

Written evidence submitted by IAM RoadSmart (SDV0014)

Introduction

IAM RoadSmart (previously IAM – the Institute of Advanced Motorists) is the UK's largest independent road safety charity, dedicated to improving standards and safety in driving and motorcycling. Best known for the advanced test, IAM RoadSmart has over 82,000 members and is supported by a local volunteer network of around 180 groups in the UK. We provide driver risk management solutions to businesses and drink drive rehabilitation courses through the IAM Driver Retraining Academy. IAM RoadSmart's policy and research division publishes original research on road safety issues.

We have no objection to our response being reproduced or attributed.

The Development and deployment of Self Driving Vehicles

Our submission is based around the themes the committee wished to see addressed.

1. Likely uses, including private cars, public transport and commercial vehicles

Despite many statements in the past that suggested self-driving cars would be ubiquitous by the early 2020s, it is still not clear when they will enter the market in greater numbers. Today the vast majority of road users have no direct experience whatsoever of the operation and use of self-driving vehicles. This means that all the research conducted to date has very little real-world content. It also means that opinion surveys of driver's intentions and fears around the use and adoption of self-driving cars are not based on any actual exposure to the vehicles themselves.

More long-term tracking research on opinions is required before the full extent of the impact of self-driving vehicles can be assessed. IAM RoadSmart are happy to support the government's intention of making the UK a world leader in driverless technology but this must not put our enviable road safety record at risk, or lead to any unwarranted early restrictions on other road users. We cannot envisage, for example, any need to designate lanes on our already

congested motorways for the most modern vehicles only, for many years to come.

2. The progress of research and trials in the UK and abroad

IAM RoadSmart support the use of trials and pilots to increase our knowledge of the impact of self-driving cars. For example, the basic advanced driving and riding principles of observation, anticipation and our 'commentary drive' approach have been adapted for use by those designing self-driving vehicles in a report from BSi

(<file:///C:/Users/neilg/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/VPX65YQI/bsi-cav-safety-benchmarking-report-2021.pdf>).

We are concerned however, that scenario based approach to research adopted by self-driving car producers can never actually hope to cover all the possible incidents that can arise on our roads. In particular, the interaction of motorcycles and increasingly sophisticated self-driving cars appears to be a very under researched topic. The experience of the aviation industry also suggests that skill fade and over reliance on technology may start to emerge as issues for drivers as more and more technology appears in their vehicle without explanation. Car makers have a clear responsibility to explain the limitations of their systems and the situations where control may be handed back to a driver. Without this clarity drivers may simply 'switch off', but 'coaching' can play a key role in ensuring that this does not happen. (See our response to Question 5).

It is also vital that more real-world driving data is collected and shared transparently by vehicle manufacturers and software providers. There is too much commercial secrecy in this arena in our view. We welcome the establishment of the Road Safety Investigation Branch (RSIB) and its already stated intent to monitor the impact of automation on road safety. It will be best placed to provide strategic insights and investigations but must be fully funded to ensure the right expertise is recruited and that reports can be published in a timely manner.

3. The potential implications for infrastructure, both physical and digital;

In our view the most immediate implication for infrastructure is the need to maintain road markings and signs in a legible condition so that automatic systems can recognise and react to them. Lane keeping assist etc requires good white lining and speed limit recognition requires signs that are clean and not obscured by vegetation. Addressing these basic road hygiene issues will also have wider benefits for road safety.

The other issue which concerns IAM RoadSmart members is data security. This takes two forms, firstly, concerns about privacy, and secondly, worries about the ability of self-driving vehicles to be hacked. Government must work with industry and regulators to constantly reassure drivers and riders that their personal security is the top priority at every stage of the process and that all data interactions are strictly regulated.

4. Safety and perceptions of safety, including the relationship with other road users such as pedestrians, cyclists and conventionally driven vehicles

In our 2021 “Safety Culture Survey”, 59% of drivers rated “the growing ability of vehicles to drive themselves” as a “very serious or somewhat serious” threat to their personal safety. The gender differences were also marked – 52% male versus 67% female rating them as a threat. This suggests a high degree of scepticism among the driving public as to the benefits of self-driving cars before many of them have even been exposed to them in real life. This may change as more drivers experience ADAS systems in their new cars and more self-driving vehicles appear on our roads. A full picture of the attitude of drivers cannot be formed until more self-driving vehicles become a common sight.

Thankfully many commentators are now stepping back from the simplistic assumption that self-driving cars will remove the 90% of crashes allegedly caused by human error. IAM RoadSmart would strongly recommend that the Transport Committee also highlights this issue in its final report. This is partly

down to much better research from bodies such as National Highways who have looked in detail at every fatality on their network. They found that road infrastructure, weather, vehicle faults etc all played a bigger part than previously thought. The suggestion that self-driving cars will eliminate every single death and serious injury on our roads should not be overstated. In our view this will assist in helping to raise public support for their use.

5. The role of Government and other responsible bodies, such as National Highways and local authorities; and potential effects on patterns of car ownership, vehicle taxation and decarbonisation in the car market

IAM RoadSmart have welcomed the work of the Law Commission in setting out the legal framework for the operation of self-driving vehicles well in advance of their appearance on our roads. It is now the role of government to translate their findings into usable legislation. It is also the role of government and car makers to educate and inform the public about the benefits of self-driving cars. To date this has mainly taken the form of an update to the Highway Code. Whilst IAM RoadSmart have welcomed this information a much wider programme will be needed to reach all drivers. The Highway Code is a seldom read publication and cannot be relied upon as the only channel for important messages about changes in law and practice brought about by increasing levels of automation.

Car makers also have a duty to educate those purchasing new vehicles. Research from the FIA https://www.fiaregion1.com/wp-content/uploads/2020/10/FIA-Region-I-_ADAS-study_18122020.pdf showed that most drivers learn about new systems by 'trial and error' which is unacceptable if road safety standards are to be enhanced and the full benefits of automation realised. These findings led to this campaign <https://www.fiaregion1.com/adas-on-board/> which is an example of what is required if we are to have a well-informed driving public ready and willing to adopt new technology in all its forms.

It is also becoming increasingly clear from research that drivers who have had some form of coaching into the process of taking back control from a self-driving vehicle perform better in emergency situations. For example, the work by the University of Nottingham for the RAC Foundation (<https://www.racfoundation.org/research/safety/driver-training-for-future-automated-vehicles>). IAM RoadSmart have also sponsored soon to be published research by Siobhan Merriman at Southampton University (see separate submission to the Committee's inquiry from Ms Merriman and the Policy Institute) and also previous work here https://www.researchgate.net/publication/348019242_Challenges_for_automated_vehicle_driver_training_A_thematic_analysis_from_manual_and_automated_driving.

These studies show conclusively the benefits of educating drivers to anticipate exactly what is expected of them when they are driving a semi-autonomous vehicle. Their ability to react to handover messages and anticipate problems was enhanced by coaching beforehand. It is vital that the government work with the DVSA and training providers, such as IAM RoadSmart, to develop new resources to educate drivers in the techniques required to safely pilot a self-driving car. Whilst this should be embedded quickly into the syllabus for learner drivers, it will require government assistance to get the message out to the millions of existing full driving license holders.

Key Points

- The proposed legal frameworks must be enacted in law as soon as possible
- Awareness campaigns beyond the changes in the Highway Code are required to prepare drivers for self-driving cars
- Evaluating the safety performance of self-driving cars should be a top priority for the new Road Safety Investigation Branch
- Training of existing drivers is needed to maximise the safety benefits of self-driving cars
- More research is needed on driver opinions, skill fade and the interaction between self-driving cars and motorcyclists

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