



Statement of

**Bruce Landsberg
Vice Chairman**

National Transportation Safety Board

to the

Joint Committee on Transportation

General Court of the Commonwealth of Massachusetts

— On —

S.7 – An Act Relative to Improving Safety on the Roads of the Commonwealth

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Good morning Co Chairs Boncore and Straus, and Members of the Committee. My name is Bruce Landsberg. I am honored to appear before you today as Vice Chairman of the National Transportation Safety Board (NTSB), to discuss the NTSB's recommendations related to safety belt use, and distracted and impaired driving.

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation – railroad, highway, marine, and pipeline. The NTSB determines the probable cause of each accident it investigates and makes safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety. The recommendations that arise from our investigations and safety studies are the NTSB's most important tool for saving lives and preventing injury.

NTSB continues to investigate the Sept. 13, 2018, series of explosions and fires in the Merrimack Valley region of Massachusetts, that killed one person and sent at least 21 others to area hospitals. We very much appreciate your quick action to enact legislation addressing the urgent recommendations we issued calling for the elimination of the professional engineer licensure exemption for public utility work.

PRIMARY SEAT BELT ENFORCEMENT

Motor vehicle crashes are responsible for more deaths than crashes in all other transportation modes combined – more than 90 percent of all transportation-related deaths every year. The single greatest defense against motor vehicle injuries and fatalities is the seat belt.

Seat belts are the best defense against motor vehicle injuries and fatalities because they protect vehicle occupants from the extreme forces experienced during crashes. Unbelted vehicle occupants frequently injure other occupants, and unbelted drivers are less likely than belted drivers to be able to control their vehicles. In addition, seat belts prevent occupant ejections. In 2016, only 1 percent of vehicle occupants using seat belts were ejected, while 29 percent of unrestrained vehicle occupants were ejected. Among those occupants completely ejected from their passenger vehicles, 81 percent were killed.

The National Highway Traffic Safety Administration (NHTSA) estimates that seat belts saved the lives of nearly 15,000 motor vehicle occupants age 5 and older in 2016, nationwide. Further, had all passenger vehicle occupants age 5 and older used seat belts in 2016 an additional 2,456 lives could have been saved. From 1975 through 2015, seat belts saved more than 344,000 lives nationwide.

Here in Massachusetts, 246 lives were saved by seat belts in 2016, and another 44 could have been saved if all vehicle occupants had worn their belt.

Unfortunately, seat belt use in the United States remains lower than in other industrialized nations, which have rates well over 90 percent. In 2017, seat belt use in the United States was 89.7

percent. However, in Massachusetts, it was 73.7 percent, a decline of 4.5 percent from 2016. Only New Hampshire, which has no seat belt use requirement for adults, was lower.

Although 49 states require motor vehicle occupants to use seat belts, 15 states – including Massachusetts – allow only secondary enforcement of their seat belt laws. Secondary enforcement means that police officers cannot issue a citation for a seat belt violation unless the vehicle has been stopped for another reason. According to the 2018 National Occupant Protection Use Survey, the average belt use was 90.6 percent in states authorizing primary enforcement; it was 86.4 percent in states authorizing only secondary enforcement.

Drivers who choose not to buckle up tend to exhibit multiple high-risk behaviors and are more frequently involved in crashes. According to the National Automotive Sampling System (crash data composed of representative, randomly-selected cases from police reports), belt use among motorists is lowest in the most severe crashes.

Fatal crashes are the most violent motor vehicle crashes and often result from high-risk behaviors such as speeding and impaired driving. While observational surveys showed a 90.1 percent seat belt use rate in 2016, use by occupants involved in fatal crashes was only 73 percent. Among those occupants fatally injured in traffic crashes, only 52 percent were restrained, and 48 percent were unrestrained.

