Submission
No 12

DRIVERLESS VEHICLES AND ROAD SAFETY

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The Chair
Joint Committee on Road Safety
Parliament House
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SYDNEY NSW 2000

Dear Chair

Staysafe Inquiry into Driverless Vehicles and Road Safety

Thank you for the opportunity to provide a submission to the Staysafe Inquiry into Driverless Vehicles and Road Safety. NRMA welcomes the committee's interest in driverless vehicles, particularly in relation to what impact driverless vehicles will have on future road safety outcomes in NSW.

Driverless vehicles, in conjunction with smart road infrastructure and Intelligent Transport Systems (ITS), will reshape personal mobility into the future. Driverless vehicles are no longer a vague futuristic concept only found in science fiction movies, with real world on road testing of driverless vehicles occurring around the world, including in South Australia.

It is worth noting that many of modern vehicles currently on NSW roads are already fitted with partially autonomous functions such as lane change assist, ABS breaking and adaptive cruise control. In October 2015, a Tesla Model S vehicle fitted with autopilot technology was driven over the Sydney Harbour Bridge in the middle of the day. It is likely that autopilot technologies such as those currently found in select Tesla models, will progressively be rolled out and made available to consumers of all vehicle brands in the not too distant future.

Car manufacturers and technology companies anticipate that fully autonomous vehicles will be widely available for purchase by 2020. Given the rapid advancements in technology, it is not unreasonable to suggest that driverless vehicles will become available for purchase even sooner.

McKinsey estimates that by 2025, fully autonomous vehicles will make up 1 to 2 per cent of light vehicles on the road network globally. It is further estimated that partially autonomous vehicles could account for around 12 to 15 per cent of all light vehicles by the same period.

Based on these estimations, it is important for government and regulators to prepare for a smart transport future by embracing driverless vehicles and related technologies. Additionally, regulators must ensure that advancements in driverless technologies are not obstructed by restrictive or unnecessary barriers or regulations.

Driverless vehicles have great potential to provide significant social, economic and environmental benefits that include reductions in congestion, increasing mobility and reducing carbon emissions. However, of all the possible benefits associated with a driverless vehicle future, improved road safety outcomes are the perhaps the most compelling.

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1. ***The capacity of driverless vehicle technology to deliver improved road safety outcomes include a lower road toll, and fewer accidents and injuries to drivers, pedestrians and other road users***

It is estimated that more than 90 per cent of accidents are caused by human error. Theoretically, driverless vehicles have the potential to reduce accidents by eliminating human error from the driving process. On this basis, it is assumed that a fully autonomous car network could reduce the number of motor vehicle accidents by around 90 per cent. Additionally, it is estimated that partially autonomous vehicles could eliminate around 40 per cent of motor vehicle accidents.

In the context of NSW, these statistics are significant. NRMA's research shows that between 2008 and 2013, 1,480 fatalities and 100,413 injuries occurred as a result of accidents on NSW roads, costing the NSW economy around $15 billion.

As noted above, it is estimated that a fully autonomous car network could reduce fatalities by around 90 per cent. On this basis, and using 2008 to 2013 statistics as a baseline, it is arguable that autonomous vehicles could reduce the number of fatalities on NSW roads by 1,330 and the number of injuries by around 90,000 saving the NSW economy around $13.5 billion.

While the above example is purely hypothetical, it is noted that driverless vehicle trials being undertaken in real world environments around the world have been involved in a relatively small number of on road incidents. Google's driverless vehicles have driven more than 1.5 million miles since 2009, and it has been reported that as of January 2016, driverless vehicles had been involved in less than 17 accidents, a vast majority of which were caused by human error and not as a result of driverless vehicle technology.

As on road testing of driverless vehicles progress throughout the world, and the technology associated with driverless vehicles improves, additional data will ultimately become available that will help determine the full impact that these vehicles will have on future road safety outcomes. However, on current projections, it is arguable that the road safety benefits of driverless vehicles in the longer term are significant and should not be dismissed.

2. ***The extent to which current road safety policies and regulations in NSW anticipate the introduction of driverless vehicle technology, including driverless heavy vehicles, and any regulatory policy changes which will be required***

The introduction of driverless vehicles onto NSW roads will potentially impact on current road safety policies and regulations. NRMA does not propose to canvas all of the policies and regulations that may require amendment in this submission, as this is the responsibility of government. However, it is likely that a number of policies and regulations will need substantial revision to enable the safe and efficient operation of driverless vehicles on the road network. In relation to heavy vehicles, driverless technologies could lead to amendments to the Heavy Vehicle National Law, particularly in relation to fatigue management requirements.

