Reliability Solutions for Industry with a Human Touch

The SAMI Times

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The President's Corner

What Makes a Professional?
The Plus Factor…

Over 700 people attended SMRP's 10th annual conference in Nashville this year. We were delighted when 225 attended the first conference back in 1993. With 10 years of observing the people who attend, what have we learned?

People who come are hungry to improve. The **plus factor**—taking the next step. They wish first to improve their capabilities, and secondly to impact their organizations. There is a cause and effect cycle going on here. SMRP, among many venues, has been useful and successful in being a causation factor in improvement.

You, as a reader of this message, are likely to be involved in maintenance and reliability activities. You expect to gain some insight, and display this same hunger.

Are you a professional? Is there a definition of what that might be?

Look around our society. The term professional conjures up such vocations as physicians, dentists, attorneys, nurses, physical therapists, athletes (especially those who make a ton of money!) and engineers. What do they have in common? They have:

- Been highly educated at their skill (a football player typically plays junior high, high school and college—10 years like a board certified physician)
- Passed professional examinations (athletes go through trials & camps)
- Received recognition from peers through certifications & licenses
- Maintained ethical standards or risk their ability to continue to practice
- Participated in continuing education

What is their benefit? Respect from their community, their peers. Improved financial rewards and security. And possibly the satisfaction of improving the world they live in.

Okay. Is there, then, such a thing as a Maintenance & Reliability Professional? Which of the qualifications do we share with those professionals listed above? Not many! In the past maintenance has been a place for training for *real* manufacturing jobs. Perhaps a place for staff unqualified for other jobs. But the world is changing. The ignorance and apathy that characterized the manufacturing executive's view of M&R a decade ago is turning into a demand for greater performance.

S. Bradley Peterson
SAMI President

We might do well to remember that physicians were once considered "Sawbones" and "Leeches". But they organized around bodies of knowledge to become professionals to serve society (and to increase their own financial security). It is possible, through organization and passion, to raise the level of professionalism (in every sense of the word) for a group.

Again, is there a definition of an M&R Professional? Yes, there is. Professionalism, for you the reader has been defined by the SMRP Certifying Organization (SMRPCO), a group under SMRP that has developed standards for competencies and a certification vehicle. These are specifically:

Competencies in managing:
1. Manufacturing
2. Maintenance
3. Reliability
4. Personnel
5. Business

And, becoming a Certified Maintenance and Reliability Professional (CMRP), by passing the CMRP examination administered by SMRPCO.

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We are a consulting group for industrial organizations working to improve profitability, efficiency and equipment reliability. Our Mission is to improve our clients' production equipment health, by tapping the desire, creativity and dedication of all plant staff, and our vision is to be the firm consistently chosen by companies serious about making change; because our values of integrity, content knowledge, advanced practices and compassion for the workforce match the values of our clients.

The Operational Reliability Maturity Continuum:
Part 10 Work Closure & Documentation

By Dave Army

At last, the work has been identified, prioritized, scheduled, planned and executed. Whew, finally we're done and on to the next task. Not so fast, I say.

Probably the least understood and under appreciated step in an advanced Stage One Work Management Process is that of Work Closure and Documentation. Why would I say this, you might ask? Well, if you have truly conquered the step of identification, scheduling, planning and execution, you are probably ready to tackle Stage Two objectives (Proactive Maintenance). However, in order to understand and institute proactive strategies for critical equipment, where do we start? The answer lies in understanding equipment history and the how and what of past failures. This information is not generated automatically. Some of you may think that by employing an advanced CMMS (Computerized Maintenance Management Systems) that in fact, this information is readily available. Not without accurate input. This input usually and correctly starts with the craftsmen performing the work.

Think about it, the craftsmen have, if successful, corrected an equipment deficiency. They have analyzed (in spite of the best efforts of planning) the failure and applied the correct adjustment or replaced failed parts. They are in the best position to perform the preliminary failure analysis and identify what it took to correct the problem. We had best make use of their intelligence, if we wish to learn, as an organization, from their experience.