Seat belt use is also substantially lower than the national observed belt use rate among special populations, such as impaired drivers and teen drivers. In 2013, 68 percent of fatally injured drivers who were driving while impaired were not using seat belts. During that same year, 49 percent of fatally injured teen drivers who had been drinking were not restrained.

Although opponents to strong seat belt laws claim that nonuse is a personal choice and affects only the individual, the fact is that motor vehicle injuries and fatalities have a significant societal cost. NHTSA calculated that the lifetime cost to society for each motor vehicle fatality is about \$1.4 million. More than 80 percent of these costs were attributed to lost workplace and household productivity.

With primary enforcement, police officers execute a traffic stop and cite unbelted vehicle occupants without needing another reason for making the stop. Data show that states with primary enforcement seat belt laws are those states that have the highest seat belt use. States that have enacted primary enforcement seat belt laws have historically experienced increased seat belt use rates between 5 and 18 percentage points. The increased use is based on the realization by drivers that they may be stopped for violating the seat belt law.

Primary enforcement of seat belt use laws has also been associated with a reduction in fatalities. A 2004 study examining 10 states that moved from secondary to primary enforcement of seat belt use laws concluded that the change resulted in a 7 percent reduction in fatalities. A similar 10 percent reduction in fatalities was observed in Minnesota, which introduced primary enforcement in 2009.

Primary enforcement seat belt laws remain the best way to raise and maintain high seat belt use rates. Numerous scientific publications and the U.S. Guide to Community Preventive Services' systematic review of all available scientific literature show that primary enforcement seat belt laws increase seat belt usage, and with increased usage comes fewer injuries and fatalities.

NTSB has investigated many crashes where seat belts would have saved lives or prevented serious injuries. Therefore, NTSB has recommended since 1995 that every state enact a primary seatbelt law covering every seating position. Based on scientific studies and our own highway crash investigations, the NTSB is confident that a significant number of lives would be saved, and injuries would be prevented if Massachusetts authorizes primary enforcement of its existing seat belt use law.

The NTSB's most recent recommendation, that states mandate the use of seat belts on all vehicles equipped with belts, including intercity motorcoaches and other passenger vehicles resulted from our investigation of a 2014 crash in Davis, Oklahoma. In that crash, four college athletes were killed when they were ejected from the medium-size bus in which they were riding after it collided with a tractor trailer. None of the passengers were wearing safety belts. Our investigation concluded that the lack of restraint use by the bus passengers contributed to the severity of the injuries.

DISTRACTED DRIVING

The NTSB is concerned about the growing number of highway crashes that involve driver distraction, particularly by portable electronic devices. It is estimated that almost one in 10 of those deaths (9.2 percent) occurred in a crash involving distracted driving. NHTSA estimates that about 3,450 fatalities occurred in distraction-affected crashes in 2016.

While data is being collected, currently there is no reliable method to accurately determine exactly how many crashes involve portable electronic devices or other distractions; therefore, it is impossible to know the true scope of the problem.

Since 2002, we have investigated at least six major highway crashes in which distraction due to the use of portable electronic devices caused or contributed to the outcome. We also have seen distractions caused by the use of electronic devices in other modes of transportation.

Epidemiological, driver simulator, and naturalistic studies all show that the risk of a crash is higher when a driver uses an electronic device. These studies, conducted by a variety of different institutions, have made the case that the use of portable electronic devices by motor vehicle operators are dangerously distracting.

Portable devices are ubiquitous. According to industry sources, there were 395.9 million wireless subscriber connections as of December 31, 2016 – or more than one for every man, woman, and child in the country. And, we use them while we are driving.

In 2013, the AAA Foundation for Traffic Safety reported that more than two out of three drivers indicated that they talked on a cell phone while driving within the past 30 days. More than

one of three drivers admitted to reading a text message or e-mail while driving, and more than one of four drivers admitted to typing or sending a text or e-mail.

