

Fleet & Safety

Vehicle technology and initiatives which will help you slash the number of accidents on your fleet

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AstaZero test site is on a mission to end accidents

A new safety testing facility is part of the plan to avoid crashes in the first place, rather than simply reducing vehicle occupants' injury risk, explains *Simon Harris*

Vehicle safety has been developed and debated from the earliest days of the motor car, but recent advances in technology have focused on preventing crashes rather than reducing the risk of injury.

An increasing number of features have been developed that allow sensors and computers to monitor risk on the road, alert the driver and intervene if necessary to prevent crashes or at least reduce the severity of the impact.

There have been significant advances in vehicle safety features even during the 18 years since Euro NCAP crash tests were launched in 1996.

Over the following decade or so, vehicle manufacturers were compelled to improve structural safety to increase their scores for occupant protection (and later pedestrian protection) in a crash. But more recently the focus has been on features such as electronic stability control and autonomous emergency braking.

Manufacturers and component suppliers are coming up with even more advances and trials are beginning where cars can drive themselves, maintaining a safe distance from the vehicle in front and keeping within lane markings.

Vehicle manufacturers can test safety features at their own sites, but those have been designed with engine and chassis testing in mind. A new facility in Europe has been purpose-built to evaluate car safety features with tracks and characteristics that mimic real-life scenarios.

AstaZero in Sweden was opened officially in August. The name Asta (active safety test area) and Zero are merged in the name to highlight the centre's vision of eliminating traffic fatalities. Although Volvo Cars and Volvo Trucks have been partners in setting up the test area, it will serve as an open, international platform for all.

Launching around two years ahead of any rival facility, according to its bosses, this is where future safety technology in fleet vehicles is likely to be evaluated.

AstaZero's total surface area amounts to about two million square metres with a paved surface of 250,000 square metres. Encircled by a 3.4-mile highway connected to a city area with four blocks, it also features a 240m-diameter circular high-speed area, with add-ons joined to a 700m-long multi-lane road. In-depth looks at these zones and a rural road zone follow later in the article.

Autonomous vehicle technology is very much at the forefront of what AstaZero will be used for.

Pether Wallin, chief executive of AstaZero, said: "Vehicles that act on their own initiative might sound like science fiction – however, a lot of technology has already been designed and developments are moving very rapidly. People cause accidents, not slipperiness or fog. If we eliminate the human factor, we can also eliminate the number of accidents."

RURAL ROAD

The rural road contains 10 different points, both open and concealed, where objects will appear in front of the vehicles.

Volvo Cars and Volvo Trucks were partners in setting up AstaZero



"People cause accidents, not slipperiness or fog. If we eliminate the human factor, we can also eliminate the number of accidents"

Peter Wallin,
chief executive, AstaZero

18

years since introduction of Euro NCAP testing

3.4

miles of test highway encircles AstaZero facility

The area is specially designed for different tests of driver behaviour and is well suited for the use of hidden obstacles or those that appear suddenly. At the road, there will be two T-junctions and a crossroad with signage in the specified language and changeable to suit customer requirements. The rural road also has bus stops/lay-bys at two locations.

CITY AREA

The city area will primarily be used to test a vehicle's capacity to interact with the surrounding environment to avoid hitting buses, cyclists, pedestrians or other road users. It includes different sub-areas, such as a town centre with varying street widths and lanes, bus stops, pavements, bike lanes, street lighting and building backdrops. The city area also has a road system with test environments such as roundabouts, T-junction, return-loop and lab-area.

MULTILANE ROAD

Four lanes connected to the high-speed area, with an acceleration road that is about 300m long and seven metres wide, with a turning loop for long vehicles. Several different scenarios can be tested, such as lane changes, different collision scenarios and crossing scenarios.

HIGH-SPEED AREA

The high-speed area consists of two acceleration roads. Acceleration road one is around two-thirds of a mile long. In addition to the two acceleration roads, it is also possible to use the multilane road for acceleration, which means vehicles can enter the high-speed area from three different directions. In this area, focus will primarily be on vehicle dynamics like avoidance manoeuvres at very high speeds.



VEHICLE SAFETY TIMELINE

Source: GEM Motoring Assist

- 1861** Locomotives on Highways Act imposed speed limits on steam-powered agricultural vehicles using country lanes.
- 1889** Electric headlamp invented, appearing first in North America.
- 1895** Pneumatic tyres first used on a car by André Michelin.
- 1896** Emancipation Act provided basic guidelines on how a car should be constructed.
- 1903** Four-wheel brakes first fitted to a Dutch Spyker race car. Wind-screen wipers appeared.
- 1912** Electric starter mass production pioneered by Cadillac to prevent manual starting injury.
- 1921** Hydraulic operated brakes on Duesenberg Model A later evolved to split circuit in the 1960s.
- 1931** UK legislation ensured safety glass began to replace plate glass windscreens on new cars.
- 1934** Citroën Traction Avant, the first unitary body construction car, paved way for others to include safety cages and crumple zones.
- 1952** Disc brakes appeared in low-volume production on Jaguar's C-type race car and Jensen 541. Disc brakes dissipate heat more effectively than drum brakes so operate more efficiently for longer.
- 1954** Self-levelling rear suspension on Citroën Traction Avant improved road holding for heavily loaded cars and prevented headlamps dazzling other road users.
- 1956** Volvo 120 introduced a steering column that broke away from the tweeting system in a major crash, leading to the collapsible columns of the future.
- 1958** Car interior design changes to include padding to reduce risk of injury from protruding parts and bare metal surfaces.
- 1959** Three-point seatbelts introduced by Volvo. Other manufacturers followed.
- 1960** Annual roadworthiness check (MOT) introduced in UK.
- 1966** Modified anti-lock brake system, developed for aircraft, introduced on a production car, the Jensen FF. More modern ABS pioneered by Bosch in late 1970s.
- 1967** UK statute stated all new cars must have front seatbelts fitted. Use became compulsory in 1983.
- 1968** Automatic fuel cut-off switch introduced to reduce fire risk in a crash.
- 1971** Electronic traction control systems began to appear in America. Later, often combined with electronic stability control.
- 1973** Side impact bars in doors introduced by Volvo. More sophisticated systems appeared in the 1990s.
- 1984** Although some cars had featured airbags, Mercedes-Benz began offering a driver's airbag.
- 1987** Rear seatbelts legally required in all new cars. By 1991 adults had to belt up in the back if rear seatbelts were fitted.
- 1996** Euro NCAP crash testing introduced, grading cars on safety beyond minimum legal standards.
- 1995** Electronic stability control appeared in revised Mercedes-Benz S-Class, reducing skidding risk by using ABS to brake individual wheels.
- 1998** Brake assist, which applies maximum pressure in emergency stops, introduced.
- 2002** Bull-bars banned on new cars.
- 2004** Blindspot warning system appeared on Volvo cars.
- 2006** Child seat legislation meant children under 135cm tall had to use a child restraint.
- 2010** Although automatic braking for cruise control systems had been around since the late 1990s, the first systems that brake if drivers ignore impact alerts in low-speed driving are introduced.
- 2012** Pedestrian airbag offers alternative to pop-up bonnet systems to reduce head injury risk.

