

THE SAMI TIMES

Spring 2002

Volume 3

Issue 1



THE PRESIDENT'S CORNER

THE CHICKEN OR THE EGG?

Which came first? The chicken or the egg?

The maintenance improvement strategy corresponding here is: which to do first, get efficient or eliminate work?

I recently sat on a panel discussion where a renowned exponent of RCM sat next to me. He explained that he was prompted to move towards RCM when, after repeated attempts to implement planned maintenance, he found he wasn't getting the work done.

The answer, according to him: Eliminate the work. Later on, it will be easier to implement planned maintenance because there will be less work to do.

One of his greatest cheerleaders works for the Navy. She agrees that only classical RCM will deliver maintenance benefits.

This argument seems to have a specific type of person on each side. The Eliminate Work Team seems to be composed of reliability proponents, the "tools and techniques" guys. The Planned Maintenance Team has the "people and process" guys standing by it.

Is there an answer to this question? Or it is like the chicken and the egg?

In our work we come into contact with every type of organization, representing many philosophies of maintenance. As an example, we recently performed an assessment at a very sophisticated refinery. The leadership had come from a major oil company, where advanced practices prevailed. They had designed an entire organization from scratch around reliability principles, and retrofitted their staff into these roles. Their mantra was right — "To Eliminate Work."

The only problem was, they were busy hiring contractors to get all the work done. None of the reliability efforts were delivering the desired results. RCFA's were to be done for most of the failure events in the refinery. They were in fact done on the major failures, but there was never time to implement the results of the analysis. The outcome was that time was taken away from work to do analyses, and there was no time to get to the new work, much less recover the time spent on the analysis.

In another case we worked with a large mining operation. Their philosophy for maintenance was RCM. Period. They told us with pride that they had

done over 100 RCM studies, and had spent 14 million dollars on this effort. They hadn't spent any time on improving maintenance efficiency, and didn't think that would be necessary. We thought maybe this would be the exception to the model we had been building.

We asked, "How many of these analyses have you implemented?" Our answer was that they were part way through the first one, and it was showing great benefits. The problem was, you see, that we don't have the resources to get to anything but emergency work!

This is typical of our observations. Those plants that focus first on eliminating work, don't have time to implement the results.

So what happens if you use contractors to supplement the work force? They do the routine work, and your own employees work on the work identified by the failure analysis or RCM analyses (whether this is classical, shortened, streamlined, front-end, etc.). That should work in the short term to get some work eliminated, and create a positive upward spiral.

The core issue becomes apparent now. With an open pocket for unlimited resources, we start to realize that our issues of controlling work are there no matter how many resources we can apply.

Our issues start with work description. If we haven't improved our old process, bringing contractors in will require one of our maintenance guys to find for him which piece of equipment is meant by "pump broke in the FCU". The contractor won't know what typically fails, where to get parts, how to get permits, how to use the CMMS, etc. Because there is an inadequate system describing the work, and planning



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SAMI President

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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 7 PLANNING & PLANNERS

BY DAVE ARMY



There is no “Silver Bullet” when it comes to planning. How’s that for an opening statement? It amazes me that when I visit facilities all over the globe that there is such a discrepancy in opinions over what constitutes planning. One would think that

when it comes to maintenance, work is identified, prioritized, planned, scheduled and executed. Not so!

In order to obtain the most efficiency from the work force, work should be planned. As I have discussed earlier, planned activities provide the feedstock for a healthy schedule of work for the next week. Getting back to basics, what should a work plan consist of? Perhaps this is a more relevant question.

Most likely, what I say from this point on will be a candidate for intense debate. After all these are personal preferences, based on my experience. Experience, you say. Well, when I was wet behind the ears, my first job was that of a planner. Only we didn’t quite know it as such. I was a new management assistant in the maintenance department (no, not an engineer) and fresh out of college. I was shown how to walk a job down, talk to the craftpersons for their input, determine the parts required and plan the activity, step-by-step. This was fun! Were mistakes made? You bet, and there were plenty.

What have I learned over all of these years? Primarily, the organization should have a clear, concise, and universal understanding of the roles and responsibilities of the planner. This assumes that the organization has chosen to have a planning function. The very fact that you’ve taken time to read this article probably means that there are planners somewhere on your site.