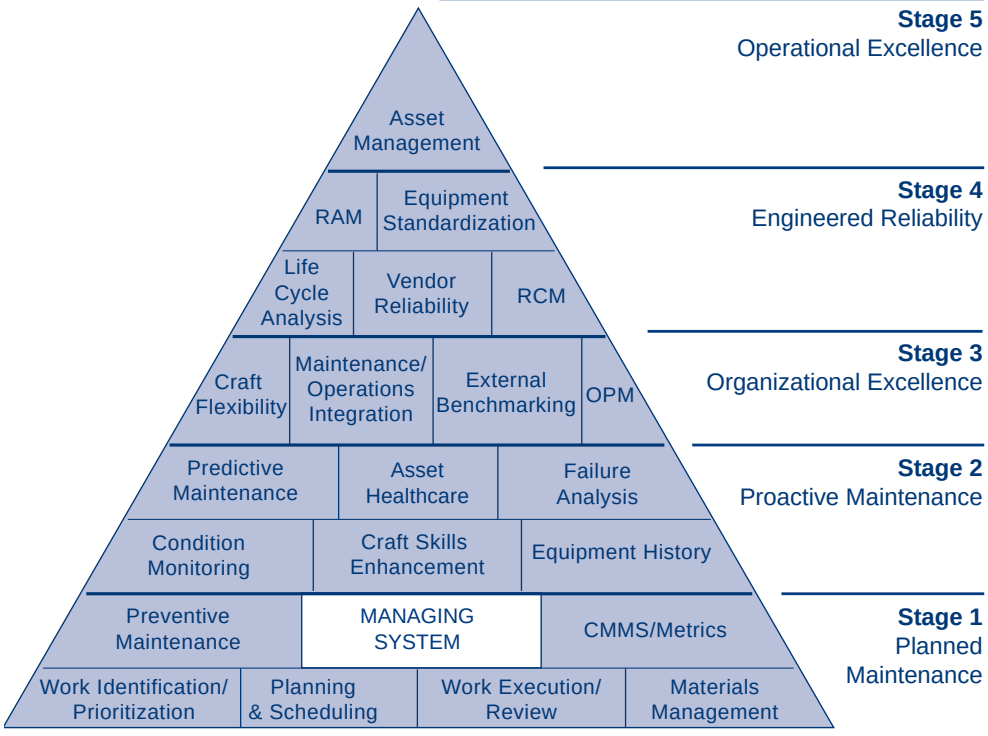
How best to gather this intelligence? Well, there are a couple schools of thought. One says, have them (the craftsmen) write it down somewhere. Then the supervisor attempts to interpret the handwriting, either enter it into the CMMS or have a clerk make the entry. The second school says, have the craftsmen enter the information directly into the CMMS.

I would agree with the second school of thought with some minor revisions. First, organizations have to get over the concern that crafts level employees will only mess up the database. After all, we are living in the 21st Century. Most of us have been using computers for the better parts of our lives. I have seen managers that have accomplished terrifying things with data entry. Anyone born before me should have a good working relationship with computers. The second issue is trust. I strongly feel that if the craftsmen are given the opportunity to understand the importance of appropriate and correct data entry at the end of a job, then they will provide that information. People want to do a good job, but it helps if they understand the how's and why's.

Once we have gotten over that barrier, what do we need (not want) to know? I have developed a pretty short list:

1. What did you find?
2. What did you do to correct the condition?
3. How long did it take?
4. What parts did you use?
5. How can the work plan, procedure, instruction be improved?
6. What was the cause of failure?
7. How did you leave the equipment?

All of this information can be included as part of the closure section of the CMMS. I would strongly recommend that craftsmen be given introductory training in failure cause determination. They need not be trained in rigorous root cause analysis techniques. However, they should understand what the failure codes mean, and how to apply them in a consistent manner. Once trained, expectations should be set and followed up.



Here is a last caution. As with the level of planning, not all activities deserve the same level of documentation. Simple activities can be treated as such with minimum documentation. However, as tasks increase in complexity, so should the documentation. Armed with an understanding of "what happened" to the equipment will make it much easier to determine how to develop the correct proactive strategy for your equipment.

Assessing the Current State of Things
Part 1

By Ralph Hedding, PE

Sometimes you know where you're trying to get to and the path may seem clear, but once on the journey you can get a lot of surprises. I was about to jump into another major restoration project on a 1975 TR-6; I've already done several so what could be different this time? To make a long story short, after pulling the engine I discovered that I have some frame damage and to fix this, the car has to be loaded with all its bits and pieces to get the proper geometry and alignments before I start welding repair sections. So the engine has to go back in. I didn't take stock of where I was to begin with even though the end state was clear in my mind.

A number of recent clients seem to have had similar experiences with this same mind-trap in pursuing initiatives to improve their overall asset reliability. There is a certain amount of restlessness in many managerial circles to "get on with things." Some have insisted that we jump into implementing new processes without the benefit of at least a cursory view of where to start. In the near term, implementation is usually delayed as we "put the engine back in" to survey what we have to work with. Or perhaps, these managers have not been sure just how to go about sizing-up the situation, possibly looking at the wrong items. It's not unusual that an in-house assessment will focus on the implementation of the business processes themselves without regard to the effects that these processes are having out where the work needs to get done. Any of these approaches will needlessly slow down their "restoration" work.

