

THE SAMI TIMES

August 2000 Volume 1 Issue 1



PRESIDENT'S MESSAGE

Most of our world of plant professionals is bombarded daily with information. First of all, there is the plant; problems large and small, reflecting every part of the operation need to be dealt with.

Next is the myriad of projects that need attention. SAP installations; safety improvements; upgrades, turnarounds, capital projects; corporate initiated projects, some with perceived value, and some just to show compliance.

You get phone calls all day, and more mail than you can open. Much of it goes into the round file by your desk, unread, unwanted, unappreciated. Email has enabled everyone to communicate, and nauseum, it seems.

So here is SAMI, Strategic Asset Management Inc., sending you another piece of mail for your edification. If you are one of those who opened this newsletter to read my column, I can say that we intend not to waste your time.

We will write what we hope will be useful articles about a topic that never seems to go away; **doing effective maintenance, achieving equipment availability.**

If we have selected our audience properly, then maintenance is an issue for you. First of all, it may be your largest controllable cost. But in many plants, it may seem that the cost is not controllable at all! And for many of you, your concern will be whether you are getting value for your millions of dollars of expense. **Why is making gains in maintenance so difficult?** In our experience, the answer is easy and difficult.

Typically the keys to success are these:

1. You need to get a commitment from operations, engineering, plant leadership and maintenance before you start any program of improvement. Any of these functions can torpedo improvements simply through negligence.
2. You need to work on first things first. For instance, we see many companies attempting to implement Reliability Centered Maintenance without having planning and scheduling in place. This represents putting the cart before the horse, a high-cost, low-success path forward.
3. You need to have clear goals and measures. The measures need continuous attention to see that progress is being made. Reward systems need to be tied to achieving goals of improved maintenance and reliability.

4. You need to have a detailed work plan that includes change management activities, or the team will get lost in it's inability to proceed.



Our intent in this newsletter is to give the information necessary so that you can achieve these four Critical Success Factors.

We will start with an explanation of the SAMI Operational Reliability Development Pyramid. This pyramid suggests five levels of improvement, that build on prior successes.

THE SAMI TRIANGLE

This representation of the improvement process is the result of hundreds of projects in maintenance, reflecting many successes, but also many failures. By working to understand the critical variables, we developed this model. And based on the many companies that have adhered to this model, we know that it works.

In upcoming issues, we will examine the content and intent of each level. What do we measure? Who needs to lead? What is the best organizational structure to implement this stage? How do we start? These are typical of the questions we will reference in our articles.

So I would like to congratulate you as one who took the time to examine our newsletter. Because it may make a difference in the future to your plant operations, and the feeling of value and success your people achieve.

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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 1 THE IDENTIFICATION OF WORK



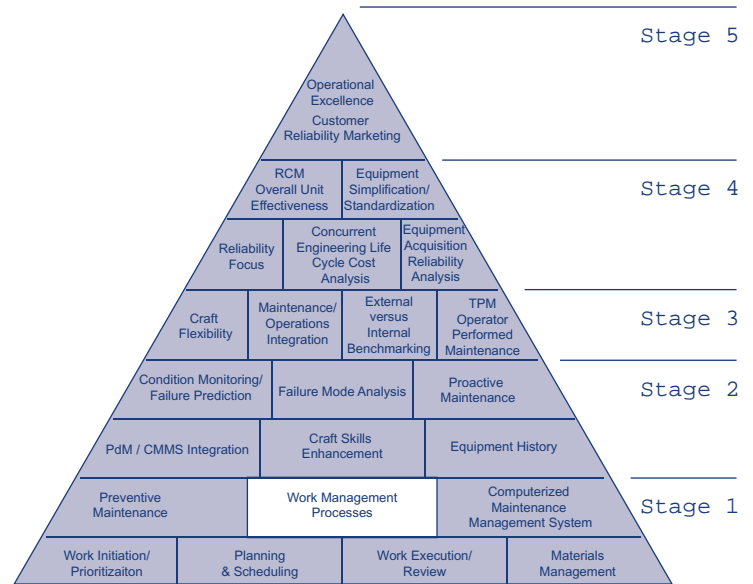
Beginning with this article, I will, over the next few months take the reader through the basic elements of SAMI's model for Maintenance Excellence -- The Operational Reliability Maturity Continuum.

