1575 S. Valley Vista Dr.
Diamond Bar, CA 91765-3914

909-610-2030

E-mail: sema@sema.org
Website: www.sema.org

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Raymond R. Posten
Associate Administrator for Rulemaking
National Highway Traffic Safety Administration
200 New Jersey Avenue, S.E.
Washington, D.C. 20590

RE: NHTSA's Federal Motor Vehicle Safety Standards: Automatic Emergency Braking Systems for Light Vehicles [Docket No. NHTSA-2023-0021]

The Specialty Equipment Market Association (SEMA) welcomes the opportunity to comment on the National Highway Traffic Safety Administration's (NHTSA) proposed Federal Motor Vehicle Safety Standards (FMVSS): Automatic Emergency Braking (AEB) Systems for Light Vehicles, 88 Fed. Reg. No.113 (June 13, 2023). Recognizing AEB systems' potential to help save lives and reduce injuries, most automakers voluntarily agreed in 2016 to begin installing this technology. While 95% of all model-year '23 light-duty cars and trucks have AEB, testing results demonstrate that the technology will have to improve significantly to meet the standards NHTSA has proposed in this rulemaking.

SEMA is a non-profit trade association that represents over 7,000 mostly small businesses around the country that manufacture, distribute, and retail specialty parts and accessories for motor vehicles. The specialty automotive aftermarket industry employs over 1 million Americans and produces performance, functional, restoration, and styling-enhancement products for passenger cars, trucks, SUVs, and special interest collector vehicles. SEMA member companies market products that enable automotive enthusiasts to personalize the style and upgrade the performance of their motor vehicles, including everything from classic cars to four-wheel drive vehicles to dedicated race cars.

Modifying and personalizing vehicles is a passion for over 8 million automotive enthusiasts in the United States. Consumers modify their vehicles to improve performance, reliability, and appearance by installing products that may interact with AEB and Pedestrian Automatic

Emergency Braking (PAEB) systems. SEMA is committed to ensuring that our member companies have the information and vehicle access that is necessary to manufacture and safely install parts and equipment that accessorizes and customizes vehicles with AEB and PAEB systems. Accordingly, it is imperative that OEM data from testing and system calibration is available and able to accommodate vehicle modifications to maintain compliance with the proposed AEB and PAEB safety standards and any FMVSS adopted in the future.

SEMA is concerned that NHTSA is overestimating vehicle manufacturers' ability to comply with the new proposed standard for AEB based on the two studies that NHTSA used as justification for this action. The results of those studies found that only one vehicle was able to pass every testing scenario, which allowed for the vehicle to still make contact and was at a lower speed. SEMA asks that NHTSA evaluates its phase-in timeline to ensure that vehicles can achieve the new testing requirements.

While SEMA recognizes this rulemaking's potential to reduce vehicle crashes, we believe it is imperative to vehicle safety that drivers can manually disengage AEB and PAEB. This option is particularly important when vehicles operate in four-wheel drive, low traction driving scenarios such as off-road or inclement weather, or when towing a trailer without an independent brake system.

SEMA's Commitment to Vehicle Safety

SEMA is proud of its capital investments and education programs to help our members and industry businesses produce, sell, and install parts and accessories that enable automotive enthusiasts to safely modify their vehicles. Underscoring this commitment, the association has invested over $25 million to construct SEMA Garages in California and Michigan that help our member companies remain in compliance with vehicle emissions standards and safety laws. The SEMA Garage in Plymouth, Michigan, includes a 5,000-plus-square-foot ADAS Technology Center and provides engineering support to members through calibration tools, scanning, and training sessions. The SEMA Garage collects critical ADAS information from vehicles to aid our members in manufacturing safe and compliant aftermarket parts since most OE manufacturers will not provide this information to the industry. The cost of ADAS testing one vehicle make, model, and trim with a single modification can range from $25,000 to over $100,000.