SPONSOR'S COMMENT

By Selwyn Cooper,
head of business sales, Volvo Car UK



Volvo has a vision that by 2020, no one will be killed or seriously injured while travelling in one of its new cars. That's a bold ambition, but it's one we're confident of achieving, thanks to our

ever-more advanced safety technology.

While improving road safety is a worthy aim in its own right, Volvo's Vision 2020 brings particular advantages to fleet operators. Not only does cutting-edge safety equipment help reduce accidents and therefore minimise repair costs, it also brings savings in insurance.

For example, by stopping our cars before they collide with an obstacle in front of them, City Safety plays an active role in preventing accidents. Royal Sun Alliance has recognised this by offering a 10% discount to owners of Volvos that are fitted with the technology.

The insurer offers a further 5% on Volvos installed with the Driver Support Pack, featuring equipment like Blind Spot Information System (BLIS) to enhance safety during motorway lane changes.

For a fleet operator, that makes it possible to enjoy significant savings on company-owned Volvos.

As it happens, the insurance industry as a whole is picking up on the value of Volvo's safety technology. Thatcham, which oversees the grouping system used in the UK, has said that Volvos fitted with City Safety should have reduced insurance groups to reflect their lower risk of being involved in an accident.

That's great news for Volvo as a manufacturer because it recognises just what our safety equipment can achieve. And it's great news for fleet operators, meaning that with the right choice of company car, it's possible to save money at the same time as saving lives.

■ Find out more at www.volvocars.co.uk or call the Volvo Car Business Centre on 0345 600 4027





Car safety races ahead as vehicles take the wheel

Simon Harris finds out how it feels to relinquish control in a self-driving Volvo S60 prototype at the new AstaZero test facility in Sweden

Mention self-driving cars and people may imagine the rather bulbous and cartoonesque Google car announced recently rather than the crime-fitting Kitt that appeared in the TV series *Knight Rider*.

When *Fleet News* was asked if it wanted to be one of the first publications to test a self-driving car, we were keen to find out how it would feel and whether any misgivings about ceding too much control to technology is justified.

When I attended the opening of the AstaZero test track (see pages 46-47), one of the many safety demonstrations was to try a self-driving Volvo S60 prototype.

I sat behind the wheel while the car drove around a part of the track meant to simulate high-speed rural roads, keeping a safe distance from the vehicle in front and keeping in the centre of the lane.

I was in the vehicle for a total of 10 miles and nothing happened that suggested the vehicle, its occupants and other road users were put at risk.

The prototype disengaged autonomous mode in the same way as cancelling cruise control, by applying the brakes, but Volvo says when the technology reaches production cars there will be a more definitive and failsafe way of resuming hands-on control of the car.

Perhaps I'm blasé from trying elements of all this technology in new cars over the years. The autonomous cars of the future will merely be joining up these features.

Adaptive cruise control, lane-keeping assistance, blindspot warnings, autonomous emergency braking and collision mitigation technology will all be working together.

At no point did I feel uneasy about the car following the meandering country road. Of course, when these vehicles appear on public roads, they will have to follow navigation instructions and we're still a few years away from the technology being ready for all real-life road situations.

Erik Coelingh, technical specialist at Volvo Car Group, explains that if customers were to choose a new Volvo with the maximum level of autonomous features currently available, the cost would be around €2,000 (£1,600), while a fully autonomous car would require around twice the number of sensors to operate safely.

This could see customers paying a premium of £3,000 or more to buy a fully autonomous vehicle.

This is expensive, but the technology is all about reducing risk. Human error ultimately is involved in all vehicle incidents in some way. Increases in cost should be offset by lower insurance bills, as we have already seen in vehicles that have autonomous emergency braking as standard.

The vehicle insurance industry will need to evolve and focus more on insuring components that allow autonomous driving, rather than the drivers themselves. There would



"Drivers will have the opportunity to do other things while the car takes care of the driving"

*Erik Coelingh,
Volvo Car Group*

also be fuel efficiency and SMR benefits as self-driving cars would keep to speed limits, accelerating and braking more gently, so reducing wear and tear on components.

Volvo's Vision 2020 objective is that no one will be seriously injured or killed in a new Volvo by 2020. Beyond that, the aspiration is that no new Volvo car will crash. We witnessed two self-driving Volvos drive toward each other at high speed, then subtly change their trajectory to avoid a collision.

Many car manufacturers also see the potential of the technology, and there were a number of current Mercedes-Benz models in the AstaZero demonstrations. Audi has also recently revealed that a vehicle has done autonomous laps of the Hockenheim race circuit in Germany.

Volvo plans a trial in Gothenburg in 2017 where 100 Volvo customers will run cars with fully autonomous technology.

Coelingh says nothing should need to happen to the roads infrastructure to accommodate this new technology, as that would increase costs and deter adoption.

He also points out that although the car would be able to accelerate, decelerate, steer and avoid obstacles, the driver would always be in command of the vehicle. They would be able to use journey time to attend to work emails and phone calls, but able to resume control of the car when necessary.

He says: "I enjoy driving but there are some journeys that are boring and drivers will have the opportunity to do other things while the car takes care of the driving."

Opinion polls on self-driving cars seem overwhelmingly against the idea. It makes me wonder if these are the same drivers I see, eyes fixed on their mobile phone screen as they tap in a message, status or tweet, only glancing back up at the road every few seconds. Or perhaps those who are too busy in a conversation to notice they have left the unrestricted speed country road and are now in a 30mph zone.

Driverless or autonomous technology will have a big impact on these and other issues where there is a risk to road users.

£3,000

probable premium for a fully autonomous car

2020

deadline for end to fatalities in Volvo vehicles



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Tyre demonstrations 'open eyes' about safety performance

Showing customers the difference in stopping distances in loaded vans focuses fleets' minds about their tyre options, says ATS group sales director Peter Fairlie. *Christopher Smith* reports

Four patches of rubber no larger than the palm of your hand are all that's between your car or van and the road.

Ensuring that the tyres of your vehicles are always in perfect condition and correctly inflated should be a no-brainer but, all too often, fleets and their company drivers neglect to have either the policies or the will to carry out regular checks.

That's where ATS Euromaster comes in. The tyre distributor has increasingly moved its business proposition from a simple retailer to a provider of services; consequently, the company now supports fleets operating cars, vans and trucks from a network of 343 centres and 820 mobile service vans with at-work inspections to help pre-empt, and therefore prevent, tyre failure.

