

# WEARCHECK INTERNATIONAL SETS GLOBAL GOALS

**Wearcheck Africa hosted the annual Wearcheck International (WCI) conference at Ballito on the KwaZulu-Natal North Coast at the beginning of July.**

Top of the agenda was the proposed introduction of a global used oil analysis service offering international equipment manufacturers and operators a centralised data base.

*"This would facilitate accurate record keeping of equipment history regardless of the origin of the sample, enabling more cost-effective maintenance management,"* said Lesley Crawford, managing director of Wearcheck Africa.

This practice is already in operation in North America where Wearcheck USA and Wearcheck Canada offer a seamless cross-border service to customers. The Ryder truck leasing company which operates about 150 000 trucks in Canada and the USA, makes extensive use of this service.

*"We hope to extend this in the long term to the nine WCI member companies which also service most European countries, Australia and parts of South America, the Middle East and sub-Saharan Africa,"* Lesley said.

Another issue discussed at the conference was the incorporation of sample diagnosis into the group's existing round robin cross-check system to ensure uniformity of laboratory analysis. This type of monitoring is valuable for maintaining ISO 9000 quality registration.

A new development arising from last year's conference in Germany is an Internet bulletin board, an online "think tank" which allows employees of all WCI member companies to request advice and offer input on a range of topics based on their own experiences. These include technical laboratory problems, software development, diagnosis, marketing and training.

All delegates said that being part of the WCI alliance had many advantages. James Chambers of Wearcheck USA said that Volvo had become a major client as a direct result of the WCI association. The equipment manufacturer nominated Wearcheck as a preferred supplier internationally as a consequence of its successful working relationship with Wearcheck UK.

Peter Weismann of the German operation said that being part of a respected international group was reassuring for his customers and had real value for his company.

Neil Robinson, technical manager for Wearcheck Africa, compiled some interesting statistics from information supplied by member companies:

- \* Wearcheck Africa processed the most samples of the nine member companies last year - a total of 359 000, followed by the UK operation with almost 270 000 and Wearcheck USA with 262 000. The combined number of samples processed by the WCI companies last year was 1,1 million.
- \* Belgium and South Africa top the list of companies distributing reports electronically - 100% in Belgium and 76% in South Africa.
- \* The German, South African, and Belgian operations received most feedback from customers, receiving feedback with 15%, 11% and 10% of samples respectively.
- \* The UK company has the highest number of current customers at 9 000 with 93% of them submitting less than 100 samples a year. By comparison, Wearcheck Africa has 3 300 current clients, 26% of whom submit more than 100 samples a year.

*Enjoying the beautiful Ballito coastline are WCI delegates (front row, left to right): Greg Lewis (Australia), Bob Cutler (UK), Bill Quesnel Senior (Canada), Gilbert de Mey (Belgium), Peter and Barbara Weismann (Germany) and back row: Neil Robinson (South Africa), Andre Verlinden (Belgium), Bill Quesnel Junior (Canada), Jesus Terradillos (Spain), Judit Bereczki (Hungary), James Chambers (USA) and Lesley Crawford (South Africa).*



# WEARCHECK KEEPS PLASSERAIL'S MAINTENANCE COSTS ON TRACK

Wearcheck has been saving Plasserail thousands of rand in maintenance costs for the past 15 years.

This Johannesburg operation owns, operates and maintains mechanised railway maintenance equipment on contract to Spoornet.

Says Greg Wilson, Plasserail's advisory engineer, "Oil analysis is our key method for monitoring the condition of engines, gearboxes and hydraulic systems."

"The cost of repairing or replacing some engines and transmissions can exceed half a million rand. Therefore, spending R400 a year on oil analysis to monitor a high cost component to prevent unnecessary failures has to be a good investment."

"A key component of oil analysis is the measurement of hydraulic oil cleanliness to ensure contamination control," he said. "We have set very high standards of cleanliness and are achieving them, with substantial savings in hydraulic component repair and replacement costs."

Mr Wilson cites a specific example of how the Wearcheck programme prevented failure of a key component and saved Plasserail a substantial amount of money.

An oil sample taken from a track geometry measuring car showed water in the oil when the sodium level increased dramatically. A check on the engine cooling system indicated a loss of pressure. The engine was removed and found to have partially overheated, damaging the liner water jacket "O" rings.