In 2022, SEMA invested over $240,000 to conduct a study on Aftermarket Modification of Advanced Driver Assistance Systems. The study utilized NHTSA's NCAP ADAS system confirmation and performance evaluation tests, which were conducted at the Transportation Research Center (TRC) in East Liberty, Ohio. The following ADAS functions were tested: Lane Departure Warning (LDW), Lane Keep Support (LKS), Crash Imminent Braking (CIB), Traffic Jam Assist (TJA), Blind Spot Detection (BSD), and Rear Cross Traffic Alert (RCTA). TRC tested a 2022 Chevy Silverado LTZ using four different configurations, including the stock configuration, a 2" lift kit with an increased tire size of 33 inches, a 3.5" lift kit with an increased tire size of 33

inches, and a 6" lift kit with an increased tire size of 35 inches. Each of these tests requires specialized equipment, facilities, and engineering resources to accurately quantify ADAS functionality and the impacts of vehicle modifications. This study and future testing will provide the aftermarket industry with valuable insights into how ADAS technology responds to modifications that millions of consumers have traditionally embraced.

SEMA's investment in equipment, resources, and ADAS testing will guide the aftermarket industry in ADAS testing both inside and outside its new Detroit SEMA Garage facility. We are committed to helping our members and the broader industry to manufacture and install aftermarket products that work harmoniously with ADAS technology. SEMA believes that NHTSA can play a critical role in encouraging OEMs to provide consumers, independent repair shops, collision repair businesses, and the aftermarket industry with guidance on ADAS systems to ensure the safety of motor vehicles with advanced technology.

Rulemaking Impact on Aftermarket Businesses

While the proposed rule applies to motor vehicle manufacturers and alterers of new passenger cars and light trucks, it does not specify how aftermarket vehicle modifications and alterations may impact AEB and PAEB systems. SEMA seeks clarity from NHTSA on implementing FMVSS for AEB and PAEB and the legal obligations of SEMA members who produce, install, or sell aftermarket parts that may impact how the AEB and PAEB systems perform. We ask for guidance on whether aftermarket part manufacturers, installers, retailers, distributors, and independent repair shops will be required to ensure that AEB and PAEB systems comply with the proposed standards after a vehicle has been repaired or modified. Specifically, will these businesses be required to comply with the "tampering/make inoperative" provision (49 U.S.C. 30112) for this rulemaking?

In order for AEB and PAEB systems to operate as designed by the vehicle manufacturer, SEMA believes that NHTSA should require OEMs to share data system specifications (including the vehicle dynamics boundary conditions within which AEB and PAEB systems shall operate), application requirements, and calibration requirements on all electronic ADAS equipment and calibration of AEB systems to ensure that consumers' vehicles can be safely repaired or modified after the initial point of sale. SEMA expressed similar concerns during the FMVSS No. 126 Electronic Stability Control. In response, NHTSA encouraged the aftermarket industry to work with OEMs to obtain that information. However, the manufacturers did not share this information with aftermarket businesses. SEMA requests that NHTSA facilitates the sharing of this information between vehicle manufacturers and the aftermarket through this rulemaking and in subsequent guidance.

This proposed rule seeks input on whether NHTSA should require manufacturers to inform vehicle operators about how the AEB system works. SEMA strongly believes this information should be shared with consumers along with access to critical diagnostic codes, calibration, and

repair information that considers aftermarket historical modifications. NHTSA should adopt a policy outlining the importance of information sharing and a requirement to do so.

If our collective goal is to ensure that motor vehicles reduce the number of injuries and fatalities, then it is imperative that NHTSA directs OEMs, the independent repair industry, and the specialty automotive aftermarket to work together to reduce vehicle-to-vehicle and vehicle-to-pedestrian accidents.

Testing Procedures

In 2020, NHTSA conducted lead vehicle AEB and PAEB performance tests on 12 vehicles from 10 manufacturers. SEMA is concerned that only two full-size trucks were included in the testing, given that trucks and SUVs make up more than 70 percent of vehicles sold today. Accordingly, NHTSA should perform AEB and PAEB testing on a comparable percentage of vehicles sold.

Current NCAP standards have only tested vehicles at speeds up to 45 mph, and the results bring into question whether this rulemaking is achievable under the proposed timeline for implementation. Three out of twelve vehicles demonstrated no contact at tests at 45 mph. The other eight out of 11 vehicles had an average contact at 23 mph when tested at 45 mph. Only one vehicle, the Toyota Corolla LE, avoided contact in all tests and at speeds up to 45 mph for 27 out of 27 tests without contact. It is noteworthy that the Corolla was the smallest vehicle that was tested.

