Motorcycle Action Group (MAG) – Written evidence (AUV0073)

This responds to the questions set by the Committee from the point of view of the UK motorcycling community, which numbers approximately 1.5 million regular riders and about 5.5 million fully qualified riders. The Motorcycle Action Group (MAG) is the leading voice for motorcyclists in the UK and hopes it will be permitted to share its perspective in person at forthcoming hearings.

1. What are the potential applications for autonomous vehicles?

MAG sees the application of autonomous technology in the context of powered two wheelers as ‘on a scale’ largely stopping short of full autonomy. This is because, for many riders, the act of riding is itself an attractive benefit of motorcycling. Thus, improvements in safety and convenience are the key draws for riders.

Full autonomy for motorcycling would not generally be regarded as appealing to riders, though MAG recognizes that there may be specific applications for fully autonomous powered two wheelers on the grounds of economy, compactness and in terms of opening up the pleasures of riding to individuals who would not wish to commit themselves to the more traditional demands of motorcycling regarding skills and effort.

2. What are the potential user benefits and disadvantages from the deployment of autonomous vehicles?

Benefits include:

a) added safety features, which reduce the risk of human error by the rider.

b) Interactivity with other road users, which reduce the risk of collision through failure to see an approaching motorcycle.

c) Reduced workload for the rider.

d) The opportunity for non-motorcyclists to benefit from the economy, agility and enjoyment of motorcycling and scooter technology.

Disadvantages could include:

a) The risk of human error as a result of increased reliance on automated systems, thereby creating secondary hazards of human failure to intervene when overriding the automatic systems could have prevented an accident.

b) Any move to create separate traffic space for autonomous vehicles, thereby effectively demoting conventionally controlled vehicles in terms of their road status. This is a major concern for riders, who explicitly choose motorcycles as a manually controlled form of transport. The current strategy to create ‘hard segregation’ for bicycles has already had a detrimental effect on road space for powered two wheelers, increasing risk...
and congestion – and pollution as stationary and slow moving queuing has increased.

c) Potential questions of liability in respect of whether the manufacturer or user of the vehicle is responsible. This could cause considerable stress in the legal system in the event of an accident involving a rider.

d) A difference in the reaction times of autonomous vehicles and humans could cause accidents. For example, a human cannot brake as fast as the autonomous vehicle in front of them, and this leads to a rear end impact.

e) Wrong interpretation of data by an autonomous vehicle, leading to an accident.

f) Corruption of data or programme functions by faulty programming, systems failure or design.

3. How much is known about the potential impact of deploying autonomous vehicles in different sectors?

There is considerable data now available from various operators in the UK and abroad, including Google, Tesla and Otto, as well as other travel sectors such as commercial aviation. However, MAG believes little has been done to assess the interface specifically between autonomous vehicles and motorcycles, and this is an important element in understanding the actuarial risks associated with the new technology. MAG is also willing and eager to suggest certain tests and to participate in them in order to improve collective understanding of the interface between autonomous vehicles and motorcycles in the interests of safety and utility.

4. How much is known about public attitudes to autonomous vehicles?

The Motorcycle Action Group has not conducted quantitative research on the question of rider attitudes towards autonomous vehicles. However, from a qualitative perspective, there is a consistent theme in terms of what bikers consider the key concerns regarding the new technology. These relate to rider safety and potential restrictions on road space for non-autonomous vehicles.

Motorcyclists are supportive of progress, as long as the risks and practical implications are fully understood and do not compromise existing road users. There is scope for a quantitative review of public attitudes – though, to get an authoritative viewpoint from people, consideration has to be given to the level of knowledge which currently exists amongst the population. This will change rapidly as autonomous systems become more prevalent, and the public becomes more informed. As such, a quantitative review needs to be very clear about its purpose.

