March 24, 2015

R. Ryan Posten
Associate Administrator for Rulemaking
National Highway Traffic Safety Administration
U.S. Department of Transportation
1200 New Jersey Ave., SE
Washington, DC 20590

via Regulations.gov


Dear Mr. Posten:

The Motor & Equipment Manufacturers Association (MEMA)\(^1\) represents more than 1,000 companies that manufacture motor vehicle parts for use in the light- and heavy-duty vehicle original equipment and aftermarket industries. Suppliers are critical in the ongoing development and implementation of safety components and technologies to meet the vehicle manufacturers’ needs as well as to support global market demands and future standards and requirements related to these systems. MEMA represents manufacturers of a wide range of products, including vehicle seating and related equipment like child restraint anchorage systems. The following comments address elements of the National Highway Traffic Safety Administration’s (NHTSA) notice of proposed rulemaking (NPRM) to amend requirements under federal motor vehicle safety standard No. 225 (FMVSS No. 225) Child restraint anchorage systems.

S9.2 Location of the lower anchorages

Clearance Angle

For FMVSS No. 225, NHTSA proposed to add new language under S9.2 Location of the lower anchorages. Specifically, NHTSA proposed to add a new part (S9.2.5) to measure the clearance angle using the “NHTSA Clearance Angle Tool” with a corresponding test procedure S11(c).\(^2\) MEMA is concerned about being able to achieve this requirement without it having an impact on seat construction. The University of Michigan Transportation Research Institute’s (UMTRI) report “LATCH Usability in Vehicles” shows

\(^1\) MEMA represents its members through four divisions: Automotive Aftermarket Suppliers Association (AASA), Heavy Duty Manufacturers Association (HDMA), Motor & Equipment Remanufacturers Association (MERA) and Original Equipment Suppliers Association (OESA).

\(^2\) 78 Fed Reg at 3778
that correct lower anchorage use starts at about a 45 degree angle. MEMA is concerned that – in order to meet a clearance angle requirement of “at least 54 degrees” – it may be necessary to redesign and remove portions of the seat’s rear padding around the wire attachment in order to allow for the required clearance angle. This padding removal may not have a safety implication, but it might have a quality implication on the trim adjacent to the ISOFIX wire. More work will be necessary for suppliers to fully understand potential other complications and impacts on function and design.

In sum, MEMA urges NHTSA to reconsider the need for the proposed addition of S9.2.5 as a new requirement.

**S9.5 Marking and conspicuity requirements**

In the preamble of the NPRM, NHTSA describes that many of the proposed “enhancements” are from work done by UMTRI, SAE and ISO to improve usability stating, “To improve consumers’ ability to find and use lower anchorages, we propose ... to be marked with the ISO-developed mark.” As an overall remark about the proposed marking and pictogram requirements, MEMA urges NHTSA to consider allowing for the use of other existing marking designs used in ISOFIX and iSize labels (see examples), which are used in many other markets. Consistency of markings is critical for our members that are global companies that supply to global vehicle manufacturers. Consequently, the small differences between the agency’s proposed marks and those already in use those would result in redesigning and changing component production to feature the different symbols. All of which adds cost and burden for the manufacturers. MEMA urges the agency to consider harmonization with the ISO and iSize standards.

**Marking Lower Anchorages and Tether Anchorages**

Regarding the revisions proposed to S9.5 *Marking and conspicuity requirements*, MEMA raises the following questions:

- **S9.5.1(a)** – The current regulation reads, “*Above each bar installed pursuant to S4, the vehicle shall be permanently marked with a circle that: ****” First, regarding the term “above,” there are cases where the latch wires are positioned higher than at the seat bight meaning that the label may not be situated above the latch wire, but rather, in front of it. MEMA seeks clarification from the agency on this point. Also, depending on the overall design, the surrounding shape of the symbol may not always take the form a circle or sphere. The agency did not propose any changes to this language; however, MEMA raises this point to ask the agency to consider permitting other shapes to enclose the symbol. The requirements in Europe (ECE regulations) do permit ISO or iSize symbols/labels. Thus, MEMA urges NHTSA to clarify the mark location, to allow for the symbol to appear within other shapes, and to consider harmonization with ECE label requirements.

