Please see the attached comments for the record to the following docket:
FMCSA-2018-0037

Thomas Doyle
(202)624-8972
International Brotherhood of Teamsters

International Brotherhood of Teamsters

Comments

To

Federal Motor Carrier Safety Administration - Advanced Notice of Proposed Rulemaking - Safe Integration of Automated Driving Systems-Equipped Commercial Motor Vehicles - FMCSA-2018-0037

The International Brotherhood of Teamsters ("IBT") is a labor union representing 1.4 million members in the United States, Canada, and Puerto Rico. The IBT represents over 600,000 members who drive for a living, as well as tens of thousands of individuals who perform vehicle support functions, working in maintenance, logistics, intermodal operations, as on-board monitors, and more.

The eventual integration of automated commercial motor vehicles onto U.S. roads is a core issue for our members. In reviewing this ANRPM, we believe that the Federal Motor Carrier Safety Administration ("FMCSA") is correct in taking the position that many of the current Federal Motor Carrier Safety Regulations ("FMCSRs") should remain unchanged. As will become clear in our answers to the Agency's individual questions, we urge FMCSA to remain firm in this position.

However, we also believe that a recalibration of a core part of the Agency's approach is necessary. As a matter of safety for all road users, we believe that an Automated Driving System ("ADS") or a highly autonomous vehicle ("HAV") should be proven safe before any significant changes to the existing FMCSRs are given serious consideration. Certain steps that the Department of Transportation ("DOT" or "Department") has already taken, such as announcing that it will interpret the definitions of "driver" and "operator" to include an automated driving system, or that FMCSA will interpret its

regulations as no longer assuming that a human is actually onboard a commercial motor vehicle ("CMV") during its operation, are entirely premature.[1]

To put it simply, these vehicles are not yet deserving of these sorts of accommodations. Despite limited public demonstrations in highly controlled environments, and the release of a few glossy safety reports, most developers have shared no concrete information demonstrating why changes to our existing regulatory structure are warranted.

As the Department noted in their AV 3.0 guidance, there is already a system in place to deal with an HAV that cannot comply with the existing FMCSRs. Developers can request exemptions from the current regulations as any other motor carrier would. In doing so, they must make their requests in a public forum and demonstrate that their HAV would achieve an equivalent level of safety to any other vehicle on the road. We believe this is an important process, and that the spirit of this standard; which puts the burden of proof on a petitioner to show their requested rule change would not degrade road safety, should also guide the Agency's future decision-making on this matter. Any consideration of wholesale regulatory changes should begin with public testing and validation of these vehicles to ensure that HAVs can meet the same level of safety as vehicles that abide by the current FMCSRs. The Agency should set up concrete steps to validate HAV safety, and until the safety of such a vehicle has been proven, any regulatory changes based on the premise that HAVs are as safe as human-driven CMVs is premature and unwarranted. Any serious consideration of regulatory changes to, for example; allow a driver to be off-duty while a HAV drives itself down the road, is wrong.

This is not to say that we do not appreciate the Agency engaging in a thoughtful discussion of potential regulatory changes around HAVs that could be considered in the years and decades to come. Changes to training requirements, inspection regimes, and driver medical qualifications are important topics to begin considering. These issues will take time to be thoroughly vetted in order to allow the best policies to rise to the top. We believe the Agency is right to discuss changes that may be needed for a future where HAVs have a proven track record and can pass a rigorous safety framework that serves the best interests of safety and American workers. But that future is not now. HAVs must prove themselves as deserving of any regulatory relief, and until they do, existing rules, including requirements that human beings have a role in these systems, should remain intact. During that time, HAV operations should abide by nearly all existing FMCSRs.

As you will find below, we have answered many of the Agency's specific questions posed in this ANPRM. The absence of a response means we either do not have direct feedback to that question or believe other stakeholders can provide more valuable insight.