Accredited by both Safe Contractor, the health and safety assessment scheme, and the Contractors Health and Safety Scheme, ATS Euromaster also holds the Silver Award for Occupational Health & Safety from the Royal Society for the Prevention of Accidents.

Peter Fairlie, group sales director at ATS, joined the company in 2006 from van rental firm Northgate. He recognised that ATS needed to put greater emphasis on serving the needs of its customers, rather than just selling them tyres and other fast-fit products such as brakes, batteries, shock absorbers, oil and exhausts.

"When I joined, one of the things that became apparent was that we were behaving like a tyre sales business, but we needed to evolve into a service business," says Fairlie. "Selling tyres is obviously part of that, but it's not the only thing."

One of the drivers for change was the fact that ATS Euromaster's customer base is dominated by business fleets rather than retail work: it required a different mind-set to a walk-in private customer.

"Our sales mix is two-thirds B2B, one-third retail – for our competitors, it's generally the other way round," Fairlie says.

"It makes a difference to the way we operate our network

and changes the dynamic in the centres. A retail-led network is driven by stock, but for a B2B network the focus is on delivering the customer's fitment policy.

"For customers with a sole supply contract, we're achieving 85-90% policy fitment. These customers are generally putting 95% of their volume through ATS."

Key to providing an enhanced customer service, one which puts the priority on burden-free safety support rather than simply tyre sales, was introducing the mobile repair service.

"The service is fantastic for fleets, particularly those based at a hub," says Fairlie. "We can come in overnight, inspect vehicles and then replace tyres as necessary, ready for the vehicles to be back on the road the next morning."

However, he adds: "One area I'm surprised we haven't seen as much take-up in is the company car market."

"It's frustrating, but the driver still wants to drive into the centre and wait to have their tyres changed. Instead, we could go to their home or office and take care of it while they can get on with their work."

"We need to find new ways to promote the mobile offer to the driver."

Fairlie believes that future developments in technology could see the mobile service expand to be even more proactive in identifying potential vehicle safety issues for fleet customers.

Telematics could open up a number of opportunities by analysing data direct from the vehicle's management system. "I think telematics has the potential to be very interesting. How would we benefit from telematics, whether that's offering our own service, or using the data?" Fairlie asks, rhetorically.

"It would be fantastic to contact customers proactively to resolve any problems, and would tie in fantastically with our mobile fitting service. There's definite value for fleets in using that data."

Fairlie is determined to build on ATS's pre-emptive approach to its business, in particular to counter drivers who aren't paying as much attention to their tyres as they should.

"Most fleets still have a 2mm tyre replacement policy, although some specific fleets will change at 3mm – but that's not the norm," he says.

"Of course, what we see on the vehicle and what the company's policy is are often wide apart. Why are the drivers waiting until that point?"

He adds: "We want to offer more electronic safety inspections at customers' sites."

"We can identify vehicles and take steps to replace. It's likely to be harder for company cars, where they may be kept all over the country, but we think it's key for vans."

The media publicity surrounding cold-weather (or winter)

"We've seen some real successes on winter tyres, predominantly on delivery and service van fleets"

Peter Fairlie, group sales manager, ATS





343

number of ATS
Euromaster centres

820

number of mobile
service vans

tyres has died down over the past 12-18 months, primarily due to the mild winter conditions. A recent *Fleet News* online poll showed only 12.8% of fleets are planning to fit winter tyres this year.

However, ATS believes there is still growth in take-up. "We've seen some real successes on winter tyres, predominantly on delivery and service van fleets," says Fairlie.

"It's fair to say the type of fleets which have adopted winter tyres are industry leaders and they certainly wouldn't go back to standard tyres over winter."

Fairlie acknowledges fleet concerns over investment in a second set of tyres, but says that while there is the initial outlay, the fleet is only ever using one set of tyres.

Over the fleet lifecycle of the vehicle, tyre purchases are likely to even out if the right type is used in the right weather conditions.

Plus, of course, there are safety and operational reasons for introducing a winter tyre policy.

"Fleets have to ask if that expenditure is worth it, but if they can continue to operate, that's a benefit. The fleets running them at the moment made that choice for valid reasons," Fairlie says.

"We do offer a tyre hotel service, but many will store unused tyres at their own depots and workshops."

In persuading fleets of the benefits of winter tyres, as well as the differences between budget, mid-range and premium brands, demonstrations are important.

"If you're investing in a premium brand, you need to be sure you're going to get that value," Fairlie says. "If someone has doubts, they'll probably end up going for the saving."

"We take customers down to MIRA's test tracks and demonstrate performance."

"When you get the opportunity and the customer is open-minded, you can see their eyes opening. If you do a braking test with a loaded Transit and see the difference in stopping distance, people start to think."

The tyre labelling scheme, introduced in 2012, is also giving customers greater awareness of the differences between products, as well as stepping up the level of competition among the premium brands who are each vying for a clean sweep of A-grades for the three measurements – wet road braking, fuel efficiency and external noise.

"Tyre labelling gives the consumer an improved product and better road safety as manufacturers want to meet the grade and criteria which means the consumer is definitely a winner," Fairlie says.

While fleet business makes up a larger proportion of revenue for ATS than leasing company business, Fairlie says the company's leasing work is on the rise. "Our retention rate for leasing business is very high," he says. "These companies are very focused on driver satisfaction."

ATS has made substantial investment in its centres in recent years. All now have wi-fi, Lavazza coffee machines and refurbished seating areas.

The growth in online retailers and associated delivery services has brought additional van fleets to ATS, Fairlie says. "It's not just the supermarkets – parcel companies have taken on extra vehicles too," he adds. "These fleets are much more managed than many van fleets – they've got processes in place from the truck sector. Uptime is critical."

FACTFILE

Company ATS Euromaster
Group sales director
Peter Fairlie
Service centres 343
Mobile service vans 820

Peter Fairlie: 'We need to find new ways to promote the mobile offer to the driver'



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fleetnews.co.uk/spotlight



Laser lights and radar technology

It may sound like technology from a science fiction film (or a Jean Michel Jarre concert), but a focus on safety means these systems are in use in vehicles right now. *Stephen Briers* reports

Vehicle safety broadly falls into three categories: pre-emptive technology, which helps to prevent a crash occurring in the first place; crash mitigation technology, which reduces the severity of injuries in the event of an impact; and post-crash technology, which alerts other road users or the emergency services to bring help as quickly as possible.

Manufacturers have historically placed most emphasis on mitigation, introducing airbags, seatbelt pre-tensioners and improved head restraints, but they are increasingly developing technology in all three areas as safety rises to the top of the agenda for fleets and European legislators alike.

Safety is one of Volvo's main brand pillars: its history is crammed with innovations. Inventor of the three-point seatbelt; the first to introduce side airbags as standard fit; creator of the side impact protection system and whiplash protection system – it's an impressive list.

