



## **The Need For Training**

By Martin Williamson.

Are you still purchasing oil on the 'cheapest tender wins' basis? Or were you tempted by that free oil analysis? What has any of this got to do with training?

It comes down to the three 'T's which apply to all aspects of running a business. What are those three 'T's? Training, Time and Tools. The latter two are self-explanatory. Nobody can do their job without the being allowed the time to complete it satisfactorily. Without the appropriate tools, the job will not be completed properly, if at all. It amazes me time and again when I am on site how there is never enough time to do the job of lubrication properly, but always enough time to rectify the problem later at an additional cost. It amazes me how lubricants are managed with a minimal set of tools. This may seem like an obvious win situation but what about the hidden cost in the damage incurred on the lubricant and machine, and more importantly the production availability?

Well you maybe wondering how much of an impact this has on the bottom line of a company's profitability? Do you feel sufficiently educated to take a guess? And this is the crux of the problem; many businesses are operating on guesswork. The role of lubrication and that of the staff involved is often trivialised.

Every piece of equipment in your plant that moves is lubricated. We are not just addressing the potential saving of increasing the useful life of the oil. Nor are we addressing the potential increase in the life of the asset or component. We are taking a fundamental root cause approach and eliminating the cause of the problem. We are increasing the available production time by reducing the occurrence of minor or major failure. Oil analysis is merely a means to assess priority areas and monitor the progress. Analysis will not resolve the problems, it merely monitors current practices.

For improvements in profitability and savings on maintenance to occur, education is critical. A new employee is often selected for their experience, and qualification to do the job. Yet, when it comes to the role of lubrication management and analysis, it seems that anybody is suitable for the job.

Individuals have a desire to do the job right and to do it well. This requires training in addition to the time and tools. Training is a key part of the Investors-In-People programme. Training is also considered a strong motivational factor that recognises an individual's educational needs. Training also rewards with certification and an increased skills base. In terms of certification, several independent bodies such as

the International Council for Machinery Lubrication and the British Institute for Non-Destructive Testing offer international certification in both machinery lubrication and oil analysis.

However, the training requirements in lubrication are broad ranging.

Firstly, lubrication awareness is sadly lacking at the fundamental stage of an engineering career, whether at College or University level. Very little emphasis is placed upon the importance of the formulation of the oil and the selection of the appropriate lubricant to meet the challenges of the equipment and its environment. OEM choice is often a commercial compromise and often little research is done to ensure the right lubricant is used in operation.

The result is that newcomers to the maintenance and engineering departments build on the knowledge of their colleagues, which again is often lacking and based on myth and commercial bias. And potential long-term life of equipment is not achieved.

The success of any lubrication training is due of course to the ability to integrate this knowledge into everyday maintenance duties, and typically the best lubrication practitioners are those that have a fundamentally strong engineering and maintenance background.

Because of the broad involvement, lubrication training should be directed at all levels of the company. The culture change that emanates from a shift towards a root-cause or proactive maintenance structure requires that all parties are educated in the goals of the programme firstly, and that individuals are educated on how to achieve those goals at a level appropriate to their role.

At the highest level, senior management must be aware of the very basics of the lubrication strategy and the need for optimised lubricant selection backed up with an analysis programme. This minimum one-hour session must focus their attention on the financial benefits of the planned implementation.

At engineering level, a sound understanding of machinery lubrication is important, backed up with good overview knowledge of the role of oil analysis. Typically taking up to 4 days to complete, as engineering will be, and should be, involved in the implementation, this is essential education.

At the technician level, the candidates selected to undertake the actual sampling and analysis of the data should be educated in the basic sampling procedures, as well as the interpretation of the data. Typically, after a 4 day class, they should be familiar with basic on site analysis, either basic field-testing or more advanced instrument testing and laboratory support.

At the lubricator level, this maybe a task carried out by dedicated maintenance staff, or alternatively, many companies have passed this responsibility over to the operations staff. Either way, there is still a need to understand the basics of lubrication handling and the application or dispensing of lubricants.

In common in all of the above, the understanding of lubricant formulation, the importance of the correct lubricant for the application, and the need for a contamination control strategy are all essential aspects of the training. Whether at an overview level or a detailed level, this is fundamental to everyone's understanding of the goals of a sound lubrication strategy. In fact, it should be, in the author's opinion,

a fundamental part of any undergraduate or college study in mechanical and maintenance engineering.

About the Author:

*Martin Williamson, Director, KEW Engineering Ltd.*

Martin has extensive experience in oil analysis and lubrication management across multiple industries including pulp and paper, mining, power generation, iron and steel, automotive and general industry. Martin is a widely published author on topics including 'setting-up a lubrication program' and 'the future technology of oil analysis'. KEW Engineering undertakes contract training and consulting roles for leading organisations.