



# The diesel difference!

By Ian M. Johnston

## THE MENACE OF WHITE VANS!

In Britain it is *large* white vans. In France it is *small* white vans. The thing is, it appears to be a pre-requisite that to drive a white van in the land of fish and chips, or across The Channel in the land of *haute couture*, one is required to have suicidal or maniacal tendencies!

These vans are everywhere. Their diesel engines scream for mercy as they are thrashed from the moment they are fired up and propelled into Formula One mode by psychopathic nut cases. Now for the record and in defence of blue van drivers or red or even green van drivers, I have to state that they are not a problem.

The remarkable thing about all this is the fact that these high revving diesel engines, flogged in this manner, don't simply go *POOF* and disintegrate. Testimony indeed to the backroom boffins of modern technology.

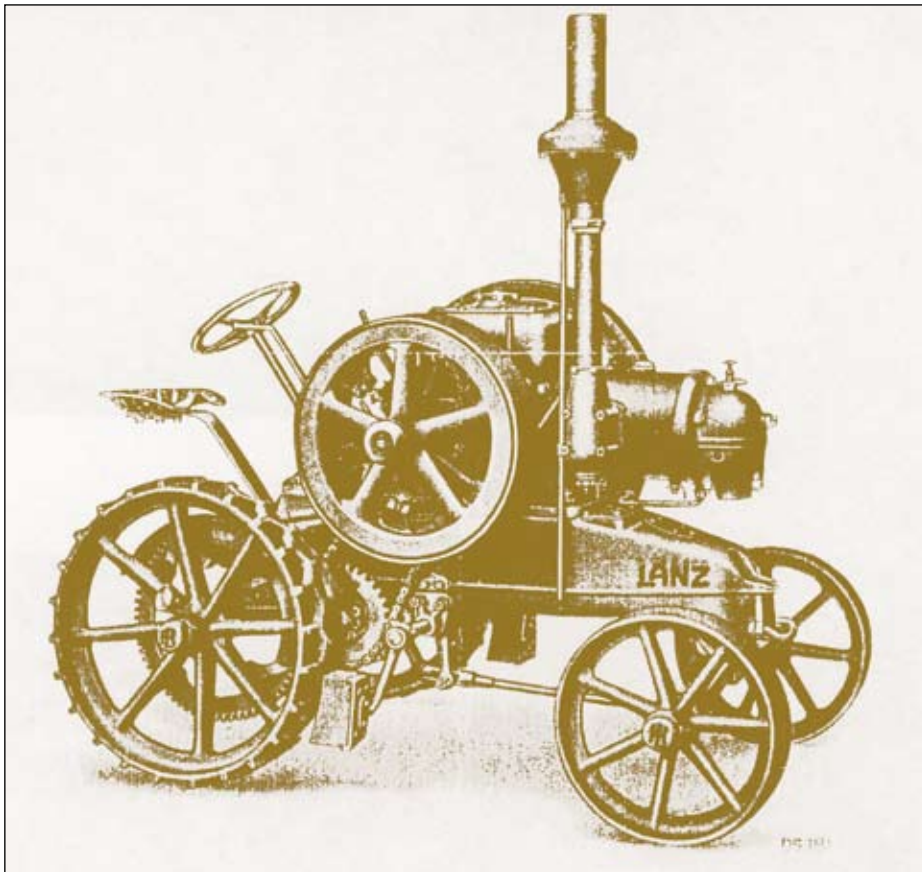
A few months ago during my last visit to Europe, accompanied of course by my Girl Friday – Margery Daw – I was prompted to rent a diesel powered station wagon. Well I mean to say, all the creditable motoring scribes have been writing such glowing reports about the brilliance of these new common-rail diesels being fitted into cars, that I felt it was uncool not to have driven one.

The engine in the wagon was a mere four cylinder 2000 cc unit. Despite it being turbo charged, I admit to anticipating

it would be a bit of a slug on the road, as the vehicle weighed-in at just over 1.5 tonnes. How wrong I was! With the beautifully matched six speed transmission, this wagon was a low flyer!

On the superb autobahns, it happily cruised all day at a comfortable 140 kph whilst recording a lazy 2200 rpm on the dial. Without the worry of speed limits,

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A 1921 catalogue drawing of a Lanz Bulldog Model HL. (Photo IMJ Archives)



The author pictured driving the only known Lanz HL in Australia, where it is on display at the fabulous Warracknabeal Wheatland's Museum – a must see for all tractor buffs! (Photo M. Daw)



A rear view of the old Lanz at Warracknabeal. (Photo IMJ)

and with Speedy Gonzalez Margery urging me on, I confess to giving the vehicle its head on a few occasions and with total safety blistered along at a pace, which in this country, would have had a highway patrol officer thinking all his Christmases

had arrived at once and I would have languished in jail for the rest of my days.

