HONDA
American Honda Motor Co., Inc.
1919 Torrance Boulevard
Torrance, CA 90501-2746
Phone (310) 783-2000

November 26, 2019

Mr. James Owens
Acting Administrator
National Highway Traffic Safety Administration
West Building, Ground Floor, Room W12-140
1200 New Jersey Avenue SE, Washington, DC 20590

Re: Docket No. NHTSA-2019-0093
Federal Register: 84 FR 51076 (September 27, 2019)
Advanced Notice of Proposed Rulemaking (ANPRM)
Rear Seat Belt Reminders

Dear Acting Administrator Owens:

Enclosed are the comments of American Honda Motor Co., Inc. regarding the above referenced docket and Federal Register notice.

We thank you for this opportunity to provide our comments. If you have any questions, require additional data or further clarification, please contact Mr. David Liu, Manager of Regulatory Safety Affairs, at 202-661-4408 or david_liu@ahm.honda.com.

Sincerely,

American Honda Motor Co., Inc.

John Turley
Senior Manager
Product Regulatory Office

JET:dl

American Honda Motor, Co., Inc.

Comments on FMVSS 208 Rear Seat Belt Reminder ANPRM

[Docket No. NHTSA-2019-0093]

[Federal Register: 84 FR 51076 (September 27, 2019)]

[Submitted November 26, 2019]

Introduction

Honda appreciates this opportunity to provide comments on NHTSA's ANPRM on Rear Seat Belt Reminders and commends the continued efforts of the U.S. DOT to encourage increased seat belt usage, especially for rear seat occupants. Honda believes that seat belts are the single most effective piece of safety equipment to reduce an occupant's risk of injury, and are effective in practically every type of collision. We are encouraged that seat belt use rates in the U.S. have reached an all-time high and continue to trend upwards, which we believe are largely attributed to changes in public attitudes and awareness. However, as NHTSA's National Occupant Protection Use Survey (NOPUS) data shows, usage rates for rear seat belts consistently fall well below those for the front seats. We encourage NHTSA to continue its important work to increase seat belt use, including through media campaigns, assisting states with seat belt law enactment & enforcement campaigns, and expanding vehicle-based strategies.

Honda agrees that rear seat belt warning systems are one type of vehicle-based strategy that encourage greater rear seat belt usage. Today, rear seat belt warning systems with audible and visual warning elements are available in markets outside the U.S., and have proven effective for encouraging seat belt use. However, rear seat usage presents significantly different challenges as compared to the front seats. We agree with NHTSA's belief that a seat belt reminder system inherently needs to balance effectiveness and consumer acceptance. As such, we encourage NHTSA to amend FMVSS No. 208 to require rear seat belt warning systems, and align with the requirements that have been effectively adopted in other markets outside the U.S. with Economic Commission for Europe ("ECE") Regulation No. 16 ("R16").

The effectiveness and consumer acceptance of seat belt reminder systems complying with R16 can be understood from the established track record of performance in the markets that already adopt those systems. Honda supports the expansion of seat belt warning systems to rear seats and urges the agency to harmonize with R16 requirements. Practically every global automaker has already developed systems to conform to the R16 requirements. Unwarranted deviation from the R16 requirements will jeopardize an existing pathway to implementing these potentially lifesaving systems in the U.S. in a timely and effective manner.

Honda provides additional comments through the following responses to NHTSA's questions.

Responses to Questions Posed

A. Potential Specifications for a Required Rear Belt Warning System

1. Warning type (Visual, Audible, or Audio-Visual)

Honda recommends that NHTSA harmonize with UN ECE R16, which requires a rear seat belt reminder system that employs both audible and visual elements. Vehicles that are complying with R16 (or EuroNCAP, which R16 is largely based on) have already been in production in other markets, and have proven effective for encouraging increased rear seat belt use. Considering that front and rear seat usage conditions can vary significantly, we believe that R16 strikes the most appropriate balance between effectiveness and consumer acceptance. R16 requires that the primary warning for rear seating positions is provided visually to inform the driver of the buckling status of rear seating positions. The secondary warning for rear seating positions is provided audibly when there is change of status if a rear seat is unbuckled. R16 also importantly provides flexibility and allows room for the deployment of more innovative occupant detection and belt reminder systems. **(See Appendix A. Illustration Chart for Honda's Seat Belt Reminder Operation)**

2. Triggering conditions

Honda recommends that NHTSA harmonize with the triggering conditions currently required in R16. R16 provides flexibility and allows the system to use speed, time, and/or distance as a trigger. While we believe speed is a logically effective triggering condition for reducing risk of injury in a crash, flexibility should be provided for systems that find a novel approach to classifying vehicle motion (for example, a combination of speed and distance, or speed and time.)

