

WELCOME TO THE MONITOR

WELCOME to the first issue of Wearcheck Monitor, a bright new publication from Wearcheck - South Africa's leading name in independent oil analysis.

Wearcheck Monitor will keep you up to date on developments in the laboratory and other specialist departments which are the backbone of Wearcheck's comprehensive system.

In these pages you will meet many of the highly qualified and experienced Wearcheck people. Over the past 17 years their skills have developed oil analysis into the basis for really effective plant and vehicle maintenance and management.

If you would like more information on Wearcheck and its services, phone your nearest Wearcheck office:

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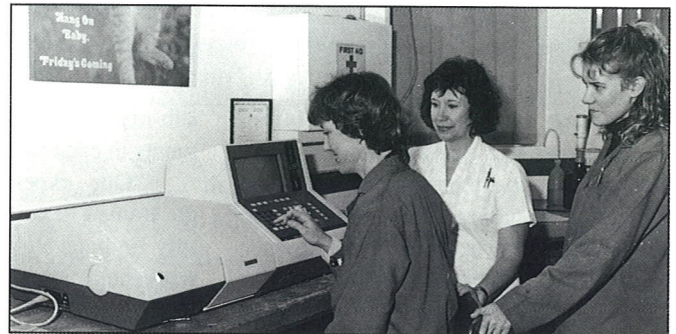
Big outlay on lab equipment

WEARCHECK has announced a significant investment in state-of-the-art laboratory equipment.

Latest instruments installed in the company's laboratory are a Fourier transform infra-red (FTIR) spectrometer and high-speed electronic viscometers.

Both sets of new equipment are computerised, enabling test results to be fed directly into the main data-processing system, shortening the turn-round time on each sample and further improving the reliability of results.

Lesley Crawford, laboratory technical director, says: "Our new equipment puts Wearcheck at the forefront of international oil analysis technology.



Testing the new FTIR instrument are, from left: Wearcheck chemist Françoise Cullen, technical director Lesley Crawford and junior chemist, Suzanne Davis.

"Because of the increasing sophistication - and cost - of our customers' vehicles and plant, it is absolutely essential that our oil analysis programme is the best possible.

"The new instruments bring more of our standard test procedures up to the speed of the inductively

coupled plasma (ICP) spectrometer which we installed in 1988. This can measure up to 30 elements at a time and handle 120 samples an hour.

Mrs Crawford says: "The ICP measures individual wear metals and ceramic elements. The FTIR uses laser technology molecular spectroscopy and computerised mathematics chiefly to assess concentrations of sludge, water and diesel fuel in oil samples.

"FTIR spectrometers are fairly new on the commercial market, but they have been used in academic applications for some time.

"The new viscometers use vibrating probes to measure the condition of each oil sample. This system is fast and extremely accurate - and is more environment-friendly because it eliminates the need for constant solvent-cleaning."

Mrs Crawford says the viscometers are the same type as selected for the United States military joint oil analysis programme (JOAP).



One of Wearcheck's new viscometers is put through its paces.

Management tool for the '90s

WEARCHECK has pulled oil analysis out of the workshop and into the boardroom, where it will be a major management tool for the 1990s and beyond.

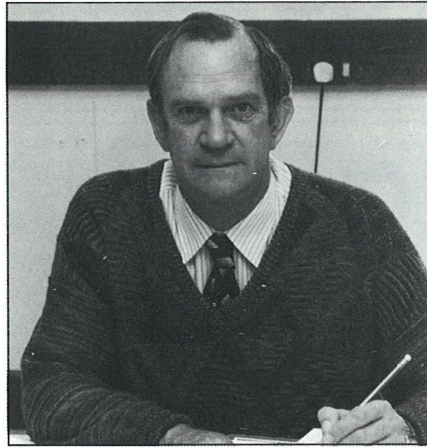
"With the spiralling cost of heavy-duty transport vehicles and plant for the mining and construction industries, operators are forced to seek greater efficiencies," says Wearcheck managing director Wally Crawford.

"Our systems, coupled with sensible operating and maintenance procedures, have proved many times over that improved efficiencies translate to huge savings for our customers."

Now in the third generation of the oil analysis business, Wearcheck offers a comprehensive analysis and diagnostics service - together with advanced information handling that puts everything within easy reach of any fleetowner with personal computer and phone.

Mr Crawford says: "In less than two decades we have seen our laboratory volumes grow from a few hundred samples a month to more than 1 000 a day.

"In the same period we have progressed from limited manual analysis of oil samples to sophisticated computer-



WALLY CRAWFORD

ised instruments capable of processing up to 120 samples an hour and measuring sub-microscopic quantities of 30 elements in each sample.

"Our experienced diagnosticians are trained to react to abnormal laboratory findings and to suggest appropriate workshop action to prevent relatively minor problems from becoming major - and expensive - breakdowns."

Mr Crawford says as a completely independent and wholly South African organisation, Wearcheck's laboratory findings and diagnostic recommendations enjoy extremely high credibility

among its customers.