The first step in this process is the identification of work. Why is identification of work so important? Some may say that we've got so much work on the books, that we can't handle it anyway. Well, when the other Stage 1 elements fall into place, it is imperative that you understand the material condition of systems, components and structures. Knowing the condition, through an aggressive work identification process, allows for the proper prioritization of activities and corrective actions prior to failure.

In a purely reactive mode, work is usually identified as equipment fails. Maintenance is then tasked to fix the equipment in as rapid a manner as possible (after all, the equipment that failed has most likely affected production or some critical function). If you're lucky enough to schedule and actually perform a preventive maintenance (PM) task, you may identify other related tasks that, if identified earlier, would have been more easily accomplished.

Minor tasks, when left to their own devices, will often turn into larger tasks. Sometimes these minor tasks will turn into emergencies. Often, the minor leakage of steam from a valve packing turns into a valve replacement due to steam cutting. What once could be performed on line has turned into a major activity involving isolations, welding and replacement of parts. A simple task has turned into an expensive one.

For those of you who work on mobile equipment, when a piece of equipment comes into the shop for PM, doesn't it just make your day when you identify other work in addition to the PM you've scheduled? Most of this work is not necessarily difficult to accomplish, but without the parts on hand, they are difficult to complete. The result is that either the equipment goes back into the field with a known deficiency, or the time in the shop is increased until the part(s) is located and the repair made. All of which leads to the perception that maintenance is ineffective or that schedules are meaningless.



In these two examples, there are a couple of quick and easy solutions. First, your organization must be willing to accept the concept that "Maintenance" is not the sole responsibility of the Maintenance Department. "World Class" maintenance organizations have embraced the concept that like safety, good maintenance is the responsibility of all organizations. I firmly believe, and tell clients when working reliability solutions, the first line of defense is the Operator. The operator understands the equipment better than anyone else does. They are around the equipment at sometime during every shift and are the "eyes, nose, ears, etc." for detecting the first indications of degrading equipment.

Second, we often don't capitalize on this understanding. Therefore, I encourage all of us to make use of this resource. Make operators part of your first line of defense. The use of Operator Rounds, check lists, walk-downs, etc. are all valuable tools to use.

Getting the operator to properly identify equipment related issues, prior to failure, is a powerful cost saving tool. Knowing beforehand, allows the maintainer to plan for the activity, have the part on hand and finally, take prompt and efficient corrective action. We can now prevent that small task from turning into the costly, inefficient, and time consuming task. Everyone profits. Why don't you give it a chance?

CASE STUDY: LONG RANGE SCHEDULING BRINGS RESULTS



SAMI has been helping a large industrial client deal with the results of changing competition and market place drivers. Specifically, this client is a producer of a vital mineral resource requiring a large fleet of mobile equipment. With increased competition and a downturn in the marketplace, this client had to learn how to downsize their mobile maintenance force without impacting plant production.

One of the tools that we've chosen to employ is long-range shop scheduling. For this client, it was relatively easy to establish a long-range schedule. However, implementation was not so easy.

First, we had unique identifiers for each piece of equipment, whether it be a forklift, pick-up truck, front end loader, sweeper, etc. Secondly, the client had a well-defined list of PM activities for each piece of equipment. For example, PM's (Preventive Maintenance) based on running hours or calendar time

Using the equipment and PM frequencies, we laid out a yearlong schedule of activities for each piece of equipment. The year was broken into weeks, presented in Excel format and any week where an activity occurred, we placed an "X". Looking up and down each column we made sure that no one week contained more work than could be accomplished by 80% of the shop work force. Secondly, we made sure that there was never more than one major maintenance activity scheduled for a specific equipment type in any one week. The schedule was revised accordingly, and presented to major stakeholders for approval. While some revisions ensued, we adopted the saying that the schedule was "cast in Jell-O" to place the reviewers at ease.

