



How proper lubrication can enhance A PLANT'S RELIABILITY

Everybody wants a reliable plant with a predictable maintenance schedule and a key part of achieving that goal is to ensure that your lubrication program is organized, well-funded and employing the best practices across the board. What are those, and how will they affect your plant's reliability? Here are a couple of things to keep in mind.

Lubrication can't be the last priority

It's sadly common for lubrication technicians or oilers to land on the low end of the seniority scale or come last in managerial assessments of what's important. Make no mistake – they're actually incredibly important. Without well-educated, motivated and trained lubrication technicians, your operation will literally grind to a halt. It's important to invest in education and certification for your people, so that they can excel in areas such as:

- Storing and handling oil and lubricants
- Learning the proper types and

amounts of lubricant to use for various applications

- Avoiding the pitfalls of over-lubrication
- Regularly inspecting machines to ensure that proper protocols are being followed

When your technicians feel valued and their work is considered a core component of overall operations, your uptime will increase and repairs will go down.

Improper lubrication gets expensive – fast

Buying high-quality oil and grease and investing in training is

expensive, sure – but not nearly as expensive as not funding them.

Des-Case conducted a study on the True Cost of Poor Lubrication, and found figures from ExxonMobil which showed “less than 0.5 percent of the average plant's maintenance budget is spent purchasing lubricants, but the downstream effects of poor lubrication can impact as much as 30 percent of a plant's total maintenance cost each year.”

The multiplier effect here is huge – just a small improvement in your lubrication program can have a massive positive impact on your overall reliability.

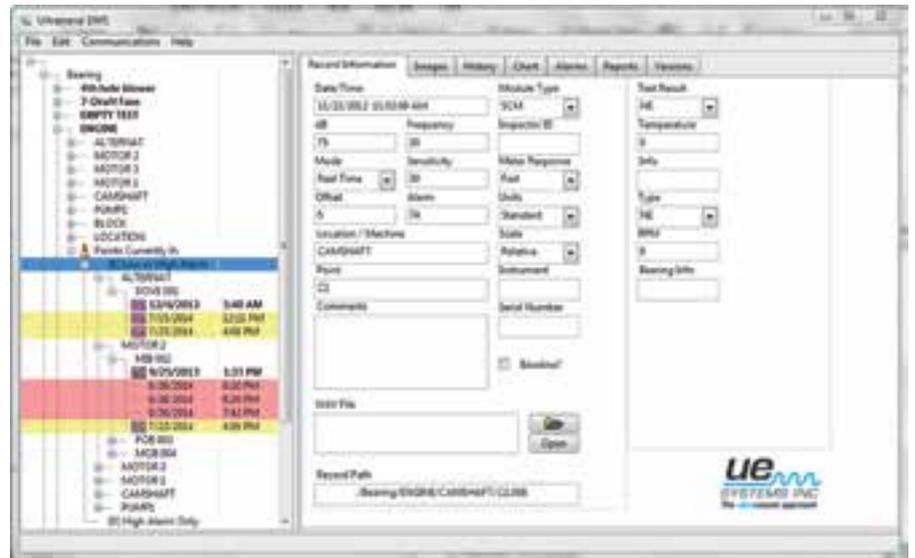
Overall, the study found that, given annual maintenance costs of \$9 million, about \$1.62 million of those can be attributed to issues arising around poor lubrication, and \$567,000 of those could be addressed immediately.

The study also found that simple time-based predictive maintenance strategies were bound to fail, because of wide variations in the life of different bearings. One subcomponent might be perfectly healthy while another is on the verge of failure. That's why testing for contamination, setting aggressive targets and taking action as issues arise will eventually prove more effective.

Proper lubrication frees up technician time

There are only so many hours in a day – and this feels especially true in the demanding environment of round-the-clock plant operations. Every minute spent dealing with inefficient lubrication protocols or the consequences of under- or over-lubrication is time technicians aren't spending on other issues.

By ensuring that your program is optimized to maintain oil health and to reduce downtime, you create space in your maintenance staff's schedules to deal with other issues



