

Enhancing the Mechanic/Technician Role for Real Machinery Improvement

Written by Ralph T. Buscarello, Update International Inc.
Tuesday, 01 April 2003 13:22

One of my weaknesses in my life as a vibration analyst/instructor is difficult to confess, as it is shameful. For about the first 10 years of training others, advising, and consulting on tough machinery vibration problems, I concentrated on instrument readings and technical and practical knowledge. I paid attention to the specialists, engineers, supervisors, and managers. The mechanics and technicians—well, they were there, but I didn't focus much on them.

Enlightenment occurred when, after discussing the details of a tough problem with a plant's vibration specialists and maintenance engineers, I was brought to the machine site. Two mechanics were waiting, tool boxes ready. The engineer led me to the machine, but for some reason before I took readings I asked to be introduced to the mechanics.

The mechanics looked surprised as I said, "I could solve this problem by myself; however, if I use your brains and knowledge, as well as my own, I could solve the problem a lot faster and most likely with the most accurate answer."

Their interest heightened dramatically as I indicated I would examine the machine with them, take vibration data, and as soon as I had something to show, we would all go to a nearby office to discuss the findings. The purpose was to use the observations to stimulate their thoughts.

At that point, one mechanic said, "If I were analyzing this pump I'd look at its pipe way up there, near the ceiling." Why? "I've worked in this department for 2 years and about every 2 months I see somebody welding the crack, always at the same place." Before any further analysis I knew that a resonant pipe with its antinodes and nodes not only caused cracking at the node, but also distorted the spectral data and phase data.

It didn't take too long before my training courses included mechanics as well as more technically oriented specialists.

One large paper mill had mechanics in each department trained to use instruments and perform most analysis upon startup of machines for which they did the majority of work. This

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developed their analysis skills enough so they could work with the staff level analyst. When mechanics were confused about their vibration data, they freely asked other mechanics to help. When necessary, they called in the staff specialists. Conversations with the staff people were on a relatively equal basis, and not a specialist with all the knowledge talking to a mechanic who is ignorant on the subject.

After about two years the top staff analyst called to tell me how much better his job was. “We finally realized that we used to treat the mechanics as if we specialists had all the brain power and they were just an extension of the wrench. We found that the mechanics not only have good brains, but they really want to use their brains. As we showed we valued their input they actually worked harder to improve the machines they worked.” It is said that people who do mediocre work, feel mediocre about themselves; people who do good work—very good work—feel very good about themselves.

This was really brought home to me in a discussion with the former quality control manager at Rolls-Royce. I told him my own guesses as to why a Rolls-Royce turns out so much better than an ordinary “good” car. I surmised that Rolls simply learned to accomplish each operation with so much more precision. He chuckled and said, “That’s not really how we do it.

“We spent much more effort and sessions creating a sense of pride and expectancy than we did on actual techniques for skills.” His lesson reminded me of so many plants that were getting the best work for the smoothest running machines when the mechanics knew that management expectancy for precision and care was very high. They enjoyed providing what was expected.

This good work needs to be recognized. One large power company in one of its monthly machinery improvement and troubleshooting newsletters reported, in short articles, the good work of the mechanics that improved a machine’s performance. The articles had diagrams and congratulations to the mechanic from the various managers involved.

Yes, good vibration analysis and correction does require good instruments, good training, good engineers, good supervisors, good analysts, and other specialists. But the catalyst to make it all work easier, faster, and more knowledgeable is when the so-called “ordinary mechanic” is not treated like an “extension of the wrench” but instead, is a thinking person with good knowledge about the machine, who enjoys doing good work, and is acknowledged by supervisors, managers, other mechanics, and maybe even his mother. **MT**

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