OUR DRIVING FUTURE

Making human factors more predictable

drivetech
from the AA

Foreword

Driving is changing. Technology, regulation and infrastructure are evolving rapidly, and this will impact our future mobility.

No matter how good the technology, the safety of drivers, passengers, all other road users, and pedestrians is paramount. We shouldn't be at all complacent about road fatalities, as every death or injury is preventable. This is why we've written this paper. When we consider fleet risk, there are three key areas: people, infrastructure, and vehicles. Here, we're shining the spotlight on the risks around people and how these can be managed.

As humans we're complex beings and, while technology may be evolving at pace to increase our safety behind the wheel, the greatest factor that determines the risk of a collision is human behaviour.

According to the World Health Organization (WHO) around 1.19 million people die each year as a result of road traffic incidents. This is estimated to be the eighth leading cause of death across all age groups globally – and this is set to rise. Tragically it is also the leading cause of death amongst the younger age group. Overall road traffic incidents are predicted to become the seventh leading cause of death by 2030.

In the UK, someone is killed or seriously injured on UK roads every 16 minutes (Department for Transport). We cannot allow this to continue. For businesses, driving can be one of the most dangerous activities that your employees will do. Around a third of road deaths involve someone driving for work (UCL and Agilysis).

So, to make a truly positive difference to road safety and fulfil our legal duty of care as employers, it's time to elevate the importance of human factors and driving.

In an environment of rapid change, our drivers are likely to need more support than ever. We need to think beyond just practical steps, such as licence checking and incident reporting, and really explore what it means be 'fit to drive'.

It's time to firmly turn our attention to the human factors that impact driving and what these mean as we move towards a new world of mobility, with advancing technology and fundamental changes to how we use vehicles. It's an incredibly exciting period of change, with huge opportunities for improvement that will make transport safer, more sustainable, and efficient.

At The AA, our aim is to create confidence for drivers, making sure they have the right help and support they need at every stage of their driving lives. This is why we recently launched our motoring manifesto, 'Creating Confidence for Drivers'. A key part of this is safety on the roads, we believe road death needs to be higher on the political agenda and there needs to be a dedicated multi-agency approach to tackle the issue. Our hope is that this manifesto helps shape a better road ahead for all drivers. So, let's work together to make safer roads a reality.

Edmund King OBE
AA President

What are human factors?

There are a huge number of variables involved in the act of driving, such as traffic, weather, vehicle, and road condition and these are constantly evolving. But the most significant is the human.

Humans are complex, with changing physical and mental needs that impact our behaviour. Then, as we've all experienced, driving too, is a complex task.

Driving requires a combination of visual, manual, and cognitive skills. And how we perform behind the wheel can be very different whether we're senior, young, speeding, stressed, distracted, under the influence of drugs or alcohol, unwell and many more factors. It's no surprise then, that human error is a component in 95% of all road incidents (RoSPA). The increased use of data and AI is giving us more insight than ever before to help us understand driver behaviours and their role in safety. We can use this insight to improve the statistics and saves lives. So, what's the data telling us?

> Human factors refer to environmental, organisational and job factors, and human and individual characteristics, which influence behaviour at work in a way which can affect health and safety.
>
> The Health and Safety Executive (HSE)

The current road safety picture

Every 16 minutes
someone is killed or seriously injured on UK roads

29,742
killed or seriously injured casualties annually

5 road fatalities
per billion vehicle miles travelled

76% of fatalities and 62% of casualties
of all severities were male

Around a third of road deaths
involve someone driving for work

214 people were killed in crashes
involving light goods vehicles (LGVs), up 10% year-on-year

220 people were killed in crashes
involving HGVs, up 6% year-on-year

Up to 11 pedestrian fatalities a month
were in a collision with a ‘working’ driver

Department for Transport. Reported road casualties Great Britain, annual report: 2022
Driving for work – a strategic review of risks associated with cars and light vans, implications for policy and practice

How the impact of human factors is evolving

Evolution of any kind is constant, but we experience periods where it's more rapid than others.

This is the current case with automotive technology. We're all first-hand witnesses to the greatest automotive evolution of all time, the move to alternative fuels and the introduction of advanced technologies such as connected and autonomous vehicles. It's these technologies that are making a difference to how human factors impact driving and, ultimately, road safety.

