



November 13, 2019

Docket Management Facility  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Re: Docket Number NHTSA-2019-0093

Dear Docket Officer:

Thank you for allowing the National Safety Council (NSC) to offer the following comments to the National Highway Traffic Safety Administration (NHTSA) advance notice of proposed rulemaking (ANPRM) in regards to amending Federal Motor Vehicle Safety Standard (FMVSS) No. 208. The “Occupant crash protection” revised standard will require a seat belt use warning system for all rear seating positions.

The National Safety Council is a 100-year-old nonprofit committed to eliminating preventable deaths by focusing on injuries from the workplace to anyplace. Our more than 15,000 member companies represent employees at more than 50,000 U.S. worksites.

NSC supports requiring a seat belt use warning system for rear seats. Data clearly reflects the safety impact of seat belt use in all seating positions. According to NHTSA, of the 23,551 passenger vehicles occupants killed in motor vehicle crashes in 2017, 43 percent were not wearing seat belts<sup>1</sup>. An estimated 14,955 lives were saved in 2017 thanks to seat belts, and an additional 2,549 people potentially could have been saved if they were properly restrained with a seat belt.<sup>2</sup> One study estimated that rear seat occupants who wear a seat belt, compared with those who do not, can reduce their risk of death by approximately 60 percent in a car and 70 percent in a light truck.<sup>3</sup> The Centers for Disease Control and Prevention has concluded that seat belt use is the most effective way to save lives and reduce injuries in crashes, yet roughly one in seven people still don’t buckle up.<sup>4</sup>

People who are not properly restrained are 30 times more likely to be ejected from a vehicle during a crash and more than three out of four people who are ejected during a crash die from their injuries.<sup>5</sup> Furthermore, a NHTSA survey found that seat belt use continued to be lower in the back than in the front seats.<sup>6</sup> Seat belts prevent occupants from being ejected and reduce potentially lethal contact with other passengers and surfaces.<sup>7</sup>

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<sup>1</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812691>

<sup>2</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812683>

<sup>3</sup> <https://injuryprevention.bmj.com/content/13/3/183.full>

<sup>4</sup> <https://www.cdc.gov/motorvehiclesafety/seatbeltbrief/index.html>

<sup>5</sup> *Ibid.*

<sup>6</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/810933>

<sup>7</sup> Charles J. Kahane. 2015. Lives Saved by Vehicle Safety Technologies and Associated Federal Motor Vehicle Safety Standards, 1960 to 2012—Passenger Cars and LTVs—With Reviews of 26 FMVSS and the Effectiveness of Their Associated Safety



Seat belts not only save lives, but save tax payer dollars as well. Motor vehicle-related fatal and nonfatal injury costs exceeded \$99 billion, while costs associated with occupant fatal and nonfatal injuries accounted for 71 percent or \$70 billion of all motor vehicle-related costs in one year alone.<sup>8</sup>

Currently, about 13 percent of model year 2019 vehicles sold in the U.S. come equipped with a rear seat belt warning system.<sup>9</sup> By amending FMVSS No. 208 to require rear seat belt warning systems, it will be mandatory for auto manufacturers to implement this life saving technology. NSC supports the application of this requirement for all passenger cars sold in the U.S.

NSC also supports the incorporation of lap and shoulder belts into school buses to ensure the safest ride to school for children. School transportation systems are the largest mass transit program in the nation with more than 55 million student trips per day and approximately 10 billion student trips per year.<sup>10</sup> School bus transportation is also one of the safest forms of ground transportation in part thanks to compartmentalization, which provides a protective envelope of strong, closely spaced seats that have energy-absorbing seat backs. However, in order for compartmentalization to provide maximum protection, occupants must be seated correctly, meaning upright, fully in the bus seat and facing forward. According to NHTSA, from 2008 to 2017 there were 264 school-age children killed in school-transportation-related crashes.<sup>11</sup> More can be done to protect children on their way to school, and requiring lap and shoulder seat belts in school buses is an effective way to provide the highest level of protection for school bus passengers.

