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CONTINUING TO IMPROVE TRUCK SAFETY ON OUR NATION'S HIGHWAYS

HEARING

BEFORE THE

SUBCOMMITTEE ON SURFACE TRANSPORTATION AND MERCHANT MARINE INFRASTRUCTURE, SAFETY AND SECURITY

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

MARCH 14, 2017

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CONTINUING TO IMPROVE TRUCK SAFETY ON OUR NATION'S HIGHWAYS

TUESDAY, MARCH 14, 2017

U.S. SENATE,
SUBCOMMITTEE ON SURFACE TRANSPORTATION AND
MERCHANT MARINE INFRASTRUCTURE, SAFETY, AND SECURITY,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:31 p.m. in room SR–253, Russell Senate Office Building, Hon. Deb Fischer, Chairman of the Subcommittee, presiding.

Present: Senators Fischer [presiding], Booker, Wicker, Capito, Young, Thune, Cantwell, Klobuchar, Blumenthal, Hassan, and Duckworth.

OPENING STATEMENT OF HON. DEB FISCHER, U.S. SENATOR FROM NEBRASKA

The CHAIRMAN. Good afternoon and welcome. I would like to call the hearing to order, please. I thank you all for being here today for a second hearing of the Surface Transportation and Merchant Marine Infrastructure, Safety, and Security Subcommittee.

Today's hearing, entitled, "Continuing to Improve Truck Safety on our Nation's Highways," brings together a panel of expert witnesses to discuss this important topic.

Enhancing the safety of our Nation's highways and roads is a critical responsibility of Congress, the Department of Transportation, local governments, law enforcement officials, and everyone who uses our roads. We must strive to strengthen the safety and reliability of our transportation system.

Commercial vehicles are a key component of our multimodal transportation system. From globally recognized companies to small single-truck owner-operators, America's truckers move billions of dollars of goods and materials each year.

In 2014, more than 31 million commercial trucks hauled 10.5 billion tons of freight across this country. More than 7 million Americans are employed in the trucking sector. In Nebraska, trucking employs 1 out of every 12 workers, representing nearly 63,000 people.

I am pleased that commercial vehicle operators have made significant investments in safety. According to estimates by the American Trucking Association, carriers are making a $9.5 billion annual investment in safety through expenditures on driver training and screening, safety incentive pay, advanced technologies, and compliance.

Innovation and technology can also serve as key tools for advancing safety on our roads. Last month, this subcommittee heard testimony from Schneider National trucking. Schneider, like others, is investing in radar-based collision mitigation systems. According to CEO Chris Lofgren, Schneider has "experienced a 69 percent decrease in rear-end accidents."

Other carriers are investing in safety technology such as event recorders, blind spot monitoring, lane departure warning systems, and adaptive cruise control systems.

We have also seen positive movement on education and training standards for new professionals entering the trucking workforce.

I applaud the strong collaboration between stakeholders and the Federal Motor Carrier Safety Administration on the recently released entry-level driver training rule.

The ELDT-negotiated rulemaking brought stakeholders together with the government to broaden theoretical and behind-the-wheel training metrics for drivers, and I hope to see more joint efforts like this in the future.

I am also proud of the work Congress has done to improve trucking safety in the 2015 FAST Act. My legislation, the TRUCK Safety Reform Act, which was included in the FAST Act, reformed the often controversial and obscure regulatory process at the FMCSA to improve outcomes for all stakeholders.

Because of this measure, FMCSA now needs to conduct a more transparent, inclusive, and responsive regulatory process with stronger cost-benefit analysis. Data and methodology transparency will lead to rules that actually benefit safety.

Unfortunately, robust analysis has not always been a priority for the FMCSA. Just last week, the U.S. Department of Transportation released a longstanding study on the efficacy of the 2013 Hours of Service rulemaking. This rule mandated that drivers rest at night, effectively pushing truck traffic onto our roads during the early morning commuting hours. The DOT study concluded it could not demonstrate the 2013 Hours of Service rule provided, "a greater net benefit for the operational, safety, health, and fatigue impacts."

This example demonstrates the need to have safeguards in place to avoid ideologically driven rulemakings moving forward. Because of these reforms, those seeking safety changes will have more clarity from the agency. FMCSA must now prioritize and respond to stakeholders' petitions in a timely fashion based on the likelihood of safety improvements. This is good governance. It will lead to better outcomes and, ultimately, greater safety in America's transportation network.

The FAST Act also included measures to correct FMCSA's flawed truck safety scoring system, known as the Compliance, Safety, and Accountability Program. For example, in January 2015 in Cincinnati, Ohio, there was an incident where a bridge collapsed on a truck. The CSA system counted this event as the fault of the truck driver. Obviously, the carrier was not at fault in this instance.

Thanks to the FAST Act reforms, carriers and their customers will now have more confidence in this critical safety scoring program.

Today's hearing is a great opportunity to examine how we can improve highway safety through greater innovation, more collabo-

ration between our public and private stakeholders, and better data and analysis.

And I would now ask my colleague and friend, Ranking Member Senator Cory Booker, if he would like to make comments.

STATEMENT OF HON. CORY BOOKER, U.S. SENATOR FROM NEW JERSEY

Senator BOOKER. Thank you very much, Chairman Fischer. This is an important hearing, and I am grateful for all of those who are assembled here.