According to the man in charge of future safety initiatives, there is no risk of the company resting on past successes.

Volvo's ambition is to have no-one killed or injured by its cars by 2020, says Jan Ivarsson, senior manager safety strategies and requirements. The key area of focus is on collision avoidance technology, with much of the company's latest developments featured on the forthcoming XC90.

Ivarsson describes the XC90 as a "leap forward in collision avoidance", adding that much of the new technology will be fitted as standard to the car and added to new models as they are launched.

For a company obsessed with safety, the claim that we are seeing "a new chapter in safety technology" is worth exploring more closely.

Volvo has already sold more than one million XC60 models worldwide containing its CitySafety system (which automatically brakes the car at speeds below 19mph if an obstruction is detected), introduced in 2008. The XC90 adds pedestrian avoidance and cyclist detection as standard.

Radar and camera technology has been adopted from other industries, including the military, and forms the basis for many of Volvo's new safety innovations, says Ivarsson.

Pilot Assist, a radar-based optional extra, removes much of the strain of driving in demanding situations by keeping the car a safe distance from the vehicle in front. It also ensures the car stays within its lane.

"This reduces the workload on the driver in congestion situations," Ivarsson says. "Our data shows that safe distance and lane-keeping technology will reduce all types of incident, not just those that result in a crash."

Research shows that drivers spend an average of around 20% of their time concentrating on things other than the road ahead, be that eating, phone calls or fiddling with the radio or sat-nav. The latest safety technology reduces the risk of a crash occurring as a result.

While Volvo's primary objective is to reduce crashes happening, it also recognises the need to mitigate damage caused when one does take place.



Audi used laser lights on its cars in this year's Le Mans 24-hour race

Design is playing a role, particularly on the XC90 which has a revamped front-end to better absorb the impact in a variety of situations, such as frontal, small overlaps and posts.

"It has good energy absorption and progressive strength which protects passengers by surrounding them with deformation zones and a strong safety cage," Ivarsson says.

"We use ultra-high strength boron steel in the car which is stronger and stiffer but without a weight penalty."

Smaller four-cylinder engines also mean more space up front to absorb the impact.

Up to one-third of crashes involve the car leaving the road. Although lane-keeping technology should prevent this occurring in the first place, if it does then Volvo is prepared.

"If the car leaves the road it is very messy for the driver – they will roll around in the compartment," says Ivarsson.

"We are putting electrical restraints in the front seats that are activated with large side decelerations. People will be restrained earlier in a collision; before the impact they will be in a good position in the seat."

Such incidents can also put immense vertical pressure on the spine; Volvo has created space beneath the seat to allow movement and absorb energy to reduce the stress.

The run-off road protection system will be another standard fit item, much like most of Volvo's safety initiatives.

The ultimate collision prevention system is the autonomous car and Volvo is one of the pioneers in this area as well (see page 48). Pilot Assist is the first step in that direction.

But its more immediate priority is to address head-on collisions, an area of concern for Ivarsson.

"On high-speed roads we have separation of lanes, but at lower speeds you can have lane drifting which is a problem," he says. "There is also intersection detection where you cross the lane of traffic. There is more work to be done here."

Volvo is also considering the actions of other drivers on the road and is looking at how it can reduce the chances of, for example, rear-end collisions.

Its cars will have warning functionality; if a tailing car comes up too fast it will trigger the blinking of the rear lights as a warning to that driver. At the same time, the seatbelts



20%

amount of time drivers spend concentrating on things other than the road ahead

19mph

maximum speed Volvo's CitySafety autonomous braking system will work at



For full coverage of safety month, visit fleetnews.co.uk/safetymonth



will be retracted to prepare for a possible impact.

This technology costs money, of course, but Ivarsson says it is more than offset by the reduction in crashes and savings in insurance premiums.

Where Volvo's innovations are focused on proactive vehicle interventions, Audi's approach includes initiatives to proactively help drivers alleviate risk themselves.

Audi's speciality is lighting. Initially introduced as a striking design enhancement to its cars, it is now playing a more meaningful role in crash prevention.

The matrix LED headlights introduced on the R8 will be added to the facelifted A6 and other new models as they come to market. Matrix features 50 LEDs in each light which are activated or deactivated individually. It means each headlight is always on full beam; the system dims each LED that would shine directly on to oncoming and preceding vehicles ensuring illumination of the road is greatly improved.

The lights also recognise pedestrians who might be too close to the road and flashes a warning to alert them.

The next step in light technology is laser lights, according to Andre Konsbruck, director of Audi UK. "They operate in addition to the matrix beam and can light up to 100 metres



Volvo's safety innovations are focused on proactive vehicle interventions

SAFETY TECHNOLOGIES

PRE-EMPTIVE AND DRIVER AIDS

- Stability control
- Improved headlights
- Distance-keeping sensors
- Lane-keeping assist
- Blind spot indicators
- Rear-end warning lights
- Matrix LED headlights/laser beam lights
- Voice commands
- Heads-up displays
- Speed limiters
- Traction control
- 360° monitors
- Autonomous cars

CRASH MITIGATION

- Airbags
- Seatbelt pre-tensioners
- Head restraints
- Autonomous emergency braking
- Deformation zones and strong safety cage
- Pedestrian airbag protection

POST-CRASH

- Flashing hazard lights
- Fuel/engine shut-off
- Alerts to emergency services (e.g. eCall)

"Our data shows safe distance and lane-keeping technology will reduce all types of incident"

Jan Ivarsson, Volvo



A HISTORY OF INNOVATION IN CAR SAFETY

Volvo's state-of-the-art safety features have been protecting road users for many generations.

When Volvo engineer Nils Bohlin invented the three-point seatbelt in 1959, it was a pioneering step in vehicle safety. More than five decades later, Volvo is still consistently ahead of the curve in vehicle and road safety, with the clearly stated ambition that by 2020 no-one will be killed or seriously injured in a new Volvo.

Which is good news for organisations with Volvo cars in their fleet. Reducing road accidents and minimising the risk of death or injury are obviously inherently good outcomes. But they also have real business benefits, reducing the costs of insurance, repairs, injury and litigation.

Innovations like Side Impact Protection System (SIPS) and Whiplash Protection System (WHIPS) help keep drivers and passengers safe. Meanwhile, active safety systems – such as City Safety, which automatically brakes for pedestrians, cyclists and other vehicles if the driver fails to – help protect other road users too.



Delivering savings

Volvo's safety technology has a proven role in reducing repair costs for fleet operators. Tristar Worldwide, a large luxury chauffeur company, found that adding Volvos to its fleet reduced the number of accidents involving its drivers, delivering savings.

Thanks to City Safety, the number of hit-in-rear accidents involving Tristar's drivers dropped by 66% in a single year. And the costs of repair bills, replacement car hire and third-party expenses were down by 41%.



