



Owner-Operator Independent Drivers Association

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September 5, 2023

The Honorable Robin Hutcheson
Administrator
Federal Motor Carrier Safety Administration
1200 New Jersey Avenue, SE
Washington, D.C. 20590

The Honorable Ann Carlson
Acting Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Re: Heavy Vehicle Automatic Emergency Braking; AEB Test Devices [Docket No. NHTSA-2023-0023; Docket No. FMCSA-2022-0171]

Dear Administrator Hutcheson and Acting Administrator Carlson:

The Owner-Operator Independent Drivers Association (OOIDA) is the largest trade association representing the views of small-business truckers and professional truck drivers. OOIDA has more than 150,000 members located in all fifty states that collectively own and operate more than 240,000 individual heavy-duty trucks. OOIDA's mission is to promote and protect the interests of its members on any issues that might impact their economic well-being, working conditions, and the safe operation of commercial motor vehicles (CMVs) on our nation's highways.

The Notice of Proposed Rulemaking (NPRM) defines "motor vehicle safety standard" as a *minimum performance standard* for motor vehicle equipment. When prescribing such standards, the Secretary *must* consider: (1) *all relevant* safety information; (2) *available* safety information; (3) whether a proposed standard is reasonable, practicable, appropriate for the types of motor vehicles involved, appropriate for the equipment for which it is prescribed; and will further the statutory purpose of reducing accidents and associated deaths. The NPRM fails to address these considerations. As proposed, the agencies' attempt to implement Section 23010 of the Bipartisan Infrastructure Law (BIL) does not adequately ensure automatic emergency braking (AEB) systems will meet necessary safety standards before the technology requirement becomes effective. The NPRM mandates AEB systems without sufficiently addressing false activations, properly consulting with professional truck drivers, or completing ongoing research programs.

Frankly, the NPRM tries to hastily meet the congressional deadlines imposed within the BIL at the expense of satisfying the requirements for driver consultation and safety. As drivers have often seen, given a choice between listening to truckers and mandating alleged safety technology, the National Highway Traffic Safety Administration (NHTSA) and the Federal Motor Carrier Safety Administration (FMCSA) seem poised to ignore the operational experience and concerns of those who make their living behind the wheel. Instead, DOT should listen to truckers and take all the time necessary to address the shortcomings of these systems. Truckers are not opposed to a technology that will help improve their safety and the safety of other motorists. But until the agencies can offer assurances this rulemaking can meet its desired safety objectives, they should not set forth any mandate.

While there are many operational concerns about AEB systems, truckers are especially worried about the potential for false activations. As you can imagine, drivers are alarmed the 80,000-pound truck they are driving could unexpectedly brake to a complete stop for no reason. The following quotes are a small sample of the feedback our association has received about AEB performance and the NPRM. This is only a representation of a much larger population that should have been sought out prior to the NPRM:

- *“AEB is taking the ability of the driver’s control out of situations.”*
- *“I have lots of experience with AEB and am deathly afraid for all of us, if this is implemented.”*
- *“AEB almost killed me. And I know others. Taking an off ramp with concrete barriers locks up the brakes making you jackknife. Going under an overpass on cruise control and suddenly the brakes lockup. If the system worked it would probably be ok.”*
- *“A computer decided that my eyeballs and situational awareness of the curve didn’t matter, only that metal was ahead and if it didn’t slam on the brakes I would hit it. It sent me into a jackknife, and I was barely able to recover the skid before going off the road because the computer assumed I would go straight instead of with the curve. If others were next to me, I would’ve hit them. It would have been a multivehicle accident caused entirely by a computer.”*

The NPRM contains four irresponsible flaws: (1) failure to address false activations; (2) inadequate consultation with professional truck drivers; (3) precedes necessary completion of ongoing research; and (4) cloaks deficient testing processes with minimum performance expectations. These shortcomings negligently pose highway safety risks to the motoring public and to professional drivers alike.

False Activations

The NPRM fails to substantively outline testing protocols and performance standards that will ease drivers’ worries about false activation alerts. We fear that the steel plate trench test and the pass through test as currently designed will not ensure safe performance as intended. These tests do not properly solve false activation problems.