---

[1] Department of Transportation; Preparing for the Future of Transportation: Automated Vehicles 3.0

Section 1: Do the FMCSRs Require a Human Driver?

The Agency begins its line of questioning by generally asking whether commenters believe the FMCSCRs require a human driver. While not a formal question, we believe this deserves a response. We think it's impossible to comply with a number of the Agency's regulations if a human driver is not present in the vehicle. For example, §392.7(a) requires a driver to be "satisfied" that the vehicle's parts and accessories are in good working order in order for a vehicle to be legally operated on public roads. We don't understand how an ADS could make a subjective determination and be "satisfied" or "dissatisfied" with the condition of a vehicle's components. At best, it could monitor a component's condition, and notify a human of potential performance discrepancies, and then allow a human driver to determine whether that component is actually in good working order. This is how many current advanced vehicle features work. Tire pressure monitoring systems do not actually make a final decision as to whether the tire is properly inflated. They simply notify the human operator of a potential issue, and then rely on a human operator to determine whether that tire is satisfactorily inflated and fit for operation under the FMCSRs. Relying on an ADS to make a decision whether vehicle component functionality is "satisfactory" would not only be incompatible with the regulations, we believe it could be dangerous. Such systems are vulnerable to malfunctions and may not be designed to account for the reality of on-the-ground conditions that only a driver could determine, such as vibrations felt through the steering column, noises coming from under the vehicle, etc.

An ADS without a human operator could also not meet §392.9, which states that a driver must "confirm" that the vehicle's equipment and cargo are secured. Even if an ADS has remote load monitoring technology to determine whether the straps themselves were engaged (similar to seatbelt monitoring technology) we do not know how that system could determine whether the load itself was secure. Any driver who has tugged on the straps holding down cargo only to see a strap slip off the load knows that it takes more than confirmation that straps were locked in to know that that load is actually secured.

For these reasons and more, we strongly disagree with the notion that anyone but a human driver in the cab of a CMV can be considered a driver or operator under the current FMCSRs.

Specific Questions

1.1 Should FMCSA establish a rule that would prohibit an ADS-equipped CMV from operating outside its designated ODD?

Answer: Yes. Both FMCSA and the states already limit how and where human drivers can operate (by regulating allowable operating time through the hours of service regulations and eligibility for interstate vs intrastate work based on the age of a driver). Both the Agency and the states also geographically limit where certain types of vehicles can operate and what types of cargo they may haul (by generally restricting vehicle size and weight, and limiting the routes on which hazardous and security sensitive cargo may be transported). Therefore, we do not believe it is unreasonable to demand that an automated CMV be afforded at least the same level of scrutiny that is already being extended to vehicles already on our roads. A future HAV operational framework created by FMCSA could include room for an ODD to be changed if an OEM can prove that a HAV is capable of safely handling new environments. But a HAV should be limited to operating within its approved design domain at all times.

1.2 Should FMCSA consider amending or augmenting the definition of "driver" and/or "operator" provided in 49 CFR 390.5 or define a term such as "ADS driver" to reduce potential for misinterpretation of the requirements?

Answer: As detailed later on in our comments, we believe a driver or operator of an ADS will require additional training and regulation by the Agency. We also believe that no existing rules should be changed to allow an ADS to become fully responsible for the dynamic driving task without direct human oversight at this time. If the creation of an "ADS driver" classification would further remove a driver from direct oversight, including via passive or remote monitoring, we would be opposed to the creation of such a classification.

2.1 Should a CDL endorsement be required of individuals operating an ADS-equipped CMV?

Answer: Yes.

2.2 If so, what should be covered in the knowledge and/or skills test associated with an ADS endorsement?
2.4 Should a driver be required to have specialized training for ADS-equipped CMS?

Answer: Training for an ADS-equipped CMV should include in-depth lessons by qualified instructors who are able to answer questions in a real-time classroom setting. Curriculum should cover basic operational control of the vehicle as well as in-depth education on HAV hardware

and software. It should include behind the wheel training on the actual equipment an operator will be utilizing.

