

Newsletter – December 2018

Tribology and road transport share a common path in managing friction.

Here, in summary from a study done by Bridgestone, is the share of resistance encountered by a truck on the road at 88kph where speed plays a major role.

Effect of speed on Fuel Efficiency	
Road Speed	88kph
% Tyre Rolling Resistance	33,3%
% Air Resistance	33,3%
% Everything Else	33,3%
	100,0%

As speed increases, air resistance becomes a major frictional factor. But managing rolling resistance is in part a matter of correct tyre air pressure – a tyre is simply a ‘container’ for air under pressure. The correct air pressure, measured at cold ambient temperature, is designed to deliver optimum fuel economy at the regulated national speed limits under load.

Fuel is by far the biggest cost factor in road transport – easily up to 50% of both fixed and variable costs in long distance haulage. According to a recent press release, MAN Automotive South Africa has selected Continental's Intelligent Tyres fitted with ContiPressureCheck (CPC) for its premium range of EfficientLine trucks, *allowing for real-time monitoring of tyre performance, pressure and temperature, thus allowing fleet managers and drivers to reduce downtimes and improve operating efficiencies.* The CPC integrates with the fleet's telematics provider, to generate real savings and to efficiently manage tyres in the fleet.

With both systems integrated, monitoring tyre pressure becomes easier and more transparent, as the CPC tyre sensor is mounted directly in the tyre to constantly monitor tyre pressure and temperature. *It's all about using technology to manage friction in real time – an efficient tribological outcome.*

ETT – Essential Tribology Terminology

More simple definitions for three of tribology's essential terms

- ✓ **Morphology** - The surface structure and size of the wear material
- ✓ **Monograde Oil** - Non-VI enhanced oils most commonly associated with automotive applications that meet the requirements of a single SAE viscosity grade classification.
- ✓ **Multigrade Oil** - An oil that meets the requirements of more than one SAE viscosity grade classification and is therefore suitable for use over a wider temperature range than a single grade oil

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Afternoon Seminar - 6 February 2019

A seminar entitled, 'Materials DO Matter', will be held at the SAIT Offices, Science Park, 1 Northway, Kelvin, Sandton, on 6 February next year. The interesting presentations include:

“Simulation of abrasive particle collision during submerged polishing of CVD coated hardmetal turning inserts” by Dominic Smit, University Witwatersrand.

“Materials Solutions At work” by Dr Amanda Jonker, Senior Ceramist, Multotec.

“Material Development & Tribology in the 4th Industrial Revolution” by Thuli Mkhali, University Witwatersrand.

“White Etching, a Common Form of Bearing Failure in Wind Turbines” by Patrick Swan, Aswan Consulting

We invite all interested tribologists in the field of wear and friction to attend.

There is no charge – but please advise Gill at secretary@sait.org.za or Isabel or Berice at admin@sait.org.za, if you wish to attend.

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SAIT Training

Follow the path from data to information and into knowledge

Lubrication Engineering 118 was held at our new training venue, Cedar Woods of Sandton, from 8 – 12 October 2018. Our congratulations to the twenty delegates who passed the exam; an especially hearty congratulations to Jano from Afrisam and Dewald from Fuchs Lubricants, who each achieved a distinction. Delegates came from all over South Africa and from as far afield as Gabon and Tanzania.



Delegates to Lubrication Engineering 118, with Lecturer David Beard

Lubrication Engineering Courses and Costs, 2019

LE 119: 18 - 22 February 2019, Johannesburg

February: SAIT Members: R14,950.00; Non-Members: R16,675; Students: R4,600

LE 120: 6 - 10 May 2019, Johannesburg

LE 121: 27 - 31 May 2019, Durban

LE 122: 22 - 26 July 2019, Johannesburg

LE 123: 26 - 30 August 2019, Cape Town

LE 124: 7 - 11 October 2019, Johannesburg

May – October: SAIT Members: R16 031; Non-Members: 17,894.00; Students: R4,922.00

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INTERNATIONAL EVENTS

2 April 2019 – UNITI Mineral Oil Technology Congress – Stuttgart, Germany:
www.umtf.de

15 – 17 May 2019 – SERBIATRIB '19 – 16th International Conference on Tribology - will be held in Kragujevac (Serbia), at the Faculty of Engineering, University of Kragujevac - www.serbiatrib.fink.rs

25 – 27 June 2019 - The 12th International Colloquium Fuels – Conventional and Future Energy for Automobiles will take place at the Technische Akademie Esslingen

DID YOU KNOW?

'A tribological tip-trip'

Lube standards – can have a massive environmental impact

The simple fact is that a subgrade lubricant lacks the correct additives in the correct ratio and that plays a major role in price. An internationally-branded API CI-4+ SAE 10W-40 engine oil with truck manufacturers' test compliance and certification costing USD in the millions must compete with backyard blenders that offer no compliance except for an attractive price.

Subgrade lubricants mean more frequent oil changes which in turn is an environmental problem because we do not recover all the used oil in the market. In these times of very high fuel prices there is a trend to blending with uncertified biodiesel that impacts on lubrication quality and service intervals.

Biodiesel has an even bigger effect on a subgrade lubricant – it's a vicious circle. 'Truck manufacturers are not happy with biofuel stability and crop quality' says Lubrizol.

Another big market with a pollutant impact is hydraulic fluid. Not only does expensive equipment perform poorly with subgrade hydraulic fluid, but also hoses burst with consequent downtime.

Ref: FleetWatch Magazine

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PARTING SHOT

It's time to tighten up on meaningless lube spec references.

The problem with common terminology usage for lubricants is that consumers, and the unwary, get trapped into believing that viscosity is everything. For example, people talk about a 10W-40 or a 5W-30 as if that was the only standard and measure of lubricant quality and performance – factually missing key reference factors.

A 10W-40 lubricant can be anything without the necessary performance additive packs whereas a API CI-4+ SAE 10W-40 includes the essential performance factor. This is what makes lubrication specification measurable and enforceable. And it's not just an engine oil issue – this applies across the board to hydraulic fluid, gear oils and greases as well.

The language of tribology needs discipline – especially in marketing and labelling.

FROM THE SAIT SECRETARIAT



**We wish all our Members
A safe and joyful Festive Season**

Annual Closure

**Our offices will be closed
From Thursday 13 December 2018
And will reopen on Tuesday 8 January 2019**