3. Alternative warning systems

Honda believes that the audible and visual elements of R16 are already sufficiently flexible, technology neutral, and cost effective. While we recommend that NHTSA should similarly adopt a technology neutral approach, adopting a foundational warning system that is consistent with R16 will provide a common performance framework to ensure consumer understanding. Additional innovative warning technologies can be provided based on vehicle and consumer demands through such a regulatory framework that is not overly prescriptive.

4. Occupant detection technology

Honda agrees with NHTSA's assessment that occupant detection systems create additional technical challenges when implemented in the rear seats. Consumers tend to use rear seats in a wider variety of conditions (e.g. child restraints, pets, groceries, and

various types of cargo) and it becomes increasingly difficult to distinguish actual rear occupants from other rear objects. Our experience has indicated that if occupant detection is applied to rear seats, this leads to greater false alarms and reduced consumer acceptance. While Honda agrees with the potential benefits that occupant detection may provide, we believe that the inherent cost to implement occupant detection well is disproportionate to the additional value provided given the current state of detection technologies. For example, a robust detection system may require a combination of seat buckle switches and seat pressure sensors, in addition to a vision-based occupant monitoring system. Honda recommends that NHTSA should ensure consistency with R16 and not require occupant detection, but rather provide flexibility to allow this as alternate compliance option.

5. Enhanced warning systems

Honda agrees with NHTSA's comments that occupant detection systems are more practical for front seats because, as indicated in our previous response, they are not subject to the same occupant detection challenges as the rear. An enhanced rear seat belt warning system with prolonged audible warnings would lead to significant consumer annoyance. We agree with NHTSA's research that a seat belt warning system must balance effectiveness and acceptability. Unfortunately, consumer acceptance of enhanced warning systems for rear seats in the U.S. is not well understood. Honda recommends NHTSA harmonize with R16.

We further note that seat belt reminder technology and methods have advanced significantly from the time that the initial driver's seat belt reminder regulations were promulgated in FMVSS No. 208. We encourage NHTSA to consider allowing enhanced seat belt reminder systems as a compliance option for the front seating positions, possibly in lieu of the currently required 4 to 8 second alarm. Please see our additional response to question 26.

6. Belt use criteria

Honda believes that the current belt use criteria, based on either the seat belt latch mechanism or belt extension, is already sufficient. While we believe using seat belt latching is a logical criteria for reducing risk of injury in a crash, we do not see any benefit in revising an existing criteria that already performs sufficiently. To the contrary, continuing to allow both options provides flexibility for more advanced belt use detection systems or innovative seating configurations.

7. Seat occupancy criteria

Honda recommends that NHTSA harmonize with R16 and ensure that occupant detection systems are permitted as a compliance option. The detection of occupants in the rear presents additional complexity because of the large variety in rear seat usage conditions. Additionally, as child restraint systems are not an integrated part of the vehicle and contain their own restraint devices, it would be difficult to implement a

system that completely detected restraint of the child occupant amongst all of the child restraint systems available in market. If the agency decides to include occupant detection as a compliance option, NHTSA should consider that the occupant size that system is required to detect should not be less than the occupant size that would use the vehicles seat belt as the only restraint.

8. Making the system resistant to intentional and inadvertent defeat

Without the inclusion of occupant detection (which we propose should not be included), the system is not likely to be so obtrusive as to merit tampering or intentional defeat. One of the main objectives of a required rear seat belt warning system should be consumer acceptance. We also note that hardcore non-belt users are significantly less likely to be persuaded by a reminder, even for a more advanced system. Regarding remote engine start, the vehicle is in a mode that is incapable of being driven. We recommend that NHTSA specify the start of the drive as the moment when the ignition was activated in the mode where the vehicle is capable of being driven.

9. Electrical Connection Requirements

Consistent with other responses provided in these comments, Honda recommends that requirements should not specify the type of electrical connection or technology (e.g. wired buckle switch, wireless buckle switch, belt extension). If NHTSA is sufficiently technology neutral in the requirements, removable seats would not need to be exempted from the requirements (as currently allowed in R16) and could lead to greater coverage for the reminder system. For removable rear seats, Honda recommends that the agency align with the EuroNCAP requirements in Version 7.0, which requires the inclusion of removable seats, and includes requirements that the electrical connection is either automatic or that the manual connection method is clearly indicated and visible during the installation.

10. Owner's manual/label requirements

Honda believes that the seat belt reminder system is an important safety function and therefore supports the inclusion of such information in the owner's manual. We recommend that manufacturers should be provided flexibility for how the system is described based on implementation. In general, we recommend that the agency take a similar approach to what is currently required for the driver in FMVSS No. 208.

