

# ASOPE™ Newsletter

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## Preventing Boiler Code Violations Creates a Safer Work Environment

And Article in Power (Focus on O&M) stated nearly 10% of boilers and pressure vessels inspected in the second quarter of 2008 were slapped with violations, which mean that the violations put workers and equipment in danger, according to a quarterly report released by the National Board of Boiler and Pressure Vessel Inspectors.

The "Report of Violation Findings" indicated problem areas and trends related to boiler and pressure vessel operation, installation maintenance, and repair. The highest percentage of violations was detected in boiler controls, followed by boiler piping and pressure relieving devices. A portion of the violations can be attributed to lack of knowledge and training on Section 1 of the American Society of Mechanical Engineers' (ASME's) International Boiler and Pressure Vessel Code.

Properly functioning control or safety devices are absolutely essential for any boiler. The only way you can be confident they will work when called upon to do so is to regularly perform required maintenance and testing while adhering to ASME code requirements

## Five Signs that Your Team is Disorganized

Published 3 March 9 10:12 AM | [Aaron Stannard](#)

Good managers by nature are "organized" people—they often are great at organizing their own work and thoughts, but their self-organization rarely carries over to the groups of people who report to them. If disorganization were easy to detect and diagnose, most managers would undoubtedly do something about it—but it's not.



More often than not, disorganization is something that becomes deeply ingrained into the modus operandi of an organization—Managers just assume they need five status meetings a week with their team because that's how they've always done things. They assume they routinely need to tell their team members where they can find important documents because that's the way things have always been.

Disorganization becomes part of the organization if it's allowed to linger for

too long, and this costs the organization thousands upon thousands of dollars of lost employee time or other resources over several years.

So how do you know if your business is suffering from endemic disorganization? How can you spot the organizational deficiencies which eat away at your time and money? Here are the five tell-tale signs that your team is disorganized:

1. **You constantly have to explain who, what, when, where, why, and how to your team.** Even though your team has been doing this for years now, every time you ask them to do something, they bombard you with questions you've undoubtedly heard before. "Where do we need to go?" "What do we need to do?" "How are we supposed to do it again?" And so forth. This indicates that your team or business is organizationally challenged when it comes to training and explaining new processes to team members.
2. **Inconsistent results.** If you ask your team to do the same thing twice, you get two completely different results; chances are your team needs better organization when it comes to quality assurance and oversight—someone needs to review work and provide honest feedback as to what the team is doing well or poorly.
3. **Some tasks routinely take significantly more time to complete than they should.** It shouldn't take five days to answer a customer's tech support request; it shouldn't take ten days to ship on order; and it shouldn't take two hours to upload a webpage. If some of your organization's tasks take an inexplicably long time to complete, the processes used to complete those tasks are the root cause of the organizational problem—lack of process is usually the culprit in these instances.
4. **Key documents / items / information routinely go missing.** Your team members have a lot of trouble remembering where key pieces of information or pieces of equipment are placed. "Where's the key for the forklift?" "Where's last year's shipping manifest?" And so forth. This indicates that your team has a difficult time organizing and documenting its resources, whether they are material resources or informational.
5. **Errors occur frequently.** Things seem to go wrong and they go wrong often. This can be caused by a number of organizational issues, the most common of which is "roles and responsibilities." Disorganized teams tend to err frequently because nobody feels that they truly own their work; thus, they feel as though any errors that occur are "somebody else's problem." This occurs because the roles and responsibilities of each team member are unclear or undefined.

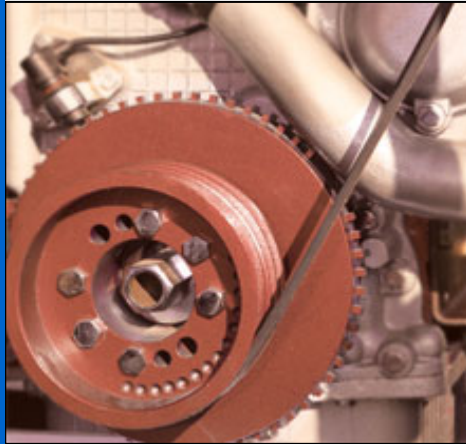
If you recognize any of these five signs within your own team then you know you've got a problem with organization. What can do you to start correcting it? The first place to start is to [analyze your existing processes](#) and identify the trouble spots.

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# Air Compressor Technology

*This article has been removed upon request.*

## V Belts in a Struggling Economy



In these troubling times, most maintenance departments must make difficult economic decisions. For manufacturing companies, one of the first areas to go under that microscope is maintenance. To the unsophisticated, maintenance costs, both labor and parts procurement, seem easy to scale back during economic downturns. Preventive maintenance tends to drift toward maintenance-by-emergency.

A well-planned V-belt maintenance-reduction program can help you survive while minimizing equipment degradation. The planning process doesn't have to be a protracted agony. Using simple processes and some tailored resources will deliver good results.

If you've developed a decent CMMS database or manual paper proactive maintenance system, you have already benefited from reduced labor and parts replacement costs (prevent a catastrophic failure), reduced production downtime and maximized energy savings (minimized belt slippage).

Proactive maintenance can be scaled back, but that involves significant risk-taking. Obviously, maintenance can be eliminated on idled equipment. However, scaling it back on operating equipment risks reversing the benefits listed above. This is especially true if the cutbacks are made without a rational thought process.

Reducing a maintenance program to the "if it ain't broke, don't fix it" level will result in significant degradation of equipment condition over time, costly major repairs and production downtime. That last effect might not seem like a major issue during reduced production schedules, but you can bet money that it'll be a critical machine that will break down at midnight while production is working to fill that oh-so-important order that must be delivered on time.

