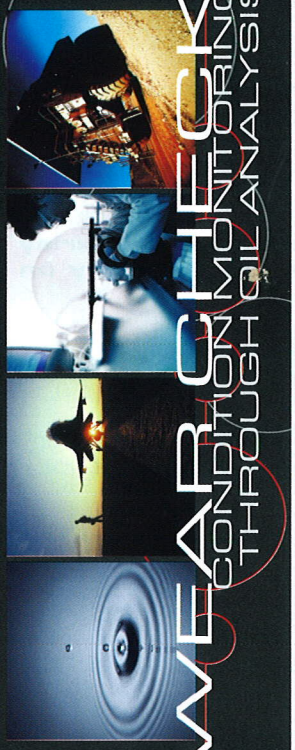
WEAR CHECK® AFRICA
A member of the Set Point group

MONITOR
ISSUE 42

WEAR CHECK
CONDITION MONITORING THROUGH OIL ANALYSIS



INTERNATIONAL TIES ARE STRENGTHENED AT WCI MEETING IN CANADA

Taking a break from the annual WCI meeting to enjoy the Canadian sunshine are (left to right): Bill Quesnel Junior of Canada, Tim Vann and Keith Scott of the USA, Peter Weismann of Germany, Alistair Geach and Bill Quesnel Senior of Canada, Bob Cutler of the UK, Andre Verlinden of Belgium, Larry Baddock of Wearcheck Africa, Judit Bereczki of Hungary, Neil Robinson of Wearcheck Africa, Barbara Weismann of Germany, Akos Nemesnyik of Hungary, Jesus Terradillos of Spain, Gilbert de Mey of Belgium and Peter Jordan of Australia.

The annual three-day meeting of Wearcheck International (WCI) in Burlington, Canada during July was once again a valuable forum for the sharing of ideas and resources amongst the nine member companies of the group.

Wearcheck Africa's technical manager, Neil Robinson and IS manager Larry Baddock attended the meeting.

'All of the member companies reported that they found the quarterly round robins which are organised and controlled by Wearcheck Africa extremely useful for cross-checking the accuracy of sample analysis and diagnosis,' said Neil.

'We have forged a particularly close relationship with Wearcheck Canada which has been strengthened since they were joined by our former technical manager, Alistair Geach,' said Larry who stayed on for three days after the WCI meeting for a fruitful 'technology swap'.

'We both benefited from our discussions, especially in the areas of software development and the enhancement of sample processing systems because our processes are different,' Larry said. 'Ultimately it will be our clients who benefit as we introduce innovations in our laboratories.'

Wearcheck International is represented by associate companies from Australia, Belgium, Canada, Germany, Hungary, Spain, the United Kingdom and the USA, with Wearcheck Africa representing the African continent.

NEW OFFICE FOR CAPE TOWN

Wearcheck established a Cape Town office in September last year to provide a superior service for customers in this region, supported by trained field staff. The full range of Wearcheck products is available here along with a sample collection and delivery service.

The office is conveniently situated at:

Unit 20, Point Business Park
Marinus Road
Montague Gardens
Tel (021) 555-4062

THE FUTURE OF MAINTENANCE

OASIS
Oil analysis service information system

NEW TRAINING ACADEMY IS GOOD NEWS FOR SA MAINTENANCE MANAGEMENT

Jan Backer (left) technical trainer for Wearcheck Africa will present two new Machinery and Lubrication Academy courses at the ABB School of Maintenance. With him is Lisa-Anne Fairley who manages the school.

A new Machinery and Lubrication Academy established by ABB and Wearcheck in July is set to help South African maintenance managers develop world-class lubrication practices in the workplace.

Two new courses, developed specifically for South African operating conditions, will be offered for the first time in the third week of August.

The new academy combines the extensive facilities and expertise of the ABB School of Maintenance and Wearcheck's more than 30 years of experience in oil analysis and proactive maintenance in the local environment. It will add to the extensive range of courses already offered at ABB's well-equipped Sunninghill premises.

'Wearcheck customers appreciate the benefits of oil analysis and the importance of training maintenance personnel so that they can capitalise on the cost savings and increased component availability which can be gained from effective implementation of the programme,' said Wearcheck's diagnostic manager, John Evans. He developed the course material earlier this year with Jan Backer, Wearcheck's senior consultant and technical trainer.

'These courses will be of huge benefit to them, and also to other companies who find themselves in a comfort zone with several non-destructive condition monitoring techniques in place – for example oil analysis, vibration analysis and thermographic imaging - but the question must be asked: How effectively are they managed?'

'They often use condition monitoring in a reactive manner – critical wear indicates an impending failure so the machine is stopped before it fails catastrophically,' John said. 'The courses will help them to employ proactive thinking – to address the root causes and implement solutions before minor problems turn into major ones.'

John and Jan have packed their decades of experience of oil analysis and maintenance across southern Africa into the two courses. Last year John co-authored 'The Oil Analysis Handbook' with UK-based condition monitoring specialist, Trevor Hunt, which was published in England. Jan, the only trainer in Africa certified by the International Council for Machinery Lubrication, will present the courses.

