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FLEETS AND SAFETY

A victim's view of road safety, how latest vehicle technologies can reduce crashes and an examination of the positive impact of telematics ... these form our nine-page look at all things safety related

INSIDE

THE REALITY OF ROAD SAFETY

Scene of the accident about 30 yards down the road from where the collision happened

Elaine Corner sustained serious injuries after being knocked off her motorbike by an at-work driver. Here she shares her story and explains why fleet managers need to treat road safety seriously

Nobody goes out thinking an accident is going to happen to them. Everyone thinks their vehicle and its load are safe. They feel they can still concentrate on driving while fiddling with the radio, using the phone or recovering from one too many beers the night before.

But the reality is there are consequences to not concentrating when you are driving, to not having a safe vehicle, to not being in full control of that vehicle.

In March 2011 I was involved in a collision caused by a fleet vehicle. I was knocked off my motorbike when a van pulled out on to the main road.

There was good visibility at the junction. If the driver had looked, he would have seen me and he would have seen my mate on his motorbike behind me.

But he didn't look because he was distracted. He was using his mobile phone. It was hands-free, but he was still distracted.

He pulled out and hit me on the side. I went about 30 yards down the road and ended up face down on the grass verge. I was about six feet away from my bike.

My mate was lucky. He was far enough behind to avoid the van and ring 999. The driver of the van was unhurt. He was just wandering around saying 'huh, I didn't see them'.

It seemed like forever when I was waiting for the ambulance to turn up. It was actually about 10 minutes. It was the longest 10 minutes of my life.

I was in lots of pain from my foot and my back. I'd done first aid training, I knew not to move in case of injuries I didn't know about.

When the paramedics turned up, they cut my kit off. You feel very vulnerable lying at the side of the road without your clothes on. It was at the edge of Salisbury Plain, the Army training area. There was the noise of army helicopters flying around. And then it sounded like one was landing.

When the policeman confirmed that it was the air ambulance, I realised maybe I was a little more seriously injured than I first thought.

ABOUT ELAINE

Elaine Corner served in the Army for more than 25 years before being medically discharged following a crash with an at-work driver who was using their mobile phone. She is a volunteer with Wiltshire Safe Drive, Stay Alive – a roadshow based around powerful personal testimonies designed to make the audience aware of the suffering caused by road traffic collisions. She is passionate about supporting wounded service personnel and veterans in Wiltshire to undertake volunteering as part of their recovery process.

25

years was the time Elaine Corner spent in the Army before her medical discharge

£165

the fine for careless driving handed to the van driver who also lost his job

And then the paramedics filled me full of drugs and the next thing I knew I woke up the next morning in intensive care with my husband at my bedside.

That's when I found out what my injuries were. I had tendon damage to my right ankle. I had fractured ribs. I had two fractured vertebrae. I had a fractured sacrum, that's the bit where your spine goes to your pelvis. I had internal bleeding in that area.

My foot had also been amputated. As you can see from the X-ray (right), they weren't going to be able to save my foot. It had been crushed between the van and my bike.

I spent the next eight weeks in hospital, and with that came the stress that caused my husband, visiting me every day, with my family travelling from Yorkshire to be with me.

I had five further operations which resulted in my foot being amputated to the level it is now. I had 15 months of rehabilitation, learning how to walk again, learning how to live with my injuries.

I had another operation just when I thought I was getting my life back, so I had to spend another month in a wheelchair.

I'm still in constant pain with my lower back. I have pain and weakness in my right ankle. I get phantom limb pain. It can feel like someone is smashing into my foot with a sledge-hammer, or giving me an electric shock.

It is sufficient to sit me bolt upright in bed and stop me from sleeping.

I have days when my stump is too sore to be able to put my leg on, so I'm back in the wheelchair.

Regardless of what people say, the world isn't accessible nowadays. It's very hard work getting round in a wheelchair, so I tend to just stay at home.