### **Test low-cost suppliers**

Before we explore possible ways to tweak your V-belt maintenance program, let's discuss belt-purchasing practices. In tough times, purchasing always seeks alternative, low-cost vendors. In the case of belts (both V-belt and synchronous or timing belts), there are inferior-quality imported belts being sold in the United States. I've visited some of these plants and the astonishingly poor quality amazed me. The manufacturers often will claim to meet the standards of the either the Rubber Manufacturers Association (RMA) or ISO. The problem is that these standards are geometric standards,

tolerances. In the case of RMA, the organization publishes horsepower ratings, but no performance qualification method. Any manufacturer can claim that its belts meet the ratings, but there's no way to confirm the claim. An inferior product will manifest itself in drastically reduced belt life and significantly greater maintenance demands. In the long run, purchasing name-brand belts from industry-recognized distributors is money well spent.

If purchasing wants to evaluate alternative, low-cost suppliers, it should be done in a premeditated manner. Maintenance should be involved and select one or two challenging applications so that the belts will be evaluated properly in a real-life application. This teamwork will allow purchasing to evaluate the prospective vendor properly. The goal of a test program shouldn't be one of ranking vendors; that takes many months or years and requires considerable testing in many applications. Rather, the test program should help you gain assurance that the potential vendor isn't furnishing a vastly inferior product. The cheap belts will likely fail after a month or two on a challenging drive, as opposed to two to three years for a quality belt installed on a properly designed and maintained drive. Preliminary evaluation can be based on inspecting the belts for unusual wear or cracking, and any additional required maintenance. If the prospective vendor's belts last for a month or two, up the ante and expand the evaluation to additional drives, again selecting challenging candidates.

### **Collect data to reduce maintenance**

Reduce your belt maintenance in a systematic manner. This doesn't have to be a huge undertaking. The primary information source supporting your logical decision process is your CMMS or paper-based work order databases. Then, augment that data with input from the mechanics and machine operators. Group your equipment into logical categories, for example:

- Belt drives on active equipment with no history of service problems are candidates for deferred maintenance.
- Belt drives on idled machines or those that have reduced usage are candidates for deferred or "no maintenance" status.
- Belt drives on critical machines exhibiting minimal service problems should be subjected to an analysis of risk versus cost before instituting an extended maintenance schedule.
- Belt drives on critical machines with a history of significant service needs will require a review of maintenance procedures, product quality level (look for use of off-brand belts) and a request of your vendor for recommend remedial options.
- Belt drives that are trending toward increasing maintenance demands will need to be prioritized for a failure analysis if resources are available or the component vendors can make recommendations.

This process will likely identify some troublesome belt drives. If these belt drives are on important production equipment, they probably justify a first-level troubleshooting process. A belt drive that is both designed and maintained well in a reasonable factory environment should last from two years to three years. The most frequent causes of reduced belt life are:

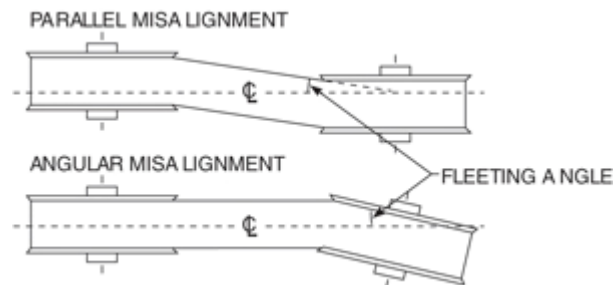
- Improperly designed drive
- Belts of inferior quality
- Improper maintenance with respect to tension, misalignment, etc.
- Worn pulleys

- Abnormal heat, dust, chemicals, etc. in the operating environment
- Improper belt storage in the stockroom

## Use the right tools

A skilled, trained mechanic can do some troubleshooting on a drive that isn't performing up to expectations, but a good belt vendor with whom you've built a partnership often can assist in troubleshooting. They're better equipped for the process. Troubleshooting a belt drive requires various tools. Those commonly available in the plant include:

- Infrared thermometer (belt temperatures should generally be less than 140°F)
- Stroboscope to observe belts under all operating conditions (with emphasis on start-up, shock loads and shut-down)
- Straightedge (or string for drives with long center distances) to check both parallel and angular misalignment (Figure 1).



**Figure 1. Use a straightedge or a taut string to look for misalignment.**

Advanced tools include a thermal imager and vibration analyzer. Some inexpensive tools you might want to add to your arsenal include groove gauges to check for sheave and belt wear (Figure 2), a belt-tension gauge (Figure 3) and the belt vendor's preventive maintenance manual. These are available from your belt vendor, who will show you how to use them. Preventive maintenance manuals, your primary guide for maintaining and troubleshooting belt drives, might be available on the belt manufacturer's Web site. The manual should provide generalized tension recommendations and lead you through the troubleshooting process.



**Figure 2. Use a groove gauge to help visualize sheave wear.**



**Figure 3. The tension gauge should be used for proper drive tensioning.**

### **A most versatile tool**

One final “tool” that will prove extremely valuable in your efforts to reduce belt maintenance is the machine operator. Typical operators know their machines inside out. Encourage them to monitor their equipment using their full range of senses:

- Watch for signs of abnormal operation
- Listen for unusual noise that could signal pending problems
- Observe unusual scents (probably an overheated component on the verge of failure)
- Feel for unusual machine vibration

Give your operators the authority to shut down a machine they believe has a significant probability of a major failure. It's better to have one or two false alarms than one major failure that damages associated equipment.

Done properly, scaled-back maintenance can help you survive and be prepared when the economy improves and orders pour in.

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## What's New?

### ASOPE™ CrossWord Puzzle

Visit the link below for new ASOPE™ CrossWord Puzzle Fun.

<http://asope.org/Crossword2.html>

Answers will be posted in next month's newsletter.