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**Joint Comments from the Institute for Safer Trucking and Road Safe America on
Heavy Vehicle Automatic Emergency Braking; AEB Test Devices
Docket No. NHTSA-2023-0023/FMCSA-2022-0171**

The Institute for Safer Trucking (IST) and Road Safe America, two non-profit organizations committed to educating the public about sensible safety solutions, offering support to families impacted by crashes and fostering collaboration between truck safety stakeholders, submit the following comments in response to the Federal Motor Carrier Safety Administration (FMCSA) and the National Highway Traffic Safety Administration's (NHTSA) request for comments on the Notice of Proposed Rulemaking (NPRM) to adopt a new Federal Motor Vehicle Safety Standard (FMVSS) to require automatic emergency braking (AEB) systems on heavy vehicles, and to amend FMVSS No. 136 to require nearly all heavy vehicles to have an electronic stability control (ESC) system.

History and Development of AEB

AEB in large trucks was initially adapted from passenger vehicles. In the early 2000s, as trucking companies recognized the potential to prevent or mitigate severe crashes, research and development intensified. Over the years, AEB technology has evolved significantly, propelled by advances in sensor technology like radar, Lidar, and cameras. Many issues that existed in the first few iterations of this technology, such as false braking, have been largely remedied.

Leading trucking companies embraced AEB, integrating it into their fleets to reduce collisions. The results have been compelling, with substantial reductions in both the frequency and severity of crashes. Moreover, none of these major companies have reversed course in their decision to implement AEB and there are no records to indicate that any of these companies has ever been sued for equipping their trucks with this technology.

While we commend the proactive approach taken by companies that voluntarily use AEB, almost all of which have seen their crashes go down, the 47 percent increase in truck crash deaths in the U.S. over the last decade cannot be ignored. What this tells us is that the bad actors are getting worse at a faster rate than the safety-conscious companies are getting better. By requiring AEB

we can make sure that all trucking companies are reducing crashes, and not simply the ones that prioritize safety.

Truck Safety is Getting Worse and AEB Can Reverse that Trend

The state of truck safety in the United States is deeply concerning, with 2021 (the most recent data available) marking the highest number of truck crash deaths in 40 years. Additionally, truck occupant deaths skyrocketed to more than 1,000, also one of the highest numbers on record. These alarming trends underscore the urgent need for measures that can help mitigate the risks associated with heavy vehicles on our roads. AEB technology has been proven to be effective in preventing crashes and reducing the severity of collisions, making it a much-needed tool in improving road safety.

Revise Compliance Dates for Class 7&8 Trucks

We strongly urge the agency to revise the compliance dates for class 7 and 8 trucks from the proposed three years to a shorter period, preferably to one year. Many of these trucks are already being manufactured with AEB systems, and accelerating the implementation of this life-saving technology will expedite the reduction of truck crashes. A one-year compliance timeline aligns with the industry's readiness and ensures that class 7 & 8 trucks, which accounted for 77 percent of all large trucks in fatal crashes over the last decade, are addressed as quickly as possible.

The NPRM recognizes that electronic stability control is fundamental to AEB.

This NPRM recognizes that electronic stability control (ESC) is required for automatic emergency braking to function properly and safely. The Federal Motor Carrier Safety Administration noted in a 2020 report on AEB in large trucks that, “[electronic] stability control is mandated for heavy-duty trucks but not for medium-duty trucks. Most OEMs and AEB suppliers consider stability control a required technology for AEB, and currently do not sell AEB on medium-duty trucks unless stability control is installed.”^[1]

We appreciate that the Agency recognized the importance of ESC as an essential building block of AEB, and support the extension of the ESC requirement (FMVSS 136) to all large trucks. This will allow for the safe implementation of AEB on medium duty trucks, which are becoming a greater safety issue on road: Over the last ten years, the number of class 3-6 trucks that were involved in fatal crashes has increased 135 percent.

Ensure AEB Systems Detect Vulnerable Road Users

The agency should expand the scope of AEB requirements to require systems that also work to prevent collisions with vulnerable road users (pedestrians and bicyclists). Over the last ten years, 747 bicyclists and 4,098 pedestrians were killed in large truck crashes, which amounts to approximately 1 out of every 10 truck crash fatalities. Having an AEB system that captures vulnerable road users is essential as it addresses the broader ecosystem of road users and enhances safety not only for vehicle occupants but for vulnerable road users as well.

^[1] Kevin Grove, Matthew Camden, Andrew Krum, and Richard Hanowski. “Research and Testing to Accelerate Voluntary Adoption of Automatic Emergency Braking (AEB) on Commercial Vehicles.” Report No. FMCSA-RRT-18-013. Washington, D.C.: Federal Motor Carrier Safety Administration, 2020.

Studies and Actual Use Demonstrate Benefits of AEB in Large Trucks

Numerous studies have demonstrated the substantial benefits of AEB technology in reducing rear-end collisions and preventing crashes caused by preventable driving behaviors, including distraction, impairment, and fatigue.

Relevant Studies:

- *Teoh, E. R. (2021). Effectiveness of front crash prevention systems in reducing large truck real-world crash rates. Traffic Injury Prevention, 22(4), 284–289.*
<https://doi.org/10.1080/15389588.2021.1893700>
 - AEB reduces the rate of real-world police-reportable rear-end crashes per mile traveled for large trucks by 41 percent and helps drivers reduce speeds by over 50 percent in rear-end crashes that still happen. This study was limited to Class 8 trucks.
- *Kuehn, M., Hummel, T., & Bende, J. (2011). Advanced driver assistance systems for trucks - Benefit estimation from real-life accidents. 22nd International Technical Conference on the Enhanced Safety of Vehicles, Washington, DC.*
 - 52 percent of rear-end crashes could have been prevented or mitigated if the striking truck had AEB. This study examined real-world crashes.
- *Woodrooffe, J., Blower, D., Flannagan, C. A. C., Bogard, S., & Bao, S. (2013). Effectiveness of a current commercial vehicle forward collision avoidance and mitigation systems. SAE International.*
 - 22–24 percent of police-reportable front truck crashes would be prevented using AEB.
- *Belzowski, B., & Herter, J. (2015). Deploying safety technologies in commercial vehicles. University of Michigan Transportation Research Institute*
 - Companies that implemented front crash prevention technologies reported a 14 percent reduction in crash occurrence and a 15 percent reduction in the average cost of those crashes.

It is worth noting that the European Union recognized the importance of AEB systems for large trucks as early as 2013, and then strengthened those requirements in 2022. Considering this, alongside the fact that many leading trucking companies have been voluntarily employing AEB for years without reversing course, we urge the Agencies to discount anecdotal evidence that implies these systems would somehow diminish safety.

Conclusion

The implementation of AEB technology on large trucks is a crucial step toward improving road safety and reducing the devastating impact of truck crashes. We commend the Agencies for taking this important initiative and strongly urge the agency to consider the points outlined above in the final rule.

Thank you for your attention to this matter, and we look forward to a safer future on our nation's highways.