Because of my injuries, I was medically discharged from the Army. And because of the disrupted sleep and the constant pain, I can't work full-time now, so I can't earn as much as I used to.

I had to move away from my friends because of access problems to my old house. I had to sell my car. For eight months I was taking too many prescription drugs to be in a fit state to drive and I had to rely on other people to take me everywhere.

It felt like I was 16 again.

I'm a Duke of Edinburgh Award leader and have been for the past 12 years. I can't drive the minibus anymore. I can't go hill walking with the young people like I used to, so it's put extra pressure on the other leaders.

But I'm lucky. I'm still here. I can still ride a motorbike. I have a suitable car now. I can still be with family and friends.

Think about those who aren't so lucky. Those who are killed, paralysed, have serious brain injuries because they were hit by someone and it wasn't their fault. Somebody who wasn't concentrating. Somebody who wasn't in full control of their vehicle.

Think about your policies and your training. Are they sufficient to stop things like this happening to someone else? To some other family?

The guy who hit me got six points and a £165 fine for careless driving. He also lost his job. I have a lifetime of pain, of disability. That's the reality of road safety.

Below: X-Ray shows why Elaine Corner's left foot had to be amputated

"I have days when my stump is too sore to be able to put my leg on, so I'm back in the wheelchair"

Elaine Corner

SPONSOR'S COMMENT

Selwyn Cooper, head of business sales for Volvo Car UK

"We at Volvo have a vision that no one will be seriously injured or killed in one of our vehicles by 2020. Our pioneering safety technology is driving down costs as well as saving lives:

"Volvo's history in developing new technologies has always been safety focused; the three-point seatbelt was introduced by us in 1959, with an estimated one million lives saved by the harness. Today, driver-supporting technology is commonplace, with tools such as collision and lane departure appearing on new models nearly 10 years ago.

"Looking at the vehicle selection policy from a safety point of view is something that more and more businesses are starting to do as they understand what a dramatic impact this can have on both collision and cost reduction.

"Volvo's history in developing new technologies has always been safety focused"

"For example, fitted as standard on all models in our fleet range, Volvo's City Safety system has reduced insurance claims for rear-end frontal collisions by 28%.

"And it's not just the number of collisions that's reduced, but also the severity. This means fewer whiplash and other neck-related injuries, and less accident damage to cars, all of which is translating into lower insurance premiums, with insurers offering discounts of between 20-25% on premiums for Volvo drivers.

"Under Volvo's 'Intellisafe' umbrella, the City Safety system features autonomous emergency braking (AEB) with pedestrian and cyclist detection and now the new S90, V90 and XC90 feature world firsts of Run-off Road Mitigation and Large Animal Detection. Meanwhile, Pilot Assist, which operates at speeds of up to 80mph, supports the driver with steering, accelerator and brake inputs to keep the car in its lane and at the desired speed.

"In a Volvo, safety is the result of a complete, integrated solution, where every system and component works in unison with all the others."

For more information call the Volvo Car Business Centre on 0345 600 4027

TECHNOLOGY TO KEEP YOUR DRIVERS SAFE

Manufacturers are developing ever-more sophisticated systems to cut the number of collisions. *Simon Harris* looks at some of the latest technology

The speed at which car technology has advanced on the road to autonomous vehicles is astonishing.

As we outline some of the safety features available now on an increasing number of vehicles, it's worth remembering that, if this were written just 10 years ago – less than two typical car generations – more than half of them wouldn't exist.

With much of the technology available only as an option or included in a more expensive safety or assistance pack, there could be a cost associated with the feature that grabs your interest.

But it is worth pointing out that choosing a higher specification car because it has a particular safety feature as standard could see insurance costs cut.

Already, fleets choosing autonomous emergency braking have seen a reduction in car park prangs and low-speed bumps that come within insurance policy excesses or defleet recharges, and have a direct impact on the bottom line.