"Running an engine that is overheated normally leads to rapid wear and can result in conrod failure, often with catastrophic results," Mr Wilson said.

"The oil analysis report alerted us to the problem early and allowed us to remove the engine during a non-working period so income was not lost and repair costs were limited to those of a normal overhaul. We estimate that this saved us R260 000, made up of R60 000 for loss of income and R200 000 for extra engine repair costs."

Most of Plasserail's 65 machines are on the Wearcheck programme. These range from tamping machines and track geometry measuring machines to ballast cleaner and regulating machines.

Greg Wilson, advisory engineer for Plasserail.

This continuous action tamping track levelling and lining machine is one of the units of railway maintenance equipment which Plasserail has on the Wearcheck programme.

## New services take off

Wearcheck has added three new services to its product range over the past year - coolant, diesel and transformer oil analysis - and all are gaining in popularity.

### COOLANT ANALYSIS

Since Wearcheck introduced its coolant analysis service in August last year, increasing numbers of customers are finding that it has become an essential part of their maintenance programme.

"Considering that at least 50% of all premature engine failures can be traced back to cooling system problems, this makes sound business sense," says John Evans, diagnostic manager: mobile equipment. "It is vitally important that engine coolant systems are kept in peak condition."

Samples are taken from the radiator when the engine is serviced and sent to the Pinetown lab where several tests are conducted including glycol concentration, freezing and boiling points, pH and nitrite concentration. The diagnostic report advises whether the coolant is fit for further use or needs to be changed.

PRODUCT CODES:	Coolant analysis kits:	WCK
	Transformer analysis kits:	WTAK
	Diesel analysis kits:	WDS

### DIESEL AND TRANSFORMER OIL ANALYSIS

Introduced to meet customer demand, diesel and transformer oil analysis are outsourced to a business partner, but kits are available from Wearcheck.

In the case of transformer oil analysis, the condition of the oil is examined as well as the transformer itself. This can detect potential problems like contact arcing, ageing insulating paper and other latent faults. Samples are submitted in a 1 litre tin container.

Diesel analysis is of value to companies operating automotive equipment. A range of tests are carried out to detect unsuitable diesel which could damage a vehicle's fuel system.

## Swazi contract extends WEARCHECK'S African footprint

Wearcheck has a major role to play in a new contract awarded to Instrument and Control Systems (ICS) by the Swaziland government's Central Transport Administration for the condition monitoring of their 4 000 vehicles.

"ICS have been supplying Wearcheck's programme to the Swazi sugar industry for the past five years and are agents for a number of products and services allied to the transport and plant hire industries in Swaziland," says Guy Holman, managing director of ICS, "Wearcheck's experience and reputation were an influencing factor in the award of the contract, coupled with the solid base we have established in Swaziland."

ICS have appointed their subsidiary, Fleetcon, to administer the contract on site.

They have established a site office at Central Transport Administration headquarters for ease of access to the government's fleet which ranges from light commercial vehicles and buses to trucks and municipal earthmoving equipment.

Roy Vilakati, MD of Fleetcon and Mario Valentim of ICS underwent a two-day training course at Wearcheck in May and the first samples from the Swazi government fleet were received in the Pinetown lab in June.

"We expect to process about 3 000 samples for this contract in the first year," said Wearcheck's Keith Finlayson who has been working closely with ICS on the project.

Other African countries where Wearcheck's oil analysis service is currently helping to reduce the maintenance costs of organisations operating costly equipment and heavy duty vehicles are Botswana, Congo, Malawi, Namibia and Tanzania.

## ...TECHNICALLY TALKING

It was all systems go at two afternoon Technically Talking sessions on coolant analysis presented by Jan Backer and Daan Burger at Wearcheck's Johannesburg office in mid-June.

"The response was excellent," says Jan. "More than 50 customers attended the two presentations which were followed by lively question and answer sessions."

"Many of the companies who attended have since started sending in coolant samples as they have now made coolant analysis part of their maintenance programme. Some have asked if the presentation can be made available to their employees so that everyone is fully informed of the benefits."

Those who attended ranged from mechanics, foremen and engineers to technical managers. They represented a variety of organisations such as oil companies, earthmoving operations, maintenance service companies and transport undertakings.

