



Computer says **BRAKE**

When first launched, AEBS (autonomous emergency braking system) technology was described as the

most significant development in vehicle safety since the seatbelt, offering the potential to save hundreds of thousands of lives. From November 2015, all new road trucks over 8t gwv sold in the UK must have Level 1 AEBS fitted.

By monitoring the road using radar and other sensors, they provide warnings to the driver, and, when faced with the risk of a collision, automatically apply the brakes. They are mandated to limit the severity of a collision between a vehicle travelling at 80kph and another ahead travelling at 32kph by a speed reduction of at least 50kph. If the vehicle ahead is stationary, then the oncoming vehicle's speed must be reduced by a minimum of 10kph.

This November, Level 2 AEBS will come into force. It increases the performance requirements, with raised mandatory speed reductions of 70kph in moving traffic, and 20kph when approaching a stationary vehicle. And, for the first time, the requirement to fit AEBS will now apply to light commercial vehicles (LCVs) below 8t maximum mass. EU regulation 347/2012 will apply to the smaller N2 class vehicles (goods vehicles from 3.5-12t gwv) "not exceeding 8t", except tractor units weighing 3.5-8t gwv and vehicles with more than three axles.

Although fitted as standard in medium and large trucks, AEBS technology is only just starting to trickle down to the LCV sector. Later this year, a new EU regulation is likely to change things. Chris Tindall reports

(Those weighing more than 8t gwv were already covered by AEBS Level 1.)

But, as of January 2018, there remains only one OEM that fits AEBS as standard across its entire range of LCVs. Last June, Volkswagen announced its intention to fit Front Assist with City Emergency Braking to the Caddy, Transporter and Crafter models. This system, active up to 19mph, uses radar to scan the distances of vehicles in front, initially warning the driver about hazards, and automatically braking in potentially

dangerous situations. The MAN TGE van, which is based on the Crafter, also includes 'Emergency Brake Assist' as standard. In combination with the automatic transmission, it automatically slows the vehicle in case of danger.

A VW spokeswoman explained the manufacturer's decision: "Not only does autonomous emergency braking have the potential to reduce the number and severity of accidents, it has also been proven to cut third-party injury insurance claims by 45%."

Matthew Avery, director of research at Thatcham Research, says: "The addition of AEBS as standard on LCVs will make them far safer [in] avoiding accidents in the first place, as well as help reduce some of the hidden costs of fleet ownership."

As to the latter point, he explains that VW's new Crafter van was tested last year (pictured above, and p22, showing robotic driver set-up). The successful performance of its AEBS meant that the vehicle's rating was reduced by up to four groups. This means the starting insurance group rating for the Crafter range is now 34 - a substantial financial reduction and incentive for fleet buyers." (A 10% insurance premium reduction is also claimed by the manufacturer.)

RECALIBRATION NEED

Sensor-based safety systems require recalibration following workshop adjustments as commonplace as a wheel alignment, or a steering component replacement. Hella Gutmann Solutions' Neil Hilton says: "If the cameras and radars are even marginally misaligned, this would certainly impact systems such as AEBS. If drivers depend on their ADAS [advanced driver assistance systems] technology for safety, they should be able to trust the people working on their vehicle to recalibrate the systems." The irtec light accreditation system is designed to verify the competence of van technicians.

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Neil Hilton

Avery continues: “A reduction in insurance premiums is only one factor, though. We believe there needs to be a fundamental change in the way fleets make decisions about their vehicles, and the conversations they have with vehicle manufacturers. The balance needs to change from accepting what is currently available, to challenging vehicle manufacturers to fit technology that prevents accidents in the first place as standard – such as AEBS.”

Neil Hilton, head of business development at automotive supplier Hella Gutmann Solutions, believes that although VW’s decision has not yet had a dramatic effect in the market, it will do. He said: “In common with larger commercial vehicles, vans are usually high-mileage vehicles, so statistically more are likely to be involved in a rear-impact accident than other vehicles.”

He adds: “These sorts of accidents have already dropped by 38% since the development of AEBS, so pressure is also likely to be brought to bear on fleet managers from insurance companies.”

The VW spokeswoman continues: “It feels inevitable that this kind of technology will increasingly become



available, and eventually standard.” She quotes Thatcham Research figures that 21% of new cars in 2016 had AEBS as standard, and 27% offered it as an option.

According to the European Transport Safety Council, the EU’s own plans to require AEBS systems in cars, to come into force not before late 2020, are due to be published in May. It also said that South Korea will mandate the systems in 2019, as will the USA, through a voluntary scheme, in 2022.

None of this is to say other van manufacturers are ignoring AEBS completely. It’s fitted to some

Mercedes-Benz vehicles. Ford offers AEBS on its Transit and Transit Custom models – although not as standard. It will also be available on the new Transit Connect when it launches later this year. The smaller end of medium trucks, such as 6.5t chassis-cab IVECO Eurocargo and 8t DAF LFs, also offer AEBS as standard in some variants.

Asked if there is a correlation between offering AEBS to customers and sales, a Ford spokesman says: “Feedback from fleet customers was to provide the feature as an option rather than standardise. The larger fleet customers are very aware of the benefits of these systems.

“Vehicle safety is paramount. It’s a legal requirement already on any commercial vehicle over 7.5 tonnes, so you could expect this to flow down to light commercial vehicles over the next few years.” **TE**

FURTHER INFORMATION

VW FrontAssist video – <https://is.gd/ocekaj>

Evidence of AEBS’ safety benefit – <https://is.gd/netaga>

AEBS regulations – <https://is.gd/unecup>

STOPPING A COLOSSUS

Slowing a 5,500kg racing truck from 100mph at nearly every corner of a race track, on every lap, during a 20-minute-long race is so arduous that one of the most common reasons for a race truck retiring or crashing is brake component failure.

In race trucks, each brake disc is internally water cooled – sprayed with a fine mist of water – to help dissipate generated heat. When this fails, temperatures can easily exceed 1,000°C. Although commercial vehicles’ brakes rarely reach that level, they can still heat up to 850°C during long descents or along urban bus routes.

Basic pad grades, perfectly suitable up to medium levels of duty, wear at a much faster rate once the operating temperature exceeds 400°C for any length of time. This is where a premium pad grade offers extended life, according to supplier Juratec.

It supplied the Synergy CV brake friction material, launched last year, to Team Oliver of the British Truck Racing Championships last season. Juratec reports that the product proved so successful that three teams are planning to use it in the 2018 season.