Other technology could help high-mileage drivers avoid fatigue but the value is perhaps more difficult to quantify. And some are building blocks on the road to fully autonomous cars that drivers will ultimately become familiar with as the systems permeate down from premium models to mainstream versions.

There are some features we now take for granted, so the list focuses on those items that are beginning to appear more frequently.

But it also begs the question that if we were writing this in 2026, could we even imagine what technology we would then be discussing?

Volvo's City Safety feature will apply the brakes if the driver fails to react to hazards

360º CAMERAS/FRONT CAMERA

What is it? Cameras placed around the car provide a comprehensive view of surroundings, shown on the dashboard screen.

How does it work? Rear-mounted cameras with the view displayed on the dashboard screen have been available for 15 years or more, but as cameras have become smaller with better picture quality, as well as less expensive, it has become possible to display the view all around the car when parking, or left and right ahead of the car when approaching junctions. It's usually possible to switch between different views using the car's touchscreen.

What is it available on? Many mainstream cars now offer this function as well as most premium cars, with the popular Nissan Qashqai perhaps making it most accessible as standard on a special edition.

What does it cost? A rear-view-only camera typically costs around £250 as an option, but full surround monitoring can be less than £400, even on some premium cars.

AUTONOMOUS EMERGENCY BRAKING (AEB)

What is it? Applies hard braking in an emergency without intervention from the driver. While the technology has the generic AEB tag, manufacturers will often give it another name, such as Volvo's City Safety.

How does it work? Laser and radar sensors continuously monitor the road ahead, and pick up any obstacles, which can include cyclists and pedestrians. If the system deems that a crash is imminent, it will give the driver an audible and visual warning, and if the driver doesn't intervene, it will apply a significant braking force to try to avoid it. Euro NCAP research has found that the technology leads to a 38% reduction in rear-end crashes.

What is it available on? The technology is increasingly available, and is now offered by most manufacturers, often as standard equipment, as a result of Euro NCAP tests favouring cars with it fitted. The most sophisticated version can also help prevent collisions with crossing traffic at junctions.

What does it cost? Often standard, but when optional, usually between £250 and £400. Cars with it as standard usually have lower insurance groups than equivalent variants without it.

LEAD THE WAY

A LASTING IMPRESSION

Our new range of premium executive cars is designed to stand out from the competition. With elegant lines, high-quality finish and the use of natural materials, the 90 series models draw extensively on our Swedish heritage to embrace a sense of calm, quiet confidence – inside and out.

SAFETY THROUGH INNOVATION

With City Safety, Run-off Road Mitigation and other world-leading safety features, the new S90, V90 and XC90 constantly work to keep drivers safe. In a step towards autonomous driving, Pilot Assist combines Adaptive Cruise Control with Lane Keeping Assistance to maintain speed or distance from the car in front, while keeping the car within lane markings.

SEAMLESS CONNECTIVITY

The 90 series makes it easier for drivers to stay connected to their digital world. Smartphone integration makes it simple to safely access many of their devices' functions whilst on the move – through a touchscreen interface or voice command.

A DIFFERENT KIND OF SUCCESS

Success isn't just about performance. It's also about beautiful design, staying sustainable, keeping drivers and other road users safe, and developing technologies that make everyday life simpler and better.

"Understated Swedish elegance, next-generation safety and support technology, impressive finance figures. These are fleet cars that simply don't compromise on anything."

Dominic Gill, Business Sales Operations Manager at Volvo Car UK, assesses the new 90 series.

