

# MAINTENANCE IS AN EXECUTIVE PRIORITY - Dave Scott

It's a tragedy that business executives only take notice of lubrication and unnecessary friction when the 'wheels stop or fall off' a truck or any productive plant and machinery. Weak lubrication practice has a severe impact on the life of trucks, productivity and operating costs. It's all compounded by lubrication costs that are such a small part of operating expenses and applied by the most unskilled labour available ('grease monkeys'). In other words, lubrication is perceived to have no strategic value.

A recent study by the SA Institute of Tribology (SAIT) – which has nothing to do with tribes and everything to do with friction and wear – outlines the really concerning state of lubrication practices in South Africa. Sponsored by the South African Department of Science and Technology, and titled 'SA Tribology Project 2010', the research objective was to determine the cost and energy saving potential of tribology to SA. Here are a few key findings that relate directly to the our local road transport industry:

Root-cause failure analysis is not typically performed in industry, hence the true value of lubrication related failures cannot be determined. There are, however, a number of individual operations that are conducting root cause analyses and have reliability engineers for failures above a certain value. Most failures and breakdowns that occur are typically due to:

- Contamination, water or dirt ingress
- Alignment
- Poor maintenance
- Lack of greasing/lubricating
- Policies and control

The major component failures are gearboxes, pumps and bearings.

Typically, up to 35% of the failures are caused by shaft misalignment. Laser alignment equipment is normally available, but is not always used by the maintenance personnel, unless the reliability department insists and checks that this occurs.

An example in one plant was fans with double spherical bearings that were failing: 30% were due to misalignment and 70% due to balancing. Bearing life in the 18 fans was 2-3 months. With correct alignment and balancing this was reduced to approximately one failure per annum. These failures indicate the lack of skills, attitudes and training of artisans and artisan helpers. It is believed that this could be the cause of up to 60 -70% of all failures.

This study has shown that, in general, equipment life has been reduced by a factor of three over the past 15 to 20 years. The loss of equipment life is a lack of traditional maintenance skills. 'Modern' maintenance has forgotten that that dirt does not lubricate, that shafts must be correctly aligned and that oils and greases are not all the same. The report goes on to point out the desperate need to get back-to-basics:

- the need to calculate the correct viscosity grades throughout to minimise energy wastage and
- to understand the difference between grade and type of lubricant

Education is a priority, from the boardroom to artisan level. Tribology and lubrication are currently not part of any tertiary level course. A lubricator is one of the most important persons on the plant, and must be trained and recognised accordingly. Here are three items that truck operators can note:

- Total cost of ownership of assets should be a philosophy that is implemented
- Filters and filter management is CRITICAL in improving system cleanliness and improving component life
- Design of systems from an operation and maintenance perspective is essential to minimise dirt contamination of systems during maintenance

It's a CEO challenge – place lubes on the boardroom table!



Tribologist John Fitton

Make lubrication a strategic and policy-driven issue and don't bring failures to board reports.

If any CEO is really interested in preserving and protecting a truck fleet, including all the fleet support machinery, then take a tour of the lubricators' ('grease monkeys') workplace and ask yourself - does this match the highest standard? In all honesty, is this operation going to extend vehicle and component life? Do you really need more computers and software or an upgrade for outdated lubrication equipment, storage areas, systems and procedures?

A 21-page paper on the 'Tribology 2010' report that was presented at the recent Tribology International Conference in Pretoria, is broad-brush stuff - but worth the read and available FOC – Free of Charge! It might change your mind about how we think about friction. But importantly, make friction (rather tribology – consider it your new word) a strategic issue. This elevates the subject to the level of being policy-driven, environmentally-friendly, energy-conservative and concerned with life-cycle costs.

*References & acknowledgement*  
 'Swan PG, Fitton JC; South African Institute of Tribology; SA Tribology Project 2010'  
 A copy of this paper can be obtained from the SA Institute of Tribology.