Statement of the National Safety Council
United States Senate
Committee on Commerce, Science, and Transportation
Hearing on,
Highly Automated Vehicles: Federal Perspectives on the Deployment of Safety Technology
Wednesday, November 20, 2019

Thank you for allowing the National Safety Council (NSC) to submit this statement for the record. NSC is a 100-year-old nonprofit based in Itasca, Ill., with a mission to end preventable deaths in our lifetime at work, in homes and communities and on the road through leadership, research, education and advocacy. Our more than 16,000 member companies represent employees at more than 50,000 U.S. worksites. These members are across the U.S. and likely are in each district represented on this Committee.

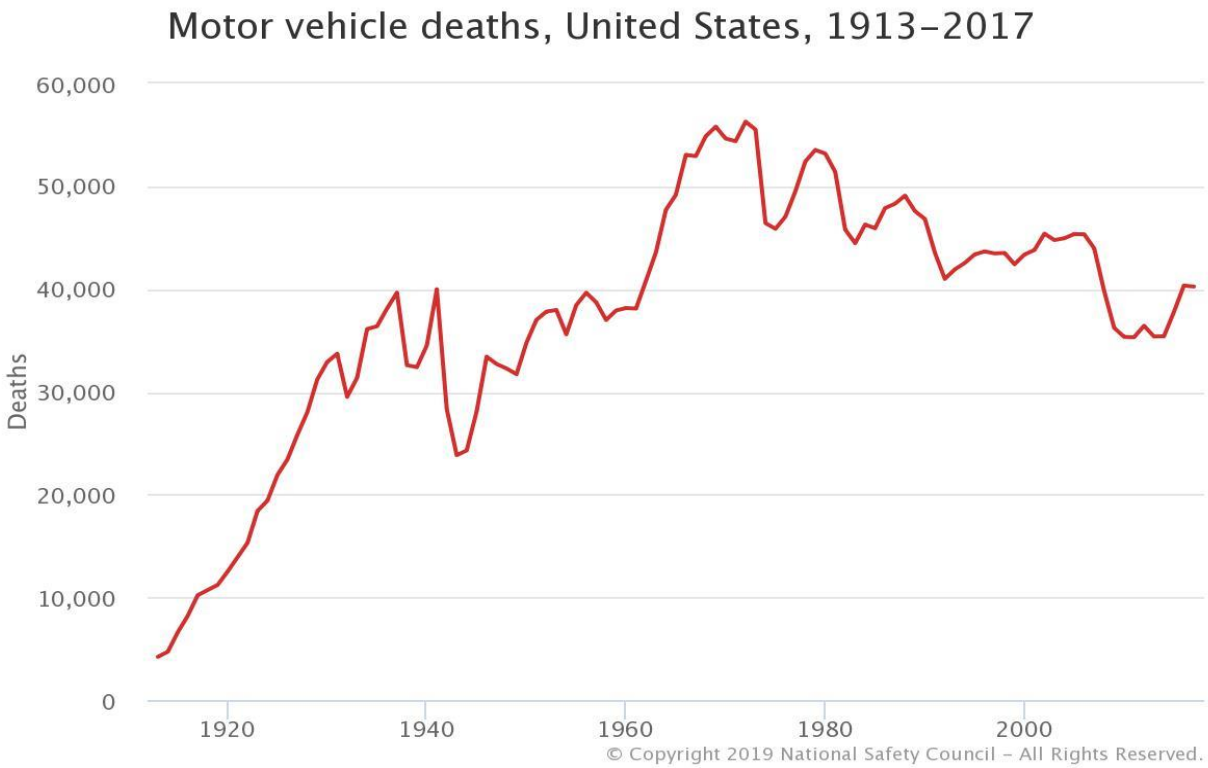
The National Safety Council estimates that approximately 40,000 people were killed in motor vehicle crashes in 2018.[1] Your timing for this hearing is critical. As we enter the holiday season, NSC estimates that U.S. roads will experience 417 fatalities over the Thanksgiving holiday, and another 47,500 people may be seriously injured.[2]

Included here are the number of people killed in motor vehicle crashes in 2018 from the Chairman's and Ranking Member's states.[3]

Mississippi	664
Washington	546

These are the lives of your constituents. These mothers, fathers, sisters, brothers, aunts and uncles contributed to the communities in which they lived. Yet, our national outrage at these losses is conspicuously absent, particularly when you compare to deaths in other forms of transportation, such as aviation. These crashes and deaths on our roadways not only have a human toll, but there is an annual cost to the American economy of over $433 billion.[4] The U.S. has consistently avoided the hard choices needed to save lives on the roadways, and NSC calls on Congress to act in a bipartisan manner to implement policies that will save lives. We know the solutions; we need the will to enact them.