Automated technology is expected to play a key role in reducing the number of deaths and injuries from road traffic collisions. Advanced Driver Assistance Systems (ADAS) use a range of technologies, such as sensors and cameras, to identify risk and autonomously take action when needed. These include lane keep assist (LKA), autonomous emergency braking (AEB) and intelligent speed assistance (ISA). The level of success of these technologies, however, is dependent on the driver. Some drivers find them hard to adapt to, describing them as annoying. This was reflected in research by AXA and road safety charity Brake, which found 41% of drivers had turned off safety features in their cars for this reason.

The Parliamentary Advisory Council for Transport Safety (PACTS) describes vehicle safety technology as "the single most important means of preventing and mitigating serious injuries in motor vehicle crashes and the most efficient means of reducing deaths and serious injuries in road crashes". It estimates 1,700 deaths and 15,000 serious injuries would be saved over a 16-year period if ADAS technologies were fitted to all new vehicles. A study by the National Highway Traffic Safety Administration in the US, found that ADAS could prevent 62% of traffic deaths per year.

We're seeing this technology become mandatory in the EU. In July 2022, the European Union put in place the Vehicle General Safety Regulation, making it compulsory for set safety features to be present in new vehicles, including ISA and AEB. Many of these technologies are present in vehicles in the UK but the government hasn't passed the same policy. With pressure mounting from safety organisations, it may only be a matter of time.

Whether ADAS technology is present in a vehicle or not, drivers must still pay attention to the road around them. While there's a human involved in a moving vehicle, there will always be human factors impacting safety to some degree.

How driver behaviour impacts safety

Put simply, every behaviour, emotion, physical symptom, and reaction we have as humans has the potential to negatively impact on our safety when driving.

There isn't a single factor responsible for road collisions. In fact, it's often a combination of influences.

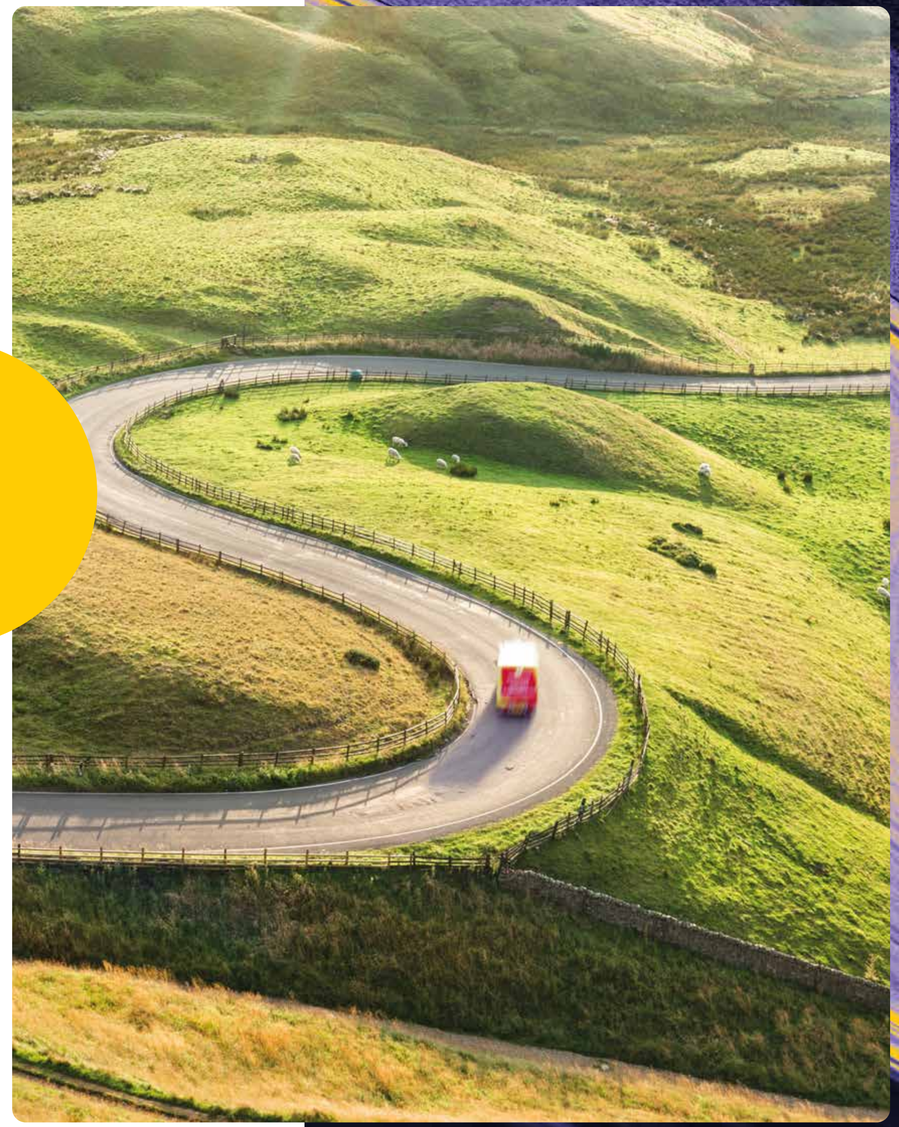
When you delve into the 2022 road collision data (Department for Transport), the top cause of collisions is errors or incorrect reactions from drivers, accounting for 13.2% of all incidents. Second, is driver or rider failure to look properly, in the case of 7.2% of incidents. A significant proportion of these cases could be attributed to distraction. Using a mobile phone at the wheel is still a common occurrence seen by 93% of drivers according to The AA Charitable Trust, despite December 2023 being the 20th anniversary of the ban on the use of hand-held mobile phones in vehicles.