"But analysis and diagnosis alone are little use to a major operator unless he can access information easily. This is why we developed the Infocheck computer system, through which customers can key directly into the Wearcheck mainframe to obtain latest diagnostic reports - and to feed back information to assist our diagnosticians.

"This accelerates the flow of information on engine and oil conditions and reduces the volume of paper so that the fleet manager can concentrate on his real job - keeping costs in check."

Since broadening its horizons through Infocheck, Wearcheck has also set up mainframe-to-mainframe links with a major customer in the mining industry. For another it provides a diagnostic service based on results generated by oil analysis laboratories in the field.

Mr Crawford says: "The Wearcheck system has become a reality because we have built a staff of qualified and dedicated people who are totally committed to excellence in their respective fields.

"Their input enables us to promise our customers the route to effective maintenance through oil analysis."

WEARCHECK'S PEOPLE



LESLEY CRAWFORD

Technical director and Wearcheck founder Lesley Crawford holds an M.Sc in chemistry from the University of Natal in Pietermaritzburg. She is a member of the Royal Society of Chemistry and the SA Chemical Institute and has also served as secretary for the Natal branch of the Spectroscopic Society.



GILLIAN BARNES

Accountant Gillian Barnes joined Wearcheck early in 1990. She is a member of the Institute of Accounting Technicians and has a B.Compt (Hons) from Unisa. She studied while working in commerce and then served articles at Pim Goldby in Johannesburg. She was a freelance consultant and, later group financial manager for Kopp Electronics. She spent four months touring the United States before returning to Durban.



FRANCOISE CULLEN

Chemist Françoise Cullen is studying for a B.Sc, majoring in chemistry and computer science. She already holds a National Diploma in chemistry, an Intermediate Certificate in medical technology

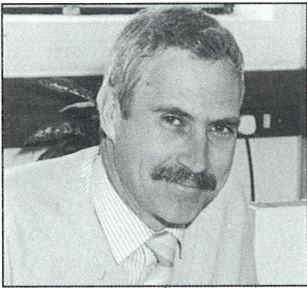
and a National Diploma in medical technology (specialising in clinical pathology). She has completed courses in brewing microbiology and basic infrared spectrophotometry and is a member of the Natal Plastics and Rubber Institute.



MARY-ANNE BEASLEY

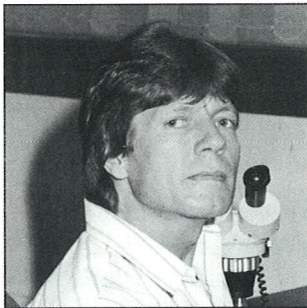
Mary-Anne Beasley came to Wearcheck in 1989 as an analyst-programmer. She has a B.Sc (physics) from the University of Cape Town. She is responsible for the support and installation of the Infocheck PC system and its further development. She worked on a similar program in London, for a firm managing oil exploration data. Her other achievements include crossing the Syrian desert.

WEARCHECK'S PEOPLE



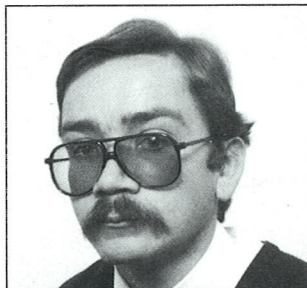
JOHN WASSERFALL

Data processing manager John Wasserfall joined Wearcheck in July 1990 with a diploma in datametrics and 10 years' experience of software management. In his spare time he enjoys aeromodelling and marathon running - he has served on the Comrades marathon committee and wrote the Comrades computer system.



ROWAN MAARTENS

Rowan Maartens has an NTC 3 and 14 years' experience of petrol and diesel engines. He joined Wearcheck in 1982 and was trained as an oil analyst and diagnostician.



JOHN EVANS

Diagnostician John Evans has been in oil analysis since the early 1980s, and was responsible for setting up four laboratories in Botswana and Zimbabwe. He has a B.Sc (chemistry) and joined Wearcheck in 1989.

Oil samples highlight danger signs

FAR too many South African oil samples show abnormally high concentrations of wear metals or too frequent signs of other potentially serious problems, says Gary Brown, technical director in charge of diagnostics at Wearcheck.

He says: "On average 25% of the samples processed in our laboratory reveal evidence of problems which can be traced to workshop or operational shoddiness. This is clearly unacceptable in a country heavily dependent on road transport as well as mining and construction.

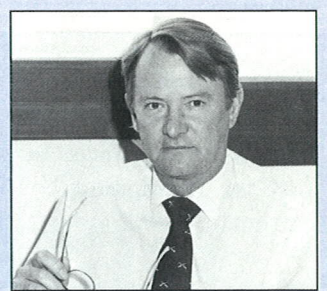
"The picture is often worse when customers come on to the Wearcheck oil analysis programme for the first time - problem sample rates as high as 45% are not uncommon."

But, he says, some users have the problem rate down to less than 10%.

"In some quarters this is viewed as overkill and raises questions over the cost-effectiveness of the elaborate maintenance procedures and pristine workshops necessary to produce such good results.