Making safer drivers

Volvo's technology also encourages safer driving, keeping drivers alert to danger with audible speed camera signals, Lane Departure Warning and Blind Spot Information Systems (BLIS).

Volvo's leadership in safety innovation has been unchallenged for generations. Increasingly, as companies recognise the need to manage costs, compliance and risk, the economic value of Volvo's pioneering approach is becoming clearer.

With fewer employees involved in road accidents, and less harm caused when accidents do happen, Volvo's fleet customers are able to run a safer, more reliable and more cost-effective fleet.

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OR CONTACT THE VOLVO CAR
BUSINESS CENTRE ON 0345 600 4027



The Jaguar XE is the first car in the compact luxury car segment to feature an airbag pedestrian protection system as standard-fit



using precise light streams," he says. The technology was used on Audi's Le Mans cars at this year's 24-hour race.

Audi is also taking the cabin environment into consideration when assessing safety. It recognises that in-car connectivity and entertainment is going to proliferate, which potentially increases driver risk.

"We are investing time to analyse consumer behaviour in the car with all these technologies to limit the risk of them being distracted," says Konsbruck.

"For example, what should be in the central console and what is in front of you rather than on the left-hand side of the screen? We are also disconnecting some systems at certain speeds when it becomes too risky."

Konsbruck believes voice commands will become increasingly important as a way to control key functions. "We want no distractions in the cabin," he adds.

Audi is also developing its own autonomous cars with pilots underway at a number of universities in America.

Its Volkswagen Group sister brands Volkswagen, Škoda and Seat share in the group technology being developed by the company.

In addition, Škoda fits speed limiters to its latest models as standard which fleets can set at their desired level.

Meanwhile, its new Fabia has a raft of standard-fit safety equipment, such as XDS+, a multi-collision braking system, and Prefill, where pressure in the brake system is increased with rapid release of the accelerator pedal, to enhance protection and prevention.

Front Assistant is a radar-based system which alerts the driver about the risk of a collision, while brake lights flash during emergency braking to warn traffic. In the event of a crash, the hazard lights are activated while fuel and engine are shut off and the central locking automatically unlocks.

100

distance (metres)
Audi's laser lights can illuminate using precise light streams

50

time (milliseconds)
Jaguar's airbag pedestrian protection system takes to deploy an airbag

Seat is pushing its latest safety equipment hard through national advertising of lane assist. According to UK managing director Neil Williamson, this approach "shows the importance [of safety] for the business".

Like Audi, with its pedestrian warning lights, Jaguar Land Rover has also extended its safety developments to include safeguarding people outside the car. Its new XE compact luxury car is set to be the first in its segment to feature an airbag pedestrian protection system as standard fit.

Triggered by sensors mounted in the front bumper, the scuttle-mounted system deploys an airbag within 50 milliseconds should the car come into contact with a pedestrian.

The airbag is designed to cushion the impact of a person on the car's bonnet without blocking the driver's vision and comes into action at speeds between 15mph and 31mph.

"We're also introducing autonomous braking that is activated via a forward-facing stereo digital camera and is capable of avoiding an impact at speeds of up to 50mph," says Paul Cleaver, vehicle programme director at Land Rover.

"Both these systems have been designed to assist drivers rather than distract them and are part of our ultimate goal for Jaguar Land Rover vehicles to have no involvement in road accident statistics."

Among a raft of advanced safety technologies debuting in the XE is all surface progress control (ASPC), hailed as a unique traction management system to aid winter driving.

It is available on cars with automatic transmission and uses electronics to operate like a cruise control to gain traction over ungritted surfaces.

"It works at speeds between 2mph and 18mph and allows the car to travel smoothly without skidding. All the driver needs to do is concentrate on steering," says a spokesman.

Another first in the XE is a laser head-up display (HUD) that projects high-contrast colour images directly in the driver's line of sight. Smaller and lighter than existing HUD systems, it makes the virtual images appear to 'float' two metres ahead of the driver. It is also claimed to remain effective in bright sunlight and when the driver wears polarised glasses.

Meanwhile, Nissan is making its safety technology more accessible to fleets by bundling it together in a Safety Shield pack that is being cascaded out across its vehicle range.

Included are: lane departure warning, blind spot detection, around view monitor, moving object detection and autonomous emergency braking.

Safety Shield is standard on N-tec trim, Nissan's mid-level specification. Consequently, it expects good take-up by fleets.

However, Nissan GB managing director Jim Wright adds a note of caution with the proliferation of safety technology: fleets and company car drivers must be prepared for a much lengthier vehicle handover process.

"It can take two hours to hand over a car because of all the technology," he says. "We are also recruiting innovation specialists at 50 dealerships whose role is to explain the technology on the car, not to sell them."



Nissan's Safety Shield pack includes lane departure warning and around view monitor

"Our ultimate goal [is] for Jaguar Land Rover vehicles to have no involvement in road accident statistics"

Paul Cleaver,
Land Rover



Safety programme puts developments to the test

The eSafety Aware initiative allows fleet managers to experience the benefits of systems such as autonomous emergency braking. *Christopher Smith* reports

Over the past 20 years, automotive safety technology has become an ever more important issue for fleets – and the industry in general.

Since it was established in 1997, the Euro NCAP safety and crash testing programme has helped improve safety standards.

Its rating programme is independent of car manufacturers and is performed in research and test centres spread across the continent.

As vehicle safety technology has evolved, so has NCAP's scoring system: a five-star rating from 1997 is vastly different to a five-star rating from today.

Technology has advanced from passive safety systems such as airbags, headrests and seatbelt pretensioners, to active systems such as anti-lock braking (ABS), electronic stability control (ESC) and autonomous emergency braking (AEB) which help prevent an accident from occurring.

Thatam Research is one of Euro NCAP's testing partners and, in recent years, the UK organisation has specialised in investigating collision avoidance technology.

Bosch, together with Thatam, has been running the eSafety Aware programme to educate the wider automotive industry on the technology behind autonomous safety and how it can make a difference, either eliminating or reducing the impact of collisions.

“In addition to protecting the lives of drivers and other road users, safety technology offers fleets potential financial advantages”

The eSafety Aware programme offers training sessions at research institute MIRA, where those in the automotive and fleet industries can witness the difference some of these technologies can make on the road.

Fleet News was invited to take part in the programme and getting behind the wheel of a vehicle to experience the crash prevention technology made it clear how beneficial it could be.

All the vehicles we performed the demonstrations in were standard vehicles, on sale today, with many of the systems on test gradually moving off the options list and becoming standard specification.

In addition to protecting the lives of drivers and other road users, safety technology offers fleets potential financial advantages. Reduced accident rates mean reduced downtime, lower accident repair costs and potential discounts on insurance premiums.