VOLVOCARS.CO.UK/VQMAGAZINE

VOLVO CAR BUSINESS CENTRE: 0345 600 4027


Lane markings are monitored to help stop unintentional lane switching

LANE DEPARTURE WARNING

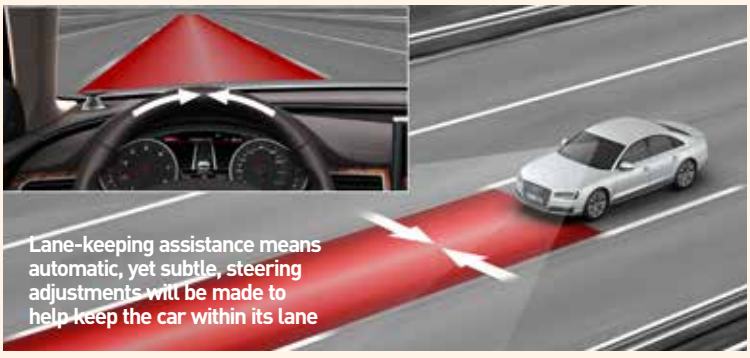
What is it? The driver is alerted if the car appears to unintentionally drift out of its lane, to prevent the vehicle veering into the path of other traffic.
How does it work? Lane markings are monitored and if the car moves close to the line without the driver indicating, a visible alert in the instrument display, sometimes combined with an audible alert or a vibration through the steering wheel is triggered.
What is it available on? Now available on most cars.
What does it cost? Varies from £500-£700 as a standalone option or as part of a more expensive driver assistance pack, but is standard on some high-specification mainstream cars.

TRAFFIC JAM ASSISTANCE

What is it? A semi-autonomous mode that allows the car to keep pace with frequent-stopping, slow-moving traffic, maintaining a safe distance to the vehicle in front and remaining within the lane without driver intervention.
How does it work? Usually a combination of autonomous braking and lane-keeping assistance systems monitor the road ahead and the edges of the lane to ensure the car deals with stop-start traffic autonomously. The most sophisticated versions of the technology recognise if the vehicle in front is turning off at a junction and won't follow it, instead catching up to the next vehicle in front.
What is it available on? Most premium cars offer a version of it, even on compact- and medium-sized vehicles. Less common among mainstream brand cars for now.
What does it cost? Usually features as part of a driver assistance pack with prices around £1,000.

LANE-KEEPING ASSISTANCE

What is it? Prevents the car from drifting unintentionally out of its lane.
How does it work? Linked to the same technology that monitors the edges of the lane, the car can make subtle steering inputs to prevent it from leaving the lane unintentionally. The steering correction can be overridden by the driver, and the system relinquishes control if it thinks the driver isn't holding the steering wheel. Most systems are based on electric power steering systems, where it's possible for the car to correct the steering using the power steering motor. Where it's available on cars with hydraulic power steering, it makes the corrections to the car's trajectory with subtle application of the brake on the corresponding front wheel to bring the vehicle back into line.
What is it available on? Offered as an option or part of an optional safety pack on most premium cars. Available on many mainstream cars, usually as an option, or sometimes standard.
What does it cost? Can be around £500-£1,000 as an option, or part of a more expensive safety pack, although it is fitted as standard to some high-specification mainstream cars.


Lane-keeping assistance means automatic, yet subtle, steering adjustments will be made to help keep the car within its lane

BLIND SPOT WARNING

What is it? Detects vehicles approaching from the rear in the driver's blind spot, alerting the driver should he or she be planning a lane change.
How does it work? When introduced by Volvo, it relied on cameras mounted under the door mirrors, which could often be fouled by grime. Now, it's more common to use radar sensors that continuously monitor behind the car and illuminate a warning light in or around the door mirror on the side where traffic is approaching. Should this have been missed and the driver indicates to warn of a lane change, an audible warning sounds.
What is it available on? Originally on Volvo and premium badge cars, it is now more widespread on mainstream medium models, either as an option or part of a safety pack, and sometimes as standard on higher equipment grades.
What does it cost? Around £500-£600 but often in a pack that includes other features. For example, in a Ford Focus it's £525, but includes power folding mirrors and one-touch electric windows front and rear.