5. What is the scale of the market opportunity for autonomous vehicles?

MAG believes there is scope for partial application of autonomous technology in the powered two wheeler sector, where this delivers safety and convenience benefits. Most high value motorcycle engines are already immensely complex and rely on extremely advanced autonomous engine management systems. However, at the
budget end of riding, where less wealthy citizens depend on their motorbike or scooter to keep commuting costs to an absolutely minimum, any new technology which significantly increases purchase or maintenance costs is unlikely to achieve much market penetration and will not be welcomed by this community of commuters.

Research and Development

6. Is the scale of current and planned demonstration facilities for autonomous vehicles sufficiently broad and ambitious?

No. The current research environment depends almost entirely on the private sector to take advantage of the enabling conditions which the Government has laudably generated in the UK. However, aspects of the technology that are not necessarily in manufacturers’ interest to assess – such as the knock-on effects to other road space users - may currently not be receiving the attention they require. The interface between autonomous vehicles and powered two wheelers appears to fit into this category.

7. Is the Government doing enough to fund research and development on autonomous vehicles, and to stimulate others to do so? Should it be doing more to coordinate UK actions?

It follows from the answer to question 6 that MAG believes areas of little commercial relevance to the private sector would benefit from dedicated, Government supported research – either through a mandate to the sector or through direct public investment.

MAG is aware that these questions are rightly being considered by the Centre for Connected and Autonomous Vehicles (CCAV). MAG has made a submission to its recent consultation on these matters. We are more than happy to supply a copy of MAG’s response on request. We would invite the Government to work with interest groups such as MAG to ensure that nothing has been missed in the process of proving the new technology. The risk of not doing so could be a counterproductive increase in accidents - as a result of unintended consequences arising from insufficiently thought out use of the new technology, leading to problems between manually controlled and autonomously controlled vehicles.

8. How effective are Innovate UK and the CCAV in this area?

MAG has not interacted directly with Innovate UK. However, the Motorcycle Action Group has worked extensively with the CCAV. We have found their approach very impressive. They are entirely open to engagement and suggestions. We regard their comprehensive approach to consultation is very much in line with promoting the responsible evolution of the new technology and its practical applications.
9. Is the environment for small and medium-sized enterprises (SMEs) working in this sector sufficiently enabling?

MAG has not had direct experience in this regard. However, we suggest that the Motor Cycle Industry Association may be able to furnish the Committee with a more detailed perspective – though, as already stated, autonomous vehicle technology is at this stage less prevalent in the motorcycle sector than it is in the four wheel sector.

**Real world operation**

10. Will successful deployment of autonomous vehicles require changes to digital or physical infrastructure?

There is one aspect of this question which is highly relevant to motorcycling – collision avoidance. If this can be improved through autonomous technology, then there are strong grounds to ensure a continuous, robust WiFi environment which ensures that outages will not endanger the general road using community. Obviously, as far as MAG is concerned, we are primarily concerned with motorcyclists: however, this must surely apply to all vehicles and pedestrians.

If there is any risk of outages preventing manual override or the general prevention of accidents, then the infrastructure must be reviewed and made robust. For example, MAG observes that latency could become a serious issue if the digital infrastructure is overloaded by very high data transfer requirements, on account of a large number of autonomous or semi-autonomous vehicles. This issue of sufficient data transfer is important and probably requires Government intervention, as it is an infrastructure project that transcends the needs of individual companies.

11. How might a move from current levels of highly automated vehicles to their extensive deployment best be managed? What do you see as the key milestones?

The move must take into account the issues listed in the other answers provided by MAG. This would imply the following milestones must be met:

i) Demonstrable evidence that the technology is as safe or safer than current modes of control of vehicles.

ii) Empirical evidence that no user group, such as the motorcycling community, is especially compromised in terms of freedom to operate or in terms of safety.

iii) Cybersecurity protocols are established up to an agreed and specified industry standard.

iv) Clarity is achieved regarding liability.

v) A route map is generated to ensure sufficient digital infrastructure exists to accommodate predicted volumes of autonomous vehicles.
12. Does the Government have an effective approach on data and cybersecurity in this sector?

