

# New maintenance package keeps the wheels turning

BENEFITS of sophisticated condition monitoring and diagnosis have been extended to industrial machinery users throughout South Africa.

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THIS follows the launch of Wearcheck's sister company, Maintech.

Decision to move into this important new territory followed visits by Wearcheck's top management to leading oil analysis laboratories overseas and the Condition Monitoring '91 conference in Munich, Germany.

Pinetown-based Wearcheck is South Africa's largest independent oil analysis company, with capacity for more than 30 000 samples per month.

Managing director Wally Crawford says: "Some of the laboratories we visited in the United States do as much as 60% of their business with industrial clients.

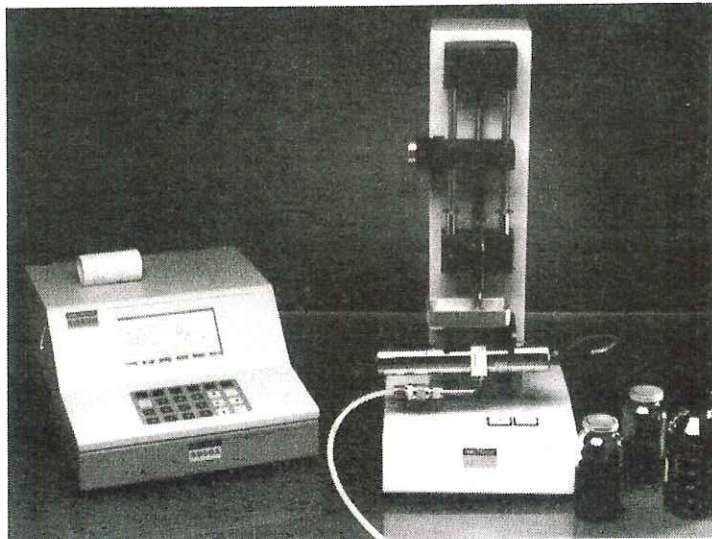
## FOCUS

"In this country, oil analysis has tended to focus on the needs of the transport, construction and mining sectors — particularly the lubricants for engines, gearboxes and final drives.

"However, the theory and principles of oil analysis apply equally to the many thousands of gearboxes and other lubricated components of production machinery in virtually every major factory.

"This is why we have made it a priority to establish the Maintech operation in the competent hands of Michael Paul.

## ... AND ANOTHER WEARCHECK FIRST



WEARCHECK has scored another "first" for oil analysis in South Africa with the introduction of an electronic particle counter.

This sophisticated instrument, newly developed in the United States, adds a new dimension to oil analysis by measuring the concentration of particles in eight size ranges.

The instrument gives Wearcheck diagnosticians deeper insight into the condition of customers' machinery through accurate measurement of non-metallic contaminants, as well as wear metal particles.

"But oil analysis is only one aspect of the condition monitoring and predictive maintenance programmes which Maintech will be offering to manufacturing industry nationwide."

Mr Crawford says the industrial sector represents a massive growth opportunity for the Wearcheck group. And this corporate development is a major plus for South Africa.

He says: "Our factories desperately need to produce more goods for export and local consumption, to meet the needs of a population that is growing rapidly in size and sophistication.

"Manufacturers will have to

achieve better efficiencies in the challenging environment of tomorrow. Factory downtime due to machine failures or maintenance will have to be minimised.

"The best way to achieve this is through regular condition monitoring and good preventive maintenance.

"Industrialists — just as many transport and construction plant operators are already doing — will be able to achieve significant repair cost savings by reducing the length and frequency of machine breakdowns.

"This helps to slow production cost increases — and to boost profits."

## Progress on new lab

A NEW purpose-built head office and laboratory for Wearcheck is under construction at Westmead, Pinetown.

Managing director Wally Crawford says the company acquired a site some time ago and has been carefully finalising plans for the building.

The development is due for completion in the second quarter of 1992, shortly before Wearcheck's current lease expires.

# WEARCHECK AMONG WORLD'S LEADERS

VISITS to top oil analysis laboratories in the United States and Britain show that Pinetown-based Wearcheck is comfortably among the world's leaders.

Back from an extensive tour of foreign facilities recently, Wearcheck managing director Wally Crawford and technical director Gary Brown report that many overseas laboratories are smaller and less sophisticated. This relates to their range of tests, their diagnostic services, their communication and their marketing.

"Of the commercial laboratories we visited in America and Britain, few handle as many samples each month as we do," says Mr Crawford.

"Consequently, many of the oil analysis companies are able to make do with slower second-generation analytical equipment and relatively low levels of automated test procedures.

"By contrast, we moved into the third generation three years ago, giving us faster throughput, greater accuracy and a wider range of tests."

Mr Crawford says only one commercial laboratory in the United States offers a personal computer package that ranks with Wearcheck's Infocheck system.

He says: "And our system is much more sophisticated."