In addition to passenger cars, NSC supports the incorporation of lap and shoulder belts into limousines. On October 1, 2019, the National Transportation Safety Board (NTSB) released recommendations to require the implementation of lap and shoulder belts into limousines.<sup>12</sup> The NTSB also recommended requiring seating systems in these vehicles to meet minimum performance standards to ensure their integrity during a crash. NTSB's investigation of a 2018 limousine crash revealed the seats were not properly designed for occupant crash protection.<sup>13</sup> Evidence from first-responders indicated that none of the passengers were wearing seat belts at the time. Properly designed seats and seat belt systems have the potential to mitigate injuries and improve the chance of survival during a crash in all vehicles. NSC supports these recommendations and urges NHTSA to research and further study the effectiveness of seat belt systems in limousines.

The European Union already has begun an effort to update seat belt regulations that will require seat belt reminder systems in all front and rear seats on new cars beginning in September 2019.<sup>14</sup> In 2018, the EU also updated its New Car Assessment Program (NCAP) by

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Technologies in Reducing Fatalities, Injuries, and Crashes. DOT HS 812 069. Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration, p. 89.

<sup>8</sup> <https://www.ncbi.nlm.nih.gov/pubmed/20730682>

<sup>9</sup> New Car Assessment Program (NCAP) Buying a Safer Car.

<sup>10</sup> Wiegand et al. (2010)

<sup>11</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812712>

<sup>12</sup> <https://ntsb.gov/news/press-releases/Pages/NR20191002.aspx>

<sup>13</sup> <https://ntsb.gov/investigations/AccidentReports/Reports/HSR1902.pdf>

<sup>14</sup> <https://etsc.eu/seatbelt-reminders-on-every-new-car-seat-from-2019/>



giving improved scores for vehicles with rear seat belt reminder systems, further supporting the adoption of these systems. Given the fact the U.S. is the fourth-largest exporter of cars to the EU, manufacturers will need to implement these systems into new model passenger cars in order to comply with these regulations.<sup>15</sup>

### **ANPRM Questions**

1. Should the warning be visual-only, audible-only, or audio-visual? And what should the minimum duration be?
  - According to an Insurance Institute for Highway Safety (IIHS) study, audible reminders lasting at least 90 seconds were significantly more effective for increasing seat belt use than an intermittent audible reminder. IIHS estimates that an audible reminder lasting 90 seconds could save up to 1,489 lives annually.<sup>16</sup> Additionally NHTSA research shows that audible warnings in conjunction with visual warnings are generally more effective than text or icons alone.<sup>17</sup> NSC supports both the audio and visual features to be implemented for rear seat belt reminder systems.
  
2. However, might it be preferable to delay the warning to a time when the warning could be given greater attention and, perhaps, the driver (or other occupant) is less distracted? Would delaying the warning until the vehicle is placed in gear make it more likely that the occupants fasten their belts before the vehicle is in motion?
  - An IIHS study found that an indefinite reminder and a 100 second constant reminder increased seatbelt use by 30-34 percent over an intermittent reminder.<sup>18</sup> A 30-34 percent increase in belt use would save 1,489 lives each year.<sup>19</sup> Long single cycle durations, and high maximum sound frequencies increase seat belt use. The system that continued to cycle auditory/visual reminders throughout the entirety of the drive was rated as more effective than systems that cycled for a limited number of times.<sup>20</sup>
  - Seat belt reminder systems with an intrusive and more aggressive acoustic signal are most effective in getting occupants to wear seat belts.<sup>21</sup>

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<sup>15</sup> <https://www.acea.be/publications/article/eu-us-automobile-trade-facts-and-figures>

<sup>16</sup> <https://www.iihs.org/topics/bibliography/ref/2185>

<sup>17</sup> DOT 2009 Belt Warning Study, *supra*, p. 39 (drivers); p. 45 (passengers).