AUTOMATIC HIGH-BEAM

What is it? Enables the selection of main beam at night full time without dazzling other road users.
How does it work? There are a few versions of this feature with varying levels of sophistication. The simplest one uses a forward-facing camera to detect lights of other vehicles or cyclists in the road ahead, then switches to dipped headlamp until the view is clear again. It is possible to offer a more complex version, especially with LED headlamps, where the main beam is masked from traffic ahead only in their location, with the dipped area moving with the other road user. It means most of what the driver sees is still lit with the high beam.
What is it available on? Some form of automatic high beam is available on most cars that feature automatic headlamps, usually as an option. The more complex versions are typically offered on premium-badge cars and often as part of a lighting pack upgrade.
What does it cost? Around £100-£150 as a standalone option, but usually included as part of a lighting pack, which can be less than £500, but sometimes £1,000 or more.

REAR COLLISION WARNING

What is it? At low speeds or when stopped in traffic, it can warn a fast approaching vehicle behind to slow down or stop.
How does it work? Sensors at the rear monitor for approaching vehicles, and if their speed is too high and risks a rear-end collision, it will flash the hazard warning lights quickly to attract the attention of the driver in the vehicle behind and warn them to slow or stop. If sensors predict a collision is imminent, the seat belt pretensioners are activated and the brakes are also applied, to help reduce the risk of whiplash injury and reduce the distance travelled after being hit.
What is it available on? Available on some premium cars, such as the Mercedes-Benz E-Class, usually as part of a wider safety pack.
How much does it cost? On the new E-Class, part of the Driver Assistance Plus package, priced at £1,695.


Hazard warning lights will flash quickly in a bid to alert the driver approaching from behind too fast

REAR CROSS TRAFFIC ALERT

What is it? When reversing out of a car park space, the driver is alerted to approaching vehicles and the car is prevented from moving.
How does it work? Activated when reverse gear is selected, sensors monitor the areas to the left and right of the rear end of the car and alert the driver if an approaching vehicle is detected. It might also be able to detect smaller objects such as cyclists or pedestrians.
What is it available on? Many mainstream cars now offer this function as an option or part of a driver assistance or safety pack. The technology is linked to the blind spot information system, so will be linked to that feature.
What does it cost? Around £500 when part of the blind spot warning system.

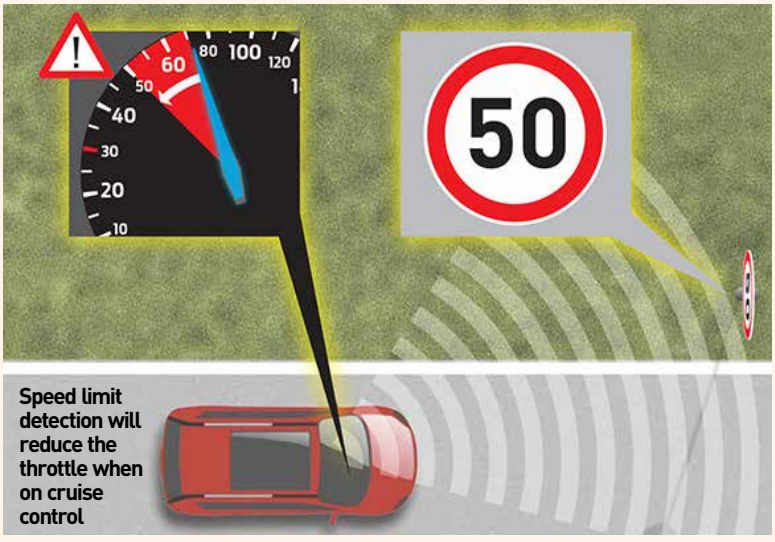

Reversing back and unable to see clearly? This feature may save the day

EVASIVE STEERING ASSISTANCE

What is it? Monitors the road ahead on a single carriageway and prevents the car from veering into the path of an oncoming vehicle or other road users.
How does it work? Forward sensors linked to autonomous braking technology can prompt the car to alter its line smoothly to avoid a pedestrian suddenly stepping into the road, and return to the original line afterwards.
What is it available on? Mercedes-Benz offers it on some models, and it is likely to become more widespread.
What does it cost? Usually part of a more expensive safety pack. For example, included in the Driving Assistance Plus Package on the new E-Class for £1,695.

