



When VIBRATION DIAGNOSTICS Fails to Work

In some cases the use of applied diagnostics fails to give you the expected end result. For instance, a company may buy a system for vibration diagnostics and offer proper training on the device to its staff, but still the anticipated results from its use, such as reduced costs and less unexpected shutdowns, are just not forthcoming. Why is this so?

EVA GERDA BOJKO,
Adash,

eva.gerda@adash.cz



THERE ARE a few factors, which may cause applied diagnostics to not be efficient. In this article we will have a look on what can go wrong.

Vibration diagnostics needs proper knowledge

The goal of vibration diagnostics is to receive the information about the current machine condition and decide if the condition is good, or if some repairs or adjustments need to be made.

First of all, it is crucial to train the

maintenance staff that uses the vibration diagnostics equipment. Vibration diagnostics is definitely a scientific discipline. However, this does not mean that the person using a vibration meter needs to have a deep knowledge of its theory! Obviously, when we train the maintenance staff that will be responsible for data collection and basic data trending, they don't need knowledge of advanced data analysis such as orbits or similar issues. It is important to provide the appropriate level of knowledge and training.

However, the person using an advanced vibration analyzer should have advanced knowledge. It is not enough to buy an expensive professional analyzer when we do not have anybody who can understand the measured data.

Vibration evaluation is very similar to X-ray photo evaluation in medicine.

Some things are obvious and visible to almost anyone, but a more advanced evaluation depends on the doctor's experience and knowledge.

You can probably see that it would be not be wise to set up automatic standards for X-ray photo evaluation. With vibration diagnostics it is the same, the procedures and some limit values can be recommended, but the vibration diagnostician needs to make the final decision and evaluate the reading.

Failing Communication between Maintenance Staff and the Diagnostic Team

There are different organizational structures in different companies. The following scheme however, is common: vibration diagnosticians collect and evaluate the data and the mechanical maintenance staff take care of the repairs and other machine treatments. If the communication and data transmission between those two teams does not work properly, it unavoidably leads to poor results.

Whatever the structure in your company looks like, the communication and understanding of data is essential. If decision-makers do not have sufficient information, they obviously cannot make the right decision. Correct advanced vibration analysis is worthless if it just stays in the hands of those who cannot take any further steps or decisions.

Moreover, the reports about machine condition should be accessible throughout the whole company for everybody who is responsible for the machines. Those reports should ideally include recommendations for further actions and deadlines when those actions need to be taken by.

Proper Customer Service is Missing

Customer service provided after purchasing the product is essential. When you buy an expensive professional analyzer it is necessary to be able to contact somebody who will answer your questions and provide you with sufficient

information and training. Different systems have different functions and controls. It is important to know how the purchased system works and to be able to send questions directly to the producer and to get an answer. Unfortunately, contact details for the producer are not always available nowadays.

The Human Factor

The human factor is definitely one of the main influences on vibration diagnostics efficiency. The best situation is if when the person who is responsible for diagnostics is also the person who is interested in it. Vibration diagnostics is a fascinating field and a personal interest can fundamentally increase its efficiency. The more the person knows and cares about the machines, the better the diagnostics results are. If diagnostics tasks are given to a person who already has plenty of work under his or her responsibility (usually electricians) without increasing their salary, the results will be poor, or totally nonexistent.

MAINTENANCE
NEXT
TECHNOLOGY AND MAINTENANCE EXPO
APRIL 11 - 13 2017



Register for a free visit

PARTNERS IN PERFORMANCE

Visit Maintenance NEXT in Rotterdam Ahoy from 11 to 13 April 2017. The technology and maintenance expo in the Benelux, building on today's and tomorrow's maintenance industry. Go to www.maintenancenext.nl for an overview of all participants and the programme.

LinkedIn Twitter @MaintenanceNEXT

Strategic partners

Organizer
ROTTERDAM AHoy

Wrong System Purchased

A top-quality, but inappropriate system is sometimes purchased by companies. When the decision of purchasing a new diagnostic product relies solely on the economic department, who only has the list of the required functions, the wrong decision may be made. Only a person with the appropriate knowledge can make a decision for the right solution. Moreover, you should consider the achievable skills of your staff properly before purchasing a system. You will not achieve expected results from purchas-

ing an advanced system for somebody who will never learn how to use it.

Wrong Application

It is necessary to use the vibration measurement devices according to rules, which ensure correct signal transmission between the inspected machine and the measuring device. If not, we can get an incorrect reading; even an experienced diagnostician is unable to read the information that is simply not there. For example, measuring places are very important; we need to select the correct

places and also prepare them properly. The best solution is to use measurement pads and glue them to the measuring points. This ensures good transmission of the signal and repeatability of the measurements.

Insufficient Communication with External Service Provider

All of the reasons above describe the situation when the company itself takes care of the diagnostics applied. The other option is to hire an external company providing diagnostic services. In some cases this could definitely be a good solution, especially in cases when we know we are not able to ensure all the factors, which are mentioned above. However, in this case all the issues are also not automatically solved. In this case the communication between the factory and diagnostics service company together with its correct interpretation are essential. Both groups need to work as partners and discuss the finding and recommended solutions. Recommended steps by a service company should be taken, otherwise the services are worthless. There is one disadvantage when hiring an external service company, which cannot be reduced easily and that is the fact that they don't know the machinery park as well as the employees of the company itself. The factory employees must say and report what they experience and see on their machinery to reduce this factor. A typical example of bad communication is a situation when the maintenance staff carried out a machine repair and nobody informed the external company about that repair. Then the external service company stares at the new measurement and vainly tries to find the reason for machine condition change.

Conclusion

You may think that all the reasons listed above sound quite obvious. However, in practice we see that it is not so easy to fulfill them all. Unfortunately, the listed mistakes can lead to the wrong judgment that the vibration diagnostics methods themselves are not working. The company may blame the method for not working as they imagined, but in this case the problem is only the bad application of the method. Correctly applied vibration diagnostics is definitely worth doing and it is a very effective part of a predictive maintenance programme. ■