Machinery and Lubrication Level One, a three-day course, is aimed at all maintenance professionals including technicians, engineers and managers. It covers:

- Basics of lubrication
- Oil sampling principles
- Fluid property analysis
- Proactive maintenance and contamination control
- Machine wear and analysing wear modes
- Classification of oils
- Grease and its analysis

Machinery and Lubrication Level Two, a two-day course, is designed for people of all levels of expertise performing maintenance, engineering and administrative functions such as production and purchasing. It includes:

- Maintenance philosophies
- Designing a total fluid management programme that includes oil analysis
- Why oil analysis sometimes does not work
- Six most expensive oil analysis tests
- Ways to make oil analysis work
- Alarms and limits
- Getting the most from your oil analysis reports
- Integrating oil analysis with other CM techniques
- Savings calculations
- Case studies
- Data interpretation

The new academy is an extension of the longstanding association between ABB and Wearcheck who have been offering a holistic condition monitoring service in partnership for the past four years.

For more information phone Lisa-Anne Fairley on (011) 236-7342 or Wendy Holiday on (011) 392-6322.

WEARCHECK TARGETS THE MIDDLE EAST

Wearcheck has set its sights on opening a laboratory in the Middle East following a fact-finding trip to the region by technical manager, Neil Robinson, at the end of last year.

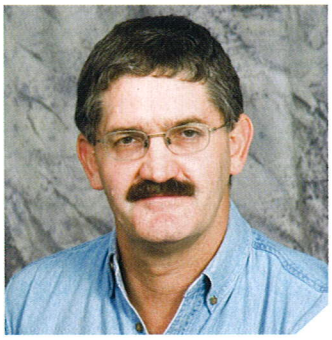
'At this stage the possibility of opening a laboratory in Dubai or Bahrain to service the United Arab Emirates and Saudi Arabia looks promising,' says Neil. 'There are other oil analysis laboratories in these countries but their diagnostic expertise is limited.'

'We are discussing the option of taking over a small used oil laboratory which is run by a consortium of companies in Dubai and also operates a quality control section. The negotiations are in their very early stages but the long term prospects look positive.'

'We have appointed an agent there who will be facilitating the dispatch of samples to be processed in our laboratory in Pinetown. This is a simple process as there is a convenient supply line from the region. DHL offers a 24-hour service from Dubai to Johannesburg and there are several flights a day between the two centres.'

Wearcheck currently processes about 700 samples from several countries in the Middle East, including Iraq, Afghanistan and Kuwait.

ABB AND WEARCHECK – A USEFUL INDUSTRIAL PARTNERSHIP



Frikkie van Vuuren of ABB (left) works closely with Daan Burger and the other Wearcheck diagnosticians on industrial oil analysis samples.

The alliance between Wearcheck and ABB began in 2001 when the two companies joined forces to offer a complete condition monitoring package to customers of both companies - including oil analysis, thermographic imaging and vibration analysis.

'We realised at the time that, whilst we serviced the major portion of the country's mobile equipment market, a partnership with ABB would expand our industrial sample base substantially,' says Wearcheck's diagnostic manager, John Evans.

'The strategic alliance made sound business sense because we knew that ABB had an excellent reputation and years of experience in the field. The benefits also applied to their customers and ours as they had new services available to them.'

Oil analysis for industrial equipment – fixed plant and machinery on ABB's books – is the domain of Frikkie van Vuuren, a senior diagnostician with ABB. Based in Wearcheck's Croydon office, Frikkie co-ordinates ABB's industrial oil samples and works closely with the laboratory staff and diagnosticians in the Pinetown office. When he joined ABB at the beginning of last year, he spent three months in Pinetown familiarising himself with Wearcheck's systems.

Frikkie is ideally placed to visit ABB's industrial customers in Gauteng, offering support and advice on the different sampling techniques. He also liaises with customers throughout southern Africa and was closely involved with the Sappi Saiccor case study featured in the last issue of Monitor. Early detection of a bearing problem in the motor of a water intake plant at this dissolving pulp producer saved Sappi Saiccor hundreds of thousands of rand.

LUBE TIP

WHEN SHOULD OIL BE FILTERED?

QUESTION

'Our lube technicians recommended that we start filtering our new oils right out of the sealed drum with a 3-micron filter. Do you think this is necessary?'

ANSWER

'Just because a drum is sealed doesn't mean the oil it contains is free of abrasives. There is a common misconception that new equals clean - there is no guarantee of this. The base oil, blending, packaging and logistic processes can all lead to contaminant ingress. Likewise, drums are never perfectly clean, particularly if they are reconditioned steel drums. New plastic containers are the generally the cleanest, followed by new steel drums.

A good rule of thumb is that it costs 10 times as much to remove a gram of abrasive particle once it has entered your system than it does to exclude it in the first place. It can cost 10 to 1 000 times that figure, or more, to leave the gram of abrasive contaminant in the system, depending on mechanical design, machine criticality, contaminant abrasiveness, etc.