2.5 In an operational model that has an individual remotely monitoring multiple CMVs, should the Agency impose limitations on the number of vehicles a remote driver monitors?

Answer: Yes, a remote monitor should be limited to monitoring one vehicle at a time. Neither the Agency nor our Union knows what specific operational requirements this remote monitoring job will entail, much less how fatigue and attentiveness will be impacted by this work. While we believe that remote monitoring could provide an interesting job opportunity in the future, we do not believe that it should be considered a replacement for having a driver in the cab at this time. Any test operations should be limited to one monitor per vehicle.

Section 2: Commercial Driver's License (CDL) Endorsements

2.6 Should a dedicated or stand-by remote operator be subject to existing driver qualifications?

Answer: Yes. We believe that anyone responsible for operating or monitoring a CMV should have a basic knowledge of that CMV's capabilities. Until a HAV is proven to need a lower level of human interaction than traditional vehicles without having a negative impact on safety, no waivers from medical qualifications for HAV operators should be granted.

Section 3: Drivers' Hours of Service (HOS) Rules

3.1 Should HOS rule changes be considered if ADS technology performs all the driving tasks while a human is off-duty or in the sleeper berth, or physically remote from the CMV?

Answer: No. We do not believe any such changes should be considered.

3.2 Should the HOS requirements apply to both onboard and remote operators?

Answer: Until more is known about the specific challenges posed by remote operations and specific rules can be determined for that position, the hours of service requirements should apply to remote

operators. However, we also believe that a driver should continue to be required in the vehicle for the time being.

3.3 If so, how should HOS be recorded when an individual is not physically in control of the vehicle?

Answer: We defer to technology developers on the exact implementation, but we would expect there to be an easy way to interface an ELD-type feature into HAV software. Presumably each operator could have a "driver-specific" login before the vehicle starts which would allow for the tracking of how long that driver was active and "driving" the HAV.

Section 4: Medical Qualifications for Human Operators

4.1 Should some of the physical qualification rules be eliminated or made less stringent for a human remotely monitoring or potentially controlling ADS-equipped CMVs?

Answer: No, we believe such changes would be premature.

Section 5: Distracted Driving and Monitoring

5.1 How should the prohibition against distracted driving apply to onboard operators responsible for taking control of the CMV under certain situations, and to remote operators with similar responsibilities?

Answer: We believe that a driver should only be allowed to use electronic devices that are connected to the direct operation or monitoring of that vehicle. No technology should be allowed to be introduced into the vehicle if it would contribute to driver distraction.

Section 6: Safe Driving

6.1 Should FMCSA consider revising its rules to ensure that (1) any human exercising control of an ADS-equipped vehicle must continue to comply with all the rules under Part 392, and (2) a CMV under the control of a Level 4 or Level 5 ADS must satisfy the operational rules?

Answer: FMCSA should not consider revising its rules under Part 392 for an ADS-equipped vehicle. We believe that a human operator and/or

monitor should be required for the foreseeable future, and that all regulations in part 392 should apply.

6.2 For example, should FMCSA require that the ADS be capable of identifying highway-rail grade grossing and stopping the CMV prior to crossing railroad tracks to avoid collisions with trains, or going onto a highway-rail grade crossing without having sufficient space to travel completely through the crossing without stopping?

Answer: Yes. Many of the operating rules being referenced in this question and question 6.1 are centered on the safety of other road users. Their importance does not change regardless of whether a human driver is operating the vehicle or an ADS. For example, §392.22 requires a driver to activate the hazard warning signal flashers when their vehicle is stopped on the shoulder of a highway. That action is focused on alerting other road users to an unsafe situation, and should not be changed whether the vehicle is a HAV or not.

In the case of the highway-rail grade crossings specifically, unless a vehicle's ODD would ensure that it was never out on the open roads and would never interact with a rail crossing, we strongly believe a vehicle must be capable of completing this action.