Mr Brown says a marked difference between Wearcheck and similar organisations overseas is that Wearcheck encourages its users to feed information back into the system. This is so that they can get the best out of it.

He says: "It appears that many US plant and transport operators are using oil analysis in an offhand way, without realising the many advantages the system offers if there is a close relationship and two-way communication between user and laboratory.

"It's like telling your family doctor half your problems — and then wondering why you don't get better."



Souvenir of the recent US visit is a picture of this beautiful 1980 Peterbilt owned and operated by David Hodgman of San Diego, California. It logs 160 000 to 200 000 km a year hauling machinery coast to coast. The air-conditioned cab and sleeper includes computer, phone, microwave oven, colour TV, generator and stereo system.

## *Infocheck upgrade*

PERSONAL computer software developed for Wearcheck's Infocheck users now has an ASCII export utility which outputs sample data to an ASCII file in tabular form.

Using this utility, Harvard Graphics has been integrated into Infocheck which allows users to display and print line, bar and pie charts from within Infocheck.

The utility can also be used to transfer data from Infocheck to other DOS-based packages which have an ASCII import facility.

An installation diskette is available from Wearcheck on request. Call John Wasserfall or David van der Byl on (031) 701-4291.

## Guy de Chalain retires as marketing chief

HEAD of Wearcheck's Transvaal operation and the company's general manager in charge of marketing, Guy de Chalain, has taken early retirement for health reasons.

Mr de Chalain, who is well known among Wearcheck customers, joined the company in 1984 and immediately started making his mark on the business. His more than 20 years' experience of earthmoving equipment

and industrial marketing added strongly to Wearcheck's impetus over the past seven years.

Managing director Wally Crawford says: "Guy's energy and enthusiasm — and his intense devotion to the principles of oil analysis — will be sorely missed, both in Wearcheck and in the industries we serve.

"We wish Guy better health and, with his family, happiness in the years ahead."

# MAINTTECH

## Huge benefits for industrial users

ANNOUNCING Maintech — a comprehensive maintenance package designed to keep the wheels of industry turning.

"THERE is potential in industry to save many millions of rands a year through improved maintenance systems and consequent better utilisation of production facilities," says Michael Paul, managing director of Maintech — a partnership with Pinetown-based oil analysis specialists Wearthcheck.

Mr Paul says greater efficiency in manufacturing translates to better returns for investors — and more gentle price increases for hard-pressed consumers.

"We anticipate a big swing to predictive maintenance as engineering managers come under increasing pressure to get the most out of production machinery. Downtime has to be minimised and breakdowns prevented wherever possible.

"Our wide-ranging predictive maintenance service provides the backbone of meaningful machine maintenance. This takes a load off the maintenance engineer and it frees his staff to concentrate on what they were hired for — looking after the machinery.

"It also enables the engineer to schedule his production better, knowing which machines are the more reliable."

Mr Paul says every industry machine has a range of vital signs which, through regular monitoring, enable the diagnostician to detect possible mechanical, physical and electrical problems.

These signs are monitored through:

- Oil analysis
- Vibration analysis
- Filter analysis
- Visual examination
- Internal examination using borescopes
- Temperature measurement
- Thermal imaging
- Non-destructive testing

Mr Paul says: "Each of these techniques makes a vast pool of information available. For example, Wearthcheck oil analysis highlights the wear rates of contacting metal surfaces, the levels of contaminants in a machine and the ability of a lubricant to do its job.

"This in turn may point to bad operating or maintenance practices which require correction. But under good conditions it also allows component exchange and oil drain periods to be extended with considerable potential for cost savings.

"New test procedures are often viewed with suspicion on the

shop floor, but these should be seen as part of the new engineering discipline of cost-effective maintenance. Predictive maintenance is a major enhancement of traditional procedures."

Wearthcheck managing director Wally Crawford says the establishment of Maintech is a natural expansion for his company, which is a world leader in oil analysis, diagnosis and associated computerised management information systems.

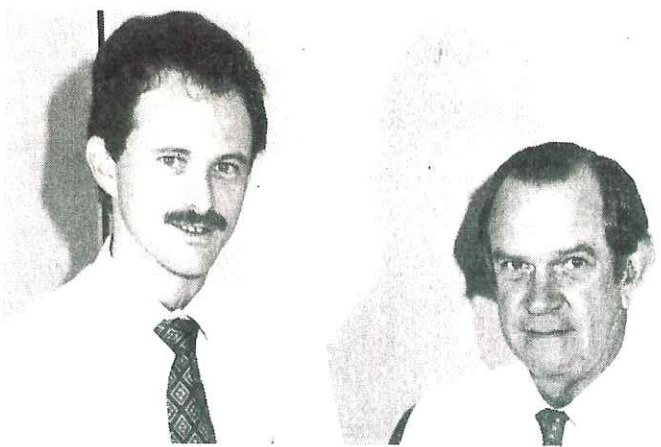
He says: "We have built our business chiefly on the needs of diesel users in the transport, construction and mining sectors. But we have long recognised the potential for a more wide-ranging service to manufacturing industry.