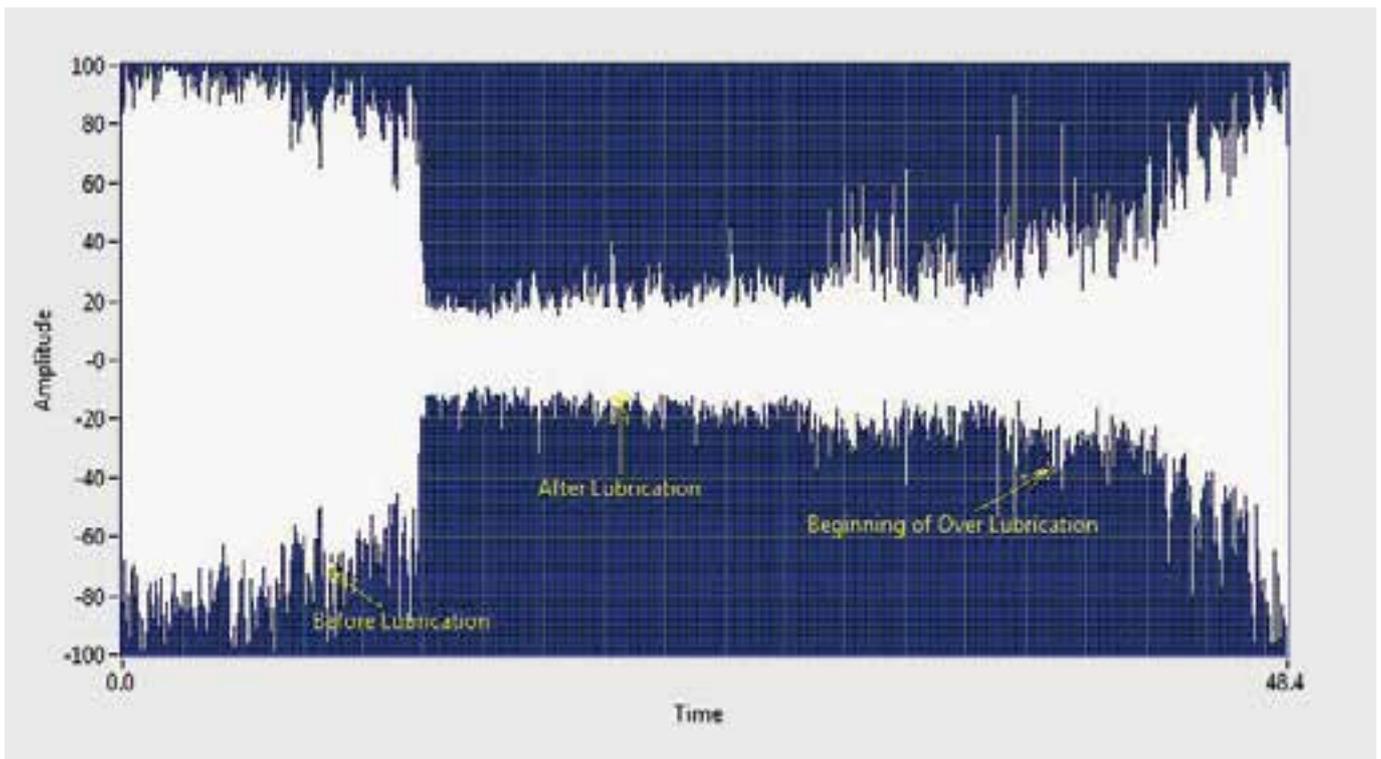
proactively. This gets you ahead of the game across the plant, ultimately improving your overall reliability and in the long term, lowering your costs.

The importance of oil analysis, proper storage & high-quality lubricants

The most precise lubrication in the world won't help if the lubricants in question are poor quality, contaminated or breaking down under heat and pressure. Contracting with an oil analysis laboratory or investing in your own analytics kit will allow you to detect these kinds of issues before they result in machine failure.

Many different factors can impact the quality of your lubricant. Improper storage or a blown seal on a component could allow dirt, water, or metal fragments to corrupt your supplies. Even new oil should be tested – while your lubrication program might be top-notch, you've got little control over its handling before it's delivered to your facility.

There are also many factors that can affect the storage of industrial lubricant, including using containers that already contain contaminants, storing them outside in harsh conditions, and not using color-coded containers to prevent accidentally mixing two different oils.





Any auxiliary equipment, lines, and vessels should also be thoroughly cleaned and certified before being used with fresh lubricants.

Finally, all the maintenance, storage and analysis technology in the world won't serve you well if you're not using both high-quality and properly selected lubricants. Most if not all technicians are comfortable with selecting the right grade of oil for a given application, but there are more complex factors than that to weigh. Considerations such as additives, duration of use and ambient conditions can all make for a significantly more complicated decision process.

Avoid over-lubrication by using Ultrasound

Lubrication is far more complex than just buying oil or grease and throwing it into your equipment, of course. Selecting the right type or types of lubricant, storing and filtering them correctly, monitoring bearing noise, and ensuring that over-lubrication and under-lubrication don't occur all play

an important role. Fortunately, there are more technologies than ever in the marketplace that allow you to manage your lubrication program effectively.

An ultrasonic instrument as the UE Systems Ultraprobe 401 Digital Grease Caddy can bring your facilities management game to the next level. The Ultraprobe 401 uses ultrasound technology to provide critical data about baseline dB levels, dB levels before and after applying grease, cost analysis of lubricants and other vital information.

Over-lubrication is often a problem as big as or bigger than under-lubrication – in fact, 70 percent of lubrication professionals believe it's a problem at their plant. When excess grease gets into a bearing, it begins to churn and heat up. This churning causes the lubricant to solidify, blocking the entry of more, fresh grease and ultimately causing a bearing to fail. Another possible failure mode that can arise from over greasing is seal damage. Adding more than the necessary amount of lubricant to a bearing under the high

psi of a grease gun can crack the seal, allowing outside pollutants to infiltrate.

The Ultraprobe Grease Caddy uses ultrasonic technology, so that lubrication technicians know when to stop adding grease, which can prolong the life of your equipment. Its digital display allows the user to gauge friction levels through the dB levels. Even in high-noise environments, the Ultraprobe 401 is able to isolate the necessary ultrasonic waves and transmit them to the user.

Conclusion

In all, the field of precision lubrication and maintenance has grown more complex and diverse than ever before. It's easy to get lost in the minutiae of these processes and products, and sometimes the measures you think are helping may actually lead to failures down the line. With the right techniques and technologies, however, it's possible to see real return on investment from your maintenance efforts.