November 26, 2019

James Clayton Owens
Acting Administrator
National Highway Traffic Safety Administration (NHTSA)
1200 New Jersey Avenue SE, West Building
Washington, D.C. 20590-0001

Submitted electronically via www.regulations.gov

Response to NHTSA's ANPRM on rear seat belt warning systems (NHTSA-2019-0093)

Dear Acting Administrator Owens,

KidsAndCars.org welcomes the opportunity to comment on the questions put forward by NHTSA in the Advance Notice of Proposed Rulemaking (ANPRM) on seat belt warning systems. KidsAndCars.org, founded in 1996, is a national non-profit organization dedicated to saving the lives of children in and around motor vehicles.

KidsAndCars.org is very anxious for the National Highway Traffic Safety Administration (NHTSA) to implement, without further delay, rulemaking that requires seat belt warning systems be installed in all seating positions in passenger vehicles as soon as possible. The importance of seat belts in saving lives is indisputable. We should do everything possible to get all passengers to buckle up every time on every trip.

During the past 20 years KidsAndCars.org has focused our efforts on data collection, education and public awareness, policy change, product redesign and working with families who have lost children to channel their grief into positive change. We have also taken the lead to bring nontraffic incidents involving children ages 14 and younger to the national agenda. KidsAndCars.org has worked successfully to ensure that trunk releases, safer power window switches, brake transmission interlock systems and rearview cameras are currently provided as standard equipment on all vehicles sold or leased in the U.S. market.

We are particularly disheartened and frustrated by NHTSA's failure to protect occupants (especially those in the back seat) by decades-long delays to issue a rule requiring seat belt reminders in all seating positions. Our organization has considered this 'low-hanging fruit' with life-saving benefits and are puzzled by delay after delay after delay. NHTSA must complete this rulemaking without further delay or additional lives will be needlessly lost.

On September 27, 2019, when NHTSA published an ANPRM about seat belt warning systems in Docket No. NHTSA-2019-0093, KidsAndCars.org was quite surprised. It has been 7 years since the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law and would certainly seem that all interested stakeholders have had plenty of "advance" notice. KidsAndCars.org strongly urges NHTSA to move directly into rulemaking without the need for a NPRM which would further delay this process.

European vehicle manufacturers have employed seat belt use reminder systems using chimes and other audible sounds, which become more insistent based on increasing vehicle speed or distance driven for many years. The U.S. has fallen well behind Europe when it comes to saving the lives of Americans through seat belt use. The European New Car Assessment Programme (Euro NCAP) has recommended rear seat belt reminders since at least 2004 and such reminders have been saving lives in Europe since 2009.[1]

In recent years the U.S. Department of Transportation (DOT), safety organizations, government agencies, law enforcement and corporations have made a major effort to educate the public about securing children in child restraints in the rear seat of vehicles for their safety. At the same time, rear seat occupancy by older children using booster seats and teens who use adult seat belts has also increased. Yet, rear seat belt use rates lag well behind front seat belt use rates. A recent Washington Post article[2] reported that 25 percent of rear seat passengers go unbelted. Seat belt reminder systems can both remind the driver and all other occupants to buckle up and alert the driver when a passenger unbuckles their seat belt while the vehicle is moving.

Currently only 13% of vehicles sold in the US provide rear seat belt reminders. It is inexcusable that our most vulnerable passengers, children, who are required to ride in the back seat do not have the same protections as front seat passengers. Children cannot be relied on to protect themselves. It is common for children to unbuckle without the knowledge of the driver. According to NHTSA, "Of the 23,551 passenger vehicle occupants killed in 2017 in fatal crashes, 794 (3%) were children. Based on known restraint use, of these 721 child occupant fatalities, 267 (37%) were unrestrained." [3]

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[1] *Seat Belt Reminder Assessment Protocol*, EUROPEAN NEW CAR ASSESSMENT PROGRAMME (June 2004), www.vdrsyd.com/ancap_datasheets/xprotocol_archive/EuroNCAP/Euro-NCAP-Seat%20Belt%20Reminder%20Assessment%20Protocol%20V1-0b.pdf

[2] A more than decade long delay in a seat belt warning system shows how car-safety rules get bogged down in bureaucracy, The Washington Post; Ian Duncan, 11/24/2019; https://wapo.st/2DfbYjv

[3] NHTSA Traffic Safety Facts, May 2019 Report, DOT HS 812 719, https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812719

Seat belt reminders help to increase usage of seat belts. The Governors Highway Safety Association (GHSA) has recently released a study noting that seat belt usage is lower in for-hire vehicles (i.e., taxis, Uber, Lyft, etc.) than in private vehicles.[4] Trip-for-hire rides are continuing to increase which creates an escalation in the number of passengers traveling in the back seat of vehicles.