ELECTRONIC STABILITY CONTROL

Developed by Bosch in the early-1990s as electronic stability programme, ESC is mandatory across the EU on every new car and light commercial vehicle.



Bosch's autonomous emergency braking system is put through its paces at MIRA





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Volvo's autonomous emergency braking technology can bring a car to a complete stop



The basis of ESC – technology to control braking to each wheel with millisecond precision – forms the bedrock of today's safety technology. It's a combination of ABS and traction control, for acceleration without slipping.

Speed sensors on each wheel, a steering wheel angle sensor and direct links to the vehicle's computer system allow information to be fed to the brakes to react to a changing situation.

It's an invisible system – drivers don't need any training, nor drive differently – but the ESC system, indicated on the dash by an orange skidding car icon when activated, will act as a correction tool when necessary.

The standard fitment ruling should mean that within the next couple of years, almost all cars on fleets will have ESC, depending on replacement cycles.

There are also various added benefits that ESC can bring, particularly in the LCV sector.

Load adaptive control is a variation of ESC that makes adjustments to the vehicle's steering characteristics based on the positioning of the load and the centre of gravity of the vehicle.

Roll over mitigation, another adaptation of ESC, detects lateral movement from winds, alerts the driver, and makes adjustments accordingly. A variation of this system is also used for detecting winds and reducing trailer sway, which is particularly useful for vans towing plant, or drivers with caravans.

Hill hold control, which keeps a vehicle in place as it accelerates away from a hill start, is also a derivative of ESC.

ADAPTIVE CRUISE CONTROL

While cruise control is found on many company cars, adaptive cruise control is less commonplace.

It uses a combination of radar and cameras to detect the car in front, and will 'lock' on to it. The driver sets their maximum permitted speed and the car follows at a pre-determined distance. Like standard cruise control, the driver can cancel it at any time, but in a flow of traffic the system makes a journey far less stressful.

Standard on a number of vehicles including SE and Match trim levels on Volkswagen's Golf and an option on many other vehicles, it could make a difference to the well-being of high-mileage drivers.

While generally used in faster-moving traffic, several cars on the market, including the new Volkswagen Passat and Mercedes-Benz models, offer a slower speed function that allows the vehicle to control its speed while in slow-moving traffic queues.

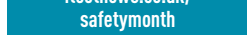
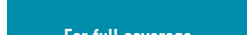
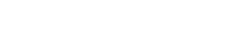


“The standard fitment ruling should mean that within the next couple of years, almost all cars on fleets will have ESC”



£250

starting price for autonomous emergency braking systems



For full coverage of safety month, visit fleetnews.co.uk/safetymonth

AUTONOMOUS EMERGENCY BRAKING (SUB-20MPH)

Our technology demonstration took place in a manual Volvo S60, accelerating to a constant 18mph before letting the car prevent a collision with a simulated parked vehicle by coming to a complete standstill.

These units (pictured left) are used by Thatcham in Euro NCAP testing and are designed to resemble the radar profile of a car as closely as possible.

AEB is designed to be a last resort. If the car senses human intervention, such as sudden steering movement or another reactionary movement, it lets the driver take control of the vehicle.

The sensation of letting the car bring you to a halt is quite shocking, but powerful. In the manual S60, the braking system also stalls the vehicle, which exacerbates the effect, but you can be moving away again in seconds with just a turn of the ignition.

AEB has the potential to eliminate a huge number of low-speed collisions.

The system uses a short-range detection system, LIDAR, to scan the road up to 20m ahead for vehicles and will prepare the brakes to be applied if needed.

With fitment of this system costing from £250 where optional, the demonstration proves if you only opt for one additional safety expenditure, AEB is a wise choice.

AUTONOMOUS EMERGENCY BRAKING (20MPH+)

Our higher-speed emergency braking demonstration took place on the long straight on MIRA's infield, and was a particularly striking experience. Designed to reduce the impact, or even eliminate, higher-speed rear-end collisions, the system works at speeds above 20mph.

Bosch has developed a test unit for this demonstration involving a Land Rover with a simulated car suspended from its rear. With the 'traffic' in front travelling at 25mph, our Golf fitted with the technology approached at 50mph.

Radar long-distance technology monitors the road ahead, with LIDAR short range detection monitoring the situation as the vehicle gets closer.

The system kicks in only if no intervention is detected from the driver. An audible and graphical warning is given seconds before the predicted impact, which should give the driver time to react and avoid the situation.

If they don't, brakes will be applied to either avoid the crash or reduce the severity of the impact. The technology isn't going to prevent every collision, but with the car assisting in the braking process, the impact can be lessened.

Coming to a complete stop just feet away from the 'car' in front from travelling at 50mph is quite disorientating, but extremely impressive. Again, within seconds, the driver can be on their way – accident avoided.

PARK ASSIST

In its most basic form of parking sensors, park assist has been on vehicles for many years now.

However, the increase in fitment of sensors and sensor technology has improved the capability of this equipment greatly over the past few years. A growing number of vehicles offer a self-parking facility which requires minimal input from the driver. This input is generally twofold – changing gear and controlling speed via the accelerator pedal.

■ Further eSafety Aware briefings will take place next year. For more information, email technology.briefings@uk.bosch.com

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Use technology to minimise road incidents

Developments such as telematics and autonomous emergency braking can significantly improve the safety of all road users. *Ben Rooth* reports



Technology will form the bedrock of the future battle to cut road accidents, according to fleet experts from leasing and insurance.

However, technology in isolation will not prevent drivers crashing vehicles; it has to be used to inform a cohesive risk management and incident reduction plan with buy-in from across the company.

Achieve this and you can expect to not only see a reduction in crashes, but a reduction in insurance premiums – a double-whammy saving.

In addition, in some instances insurers will even part-fund investment into crash-reduction technology.

The consensus among fleet professionals is that telematics offers the biggest opportunity with its ability to provide specific information about a driver's behaviour.

Bernel Meyers, senior risk consultant at insurance company Zurich, says: "Basically, there needs to be far more

95%

of at-work road incidents are caused either wholly or partly by employees' actions

uptake of telematics in fleets. Large goods vehicles will routinely use telematics either installed by the manufacturer or as an aftermarket option, and fleets operating cars and vans need to do the same with data relating to safety being properly analysed.

"In-vehicle cameras also seem to be increasingly coming into favour. I think that we're missing an opportunity to make the most of this type of technology currently, but this should change."

Oliver Boots, head of product services at LeasePlan, urges fleets relying on driver training to understand the importance of correct implementation.

"Fleet operators are increasingly using data from telematics to deliver training to the individuals or driver groups that need it most," Boots says.

"Telemetry data is often most useful for high-mileage fleets where significant analysis may be required to best establish training needs."

When telematics is used in conjunction with other emerging technologies, such as in-vehicle cameras, its potential to improve drivers' behaviour becomes even greater.