Not yet. MAG believes that this issue has been acknowledged by the CCAV. It is, nevertheless, necessary to ensure that the solutions are in place before mass roll out of human carrying vehicles, which will necessarily involve large quantities of kinetic energy and potentially act as lethal devices if the systems are breached by a malicious third party. Solutions already exist. They simply have to be implemented.

13. Are further revisions needed to insurance, regulation and legislation in the UK to create an enabling environment for autonomous vehicles?

The Motorcycle Action Group has provided an extensive answer to this question in a previous consultation by the CCAV. We are happy to provide these longer comments on request. To summarise and for the sake of brevity, the key goal is to ensure that no ambiguity exists regarding liability. This has to be achieved because motorcyclists – and for that matter other road users - deserve fairness of treatment in the event on an accident. They cannot be expected to muster the resources to mount a legal challenge against, for example, a massive multinational firm which would potentially be motivated to invest a large amount in legal defence to avoid a precedent which could be immensely costly in terms of future liabilities.

It is perfectly possible that the existing regulatory framework regarding insurance is adequate, but this needs to be tested prior to mass scale use of the machines.

Separately, the regulatory structure as a whole must err on the side of caution. Other road users must be confident that the overall regulatory framework is balanced and does not solve problems of co-existence by just separating autonomous and non-autonomous traffic at the expense of more lost road space for existing conventional vehicle users.

14. What, if any, ethical issues need to be addressed in the substitution of human judgement in the control of vehicles by algorithms and Artificial Intelligence?

There are two ethical issues.

Firstly, if anyone is killed as a result of automated decision-making, who is morally – and thus legally – liable for it? For example, does the fault lie with the designer of the scheme, the specific programmer who wrote a faulty script or the individual who successfully ‘hacked’ into the system?

Secondly, if there is an accident while the autonomous vehicle is being operated and the user does not exercise some kind of manual override – perhaps because they are incapacitated, for example through drink - should the individual be exonerated from liability, or is there NEVER a situation whereby someone who could have taken control is excluded from liability in this scenario? As an addition to this latter point,
should there be a specific waiver which is entered into formal records to say that some individuals are physically or mentally incapable of taking control of a vehicle, and that they are indeed excluded from liability? MAG is eager to discuss these matters with the Committee.

Wider governance

15. What does the proposed Modern Transport Bill need to deliver?

The Motorcycle Action Group believes that the Bill offers an opportunity to introduce ‘light touch’ legislation to address all the practical, legal and moral issues which autonomous (and connected) vehicles present. These issues are now becoming recognized, but the legislation must also be flexible enough to embrace future developments which cannot yet be conceived in specific terms, but which may be understood in principle. For example, the Bill needs to be framed so as NOT to promote segregating autonomous, connected and human-controlled traffic – a move which would reduce the overall flow of traffic and further increase congestion and pollution.

16. How effective is the UK’s education system in delivering people with the right skills to support the autonomous vehicles sector?

MAG has no formal involvement with the UK education system in terms of promoting or requiring these skills. Familiarity with the principles of connected and autonomous vehicles are an important element in road planners’ understanding and experience.

17. Is the Government’s strategy and work in this area sufficiently wide-reaching? Does it take into account the opportunities that autonomous vehicles offer in a wide range of areas, not just on the road?

MAG believes that it is not the Government’s role to seek to innovate in this sector, except in as much as it may enable socially beneficial outcomes to accrue from the new technology. Government also needs to ensure that no negative consequences accrue as a result of these innovations.

18. What are the implications of exit from the European Union for research and development and the autonomous vehicle industry in the UK? Are specific actions from the Government needed to support or protect the autonomous vehicles sector in the short term or after the terms of Brexit have been negotiated?

Again, MAG does not hold a particular view on this question, but believes that the Motor Cycle Industry Association may offer a candid perspective on behalf of the industry itself.

CONCLUSION
The Motorcycle Action Group would request the opportunity to provide oral evidence to the Committee to assist with its considerations in a constructive context, and hopes that the Committee would be minded to make such an invitation.

26 October 2016