For instance, the agencies admit, “The proposed requirements also include *two* tests to ensure that the AEB system does not inappropriately activate when no collision is actually imminent. These false positive tests provide *some* assurance that an AEB system is capable of differentiating between an actual imminent collision and a non-threat. While these tests are *not comprehensive*, they establish a *minimum* performance for non-activation of AEB systems.”¹ Given AEB performance history, we think professional drivers deserve more than just “some assurance” that the equipment can undoubtedly distinguish between perilous crash risks and harmless highway infrastructure.

The NPRM seeks to effectively replace professional drivers possessing years of experience and millions of accident-free safe driving records with equipment admittedly lacking thorough testing. It is inconceivable the government would require professional drivers to acquiesce control of CMVs to a technology the agencies openly admit may or may not be able to accurately detect legitimate threats. As such, any AEB tests should exceed “*minimum* performance for non-activation of AEB systems.”

The NPRM goes on to state, “The proposed false activation tests establish only a baseline for system functionality. For practical reasons they are *not comprehensive, nor sufficient* to eliminate susceptibility to false activations in the myriad of circumstances in the real world. However, the proposed tests are a practicable means to establish a *minimum threshold of performance*.”² Imagine for a moment if every American was told that their car must be equipped with, and use at all times, a technology that the government admitted they could not quantify possible negative safety effects, or that the standards for the public, “are not comprehensive, nor sufficient to eliminate susceptibility to false activations [i.e., safety risks].” In other words, NHTSA and FMCSA seem comfortable advancing a rulemaking while also admitting it will fail to assess or address the safety risks to the regulated community. As representatives of the men and women who are dangerously being forced to use this technology, we find this reckless.

Further, the steel plate trench test for false activations should be conducted at multiple speeds and fails to replicate interstate highway settings. The proposal includes only a test at a single speed of 80 km/h, or 49.7 mi/h. This is far below the average speed limits on interstates throughout the country. Failing to design a test that includes higher speeds will not help prevent false activations.

We urge NHTSA to adopt more safeguards before any AEB mandate is implemented. Any final rule must incorporate additional layers of performance testing to mitigate false activation alerts. NHTSA should require further documentation from manufacturers demonstrating that process standards were followed specific to the consideration of false application of automatic braking. The NPRM points out that these methods have been developed in other safety-sensitive industries such as aviation and health care.

We also recommend that the agencies employ targeted data recording and storage for significant AEB activations, which could even be helpful for trucks currently equipped with AEB

¹ Heavy Vehicle Automatic Emergency Braking; AEB Test Devices Notice of Proposed Rulemaking, 88 FR 43174 (July 6, 2023) (to be codified at 49 CFR Parts 571/596 and 49 CFR Parts 393 and 396), pg. 43179.

² Ibid, pg. 43217.

technology. This information can assist manufacturers and the agencies in determining the causes of repeated false activations. We feel this data should accompany necessary improvements to the proposed testing and development processes rather than replace them as an alternative. Certainly, this would help strengthen the proposed “minimum threshold of performance.”

The BIL requires the agencies to review AEB systems and, “address any identified deficiencies with respect to those automatic emergency braking systems in the rulemaking proceeding to prescribe the standard, if practicable.” We cannot fathom how federal regulators whose primary objective is to promote safety could move forward with mandating a safety technology at a time when this same technology is already under investigation for safety defects. In May 2023, NHTSA launched an investigation (PE-23-010) into AEB-equipped trucks manufactured by Daimler Trucks North America. According to NHTSA documents, the AEB systems may inaccurately identify an object and command the vehicle to stop unexpectedly, resulting in a hazard to other motorists. At a minimum, any deficiencies found in the investigation must be addressed before moving forward with the AEB rulemaking. And if NHTSA determines that it is not practicable to address the findings of this safety investigation, it would be irresponsible to finalize any AEB mandate.

Inadequate Professional Driver Consultation

We understand that the agencies are subject to a congressional mandate to issue this regulation, but Section 23010(b)(2)(B) of the BIL requires DOT to “consult with representatives of commercial motor vehicle drivers regarding the experiences of drivers with automatic emergency braking systems.” Based on the NPRM that was published, it is clear that drivers with AEB experience should have been consulted before issuing the proposal. We believe the “insufficient and not comprehensive” standards would have been better informed through these discussions, and solely relying on the NPRM for driver consultation is evidence that DOT has not met its obligation under the applicable law. Before DOT publishes any final rulemaking, we encourage the agencies to conduct direct outreach with industry stakeholders, most importantly professional truck drivers and/or representatives of CMV drivers, to sufficiently consider real-world experiences with AEB. The consultation will provide NHTSA and FMCSA with invaluable information on top of the comments professional drivers have submitted to the docket.

