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Securing America's Future Energy

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Docket Management Facility
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Room W12-140
Washington, DC 20590-0001

**RE: Request for Comments Concerning Federal Motor Carrier Safety Regulations (FMCSRs) Which May be a Barrier to the Safe Testing and Deployment of Automated Driving Systems-Equipped Commercial Motor Vehicles on Public Roads [Docket No. FMCSA-2018-0037]**

## I. Introduction

Securing America's Future Energy (SAFE) is pleased to submit the following comments in regard to existing Federal Motor Carrier Safety Regulations (FMCSRs) that may need to be updated, modified, or eliminated to facilitate the safe introduction of automated driving systems (ADS) for commercial motor vehicles (CMVs).

SAFE is a Washington D.C.-based energy security advocacy organization with extensive experience in transportation issues and a particular expertise in autonomous vehicle (AV) regulation. In 2006, SAFE formed the Energy Security Leadership Council (ESLC), a nonpartisan group of business and former military leaders in support of long-term policies to reduce U.S. oil dependence. The ESLC is co-chaired by Frederick W. Smith, Chairman and CEO of FedEx, and General James T. Conway, 34th Commandant of the U.S. Marine Corps (Ret.).

Over the last several years SAFE has taken a leadership role in promoting connected and autonomous vehicles, inclusive of heavy-duty commercial vehicles, and has worked with industry and other stakeholders to advance sound policy solutions to enable the safe and expedient development of AVs. In 2016, SAFE released *The National Strategy for Energy Security: Innovation Revolution*, which contributed some of the philosophical underpinnings for NHTSA's AV Policy Guidance released later that year. We have also released studies that examine safety standards for testing and early deployment of AVs, as well as evaluated the potential for connectivity and automation in the freight and logistics sectors. In addition, SAFE played a leading role in the drafting of both the House and Senate AV legislation through our work as a founding member of the Coalition for Future Mobility.

SAFE applauds the Federal Motor Carrier Safety Administration (FMCSA) for its ongoing responsiveness to industry developments with regard to ADS equipped CMVs. AV technology is advancing at an increasingly rapid pace, requiring regulatory agencies to exercise care to avoid hindering innovation with enormous potential benefits.

AVs present an opportunity to transform our transportation system on a scale unseen since the invention of the car itself, and CMVs will play a leading role in that transformation. Beyond the significant societal benefits such as dramatic improvements in roadway safety, AV technology can serve our economic and national security goals by enabling fuel efficiency gains and serving as a market-driven accelerator for advanced fuel platforms. ADS equipped CMVs can precipitate a shift away from the heavy-duty segment's outsized dependence on oil and provide new and more efficient options to power our vehicle fleet.

While the U.S. Department of Transportation has focused much of their efforts on light-duty vehicles, SAFE strongly supports the creation of a framework that is inclusive of ADS equipped CMVs, as the trucking sector is best positioned to quickly deliver societal benefits using AV technology. An inclusive framework is imperative given that testing cannot currently occur across state lines, and continued delay on ADS equipped CMVs has the potential to send a discouraging signal to markets and delay the broad benefits the technology can deliver.

## II. Background

SAFE believes the trucking industry is likely to be an early implementer of AV technology because highway freight transportation presents a more predictable and less complex driving environment than urban roads. Although the timeline for widespread commercialization is unclear, testing has already begun, underscoring the importance of any FMCSA actions. ADS equipped CMVs promise safer roadways, solutions to an industry experiencing rapid growth amid chronic labor shortages, and efficiency gains whose savings can be passed on to U.S. consumers. Regulators such as FMCSA have an important role to play in ensuring that policy allows this important industry to innovate in ways that will save lives, reduce costs while meeting growing consumer demand, and save fuel.