"We plan to organise regular Technically Talking presentations on topics which we feel will be of value to customers," Jan said.

## LUBE TIP

### HOW OXIDATION CHANGES OIL

Once the oxidation process occurs, five major changes in the oil result in the following:

1. Colour becomes darker - changes from transparent or translucent in colour to some degree of discoloration toward the point of complete opacity.
2. Odour becomes pungent and acetic due to the presence of excessive organic petroleum acid and similar products of oxidation.
3. Acidity increases - changes from a neutralisation number from 0.06 to 0.12 KOH mg/g to well above 2.0 can occur.
4. Viscosity increases - the viscosity of an oil frequently may double or triple due to oxidation. Oxidative thickening is capable of producing fluids that have the consistency of molasses-like sludge under high operating temperature conditions.
5. Insolubles precipitate (sludging occurs) - after an induction period, the deterioration of an oil gradually accelerates until the formation of organic acids of deposition of sludge completely destroys the oil.

- Courtesy of Noria Corporation

# Wearcheck targets power generation industry locally and abroad

Wearcheck has set its sights on the power generation industry after securing two key orders in May - one on a wind farm at Mumbai, India and the other in joint venture with ABB South Africa at Kendall Power Station near Witbank.

Wearcheck will be performing ongoing oil analysis at Kendall from the beginning of June as part of a full condition monitoring contract valued at more than R3 million over three years. This will be completed in strategic alliance with ABB who will perform the thermography and vibration analysis. The contract aims to reduce maintenance costs and increase reliability and availability of all monitored equipment at the 3.75 Giga-watt power station.

Windia Power Limited of India approached Wearcheck in April to monitor the massive low friction gear box bearings operating on the wind turbines at its Mumbai wind farm.

According to Wearcheck managing director, Lesley Crawford, the bearings should produce as little friction as possible to generate power efficiently.

*"Although the initial order for Windia Power is relatively small, we hope that it will develop into a long term relationship. In any event it has alerted us to a potentially lucrative new market - India is the fifth biggest user of wind-generated energy in the world."*



Lesley Crawford, Wearcheck managing director, in the Pinetown laboratory.

*"This type of analysis is well suited to our advanced LaserNet Fines particle counter, the only instrument of its kind commercially available in South Africa, which is used extensively for the power generation industry by our associate companies in Germany and Spain."*

*"Locally, Eskom has established a wind-energy research facility with three wind turbines at Klipheuwel in the Western Cape which could open up a new market in this country in the long term," Lesley said.*

*"Wind farms are of particular interest to us because the technology is environment-friendly in keeping with our drive to achieve ISO 14001 registration for our environmental management system by early next year."*

## TAILOR-MADE TRAINING GETS RESULTS

A new one-day training module on report interpretation has been added to Wearcheck's range of technical training courses. This focuses on engines, drivetrains and clean oil systems.

"Oil analysis orientation" and "Understanding oil and its analysis", both full day courses, have been helping customers get the most from their oil analysis programme for years, along with a half day course aimed at maintenance managers.

These are all offered at scheduled times at Wearcheck's offices in Johannesburg and Pinetown or on the customer's premises. They are complemented by a practical on-site workshop in English or Zulu on how to take a sample.

Wearcheck is also organising regional training courses at centres like Cape Town and Nelspruit so that companies in those areas can take advantage of the service without incurring travel and accommodation costs.

A new trend, says Wearcheck training specialist Jan Backer, is that 90% of customers now prefer to conduct training at their own offices or workshops, finding this a more flexible and effective alternative.

This means that all of their staff can benefit without too much disruption and that courses can be designed to meet their specific needs.

The first thing Jan does is conduct a needs analysis to determine the level of training required. *"By asking the right questions I can easily determine which modules should be included," he says. "This is extremely important because training pitched at the wrong level is counter-productive. Pitched correctly, it will improve the attitude of employees to oil analysis as well as their efficiency."*

**For details on Wearcheck's training courses contact Cathy Bolton on (011) 392-6322 or email: [jhbsupport@wearcheck.co.za](mailto:jhbsupport@wearcheck.co.za).**

*If you would prefer to receive future issues of Wearcheck Monitor and Technical Bulletin via e-mail instead of in printed form, please e-mail a request to: [support@wearcheck.co.za](mailto:support@wearcheck.co.za)*

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