Coming in at third place, is driver behaviour or inexperience, responsible for 5.3% of collisions. We know that inexperience leads to more collisions. It takes time for drivers to develop situational awareness, get better at anticipating hazards and build up the right kind of confidence on the road. This is very clearly demonstrated in the statistics. In 2022, around a fifth of all killed or seriously injured casualties from car collisions involved a young car driver.

Young male drivers aged 17 to 24 are four times as likely to be killed or seriously injured compared with all car drivers aged 25 or over. Furthermore, research from the AA Charitable Trust, shows almost 69% of fatal car crashes for young drivers take place on rural roads. This shows the importance of education when it comes to young drivers, and this should be a key area of risk management for companies with younger drivers.

Human factors that impact driving behaviour include but are not limited to:

- Mental illness
- Physical illness
- Fatigue
- Stress
- Distraction
- Substance use (e.g. alcohol and drugs)
- Inexperience



How to mitigate the impact of human factors

Getting to know your workforce and their risk factors and then designing ongoing education and training to manage those risks is critical for providing drivers with the right tools to increase safety on the road.

A great place to start is with an audit. Knowledge is power, so if you have a full picture of your fleet, drivers, and risk factors, you can take the right action. Importantly, you can then take steps to embed safety into the culture of your organisation and put processes in place to measure and track the results to reduce risk.

At Drivetech, the driver training specialists at The AA, we've built considerable expertise and understanding of driver behaviours, including through our work providing speed awareness training for UK Police Forces. We use this insight to help businesses with bespoke risk management programmes and a wide range of continuously evolving online and offline training to meet the needs of organisations whatever their fleet profiles or the needs of the people who drive for work.

Try PULSE Light: Fleet Risk Health Check. It only takes around 20 mins and you get a free report with actionable insights.

It's a comprehensive and actionable fleet risk health check for your business covering policies, drivers, vehicles, and journeys. PULSE Light will highlight good practice and areas for action – in particular, where there are indications that you're not conforming to legal requirements. It can help kickstart a new focus on driver risk management in your business or re-start an existing programme that might need checking and re-calibrating to improve momentum and drive new actions.

Find a training solution right for you

Driver training should be used proactively to help prevent incidents. It isn't just there for when things go wrong.

It's an important risk management tool that ensures accountability and risk reduction are part of the everyday operations of a business. Training too has evolved to optimise the use of technology, expanding the range of options available to suit different business needs and driver requirements. It also considers the human factors by including nudge options, to help keep drivers on track and make sure what they have learned stays fresh.

Technology has dramatically shifted the possibilities for training, making it quicker and more cost-effective than ever to include it as part of health and safety regimes.

E-learning modules

These can be selected to suit individual drivers and prove effective in both meeting gaps in training and refreshing knowledge. They can be as short as two minutes in length and carried out on a range of devices.

Workshops

Group 'classroom' sessions can take place face-to-face or virtually and are fully interactive to engage drivers.

On-road

In-vehicle training with a coach and a personalised approach will have maximum impact on driver safety and performance.

