



## Learning, Communication and Consistency – Your Most Essential Tools

There are three factors that are recurring in just about every Action Team story: Learning, Communication and Consistency. The entire team, Operations, Maintenance and Business Services (Parts Procurement, etc.) need to understand the importance of each other’s jobs and what it takes to maintain the equipment in their facility. They all need to learn to work together as a cross functional team instead of individual units. They must start communicating on the same level with a common goal in mind – to get the optimum from planned maintenance, decrease equipment down time and eradicate the defects (bugs) at their sources while consistently making the maximum profit for their business unit. Once employees learn how to take the proper care of their equipment and to communicate by forming cross functional networks, the work must be done consistently.

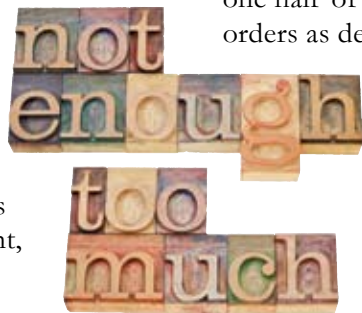
In one facility, a certain valve was given a part number by refinery personnel and a totally different number by the chemical personnel. This was not only a communication problem, but also an enlightening one. The wrong valve could not only cause a breakdown of the machinery but was also a safety hazard. It was determined that the correct number of the valve was the one engraved on the casing and not the one on the tag attached to the valve. Each person that was involved with the valve and its

Learning...continued on page 3

## When Is Enough “Enough” and More Too Much?

By Winston P. Ledet

How do you know what is enough when you are trying to decide on how many of your work orders should be defect elimination work orders? Or in the language we have used and many of you are familiar with “Don’t Just Fix It – Improve It” work orders? To be clear at the outset...we recommend that these work orders are always done by cross functional teams. People from operations, maintenance, perhaps materials procurement, technical and those with expertise about the equipment or MOC process must be a part of the team.



occur. This in many cases requires those dreaded words, a “culture change.” Certainly the industry you are in has a lot to do with the magnitude of change required and only you can determine the extent of the change needed.

One of the sites that we worked with achieved this change by doing one half of a percent of their work orders as defect elimination work orders...that means getting to the root cause of the defect and eliminating it – not just fixing the symptom and moving on to the next job. To quote Deming, “Stamping out fires is a lot of fun, but

it is only putting things back the way they were.” At the site mentioned above, they were able to reduce their work orders thirty-seven and a half percent in three years and by seventy percent in eight years. Fixing the symptom would be a quick fix, but it does not keep the defect from coming back over and over and infecting the equipment repeatedly.

By running our computer model we found that the sweet spot for defect elimination work orders is about one percent. By designating only one percent of the work orders as defect elimination work orders, sixty percent of the defects can be eliminated within three years.

When Is Enough...continued on page 2

If you truly want to change the way people in your facility work you have to change their old work habits. Habits change over time by repetitive behavior, but it can’t be the same old behavior that has been going on for years. That behavior is what has kept improvement from happening and kept you in the same domain you are in. You have to decide on what you are trying to achieve and then develop a plan to achieve that vision. The next step is putting that plan into action because nothing changes until some action is taken. In order to break the old habits and start up more productive habits some form of trigger must

<b>What's Inside?</b>	<b>When Is Enough...</b>	<b>1–2</b>	<b>Learning, Communication...</b>	<b>1, 3</b>
	<b>Calendar</b>	<b>2</b>	<b>Houston Chapter of SMRP...</b>	<b>3–4</b>

# SCHEDULE

Throughout the year, The Manufacturing Game® holds workshops for the general public at universities and/or professional organizations.

For more information visit [www.mfg-game.com](http://www.mfg-game.com)

## Conferences of Interest



**Houston Chapter of SMRP Maintenance and Reliability Symposium**  
**Moody Gardens—Galveston, TX**  
**August 15–16, 2013**  
**Golf Tourney August 14, 2013**

Visit the Manufacturing Game® at Booth #400  
 For more information or to register visit: [www.smrphouston.org](http://www.smrphouston.org)



**SMRP Annual Conference**  
**Orlando, FL**  
**October 14–16, 2013**  
[www.smrp.org](http://www.smrp.org)



**IMC 2013**  
**Bonita Springs, Florida**  
**December 9–13, 2013**

Visit the Manufacturing Game® at Booth #2  
[www.MaintenanceConference.com](http://www.MaintenanceConference.com)



**Reliability 2.0**  
**South Point Resort, Las Vegas**  
**April 7–11, 2014**

For more information or to register visit: [www.MaintenanceConference.com](http://www.MaintenanceConference.com)