Seat belt reminder systems should be available for all designated seating positions to remind the driver and each passenger to buckle their seat belt and to alert the driver of change-of-status for all passengers.

Reasons NHTSA needs to require a rear safety belt reminder system include:

- requiring rear seat belt reminders could save nearly a thousand lives each year and prevent countless injuries, a large percentage of which would be children;
- rear seat belt reminders are necessary to save lives because primary enforcement of seat belt laws does not typically cover rear seat occupants (only 19 states and DC cover all passengers);
- a multitude of studies have proven that rear seat belt use would increase significantly if seat belt reminders were required;
- unbuckled passengers can kill buckled passengers;
- requiring seat belt reminders is consistent with NHTSA's statements, Rulemaking Agenda, and SAFETEA-LU requirements to increase safety belt use for all passengers because implementing rear safety belt reminder systems would be the easiest way to achieve further gains in safety belt use and lives saved;
- Seat belt reminders are technologically feasible and would be less costly per unit if required in all vehicles

Government, industry and safety groups all agree seatbelts save lives.

SPECIAL NOTE

KidsAndCars.org would like the final rule language to incorporate seat belt reminders in ALL seating positions. Though the focus of this particular ANPRM is seating positions behind the front row seats, the final rule should include language to ensure that the front row passenger seat is also officially added to the Federal Motor Vehicle Safety Standards (FMVSS) as being mandated to have a seat belt reminder system.

NHTSA DELAYS

In 2003 the National Academy of Sciences conducted a study[5] of new seat belt reminder technologies for NHTSA, recommending, among other actions, that all new light-duty vehicles

[4] Rear Seat Belt Use: Little Change in Four Years, Much More To Do, GHSA, (Nov., 2019), https://www.ghsa.org/resources/RearBeltReport19

[5] *See Buckling Up: Technologies to Increase Seat Belt Use*, Transportation Research Board Special Report No. 278 http://onlinepubs.trb.org/onlinepubs/sr/sr278.pdf

be equipped with an enhanced belt reminder system that includes an audible warning and a visual indicator for front seat occupants and that the current 4-8 second limitation on audible warnings be amended to remove the time limit. Rear seat belt reminders should have been added then without delay.

On August 28, 2007, safety groups (Public Citizen and Advocates for Highway and Auto Safety, etc.) filed a petition with NHTSA requesting that seat belt reminder systems be required in the rear seats of cars and in the second and third row of seats in multipurpose passenger vehicles including minivans and sport utility vehicles. [6] A very compelling case was made at the time. Though NHTSA is required to respond to petitions within 120 days (49 CFR Section 552.8) it took the agency 5 years to respond.

During a May 2009 Congressional hearing the 2007 petition was attached to the testimony of Janette Fennell, president and founder of KidsAndCars.org, as it cites numerous studies and provides every justification needed to move quickly on issuing the rear seat belt rule.[7]

On July 6, 2012 MAP-21 became law requiring NHTSA to issue a final rule for seat belt reminder systems for rear seat occupants by October, 2015. Under the law, the DOT is required to set a new deadline or explain to Congress why a requirement for seat belt warning systems does not meet the requirements and considerations in subsections (a) and (b) of 49 U.S.C. § 30111. Seven years have already gone by since Congress passed this law, but DOT has done neither.

After years of delay, the Center for Auto Safety and KidsAndCars.org, filed suit in the U.S. District Court for the District of Columbia to compel the DOT to issue a regulation after missing the Congressionally mandated final-rule deadline.[8] The suit was unsuccessful and as we near the end of 2019, still no final rule has been issued. People continue to die every day because they are not wearing their seat belt.