Remember, driver training isn't a one-off tick-box exercise. It's vital to maintain a training programme that continues to reinforce what's been learnt and refresh skills as regulations, infrastructure and vehicle technologies evolve. A great way to do this is using short videos, such as Drivetech's EV Co-Driver, a series of simple to digest clips designed to help fleets and their drivers to transition to EVs. These can be watched from most devices to help drivers with best practice handling tips for EVs.

Don't overlook the importance of regular driver education. This doesn't just apply to when there's a change in vehicle technology, an addition to The Highway Code or updated legislation, it's also an important reminder for drivers not to use mobile phones, how best to minimise driver distraction in the vehicle, when to take driving breaks and how to identify if you are well enough to drive.

Prioritising wellbeing for improved driver safety

When it comes to the impact of human factors on driver safety, understanding the role of wellbeing is paramount.

When we talk about wellbeing, we're referring to physical, mental, emotional, and social health. Each element of a driver's health, both physical and mental, profoundly influences their ability to operate vehicles safely. Put simply, drivers experiencing stress, fatigue, or poor physical health are more prone to errors, distractions and impaired decision making while driving.

Factors like inadequate sleep, unhealthy lifestyle habits and chronic medical conditions can compromise a driver's alertness and reaction times, increasing the risk of incidents and injuries. It's estimated that fatigue is a factor in up to 20% of all road traffic collisions (Department for Transport).

And a study by Warwick University found that at any one time, 20% of people in the developed world are suffering from sleep problems.

While wellbeing is critical to all employees, it can be particularly relevant to those who drive as part of their job. Driving is unpredictable, with a range of pressures that are outside of a driver's control, such as traffic and delivery deadlines that can easily disrupt the working day. The nature of the role can also mean physical health is compromised if not prioritised. For example, drivers spend a long time sitting down, so exercise might be limited, and it can be easy to rely on fast food. Furthermore, driving, especially for long distances, can be lonely and loneliness is a top cause of mental health issues.

What businesses can do to prioritise wellbeing

First and foremost, it's important to ensure wellbeing is a priority company wide.

Establish a wellbeing strategy, set out goals for what you want to achieve and then regularly review and monitor the programme. Knowledge is power, so collect data you can analyse and use this to adapt your strategy accordingly to maximise its success.

Wellbeing needs to be embedded in the culture of a business. This is a culture that prioritises health, safety, and work-life balance. What's included in the wellbeing strategy and what programmes are put in place will need to be different for each business, unique to its structure and the needs of its employees and drivers. It may include health screenings, access to counselling, workshops and more.

As part of a culture that supports wellbeing, businesses should create supportive work environments that prioritise open communication, employee engagement, and social connectivity among drivers. Encouraging peer support networks, establishing mentorship programs, and fostering a sense of belonging can enhance drivers' sense of wellbeing and job satisfaction.

Finally, don't overlook the importance of direct engagement with employees. Get close to drivers and find out what's impacting them and what matters to them most. For example, if they're delivery drivers, does traffic and scheduling put them under pressure? If drivers are doing long distances, are they managing fatigue and potential loneliness? This can be done through regular employee surveys and interviews, alongside planned line manager reviews. This will also enable routes to measure and monitor the effectiveness of a wellbeing programme.

What The AA is doing to support driver wellbeing

We're passionate about creating a safe, inclusive workplace that prioritises the wellbeing of everyone. To achieve this, we have a dedicated wellbeing strategy which focuses on five pillars: physical, social, financial, emotional, and professional wellbeing.

We have a dedicated team of people who create, plan, and execute this strategy, as well as ensure its smooth running daily. This is no mean feat for an organisation of over 7,000 employees in a wide variety of job roles!

As part of our commitment to wellbeing, our colleagues can access physiotherapy, health assessments, mental health consultations, flu jabs, eye care vouchers, debt advice, pension help and a broader employee assistance program.

Here's some elements of our wellbeing strategy that we're particularly proud of:

- Menopause support service
- Self-referral physiotherapy
- 24/7 mental health support
- Neurodiversity support
- 24/7 GP service

We also have a centralised wellbeing and benefits app which now gives over 3,000 employees on the road easy access to our services in the palm of their hand. This is important for teams such as our Patrols who remote work and aren't desk based.

Employee engagement is a critical component of our overall strategy. It's vital we know what's working and what's not so we can adjust our strategy according. We do this through regular employee surveys and feedback sessions.

