



The Pesky Airlock Seal

After attending a Manufacturing Game Workshop the Action Team of Alonzo Coleman, Danny Garon, Matthew Abrams, Eddie Bordreaux, and Jerry Mendoza decided to choose the Dryer 8 Transfer Airlock Seal as their defect to eliminate. That pesky seal had been causing problems for quite some time on a weekly and occasionally even on a daily basis.

The rotor airlock looks like a paddle wheel on a river boat that has a concealed flapper in it that turns. Induced air comes in from a transfer blower below that carries product out. It must have a complete seal because the air pressure from the transfer system will blow PVC powder to the atmosphere, and that causes housekeeping problems, environmental issues and wasted product. Alonzo is a part of Plaquemine as an employee and stockholder of Georgia Gulf, and decided ‘enough was enough’.

The team decided to figure out how the rotor airlock worked. The airlock actually has 2 seals, but both seals were fed purge air by a single regulator. The purpose of the purge air was to prevent PVC powder from packing the seal cavity. Once a cavity started to pack for whatever reason, the purge air being supplied from the single regulator would stop flowing through the cavity and flow through the clear cavity. Since the partially packed cavity wasn’t getting as much air, it would plug even faster. Once the powder starting packing, the powder would quickly abrade the seal and/or shaft, then the leaking began.

The team decided to provide

Level 5 Leadership — What Is It and How Do I Achieve It?

By Winston P. Ledet

Leadership is a subject that seems to be undergoing a dramatic change in recent times. The transformation seems to be from the “great man” point of view to the “great team” point of view. The reason for this shift may be that the level of complexity in today’s world is much higher and therefore requires a more complex method of leadership. Jim Collins coined the term Level 5 leader in his book “Good to Great” to characterize the type of leaders found in his team’s study of companies that achieved the transformation from a good company to a great company by out performing the stock market for at least 15 years. Collins was careful to avoid attributing the greatness to a single person, but found that the companies he identified as great seemed to have common characteristics. He called people with those characteristics Level 5 leaders. David Marcum and Steven Smith have extended Collins’ study of leadership from single individuals to teams and Hazy, Goldstein, and Lichtenstein have proposed a new leadership theory in their book “Complex Systems Leadership Theory” based on Complexity Science. The common thread in these studies is that high performance leadership is a group process and not an individual leader taking the organization to higher performance.

relationship between people. With this principle in mind, the definition of a leader is simply: “anyone who has followers.” The other underlying concept change was discovered by Ilya Prigogine in the 1970’s. The discovery was that a group of people can have traits that do not exist in any one of the individuals. Therefore, leadership traits can emerge from a group without any of the individuals conceiving them or even being aware of them. With these concepts in mind, leadership emerges as a result of the interactions among the members of a network of people and their environment. A simple way of envisioning this is a socio-technical network of people, tools, equipment, buildings, roads, etc. that have physical contact with each other in a particular space over a specific period of time. In this context, the equipment can be a leader if it commands the attention of people that follow the lead of the equipment. This is exactly what we find in production organizations that are in the reactive domain. The equipment decides to break and this determines what a number of people will do that day instead of what they wanted or planned to do.

A leadership process can have many leaders at the same time on different subjects, and who and how the leadership is enacted is determined by the followers. As people choose to follow a particular leader on a

The underlying principle in all of these studies seems to be fairly simple. Leadership is not a person but a

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specific subject, they are creating the leadership process. When a financial crisis occurs, the people authorized to spend money then become the leaders. When the workers choose to strike, the contract negotiators become the leaders. When new technologies are developed, the technical experts become the leaders. All of these leadership activities could be occurring at the same time in the space of the organization.

Applying these ideas on leadership to the domains of operation, which we have experienced as reactive, planned, and precision, yields some interesting conclusions. In the reactive mode, the equipment is the main leader, and it exercises its leadership by breaking when it is not treated correctly. This act of leadership results from the consequences of many previous acts in people's treatment of the equipment. A useful metaphor for this case is to look at the equipment as an information system that keeps diligent track of how the organization treats its' equipment. It remembers all of the acts of abuse as well as the acts of tender care it has received. From time to time it tallies up the score and decides it is time to break so that this information can be noticed by the care givers. For an organization in the reactive mode, the response is to fix what broke. Sometimes in the process of repairing, someone may notice the root cause of the failure and change the method of caring for that piece of equipment, but usually that is not the case because there is often not enough time to address the root cause issue.

In the planned domain, some of the leadership is transferred to care takers in a reliability group. These people take on the role of discovering the abuse before the equipment has broken and create plans and schedules to remove the defect before the equipment breaks. This avoids some of the collateral damage that often occurs in the act of breaking. This leadership process depends on the reliability groups to discover the defects, in a timely manner, that

other people in the organization are inflicting on the equipment. This allows the existing resources to be used to remove the defects before failure. In cases where the acts of abuse are random, the number of people required to perform these acts of mercy is enormous. In spaces where the consequences of failure are catastrophic, such as a nuclear power plant, this amount of resource is warranted, and people are motivated to perform these duties. In many other facilities, the consequences are not as significant, and it is much harder for people to stay motivated to this approach. The planned domain is not very stable, and people tend to lack the will to maintain this operation when the consequences of not giving the care are only financial.

In the precision domain, people who pursue perfection in their treatment of the equipment provide leadership. People see themselves as maintainers and improvers of the functioning of the equipment in addition to users of the functioning. Everyone who touches the equipment is a leader in avoiding abuse of the machines during its operation as well as in the repair, restoration or upgrading of the equipment. In the precision domain a leader is anyone who has expertise in the proper care of the equipment and the will to take that care.