A 2015 report from State Farm revealed a new trend: nearly 30 percent of drivers surveyed admitted to accessing the Internet while driving. That compares to just 13 percent who admitted to surfing the Web while driving in 2009.

Drivers don't just experience a visual or manual distraction when using a cell phone or other type of device; they also suffer a cognitive distraction. On November 14, 2004, an experienced motorcoach driver, distracted by talking on his hands-free cell phone, failed to notice both that low-clearance warning signs were posted and that the motorcoach he was following had changed lanes to a lane in which the clearance was sufficient. As a result, he failed to move to the center lane and struck the underside of an arched stone bridge on the George Washington Parkway in Alexandria, Virginia. Eleven of the 27 high school students on the bus were injured. In his post-accident interview, despite the numerous warnings and his knowledge of the route, the driver stated that he did not recall seeing the bridge until the accident occurred. This crash paints a clear picture that cognitive distraction while conversing is not just limited to the hand-held use of a device.

Other research supports this fact. Two studies examining crash data, one published in the *New England Journal of Medicine* in 1997 and one published in the *British Medical Journal* in 2005, identified as much as a four-fold increase in crash risk when engaging in a cell phone conversation. More recently, in 2011, the Swedish National Road and Transport Research Institute reviewed studies examining distraction resulting from cell phone use and found longer reaction times with cell phone use, regardless of whether it is handheld or hands-free. Likewise, reviews conducted by researchers at Monash University in 2007 and at the University of Calgary in 2008 concluded that performance was degraded using both handheld and hands-free cell phones.

The Virginia Tech Transportation Institute conducted a series of naturalistic studies and found that the odds ratio for a motor vehicle crash or near-crash involving an experienced driver was 2.49 for dialing and 1.37 for reaching for a phone.

Recent studies by the AAA Foundation also show that hands-free is not risk-free. A driver's level of cognitive distraction is about equal whether using a hands-free or hand-held cell phone. Even voice-based systems may not eliminate distraction and may have unintended effects on traffic safety. In a study released early this year, the Foundation concluded that "visual-manual interaction with cell phones while driving, particularly but not exclusively relative to text messaging, was associated with approximately double the incidence of crash involvement relative to driving without performing any observable secondary tasks."

Finally, the public agrees that cell phone use is dangerous. In June 2014, the National Safety Council reported that 73 percent of drivers think that more enforcement of texting laws is needed. And the AAA Foundation for Traffic Safety reported that 85 percent of Americans think that other drivers who talk on cell phones are a threat to safety.

There is no doubt that the adoption of safe driving behavior, free of electronic device use, will require a cultural shift. If change is to happen, it will require a three-pronged approach: good laws, good education, and good enforcement. We have seen this approach work to improve highway safety with the widespread use of seatbelts, increased use of child restraints, and reduction in drunk driving. Public education continues to be important for reaching drivers, operators, and safety-critical personnel about the dangers of distractions. But education campaigns must be built on a foundation of strong laws and effective, visible enforcement. In 2015, NHTSA began development on a distracted driving training course for law enforcement, a monograph for prosecutors on investigating and prosecuting distracted driving cases, and a Lessons Learned Guide summarizing the highlights of the recently completed distracted driving High Visibility Enforcement demonstration project.

Recognizing the need for drivers to focus on the driving task, in December 2011, the NTSB recommended that all 50 states and the District of Columbia ban the nonemergency use of all portable electronic devices (other than those designed to support the driving task) for all drivers.

Currently only 16 states and the District of Columbia ban the use of hand-held cell phones while driving. The District of Columbia and 38 states restrict the use of cell phones by novice drivers, and 47 states and the District of Columbia ban text messaging while driving. And, your legislative colleagues around the nation are very interested in this topic. The National Conference of State Legislatures has identified 185 bills that have been introduced in 42 states this year.

