INSIDE LINE

Driver contributor Lucy Radley tests Mercedes-Benz's Active Drive Assist, part of its driver safety package, which is claimed to offer a 3-5% fuel saving

When Mercedes-Benz Trucks launched the latest version of the Actros, in September 2018, there was always going to be a lot to talk about. With 60 new innovations, four of which were 'world firsts', much of the transport press concentrated on the most visible – MirrorCam, in place of physical mirrors and arms, and MultiMedia Cockpit, which removes the vast majority of the usual switches and dials from the dashboard and replaces them with two tablet screens (pictured p13; see also for example *www.is.gd/vuyoqu*).

Get behind the wheel of Actros 5 and these two features are, indeed, immediately obvious. But today the focus is on something far more clever that seems to have slipped under the proverbial radar: the first-ever example of Level 2 vehicle autonomy in full production in a heavy commercial vehicle.

The levels of driving automation were first defined by SAE in January 2014 in standard J3016. The lowest Level 1 covers vehicles with systems that will provide support to the driver in one direction, either latitudinal or longitudinal. The best example of this is adaptive cruise control which, despite using GPS, can only control forward movement. Level 2 automation combines latitudinal and longitudinal support in tandem, allowing drivers to let go of the wheel and remove their feet from the pedals, although they do need to be present and ready to take control at any time. Mercedes-Benz achieves this by combining four features alongside its tried and tested adaptive cruise offering, Predictive Powertrain Control (PPC), to create Active Drive Assist.

First comes Proximity Control Assist, the radar-guided element of PPC that maintains a set distance between you and the vehicle or object in front. That combines with Active Brake Assist – or rather, the new, updated version, Active Brake Assist 5 – which does the stopping. This is a world-first in itself, as it is the first system of its kind that can detect and prevent collisions with stationary objects as well as those moving across the front of the truck.

Added into that are Lane Keeping Assist and Lane Departure Warning. Those who've driven vehicles with one of these systems or similar alone will know how easy it is to end up weaving from side to side, as the nudge felt through the steering wheel by the driver prompts an over-correction, triggering the system again from the opposite direction, and so on. Combining the two, however, eliminates that, keeping the truck centred on the carriageway.

The information needed to make all this work is provided by two sensors working in tandem. The first is an upgraded version of the camera found in the windscreen of MP4 Actros, where it was purely looking for white lines in the road to enable Lane Departure Warning to function. As well as producing higher quality data, the new version also talks to the second sensor – radar – which is mounted on the bumper. It is this 'sensor fusion' which enables the more clever bits of the system to work – bringing us back to Active Brake Assist 5.

Above 30mph, the radar is set to look 250m down the road in at a fairly narrow angle, for the benefit of Proximity Control Assist. Drop below that speed and the angle opens up, the sensor then looks for objects – people and cyclists, essentially – taller than one metre. The height threshold was chosen to minimise the number of false positives generated, but does mean that the system won't pick up a small dog or similar, although in fairness you wouldn't want to perform a full emergency stop with a 40-tonne vehicle for an errant Jack Russell anyway.

MOVING OBJECTS

The problem with radar, though, is that it can only pick up moving objects – as soon as they stop, they become invisible. Consequently, the previous version of Active Brake Assist, alongside similar radar-based systems from other manufacturers, became inactive if, say, a pedestrian stepped out in front of the truck and froze. In the new truck, the camera picks up where the radar left off, and the brakes are applied.

An added bonus of using both

sensors is an increase in confidence that an object genuinely is being detected, rather than a false positive. This means that the braking force applied can be greater – 100%, in fact, as opposed to the 50% braking applied by MP4 Actros. For perspective, 50% is still plenty to stall the truck and put the driver through the windscreen, but 100% gives a shorter stopping distance again.

To complete the package, self-steering is enabled by the Bosch Servotwin electro-hydraulic system, which as well as mechanically controlling the direction that the wheels point, enables the feel of the steering to lighten at lower speeds, making manoeuvring easier. The downside is that the unit itself sits between the first and second axles, just the space into which a midlift would normally rise. For this reason Active Drive Assist is only available on 4x2 tractors, though you can have it on both 4x2 and 6x2 rigid-bodied prime movers.

REVIEW

On the road, the system is, perhaps inevitably, disconcerting, but very impressive nonetheless. Although designed with long-distance motorway driving in mind, there can be no situation demanding more trust from the driver than pointing an articulated lorry at a winding cross-Pennine single-carriageway, putting both feet on the floor and letting go of the wheel. One big difference between MP4 and the new Actros, however, is that it always tells you what it's going to do next. It sees a roundabout, shows it on the dashboard, informs you it will drop to 4mph to negotiate it, then politely asks you to steer for a minute while it does the rest.

Having settled in, Active Drive Assist felt simple both to engage and use. Two blue lines on the screen in front of you show when the truck can orientate itself to steer; they vanish and the vehicle alerts the driver when intervention is needed. Two sensors on the steering wheel and a third beneath the driver's seat pad tell the system you're still present and ready to take over, and the software is programmed to insist on some kind of input after 30 seconds.

The most important difference for this driver, however, was the lack of mental fatigue felt at the end of a 90-minute test drive, something that is usually very noticeable. Whether that was the automation, the reduction in upper body movement thanks to MirrorCam, or a combination of the two is difficult to say, but extrapolated over a full shift the safety benefits are compelling. On the other hand, such systems might make it really quite difficult to retain focus when driving a familiar motorway route. TE

FURTHER INFORMATION

Scotland bus automation – www.is.gd/itemeh

Autonomous trucks – www.is.gd/ikekak

EBS and braking systems – www.is.gd/vocagi