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3 Figure 46 “LATCH Usability in Vehicles”, UMTRI-2012-7, Klinich, Kathleen D.; Flannagan, Carol A. C.; Manary, Miriam A.; Moore, Jamie L. University of Michigan Transportation Research Institute (April 2012) at Page 60.
4 78 Fed Reg at 3746
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- S9.5.1(a)(2) – The language in the current regulation allows for words, symbols and pictograms. Current designs contain the text inside or outside the symbol’s shape (typically a circle or rectangle) along with the pictogram (see examples below). NHTSA’s proposed language “[c]ontains the pictogram shown in Figure 24 of this standard” appears to only allow for the use of a single symbol as depicted in the NPRM. The proposed revised text is much narrower than the current regulation. MEMA raises this issue because the ISO standard symbol, in some cases, may include the term “ISOFIX” or “i” near the symbol. Again, ECE regulations do permit these symbols/labels. Changing the various designs and markings that are currently being widely used would be costly to industry.

MEMA urges NHTSA to allow text to be either inside or adjacent to the ISO standard pictogram symbol (indicating such allowances in the “notes” associated with the attributed figure/symbol) and considers harmonization with ECE label requirements.

<table>
<thead>
<tr>
<th>Marking Location</th>
<th>NHTSA Proposed Marking</th>
<th>Examples of Other Markings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Anchorage</td>
<td><img src="image1" alt="Lower Anchorage Symbol" /></td>
<td><img src="image2" alt="Other Markings" /></td>
</tr>
<tr>
<td>Top Tether</td>
<td><img src="image3" alt="Top Tether Symbol" /></td>
<td><img src="image4" alt="Other Markings" /></td>
</tr>
</tbody>
</table>

- S9.5.1(a)(3) – The NPRM proposal requires marking on all lower anchorages regardless of whether or not they are visible. MEMA is concerned that – as proposed – if the lower anchorage wire is visible, but is now required to be

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5 “That is either solid or open, with or without words, symbols or pictograms, provided that if words, symbols or pictograms are used, their meaning is explained to the consumer in writing, such as in the vehicle’s owners manual; and * * * §571.225 at 983 (49 CFR Ed. 2013)
6 78 Fed Reg at 3780
marked, then that may necessitate changes to the seat function/design. As a point of reference, some current seat designs, (where the wire is visible) would not be able to accommodate a mark placed in the existing 50 mm zone.

To illustrate the point, as the agency may be aware, it is common for seats to be designed with trim seams that run vertically through the 50 mm zone. As such, button markings have to be offset from the seams, which makes it challenging to have the mark within the compliance zone. Another common case is that some designs may have the seat-cushion bight line within the marking zone. This would make it difficult to package the marking and meet the dimensional capability. Therefore, the industry solution to remain compliant was to make the lower anchorage wire visible. Considering this scenario, the agency's proposal to now have those wires marked, regardless of visibility, presents an impact on trim design and may require a redesign to accommodate the proposed requirements. Again, this change may not have a safety implication, but it might have a quality implication on the trim.

Thus, MEMA urges NHTSA to reconsider the need to mark visible lower anchorage wires such that if anchorage wires are visible, then marking them should not be necessary. In the alternative, at minimum, MEMA requests that NHTSA expand the compliance zone dimensions to accommodate seat trim design elements. Our recommendation for the lower anchorages is to increase the vertical zone 25 to 125 mm and the horizontal zone to ±50 mm from the centerline of the wire. These increased tolerances will help marking visibility, keep the marking within compliance and would avoid potential redesign of seating function/design elements.

- **S9.5.2(a)(1)** – The NPRM states that the Figure 25 pictogram for the tether anchorage cannot be less than 20 mm in diameter. The proposed rule's Figure 25 shows a height of 20 mm (not a diameter). MEMA is concerned that the 20 mm diameter on the tether anchorage may not include the entire pictogram for some applications (depending on the function/design of the tether anchorage component). Therefore, MEMA believes it is important to make the regulatory text consistent with the figures' depictions. For this part, *diameter* should be struck and replaced with *height*.
  
  MEMA urges NHTSA to revise the text for this part to read as follows: “(1) Consists of the pictogram in Figure 25 of this standard that is not less than 20 mm in diameter: height.”

- **S9.5.2(a)(2)/(3)** – MEMA notes that Figure 26 referenced in the proposed regulatory text depicts another different pictogram inside a label. This pictogram is not referenced elsewhere.
  
  MEMA requests clarification about this issue and that NHTSA use consistent pictograms in all of its figures in the regulation.

- **S9.5.2(a)(3)** – The proposed rule requires that the mark appear within 25 mm (±5 mm) from the tether anchorage bar. MEMA contends that the 25 mm
tolerance is too constrained for current standard production components. Depending on the functional design size of the component piece that surrounds the tether bar, such a tolerance could place the mark either on the edges or in the interior of the bar and its surrounding component.

Not only is it difficult to achieve such a mark (under typical molding and manufacturing processes), but also could potentially obscure the mark and impact visibility, thus defeating the agency’s goal to improve conspicuity. Furthermore, the proposed 25 mm dimension tolerance may force redesign of tether hook components, which could impact the surrounding opening of the tether bar making attachment of the tether hook more difficult. Under that scenario, it would defeat NHTSA’s goal to improve usability.

