MICSA TEST REPORT

KYALAMI 12/11/1986

AIM

Was to prove prolonged engine life after treatment with MICSA 926

BACKGROUND

It was firstly established what could be expected from an internal combustion engine if the lubricant was removed from the engine and replaced with water. According to the leading testing authority in South Africa*, the Technical Director assured us that the following would take place based on many tests performed by themselves.

1) The vehicle with only water in the sump would run totally normally for the first half kilometer;
2) would start to make a severe noise after the second half kilometer because of lack of lubricating properties in the water;
3) by the third kilometer, the gears would have to be changed down in order to maintain power;
4) upon reaching four kilometers, if indeed you did reach that distance, the engine would seize solid.

FUEL DILUTION IN DIESEL ENGINE

We also spoke to Mr Marais at Barlows Caterpillar, to establish what the results would be if an internal combustion engine were to run with 100% fuel dilution. He quoted and confirmed what his workshop foreman said, that "if you had 100% fuel dilution in an engine you would run the vehicle for no longer than 20 minutes and under load, doubted if you would reach 10-15 minutes".

We approaced one of our clients, SM Goldstein, to submit a standard vehicle from their fleet for our test. As the client was not too sure of what to expect, an old LDV was chosen in case of engine seizure. The vehicle was a Toyota LDV which had been driven by many different drivers under severe conditions and had already run for 180,000 kms. The other vehicle was a Renault 11 Sedan which had run 48,000 kms. It was decided that tests would be carried out as follows :

1) Speed performance on the Renault;
2) To test the endurance on the Toyota;
3) The effect of fuel dilution in diesel equipment.

TIMES OF TESTING - VENUE - PARTIES PRESENT

Kyalami Race Track — 9 am to 4 pm
Range of Track — 4.1 kms
Temperature — 28°C Midday

Persons present to witness test:

COMPANY	REPRESENTATIVE
Eagle Plant	A C Bruce
Kevkor Kimberley	J Watt
Tiger Bakery	P de Jager
Witwatersrand University	D Bishop
Stannic Fleet	K Cokayne
	P Southwood
	A Wood
I F C	W van Vuuren
Compuwheels	D van Vuuren
Leyland SA	A Rosendorff
	A Stone
Emteco	E Barend
S M Goldstein	J Hughes
	H Cushnaghan
	A Vythoulkas
S A A	P Pelser
SATS	D Dijkstra
D J Groder	T van Staden
Consultant Company	A Forbes
Toyota SA	P Wilken
Die Beeld	M Bird

TEST

Mechanical assistance and monitoring by Ronny Steenveld of S & M Motors, Pinetown.

We drained the oil from both vehicles, replaced sump plugs and then filled up with water from the hose pipe connected to Rand Water Board mains, i.e. normal tap water.

LAP 1

The vehicles were driven around the track once to test for comparison to normal, i.e. failure at 4 kms.

1) The Renault had speeds up to 120 kms/hr.
2) The Toyota had speeds up to 70 kms/hr.

RESULT

Both vehicles were in good condition (completed 4.1 kms).

ACTION

No action.

LAPS 2 AND 3

A further two laps were completed.

1) Renault reached 130 kms/hr.
2) Toyota maintained 70 kms/hr.

RESULT

Both vehicles still in good condition (completed 12.3 kms).

ACTION

Topped up with water.
We decided at this stage to top up with water every three laps.

LAPS 4 TO 6

The vehicles continued until tea time - 10 am, stopped and a compression test was carried out to establish if any damage had been caused during the first of our tests. The compression test was carried out by Ronny Steenveld and Dave Bishop, Head of Desmond Bolton School of Transport of the University of the Witwatersrand.

RESULT

No change in compression on either vehicle.
Completed 24.6 kms.

ACTION

We felt at this stage that the speed tests had satisfied our requirements and would continue only with the endurance test on the Toyota, refilling with water every three laps to replenish any water evaporated during the run. We would now run until 1.30 pm.

Prior to stopping for lunch, the two gentlemen from Toyota Head Office in Wynberg arrived, a Mr P Wilken and his colleague, with total disbelief on their faces. We drove the Toyota in their presence and refilled again with water. These two gentlemen then drove the Toyota for two laps around the track to satisfy themselves that there was no loss of power. "Amazing" was their only comment. We then stopped for lunch.

RESULT

Endurance test running well. Completed 98.4 kms.

ACTION

After lunch we decided to set a target which we had to reach by 4 pm because Kyalami could not be used for running vehicles after this time without prior authority from the Midrand Municipality. We aimed to make 200 kms our target which would be 50 times longer than expected distance for failure. The speed of the LDV had to be stepped up to reach our target. We would have to drive at 120 kms per hour in places.

49 LAPS

By 4 pm. we had completed 49 laps (203 kms), plus we drove a further 10 kms to the garage where we drained the water and replaced with oil, so a total of 213 kms was driven all told.

The following day the Toyota LDV was returned to SM Goldstein, still in perfect running condition. We requested that they change the oil once again and replace the oil filter.

DATE 19/11/86

Confirmed by SM Goldstein that the LDV was still in perfect running order.

CONCLUSION

With the advanced technology available to man, we proved that our product MICSA 926 does in actual fact protect all moving parts inside the internal combustion engine to the standards that can be expected in 1986.

To minimize or even eliminate the possibility of engine failure due to excessive fuel dilution in diesel engines where parts can run into thousands of rands.

We also would like to add that we do not promote the idea of running engines on water.

This test was done to highlight the reduction of wear under extreme conditions, and to show maximum protection in case of heavey fuel dilution on Diesel Engines.

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AEC·AEK

2 November 1990

Mr M Samouilhan

REPORT ON MICSA 926 PTFE TREATMENT : ATOMIC ENERGY CORPORATION

Treatment done on : Sulzer Buckhardt Compressors
Type 3CT 223-1 G.P.
R.P.M. 960
KW 81
Bar 31

Since 1988 oil analysis was done on a monthly basis of two sulzer compressors. A company by the name of Wearcheck did the oil analysis. With every feedback Wearcheck asked for an oil change and filter change.

With every oil change the filter was emptied through a 0,45 micron membrane, which really looked bad. These compressors pump hydrogen and are number one priority.

In 1989/11/21 compressor number one was treated with Micsa 926 for the first time. Compressor number two was treated on date 1989/12/01. After one month oil samples were drawn and sent to Wearcheck. Within two days Wearcheck phoned us to ask us what has been done to these compressors as the viscosity and other wear elements have stayed constant. We changed the filters after one month put the oil through the 0,45 micron membranes and found them to be as clean as could be. The difference between, before the Micsa Treatment and and the after treatment could be seen by comparing the membranes. The difference was like night and day.

After a period of 10 months these compressors had done in total 11 234 06 hours, trouble free, with no oil changes. Reports from Wearcheck showed the oil to be acceptable and wear limits still in order.

These compressors were again treated with Micsa 926. Since Micsa 926 has been used a temperature drop on both compressors has been noticed between 7 - 9 °, these compressors run at least 24 hours before switching over to the other one.

Since using Micsa 926 we are very happy with our results. Wearcheck reports are attached to this Report as well as the membranes which were use to test the filters.

Yours faithfully

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J. LE ROUX