SPEED LIMIT DETECTION

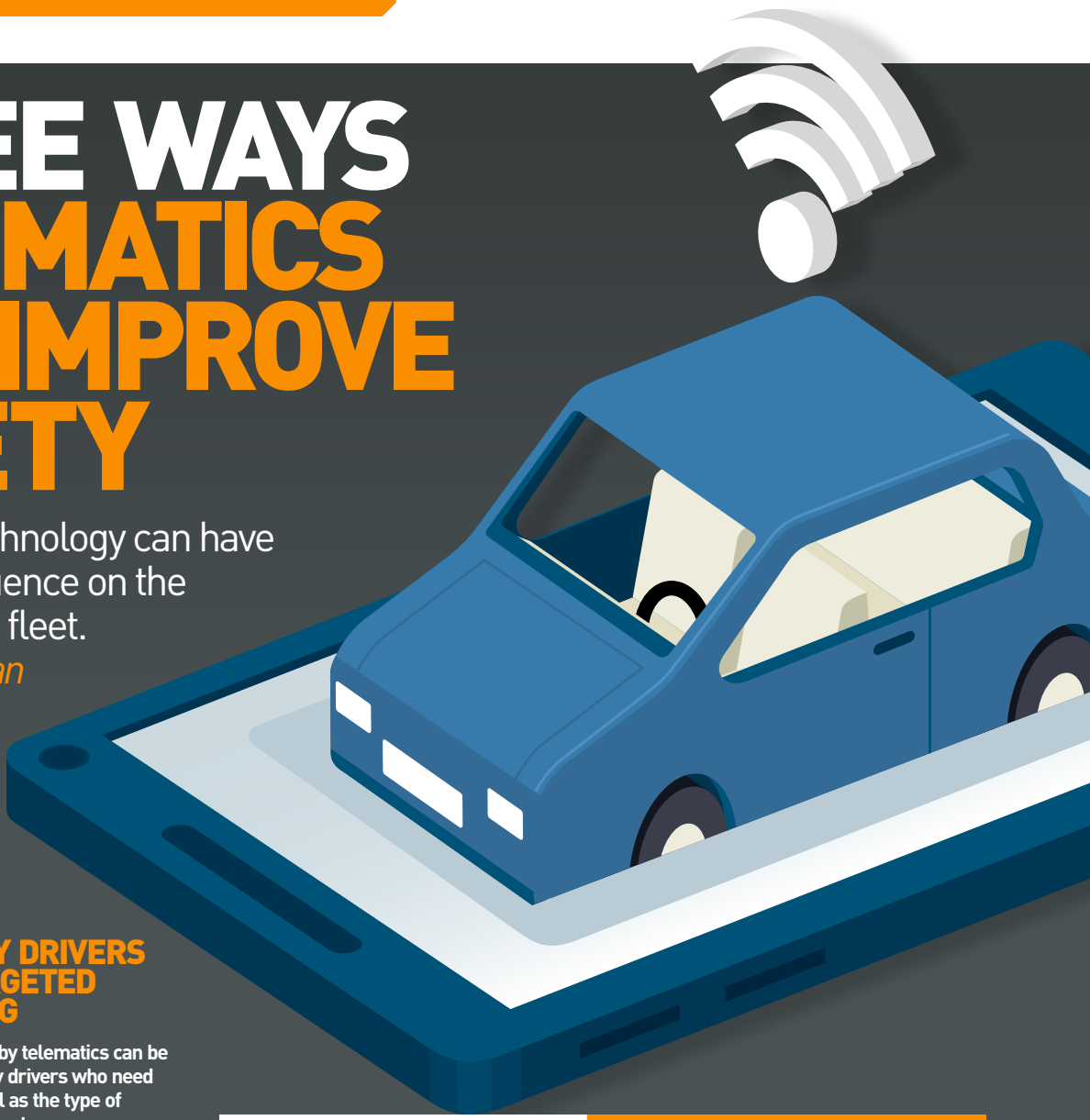
What is it? Monitors road signs and subtly adjusts the cruise control if set higher than the speed limit.
How does it work? The camera that picks up the speed limit signs to display the speed limit in the car's instrument display or dashboard screen also relays the information to the car's adaptive cruise control system and gradually reduces speed through reducing throttle input. It will allow the cruise control to be set up to 5mph higher than the speed limit.
What is it available on? A number of mainstream cars now offer this technology. It made its debut with Ford on the latest S-Max.
What does it cost? Usually included as part of adaptive cruise control, but this can be standard on certain high-specification cars.
What does it cost? Included in the Advanced Parking Package on the BMW 7 Series for £1,100, or part of the Autopilot Convenience Pack with Tesla for £2,200.



