanic quoted above was truly concerned. We had just discovered that another mechanic at one point cranked down on one of the precision adjustments so far that it badly damaged the machine. The procedure in the equipment manual was not followed. Even though it was still running and making acceptable parts, the $10,000 precision cylinder had been scored beyond repair and there was no spare in stock. After a 12-week estimated delivery time, it would take several more days to replace the damaged parts.

We've always done it that way

In another plant, I noticed that four finethreaded machine adjustment bolts had been beaten severely with a hammer. They were so mushroomed that a wrench would no longer fit. ("That's why we have Channel Lock pliers.") Logically, and mechanically, any adjustment had to be made by turning the threaded adjusters. No other movement was possible. When asked, the mechanics all responded:

"Why do we hit the adjusters with a hammer? That's the way we were taught. I guess we've always done it that way."

We couldn't find the manual

A one-year-old machine's programmable controller was operated with a touch screen panel. While working on a processing line that fed this final stage unit, we noticed a gaggle of people gathered around the panel poking at it. Then they just wandered away. As we attempted to start up the machine, we discovered that the program had been erased and the machine would not cycle properly. Searching for the machine's O&M manual, we discovered it underneath a workbench…and half of it was missing! As one individual later explained:

"Somebody must have messed with the program, again. If you touch this icon, then this one, it erases the program. I figured that out the hard way since we've never really had training on the programming controls. The manual has some of the control panel information, but it's still not easy to understand."

Sure we do regular preventive maintenance

During a hands-on PM workshop on a large integrated manufacturing line, one person discovered a loose bolt (no, it was not a maintenance person). Upon further investigation, we discovered that only one of the four bolts holding this unit together and in alignment was actually in place. One was missing, another one was completely broken off and a third bolt had the head sheared off. The remaining bolt was doing the work of four and was the only link between full operation and catastrophic downtime. After two hours of disassembly and repair, the broken bolt problems were corrected. The situation, evidently, came as surprise to at least one staffer:

"I don't understand how we could have missed that one. Our monthly PM was just completed a few days ago."

What's changed

We are in the midst the "de-skilling" of the American industrial workforce—not by design, but by default. It's not a new phenomenon either. This frightening trend has been overlooked by far too many of our business, government and academic decision-makers for far too long. We are at a near-critical point-of-no-return as the critical mass of skilled and knowledgeable people leave today's workplace. Too many of today's maintenance, reliability and operations personnel have not been adequately trained and qualified to do the jobs they are asked to do day in and day out. Many, if not most, younger and newer employees may not have the same basic skills and knowledge as those whom they are replacing.

Unfortunately, today's decision-makers often ASSUME the fundamental skills and knowledge that were "common" when they began working 30-plus years ago are the same today. While we hate to be the bearer of bad tidings, these decision-makers are sorely wrong! There has been a fundamental paradigm shift and it is hurting our capital-intensive industries' performance and reliability.

Think about it. How many of today's older teenagers and twenty-somethings ever have:

- Built a birdhouse, a utility box or a shed?
- Changed the oil and filter in a car or truck?
- Disassembled a lawnmower, a motorcycle, a jet ski or a snowmobile engine, put it back together and have it run?
- Assembled a radio, a computer or an electronic robot?
- Glazed a wood frame window?
- Rebuilt an automobile engine?
- Made something useful on a lathe or milling machine?
- Owned and used a set of mechanic's or carpenter's tools?
- Used a volt-ohmmeter to check a circuit?
- Welded an angle iron frame or built a metal stand?
- Soldered copper tubing or brazed steel tubing?
- Installed and wired a doorbell?

Not many parents spend time with their children and teenagers making things, building projects or doing repairs around the home these days. Many of the fundamental skills and knowledge we took for granted in the 1960s, 70s and early 80s are apparently no longer valued. Luckily, there still are some very good high school vocational programs out there and some very good post-secondary technical colleges too—despite thousands of schools and programs being

closed over the years. But, there simply are not enough schools and programs to address the problem we have now—a problem that's going to get worse before it gets worse.

An overlooked career

As shown in the findings of our 2007 Salary Survey beginning on page 38, Maintenance & Reliability technician jobs can pay quite well. Some industries pay in the $30 per hour range and higher. So, why do countless newly-minted high school grads take jobs that pay less than $10 per hour—and, hop from job to job for years until they find their niche? Why do they go on to a four-year college to try and figure out what career they want to pursue in life? (If you are asking me, that is really an expensive "career education" program!)

We should promote careers in Maintenance & Reliability (not just "maintenance jobs")! Clean up the workplace and give career-day tours. Help teachers and students understand that good money can be made in a rewarding career with a one- or two-year technical degree. Begin attracting the best and the brightest. Offer high-school cooperative education experience in your plant.

Trainers and coaches

Recruit a few of your senior, highly skilled maintenance personnel to be trainers and on-job coaches. Have them dedicate time documenting proper maintenance and reliability procedures for your critical equipment. Set new expectations; insist that critical maintenance tasks follow "standard procedures" or "standard job plans." Train everyone who needs to know—everyone who touches the critical equipment—to follow these new standards. Then, hold everyone accountable for following these procedures. Problems will begin disappearing!

Show everybody that you care about how your equipment and plant are maintained. Be proud of your workmanship. Share a positive vision for careers in this arena. Let's make 2008 the year of "Transforming Careers in Maintenance & Reliability."