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## Adapting to Being a **Better Leader**

# 10 Reasons Why You Vibration Monitoring

By Alan Friedman 

If you are currently running a vibration monitoring program in-house or outsourcing it to a consultant, before you potentially throw any more money in the toilet, you really need to audit your vibration monitoring program and ask yourself if you are getting any value out of it.

If you do not know what benefits you are getting from a program, you are probably not getting any benefits at all! On the other hand, if you are getting benefits but not documenting them, then your program is at risk for being cut. Either way, you need to know what is going on with your program and document it if it is good or fix it if it is not.

All too often, people come to work every day and do their jobs without ever stepping back to ask if what they are doing is beneficial. Furthermore, many people cannot verbalize the goals of their program, no less demonstrate its benefits in financial terms. For example, one company has been using a consultant for a long time to test machines on a quarterly basis. The consultant was providing a report that was just graph after graph that no one ever looked at. Nowhere did the report show how many machines were tested, how many defects were detected, what defects were detected and how bad they were. On the client's side, the company never asked, "What is the benefit of this?"

People often have problems on the technical level as well. Vibration tests are often configured in such a way that the analyst is not going to find a fault unless it is really bad. And if it is really bad, then you don't need a vibration program to find it! When you buy a digital camera, it has a bunch of settings, like flash on or off, aspect ratio, number of pixels, f-stop, etc. Vibration data collectors also have a bunch of settings that need to be configured correctly for each test. The difference is when you set up the camera wrong, perhaps by taking a picture in the dark with the flash off, it is immediately obvious that you goofed because the photo doesn't come out. With a vibra-

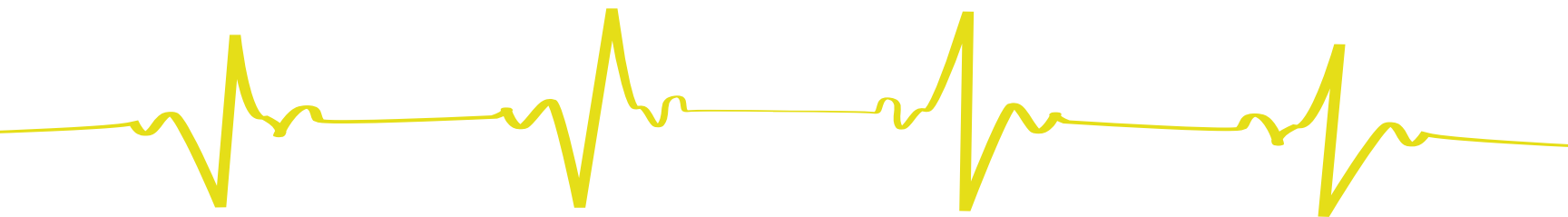


- 1 How many machines are being tested per quarter?
- 2 How many diagnoses are being made?
- 3 How many of these diagnoses are accurate?
- 4 How many of these defects would have been discovered even if you did not have a vibration monitoring program?
- 5 How much money is being spent on the program?
- 6 How are vibration reports helping you make better repair decisions?
- 7 What return on investment (ROI) are you getting from your program?



If you do not have answers to these questions, then you really need to audit your vibration monitoring program NOW!

# Should Audit Your Program NOW!



tion test, it is not so obvious. You may very well be collecting useless data without realizing it.

How you take the readings also matters. In some cases, people take readings on too many test points and money could be saved by taking fewer. On the other hand, some people don't take enough data, or they don't take it in the right place, like a doctor trying to listen to your heart by placing a stethoscope on your head; you might not be getting the data you think you are getting! Not only do you need to put the sensor in the right place, but since no sensor measures everything perfectly, you also need to use the correct sensor for the application. How you mount the sensor (e.g., two-pole magnet, flat magnet, sensor pad, etc.) also makes a difference and this also depends on what you are trying to measure.

It also matters what the machine is doing when you test it. When using vibration analysis in the context of a condition monitoring program, the key is to trend the data. Imagine waking up in a hospital bed and having a nurse take your pulse. Now imagine jogging to the doctor's office and getting it taken. Does your higher pulse rate mean that you are sick? Of course not. But if we can't compare the two tests, then how do we know which pulse rate is normal for you? Bottom line, if you are not testing your machines under similar conditions (e.g., speed, load, etc.) each time, then your trends are probably useless and so are your alarm settings – that is, if you have any alarms set up!

Assuming you are lucky enough to have all the test parameters set correctly and you know you are getting quality data, what about analysis? Are you just getting an alarm, or are you getting a concise report, such as: "Stage 3 motor bearing wear is indicated by a peak at 7.2x with harmonics and shaft rate sidebands. I recommend a bearing replacement during the next shutdown." And who gets this report and what do they do with it?

Does anyone calculate the financial value of knowing well in advance that the motor bearings are entering a failure mode? Does anyone open up the bearings after the repair to verify that they were, in fact, damaged? Does anyone track how many diagnoses are accurate? Does anyone track

how many failures are not diagnosed? Does anyone follow up to figure out *why* they were not diagnosed? When failures are detected, does anyone do a root cause failure analysis (RCFA) to determine what caused the failure? Does anyone follow up to redesign the asset or change procedures to prevent the same failure from happening again in the future?

Why is it that so many people have these sorts of problems with their programs? One reason is that the people running them are not adequately trained or have the skills required for the job. Many people put in charge of the vibration program are just given a data collector or software manual to read. After taking even a basic Category I vibration course, they discover they have been doing things backwards for years. What is difficult to understand is how anyone can think that running a program backwards for years is less costly than sending someone to a training class or having someone come in to audit the program. Lastly, it is one thing to take a class and pass an exam. It is another thing to be confident that your program is set up correctly and that you are getting the benefits that you should, and this is yet one more reason to.

In conclusion, at least 10 reasons why you should audit your vibration monitoring program NOW have been presented in this article. Can you find them? Can you come up with 10 more reasons to audit your vibration monitoring program now? If you think about it a bit, you more than likely can!

**The best advice to remember is:  
Audit it. Improve it.  
Get the most from your vibration monitoring program NOW!**



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