[1] https://www.nsc.org/in-the-newsroom/2018-marks-third-straight-year-that-motor-vehicle-deaths-are-estimated-to-have-reached-40-000
[2] https://injuryfacts.nsc.org/motor-vehicle/holidays/thanksgiving-day/
[3] https://cdan.nhtsa.gov/STSI.htm#
[4] https://injuryfacts.nsc.org/motor-vehicle/overview/introduction/



Road to Zero

NSC is so committed to the goal of zero deaths on the roadways that we lead, in partnership with the U.S. Department of Transportation, the Road to Zero Coalition, a diverse group of over 900 members committed to eliminating roadway fatalities by 2050. Over the past two and a half years, the coalition has grown to include members from across the country representing transportation organizations, businesses, academia, safety advocates and others, the first time so many organizations have collaborated to put forth a plan to address fatalities on our roads.

The centerpiece of the coalition's work has been the creation of the Road to Zero report, a comprehensive roadmap of the strategies necessary to achieve its goal by 2050. In April 2018, the coalition issued its report with three primary recommendations.

1. Double down on what works through proven, evidence-based strategies
2. Accelerate advanced life-saving technology in vehicles and infrastructure
3. Prioritize safety by adopting a safe systems approach and creating a positive safety culture

The Lifesaving Potential of Advanced Technology

NSC believes advanced vehicle technology, up to and including fully automated vehicles, can provide many benefits to society. The most important contribution will be the potential to greatly reduce the number of fatal crashes on our roadways. Federal leadership on motor vehicle safety is necessary because there should only be one level of safety. Consumers need confidence in vehicles regardless of where they reside; manufacturers need certainty in order to invest in design and production, and states do not possess the expertise and the resources to replicate design, testing and reporting programs. Further, a patchwork of requirements will result in

confusion for consumers and increased cost for manufacturers and operators attempting to comply with a myriad of requirements. Finally, the absence of a safe, workable standard will drive development, testing and deployment overseas, resulting in the flight of innovation and the jobs that accompany it to locations outside of the U.S.

To reach zero deaths, we need to encourage the development of innovations that address human errors and road design failures and, once proven, establish mandates for adoption of technologies that work. The potential safety benefits of automated vehicles could be incredible; however, it will be decades before we have meaningful fleet penetration on U.S. roadways of AVs.

One of the biggest challenges in moving from level 1 to level 4/5 vehicles is successfully identifying the improvements needed for the human-machine interface to be successful. In other industries, such as aviation, there have been many lessons learned regarding mode confusion and overreliance on automation. We must recognize that the most dangerous environment will exist when both the human and machine are involved in the safe operation of a vehicle. The greatest risks are not when one or the other has sole responsibility for the vehicle, but when the control is shared.

Advanced Driver Assistance Systems (ADAS) can prevent or mitigate crashes. Consumer education about these new technologies is of utmost importance, and NSC is expanding consumer education around these new technologies. NSC and the University of Iowa created the first and largest ADAS national campaign at, MyCarDoesWhat.org, to help. When a person visits MyCarDoesWhat.org, he or she learns about dozens of existing safety features such as lane departure warning, blind spot monitoring, backup cameras, automatic emergency braking and more. The purpose of MyCarDoesWhat is to educate the public about these assistive safety features in order to maximize their potential lifesaving benefits.

Another way to advance consumer understanding is to standardize the nomenclature or taxonomy for advanced technologies. NSC recommends that, at the very least, systems that are not fully automated or Level 5 should not be described as such. ADAS, with emphasis on driver assist, represents the vehicles being sold today and requires drivers to remain fully engaged in the driving task. That fact is often lost in marketing, media reports and consumer expectations. Labeling a motor vehicle as “automated” or “autonomous” today, or even using terms such as “autopilot,” only confuse consumers and can contribute to losses of situational awareness around the driving task. By establishing standard nomenclature and establishing clear performance outcomes, consumers will better understand what they should expect from these technologies.

Today (Nov. 20), NSC, in collaboration with AAA, Consumer Reports, and J.D. Power, released recommendations to standardize nomenclature in order to help educate consumers on the benefits, limitations, and proper use of these new technologies. (See www.nsc.org/in-the-newsroom for more details.) The four organizations agreed on standardized naming that is simple, specific, and based on system functionality in an effort to reduce consumer confusion. Today, 93 percent of new vehicles offer at least one ADAS feature and while the technology has the potential to improve safety and save lives, the terminology prioritizes marketing over clarity. We urge other safety organizations, automakers, journalists, and lawmakers to join us in adopting these terms.

Additionally, the National Safety Council was a founding member of PAVE (Partners for Automated Vehicle Education), which launched in January of 2019. PAVE is a broad-based

coalition that includes automotive and technology companies, safety and mobility advocates and community partners. PAVE members believe that in order to fully realize the benefits of self-driving technology, policymakers and the public need factual information about the present and future state of such technology. PAVE enhances public understanding through a variety of strategies including an educational website at PaveCampaign.org, “hands-on” demonstrations allowing the public to see and experience driverless technology and workshops to help understand the technology. In the future, PAVE will produce educational toolkits for car dealers to help them communicate more effectively with customers about their vehicles’ capabilities and limitations. PAVE is focusing on levels 4 and 5 vehicles.