What I have found, that is most disturbing, is that planners are mostly misunderstood. In the field, when I have asked the question, “What does the planner do?” answers have been varied. My view of planning is founded on the premise that the planner is a strategic element in your overall maintenance program. The planner should be firmly rooted in the future. Firefighting badges should never be awarded to planners because of their day-to-day routine. Furthermore, planners should not be assigned directly to the line organization. When this happens, the planner soon finds himself deeply immersed in real-time activities. Worse still, the planner often ends up as the “go-for” for the line manager. This further emphasizes the misconceived value that the organization places on the planner’s role i.e., the planner is expendable. After all, he isn’t working on anything that’s important or broke!

We can argue loud and long about the relative position of the planner within the organization. Let me ask you this question, “How important do you think planning is to the future of your company?” If the answer is, “pretty damn important,” then you shouldn’t be populating those positions with crafts level personnel. This is not to denigrate the importance or knowledge base of craftpersons; however, placing planners at a relatively high level within the organization conveys the message that planning is important. This doesn’t mean that the planner needs to be a degreed engineer. Even though engineers have some value and could eventually become a good planner, why not promote someone up from the field,

who possesses “subject matter” expertise. Although, depending on the size of the organization, it might make sense to have both types in the planning group. A final word of caution. Please don’t assign planning responsibilities to personnel who have failed at other assignments, are retired in place or you can’t find any other position for them. Planners and the planning group needs to have the respect of the site community. Enough said!

So, what are the planner’s roles and responsibilities. Primary roles are to:

- Manage data
- Plan and coordinate work activities
- Schedule work
- Support the analysis process and
- Look into the future

The planner supports and in some cases is directly involved in all phases of a Stage 1 Work Management Process: identification, prioritization, backlog management, materials management, planning, scheduling, execution and trending, reporting and monitoring performance. If you ever find the planner involved in:

- Supervising people
- Functioning as the foreman’s “right hand man”
- Serving as a purchasing agent or expediter
- Living “in the moment”

At this point you should re-examine the relative importance of the planner and the planning function within your organization. It would be clear to me, that someone isn’t getting the message.

In the next article, I’ll talk a little about what planning should look like. Again, this is from my perspective and is subject to debate. If you’d like to challenge me, or better still discuss tactics to move from reactive to proactive, please give me a call or drop an e-mail. I welcome your input.

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TUNING UP THE TRANSMISSION

BY RALPH HEDDING, PE



So I'm sitting in the office of a new Assessment client, having a coffee while discussing the relative merits of Lucas ignitions and Weber versus Stromberg carburetors for our respective British cars. He is executing a restoration of his Austin Healey 3000 while I'm planning my next TR-6. The conversation turns back to business and the topic of maintenance planning comes up. As I try to describe the relative importance of this function, an analogy of which component in the car the planning function would represent comes to mind; I contend that Maintenance Planning represents the transmission in the car's system.

Consider this; the engine represents the sum of the workforce working as fast and diligently as they can. The velocity of the car equates to the amount of work being produced as the final drive system converts rotational energy to forward velocity. The transmission, however, ultimately determines the ratio of the engine speed to the rotation of the wheels; the higher the gear, the more efficiently the work of the engine produces forward velocity, while consuming the least fuel. In this analogy, the net output versus effort of the workforce will produce more work completed if planning is in its highest gear.

So if this is true, we need to assure that our "transmission" is well tuned. We do this by first using the best components. In this case, the best qualified people we can find to fill these roles. The selection should be made based on qualifications of technical knowledge, detail orientation, planning abilities, and very strong communication skills. This is not a role to fill with people that you don't know where else to place. A chipped tooth on a gear or a worn synchronesh will not help to win the race. Top quality bearings for our unit represent a planning process that has been designed that gives direction, and holds the components in their relative positions with as little friction as possible. Good lubricants "grease" the entire unit; this is the computer system that planners use as the major tool for them to perform their duties. This provides the structure, reduces friction that slows the unit down, supplies information for planning. Skimping on the computer system will never allow for top gear performance since the unit will overheat and eventually fail in its mission. Top performance of our transmission will allow a high mechanical efficiency of the engine, our workforce.