SEMA does not believe that having only one out of twelve vehicles consistently avoid contact when tested at 45 mph will correlate to vehicle manufacturers being able to meet the proposed standard that requires vehicles not to make contact at 62 mph when the breaks are manually applied and at 50 mph when no manual braking is applied. NHTSA has tentatively concluded that a no-contact criterion for the performance test requirements is practicable, although the agency's own test data do not support this.

SEMA has concerns that AEB and PAEB technology is not reliable enough yet for it to be mandated under the timelines laid out in NHTSA's proposed rule. For example, one OEM recalled every 2019 and 2020 vehicle it produced due to faulty AEB software. Recalls like this raise legitimate questions, such as A) Is a no-contact standard for AEB and PAEB achievable just three years after the rulemaking is finalized, and B) Would a more incremental approach where OEMs are able to demonstrate progress in achieving no-contact at speeds over 45 mph be more effective in reducing both vehicle-to-vehicle and vehicle-to-pedestrian crashes? Accordingly, SEMA recommends that NHTSA phases-in this rulemaking over five years instead of three years while providing an additional year for small-volume manufacturers, final-stage manufacturers, and alterers to comply.

System Engagement Exemption

We commend NHTSA for soliciting comments on the manual deactivating of AEB and PAEB in the proposed rule and for the agency's previous decision to allow manual system disengagement for Electronic Stability Control (ESC) in FMVSS No. 126. SEMA supports the need to create performance standards for AEB and PAEB, although we ask that NHTSA allows for the manual deactivation of AEB and PAEB systems at speeds above 6.2 miles per hour.

Given that the purpose of this rulemaking is to save lives and reduce injuries, it is imperative that NHTSA considers the spectrum of circumstances, both on-road and off-road, that can cause AEB and PAEB systems to apply the brakes erroneously, including:

- Road shadows that deceive AEB and PAEB technology into thinking something is in front of it.
- Cars that are parked on the side of the road in the middle of a bend (commonly seen at national parks).
- Signs that are located on the side of the road in the middle of a bend.
- Steep driveways that may cause automatic braking either forward or backward.
- Rain, fog, and snow are just a few of the conditions that could prevent your safety systems from operating as they should.
- Dirt, mud, rocks, and other off-road obstacles.
- Vehicle cleanliness: the average owner only washes their vehicle every two weeks, which could hinder the effectiveness of AEB cameras and sensors. NHTSA should test the impact of dirt and debris on AEB and PAEB.

SEMA believes manual system disengagement should be permitted when vehicles operate in four-wheel drive or other low-traction driving scenarios such as off-road or inclement weather. We also believe that a vehicle towing a trailer without an independent brake system may cause jack-knifing or other dangerous conditions when AEB engages with a system that has not been tested to ensure the system can adapt to scenarios where the vehicle is towing or loaded with cargo over stock weight.

Conclusion

SEMA and its member companies have made significant investments to ensure compliance with applicable federal and state motor vehicle laws. The Association is committed to ensuring our members have the information and vehicle access to manufacture and safely install aftermarket parts that consumers demand. We appreciate NHTSA's consideration of our request that the agency directs manufacturers to share data and information with the aftermarket and vehicle owners about critical safety systems, including AEB and PAEB, to ensure vehicle technology provides maximum safety over the lifetime of the vehicle.

SEMA will work with our member companies to facilitate the successful implementation of this proposal. Accordingly, we seek additional clarity surrounding how the proposed rulemaking applies to specialty aftermarket businesses and ask that it is implemented under a timeline that is consistent with improvements in AEB and PAEB technology. SEMA believes that providing two additional years to implement the rulemaking would help to ensure that the proposed standards are achievable. Finally, SEMA asks NHTSA to include a provision in the final rulemaking that allows AEB and PAEB systems to be manually disengaged, given the potential safety issues included in our comment.

SEMA thanks NHTSA for considering our comments on the agency's proposed FMVSS for AEB and PAEB for light-duty vehicles. If you have any questions about the comments, please feel free to contact me at MikeS@sema.org.

Mike Spagnola
President & CEO
Specialty Equipment Market Association (SEMA)