Filtering new oil is among your cheapest options for improving the mechanical reliability of bearings, gearing, hydraulic, systems, engines, etc.

In my opinion, your lube techs are on the right track. If they were mine, I'd support them on this initiative.

- Courtesy of Noria Corporation

FLYING HIGH

Not all customers know that Wearcheck has a thriving aviation division which analyses aircraft oil and filters.

Wearcheck undergoes an annual audit to maintain its status as a SA Civil Aviation Authority approved test organisation.

The company is also the only accredited laboratory for Honeywell turbine engines in Africa. US-based Honeywell is one of the world's largest manufacturers of jet and turboprop engines. Three Wearcheck diagnosticians have completed Honeywell's stringent accreditation exam – Daan Burger, Michelle Allis and Ravi Chetty.

Daan, who spearhead's Wearcheck's aviation section, is a former aircraft electrician with SAA in Johannesburg where he spent 13 years doing troubleshooting and condition monitoring on jet engines and auxiliary power units.

Earlier this year Daan authored two articles for African Pilot magazine. The first outlined how to detect the more common piston engine failure modes through a combination of oil and filter analysis. The second looked at the safety and cost-saving benefits of oil and filter analysis for turbine engines.

Some of Wearcheck's aviation customers are SA Airlink, Execujet Maintenance, National Airways Corporation, CHC Helicopters, Orsmond Aviation and Safair.

PRAAT ONS AFRIKAANS?

Dit is 'n algemene wanopvatting dat ons personeel in Pinetown, anders as in ons Johannesburgse takkantoor, nie Afrikaans magtig is nie.

Om in Afrikaans in Pinetown gehelp te word, kontak:
Lorain de Bruin vir NetCheck/databasis navrae
Daan Burger of Quinton Verster vir diagnose navrae
Kay Meyrick vir kliente navrae

OIL ANALYSIS SAVES US MAINTENANCE MANAGER THOUSANDS

US magazine, Tribology and Lubrication Technology, asked members of the Society of Tribologists and Lubrication Engineers to relate an experience where oil analysis saved a piece of equipment or system, and estimate the savings. These are some of the 160 responses they received:

- Our use of oil analysis saved a Cat D7 engine which had a severe coolant leak. Estimated cost saved: $70,000.
- I monitor the oil for HCl in compressors and have saved $2 million during the last two years.
- Oil analysis combined with vibration measurements have a number of times detected when propeller blades in larger ships started to fail. Oil analysis made it possible to change the blades before they totally disintegrated.
- Saved the gearbox in a cement plant. Replacement cost: $42,000. Downtime: $100,000.
- Oil analysis detected ester-based and hydraulic fluids in a turbine oil. The source of contamination was found and contamination stopped. Cost savings: $150,000.
- Every time you detect dust entering an engine on a haul truck in the mining industry, especially the big 2500-hp and above vehicles, you are talking a minimum saving of $250,000.

Note: Gearboxes were cited as the piece of machinery most frequently saved by oil analysis (often coupled with vibration analysis and particle counting), followed by steam turbine engines, diesel engines, heavy machinery and pumps.

TRANSFORMER ANALYSIS FOR GAUTENG CUSTOMERS

Wearcheck has formed an association with a Gauteng transformer oil analysis laboratory and now offers a comprehensive on-site sampling and analysis service for customers in this region at very competitive rates. Phone Wendy Holiday on (011) 392-6322 for more details.

MAKING HEADWAY

Michelle Allis, senior diagnostician

Michelle Allis has been promoted to senior diagnostician.

Michelle joined Wearcheck in 1997, shortly after completing her B.Sc. in Mechanical Engineering at the University of Natal.

Having gained more than eight years' experience in the technical department diagnosing samples and advising customers on their results, she is currently preparing to spend some of her time assisting Jan Backer with training.

She has completed a 'Train the Trainer' course and recently lectured at a workshop presented by the SA Institute of Tribology (SAIT) in Durban. Her future plans are to sit the stringent exams leading to certification as a trainer by the International Council for Machinery Lubrication.

WEARCHECK'S EXPERTISE IS SOUGHT AFTER

Wearcheck's expertise is in demand on a number of fronts - apart from as a quality service provider of oil, fuel, filter, coolant and transformer analysis.

Articles from Wearcheck's Technical Bulletins are often reproduced in specialised industry publications such as Mechanical Technology, Shipyear and SA 4x4 magazine.

Wearcheck staff are also regularly requested to speak at conferences locally and abroad. Technical trainer Jan Backer recently presented a paper at the Lubrication Excellence and Reliability World 2005 Seminar in San Antonio, Texas in the USA in April and he spoke at the 'Rotating Equipment Maintenance' conference in Johannesburg at the beginning of June.

CUSTOMER SURVEY

Many thanks to all of you who completed the customer survey. The results will be featured in the next issue of Monitor along with the name of the winner of the lucky draw prize of a weekend for two at any Protea Hotel in South Africa.

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

THE LEADING OIL ANALYSIS COMPANY IN AFRICA

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Felicity Howden Public Relations 8/2005 P7