11. Interaction with other vehicle warnings

Flexibility should be provided to allow manufacturers to temporarily prioritize vehicle warnings based on the safety severity of the warnings. Some seat belt reminder systems may be most effectively provided through an existing visual display that may be used for communicating other safety critical information to the driver (e.g. Automatic Emergency Braking or Lane Departure). In these cases, flexibility should be provided to manufacturers to allow prioritization of warnings with a higher safety risk. Honda

additionally recommends that the existing FMVSS No. 101 Seat Belt Unfastened Telltale be utilized as a persistent "baseline" warning when there is an active seat belt warning for any occupant, even in the event that the display of detailed seat belt information is prevented by a higher priority warning. Such utilization of an existing "baseline" warning leverages consumer familiarity and provides flexibility for systems, regardless of the implementation of occupant detection.
(See Appendix A. Illustration Chart for Honda's Seat Belt Reminder Operation)

12. Harmonization with regulatory requirements or new car assessment programs in other markets

As mentioned throughout our response, Honda urges the agency to align this proposed rulemaking with the requirements already successfully implemented in UN ECE R16. Honda believes that the issues under consideration in this ANPRM have largely been addressed by the UN ECE regulation. Practically every global automaker has already developed systems to conform to the R16 requirements. Unwarranted deviation from the R16 requirements will jeopardize an existing pathway to implementing these potentially life saving systems in the U.S. in a timely and effective manner. Regarding more advanced/aggressive systems that may exceed regulatory requirements adopted through this ANPRM, Honda recommends that the agency consider whether this would be more appropriately incentivized through US NCAP. **(See Appendix A. Illustration Chart for Honda's Seat Belt Reminder Operation)**

13. Visual warning location

Honda believes that FMVSS No. 101 already provides a requirement framework for seat belt visual warnings. We recommend that the visual warning location be consistent with FMVSS No. 101. Manufacturers should be allowed to additionally provide warnings to passengers but the foundational requirement should remain for providing that information to the driver, who should be allowed to have responsibility for the passengers.

14. What type of information should the warning convey?

Honda agrees with the agency's comments that positive-only, negative-only, and full-status systems each could have strengths and limitations. The priority consideration should be that all of these variations effectively allow the driver to identify which seats are unfastened (in the case without occupant detection), or if any occupied seats are unfastened (with occupant detection). We note that R16 does not establish such definitions of systems but rather specifies the base requirement that the driver should be able to identify which seats are unfastened (8.4.4.2). We urge the agency to be consistent with R16 which provides sufficient compliance options. The agency should exercise caution in setting criteria too broadly. This may restrict manufacturers to implementing a full-vehicle display, even if occupant detection is applied, in which case a single seat belt telltale indicator is sufficient.

15. Telltale Characteristics

Honda believes that the existing Seat Belt Unfastened Telltale in FMVSS No. 101 is a universally recognized warning that should be leveraged when seat belt warning systems are extended to rear seat occupants. The singular telltale described in FMVSS No. 101 can be used to provide a consistent link to additional seat belt information that may be provided. We propose that flexibility is provided for the indication method for each seating position, and may exist in the form of a telltale or as a graphic or rendering of the vehicle seating positions in a more advanced display screen. Additionally, using the singular FMVSS No. 101 telltale as a "baseline warning" will ensure that an active safety belt warning continues to be provided if an additional seat belt warning visual display needs to give priority to a more important safety warning. For these reasons, we urge NHTSA to align requirements with R16, which allows such implementation. **(See Appendix A. Illustration Chart for Honda's Seat Belt Reminder Operation)**

16. Minimum duration (visual warning)

Honda agrees with NHTSA's research for front seat belt warnings that longer duration warnings are more effective, but also more annoying. For this reason, we recommend that the agency align with the requirements in R16 which specifies a first level 30 second visual warning and second level 30 second audiovisual warning for the front seats and a 60 second visual signal for the rear seats. Existing systems in other markets that comply with R16 (or EuroNCAP which R16 is largely based on) have already demonstrated consumer acceptance at this duration level. It would be more appropriate for the agency to consider the adoption of longer duration systems, which are potentially more annoying, through U.S. NCAP.

17. Minimum duration (audible warning)

The response to this is largely similar to the one above for question 16. Honda recommends that NHTSA align with R16 which specifies that a change-of-status audible warning component be 30 seconds long for rear seating positions.

18. Other audible signal characteristics

FMVSS No. 208 sufficiently specifies the audible warning components for the driver. Requiring additional audible warning criteria (such as minimum/maximum sound pressure levels) would be unwarranted, burdensome, and seek to address a problem that does not exist. Honda recommends that NHTSA maintain consistency with the existing requirement in FMVSS No. 208.

B. Applicability

19. Vehicle types to include/exclude

We reserve comment at this time.

C. Effectiveness

20. Effectiveness of rear seat belt warning systems

NHTSA's 2015 survey of rear seat belt reminder systems indicated very favorable results for increased rear belt use and consumer acceptance. Our understanding is that at least a portion of the vehicles studied (with a rear seat belt reminder system) implement functionality that is consistent with R16, if not essentially compliant with R16. Honda also understands that there are several vehicles currently available in the U.S. market that are essentially compliant with R16. We encourage NHTSA to evaluate these R16 compliant vehicles, to further support that R16 seat belt reminder requirements are currently effective.

