# Report on the Tests carried out by the Touring Club of Belgium

We met the team of Asta Technologies in the beginning of December 95. After an attentive reading of the presentation file and the presented references, we started to prepare the tests by December 15th 95. We checked the consumption, the power and the pollution on twenty vehicles from our car park or of members of our personnel. All twenty of the vehicles use SHELL fuel and ELF lubricant.

We chose four vehicles which showed the greatest weakness regarding power, consumption and pollution. We did so not only in order to confirm the efficiency of ASTA 3000, but also its inoffensive nature on used engines.

The tests were carried out on 20,000 km in total. A first report was made after 10,000 km.

## Presentation of the four tested vehicles

| | License Plate | Mileage on 07/03/96 | Year of Manufacture | Use road/city |
|---|---|---|---|---|
| Renault 19 DIESEL | AZE121 | 290,844 km | 1989 | 90/10 |
| Renault 19 DIESEL | 6989B | 59,075 km | 1989 | 10/90 |
| Ford Sierra GASOLINE | JYU015 | 109,163 km | 1990 | 50/50 |
| VW passat DIESEL | APN590 | 239,630 km | 1989 | 80/20 |

- *Tests before treatment*: March 7th 1996
- *Place*: Diagnostic Centre of the Touring Club of Belgium
- *Application of the product*: March 7th 1996
- *Way of application*: as described on the packaging of the product

## A. EFFICIENCY

### 1. Consumption

a) From December 15th 95, we asked our four drivers to check and to write down the average consumption of their vehicle until the date on which we applied the product ASTA 3000.
Vehicles rode about 10,000 km before the application of the product.

b) After the application of the product (on March 7th 1996):

1. *Length of the test*: 20,000 km
2. *Methodology*: Taking of results every 1,000 km, from 0 to 20,000 km
3. *Results*: On the four vehicles which were followed attentively, we noted **an average reduction of fuel consumption of 17%. The lowest diminution noted was 15% and the highest 21%**. We noted a constant progression of the results up to 3,000 km for these four vehicles, the consumption reached its best level at 3,000 km and the consumption remained constant until 20,000 km.

During all the testing period, these four vehicles were used by the same drivers, in the same conditions, and on the same journeys.

### 2. Engine Power

We have tested the power in two different ways:

**a) Taking of the power in KW:**

We have measured the power in KW of these four vehicles on our road simulators and BOSCH measurement machines, which are frequently checked by BOSCH.

1. *Length of the test*: 20,000 km
2. *Methodology*: Taking of results every 1,000 km, from 0 to 20,000 km

3. *Results*: B*efore treatment:* the four vehicles lacked engine power. *After treatment:* **the engine power of these four vehicles returned to their original horsepower** by 3,000 km. In the four cases, the first effects were noted from 1,000 km. Identical results from 3,000 to 20,000 km.

**b) Taking of compression:**

1. *Length of the test*: 20,000 km
2. *Methodology*: Taking of compression every 5,000 km, from 0 to 20,000 km
3. *Results*: B*efore treatment:* three vehicles out of four had uneven compressions.
   A*fter treatment*: **we noticed a readjustment of compressions** on those three vehicles by 5,000 km. Identical compressions for the three vehicles at 5,000, 10,000, 15,000 and 20,000 km.

## 3. Pollution

We measured the pollution of those four vehicles on the same BOSCH machines of our diagnostic centre.

1. *Length of the test*: 20,000 km
2. *Methodology*: Taking of results every 1,000 km, from 0 to 20,000 km
3. *Results*: a) Gasoline: **The Co emissions fell from 3.5% to 2%.**
   b) Diesel: **For the three vehicles, the opacity values fell from 6 to 2 K(m-1).**

We noted on the four tested vehicles a significant reduction in emissions from 1,000 km. The best results were reached at 3,000 km and remained at this level during the rest of the testing period.
During this time, no engine adjustments were made on the tested vehicles.

## 4. Visualization of an engine treated with ASTA 3000

We dismantled the engine of a vehicle tested with ASTA 3000 for more than 15,000 km. **We noticed a surprising cleanliness for a vehicle with over 200,000 km**.

## 5. Non-quantified results on the 16 other tested vehicles

**The drivers have noticed a general improvement of the working of their engine. We noted depending of the case:**

**- a decrease in fuel consumption;**
**- a decrease in oil consumption;**
**- an improved responsiveness;**
**- a higher level of smoothness;**
**- easier cold start;**
**- lower working engine temperature.**

The 16 vehicles tested with ASTA 3000 had, at the moment of the application of the product, travelled a total of 20,000 to 200,000 km.
We noted that the effects were also noticed by the drivers of the vehicles which had the lowest mileage.

## 6. Behaviour of the vehicles after 25,000 km

We noticed in some cases a slight reduction in the efficiency of ASTA 3000 after 25,000 km. Nevertheless, in other cases, the efficiency only decreased after 30,000, 35,000 or 40,000 km.

## Conclusions

**The tests that have been organized have demonstrated the efficiency of the product ASTA 3000. Moreover, the general feelings of the drivers about the performance of the engines tested by ASTA 3000 have confirmed the observed results.**

## B. INNOCUOUSNESS

We asked the company Elf, our lubricant supplier, to assist us in these tests.

### 1. Analysis of the product ASTA 3000 in the laboratories of the company Elf

**The results of these analyses show that ASTA 3000 is compatible with and remains stable in engine oil, gasoline and diesel fuel (gasoil).**
ASTA 3000 has no effect on the quality and properties of lubricants or fuels.
ASTA 3000 has the advantage of being ashless and thus it does not leave any deposits during or after its action.

### 2. Analysis of the engine oil of the four vehicles

We wanted to check the behaviour of the product ASTA 3000 during all the testing period.

1. *Length of the test*: About 20,000 km
2. *Methodology*: Application of the product and taking of results every 1,000 km before changing the oil.
   After having changed the oil, taking of results at 5,000, 10,000 and 15,000 km.
3. *Results*:
   **- The analyses of the oils show no harmful effect on the wear of the tested engines;**
   **- During the cleaning phase, the wear of the engine is not higher;**
   **- During testing, ASTA 3000 did not change the quality nor the properties of the lubricant;**
   **- The analyses also show the stability of the product ASTA 3000 over time.**

Conclusions:

The tests and analyses realized by ELF have confirmed the claims of the Asta Technologies representatives concerning the composition of the ASTA 3000 product and **the results confirm also the total innocuousness of the product**.

## C. GENERAL CONCLUSIONS

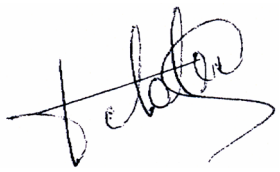
**All the tests have shown the efficiency and the harmlessness of ASTA 3000.**
The support of the company Elf gave us the opportunity to carry out complete tests and the positive opinion about this engine treatment is unanimous.

We've been using ASTA 3000 on some vehicles for more than two years now. The users/testers of this engine treatment keep on using ASTA 3000 on their professional and/or private vehicles.

We're already using ASTA 3000 on a part of our fleet and we would like to apply it on all our vehicles.

Since November 97, this engine treatment has been recommended to our members through our magazine. So far, we have not received any complaints, and this reassures us in our positive opinion about ASTA 3000.

After those two years of application of ASTA 3000, we can only give a favourable opinion about this engine treatment.



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