



California State Transportation Agency
Comments on NHTSA Notice of Proposed Rulemaking:
Occupant Protection for Automated Driving Systems
Docket No. NHTSA-2020-0014
May 29, 2020

The California State Transportation Agency (CalSTA), in coordination with its departments including the California Highway Patrol (CHP) and the California Department of Motor Vehicles (DMV), thanks the National Highway Traffic Safety Administration (NHTSA) for releasing the Occupant Protection for Automated Driving Systems Notice of Proposed Rulemaking (NPRM) and submits the comments below in response.

We understand this is the first in a series of NHTSA regulatory actions to modernize Federal Motor Vehicle Safety Standards (FMVSS) to reflect the development of Automated Driving System equipped (ADS-equipped vehicles) that may lack traditional manual controls or have unconventional designs. CalSTA and its departments look forward to working cooperatively throughout this process.

The development of automated driving systems (ADS) and associated technologies have the potential to enhance traffic safety and fundamentally change transportation systems. In 2014, the State of California put regulations in place to allow for the testing of autonomous vehicles (AVs) with a driver. The DMV has since promulgated regulations to allow for testing and deployment of AVs on public roads, with and without drivers, including light-duty delivery vehicles. These regulations recognize NHTSA's traditional role in regulating the safety of motor vehicles and require permitted AVs to comply with existing FMVSS or to receive an exemption from the NHTSA. There are currently 66 AV companies actively testing ADS technology, with over 880 vehicles and 3,100 safety drivers throughout the State of California.

California stands ready to work with the NHTSA to update FMVSS while maintaining traditional federal and state roles related to vehicle safety and the safe operation of vehicles, as well as navigating the complexities of this developing technology.

Thank you again for the opportunity to share initial thoughts.

FMVSS No. 208; Occupant Crash Protection

1. Application to Vehicles Without Designated Seating Positions.

S3. Application – California concurs that the assessment does apply to trucks which do not have designated seating positions (DSPs) and that this does create a barrier to certification because the requirements of FMVSS No. 208 are linked to the existence of specified DSPs. Accordingly, the proposed amendment to apply FMVSS No. 208, S3. Application, only to trucks with DSPs is supported. The Federal Motor Vehicle Safety Standard No. 208 provides a safety aspect for vehicle occupants; this safety need does not exist if the vehicle is designed to carry property exclusively.

2. Textual Modifications Addressing That There May Be No Driver's Seat and Multiple Outboard Passenger Seats.

It is important that the change in nomenclature relative to the terms "passenger seat" or "driver's seat" do not degrade occupant safety. However, before making any change, research should be conducted to determine if there is an unintended degradation in occupant safety for a person seated in the traditional "driver's seat" if the test procedures are changed to mirror those currently conducted on the right front outboard passenger seat.

3. The Treatment of Outboard Versus Center Seating Positions in the Front Row of Light Vehicles.

S19.2.1 – With a change in traditional seating likely to occur with ADS-equipped vehicles, safety enhancements, where practical and effective, should be thoroughly evaluated. Under current standards, the inboard seats in the front row of "light vehicles" do not require air bags or lap/shoulder seat belt protection. In theory, while requiring these enhancements in ADS-equipped vehicles is a good idea, further testing is recommended to ensure there is not an unintended compromise to occupant safety if implemented.

4. Treatment of Advanced Air Bags.

S19.2.1 – Additionally, NHTSA requests comment on whether it is necessary to apply passenger (child and adult) advanced air bag requirements to both front outboard seats in an ADS-equipped vehicle without manual controls because both seats would be available to child occupants. The CHP recommends the same standards for both front outboard seats due to the

possibility that a child could be seated in the traditional “driver’s seat” if there are no manual controls in the vehicle.

5. Advanced Air Bag Suppression Telltale for Passenger Air Bags.

S19.2.2 – California supports the amendment to change the nomenclature from “passenger air bag system” to “front outboard passenger air bag system” in consideration that ADS-equipped vehicles may have more than one passenger seat with an advanced air bag system. California also supports a requirement for a unique telltale to maintain the current level of safety provided by the standard.

6. Treatment of ADS Vehicles with Driving Controls When Children Are in the Driver’s Seat.

Proposed S19.5 and S19.5.1 – We share the concerns of NHTSA regarding the likelihood of a 12-month-old child occupying the traditional “driver’s seat” in an ADS-equipped vehicle with manual controls. The child would not be afforded the protections of advanced air bags. California supports any actions that would prevent this unsafe condition from occurring, including disallowing the vehicle to move if occupied by a child.

7. Driver’s Seat Used as a Spatial Reference.

S4.4.3.2.1 and S16.3.3.1.4 –Section 27316 of the California Vehicle Code has required seat belts at all passenger seating positions for school buses operating in California since 2004 for smaller buses and 2005 for larger buses. Additionally, the section requires all school buses be equipped with seat belts at all passenger seating positions by 2035. NHTSA has released guidance that seat belts provide a high level of motor vehicle occupant protection and has required seat belts on smaller school buses since 2011 and on motor coaches since 2016. As a result, there is sufficient testing and data to prove seat belts are more effective than compartmentalization for occupant crash protection.