**Mark Your Calendar!**

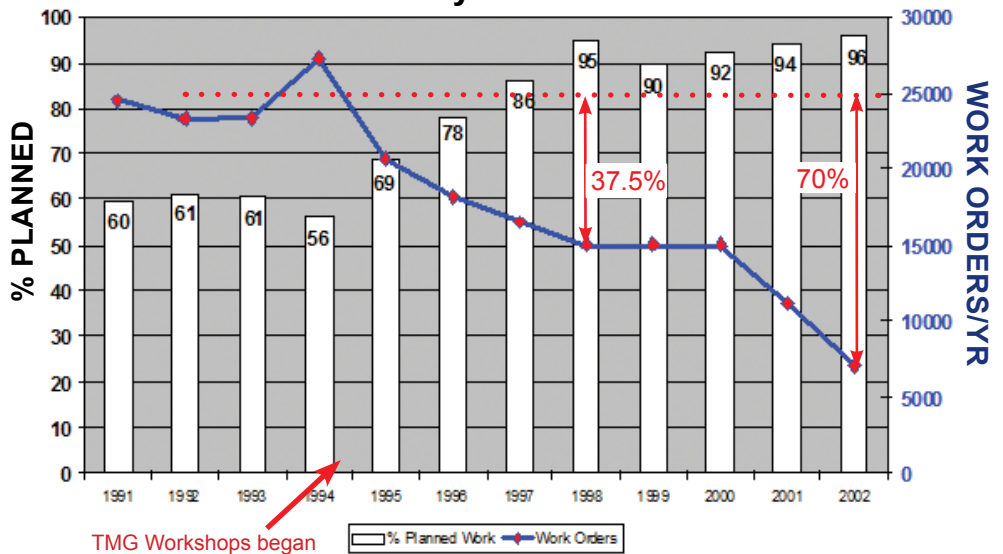


## When Is Enough...continued from pg. 1

It seems hard to believe, that such a significant improvement can be achieved! So the next question that came up is if one percent is good, would ten percent be even better? We ran the computer model again with ten percent of the work orders done as defect elimination work orders. The results might surprise you. At first the results seem to be about the same as doing one percent but over time (three years) defects are only decreased by thirty percent instead of sixty percent. We kept constant the number of operators in the model, and what we find is that if you try to do too many defect elimination work orders you will overwhelm the organization and people will just stop working on them and go back to the regular daily work without paying any attention

do I choose as defect elimination work orders? The simple answer is start anywhere because there are so many to choose from that the main thing is to start taking action. Another way of answering this question is to look at the repetitive failures and choose work orders on equipment that is failing most frequently. This recommendation can be controversial because many people advocate starting on the work orders where there is the biggest monetary payback. This can often cause an organization to become stymied because the work orders dealing with the biggest savings can also be the kinds of problems that can only be solved by engineering teams over many months and for a lot of money. We advocate picking the frequently failing pieces of equipment because you will have a

**Refinery Results**



to improvements. A quick answer would be to get more operators, but we know that takes time and training and can't be achieved overnight. And few organizations are trying to increase headcount in today's world. This supports what we often hear in industry. People complain about having so much to do with all of the different initiatives that nothing gets accomplished and in many cases things seem to only get worse.

So the next question that needs answering is which work orders

lot of opportunities to fix it right and to form the new habit. Thereby everyone in your organization can participate not just the engineers, black belts or reliability personnel. As you improve the equipment you will eliminate a lot of the existing work orders and have more time to deal with the larger problems affecting the organization.





TOM KITE, former U.S. Open champion golfer, consults regularly with sport psychologist Dr. Bob Rotella. And in Kite's "Golf News & Notes" column, he reports a golf tip that golfers and nongolfers alike can apply off the course as well—in business and personal situations:

"You can only play one hole at a time. That's the first step toward how to think like a pro. An important key to a successful game is staying in the present."

"Here are a few ways Doc and I recommend to help you focus on

your game and keep you from getting ahead of yourself:"

- Resist the urge to add it up. If you anticipate your score, you'll be distracted from the task at hand. Avoid thinking about breaking a personal record or blowing a lead.
- Focus. Concentrate on hitting great shots rather than worrying about bad ones or what others will think if you miss. Visualize the ball going to your target. If your mind wanders, take a moment to refocus and start over again.
- Keep your mind on the hole you're playing. Don't worry about the shot you just missed, or how you're going to play the 18th. Taking care of the present lets the future take care of itself.