Steps to mitigate the impact of human factors and increase driver safety

Enhance driver training

Make sure driver training is a core part of your fleet management. Utilise the expertise of a third-party driver training specialist, such as Drivetech, as needed.

Prioritise driver wellbeing

Recognise the critical role of driver wellbeing, implement a company-wide wellbeing strategy, and embed wellbeing in company culture.

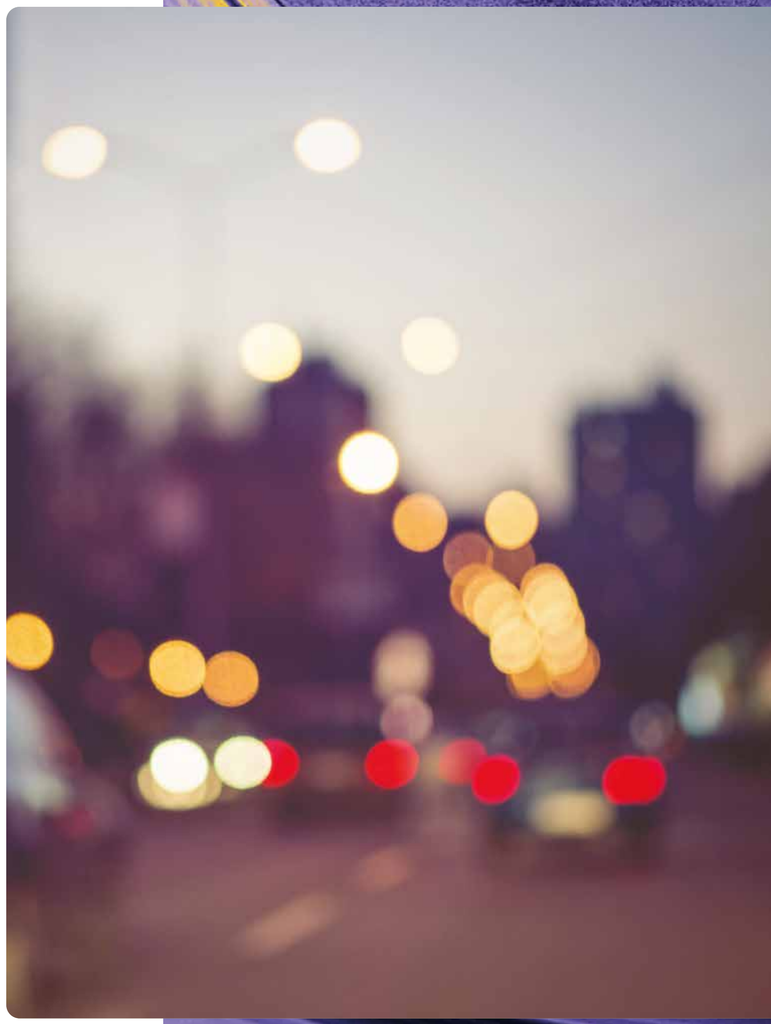
Invest in ongoing monitoring

Ensure driver needs are regularly audited and reviewed and the impact of human factors on fleet safety are tracked and measured. This will enable you to identify trends, areas of risk and how to make improvements.

Utilise technology solutions

Driver monitoring systems and telematics offer useful insight into driver behaviour patterns. You can also look at individual driver risk factors through measures such as psychometric testing.

There's no one size fits all approach and it's important to find the right solution for your individual business, fleet, and driver profiles. By prioritising the above, fleets can effectively mitigate the impact of human factors on driver safety and create a safer, more sustainable environment for all road users.



Upcoming technology that will impact drivers

Advances in technology are having a huge impact on safety on our roads when used by drivers in the correct way, and this is only set to continue at pace.

Advanced Driver Assistance Systems (ADAS) are evolving, and certain technology elements will become more widely available and more widely used by motorists. For example, Pedestrian Detection Systems (PDS) which use sensors to recognise pedestrians, could become more frequently used.

Another area which is seeing rapid growth is intelligent infrastructure and vehicle connectivity. Through vehicle-to-everything (V2X) technology, vehicles can exchange real-time data regarding road conditions, traffic patterns, and potential hazards. This collective intelligence enables proactive decision-making and adaptive responses to dynamic driving situations, reducing incidences caused by human factors such as misjudgement or insufficient situational awareness.