The engine needs air, fuel, and spark to work. The air in this model is the general environment that maintenance works within. An organization that is supportive of a proactive approach to equipment healthcare is essential. Fuel is the collective set of pre-planned jobs, parts, supplies, tools and information that allows for efficient and effective execution of work. A compatible customer that embraces the same philosophy and feels a shared responsibility for the care of the equipment and infrastructure provides the spark. Our engine working with the proper air

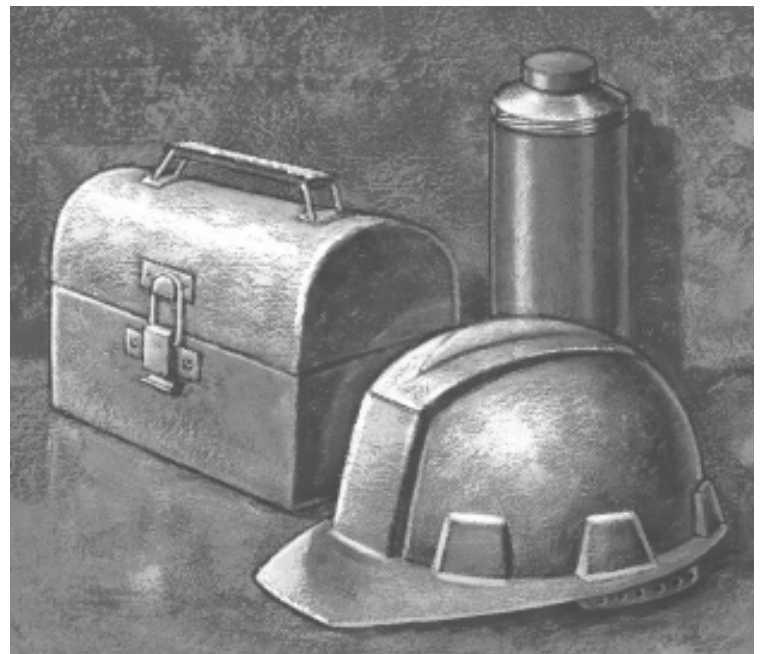
fuel ratio and hot spark at the right time can be a world class contender.

Manual transmissions are basically very simple; properly tuning up a planning function also is not very mysterious if you consider the components of how you build this function. But planning is a part of an overall system as the transmission is to the car. Every car has a driver in this system that makes the decisions about how the car will perform. In our model, the driver is the operating entity of the facility. They have a direct bearing on how fast the car travels and have ultimate control of which gear is utilized.

With their foot on the clutch, the driver can disengage the transmission and slow the car to a halt. The clutch is the scheduling process. Once the car is up to speed and moving in high gear, constant application of the clutch is counterproductive to velocity. Continually breaking schedules, misusing priorities, failure to provide information, withholding maintenance time on equipment, and generally taking a careless attitude with how they drive will eventually find our car heading for the junk pile, and our forward movement difficult if not impossible.

In our model, we have picked out the transmission as the key component to make our system move at top velocity. In actuality, if any of the system's components, including the driver, aren't tuned as carefully as we have built the gearbox, our racer will continue to finish out of the money if we finish the race at all.

But getting back to my original conversation, I'll take Weber carbs any day to pull the most horsepower out of British Leyland's finest.....





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the job, it now takes two people to do the job one guy used to do.

Next is the issue of priority. What work is most important? Who decides if we don't have a clear prioritization system, with someone making the calls? If we have contractors working on things that don't matter much, have we gotten ahead of the curve?

If a job isn't planned, how will we acquire the proper parts before the job is started? And is the storeroom inventory record accurate anyway?

How about scheduling the equipment for the repair or modification? If it's in use, it doesn't matter what analysis has been done, because the repair or change won't get done.

And how about the supervisor? Does he know how to motivate and help people to work efficiently, and eliminate barriers?

I hope that the fallacy of the "eliminate the work" argument becomes apparent through this discussion. Reliability teams and processes create work. If the ability to get work done is constrained, or not effective, then no matter what the intentions, the improvement work won't get done.

Why does RCM work for the Navy? They have one of the most disciplined work management processes in existence, and have had one for decades!

The issue of doing planned maintenance first or last in sequence comes up because planned maintenance is difficult to get established. Implementing a system of disciplined action requiring precise coordination goes against human nature. Yet we understand this in the context of sports teams. It's not always the most talented teams that win, but those who execute with great reliability.

Conclusion

Experience shows us that an ineffective maintenance process will seriously impede the success of reliability efforts. These efforts become a waste of time and money if they aren't implemented.

Reliability starts with a reliable work management process. Then the analyses done on the causes of equipment failure have a chance to make a difference, and likely will!

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