Every day that the final rule is delayed, American families will pay the price with the lives of loved ones, many of which are children. Further delays are inexcusable.

SPECIAL CONSIDERATIONS FOR CHILD BACK SEAT PASSENGERS

Recent data from NHTSA indicates that for passenger vehicle occupants killed in 2017, restraint non-use exceeds the national average (47%) in the population of occupants starting at age 8 –

[6] https://www.autosafety.org/wp-content/uploads/2017/08/Advocates_for_Highway_Auto_Safety_-_Petition.pdf

[7] Testimony of Janette E. Fennell, Founder and President, KidsAndCars.org on the "Auto Safety: Existing Mandates and Emerging Issues" hearing before the Subcommittee on Commerce, Trade and Consumer Protection of the House Committee on Energy and Commerce, May 18, 2009

[8] https://www.washingtonpost.com/news/tripping/wp/2018/03/20/the-u-s-needs-to-move-forward-on-rear-seat-safety-belts/; https://www.autosafety.org/wp-content/uploads/2017/08/FiledComplaint.pdf; https://www.autosafety.org/wp-content/uploads/2017/08/Peition-for-Writ-of-Mandamus-10-30-17.pdf

12. The unrestrained percentage for younger occupants is 36% for 4-7 year olds and 22% for occupants less than 4 years old.[9]

Rear seat belt warning systems would provide a critical alert to parents if a child unbuckled at an inappropriate time. This is a very important consideration as drivers are unable to monitor children while driving.

The driver would be alerted if a seat belt meant to secure a child's car seat had been unbuckled, or any other passenger who unbuckles while the vehicle is moving. In most situations, they would not know someone has unbuckled themselves without this alert.

ANSWERS TO SPECIFIC QUESTIONS IN ANPRM

1. Should the warning be visual-only, audible-only, or audio-visual?

The use of both an audio and visual alert would be the most effective option. A visual-only warning would be easily missed by a driver who is focused on driving safely. An audio-only alert would not be effective because without the visual warning, occupants may not know what the audio warning is intended to communicate. Additionally, an audio-only alert would not be effective for hearing impaired occupants.

2. Triggering conditions.

Alerts should be given when the engine is engaged at the earliest possible opportunity. Drivers need to make sure all passengers have their seat belts on before moving the vehicle. Vehicle crashes can happen quickly, for example, with a vehicle backing out of a parking spot in a parking lot or pulling out into traffic from a parallel parking situation. Vehicle occupants should be buckled up anytime the vehicle is in motion.

Alerts should also be given for a change-of-status situation. In other words, an audio-visual alert should be given if an occupant unbuckles any time and also have confirmation when they have re-buckled. Drivers and passengers need this type of notification system.

Alerts should not be dependent on vehicle speed or any condition other than the vehicle ignition being engaged.

3. Alternative warning systems.

The system should provide the driver with knowledge of which seating position is not buckled or becomes unbuckled. Because the motoring public is very familiar with the current

[9] National Center for Statistics and Analysis. (April 2019). Occupant protection in passenger vehicles: 2017 data (Traffic Safety Facts. Report No. DOT HS 812 691). Washington, DC: National Highway Traffic Safety Administration.

audiovisual warning system in the front seats it is likely to be just as effective in rear seating positions.

4. Occupant detection technology

Occupant detection and classification systems are currently being used in a number of vehicles. It is troubling that NHTSA did not provide any information about these types of available systems and how they work. Instead, only presented a list of challenges for occupant detection. Yet, some of the challenges such as determining the differences between packages or child seats from occupants have already been addressed and that technology is readily available.

KidsAndCars.org urges the Agency to investigate requiring occupant detection in conjunction with seat belt reminder systems. A seat belt reminder system should only provide an alert when an 'occupant' is present. Occupant detection can help reduce false positive warnings, for example, if cargo is placed in a passenger seat.

Occupant detection systems are cost efficient, readily available and can provide for a number of different applications in motor vehicles. KidsAndCars.org is aware of a number of systems that cost less than $10 and can tell the difference between an object, an adult passenger and a child. These systems could help rule out the possibility of false alarms from seat belt reminder systems. Other applications include, but are not limited to drowsy driving alerts, preventing children from being left unattended inside vehicles, anti-theft systems, air bag sensors, etc.