6.3 For scenarios in which the control of the ADS-equipped CMV alternates, or may alternate, between a human and the technology, should FMCSA require that both the human operator and ADS comply with the applicable operational rules?

Answer: Yes, whoever is responsible for controlling the dynamic driving task at the time must be able to comply with all basic operational rules of a CMV.

Section 7: Inspection, Repair and Maintenance

7.1 – What qualifications should be required of the individual performing the pre-trip inspection?

Answer: The individual should be able to satisfy the existing pre-trip inspection requirements and ensure the mechanical components of the vehicle satisfy existing FMVSS regulations. The driver performing the pre-trip inspection should have a baseline understanding of all ADS components which control the dynamic driving task. The driver should be able to identify, review, and resolve, any issues which could prevent safe operation of the HAV.

7.3 Should the inspection period be more frequent than annual for an ADS-equipped CMV?

Answer: Yes. We believe a more thorough inspection regime will be needed for any safety critical component of HAVs. Inspections should also be developed to include diagnostic reviews on the ADS software that is controlling any safety sensitive functions of the vehicle.

Section 8: Roadside Inspections

8.1 Should motor carriers be required to notify FMCSA that they are operating level 4 or 5 ADS-equipped CMVs?

Answer: Yes.

8.3 Should FMCSA require markings identifying the ADS level of a vehicle?

Answer: Yes. Other workers operating around the vehicle (performing loading or unloading duties, washing, refueling, etc.) need to know the capabilities and limitations of that vehicle.

8.4 Should the Agency require motor carriers to utilize ADS-equipped CMVs that have a malfunction indicator?

Answer: Yes, there should be a clear and detectable way for operators, law enforcement, and inspection personnel to determine that the vehicle is, or may be, malfunctioning.

8.5 Should the Agency require that motor carriers deploying ADS-equipped CMVs ensure the vehicle can pull over in response to Federal and State officials or move out of the way of first-responders?

Answer: Yes, operation in nearly any ODD would include possible interaction with law enforcement or other emergency personnel. This should be a mandatory driving task that the vehicle is capable of executing.

Section 9: Cybersecurity

9.1 What types of safety and cargo security risks may be introduced with the integration of ADS-equipped CMVs?

Answer: While we believe this is an incredibly important topic, we defer to other stakeholders about how the Agency can ensure that motor carriers are effectively addressing cybersecurity.

Section 10: Confidentiality of Shared Information

10.1 As the development of ADS technology continues, the Agency believes there is a need to learn about the performance limitations of these systems. FMCSA draws a distinction between information on performance limitations (e.g., how well does the ADS keep the vehicle in its lane and under what environmental conditions, etc.) and details about the system design (e.g. the specific types of sensors, or the arrays of sensors and cameras used for input to the central processing unit for the ADS). To what extend do ADS developers believe performance data should be considered proprietary and withheld from the public?

Answer: FMCSA should establish a framework for OEMs to submit performance data through a publicly available database just as carrier safety reports have typically been available via the Compliance, Safety and Accountability information portal. This data should also be standardized so that comparisons of technology and functionality between different OEMs can be easily made. All applicable and relevant testing data relative to exemption petitions should be documented and made publicly available.

Additional questions:

The Agency notes that "FMCSA requests comments on whether there are CMV types/configurations or cargoes for which fully automated operations should be restricted or prohibited (e.eg hazardous materials, motor coaches, multi-trailer or longer combination vehicles (LCVs) etc. If commenters believe the Agency should consider restrictions please explain why.

Answer: We believe any commercial AV operations should be limited to traditional tractor-trailer configurations. Transporting of any sort of cargo that requires an endorsement on your CDL, (hazmat, school bus operations, etc.) or that require additional driver monitoring rules (i.e. flatbed operations) should be prohibited from HAV use.

Respectfully submitted,

Sam Loesche

International Brotherhood of Teamsters