Despite only accounting for 4 percent of vehicles on the road, long-haul trucks move more than 70 percent of all freight—$725 billion every year—in the United States and account for roughly 13 percent of total U.S. petroleum consumption.[1] Oil dependence in the trucking sector can be reduced by adopting new technologies that lead to a more modern and efficient trucking sector. New technologies include advanced driver assistance systems (ADAS), platooning and connected vehicles, and eventually highly autonomous trucks. Once deployed, these technologies have the potential to upend an industry that has yet to fully experience the digital revolution that has reframed how many other industries operate.

SAFE modeling estimates that platooning technology, enabled by lower levels of automation and vehicle-to-vehicle (V2V) technology, could save more than 20 billion cumulative gallons of diesel by 2050 in the heavy-duty freight sector. Highly autonomous trucks also offer the potential for significant fuel savings. Although some savings may be realized at lower levels of automation, Morgan Stanley noted that highly automated trucks could facilitate a 25 percent improvement in efficiency.[2] A 2017 Energy Information Administration (EIA) study also projected that autonomous trucks could yield fuel savings of more than 3 percent.[3]

[1] American Trucking Associations, "Reports, Trends & Statistics."
[2] Id.
[3] Roland Berger, "Automated Trucks: The Next Big Disruptor in the Automotive Industry?," Presentation, Chicago/Munich, April 2016.

In terms of safety, ADS-equipped CMVs promise to eliminate the observational errors made by drivers who are distracted, incapacitated, inattentive, or who make erroneous judgments that lead to collisions, and often fatalities. NHSTA attributes 94 percent of all crashes to human error. The vast majority of human-error related crashes were caused by recognition and decision errors (standing at 41 and 33 percent, respectively).[4] Similarly, trucks have been involved in 222 truck crashes per 100 million vehicle miles traveled since 2000, and more than 90 percent of them were a result of human error.[5] The greatest benefit that fully autonomous vehicles offer society is undoubtedly safer roadways for both the truck drivers that take to the roads every day and other road users. One study forecast that crash rates could drop as low as eight crashes per 100 million vehicle miles by 2040.[6] While we remain in the early stages of testing and deployment, it is important to consider the vast number of lives that are at stake if unnecessary hurdles to widespread deployment are introduced.

Innovation in the commercial trucking sector is imperative to accommodating growing demand on U.S. highways and minimizing fuel price shocks to this vital industry and the broader economy.[7] An appropriate regulatory framework will enable the trucking industry to maximize the benefits delivered by new technologies, most notably in the form of increased energy security through reduced petroleum consumption.

## III. Specific Comments

SAFE is pleased to offer comments for consideration by FMCSA. The context of our comments is grounded in our understanding of the potential safety benefits and fuel savings of CMVs equipped with ADS. SAFE's view is that the role of regulation is to ensure that technology developers and fleet managers can utilize and deploy ADS products while maintaining the standards necessary for public safety. Given the role FMCSRs play in governing operational performance, it is incredibly important that any changes or interpretations carefully balance the need for safety while accommodating novel technologies.

FMCSA's actions are particularly critical at this time because they will set the conditions governing the initial deployment of CMVs equipped with ADS. The testing and early deployment of ADS equipped CMVs will be intensely scrutinized and are a critical period for growth and learning. However, the future success of ADS-equipped CMVs and the benefits they bring are fully contingent on both industry's ability to test the products and continued investment from the private sector. A handful of industry players have already conducted tests of the technology, and we encourage this to continue.

*Petitions for Waivers or Exemptions*

The federal guidance, Automated Driving Systems (ADS): A Vision for Safety 2.0, released on September 12, 2017 indicated that FMCSA believes its regulations require that "a trained commercial driver must be behind the wheel at all times, regardless of any automated driving technologies available on the CMV, unless a petition for a waiver or exemption has been granted." SAFE urges FMCSA to consider all

[4] Jeffrey Short and Dan Murray, *Identifying Autonomous Vehicle Technology Impacts on the Trucking Industry*, American Transportation Research Institute, November 2016.
[5] Id.
[6] NHTSA, "Traffic Safety Facts," Department of Transportation, February 2015.
[7] BTS, "DOT Releases 30-Year Freight Projections," March 3, 2016.

relevant information before coming to a final interpretation on this matter, as we believe this interpretation may place a ceiling on innovation and rapid technology in the private sector.