## Houston Chapter of SMRP 2013 Maintenance and Reliability Symposium

The Houston Chapter of SMRP announces the 7th annual Maintenance & Reliability Symposium, August 15–16, 2013 with a preconference golf tournament on August 14, 2013 at Moody Gardens — Galveston, TX.

Keynote speaker for this year's Symposium is Terrence



O'Hanlon, the publisher of Reliabilityweb.com and Uptime Magazine. He is a Certified Maintenance & Reliability Professional and is the acting Executive Director of the Association for Maintenance Professionals.

continued on page 4

### Learning...continued from page 1

replacement were made aware of the correct part number through education and communication. Now the valve is always replaced by the correct part no matter who does the work.



In two other facilities, repair and maintenance tools were being hidden and hoarded by some because they were unable to find them when needed. Some were actually being stolen. Business services had to keep replacing the tools at an ever-increasing expense to the company. The two plants came up with totally different solutions to this problem. One started a central tool storage area where tools had to be checked out when needed. The other plant was too spread out for one central tool storage, so duplicate toolboxes were placed in two locations at either end of the plant.

All personnel that needed to use them on each shift were given a key and made responsible for their return. At both plants those responsible for working with the tools were told how the new system would work and made accountable for their replacement so the tools could be found whenever they were needed.

Two additional examples where learning, communication and consistency improved record keeping:

One involved the ordering of sub-standard equipment by each department without the knowledge of the Records Department. The Records Department did not have any budget for ordering parts or equipment so each department ordered what they needed trying to keep their cost within budget. The Records Department, the Purchasing Department and suppliers met and came up with



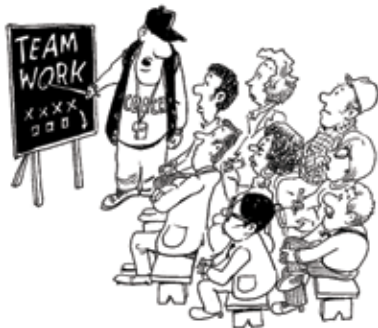
an agreement with a particular supplier to provide good quality parts at a reasonable price and devised a new standardized equipment request form. Everyone was taught how to fill out the form correctly and to send a copy to the Records Management Department. The other involved keeping the storeroom stocked. Goods had been either removed from storage or recorded incorrectly leaving records incomplete. By educating employees through a presentation and using a "cheat sheet" on how to report and place orders they were consistently able to keep sufficient stock on hand.

These are just a few of the many examples of how thoroughly educating employees, communicating to all of those involved; and following up in a consistent manner can provide a more organized, efficient work environment.





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“Games lubricate the body and the mind.” — Benjamin Franklin



## TMG News

### The HCSMRP...continued from page 3

There will be top notch speakers presenting on the 5 Pillars of SMRP plus a new track only at MaRS 2013 on Operations and Maintenance. A few examples of the presentations are:

- » Reliability Culture, Observations and Getting Effective Investigations Done
- » Implementing your Pdm Program: Is Your Program Capable or Reliable
- » Optimize Pump System Reliability Through Failure Analysis
- » Operation and Maintenance Synergy

Friday’s panel discussions include captains of industry from various companies discussing:

1. Maintenance and Capital Budget Forecast
2. Emerging Technologies for Maintenance and Reliability

3. RELIABILITY: “WE” not “Us vs. Them” (Getting Operations and Maintenance Departments to Work Together)

There are great opportunities for learning & networking for all venues. The net proceeds from the symposium and the golf tournament are awarded in scholarships to maintenance, reliability and technical students and also in endowments. The Houston Chapter of SMRP started awarding scholarships in 2008 and through the years has awarded \$55,250 in scholarships to 38 individuals and has established endowments at two universities (Texas Tech and The University of Houston) totaling \$60,000. Total amount of scholarships and endowments awarded to date is \$115,250. The chapter is anticipating another \$36,000 in scholarships and an endowment to Texas A&M University for 2013. Please help us

achieve our goal. Register for MaRS 2013: [www.smrphouston.org](http://www.smrphouston.org)

### HOUSTON CHAPTER OF SMRP 2013 MAINTENANCE & RELIABILITY SYMPOSIUM

August 15-16, 2013  
 Moody Gardens — Galveston, TX

Preconference  
 Golf Tournament  
 August 14, 2013  
 Moody Gardens Golf Course  
 Registration 11am.  
 Shotgun start 12pm.  
 Payment must be received by  
 August 1st to confirm.



For information or to register visit:  
[www.smrphouston.org](http://www.smrphouston.org)