But even whilst I was doing my Stirling Moss thing, diesel powered VW Golfs and Skoda Octavios thundered past leaving us in their wake, as if we had been sitting at the side of the road enjoying a picnic.

The good news was that the white van

brigade largely steered clear of the autobahns, preferring to inflict their intimidating presence on the winding secondary roads. You know – the ones with blind corners and humpback bridges.

We clocked up around 4500 kilometres in our wagon and remarkably it returned a miserly consumption of 6.4 litres per 100 kilometres. This included driving in cities and highways. Pretty impressive stuff!

Of course fuel is more expensive in Europe than in Oz, but significantly diesel is on average 20 per cent cheaper than petrol. (Why is it that Australia is possibly the only country on the planet where one pays more for diesel than unleaded petrol, when it costs much less to produce? I think we all can guess the answer!)

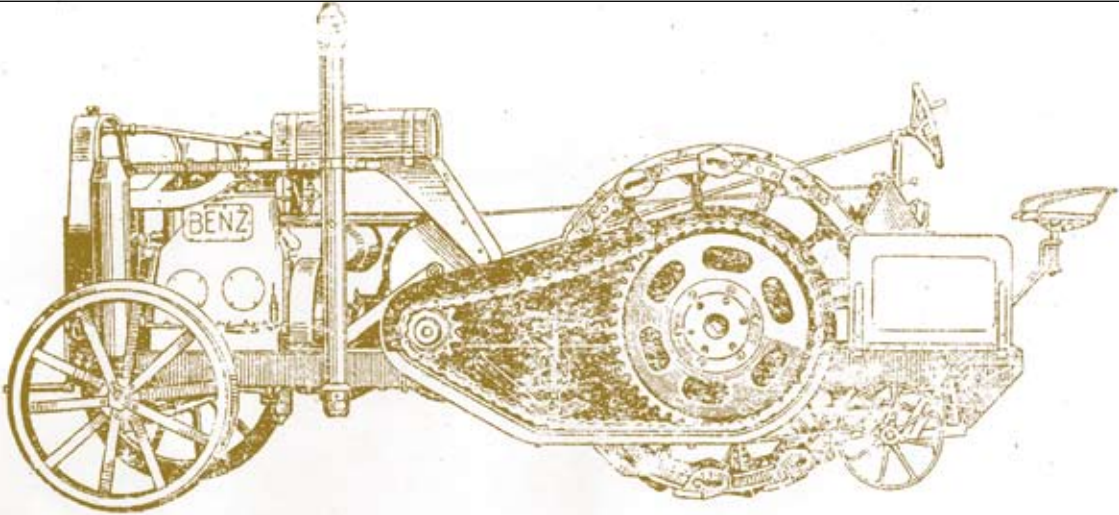
You can probably sense I am now hooked on diesel engined cars.

My hitherto bias against such vehicles had its origins spawned back in the 1950s, when a Sydney taxi firm put on a fleet of diesel powered Vanguards powered by four cylinder Standard engines, borrowed from the Ferguson FE 35 Diesel tractor.

These cabs were so gutless that it was not uncommon, when driving up the original, near perpendicular, one way Spit Hill at Seaforth, for passengers to be requested



The actual Benz Sendling as described in the text. The unit is being demonstrated by Greg McCallum in the grounds of the Booleroo Steam and Traction Preservation Society Inc in South Australia, home to an internationally acclaimed tractor collection. (Photo IMJ)



**BENZ-DIESEL** COMPRESSORLESS CRUDE OIL TRACTOR.

Has no MAGNETO, CARBURETTOR, SPARK PLUGS or DIFFERENTIAL, consequently no delicate parts to wear out and cause trouble and has twice the life of other Tractors.

It has a four cycle Engine and does not lose its compression like the ordinary two cycle type of Diesel Engine.

Works most economically. Will plow ordinary land for 3d. per Acre, and on very heavy soil and deep plowing will not exceed 6d. per Acre.

This Tractor alters the whole aspect of Power Farming.

**E. SCHRAPEL & SONS, LIMITED,**  
Sole Importers, **TANUNDA,** South Australia.

Pictured is an advertisement which appeared in a South Australian rural newspaper in the early 1920s. Although the reproduction is of poor quality, it is still fascinating to study. Refer to the text in the accompany article. (Photo IMJ Archives)

to alight and walk to the summit, before continuing on with their taxi ride.

Even with later car diesel engines, they always sounded as if some errant washers were clattering around within their innards. Also they were smelly!