The agency noted, in its request for comments, "that the absence of specific regulatory text requiring a driver be behind the wheel may afford the Agency the flexibility to allow, under existing regulations, ADS to perform the driver's functions…" While waivers or exemptions may be granted if FMCSA decides an ADS cannot perform a driver's function, the process may deter or delay those wishing to begin testing their technologies. Given the speed with which technologies are being developed and change, such a process may prove overly burdensome. It is also worth noting that the future evolution of technology and its deployment are to some extent unpredictable. Driverless operations may emerge in forms, locations, and uses that are currently unanticipated. Encoding strict interpretations of regulations may prevent the development of safe and innovative future business models.

*Commercial Driver's Licenses*

In its request for comments, FMCSA asks whether an endorsement should be considered for human drivers and operators of CMVs equipped with ADS. SAFE recognizes that the introduction of ADS may present difficulties in ensuring drivers or operators understand the capabilities and limitations of technologies in a specific vehicle. Adopting standardized definitions for technologies is an important first step, as an imperfect understanding of any individual technologies by drivers or operators presents safety risks to both users of the CMVs and members of the general public.

The mechanism for communicating instructions and information on capabilities and limitations of autonomous systems will vary based on driver or operator's interaction with ADS-equipped CMVs. While SAFE would urge against the creation of a specific endorsement, it is necessary for industry to have a plan in place that provides comprehensive use instructions, appropriate training materials, and adequate notice to drivers or operators regarding the limitations of all autonomous or semi-autonomous features and systems. These instructions should be made available to all appropriate regulators as well as the broader community. AV providers should implement a mechanism, by which drivers or operators acknowledge they have received and understand these instructions before use. This should remain consistent whether or not the operator or driver is an active driver, onboard technician, or remote supervisor.

*Vehicle Markings*

FMCSA also requested comments as to whether CMVs with ADS should require visible markings to facilitate cooperation with state partners and law enforcement officials. SAFE believes that visible markings should not be required on CMVs equipped with ADS unless FMCSA demonstrates compelling reasons due to its high potential to distract and cause unsafe road conditions for other drivers and road users.

A significant portion of the public remain leery or unfamiliar about the capabilities or limitations of AV technology. One can imagine the high potential for some drivers, especially those who remain unfamiliar with the technology, to be confused and distracted at the sight of a vehicle driving itself. In the early phases of testing and deployment some road users that are knowledgeable about the technology may even perform unnecessary or unusual driving maneuvers in the hopes of catching a glimpse of a vehicle

without a driver. SAFE believes that the benefits offered to enforcement officials likely do not outweigh the need to protect the safety of road users, unless otherwise demonstrated.

*Shared Information and Data*

SAFE, as a public advocacy organization that is dependent on publicly available data, believes it is imperative that data reporting requirements balance the public good of data availability with the private-sector interest in minimizing the loss of confidential business information. We support the collection of data in which there is a compelling and immediate regulatory interest; however, we also believe that data to support long-term research into the more efficient use of ADS-equipped CMVs are best acquired through other means (including, but not limited to, cooperative research agreements). Specifically, we believe that imposing data reporting requirements on technology developers without a clear application for an immediate regulatory action is counterproductive.

## IV. Conclusion

SAFE looks forward to working with the FMCSA throughout the regulatory process on all matters related to ADS-equipped CMVs, and would welcome the opportunity to offer perspectives or further information related to AVs or our comments on this proposed regulation.

Thank you for considering SAFE's comments. Any questions related to these comments may be directed to Jeff Gerlach at (651) 210-5035 or jgerlach@secureenergy.org.

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