"Generally if the problem sample rate is around 10-14% the chances of experiencing catastrophic failures in engines or drivetrains

Technical director Gary Brown heads Wearcheck's diagnostics division and has been with the company since 1974. He holds a mine assayer's certificate of competency and worked in the laboratory of Palabora Mining Company when in 1970 it became probably the first mine in Southern Africa to establish a used oil analysis facility. Prior to that he worked at Mobil's lube blending plant laboratory in Durban.



GARY BROWN

is virtually zero."

Wearcheck has a staff of four experienced diagnosticians plus two of Barlows' specialists seconded to handle Caterpillar business.

Mr Brown says 30% of Wearcheck's laboratory throughput consists of "super normal" samples. These come within the continuously updated wear rate and oil condition tolerances and are handled by the autodiagnosis facility in the company's computer.

He says: "The other 45% includes borderline cases or samples with incomplete or inconsistent submission data. All these have to be checked by the diagnosticians, just in case."

Mr Brown says Wearcheck's large throughput of samples exposes the diagnostics team to the widest possible range of engines -

and lubricants.

"If new models develop problem tendencies, we are often the first to hear about them - and we can quickly issue appropriate warnings to other users among our customers.

"And as an independent monitor of additive packages, we can also advise our customers of the best lubricants for their applications."

Wearcheck's expertise in diagnosis stems from accurate statistics based on careful scrutiny of every sample submitted.

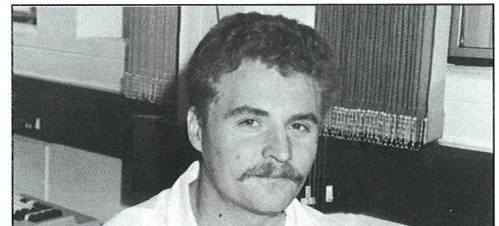
"This entails routine spectrometric analysis and particle quantification plus full microscopic examination where necessary."

He says: "We are also looking at the possibility of introducing oil filter analysis because that will give us all the evidence."



NICHOLAS THOMAS

Nicholas Thomas joined the diagnostics team at Wearcheck in 1990. He holds National Diplomas in mechanical engineering and metallurgical engineering and has marine engineering officer class 4 certificate.



GARY BLEVINS

Gary Blevins joined Wearcheck in 1990. He obtained a first class pass for NTC 6 and won the Beachway Bowl for motor theory. He also passed his trade test as a diesel technician.

Guy helps unlock the programme's potential



GUY DE CHALAIN

General manager marketing Guy de Chalain is responsible for developing the company's customer base and ensuring that existing users' needs are fully satisfied. Prior to joining Wearcheck in 1984, he was in charge of sales and marketing for J.I. Case International, based in Athens, Greece. His in-depth experience of earthmoving equipment follows 20 years' selling machines into African markets.

HELPING customers to get the most from the Wearcheck oil analysis programme is a major responsibility for Guy de Chalain, general manager marketing.

"There's much more to oil analysis than sending samples to the laboratory and waiting for the reports to come back."

He says "To unlock the programme's potential, the correct sampling procedures must be used and diagnostic reports must be followed up in the workshop.

"My job is to ensure that customers and their employees have sufficient understanding of the Wearcheck oil analysis programme so that they can use it confidently and cost-effectively."

Wearcheck has turned to television to address the user-education needs of a wide diversity of customers throughout Southern Africa.

Mr de Chalain says: "We have just completed a modular training video that is aimed to sharpen the skills of workshop people - and others so they can use the Wearcheck system properly.

"The video, which has been produced in English, Afri-

kaans, Zulu and Tswana versions, is in three parts. The first covers basic oil sampling which is often left for unskilled or semi-skilled workers with minimal supervision.

"The second module covers documentation and the information which Wearcheck needs if it is to make a worthwhile diagnosis.

"The third covers workshop troubleshooting, giving technical staff a checklist of likely causes for many of the problems which come to light through oil analysis."

Wearcheck also produces technical booklets and other guides for users in the transport, mining and construction industries.

"Modern diesel engines, gearboxes and final drives are complex, expensive machines and we see the Wearcheck oil analysis programme as a form of insurance against serious breakdowns.

"Our sales staff, based in Johannesburg, Cape Town and Durban, sells this idea to potential customers. But equally important is the fact that oil analysis itself is a tool for effective maintenance and management of plant and vehicles."

WEARCHECK'S PEOPLE



LIN PATTERSON

Lin Patterson joined Wearcheck in 1983 as an order clerk. Since then she has undertaken various functions in the sales and market-

ing field. She is now the company's marketing services manageress, and is largely responsible for after-sales service.



LORAIN DE BRUIN

Lorain de Bruin, data base administrator, joined Wearcheck in 1989. She has a B.A. (education) majoring in history, theory of education, English and Afrikaans-Nederlands, and a B.A. (Hons) in history. She is studying for a diploma in datametrics through Unisa.



SUZANNE DAVIS

Suzanne Davis joined Wearcheck as a junior chemist in 1989 and holds a National Diploma in analytical chemistry from the Natal Technikon. She was a member of the Natal underwater hockey team from 1983 to 1989 and has run the Comrades marathon five times.