<sup>18</sup> <https://www.iihs.org/news/detail/belt-reminders-can-be-just-as-effective-as-interlocks>

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*

<sup>21</sup> [https://www.swov.nl/sites/default/files/publicaties/gearchiveerde-factsheet/uk/fs\\_seatbelt\\_reminders\\_archived.pdf](https://www.swov.nl/sites/default/files/publicaties/gearchiveerde-factsheet/uk/fs_seatbelt_reminders_archived.pdf)



3. How would the costs and benefits of such a warning compare to more traditional types of warnings?
  - Seat belt reminder systems require a relatively small investment and have great potential to reduce injury as well as costs to society.<sup>22</sup> The systems are comprised of three basic components: 1. a sensor in the seat which detects occupancy; 2. a sensor in the safety belt buckle; 3. a control unit for a reminder system that features flashing lights and/or an audible chime. Low cost 2-D or digital cameras also could be used to detect a rear seat passenger. Not only were these cameras found to be highly reliable, they are also cheaper than the sensors described above.<sup>23</sup> The cost will decrease even further if rear seat belt reminder systems are required in all vehicles.<sup>24</sup>
4. NHTSA seeks comment on potential consumer acceptance concerns with a proposed seat belt warning system.
  - For reminder systems to be successful, they must not only provide sufficient motivation to buckle up but also achieve a minimum level of acceptance among both the belted and unbelted populations. A 2018 survey commissioned by NSC, found that 70.1 percent of the 2,000 drivers surveyed were in favor of a law that required all cars to have seat belt reminders that continuously chime until the seat belt is buckled, including rear seat passengers.<sup>25</sup> Additionally, NHTSA conducted 106 in-depth interviews with part-time seat belt users, non-users and full time users, finding that nearly two thirds of respondents rated seat belt warning systems as, “acceptable”, while approximately 80 percent thought they would be effective.<sup>26</sup>
5. We also seek comment on whether NHTSA should propose that information be provided in the vehicle owner's manual that accurately describes the warning system's features, including the location and format of the visual warnings, in an easily understandable format.
  - In order to achieve the full safety potential of seat belt warning systems and to reduce distraction and confusion, NSC supports the inclusion of the system's features in the vehicle owner's manual. It is imperative to educate the public on how to best interact with vehicle technology to ensure a better, safer driving experience. Communicating the appropriate operation of these systems may prove difficult without consistent education. With great system complexity, greater knowledge and understanding of the system is required. By including seat belt warning system features into the owner's manual, drivers and passengers would be familiarized with how the system functions.

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<sup>22</sup> Ibid.

<sup>23</sup> [https://www.autosafety.org/wp-content/uploads/2017/08/Advocates\\_for\\_Highway\\_Auto\\_Safety\\_-\\_Petition.pdf](https://www.autosafety.org/wp-content/uploads/2017/08/Advocates_for_Highway_Auto_Safety_-_Petition.pdf)

<sup>24</sup> Ibid.

<sup>25</sup> <http://www.norc.org/Research/Projects/Pages/underutilized-strategies-in-traffic-safety-results-of-a-nationally-representative-survey.aspx>

<sup>26</sup> <https://www.nap.edu/read/10832/chapter/6#72>



- It is also important to note safety features, such as seat belt warning systems, have different operational parameters and limitations across manufacturers and sometimes even across the same manufacturer's varying models. Many safety features also have different generic names that vary among manufacturers. NSC urges NHTSA to consider standardizing generic nomenclature as well as standardizing warning and icon symbols to reduce driver confusion.

NSC applauds NHTSA for its continued efforts to promote occupant crash protection by amending FMVSS No. 208, to require a seat belt use warning system for rear seats. NSC supports the incorporation of this lifesaving technology in passenger cars, school buses and limousines. Seat belt use is an effective, data proven way to reduce crash fatalities.

Thank you for allowing NSC the opportunity to comment on this advance notice of proposed rulemaking.

Sincerely,

A handwritten signature in cursive script that reads "Lorraine M. Martin".

Lorraine M. Martin  
President & CEO