Steve Shirley, commercial motor risk manager at insurance company Aviva, also believes that telematics with in-cab cameras will be of "increasing importance".

"Telematics combined with in-vehicle camera systems has the potential to make a real difference to driver behaviour in the future," he says.

"The drivers are in no doubt that they're being



"Telematics combined with in-vehicle camera systems has the potential to make a real difference to driver behaviour in the future"

Steve Shirley, commercial motor risk manager, Aviva



HOW FLEETS CAN IMPROVE SAFETY

1 DRIVER TRAINING

In a nutshell: Training is the single-biggest element in any risk management and crash reduction programme.

How is it implemented? Can be carried out either through on-road training or online.

Benefits: Reduces accidents, improves fuel economy, less wear and tear on the vehicle.

Disadvantages: A one-size-fits-all approach rather than tailoring courses to individual needs will not be effective.



2 PROACTIVE PREVENTATIVE MEASURES

In a nutshell: A way to assess driver behaviour and implement actions to reduce risk.

How are they implemented? Measures might include individual driver risk assessments and the use of telematics.

Benefits: For many, it's the starting point to establish risk levels to enable tailored action to be undertaken

Disadvantages: Requires involvement of line managers who need to be clear about their roles and responsibilities.



3 INTELLIGENT RISK ASSESSMENTS

In a nutshell: Assessments will look at the component parts of driving such as the driver, the vehicle and the journeys being undertaken.

How are they implemented? Assessments will hone in on why an individual is considered to be high risk.

Benefits: Risk assessments can be used to provide more focused driver education programmes.

Disadvantages: Assessments require an investment of both time and finances.



4 VEHICLE SAFETY TECHNOLOGY

In a nutshell: Often referred to as advanced driver assistance systems (ADAS), these might include autonomous emergency braking.

How is it implemented? Many of these are purchased when the vehicle is ordered. Some, such as reversing sensors and in-cab cameras, can be fitted at a later date.

Benefits: Reduces risk of frontal crashes, lane departure, loss of control, etc. Many systems provide audible or visible alerts.

Disadvantages: Usually optional so requires investment.



5 CHARGING EMPLOYEES FOR EACH CRASH

In a nutshell: Some fleet management policies include the ability to charge the employee for a portion of the cost of the damage.

How is it implemented? The implementation varies widely. Some organisations make a charge from the first at-fault claim while others start from the second or third within a 12-month period.

Benefits: Creates a financial incentive for drivers to take greater care of their vehicle.

Disadvantages: Might not be good for staff morale.



6 POST-ACCIDENT REVIEW GROUPS

In a nutshell: Post-accident reviews aim to get to the root cause of the collision.

How are they implemented? Reviews identify whether management failings or other factors might have contributed to the collision.

Benefits: Understanding the root cause will result in more meaningful remedial action being implemented to help prevent a recurrence.

Disadvantages: There's the potential for an organisation to be presented with unpalatable truths about the way it operates.



Advertisement feature

When, where and why do at-work drivers crash compared to the average driver?

Earlier this year, AA DriveTech commissioned research organisation Road Safety Analysis to undertake a review of all incidents reported to the police between 2008 and 2012 (1.4 million drivers). It focused in particular on 'working car drivers' who represent 8% of those involved in a crash; the word 'working' excludes those commuting to work.

When? While, in overall terms, most collisions happen in October, working car drivers are more likely than the rest of the driving population to be involved in collisions between 3am and midday. In particular, this group is twice as likely to be involved in a collision between 6am and 9am.

This data can help fleets to focus education on the times of day working drivers are at most risk.

Working drivers are over-represented in crashes on Monday to Thursdays, but revert to the norm on Fridays.

Where? While most (57%) collisions occur at junctions, different types of junctions

show different results for different types of driver. Working car drivers are over-represented in collisions on slip roads by 28%. They were also slightly above the norm at roundabouts (7%) and controlled junctions. Commercial drivers of large goods vehicles or passenger carrying vehicles tend to crash more than the average at controlled junctions (22%) and on slip roads (42%).

Why? The research also highlighted some clear differences between the ways at-work drivers contribute to collisions compared to other drivers. Working car drivers are more likely to be distracted (15% higher), commit junction errors (25% higher), fatigued (23% higher), or close following (14% higher), whereas commercial drivers are more likely to be close following (40% higher), fatigued (48% higher), or undertake manoeuvre errors (40% higher).

We believe this research will start to set the agenda for driver training programmes for working drivers in the years ahead.



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monitored and are likely to take greater care. "But, as ever, it comes back to how the information that's gathered from the technology is subsequently used by the fleet manager."

Malcolm Roberts, fleet services manager at Hitachi Capital Vehicle Solutions, said fleets should use "all the tools" at their disposal to minimise accidents.

"It's not only going to be driver training that will feature – but that'll still be a major component that's increasingly shaped by telematics.

"It'll be a case of gathering as much data as possible and then acting on it."

IMPROVING DRIVER BEHAVIOUR

Studies suggest that up to 95% of all at-work road incidents are caused either wholly or partly by employees' actions. The remaining 5% are down to mechanical failure, vehicle defects or uncontrollable events such as falling trees.

So, what can be done to improve driver behaviour?

Phrases such as 'effective communication' between employees and an 'engaged management team' that's 'committed to cutting accidents' are heard regularly in any discussion of this topic.

Meyers adds: "To make drivers more responsible, companies should, in the first instance, have robust policies and procedures in place concerning safe driving and a safe fleet.

"Their line management should understand their roles and



Telematics data can help tailor driver training courses for employees

responsibilities and be proactively implementing the policies to ensure they are looking after the health, safety and welfare of their teams.

"They should also have a robust education and communication programme in place, which includes a driver's understanding of what's required of them in relation to the fleet policies and procedures."

Roberts adds that effective communication involves total clarity when it comes to the impact of crashes.

He says: "To my mind, discussions about the true cost of accidents should be explained at an employee's annual review.

"By talking through the real costs that are involved – including repair, lost business and increased insurance premiums – employees are likely to become more engaged.

"I think that this is far more positive than adopting punitive measures like fining employees who have two at-fault crashes."

Chris Chandler, a senior consultant at Lex Autolease, believes fleets should consider actively rewarding good drivers. He also extols the merits of establishing "a total safety culture" within an organisation.

"For many organisations, it becomes clear to employees that this is important if prominent display within their workplace is given to the number of accident-free days that have been enjoyed," says Chandler.

"Then, when someone has a crash, they're fully aware that they're responsible for affecting that tally.

"I also think that for some organisations it's even worth considering rewarding accident-free periods in some way, possibly with shopping vouchers, in order to incentivise the whole process.

"This investment is often recouped through savings made on wear and tear on the vehicle."