Incomplete Research

The NPRM also claims that work through Tech-Celerate Now and other NHTSA research studies satisfies the requirement to consult with drivers. However, the timelines that NHTSA provided for its research suggest the studies will not be completed before the agencies move forward with the AEB rule, further calling into question the commitment to develop this regulation in a responsible and compliant manner. In reference to Tech-Celerate Now, the agencies mention that, “As of January 2023, FMCSA has compiled the findings from drivers and/or representatives of drivers in a final report that is currently undergoing internal review.”³ The NPRM further notes:

³ Ibid, pg. 43201.

“The current ongoing field study with VTTI aims to collect and analyze performance and operational data on newer generation AEB crash avoidance technologies on new, class 8 tractors by heavy vehicle original equipment manufacturers and their suppliers. One year of naturalistic driving data will be collected by monitoring the production systems used in real-world conditions as deployed by multiple fleets across the United States. In addition to the performance and operational data retrieved from on-board data acquisition systems for evaluation, the study will also involve conducting subjective surveys with drivers and fleet managers regarding performance, satisfaction, and overall acceptance of the crash avoidance technologies.”⁴

These studies will not be completed until sometime in 2024, if not later. In other words, DOT has published the NPRM without completing the review as required Section 23010(b)(2)(A) of the BIL. Again, we believe the proposal is incomplete pending the results and analysis from DOT’s ongoing AEB research and studies.

Improper Testing Conditions Fail Predictability

We are also concerned the NPRM’s testing settings do not simulate real-world road conditions. The proposed testing conditions specify that the road surface is “free of debris, irregularities, or undulations, such as loose pavement, large cracks, or dips. These could affect the vehicle's ability to brake properly or maintain its heading, and ultimately reduce the repeatability of a test.”⁵ We simply cannot understand the logic to prioritize testing repeatability over safety. As the NPRM acknowledges, debris, undulations, loose pavement, or other road conditions can and do affect braking systems. While it may be appropriate to include some tests free of irregularities, the final testing standards must also incorporate scenarios with these impediments. Any trucker can tell you that just about every highway they come across will have an irregularity or two, so it is critical that AEB systems operate exactly as intended when encountering varying road surfaces.

We also question NHTSA’s Preliminary Regulatory Impact Analysis (PRIA), as the agency effectively derived their proposed AEB effectiveness and test procedures from their various test track evaluations, which had significant limitations. In fact, NHTSA listed the following eight limitations in the PRIA:⁶

- *First, although the proposed performance tests represent a significant portion of rear-end crash scenarios, they are not comprehensive. This creates information gaps in evaluating effectiveness.*
- *Second, the field performance test settings do not reflect all the possible interactions between roadway, vehicle, and environment that were presented in the real-world crash conditions.*

⁴ Ibid.

⁵ Ibid, pg. 43216.

⁶ Preliminary Regulatory Impact Analysis, FMVSS No. 128 Heavy Vehicle Automatic Emergency Braking (AEB), June 2023, Docket No. NHTSA-2023-0023, pgs. 87-88.

- *Third, the number of repeated runs may also affect the quantification of AEB performance. Not every test protocol was conducted evenly; certain protocols had an extensive number of runs while others only had one run. Without a normalized number of runs for each test protocol, it is difficult to discern the effect of AEB and the variation introduced from chance.*
- *Fourth, due to resource constraints, e.g., the cost of heavy vehicles, the agency so far only has tested one vehicle model per class for vehicle Classes 6, 7, and 8 and none for vehicle classes lower than 6.*
- *Fifth, Class 6 and Class 7 test vehicles are 2016 and 2017 MY, respectively. These factors increase the variability of the derived effectiveness and may raise representative issues. Therefore, the test outcomes may not truly reflect the performance of the current state-of-the-art AEB technologies nor future compliant AEB systems given a two to three year technology lifecycle.*
- *Sixth, all four tested vehicles failed to comply with the proposed performance criteria and produced inconsistent AEB performance outcome among various runs. This demonstrates another aspect of uncertainty. We expect the AEB in future compliant vehicles would improve and thus greatly diminish the inconsistency in performance test outcome.*
- *Seventh, we do not have bus-specific AEB effectiveness and used AEB effectiveness instead for all buses including school and non-school buses. Although, crashes involved buses comprised in insignificant portion [sic] in the target population, this is also an area of uncertainty surrounding effectiveness.*
- *Finally, from the real-world crash databases, there are many crash cases with missing travel speeds. This has caused insufficient sample size when deriving crash weights during the effectiveness aggregation step. Furthermore, travel speeds were based on the police assessment and can be influenced by the speed limits posted on the roadways. This can result in less accurate frequency counts, thus contributing to the variability of crash weights[sic].*