Speed limit detection will reduce the throttle when on cruise control

THREE WAYS TELEMATICS CAN IMPROVE SAFETY

Installing the technology can have a significant influence on the incident rate of a fleet. Here *Andrew Ryan* looks at how you should use the data



1 IDENTIFY DRIVERS FOR TARGETED TRAINING

Data captured by telematics can be used to identify drivers who need training as well as the type of coaching required.

The technology can be configured to record a variety of events such as harsh acceleration, sudden braking or hard cornering – all manoeuvres which increase the risk of a collision.

"Using these insights, businesses can identify where training might be required to improve driving behaviour and, in turn, help lower costs across the fleet," says Jonathan Hewett, vice-president of Octo Telematics.

Andy Phillips, director of Applied Driving Techniques, adds: "Telematics is an effective way of identifying certain driving events, but it is then about analysing this data to identify regular issues and patterns.

"For example, if someone is consistently harsh braking at high speed, then they could be driving too close to the vehicle in front.

"However, it is not simply about looking for poor driving behaviour, but also the root cause that is contributing to higher levels of risk.

"By looking for patterns at certain times of the day, a fleet operator can establish if there is a problem with fatigue.

"Meanwhile, excessive events at month-end or year-end could suggest employees are under pressure to meet targets, which is contributing to increased risk."

CASE STUDY: IRON MOUNTAIN

Information storage and management specialist Iron Mountain uses telematics to identify drivers who need coaching.

"Our supplier's scoring method is to achieve less than 20 'events' per 10 hours of driving, which it regards as safer driving," says Rory Morgan, head of logistics support, Western Europe, for Iron Mountain.

The company aimed for less than 10 when the system was introduced in 2011 as it "was a more acceptable target", but in the past couple of years has changed this to less than five.

"We felt we could go further by moving the target again," says Morgan.

"We monitor these scores daily at a local level, but also have a weekly report which precedes a conference call to discuss the previous seven days and highlights all scores and violations."

Drivers also have annual driving assessments carried out by Iron Mountain's regional driver trainers.

"The scores from the telematics system, along with the driving assessments, are fed into a data system which also carries a driving licence history, incident history, tachograph infringements and road traffic incidents," adds Morgan.

"These are then collated and a risk profile score produced for every driver. We then use this data to prioritise both individuals and areas of concern."

Trainers are used to guide and coach both drivers and managers.

He adds: "The operations in the UK, Ireland, Germany and Spain consistently average around four most weeks."

CASE STUDY: GREEN TOMATO CARS

Green Tomato Cars this year introduced a GreenRoad telematics system across its fleet to improve driver behaviour and reduce collisions.

The telematics system detects when a driver performs a manoeuvre such as sharp cornering, swerving, harsh braking or sudden acceleration.

It features a 'traffic light' system that sits on the vehicle's dashboard: a green light means driving is safe, amber that it is straying away from the safest driving practices and a red light indicates that a risky manoeuvre has just been undertaken.

"The telematics has had a massive impact on our accident costs," says Sophie Jacobsen, head of service delivery at the private hire company.