For example, Caaresys BabyCaare® is a system that uses contactless low emission radio frequency radar to detect vehicle occupants and monitors vital signs. It can tell the difference between an adult, child and pet as well as their position in the vehicle. The sensors operate under any light or weather conditions and can see through objects such as vehicle seats, clothing, car seats, etc. The system can use audio/visual alerts inside the car. For more information visit https://caaresys.com/.

Another example is Vayyar's 3D imaging sensor technology, which quickly and easily looks into objects or any defined volume (inside of a vehicle) and detects even the slightest anomalies and movements to bring highly sophisticated imaging capabilities to your fingertips. The system can detect the number of passengers, where they are and even if they are an adult vs. a child. For more information visit https://www.youtube.com/watch?v=lL2YDx8jOII.

As we move towards autonomous vehicles, detecting occupancy will become increasingly important to ensure that all passengers are properly restrained on every trip.

5. Enhanced warning systems.

The ANPRM states the following, "Enhanced warnings therefore generally need to work in conjunction with an occupant detection system, and even this might not completely eliminate the possibilities of false warnings (for example, if a seat is occupied by a pet or groceries)." Occupant detection systems are capable of discerning between pets, humans and objects such

as a bag of groceries as noted above. Discouraging the placement of objects on vehicle seats would not be a bad thing as cargo can become a projectile in the event of a crash and injure passengers.

6. Belt use criteria

Criteria for belt use in rear seating positions may differ from belt use indicators for the driver's seat due to the various types of passengers riding in rear seating positions. Cargo is usually not stored in the driver's seat, so consideration for objects vs. occupants has not been considered for driver's seat belt use criteria, but should be considered for all other seating positions. This has already been addressed with occupant detection currently being used for passenger front seat airbag sensors.

7. Seat occupancy criteria

Seat occupancy criteria should consider the smallest possible passenger that would be utilizing a seat belt. However, using weight alone to determine seat occupancy would be inefficient because child car seats weigh as much as a small child. Seat occupancy must be able to discern the difference between an occupant and an object as noted above in the information on occupant detection.

8. Making the system resistant to intentional and inadvertent defeat.

All efforts should be made to ensure the system is resistant to intentional and inadvertent defeat. KidsAndCars.org does not support the inclusion of a single-trip manual deactivation or a long-term deactivation as this would encourage non-compliance with seat belt use. The countermeasures proposed by the Agency should be considered given the components required would already be present in an effective seat belt reminder system. Occupant detection would help prevent intentional and inadvertent defeat.

9. Electrical connection requirements.

Careful consideration must be given to how removable, rotating, flipping and folding seats connect electronically. Connection of electrical components for seat belt reminder systems must be passive and should not require any action on the part of the consumer. These type of seats are typically found in minivans and larger SUVs which are commonly transporting children, making the importance of seat belt reminders very important.

A warning for problems with the electrical connection for seat belt reminder systems should be considered so consumers know if the reminder system is not functioning properly. NHTSA should seek wireless options that would eliminate the need for reconnection by consumers where human error could be a factor. If reconnection is necessary in removable seats, an audio-visual alert indicating that a reconnection was not made properly should be persistent so that the driver ensures proper reconnection every time a seat is reconnected.

10. Owner's manual / label requirements.

Instructions on how the seat belt reminder system functions should be included in the owner's manual and be easy to understand. It is important for consumers to know what features are in their vehicle and how they work.

11. Interaction with other vehicle warnings.
No comment.

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

Occupant detection is not required in other markets, but we believe it is necessary for these systems. Differences in child passenger safety requirements and regulations between markets should be taken into consideration. Consideration for the most effective system is more important than harmonization with other markets.

13. *Visual warning location.*

The visual warning should be displayed so that the driver is able to see it and determine the seating location of the unbuckled occupant. Ensuring the driver receives this information is critical especially when children are involved as they do not understand the implications of riding unbuckled.

As we move towards autonomous vehicles, there may no longer be a "driver." In this case, it would be important for occupants in all seating positions to receive an audio-visual reminder.