Behavioural monitoring is another area where technology is making significant strides when it comes to safety. Driver Monitoring Systems (DMS) utilise biometric sensors, eye-tracking technology, and machine learning algorithms to assess driver attentiveness, alertness, and compliance with safe driving practices. By providing real-time feedback and intervention when deviations from safe driving behaviour are detected, these systems help mitigate the impact of human factors such as fatigue, distraction, and impaired judgment.

As we've said previously, technology is there to support drivers but underpinning safety on the road is the human behind the wheel and we mustn't overlook this.

What The AA is doing to support drivers

At the heart of everything we do at The AA is drivers and this has been then case throughout our entire history, which spans over 100 years. One of the ways we do this is by giving drivers a voice – we have a rich heritage of campaigning on behalf of responsible drivers, which continues today.

For more than 15 years The AA has polled our members and used these insights to campaign on the issues that matter most to the drivers.

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The AA's Motoring Manifesto

Ahead of the upcoming elections we've created our motoring manifesto 'Creating Confidence for Drivers'.

A summary of the needs and perspectives of the UK's driving community and the moves motorists most want to see brought about in the months ahead. The AA represents more than 14 million members in the UK. Our research shows that many of those drivers are confused and concerned across a range of issues – unsure about how and when to make the shift to EVs and worried about the state of our roads and infrastructure, as well as the affordability and safety of driving overall. Our manifesto highlights five critical areas of action to address those concerns:

- **Supporting drivers:** keeping motoring costs low through better fuel transparency and more affordable excise duty.
- **Sustainable future:** providing the right incentives, infrastructure, and information to support the switch to zero emission vehicles.
- **Smoother journeys:** improving the quality and maintenance of our road and motorway network.
- **Safer roads:** reducing road deaths through clearer targets and increased policing.
- **Strengthening the industry:** providing support to the sector to enable greater investment in innovation and skills.

Each and every element of the manifesto is about supporting drivers but its 'Safer roads' that specifically focuses on reducing road deaths. We believe road death needs to be higher on the political agenda and requires a dedicated multi-agency approach to tackle the issue. Here's what we're calling for:

Road Safety Targets – the government to set out a Road Safety Framework to 2030 laying out a compelling long-term vision for road safety, Vision Zero, where there are zero fatalities and injuries on the UK's roads by 2050.

Road Safety Commitment – ensure all Government departments are aligned in reducing road deaths.

Road Safety Framework – ensure appropriate assisted driving technology is mandated for new vehicles in the UK.

Roads policing – increase in road traffic officers and consideration of a National Roads Policing Force to help co-ordination.

Graduated Driver Licence (GDL) – campaign for form of GDL so newly qualified drivers have some restrictions for six months once they have passed their test.

Driving Test Backlog – maintain pressure on clearing the driving test backlog, for learners and trainee driving instructors, to improve the safety of new drivers by being able to book tests when they are ready.

Driver Training – maintain in-life driver education.

Eye Tests – encourage drivers to undertake regular eye tests and target campaigns at over 70s.

Updated rules on vehicle headlights/brake lights - glare and dazzling from cars is impacting our members. Ask for updated rules on headlights and brake lights.

MOT Frequency – future governments should accept the retention of the annual MOT after three years to maintain safer vehicles and garage trade.

- Read our full AA Manifesto here >
- You can find our latest Environment, Social and Governance (ESG) Report here >

AA

We're at an exciting crossroads where innovation and technology, alongside regulation and social change are transforming the way we drive. And this is happening at pace.

As employers, we have a legal duty of care to create a workforce that can cope with and adapt to all the changes going on with roads, vehicles, and legislations but we must go beyond this.

We mustn't overlook that at the heart of driving is the human and it's the driver that has the greatest impact on safety on the roads. It's time to realise the goal of zero road deaths and to do this everything must consider human factors and making these more predictable. We can all achieve this through the right combination of technology, training, education and supporting driver wellbeing.

I hope this paper has provided food for thought when it comes to human factors in relation to driving safety and how these can be mitigated, ultimately saving lives.

At The AA, we remain committed to motorists. I'm hugely proud of our motoring manifesto 'Creating Confidence for Drivers' and the potential it has to put road safety and saving lives higher on the political agenda.

We're always listening, always ahead, to give drivers and businesses the best guidance and support when it comes to safer driving and empowering risk reduction. We're with you every step of your journey.

James Starling
Director of AA Business Services

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