Finally, the New Car Assessment Program (NCAP) program has operated for nearly 40 years with a goal of testing vehicle safety systems and educating consumers about them. Practically, it has created a mechanism to allow consumers to evaluate vehicles on safety systems. NSC supports NCAP, and expanding its role into ADAS safety, believing it is an important program to improve the safety of the motor vehicle fleet.

Data Sharing

Congress should facilitate data sharing as widely as possible and require that manufacturers provide accessible, standardized data to law enforcement, state highway safety offices, investigators, insurers, and/or other relevant stakeholders. Collecting and sharing de-identified data about near misses and other relevant problems could also help to aggregate useful information for the motor vehicle industry, allowing it to take proactive steps based on leading indicators rather than waiting for a crash or a series of crashes to occur. Finally, these data will be useful to researchers and the safety community in analyzing the safety benefits–and potential drawbacks–of these technologies as they continue to mature.

Acquiring an understanding of what happens when systems perform as intended, fail as expected, or fail in unexpected ways yields valuable information for manufacturers – some of whom have common suppliers. Further, in-service data, as well as near miss and post-crash information sharing, can help civil engineers and planners design better and safer roadways, as well as help safety and health professionals design better interventions to discourage risky driving or affect the behaviors of other roadway users. NHTSA has begun work toward data sharing, and we urge Congress to support this effort.

Prioritizing Safety

By prioritizing safety, we commit to changing our nation’s safety culture. This means we have to accept that any life lost is one too many. Once we accept that one death is too many, we will begin thinking about how to take a “safe systems” approach to our roadways. Fully adopted by the aviation industry, this approach features fail-safe systems that anticipate human error and develop infrastructure with safety margins. When it comes to technology, the U.S. prioritized safety years ago by dedicating spectrum for safety purposes to prevent crashes. Today, other groups would like to take the spectrum for streaming services. I urge this committee to direct the U.S. DOT, the Federal Communications Commission, the Department of Commerce and others to maintain the spectrum for roadway safety purposes allowing vehicles to communicate with each other, infrastructure, pedestrians and others to prevent crashes. This spectrum provides a safety margin that we cannot afford to give away.

While infrastructure change may not seem like “high tech,” this is a known solution for increasing safety and should be encouraged throughout the U.S. For example, in the pictures

below, a multi-lane intersection with a red light in Scottsdale, Ariz., was replaced with a roundabout. With the intersection, there are 32 potential points of failure, but with a roundabout, those points of failure are engineered down to only eight. Speeds are decreased, and if crashes do occur, they occur at angles that are not as violent.

Infrastructure changes do not have to be expensive. Through the Road to Zero Coalition, NSC has awarded grants to groups across the country working in communities of all sizes. The biggest and hardest change is the shift to truly prioritize safety by changing safety culture on the roads. We cannot be complacent when it comes to losing so many people each and every day on our roads. We need leaders in this area, and there are none better than the members of this Committee. We have changed safety culture in workplaces, around seat belt usage, around child passenger safety seats and in other areas. We can do it here too with your help.

Conclusion

Today, we have millions of drivers behind the wheel, spend millions of dollars on education and enforcement campaigns, and still recognize billions in economic loses as a result of crashes. In spite of safer vehicle designs and record-setting seat belt use rates across the nation, operating a motor vehicle remains one of the deadliest things we do on a daily basis. The integration of some of these technologies will likely be messy as we deal with a complex and ever-changing human-machine interface. There will be an evolution of the existing technologies and perhaps a revolution when it comes to new and different technologies. We need to be prepared for unanticipated consequences and new failure modes.

For these reasons, NSC respectfully urges the Committee to keep the following policies and potential barriers in mind:

- How will cars with newer technologies such as those with “self-driving” features, interact with cars that are not equipped with this capability? How will they interact with pedestrians?
- The formal regulatory process can take many years to finalize. Mandates, as well as the potential for a mandate, can spur adoption by manufacturers.[5]
- Voluntary cooperation by automakers promotes the proliferation of vehicle safety technologies into the U.S. fleet.

[5] https://www.iihs.org/media/31d3dcc6-79d5-48a8-bafb-1e93df1fb16f/324452632/HLDI%20Research/Bulletins/hldi_bulletin_31_15.pdf

- Safety should not only be available to those who can afford it. Right now, many ADAS features are part of more expensive packages, and the used car market exposes those consumers to a higher risk just because they are choosing a used vehicle.
- We are many years away from actual fully automated cars (Level 5).
- Continuous research is necessary to ensure the safety of these systems.
- Current Federal Motor Vehicle Safety Standards and other regulations should not be repealed until there is clear, evidence based data that safety will not be compromised.

The U.S. trails other industrialized countries in addressing highway deaths. We cannot afford to ignore the carnage on our highways any longer. It is a national epidemic.

NSC appreciates this Committee's leadership on vehicle technology and safe roadway transportation. If safety for the traveling public is the ultimate goal, advanced technology provides the most promising opportunity to achieve that outcome in a short amount of time, and will go a long way toward reaching the goal of eliminating preventable deaths in our lifetime.