"Last year our accident costs were £3,200 per active driver over the course of a year. Now we are looking at £2,300."

Across the fleet, this means an annual saving of around £250,000. Jacobsen says the display serves as a constant reminder to drivers of how they need to perform. In the first six months of operation, drivers recorded a 33% improvement in their telematics scores.

Habtamu Behailu, a driver at Green Tomato Cars, adds: "[The telematics] has certainly helped me improve as a driver as it gives tips to improve my driving and has made me more aware of my actions, which is good for me and good for passenger safety."

"Accident costs were £3,200 per active driver over the course of a year. Now we are looking at £2,300"

Sophie Jacobsen, Green Tomato Cars

2 POSITIVELY INFLUENCE DRIVER BEHAVIOUR

Employees will often drive more safely if they know they are being monitored.

"This draws on some elements of the psychological phenomenon, the Hawthorne Effect," says Nicola Ridgeway, consultant psychologist and clinical director at West Suffolk Cognitive Behavioural Therapy Service.

She adds: "This study demonstrated that people alter their behaviour when they have an awareness of being observed. The Hawthorne Effect may well explain why telematics drivers will, on the whole, drive more safely."

Masternaut's customers have seen significant improvements in speeding and harsh driving just through installing telematics, says Mike Hemming, head of consultancy at the company.

"It is a reminder that the company takes driver safety and driving behaviour seriously," he adds.

A number of telematics systems give drivers a visual reminder they are being monitored by having green, amber and red lights in the cab to give instant feedback to drivers on their performance.

Masternaut has carried out a study on the impact on in-cab feedback directly to the driver compared to just tracking, using vehicles from more than 400 companies over a period of three months.

Over the course of the study, cars with in-cab feedback had 25% fewer harsh driving events than cars with no immediate feedback.

3 ENCOURAGE COMPETITION TO IMPROVE DRIVER BEHAVIOUR

Harnessing the competitive spirit of drivers can be used to encourage them to improve their performance.

Data recorded by telematics systems can be used to produce league tables, with rewards such as gift vouchers available for the best performers.

"Any incentive scheme should not simply focus on the best drivers, but look at ways of rewarding the most improved employees," says Andy Phillips, director at Applied Driving Techniques.

"A driver of the year competition may seem like an excellent way of promoting road safety best practice, but, in reality, it will stimulate only a small proportion of drivers who are already driving in a safe manner.

"The remainder, including the worst performing drivers, will ignore the scheme because they have no means of winning.

"Instead, consider a way that celebrates the greatest improvement, because what you really want is a continuously upward trend across the entire fleet."

Sam Footer, head of international business and strategic development at Intelligent Telematics, adds: "Any league table needs to reflect the varying demands placed on different employees.

"Someone that predominantly drives in an urban environment will face very different challenges and risks when compared to someone who spends most of their time on motorways or rural roads.

"Therefore, it is important that any incentive scheme is fair and does not penalise certain groups of drivers."

CASE STUDY: ENSERVE GROUP

Introducing a driver league table using data recorded by its telematics system was "one of the best initiatives we have introduced", according to Paul Brown, fleet manager at Enserve Group.

The system allows the company to compare drivers in a number of areas such as speeding, sharp cornering and idling. The league tables were initially introduced in one of the business's depots.

"We ran the scores in a league table with a football focus, so it's like Premier League, Championship and Conference league, with Sunday league at the bottom," says Brown.

"Without doing anything else, the peer pressure between grown blokes was doing more to drive the accident stats down than we could have done.

"There were football chants about how the other drivers had performed, and that put them under pressure not to be in that position the week after.

"Little bets were also being made like 'if I beat you in the driver league then you wash my van on Friday'. Nobody wanted to be the loser.

"The accident stats came down by around 25% in that depot. The guys were driving a little slower, they were more cautious, they weren't idling, and we've got to the stage where it's now become part of the main board initiative across all divisions."

The company rewards the best performing drivers with vouchers.