

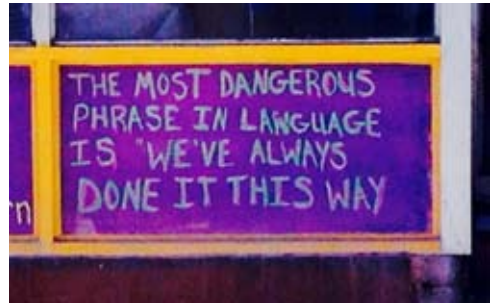


## Bug Causes Vibration on Engine #1

## Creating Change: When No One Has Time

People that we work with are trying to move their organization to a more proactive mode of manufacturing. One of the main topics of conversation is usually, “how to bring such a large change in approach, attitude and behavior into an organization that resists change.” We thought a summary of the problems and proposed solutions might be interesting and beneficial for our readers.

The most common issue that each of these change leaders hear from their organization is that “we do not have the time to work on these proactive measures.”



This can be especially true when talking about improvement projects including action teams being launched through The Manufacturing Game®. Most change leaders realize that in fact the people who have no time are mired in the reactive mode which is the most time consuming and expensive maintenance that you can have. The dilemma of the reactive mode is to find the time to break old practices and routines while you are already overworked fighting fires. To understand

this situation better, we have considered the causes of the lack of time and determined three root causes:

1. Lack of delegation skills by management and supervision leads managers to underestimate the capacity of their organization. They assume that if I am overloaded, the organization cannot stand any new work.

2. There are too many other programs going on that require people’s time. Additionally, people in the organization are sick of programs that add tasks and work and seldom show real benefits. They have lost

faith that any of these initiatives will be beneficial.

3. No obvious benefit to the people having to take the risk of trying this new approach.

While everyone would agree that strong senior management buy in is beneficial and some would say essential, the real key is to get non-objection. If senior management agree not to kill or derail the effort, the momentum in the bottom of the organization would go a long way in convincing the decision makers down the road. Below are

Inspired by a Manufacturing Game Workshop the Action Team of Michael Magee, Ron Sharbono, Charles Rice, Chad Reynolds, Jared Merritt and Steve Mitcham took on the challenge to eliminate excessive vibration on Engine #1.

There had been repeated breakdowns associated with the reciprocating compressor unit. This was very frustrating for everyone concerned. “We thought we had excessive vibration, but the vibration study we had done didn’t support our theory. When we had a failure, we had been replacing the broken part, but not getting to the root cause,” stated Steve Mitcham. It was decided by the team that it would be necessary to connect the suction bottles to reduce equipment failures and downtime. They also realized that they needed to stabilize the equipment by bracing the compressor.

Within the first 30 days they had requisitioned the fittings for the project, and they had also located the piping required. A discussion took place with Jerry Bates, the Regional Compression Leader. The team explained their problem and their plan to the Reliability and Compression guys and got help and support from everyone. Jerry said, “Besides the cross supports we wanted to add, the asset reliability team came in and did alignments and added compressor supports. Everything that was done made an impact on the vibration issue.”

Steve Mitcham said, “We

**Creating Change... cont. on page 2**

**Bug Causes... cont. on page 3**

<b>What's Inside?</b>	Creating Change...	1, 2	Bug Causes Vibration on Engine #1	1, 3
	Leaking Manzel Lube System...	3	Lessons From Geese	4

## 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)

### Public Workshop

The Manufacturing Game® will be holding a Public Workshop at IMC 2014

Hitlon Daytona Beach, Florida  
December 12, 2014

For more information or to register visit:

<http://maintenanceconference.com>

### Conferences of Interest



#### IMC 2014

Hilton Ocean Walk Village  
Daytona Beach, Florida  
December 8–12, 2014

For more information or to register visit:

<http://maintenanceconference.com>

Visit The Manufacturing Game at  
Booth #318



#### Reliability 2.0

South Point Resort, Las Vegas  
April 7–11, 2015

For more information or to register visit:

<http://maintenanceconference.com>  
or call (888) 575-1245



#### Reliability & Maintenance Conference

Austin Convention Center,  
Austin, TX

May 19–22, 2015

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

Mark Your  
Calendar!



### Creating Change... cont. from page 1

two general approaches to dealing with these issues.

One approach is to look for opportunities to tie this initiative into an existing program. Typically most organizations have some initiative that is closely related to reliability improvement that could benefit from cross functional action teams and better organizational understanding of the issues. By linking to an existing initiative, you can avoid the organization's natural immune system to anything new. Working within an existing initiative does have some potential drawbacks. You must be willing to share or give up much of the credit for success, and if the initiative dies, your addition may die with it.

The second approach is to push the initiative down in the organization where the work is getting done. These are the people who will benefit most from this approach but non-objection is not enough from these folks. You need enthusiastic support. Once you get that support and some results, the leadership and the staff are much more likely to be supportive. For this approach to work, you need someone to be excited about the approach. This person can be a first or second line supervisor since the key resource you need to get started is properly organized cross functional action teams. By not trying to launch the program on a company or site wide basis all at once, you avoid the direct assault on the organization's immune system. The bottom-up approach gives you a chance to demonstrate the value and push the initiative down to the level that will see direct benefit. The downside of this approach is that it is not always easy to fund this sort of a bottom-up process, and it can be crowded out by other initiatives.

Combined with either of these approaches having a vertical cut of the organization involved in

the action team process is critical to demonstrate the value of the approach and overcome the notion that this is just another program. It is easy for individuals not closely involved in the work to discount the defects that can be identified and eliminated by the front-line. A vertical cut allows the people who have to fund and support the process to see the teams in action.