"Wearthcheck's national infra-

structure is ready for expansion into new monitoring techniques."

An M.Sc. (industrial engineering) graduate of the University of the Witwatersrand, Mr Paul (30) had his first taste of condition monitoring among the giant earthmoving machines and process plant of Rössing Uranium seven years ago. More recently, working in Johannesburg, he has promoted the development of condition monitoring as a new maintenance philosophy for industry.

In 1991 he presented a paper on "A structured maintenance review process" at an international conference on condition monitoring and diagnostic engineering, held at Southampton University.



Michael Paul (left) and Wally Crawford . . . extending the benefits of sophisticated condition monitoring into the industrial sector.

# 'Green power' fuels change in technology

MASSIVE changes in engine fuel and lubricant technology lie ahead as the internal combustion powerplant comes under increasing pressure from environmentalists.

This is the message Wearcheck directors Wally Crawford and Gary Brown brought back from a recent fact-finding tour of Britain, Europe and the United States.

Tough new legislation in the US curbs pollution by diesel trucks and buses. Two-stroke engines are to be outlawed — in some states even for chainsaws, lawnmowers and hedge clippers.

In Europe, the Green lobby is trying to make oil disposal more expensive than its acquisition.

Mr Brown says: "Right now environmental issues are getting top priority. Emissions are a dirty word and the emphasis is on reducing the particulates in exhaust gases.

"Overseas operators already have access to cleaner, more efficient engines, but further development is needed to meet the strict new standards proposed. Fuels and lubricants will also have to change."

He says a pure hydrocarbon, when burned, should give off carbon dioxide only. Because of additives, poor combustion and may other problems, modern engines emit toxic carbon monoxide, sulphur dioxide and a host of metallo-organic by-products.

"The emission problem is very serious in South Africa and Eastern Europe, where diesel engine technology has lagged due to economic and political factors."

He says US engine manufacturers have bowed to environmental pressures with innovations to reduce engine oil consumption and to trap unwanted particulates in the oil.

One such idea is a simple piston re-design, with the top ring nearer the crown for greater blow-by and less oil consumption.

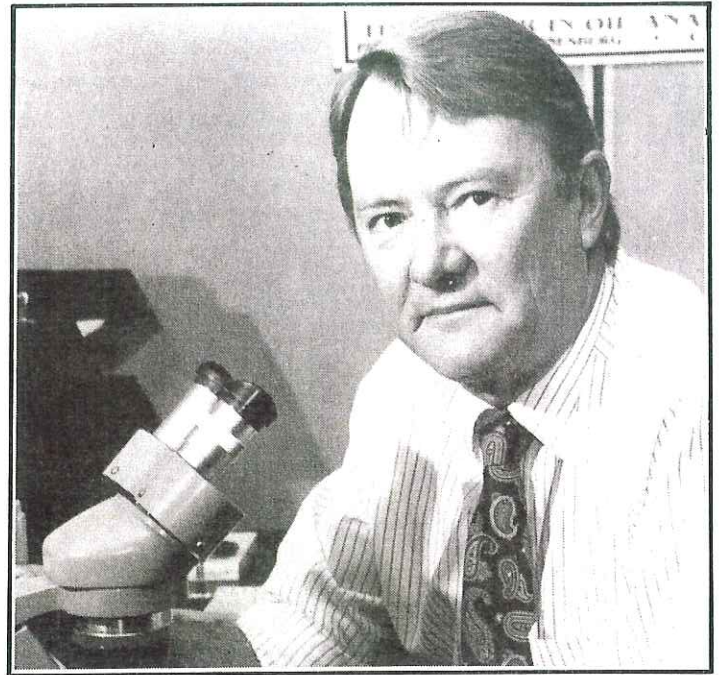
"This is a radical change from previous thinking. For example, to keep oil clean in some designs, a constant 1% of engine oil was fed into the fuel system and lubricants were regularly topped up."

"Now the sump is being viewed as the engine's cesspit — which will place even more importance on regular and meaningful oil analysis."

There is also the question of disposal.

Mr Crawford says re-refining may become more attractive, but even that process has major environmental and health implications.

He says: "It has already been tried in South Africa, but with disappointing results."



Gary Brown, technical director at Wearcheck, says environmental pressures on engine design will put more emphasis on regular and meaningful oil analysis.

Problems of re-refining include:

- Economical collection of used oil, especially from remote depots.
- Heavy use of sulphuric acid to remove old additives.
- An extremely unhealthy working environment for refinery staff and others nearby.

Mr Crawford says: "Even when oil has been re-refined with new additives put into the base oil, there remains the problem of toxic sludge disposal."

For more information about Wearcheck, the leader in oil analysis, contact your nearest office:

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