D. Consumer Acceptance

21. Potential concerns with a proposed system

Honda agrees that for a rear seat belt warning system to have an impact to belt use, it must balance effectiveness and acceptability. As noted in response to question 16 above, R16 compliant systems in many markets have already demonstrated the appropriate balance. We encourage the agency to harmonize rear seat warning requirements with R16. Doing so will also allow manufacturers to continue to develop more advanced seat belt technologies.

E. Technological and Economic Feasibility

22. Alternative rear seat belt warning systems

Provided that the requirement gives flexibility to the manufacturer, and directly mandates neither standalone indicators nor integrated dashboard meter displays, each manufacturer can choose how to best implement the system in the least impactful way.

Regarding detection of child restraint LATCH systems, this would provide little benefit with significant added costs. LATCH systems are not typically latched/unlatched frequently, so it is far more uncommon to be in the unlatched state. Additionally, as only the latch could potentially be detected, and yet the remaining parts of the child restraint are unmonitored, it may give a false assurance to the user that the child is fully restrained.

F. Benefits and Costs

23. Potential benefits and costs of the different types of rear seat belt warning system

Consistent with the responses throughout our comments, the single most important factor is harmonization with R16, not the type of warning system. If NHTSA departs from R16, a significant additional cost is incurred for developing a different system without any established benefit. Many manufacturers already have systems available today for other global markets that are effective and comply with R16. Harmonization with R16 also allows manufacturers to evolve the systems based on future developments in technology and consumer demand (e.g. innovative seating configurations or vision-based occupant detection)

G. Safety Act Criteria

24. Whether a proposed rear seat belt warning system would meet the requirements and considerations of 49 U.S.C. 30111

49 U.S.C. 30111 requires that NHTSA shall prescribe FMVSS that are objective, practicable, and meet the need for safety. Provided that NHTSA aligns with R16, R16 has demonstrated that such FMVSS No. 208 would meet those requirements. Seat belt reminder systems that meet R16 conform to a specific minimum performance criteria which has demonstrated increases in rear seat belt usage and acceptance from consumers. Additionally, R16 is technology neutral with multiple compliance options to allow manufacturers to continue, not freeze, the development of innovative occupant safety systems. This is very important when considering future technology advancements in occupant seating configurations or child occupant safety.

H. Non Regulatory Alternatives

25. Whether it should consider any non-regulatory approaches (e.g. NCAP)

Honda's overarching recommendation for this ANPRM is to align with the R16 regulation. Honda recommends that aligning US NCAP with EuroNCAP could incentivize more advanced systems through consumer information. This encourages further developments for occupant safety that can build upon the foundational performance established by harmonizing FMVSS No. 208 with R16.

I. Removing the Driver's Seat Belt Warning Audible Signal Duration Upper Limit

26. Driver's seat belt warning audible signal duration upper limit

Honda agrees that removing the existing 8-second limitation would eliminate the need to differentiate between the initial warning and the enhanced warning while also providing greater flexibility in designing a seat belt warning system. Honda further

recommends that the agency consider whether there is opportunity to holistically update the seat belt reminder requirements for both the front and rear seat occupants using a similar approach.

NHTSA's research has shown that the 8-second reminder system currently required by FMVSS No. 208 is not effective in increasing driver seat belt use.[1] Honda believes that this is due to the fact that these requirements were based on vehicle electronics technology available at the time. Since the requirements are based on a simple seat belt latch switch and ignition switch, the large population of consumers that routinely turn the ignition on before the driver or occupants have buckled up receive the audible warning every time.

Seat belt reminder technology and methods have advanced significantly from the time that the initial driver's seat belt reminder regulations were promulgated in FMVSS No. 208. Consistent with the response we provide in question 2, Honda recommends that both the front and rear seat belt reminder systems be allowed to adopt a consistent triggering method, such as vehicle speed, that will more accurately remind the driver and occupants to buckle their seat belts. We encourage NHTSA to consider allowing enhanced seat belt reminder systems as a compliance option for the front seating positions, possibly in lieu of the currently required 4 to 8 second alarm. **(See Appendix A. Illustration Chart for Honda's Seat Belt Reminder Operation)**

[1] Westefeld, A., and B. M. Phillips. 1976a. *Effectiveness of Various Safety Belt Warning Systems.* DOT-HS-801-953. National Highway Traffic Safety Administration, U.S. Department of Transportation, July.

THIS PAGE CONTAINS CONFIDENTIAL INFORMATION

APPENDIX A

Illustration Chart for Honda's Seat Belt Reminder Operation