To clarify precisely what regulatory changes may be required to allow for the safe operation of driverless vehicles on NSW roads, NRMA recommends that the NSW Government follow the lead of the United Kingdom Department of Transport and develop a roadmap for a driverless vehicle future. The roadmap should review the compatibility of current policies and regulations with driverless vehicles and identify any barriers to driverless vehicles legally operating on NSW roads.

Should policies and regulations require amendment, it is important that regulators ensure that innovation is not restricted unnecessarily. To this end, the regulatory frameworks associated with driverless vehicles must be agile with a clear outcomes focus that enables change rather than arbitrary and prescriptive that serve to stifle innovation. Restricting innovation and taking a reactive approach to driverless vehicle technologies will place NSW at a disadvantage and potentially stall any road safety benefits associated with a driverless vehicle future.

3. *The preparedness of NSW road safety regulators to meet the challenges extended by driverless vehicle technology*

NRMA acknowledges the bipartisan approach of all sides of politics in NSW to encourage and stimulate innovation in the road and transport sectors. NRMA also welcomes the NSW Government's announcement that it will hold a *Future Transport Summit* that will canvas the future of driverless vehicles and any impact driverless vehicles will have on road safety outcomes.

The challenges associated with driverless vehicle technologies are significant. It is crucial that regulators take a proactive and agile approach to new and disruptive technologies. Technology will not slow down and wait for regulators to catch up. Therefore, it is important that regulators plan today for a smart transport future.

It is noted that the NSW Centre for Road Safety has previously undertaken trials associated with smart technologies such as Cooperative Intelligent Transport Systems (CITS), Intelligent Speed Adaptation (ISA) and collision avoidance technology systems. These trials are of direct relevance to preparing for a driverless vehicle future and NRMA encourages the Centre for Road Safety to continue trialling new and innovative technologies that may lead to positive road safety outcomes.

Notwithstanding the above, NRMA has long been concerned about the public sector culture in NSW and its inability at times to embrace new technologies to address the road and transport problems faced by motorists and commuters across NSW. While it is encouraging that the NSW Government is progressing an innovation agenda, there is danger of disconnect between vision at the leadership level and the implementation of this vision at a delivery level.

To this end, NRMA would encourage the NSW Government to review its capacity, at a departmental level, to deliver an innovative smart transport agenda - particularly with regard to the challenges associated with the inevitable take up of driverless vehicles in the future.

4. *The experience of other jurisdictions in Australia and overseas in adopting and adapting to driverless vehicle technology*

A recent World Economic Forum survey estimates that 48 per cent of global cities expect the commercialisation of driverless vehicles within the next 10 years, with another 40 per cent of cities predicating that driverless vehicles will be fully operational by 2025. To prepare for the eventual take-up of driverless vehicles, domestic and overseas jurisdictions have taken the lead and commenced trials of driverless vehicles in controlled and uncontrolled environments.

In the United States, Google's driverless vehicle has driven more than 1.5 million miles and is currently being tested on roads in California, Texas, Arizona and Washington. The United Kingdom has also committed to driverless vehicle trials in Greenwich, Bristol, Milton Keynes and Coventry. The trials being undertaken in the United Kingdom have been facilitated by government through the provision of funding and by the development of a comprehensive strategy that encourages the testing and production of driverless vehicles.

In Australia, the South Australian Government has taken a proactive approach to driverless vehicles and has taken lead in facilitating the testing of driverless vehicle technologies. In September 2015, the South Australian Government introduced laws allow the on road testing of driverless vehicles, positioning the state at forefront of a future driverless vehicle industry in Australia. In November 2015, the South Australian Government in partnership with the Australian Driverless Vehicle Initiative and Volvo successfully undertook Australia's first on road demonstration of a driverless vehicle. In Western Australia, the Royal Automobile Club (RAC) has announced that it will trial a driverless bus on Perth roads.

With regard to the above, it is clear that NSW must do more to compete with Australian and international jurisdictions in adopting and adapting to driverless vehicle technologies. Driverless vehicles present NSW with significant opportunities into the future and NRMA believes that the NSW Government must do more to encourage vehicle manufacturers and technology companies to trial driverless vehicles on NSW roads. These trials could be conducted in Newcastle, Wollongong, Sydney Olympic Park or Regional NSW.

NRMA thanks the Committee for the opportunity to contribute to this Inquiry. NRMA would be happy to provide further input or clarification about the above should this be required. For further information about NRMA's submission, please do not hesitate to contact Mr Chris Siorokos, General Manager – Advocacy, Media & Education on [redacted]

Yours sincerely

[redacted]

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