But not any more! Our European missile diesel engine could hardly be heard from within the vehicle and even when idling the sound was indistinguishable from a well bred petrol unit.

## DIESEL TRACTORS – IN THE BEGINNING

Not surprisingly (being me) all this diesel business had me thinking about the early days of oil burning tractor engines. The technology, then in its infancy, was so far removed from today's diesel tractor engines that it is hard to believe that these modern marvels had their geneses in those far off smoking belching power plants.

During the first decades of the 20th century there were numerous attempts by tractor manufacturers to power their machines with other than petrol engines. Kerosene was a cheap alternative but proved less efficient than petrol. It could be used in a more-or-less orthodox petrol engine but required the unit to be initially started and warmed on petrol. Kerosene does not vaporise until heated.

The first non-petrol/kero volume selling production tractor was the German built Lanz Bulldog HL, introduced in 1921. Its extraordinary but revolutionary two stroke design rendered it the ideal machine for farmers, whose technical expertise was limited to the setting of a mouse trap.

Consider this – the Bulldog had one cylinder, no valves and no electrics. It was fuelled with crude oil or even sump oil drained from another vehicle and featured an injection system akin to a dribbly garden hose. The combustion chamber had to be pre-heated with a blow lamp prior to starting. Then, following the operator's back-breaking task of rotating the massive flywheel in a pendulum manner to start the thing, he inevitably would be in need of urgent chiropractic treatment, and all this before chiropractors had ever been thought of!

But the 12 hp Bulldog had a compression ratio of only 4.5 to 1, which put it in a class of being a semi-diesel and therefore could not burn its fuel cleanly. This resulted in a type of goeey acid rain continually being belched from the large diameter chimney, most of which was guaranteed to descend upon the hapless operator. (A full compression ignition diesel requires a compression ratio of at least 15.5 to 1.)

In 1922 Benz Sendling, another German make, released the world's first tractor equipped with a full compression diesel engine. In hindsight, it is plainly obvious that the chief designer of this astonishingly weird piece of ironmongery must have had a psychopathic animosity towards tractor drivers. Yes – it was that bad!

The three wheeled layout featured a single large diameter skeleton rear wheel, driven from the engine by a massive overgrown bicycle chain. This rendered the centre of gravity of the monstrosity well above the centre of the rear wheel. Accordingly, if driven on any surface more mountainous than a bowling green, the three tonne machine would fall over onto its side!

But never one to be flummoxed, the Teutonic design geezer appended to the rear of the tractor a set of outrigger wheels, similar to the trainer wheels he had noticed on his grandson's first two wheel pushbike. This at least rendered the machine less likely to capsize and exterminate the operator.

But the designer really needn't have bothered, because an endeavour to fire up the engine generally resulted in failure. In fact one very unhappy owner, who happened to be a South Australian farmer, after finally getting his Benz Sendling started, kept it running night and day during the harvest season, because he could not be certain if or when he could restart the thing if he shut it down!

The farmer elected to withhold his hire purchase payments as a protest aimed at the dealer, Messrs E. Schrappel of Tannunda, who had talked the farmer into

buying the contraption in the first place. In retaliation, Messrs E. Schrappel sent a technician to the farm to remove the cylinder heads from the engine until payments were resumed. All quite extraordinary!

## So what was so bad about the engine?

The concept of a full compression ignition was innovative and represented forward thinking. But sadly the design of the Benz Sendling example proved to be under-developed and was prematurely offered to unsuspecting farmers.

The four stroke engine featured two cylinders in line, each with separate heads. Its 5.3 litre capacity produced an alleged 32 hp at a mere 800 rpm. To assist starting from cold, two ignition papers had to be lit and inserted into orifices leading into the combustion chambers. This was usually followed by a prayer, the crossing of fingers and toes, then some physically demanding activity on the crank handle. All too often such enterprise only resulted in a defiant inert non-running engine and a thoroughly unhappy farmer!

It is interesting to contemplate that a modern tractor diesel engine, having a capacity of 5.3 litres, generates around 120 hp. It will likely have six cylinders and consume a fraction of the fuel gulped by the 1922 Benz Sendling. Best of all – it can be started by simply touching a button!

Spare a thought for our pioneer tractor drivers.

And, if in Europe, keep a sharp lookout for these mentally challenged white van drivers. ■

## IAN'S MYSTERY TRACTOR QUIZ

**Question:** Can you identify this grand old tractor from its schematic drawing?

**Clue:** Some people will take one to court. (Known as a 'cryptic' clue!)

**Degree of difficulty:** Grandpas will have no difficulty!

**Answer:** See page 48.