Distraction is unsafe. It takes the driver's attention away from the driving task. And personal electronic devices increase the risk of distraction – whether they are used for texting or hands-free talking and listening. The NTSB is especially concerned about distractions from the use of electronic devices both because of our accident investigations and because of the increasing use of these devices by the general population. With more and more drivers using devices instead of focusing on driving safely, everyone on the road is at risk.

Distraction is not just about holding a device in a hand or glancing away from the road; it is also about mentally straying from the driving task. Drivers may think multitasking is possible to do effectively. But research studies, statistics, and lives lost show this is not the case. Even a momentary distraction of a driver's attention from the driving task – such as scanning a text message or talking on a hands-free phone – can have catastrophic consequences.

The NTSB believes a significant number of lives can be saved and injuries avoided if Massachusetts expands and strengthens its law to include all nonemergency use of all portable electronic devices. It is past time to face the fact that portable electronic devices create distracted drivers, and distracted driving is a serious safety risk. It's not just about protecting the life of the distracted driver – it's about providing for the safety of everyone else on the road. The fact is that no text, no call, no social media update is ever worth a human life.

IMPAIRED DRIVING

Like all other states, Massachusetts has made efforts to address impaired driving, making considerable progress in detecting, arresting, and adjudicating impaired drivers. However, alcohol-related crashes continue to claim thousands of lives nationwide. In 2017, more than a third – 120 – of the deaths on Massachusetts highways were alcohol-related.

In 2012, the NTSB re-examined the impaired driving problem and in 2013 published our study, “Reaching Zero – Actions to Eliminate Alcohol-Impaired Driving.” This report included a comprehensive set of 19 targeted interventions that were a part of the NTSB’s bold, fresh look at this issue in an effort to end alcohol-impaired driving. The recommendations included requiring the mandatory use of ignition interlock devices for all offenders convicted of driving while impaired.

An alcohol ignition interlock is a device that is connected to the ignition circuit of a vehicle and prevents the engine from starting until a breath sample has been provided, analyzed for ethanol content, and determined to be lower than prescribed limits. Many systems require additional breath samples at intervals during the driving task (“running retests”). In the United States, ignition interlocks have historically been viewed as a sanction for repeat or high-BAC offenders; however, in recent years, the movement has been toward mandating ignition interlocks for all DWI offenders, including first-time offenders. Currently 32 states plus the District of Columbia have all-offender ignition interlock laws

Research evaluation of ignition interlock programs over the last two decades has found that ignition interlock devices are effective in reducing recidivism among DWI offenders, sometimes by as much as 62 to 75 percent. One study examined the effectiveness of laws that require alcohol interlock installations for first-time offenders as well as repeat or high-BAC offenders; it found an additional benefit in reducing repeat DWI offenses.¹ Similarly, according to another estimate, if all drivers with at least one alcohol-impaired driving conviction within the 3 years prior to the accident used zero-BAC interlock devices, approximately 1,100 deaths could have been prevented in 1 year.²

Based on the lack of progress in reducing alcohol-impaired driving fatalities over the last two decades, it is clear that more can be done to prevent these tragedies. The evidence shows that ignition interlock technology can – and should – be embraced in this battle. There is no argument that addressing this leading killer on America’s roads requires a bold, multi-faceted approach involving everyone from the serious repeat offender to those who, for whatever reason, have simply had too much to drink and cannot operate a vehicle safely. The use of ignition interlock devices for all DWI offenders, not only high-BAC or repeat offenders, should be one element of this effort.

¹ A. T. McCartt and others, *Washington State’s Alcohol Ignition Interlock Law: Effects on Recidivism Among First DUI Offenders*, (Arlington, VA: Insurance Institute for Highway Safety, 2012).

² A. K. Lund and others, “Contribution of Alcohol-Impaired Driving to Motor Vehicle Crash Deaths in 2005,” *8th Ignition Interlock Symposium, Seattle, Washington* (2007).

Thank you again for providing the NTSB an opportunity to testify on these important issues. I would be happy to answer any questions you may have.

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