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Getting Operations Involved in the Defect Elimination Effort

Because of the looming retirement crisis, it is increasingly important for companies to work in the Precision mode. Operations and Maintenance must work closely with each other as they pursue reliability. Although some companies are struggling with this effort, other companies have been successful in bridging the gap. Some industry professionals give their opinions on how they were able to achieve this cooperative effort:

Doug Parish
 Operations Manager
 Valero — Lima:

“After playing the game (TMG), there wasn’t much doubt in my mind that there was something

“I realized that if we all looked at things from each other’s perspectives and worked as a team, we could have a major impact on how the place ran...and how much we could improve reliability.”

————— D. Parish

there. I realized that, if we all looked at things from each other’s perspectives and worked as a team, we could have a major impact on how the place ran and how much money we made or how much money we saved and how much we could improve reliability. The game

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Facing the Coming Retirement Crisis

By Tony Cardella

A new awareness is spreading among numerous manufacturing sites across the United States, causing management to not only sit up and take notice but also bringing to light the need to formulate a plan of action.

If high costs, low reliability, limited employee ownership, and

50% of their workforce over the next 5 to 6 years, and companies are gearing up to meet this challenge. The expected high turnover is a direct result of the baby boom generation reaching retirement age. This alone might not create a crisis, but improvements in technology and increased productivity over the last

15 to 20 years have resulted in downsizing and the need for less hiring, and therefore less training of new employees. As a consequence, processes and procedures for training and qualifying large numbers of people have not been exercised, and thus have atrophied just like any skill that goes unused for many years. Anyone faced with replacing close to half of their workforce must also cope with the remaining

workforce spending up to 30% of their time training and mentoring new hires rather than operating and maintaining the plant. This can kick off a vicious cycle.

Higher costs

The overall job market has absorbed the lack of hiring in manufacturing that has caused this looming crisis. Nationally, those reaching retirement age over the next

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poor safety and environmental performance are not enough motivation to leave behind the comfort of the status quo, perhaps a looming crisis is. Over the next five years, a tsunami of employee retirements should be the motivation needed to pursue the Precision Domain.

Many sites, across the US and perhaps other countries, are forecasting the need to replace up to

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SCHEDULE

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

TMG Public Workshops & Conferences of Interest:



The Reliability Centered Maintenance Managers Forum & Enterprise Asset Management Forum

March 8–10, 2006
Las Vegas, Nevada

To register for the public TMG workshop on March 8th or for more information please visit www.maintenanceconference.com



Offshore Technology Conference

May 1–4, 2006
Houston, Texas

To register or for more information please visit: www.otcnet.org

NPRA Maintenance Conference

May 23–26, 2006
San Antonio, TX



NPRA

To register or for more information please visit www.npra.org

Mark Your Calendars!



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5 years is nowhere near 50% (a US Census Bureau projection puts this number at less than 5% of the workforce). Furthermore, manufacturing sites tend to congregate in geographic locations— i.e., the Ship Channel area in Houston or the banks of the Mississippi between New Orleans and Baton Rouge in Louisiana. Because of this, according to the US Census Bureau, Texas is projected to have 5 to 10 times as many manufacturing people reaching retirement age as there are people reaching job entry-level ages. Louisiana is projected to have 40,000 to 80,000 manufacturing employees reaching retirement age while the job entry market is shrinking by approximately 20,000. These local markets are going to experience labor shortages, which will lead to higher wage rates and/or lower quality job applicants.

Defects

Many manufacturing sites, when faced with something this significant, attempt to make as few changes in their people processes as possible — preserve the status quo. If a site chooses to adopt this philosophy, they will find that the number of defects being removed from equipment, processes and practices will decrease as actual manpower and skill levels shrink. New employees go through a learning curve when learning new skills. Therefore, the defect generation rate will increase as the number of new hires increases. The combination of a lower defect removal rate and a higher defect generation rate will cause an increase in defects over time. Defects are the source of all equipment failures, and safety and environmental incidents leading to higher labor and material costs.

Sites in the Reactive Domain typically have high costs; low percent of planned maintenance; unreliable equipment and processes;

struggles with safety, environmental and quality issues; and insufficient throughput. These sites are very much “on the bubble” and can ill afford to take on more costs and more incidents, and be viewed as an even less reliable supplier by their customers.

That’s the bad news. The good news is that these same sites have the most to gain by changing one policy. Rather than actively preserving the status quo, they can use the coming tsunami of retirements as a wake up call to unfreeze the organization and change their work processes and culture to a wide spread defect elimination and avoidance culture. For more information on the stages of organizational change, see “Getting to Stage Three” in the October, 2005 issue of the TMG newsletter (<http://www.mfg-game.com/docs/Oct2005Newsletter.pdf>).