CASE STUDY: NHS BLOOD AND TRANSPLANT

NHS Blood and Transplant's (NHSBT) 220 bluelight vehicles had just 17 at-fault collisions last year despite collectively travelling more than 5.5 million miles.

The organisation attributes these results primarily to its ongoing driver training programme and the personal responsibility taken by its drivers to modify behaviour.

It's now hoping to reduce its road accident tally further after installing telematics.

When each new driver is appointed at the organisation, which delivers blood and blood products to hospitals nationwide, they are sent

on a four-day course.

This intensive programme provides each employee with 'bluelight training' and driving experience.

Subsequently, each driver undergoes refresher courses every two years.

In addition, NHSBT fitted its 68 cars and 152 vans with TomTom telematics products two months ago.

This telemetry is now being monitored by NHSBT's national fleet services manager, Larry Bannon, who intends to use the findings to amend, if necessary, the ongoing training programme and also send drivers on refresher courses

if appropriate.

He says: "We've witnessed year-on-year reductions in the number of accidents we're having and we've no intention of resting on our laurels.

"Initially, there was some suspicion among some employees that we'd be using the telematics to keep an eye on them.

"After explaining to them and their union representatives that telemetry is simply another tool to help minimise accidents, there's been greater acceptance.

"Our drivers know that we're investing in them through training and telematics, and this is actively engaging them to keep accidents to a minimum."



"Our drivers know that we're investing in them through telematics and training"

Larry Bannon, NHS Blood and Transplant

DRIVER TRAINING

When it comes to minimising accidents, many organisations continue to place strong emphasis on driver training.

But the consensus is that this training needs to be shaped by specific requirements if drivers are to be properly engaged.

Meyers advises fleets to use training as part of a risk management package.

"The better driver education programmes will be risk-based according to individual requirements and not a one-size-fits-all approach," she adds.

While it's widely accepted that telematics is going to have an increasing importance when it comes to accident minimisation, the onus remains on fleet managers to monitor the data to identify those drivers with training requirements.





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Doug Jenkins, global risk consulting service coordinator at insurance company AXA, says: "The biggest influence on a driver's behaviour is their line manager. Telematics systems tell a line manager how a vehicle is being driven and once this information has been collated, it's down to the fleet manager to find out exactly what the cause of this behaviour is."

"It might be that someone is consistently speeding and, as a result of talking to them, you realise it's because they've got too much work on," says Jenkins.

Shirley adds: "I'm getting asked regularly whether companies will see their insurance premiums reduced if they use different types of technology."

"At the moment, we determine premiums according to the number of previous claims a company has had."

"Consequently, if a fleet uses a new technology that helps drive down crashes then, ultimately, that will save them money on their premiums."

Meyers adds that some insurers are willing to reduce premiums for fleets if technology is deployed.

"Any support is likely to be dependent on the relationship between the insurer and the insured," he says.

BRAKE'S PERSPECTIVE ON MINIMISING CRASHES

Road safety charity Brake maintains that fleets must take a "holistic approach" to minimising crashes.

It believes that isolated interventions are much less effective than creating "a road safety culture within an organisation".

And this culture begins with the creation and implementation of "robust safety policies".

Ellie Pearson, Brake's professional engagement officer, says: "Safety policies need to be communicated clearly and continuously via a variety of channels, like talks, staff bulletins, briefing meetings and appraisals."

"It's also vitally important that there's 'buy-in' to road safety throughout an organisation. There's no point having a policy in place that isn't respected by management or isn't properly enforced."

"From initial recruitment, it needs to be stressed to drivers that safety is paramount."

Pearson adds that to effectively engage drivers, employers need to explain to them why rules are in place, rather than just dictating the rules

She says: "Driver training and development needs to be an ongoing journey, in which drivers are assessed on a regular basis and given additional training where necessary. Both on the road and classroom-based training have their place."

Brake also advocates that employers look at other ways of monitoring drivers' behaviour, such as psychometric testing, telematics and in-vehicle cameras.



CASE STUDY: NG BAILEY

Engineering, IT and facilities services company NG Bailey is actively working to 'change the mindset' of employees when they get behind the wheel.

Fleet manager Ronnie Wilson is encouraging staff to regard themselves as professional drivers rather than electricians or plumbers for the duration of any journey.

Wilson says: "When it comes to minimising accidents, my view is that you need to get the driver to take responsibility for his or her actions."

"The best way to

achieve this is by encouraging them to view themselves as professional drivers when travelling.

"In my experience, professional HGV drivers have a lot more discipline than normal van drivers - they carry out far more vehicle checks and take more responsibility for their vehicles."

As part of this process, NG Bailey is subscribing to the Freight Transport Association's Van Excellence scheme with a view to becoming accredited in the future.

This provides fleet managers with best practice guidance on areas such as driver behaviour and training,

as well as vehicle condition and safe working.

Wilson adds: "This scheme encourages colleagues to take greater responsibility for the vehicles they drive, from simple things like checking their tyres more often."

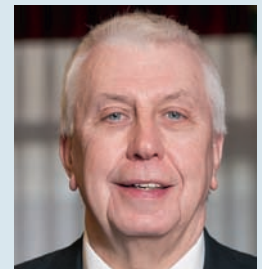
"In addition, we aim to sit down once a year with [our drivers] and discuss safe driving practices as part of an ongoing programme."

"We are talking to our vehicle tracker provider to complement what they already do for us with a driver behaviour tool."

"This has the potential to emit an audible in-cab alert if it identifies inappropriate driving."

"You need to get the driver to take responsibility for his or her actions"

Ronnie Wilson, NG Bailey



1,700

fatalities on British roads in 2012

3,000

fatalities on British roads in 2002

"Procedures which help control claims costs also add weight to the argument for premium reduction."

"But the introduction and use of technology such as telematics, along with proactive management of the data emanating from this technology, will allow businesses to achieve savings in terms of fuel cost, vehicle maintenance costs and better vehicle utilisation."

VEHICLE SAFETY TECHNOLOGY

Advanced driver assistance systems (ADAS), such as adaptive cruise control and autonomous emergency braking are becoming more common in new cars.

Chandler said that these technological developments are doing much to cut at-work crashes. "In 2012, around 1,700 people lost their lives on British roads - down from around 3,000 a decade ago," he says.

"Over the past 10 years, the availability of ADAS in addition to other developments like airbags and side impact protection systems have really made a difference."

Shirley adds: "Our advice to fleet managers when they are selecting vehicles is to consider fully what their drivers need to ensure their safety."

"If driver assistance systems ultimately result in a decrease in crashes then that will be reflected in that fleet's insurance premiums," he says.

Post accident review groups are also perceived to be an important way for organisations to get to "the root cause" of the collision.

AXA's Jenkins concluded: "If an organisation has individuals with the right credentials in place to lead these groups, then I think that they are very useful."



For more on safety, visit fleetnews.co.uk/vehicle-safety