Armed with the long range schedule, we then went about meeting with major process stakeholders to explain the objectives and process steps. First of all, we were requiring, production personnel to use the schedule to ready equipment for maintenance i.e., cleaning. Secondly, we used that work identification portion of Work Management to enable operators to identify problems with the equipment, prior to it entering the shop. Our tool was a simple operator check-list where anomalies are identified and fluid levels are checked. Prior to scheduled maintenance the operations foreman submits

work request to the mobile shop to coincide with the PM activity. The extra work is then planned, scheduled and performed with the PM, thus avoiding emergent, unidentified work that would impact the equipment's stay time in the shop. Furthermore, operators can see when equipment is scheduled and either adjust their schedule or arrange for other equipment to meet their needs.

Next, we set training sessions with production operators

and shop mechanics to explain the strategy and solicit input to the process. Operators were amazed, they agreed that filling out

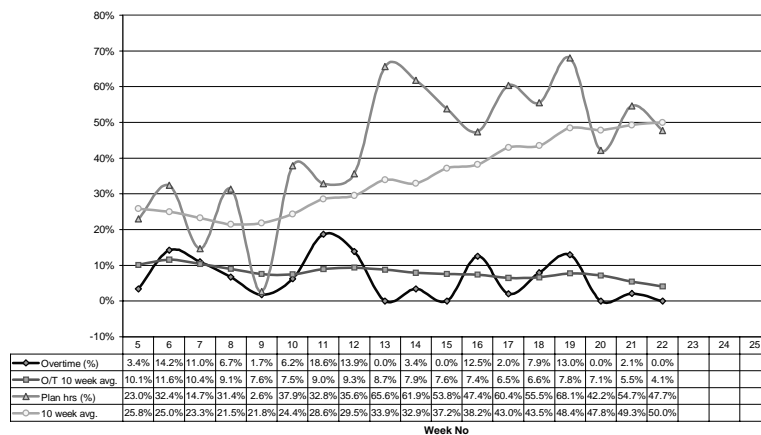
checklists made great sense, they were willing to identify degraded equipment prior to the scheduled event. You know, just like we do when we bring our car to the service shop. It was amazing to see the operators pouring over the schedule to see when "their" piece of equipment was due.

Shop mechanics were a little more reserved. Their attitude was one of "wait and see." Since schedules have been looked at with disdain in the past, they expected nothing short of that, even with our new approach. We'll believe it when we see it, was their refrain.

Now, several months into the project we can report remarkable results. Shop overtime has dropped steadily, and schedule compliance has steadily increased. We attribute these results to one simple denominator, communications. The long-range schedule has become a powerful communications link between production and maintenance. People now look ahead and are able to plan their activities and coordinate with others. Changes are no longer made in the dark. People are working with each other. Simply put, it's working!

This is only one of the instances where SAMI has allowed clients to create long lasting, effective solutions to significant issues. How can we help you? For further information on this and other SAMI initiatives, contact our offices at (800) 706-0702.

Scheduled hours vs. Overtime hours





**Strategic Asset Management Inc.
258 Spielman Highway
Suite 202
Burlington, CT 06013**

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UPCOMING SAMI SPEAKING ENGAGEMENTS

SMRP Conference
October 1-4
Cleveland, OH

Plant & Facilities Expo
October 26
Atlanta, GA

Maintenance Journal Conference
November 13-14
Sydney, Australia

Steel & Mining Seminar
November 27-29
Brazil

Work for SAMI

If you have experience in equipment maintenance and you are interested in permanent or contract employment, please send your resume to the address below or e-mail it to info@samicorp.com.



**Strategic Asset Management Inc.; 258 Spielman Highway; Burlington, CT 06013
Tel: 800 706 0702 info@samicorp.com www.samicorp.com**