14. What type of information should the warning convey?

The warning should convey the location of each unbuckled occupant (negative-only system). The system should only provide information when a seating position is occupied, but the seat belt is not being used. Occupant detection that can discern the difference between occupants and objects would be necessary for a negative only warning system. Eliminating false alarms is important to avoid annoyance or tuning out the alerts.

15. Telltale Characteristics.

Consistency in the visual reminder characteristics would help drivers recognize the visual icons in various vehicles. This would be helpful for those driving multiple vehicles, rental vehicles, etc.

16. Minimum duration - visual
17. Minimum duration – audio

With respect to the minimum duration for both the audio and visual reminder alerts, we believe that both should be persistent alerts until all occupants are safely buckled.

18. Other audible signal characteristics.
No comment.

19. Applicability – which vehicles should seat belt reminder systems apply?

Seat belt reminder systems should be included in vehicles 10,000 lbs and under including high-occupancy vehicles like 15-passenger vans and school buses. Given the likelihood of rear seat passengers and vulnerable passengers like children, elderly or disabled individuals in high-occupancy vehicles the need for seat belt reminders is important. In these larger vehicles, it is also more difficult for the driver to visually see if occupants are belted, so a system to alert them is important.

20. Effectiveness
21. Consumer Acceptance

A multitude of studies have shown audio and visual rear seat belt reminder systems to be successful at increasing seat belt use. Seat belt reminders help the driver encourage passengers to buckle up. A 2017 survey from the Insurance Institute of Highway Safety (IIHS) revealed that of 1,172 respondents who had ridden in the back seat during the preceding six months; 75% of the respondents said they would be more likely to wear the rear seat belt if someone in the car reminded them, 62% would if there was an audible belt reminder, and 50% would if there was a visual belt reminder.[10]

In 2015, NHTSA conducted a phone survey of consumers on the effectiveness and consumer acceptance of rear seat belt warning systems. The study found that overall, drivers of vehicles with a rear seat belt warning system were satisfied with the system and noticed an increase in rear seat belt use. It is also important to note that the study found that among passengers who unbuckled during a trip, 77% eventually refastened the belt.[11]

22. Technological and Economic Feasibility

The technology is readily available and cost efficient as noted above. Seat belt reminder systems are being included in a number of makes and models already in the U.S. and in international markets. The additional cost certainly does not appear to be a barrier to implementation.

23. Benefits and cost

[10] Insurance Institute for Highway Safety, Unbelted: Adults Admit They Often Skip Belts in Rear Seat, 52 STATUS REP. 1, 3 (Aug. 3, 2017), https://www.iihs.org/api/datastoredocument/status-report/pdf/52/5
[11] Paul Schroeder & Melanie Wilbur, *Survey of Principal Drivers of Vehicles with a Rear Seat Belt Reminder System*, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN. (2015).

The benefits of seat belt reminder systems would be enormous. Nearly 1,000 fatalities and 19,000 injuries could be avoided with increased seat belt use. The economic benefits of lives saved and injuries averted would be exponential.

Needless deaths and injuries that result from non-use of seat belts cost society approximately $10 billion annually in medical care, lost productivity and other costs, according to NHTSA. The cost of seat belt reminder systems is minimal and the benefits clearly outweigh the costs.

24. Safety Act Criteria

The requirements in 49 USC 30111 are that standards be practicable, meet the need for motor safety, and be stated in objective terms. Requiring seat belt reminder systems does just that. It is a very reasonable standard that protects the motoring public through increasing the use of one of the most effective safety features that exists today – seat belts. The use of seat belts addresses a critical safety issue on American roadways today.

25. Non-regulatory Alternatives

Seat belt reminders for all seating positions should be added to NCAP recognition, but only in ***addition*** to a regulatory mandate that the warning system be a standard feature. NCAP recognition is no replacement for a standard and does not guarantee that all consumers will be protected.

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

KidsAndCars.org supports amending FMVSS No. 208 by removing the 8-second limitation since it will not impact the 4-second minimum.

CONCLUSION

Seat belt reminder systems as standard equipment in all passenger vehicles should have been a reality years ago. The technology is readily available in already being used by some automakers. The life-saving benefits are indisputable and a final rule for seat belt reminders in all seating positions should be implemented immediately. The lives of countless Americans depend on it.

Janette E. Fennell
President & Founder

Amber Rollins
Director