There is a strong linkage between a proper current-state assessment and the successful implementation results of any improvement project. This is more then a synchronistic adage or just a significantly related pattern of chance. Time and again, we find that current state knowledge allows us to utilize the good things that we find at a client site, what needs to be discarded, and which components can be rebuilt to a state better then OEM. This then provides the quickest path between where they are and where they want and need to go.

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I alluded to the fact that many organizations attempt to analyze their processes. So what's wrong with that approach; isn't that what SAMI does? Well, yes and no. We certainly assess the current processes to understand how all of the various interrelated pieces work and work together. But, there is much more to this than just process mapping. In fact, as we start our assessments, the processes are not where we begin at all; we begin with the people of the organization. Since the basic premise of performing an assessment is that changes are most probably required, the logical starting point is with the people. It is the people that will have to affect the necessary changes.

The beginning of the assessment process consists of "focused" interviews with a cross section of the organization from the site manager down to the tradesmen. The content of these special interviews is not to discover what these people do on a day-to-day basis, but rather to take their pulse on topics ranging from how important is it to change the current state, how successful can this organization be in changing, is the time right for change, where are the barriers, what groups could interact better, and how large is the potential for successful change? None of the questions has much to do with the current processes; they focus on the organization, its structure and the day-to-day dynamics of how things get done. These are crucial points that must be understood so that a proper approach to a change intervention may be planned. These key factors are often overlooked when organizations self-assess. It also takes a "cold-eye" view of this dimension for a proper analysis of the human issues as self-assessors are generally too close to the problems with baggage and biases carried along.

Continuing the initial human-side analysis, our next probe involves the distribution of a lengthy survey targeted at the first-line supervisors, tradesmen and operators. The survey dimensions are variable dependent upon the maturity level of the organization relative to the five stages of the SAMI triangle; we will always survey at least the first two levels. Using this tool, we accomplish several tasks. The survey gives back the perceptions of the resultant end of the processes we are there to analyze. In other words, all of the maintenance processes put in place are there to improve the reliability of the facility. The First-Line, Trades and Operators are the people that are most knowledgeable about what is working out on the plant floor. Their efficiency and effectiveness are a direct result of how well the processes produce the information and direction needed for success. So from this survey we receive: their perceptions about how well the elements of the processes work, indications of where the weak spots may be, and as importantly, we have engaged a large portion of the population in our assessment process.

Our goal is to involve as many people as possible and our tools are designed to do that. The psychology of an assessment is not just to find out facts about the processes and people; it is also used to mobilize the organization into a common state of mind to take action on the issues.

Once we have a view on the organization's "pulse" we begin looking at the available data. I'll pick up at this point in the next issue of the "SAMI Times." Meanwhile, I have an engine to put back in the TR.

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There is no more thorough, independent and prestigious certification in our field.

But being individually certified does *not* elevate you and your peers to that of a recognized profession. You may be *professionals* but without a recognized *profession*! You are part of a profession when there is general recognition and acceptance of the standards of the certifying body. A practitioner of medicine is a "quack" unless he has passed his board licensing exam and been licensed to practice, no matter how good he is.

What is required, then, to elevate Maintenance and Reliability to the accepted professional level? I believe the answer is this: *When your ability and flexibility to practice in this field is limited by lacking the credential of CMRP.* Practically this means that a company promotes certification within its ranks. That promotions are based on certification. And eventually to hold a senior position requires certification.

Here is the conflict then: you'd like to be a recognized professional in your field. But what if you take the exam and don't pass? How much will you promote the idea of professionalism in your company? What's the risk/reward tradeoff for you?

First you have to take the exam. If you pass it, great! If you don't it will point out the areas of weakness you may concentrate on. And then pass it next time, or even the next time.

What's at stake is greater than your fear of failure. Sooner or later the certification will gain ground. Sooner or later it will become a standard. You can lead or you can follow. Some excellent people I have spoken with have expressed a desire to get to retirement without testing themselves. They listen to what they have said, and they wonder if they are really earning the right to lead their organizations. They decide that leadership *requires* their own certification.

This is the **plus factor**. Are you ready to take the next step for yourself, your company, and your profession? 200 people are off and running in 2002 as CMRP's!

Find out more at www.smrpco.org.

Power Generation Asset Management Conference

SAMI will be sponsoring an Asset Management conference for the Power Generation Industry in conjunction with EUCI on February 25-26, 2003 in Denver, CO.

Please visit www.euci.com for more details.