



A Modern Day History of Reliability and Industrial Lubrication

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Up until the 1960s, many industrial plants had a staff position for a lubrication engineer to handle any questions related to lubrication. The lubrication engineer often relied upon the original equipment manufacturer (OEM) for lubricant recommendations and would set drain intervals according to OEM guidelines. The lubrication engineer was also tasked with analyzing any equipment failures to determine the cause.

For those of us who were around during this time period, we know that failures were almost always attributed to the lubricant. Invariably, the corrective action was to change lubricant suppliers. This type of corrective action often worked, so it seemed like an effective action.

As time moved on, plants streamlined their operations and the lubrication engineer position was gradually eliminated. The tasks previously handled by the lubrication engineer became the responsibility of the equipment operator or maintenance mechanic who would consult with the lubricant supplier. For a while, most major and independent lubricant manufacturers had qualified lubrication engineers on staff to answer questions. However, as with the industrial plants, the lubricant manufacturers also slowly eliminated these positions. Once again, this reduced the number of people knowledgeable about good lubrication practices.

In the 1990s, it seemed as if the practice of lubrication was on cruise control. Equipment lubrication was considered a necessary evil of running an industrial plant. If any problems were ever encountered, it seemed the only solution was a cross-reference replacement of the lubricant. Plant operations people had been lulled into a false sense of security by the results experienced during previous decades.

An Industrial Turning Point

At the turn of the century, industrial plant management began to recognize that aging equipment would need to be replaced. Unfortunately, by this point there was no one left on staff who knew how to bring in a new piece of equipment, get it up and running and recommend proper lubrication for the new

equipment. It was then that the position of reliability engineer began to evolve.

The financial collapse of 2008 further propelled this position to a higher level of importance as companies scrambled to find people qualified to serve in that capacity.

Effective Reliability Engineers

A broad definition of a reliability engineer is someone who identifies and manages risks that could adversely affect plant or business operations. The reliability engineer must have at least three areas of knowledge and ability to be truly effective: technical analysis, teaching/coaching and financial-based salesmanship.

First, reliability engineers must be able to provide technical analysis of assets. They have to be able to analyze failure histories and determine how to prevent future failures of company assets. To do this, they must be well-versed in reliability centered maintenance (RCM), predictive maintenance (PdM) and root cause analysis (RCA). They also must be able to provide technical support to production, maintenance and other personnel.

Second, they must be able to share these techniques with others in the organization so they understand how to implement best practices in the workplace. If they are successful in this capacity as an educator, then the company will realize operational savings and improved productivity. In addition to being a champion for improving the process in the company, the reliability engineer has to be a teacher who can educate others on the details, and the coach or cheerleader who can get the entire team on board and enthusiastic — all striving for perfection.

Third, reliability engineers must be able to sell their concepts to the top management at their facilities or companies. Many of the changes that the reliability engineer will suggest have a significant upfront cost associated with the improvement. Thus, to be truly effective in their “sales pitch,” they must be able to talk about return on investment (ROI), return on assets (ROA), net present value (NPV) and life cycle costing (LCC). To do this properly, they will need to have relevant case studies of success

that they can share. In addition to case studies, they should be able to provide benchmarking — a comparison of their processes and performance metrics to industry best practices — to help measure their facility's current effectiveness and accurately identify areas for improvement.

All three of these areas are paramount to improved plant equipment reliability. By mastering technical analysis, teaching/coaching and financial-based salesmanship, reliability engineers are able to convince upper management to trust them, support them and help them implement their concepts.

While it is easy to see that reliability engineers are concerned with much more than lubrication, it is also clear that proper lubrication has a significant impact on overall effectiveness of assets. It is also clear that proper lubrication involves much more than just recommending a lubricant for a particular application.

The Role of the Lubricant Supplier

In this newly evolved world of the reliability engineer, lubricant suppliers are now called upon to support reliability engineers with all of their responsibilities. To fulfill this support role, lubricant suppliers need to make sure their personnel are properly prepared as follows:

- They must be well-versed in the technical tools the reliability engineer uses, including the aforementioned RCM, PdM and RCA. Then, when they do their part for lubrication reliability, they are able to translate that value into terms the reliability engineer can understand and use.
- They must be prepared to recommend best practices for the lubrication reliability program. This means that in addition to making proper lubrication and oil analysis recommendations, they also must be able to provide recommendations for contamination control and exclusion through improved methods of transfer and handling, storage, training and more. This may include providing case studies and benchmarking that the reliability engineer can use.
- They must know how and be comfortable talking with executive level management to bolster the reliability engineer's explanation of the lubrication reliability program. This is not just talking about best lubricant practices, but also providing management with recommendations that include business and financial terminology, including talk of ROI, ROA, NPV and LCC.

As independent lubricant manufacturers and ILMA member companies, it is interesting to take a step back and look at these changes that have occurred over the past four and a half decades. Knowing these changes helps us better understand the position we are in now and how it affects our businesses. In fact, we have the unique opportunity to provide the type of expertise and support our industrial customers need. We are well-positioned to complement the role of their reliability engineers. In stepping into this role, we can help our customers move forward in reliability and profitability, and make ourselves more valuable to them in the process. ▲

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