The tricky part is what leadership looks like when an organization is trying to move from one domain to another. In order to move from the planned domain to the reactive domain, the answer is pretty simple. Stop the inspections, and wait for the equipment to break. While that sounds absurd, many organizations abandon their reliability initiatives and stop doing the surveillance of equipment needed to remain in the planned domain and then naturally fall back into the reactive domain. Of course, most people would prefer to go from the reactive domain to the planned domain. In this case, the leadership needed is the maintenance best

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practices to detect potential failure modes and deal with them long before a failure occurs. People then can concentrate on finding root causes, or they can work on technology to detect defects early in their life so there is time to plan and schedule a repair before a failure occurs. Programs like RCM, TPM, etc. and technologies like vibration analysis, infrared thermograph, etc. are the means of providing this leadership.

The best performance we have seen occurs in the precision domain. The transformation needed is for people to become the improvers of equipment instead of simply operators and maintainers. Since most organizations start from the reactive domain, it would be useful to look at the leadership needed to go from the reactive domain directly to the precision domain without going through the planned domain since it is inherently unstable. Leadership is best done as a combination of equipment and people. The thing that makes the reactive domain so

stable is the fact that a broken piece of equipment is a clear message of the equipment's needs. In an attempt to get out of the reactive domain and move to a precision domain, Level 5 leadership would allow the individual with the best understanding of the situation to make the decisions. However, in most situations there is not one individual but several individuals who understand the situation from different points of view. A good leadership process would then be to have all of the leaders participate in the decision. This is best accomplished by using cross-functional teams of individuals who care about the equipment and have the desire to perfect it. A means of creating this situation is to let the equipment tell the team what needs to be improved, as well as what to fix. In the reactive domain, the equipment tells the people what needs to be fixed. If cross-functional teams are engaged around a particular piece of equipment, the team can also attend to the improvement of the equipment at the same time the equipment is

being repaired. This is the "don't just fix it, improve it" strategy that we recommend. The work management system is also a good tool to use to target equipment for improvement work. The number of work orders for a specific piece of equipment can provide the information needed to know what equipment is breaking most frequently and consequently producing the random failures that keep an organization in the reactive domain.

Now that the equipment is doing the vast majority of the manual work in organizations, leadership is becoming a part of everyone's job. It is important that organizations create the freedom for all of their people to practice leadership.

The topic of Level 5 leadership is explored in great length in the next book of the Heroic Change series. "Level 5 Leadership At Work" will be released in 2011. To see teasers, and learn more about the Heroic Change series visit www.HeroicChange.com



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separate regulators for each seal to insure that both seals always had good purge airflow.

This small change significantly reduced the leakage over the last 1½ years and the running time between repairs on this piece of equipment has doubled. It feels like a little vacation when you improve a chronic problem. The guys agreed, "You do not need to be an expert to look into the ways and means to make an improvement." There is a tendency to look at a problem and think that you have not been successful until the problem doesn't show up for a long period of time.

It's important to realize that extending the ability to use the equipment from one to two weeks cuts out half the work. And that is worth recognizing and celebrating!



Don't Just Fix It, Improve It—a HIGHLY Interactive Workshop

Based on the Power Networking and Reliability Coaching sessions held at various Reliabilityweb.com conferences Winston P. Ledet, Michelle Henley and the team from The Manufacturing Game will hold a half day workshop at Solutions 2.0, November 9, 2010. The workshop will begin with a presentation for each of the roles typically found in most manufacturing or process plants based on the powerful concepts expressed in *Don't Just Fix it, Improve It: The Journey To The Precision Domain* book co-authored by Winston Ledet. Following the presentation, each attendee will be involved in exercises that amplify the participants own experiences.

In this highly interactive "Don't Just Fix It, Improve It" Workshop participants will sit at themed tables including the role of

'leadership', 'CMMS', 'operations', 'maintenance,' etc.

The workshop will conclude with an overall summary of the input people gave. For more information or to sign up visit www.maintenanceconference.com

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Leadership is communicating to people their worth and potential so clearly that they come to see it in themselves.
 —Stephen Covey, *The 8th Habit*

Summer

TMG News

Manufacturing Game Casts Staff in New Roles

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Staff at Anglesey Aluminium Metals played out their new roles via a manufacturing game as preparation for the business changing its production operations.

When the Rio Tinto and Kaiser Aluminum & Chemical Corporation-owned company started to make the transition from a smelting and casting plant to a re-melt and casting operation, a corresponding change had to be made in the roles and responsibilities of the workforce.

‘Manufacturing Game’ workshops were organised for the entire workforce as part of an intensive and integrated two-week training programme. According to the change management consultancy Reliable Manufacturing

which devised the programme, the workshops were a curtain-raiser for the training programme and central to preparing staff for their new roles.



Anglesey Aluminium cast house manager Elfyn Hughes said: “The manufacturing game is integral to establishing the right attitudes and behaviours from the outset. It gives people a broader understanding of the business, and their role within it. The language of the game is now in constant use right across the company it has helped the team recognise the importance of immediately removing bugs and they

have a relentless focus on defect elimination.”

Hughes reported that since the transition the company has met 100% of its delivery dates, on time and in full.

Reliable Manufacturing is a reliability-based change management consultancy licensed by Ledet Enterprises, Inc. to run Manufacturing Game workshops in Europe, Africa and the Middle East. For more information in these locations or to inquire about attending a public workshop in these areas contact Andrew Fraser: andrew.fraser@reliable-manufacturing.com www.reliable-manufacturing.com

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