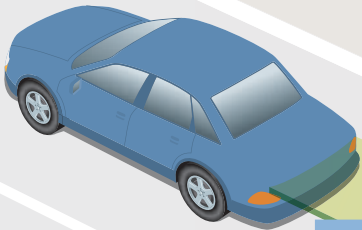


Assistance manager



Advanced technologies that help maintain commercial vehicle stability, braking, steering and safety continue to grow in popularity. Dan Gilkes finds out why

Developments in active driver assistance have come a long way over the last decade, mainly thanks to advances in electronics. But there is a difference between what is available from the manufacturer and what operators actually buy. You can't blame transport managers for that, as fleets have to turn a profit, and that is increasingly difficult without adding expensive options to the truck.

ABS (anti-lock braking) systems were probably one of the biggest initial steps forward in electronic driver assistance and it is difficult now to imagine that they were once described as a luxury driver's aid. But when first introduced as an option, few customers were prepared to invest. "ABS was initially a very expensive option and so nobody bought it," comments Iveco UK product director Martin Flach. "But, as it moved towards a legal requirement, ABS has become much more popular."

It's a similar story with Xenon headlights. Once you have used them, you wouldn't want to go back to a standard headlight, but they can be expensive and, if you're not the driver of the vehicle, they could be a difficult option box to tick.

And there in a nutshell is one of the biggest hurdles for driver assistance technologies in the UK. "So few trucks bought new are being purchased by owner drivers," observes DAF marketing director Tony Pain. He estimates that less than 5% of UK trucks are being driven by the people who purchased them, so getting the buyer to fully appreciate the benefit of driver aids can be difficult.

"Some fleets simply say that, if I really need it, the law will make the choice for me," says Pain. And he notes that many driver aids have little effect on truck values in the used market. Almost all of the additional investment will have disappeared come resale time, leaving the first owner to absorb all the cost.

That said, Flach expects history to repeat itself

when ESP (electronic stability programme), which has only become feasible through the adoption of ABS, is signalled to become mandatory equipment. And it may do so earlier than that: the ability to activate individual brakes, to slow or release selected wheels, has given us a variety of other traction control and braking options, such as anti-slip regulation (ASR), emergency brake control and hill start assist, as well as forming the basis for ESP.

Must-have ESP

So, in time, ESP will become standard across all trucks, in line with safety legislation. But how does it work? It uses an interaction between the truck's brakes, the engine management and the retarder, if fitted, along with the trailer's braking system, to keep a truck stable when it is losing grip. Sensors on the tractor measure yaw angle, lateral acceleration and the steering wheel position, activating one or more of the brakes when the incoming data doesn't match preset information. Engine torque is also reduced while the ESP system is working.

But there are two points. First, having ESP doesn't mean that a truck won't have an accident; it merely reduces the chances of that accident and helps the driver to maintain control of the vehicle in difficult conditions. And, secondly, since drivers may, hopefully, never see ESP in action, it's effectively a hidden advantage. "You can measure the benefit of systems such as iShift [Volvo's automated gear changing system] in fleet fuel averages, so people are prepared to invest," suggests Volvo Truck product manager John Comer. "That is not always the case with safety."

Nevertheless, Volvo recommends ESP on its tractors in the UK and, at £532, the majority see it as good value. Unfortunately, the same can't be said of adaptive cruise control (ACC), for example. Using sensors or radar to detect when the truck gets too



close to the vehicle in front, applying the brakes and retarder, if necessary, to keep the speed relative to the traffic ahead, ACC is designed to reduce stress for the driver on longer hauls.

But with Volvo charging around £2,370 for ACC, it isn't a popular option. Also so far most forms of ACC don't work if the vehicle or object in front is stationary – so the driver certainly shouldn't be using it in poor visibility. Some might also say that, while it is relaxing for the driver, adaptive cruise does little to ensure that they remain awake and concentrating on long motorway sections.

There are, of course, several ways for technology to watch over the driver – from monitoring eye movements, to registering whether the truck is wandering in a lane. Volvo offers driver alert support (DAS), which monitors steering wheel and pedal movements while using a video camera to read the road's centre and edge markings. The computer compares steering wheel inputs with the road markings and will warn the driver, if it thinks that they are drifting off line.

Then there are lane departure warning systems, which tend to retail at more than £1,000, so again find few customers in the UK's haulage industry. Will they become standard in the future? Some think so. "[Technology to detect] drowsy drivers is available today, but it is quite expensive," comments Flach. "But it will come. It is like the automatic emergency braking requirement that will come in three to four years' time."

Mind the gap

Meanwhile, being able to detect obstacles in a vehicle's blind spots is not just a concern for lane changing on the motorway: low speed manoeuvring and city driving also require maximum visibility for the driver. At present, there are a number of proximity sensors available for front and rear bumpers, or fleet managers can opt for cameras and additional mirrors. However, there is only so much a driver can look at and today's truck cabs are already festooned with visibility aids.

"We're relying far too much on mirrors at the moment," observes Flach. "On some occasions, mirrors are actually creating the blind spot."

As cameras become cheaper and smaller, they will almost certainly appear on trucks, but the problem then will be where do you put the screen? "Side and front view camera systems are good for reversing and manoeuvring, but not if they are going to be in the line of sight for driving," comments DAF's Pain.

Manufacturers are bound to keep working on building interest, though, having already invested heavily in technology development. Iveco's recently announced EcoStralis long haul truck, for instance, will be offered with ESP, EBS electronic braking and 'Hill Holder' as part of the standard package. A number of safety options, including lane departure warning, a tyre pressure monitoring system and adaptive cruise control will then be offered in an optional Safety Pack for a reduced price.

Unfortunately, it is only through this sort of pricing initiative that many of these driver assistance systems will reach a wider audience. And it is only then that they can actually play a role in reducing truck accidents on our roads, and lowering stress and fatigue for UK truck drivers. **TE**

