



Safety first?

Electronics have opened the door to a raft of safety systems that just a few years ago would have been fanciful. But can fleet managers afford them? Ian Norwell looks at innovations, the law and the cost

How it works: Driver Alert Support – DAS

The system uses a camera sensor that tracks the position of the truck in its lane and also monitors steering wheel movements. If any symptoms of tiredness are detected, the system activates an audiovisual alert

Emissions technology has been legislated over the last decade and truck makers have had little choice but to spend billions of euros on the Euro 1 to 6 development train. Similarly, compliance hasn't been optional for operators either.

But it's a different story when it comes to safety systems. Here, truck makers have been developing technology in advance of legislation; indeed, regulation has followed invention. If nobody had developed lane departure warning systems (LDWS), would they now be mandatory fitments for new type approvals from November this year?

That said, most new safety technology is aimed squarely at reducing the risks resulting from human fallibility, be it poor loading, excessive speed or fatigue behind the wheel. However, do fleet managers specify such systems and is the cost justified if they do?

Iveco product director Martin Flach has an interesting viewpoint. "We work with component suppliers to jointly develop these systems for our trucks, but the take-up from industry is depressingly small." Historically, fewer than 5% of chassis take newly-developed safety equipment, even when everyone agrees on the benefit. "ABS was a good example," he says. "Everyone loudly applauded the idea, but initially only 5% of vehicles were equipped with it. That figure instantly rose to 100% when it became mandatory."

Flach suggests that specialist suppliers such as Knorr-Bremse, Bosch and Wabco, who are the source of such innovations, are behind the push that eventually inspires legislators. Arguably, their aim is to boost volumes, but, if they save lives, so much the better. Either way, until

safety systems become mandatory, there is clearly a cost that fleet managers must examine closely.

LDWS, which alerts a driver to his vehicle drifting out of lane, is listed at £2,330 by Iveco, £1,330 by DAF and £1,803 by Mercedes-Benz. The transaction price for a fleet buyer will be considerably less, but with low margins weighing heavily on their thinking, a discretionary purchase like this is a tough call. It's also an investment that rarely registers on the radar of used truck buyers, so has little or no effect on residuals.

But attitudes may be changing. Andy Mair, head of engineering at the FTA, believes that canny fleet buyers are now putting their toes in the water. "Naturally, with ever-tighter margins, fleet operators are more inclined to use developed and proven technology. But where there is an apparent safety benefit, some hauliers will take it up – and electronic stability control has been a good example. Often, they will carry out a trial with a small number of vehicles, but they are not all waiting for legislative compulsion here."

Your choice?

So what might a safety-conscious fleet manager with some budget up his sleeve go for? Volvo and Mercedes-Benz led the pack in innovative technology, but most of the safety devices are now available from all truck manufacturers. Equipment goes by slightly different names, but the significant systems are aimed at keeping a truck pointing in the



right direction, upright at the appropriate speed.

Lane assist (LDWS) uses sensors to detect consistent white lane marking lines and, if a truck drifts out of lane without an indicator functioning, an alarm sounds in the appropriate speaker, left or right. At present, this device has a switch on the dashboard for the driver to temporarily disable the system when it becomes a nuisance – say, on narrow contraflow lanes. It remains to be seen if that switch survives the legislative process.

The cooking version of cruise control has been around for some time, but adaptive cruise control (ACC) now adds radar to monitor vehicles in front and maintain a safe pre-set distance, adjustable by the driver. It comes in several forms, up to and including a full pressure brake stop intervention for a driver asleep at the wheel.

Ultra-protection

On Volvo's new FH, this is accompanied by the rear trailer brake lights pulsing rapidly to warn following traffic of serious retardation. After numerous alarms, and as the climax of the alert process, the FH's ACC uses a red, military-style head-up display (HUD) projected onto the windscreen to warn the driver of an impending collision. Costs naturally vary, but expect to pay at least £2,500.

But while most systems are available from nearly all of the truck makers, there is still room for innovation. The new DAF XF tractor unit, for example, has designed-in cab crash protection, with revised cab mountings and structure. In a heavy frontal impact, it allows the cab to move backwards on the chassis rails and sacrifice the rear of the cab as a crumple zone against the trailer, protecting both cab front and driver.

Lane changing support (LCS), again on Volvo's new FH truck, has been designed to prevent those blind-side swipes that bedevil continental LHD trucks on the south eastern quarter of the M25. When the relevant indicator is used, a radar sensor checks the blind spot and, if a vehicle is present, an alarm sounds and a red light flashes on the passenger side A-pillar. DAF has a similar system that uses a camera and in-cab screen alerts.

Possibly the simplest and most effective re-

Legal implications

Legislators aren't just fixated on emissions; they also have safety firmly in their sights. General safety legislation's mandatory measures are covered in Type Approval regulation EU-661-2009, which replaces a range of directives. It includes advanced emergency braking, which becomes mandatory on new approvals for new vehicle types from 1 November 2013, a surprisingly early date for many. It comes to existing vehicle types two years later, in 2015, and the same dates apply to lane departure warning devices (LDWS).

Electronic stability control (ESC) implementation dates vary widely, depending on electronic or pneumatic actuation and the number of vehicle axles. Effective regulation started in 2011, but will not cover all vehicles until July 2016. Mandatory tyre pressure monitoring for cars is on the way and, while no date for commercial vehicles has yet been set, it can safely be assumed that it will follow soon.

New regulations for tyres are also tightening up the limits on noise, wet grip and rolling resistance. Don't confuse the legislation with last year's introduction of mandatory tyre labelling. There is a spread of introduction dates, ranging from last year to 2020.

design we saw on last year's numerous new truck launches was Volvo's new mirrors. Over the years, these have become massive objects with substantial supporting and surrounding structures – to the extent that they create a safety issue of their own making, by potentially masking small vehicles and motorcycles, particularly at roundabouts and junctions. The new stripped-down skeletal design still offers a great rear view, but the bulk is reduced.

And where lies the future? Automotive electronics has taken many cues from the military – that's where head-up displays and night-vision systems came from. So perhaps the truck driver of the future will use a helmet that conveys all data to an eye-piece. That would provide a total field of view from on-board cameras, just as an Apache helicopter pilot 'sees' through floor and bulkheads.

Mirrors could then become redundant – even Volvo's new slimline versions. **TE**

How it works: Lane Changing Support – LCS

Changing lanes can be a challenge for drivers, due to trucks' blind spots on the passenger side. Lane Changing Support, Volvo Trucks' radar system, is designed to help the driver



1. The turn signal activates the safety system



2. A light signal and a buzzer inside the truck warn the driver