Type 2 seat belts should be required at all passenger seating positions on any bus, but at a minimum concurs with the proposal “...that all front passenger seats meet the protection requirements that must currently be met by the driver’s seat in order to maintain the safety need inherent within the current requirement for a seat belt.” None of the other three options proposed (seat belts at specified forward seating positions or a barrier) provide a level of safety equal to seat belts on the entire front row.

iii. Left Versus Right Vehicle Side – The direct translation, from “driver’s side” and “passenger’s side” to “left vehicle side” and “right vehicle side,” respectively, as proposed, does not result in any loss in meaning.

8. Minor Editorial Revisions.

The editorial revisions changing the term “steering wheel” to “steering control” are well-reasoned, as they remove ambiguity for noncircular steering controls, such as the mentioned airplane yoke control. It is unknown what appearance steering controls may have in ADS-equipped vehicles and removing the term “wheel” will remove an unnecessary barrier to development.

FMVSS No. 201; Occupant Protection in Interior Impacts

The proposed change in the application of FMVSS No. 208, by carving an exemption for trucks that do not have at least one DSP for occupants (designed to be occupant-less), is well-reasoned. The intended reason for the requirements of FMVSS No. 201 is for the protection of vehicle occupants. This need does not exist in a vehicle that carries only property. Regarding the changes in nomenclature, the rationale is consistent with the proposed changes to FMVSS No. 208, §10.2.2 previously mentioned. Regarding changes to terms, such as “A-pillar,” it is important a comprehensive analysis be performed to ensure there is no unintended degradation to safety standards by changing the terms.

FMVSS No. 203; Impact Protection for the Drivers from the Steering Control System, and FMVSS No. 204; Steering Control Rearward Displacement

This proposed change to the application of the respective safety standards is consistent with the NPRM statement of reason regarding the removal of unnecessary barriers to developing ADS-equipped vehicles. By clarifying these standards don’t apply to vehicles without steering controls, it will remove the requirement for a manufacturer to petition for an exemption from a standard that has or does not have applicability to an ADS-equipped vehicle designed without steering controls. The rationale that occupant safety standards will be effectively addressed by the requirements of FMVSS No. 201 appears to sufficiently address the safety issue, but we caution further evaluation may be needed to ensure there is no unanticipated degradation to occupant safety with this change.

FMVSS No. 205; Glazing Materials

Pursuant to the underlying Society of Automotive Engineers Standard SAE J673-Automotive Safety Glasses, glazing materials are intended for the safety of vehicle occupants. This proposed modification would exclude the standard from applying to a truck without DSPs. However, there may be an unrealized degradation to the safety of vulnerable road users, such as pedestrians and bicyclists, who are involved in a crash with one of these trucks if the glazing materials standard was not required. If the glazing materials standard is removed, a standard providing a commensurate level of safety for vulnerable road users should be implemented.

FMVSS No. 206; Door Locks and Door Retention Components

This specific standard relates to occupant safety. California concurs with the proposed modification to the Application Section to clarify the standard would apply to trucks having at least one DSP. The nomenclature modifications, such as the change from “driver’s side” to “left side,” are well-reasoned.

FMVSS No. 207; Seating Systems

The proposal to modify the Application Section so it applies to trucks having at least one DSP is well-reasoned. If an ADS-equipped vehicle is designed to be occupant-less, there is no need for seating systems. Modifying the requirement that a vehicle be equipped with a driver’s seat by limiting its applicability to vehicles with manual controls is also sound. By extension, the addition to FMVSS No. 207, S4.1, clarifying that an ADS-equipped vehicle without traditional driving controls does not need a driver’s seat, while affirming that an ADS-equipped vehicle with driving controls requires a driver’s seat, is consistent with safety considerations.

FMVSS No. 214; Side Impact Protection

The scope of this standard is specific to occupant safety and therefore has no applicability for trucks that are designed without DSPs. Aligning with the premise this is an unreasonable barrier to ADS development, amending the application of FMVSS No. 214 to apply only to trucks with DSPs is appropriate. The nomenclature modifications, such as the change from “driver’s side” to “left side,” are well-reasoned.

FMVSS No. 216a; Roof Crush Resistance

The proposed modification to the Application Section so the standard would apply to trucks only if they have at least one DSP is well-reasoned. This is consistent with the premise of removing unreasonable barriers to ADS development. The change in nomenclature to use “left” and “right” side are well-reasoned.

FMVSS No. 225; Child Restraint Anchorage Systems

This proposed change may result in practical design and configuration changes to shuttle buses. Further research into how these changes will impact occupant safety on shuttle buses, if at all, is needed and suggests that it may be premature to address at this time.

FMVSS No. 226; Ejection Mitigation

This standard is specific to occupant safety. California concurs with the proposed modification to the Application Section to clarify the standard would apply to trucks only if they have at least one DSP. The proposed nomenclature change to the definition of “modified roof,” substituting the term “occupant compartment” for “driver’s compartment” will affect all vehicles, not just ADS-equipped vehicles. However, this nomenclature change will likely increase occupant safety as it expands applicability within the definition.