It is important to get better at selling the benefits of the approach by demonstrating the bottom line results that will be attained to the appropriate level in the organization. Senior management wants to hear about production gains, waste reduction and maintenance cost while the front-line is more interested in getting to do work the right way, reduce fire fighting, increase safety, not have to deal with the same issues day after day and have fewer late night callouts.

These solutions for overcoming resistance to change are not silver bullets but they are already helping at several of the sites we work with to begin the process of improvement.



The Manufacturing Game® will be holding a Public Workshop at the IMC Conference

in Daytona Beach, Florida, Friday, December 12, 2014 from 8am–4pm. The workshop is a hands on learning experience that creates a reliability culture. Participants will experience how they can increase their organization's reliability through defect elimination and cross functional work, become more proactive and increase business performance.

This is the perfect opportunity to see how you can reinforce and improve your company's reliability initiatives.

To register ask for workshop PWS6 <http://imc-2014.com/register>

## Think you're cut out for doing defect elimination? "Take the quiz!"

1. Do you have equipment that breaks down on a regular basis?
2. Are you overwhelmed with the amount of reactive work?
3. Would you prefer not to have to come to work on nights and weekends to handle breakdowns?
4. Do you prefer to work in an environmentally friendly and safe workplace?
5. Do you feel passionately about getting these problems solved?



If you answered 'yes' to one or all of these questions you could be a defect eliminator. It's not hard to get started. Find a problem that is small enough for you and a cross functional team to handle. Ask a few people from different departments that have the equipment in common to be on your team and get started!

### Bug Causes... cont. from page 1

could not have completed the project without Jerry Bates, James Hill, Jerry Evans, Jamie Womack, Willie Pierre and numerous others from Asset Reliability. We were challenged to not just fix it, but to improve it, and I believe we did. I really believe this will decrease our unavailable hours for this unit."

Often times when we take on a problem, we learn that there's more to the issue than initially thought. This team understood that additional help would be required and engaged the right people to help them get to the root of the problem. Continued measurement of machine reliability and availability will confirm their success.

The team noted several benefits from this defect elimination project including lower repair costs, increased availability, reduced downtime and labor hours; less frustration and better safety. Congratulations on the great teamwork!



### Leaking Manzel Lube System Filter Housing

Clyde Childress, Rob Morgan, Rob Carwile and Donna Aubrey left The Manufacturing Game workshop with the idea of eliminating the leaks in the Manzel Lube System by replacing the housing. Upon further research, it became apparent that more was needed than just replacing the housing itself. As the team was researching the issues and looking at potential solutions, there was an opportunity for Mechanical Specialist, Rob Carwile, to attend a one day training session on lubrication systems conducted by a vendor that covered the basics of the Manzel system. During the class, Rob determined that the best solution was to upgrade the system to a more reliable and maintenance friendly filter system. A change

was made from a bolt-on filter housing to a spin-on filter housing. Isolation valves were installed on each side of the filter housing to allow for ease of maintenance of the filter without opening the entire system. Pressure gauges were added on the upstream and downstream sides of the filter to monitor the effectiveness of the filter so that conditions could be used to determine when to change the filter without having to guess. The parts were ordered and installation completed on the #4 GMW unit for under \$400.

This is the first system like this at the station and once perfected, it will be the model for the rest of the engines at the station and can be used as a prototype for other stations.

Sometimes a new approach makes a world of difference!



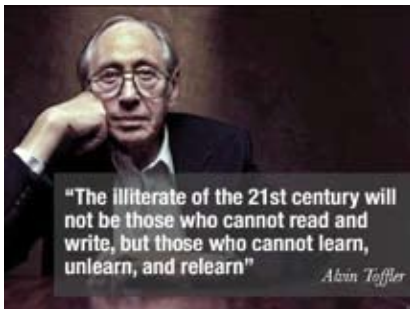
Old System



New System



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## TMG News

### Lessons From Geese

#### FACT 1:

As each goose flaps its wings it creates an “uplift” for the birds that follow. By flying in a “V” formation, the whole flock adds 71% greater flying range than if each bird flew alone.



#### Lesson:

People who share a common direction and sense of community can get where they are going quicker and easier because they are traveling on the thrust of one another.

#### FACT 2:

When a goose falls out of formation, it suddenly feels the drag and resistance of flying alone. It quickly moves back into formation to take advantage of the lifting power of the bird immediately in front of it.

#### Lesson:

If we have as much sense as a goose we stay in formation with those headed where we want to go. We are willing to accept their help and give our help to others.

#### FACT 3:

When the lead goose tires, it rotates back into formation and another goose flies to the point position.

#### Lesson:

It pays to take turns doing the hard tasks and sharing leadership. As with geese, people are interdependent on each other’s skills, capabilities and unique arrangements of gifts, talents or resources.

#### FACT 4:

The geese flying in formation honk to encourage those up front to keep up their speed.

#### Lesson:

We need to make sure our honking is encouraging. In groups where

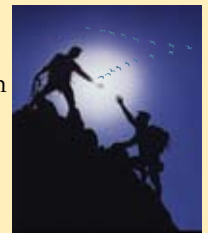
there is encouragement, the production is much greater. The power of encouragement (to stand by one’s heart or core values and encourage the heart and core of others) is the quality of honking we seek.

#### FACT 5:

When a goose gets sick, wounded or shot down, two geese drop out of formation and follow it to help and protect it. They stay with it until it dies or is able to fly again. Then, they launch out with another formation or catch up with the flock.

#### Lesson:

If we have as much sense as geese, we will stand by each other in difficult times as well as when we are strong.



—Based on work by Milton Olson