NHTSA concluded that, “All these limitations increase the uncertainty of estimated effectiveness,” and yet the agencies have plowed forward with a rulemaking anyway.⁷ The PRIA also highlighted the fact that numerous crash types were excluded from the initial target population which was used to estimate the safety benefits associated with the proposed rule. NHTSA stated, “These specific cases are excluded because we are not certain if the current AEB is effective under these cases. The communications with original equipment manufacturer (OEM) and equipment suppliers also confirmed our concerns with these cases. Therefore, the agency decided to take a relatively conservative approach for target safety populations.”⁸ The crashes that fit the following criteria were excluded:

⁷ Ibid, pg. 88.

⁸ Ibid, pg. 94.

- The striking heavy vehicle (subject vehicle) made a lane change/merge maneuver before rear-ended into the vehicle in the front.
- The subject vehicle was negotiating a curve.
- The subject vehicle tried to avoid pedestrians, cyclists, animals, and objects on the roadway.
- The subject vehicle struck a motorcycle.
- The subject vehicle lost control due to vehicle mechanical problems on tires, braking systems, or transmission as contributing factors.
- The subject vehicle is a Class 3-8 based motorhome.
- The lead vehicle was passing or overtaking another vehicle.
- The lead vehicle was backing up.

Moreover, NHTSA stated that 62% of the target population included crashes where the truck driver attempted to mitigate the crash by braking or braking and steering. So how would AEB work in this situation? While NHTSA did recognize that some of the target population crashes might involve an AEB-equipped truck as the striking vehicle, they did not make any adjustments for the fact that many truckers attempted to mitigate the collision through braking or braking and steering. Therefore, we believe the PRIA overestimates the safety benefits as the target population is larger than it should be, same too with the effectiveness of AEBs.

We also question the agencies' costs estimates. Previous research conducted by VTTI in 2017 put the cost of an AEB system at \$2,500. VTTI concluded the study by stating, "These results provide insight into the feasibility of government regulation for large-truck automatic emergency braking systems. There was *not* a strong case for government regulation requiring automatic emergency braking systems for the entire U.S. fleet of large trucks given the cost/efficacy rates used in this study."⁹ However, the NPRM, which based its estimates from research that NHTSA conducted one year later in 2018, put the cost at \$396 per system. While VTTI's study found that it would cost \$1.1 billion to equip all new large trucks with AEB, the PRIA estimated the cost at \$353.3 million annually, which not only includes AEB, but electronic stability control (ESC) as well. As you can see, this is a significant decline in cost and obviously would skew the cost-benefit analysis.

NHTSA and FMCSA have jointly determined not to propose AEB retrofitting requirements for existing heavy vehicles and ESC for vehicles not currently subject to FMVSS No. 136. For technical reasons, AEB and ESC retrofits are difficult to apply broadly, generically, or inexpensively and thus this NPRM does not propose a retrofit requirement. We agree with this position and do not believe any retrofitting requirements should be inserted into any final rulemaking. A retrofit requirement would increase costs and confusion for industry stakeholders.

DOT must overhaul the NPRM in the interests of *all* motorists, and in particular the professional drivers who travel our highways. NHTSA and FMCSA must supplement the proposed testing procedures to include more reliable safeguards and reflect practical road conditions, add layers of reliable performance testing to mitigate false activation alerts, require further manufacturer

⁹ Virginia Tech Transportation Institute, *Leveraging Large-Truck Technology and Engineering to Realize Safety Gains: Automatic Emergency Braking Systems*, AAA Foundation for Traffic Safety (Sept 2017), pg. ix.

documentation demonstrating compliance with process standards, consult with professional drivers, and complete ongoing AEB research. If DOT fails to correct each of these shortcomings, the final AEB rule will jeopardize our members' safety and create needless highway safety risks.

Thank you,

A handwritten signature in black ink that reads "Todd Spencer". The signature is written in a cursive style with a prominent loop at the end of the last name.

Todd Spencer
President & CEO
Owner-Operator Independent Drivers Association, Inc.