Therefore, to properly mark the component containing the tether bar/hook attachment without forcing redesign of the component fascia or function, MEMA urges NHTSA to increase the compliance marking zone dimension to at least 50 mm.

S11. Test procedures

Overall, MEMA has concerns about the repeatability and reproducibility of the tools. For example, the application force tool has a spring, which will require a calibration procedure for the force measurement tool so that the tools deliver the correct measurement consistently. Moreover, on March 20, with only days before the public comment period closed, NHTSA posted a memorandum that included revised technical drawings of the attachment force and clearance angle tools. MEMA members need more time to review the revised drawings more thoroughly and may submit supplemental comments, if necessary.

Anchor Depth Tool

In the NPRM, S9.2.2(a) addresses the lower anchorage depth tool. MEMA asks NHTSA to provide more clarity with respect to the dimensions of the tool, specifically, the measurements of the hook. Moreover, MEMA requests that the agency define at what angle the tool should be held when the measurement is taken.

Attachment Force & Anchorage Depth

NHTSA proposed new language for S11 to include procedures for attachment force and clearance angle and issued technical drawings for the various tools associated with the procedures.

MEMA seeks clarification of a few points about these proposed tests.

- **S11(b) Attachment force** – NHTSA asks that the measurement tool is “perpendicularly aligned with the center of the lower anchorage.” MEMA points out that some seat trim function/design may have either flaps, a zipper or another trim element that shields the lower wire. Therefore, as proposed, if the tool is held perpendicular to the center of the wire, it may require substantial

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force to attach to the wire – all this is before the individual conducting the test can take the force measurement. Additionally, MEMA notes that it is problematic that the width of the tool (0.99 in.) is wider than the minimum width of the latch wire (25 mm).

- **S11(c) Clearance angle** – Previously, MEMA pointed out concerns with the NPRM’s proposed clearance angle requirement of 54 degrees and asked the agency to reconsider the inclusion of this requirement. With respect to the test procedure, MEMA has some questions about the proposed tool. There are disparities between the NHTSA tool and the ISOFIX tool, in that it is about half the size of ISOFIX in the “Y” direction. Should NHTSA retain its proposed clearance angle requirement in the final rule, then MEMA asks the agency to evaluate, clarify and define the test position of the “Y” direction.

Considering the above points, MEMA asks NHTSA: to clarify if the test procedure would permit the tester to pull aside or open any trim flaps, zippers or similar design elements before inserting the tool; to make accommodations for the cushion angle when measuring; and, to clarify the “Y” direction of the tool in the test position.

**Miscellaneous**

Lastly, MEMA would recommend that NHTSA ensure that any technical drawings referenced and incorporated into the FMVSS are properly dimensioned and have consistent measurement systems. Currently, some of the drawings’ measurements posted to the docket are mixed between Metric and English systems. Also, MEMA believes the agency may have made a minor typographical error in the proposed regulatory text for S9.2.2, S9.2.4 and S9.2.5 where each indicate that the tools depicted are incorporated by reference from the NHTSA report’s “Drawing Package” that is “dated June 2014.” However, that report, titled “Evaluation of LATCH Usability Procedure,” is dated July 2014. MEMA concedes this is a minor point, but must be corrected when the agency finalizes the regulatory text for FMVSS 225. Besides, in light of the newer drawings the agency posted to the docket on March 20, then whichever the final drawings will be, must be referenced accordingly in the final regulatory text to avoid confusion.

**Conclusion**

MEMA appreciates the opportunity to present comments on behalf of its members that are engaged in the design and manufacture of various seating components and related functional safety features. We urge NHTSA to address ambiguities, provide clarifications and allow for flexibilities for markings and marking zones. This is particularly important on aspects of the measurement procedures and marking requirements for anchorages.

Suppliers strive to improve the usability and conspicuity of important safety equipment like the anchorages, tethers and markings for child restraint systems. The recommendations and questions posed by MEMA are simply to allow for some flexibilities

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8 78 Fed Reg at 3778
9 NHTSA-2014-0123-0005
and to avoid significant redesigns that would impose an unnecessary burden on the supplier and the vehicle manufacturer. As these are global products, MEMA urges NHTSA to consider harmonization with other standards. The changes and clarifications MEMA requested do not negatively impact the usability or conspicuity of the safety features. In fact, some of NHTSA’s proposed requirements may result in unintended consequences that detract usability and obscure visibility.

If you have any questions, please contact me at (202) 312-9249.

Sincerely,

Leigh S. Merino
Senior Director, Regulatory Affairs