A site that goes from the Reactive Domain to the Precision Domain requires 40% less labor. Thus, a Reactive site that if faced with 50% retirements will reduce their need for new hires from 50% to 10% while improving their cost, safety, and environmental incident figures. This transition can be made in 18 months with strong active leadership. That is well within the 5-year time frame most companies are concerned with.

Sites in the Planned or Precision Domain still benefit from the strategy of defect elimination in two ways. They eliminate work, which offsets the need to hire replacements, reduces costs, etc. But perhaps a more significant impact comes from the time required to train and mentor new hires. If it has been a long period of time since the person doing the training learned the procedure, much of the procedure is done by habit; therefore they are not conscious of all of the reasons why it’s done the way it’s done. If the organization undertakes defect elimination as a strategy, the employees re-learn how to do their jobs

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turned on the light bulb. It made me realize how everyone plays a role and how defects come in from all over the place and not just one or two obvious areas. Everyone has got to be willing to look at it and figure out exactly what a defect is. It's not always the obvious thing. I think the typical relationship between Operations and Maintenance in facilities is that they point the finger at each other. 'It broke because you didn't fix it right.' 'No, it broke because you didn't operate it right.' You never get the, 'Why did it really break?' 'Why did it only last two years when it should have lasted four?' Let's not sit around and complain, let's figure out the root cause. The game made it obvious."

Don Kuenzli
Plant Manager (retired)
Premcor — Port Arthur:

"The Operations group will come along as a result of the success of the program relative to maintenance and reliability. When they start seeing all these improvements having an impact on them from the mechanical aspect of things, it sucks them into it. It allows them to

really see the benefit of their endeavors and the ease of their operations. They're encouraged to become more involved. Of course, that's just the reliability side. When they start working and thinking in a proactive manner, there's so much

"When they start seeing all these improvements having an impact on them... it sucks them into it."

_____ D. Kuenzli

more they can do relative to their day to day operations that doesn't necessarily impact maintenance or reliability but impacts quality and productivity."

Marc Schomerus
Operations Manager
Valero — Port Arthur:

"From an Operations standpoint, it is really easy to optimize one small piece of the business and sub-optimize everything else. Everybody in Operations needs to be big enough and honest enough to admit that Operations can and does contribute to and can even introduce defects. Operations folks don't always see

that. It's hard to look inside yourself and acknowledge that you may have contributed to the

It's hard to look inside yourself and acknowledge that you may have contributed to the problem.

_____ M. Schomerus

problem. We've learned to have a little downtime now to avoid a lot of downtime in the future. It's important to get out of the frantic mode so that you have time to work on goals and strategies and improvements. That's where we are right now."

Michelin — Spartanburg, as presented at the Productivity, Inc. Conference, 2001:

"At Spartanburg, there were two basic initiatives that were implemented initially, both of which would contain all aspects of both the Strategic Direction and Vision and would provide relatively quick improvement. The first initiative was restructuring the responsibilities of certain maintenance, quality

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in a new way, then when they have to train someone new, their experience is fresh, and they can easily relate to the needs of the employee being trained.

Over the years, we have been working with, talking to, and cajoling organizations to pursue the Precision Domain because of its high reliability, safety and environmental performance, low costs, and high throughput. Unfortunately, most people and organizations don't take bold action until pushed into it. The upcoming wave of retirements provides an opportunity for leaders to make a strong move toward the Precision Domain and avoid the coming chaos that will be created by merely maintaining the status quo.



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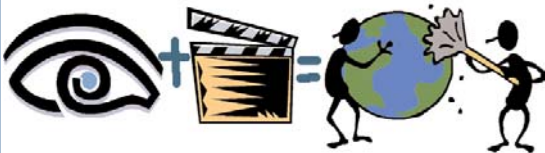
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Vision with action can change the world.

—Joel A. Barker



TMG News

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and operations personnel to enhance their ownership of equipment and to better utilize their skills. This restructuring included assigning machines to individuals, giving them responsibility for the availability and quality of their machines and providing them with the training and authority to ensure their success. A powerful effect of this change was the improved relationships between maintenance and operations areas, leading to improved operator ownership of their equipment. This initiative proved to be very successful, as the number of reactive maintenance calls began to decline within six

months of implementation and have continued to decline dramatically. Work was truly eliminated, leading to an increase in availability, a decrease in variability and a

This restructuring included...providing individuals with the training and authority to ensure their success. A powerful effect of this change was the improved relationships between maintenance and operations areas, leading to improved operator ownership of their equipment.

— Michelin—Spartanburg

decrease in reactivity. These changes meant realizing additional production capacity and improving already high quality products, which was easily seen at all levels of plant personnel, and by the customer.”

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