And, Dr. Lund, I hear you're retiring. Sir, I'm sure that the Lord looks upon you and says, "Well done, my good and faithful servant." This is not an obituary, however, so I'll move on with my comments.

[Laughter.]

Senator BOOKER. I think Chairman Fischer has done a great job of really emphasizing how vital this trucking industry is to our national economy. It is producing so many quality jobs. Trucks move a considerable amount of freight tonnage through the United States, creating vital links between people, businesses, and really helping our Nation to thrive.

Trucks add a whopping 10 billion tons of freight, more than $700 billion in freight revenues. However, the importance of trucking means that millions of trucks are traveling billions of miles on our roads every single year. It means that thousands and thousands of accidents are occurring as well. This has resulted in actually seeing tremendous amounts of truck-related deaths, about 4,000 deaths, and 100,000 people injured, every year. In 2015 alone, about 4,067 people were killed in crashes involving trucks, the highest fatality since 2008. And I know we have some victims' families that are here today.

As the economy has improved, highway deaths that relate and include truck-related crashes actually have been rising. This is a problem that's not getting better; it's not even stable. Unfortunately, we're seeing a frightening increase.

According to the National Safety Council, preliminary data for 2016 estimates as many as 40,000 died in motor vehicle crashes last year. That increase is actually an increase of 6 percent over 2015 and a 14 percent increase in 2014. Again, the trend lines are moving in a frightening direction.

And each one of these deaths, each one of the people killed or injured, these represent not data, not statistics, these are real families being shattered by these incidents. This is a trend that we need to do something about, and I believe we need to take action.

I've actually learned a lot as a Ranking Member on this Committee. There are some good folks looking to try to make a difference in this area, from trucking companies themselves all the way to individuals who are activists in this area. This is clearly not a Republican or Democratic area issue. We need to come together to find solutions. We need to find ways to fix this.

I believe there are some real steps we can take to address this trend. For example, in 2014, an unfortunate tragic incident occurred in New Jersey on the New Jersey Turnpike, killing one person and severely injuring others. Analysis shows that the truck

was traveling 20 miles per hour over the speed limit, and the driver was very close to hitting their daily hours of service. The driver was tired and heading to a construction zone when he failed to brake for stopped traffic ahead of him.

The crash highlights a lot of critical issues that we could be taking and things we could probably do to prevent these tragedies, from investing in new technologies and new innovations that help trucks stop, also to having rules that keep truck drivers from pushing the bounds of human endurance during their work.

We need to get the best of technology into trucks, something I've learned a lot since I've been serving on this subcommittee, where some in the industry are leading and some are lagging. We need to make sure we are doing everything we can to help trucks automatically brake, even when the driver might be tired or distracted.

We need to prevent these tired or impaired drivers from getting behind the wheel full stop. We have to have only the safest trucks on the road, and that means proper inspections, not having faulty brakes or letting longer, heavier trucks onto our highways. What we don't need are roadblocks and exemptions that make our highways less safe.

While most drivers and companies—and I've been very encouraged by this—do prioritize safety, we continue to have very serious problems on our highways. Collectively, as a nation, we can't just tolerate, we can't just accept, such high levels of carnage on our highways. This can't be normalized. We should be committed, as a country, to having much better road safety.

So rolling back the rules, those that are illogical—I agree with my Chairperson, I do not think a bridge falling on somebody's head is the truck driver's fault. Rolling back nonsensical rules I fully support, but we need to make sure we do this in an intelligently driven way and that we are aggressive in the protection of our highways and protection of individuals and families.

We have real hard work to do. Clearly, the urgency is upon us. That means having an open and honest dialogue about the impacts of these issues and really understanding the long-term impacts of our actions.

Again, I'm grateful to be serving as a Ranking Member with the Chairman. I'm really committed to this issue. And I'm grateful that you all are assembled here today to talk about something that clearly for American families, businesses, and especially those who have lost loved ones, this is a very, very important hearing.

The CHAIRMAN. Thank you, Senator Booker.

With that, I would like to welcome our panel of witnesses today. And we will begin with the Honorable Christopher A. Hart, who is Chairman of the National Transportation Safety Board.

The Honorable Christopher Hart was appointed as Chairman of the Board in 2015. In addition to his work at the NTSB, he has served in a number of other safety roles at the National Highway Transportation Safety Administration and the Federal Aviation Administration.

So welcome, sir, if you would like to give your opening statement, please.

STATEMENT OF HON. CHRISTOPHER A. HART, CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD

Mr. HART. Thank you very much. Good afternoon, Chairman Fischer, Ranking Member Booker, and members of the Subcommittee. Thank you for inviting me to testify on behalf of the NTSB today. I appreciate Congress's continued attention to improving safety on our Nation's roadways.

Crashes on our roadways claimed more than 35,000 lives in 2015, with more than 4,000 killed in crashes involving large trucks, as you've already heard from the introductory statements. That represents 4.1 percent more deaths than in 2014, and the most lives lost in truck-involved crashes since 2008, as Ranking Member Booker mentioned.

In our investigations of commercial truck crashes, we see issues that are focused on our Most Wanted List of transportation safety improvements. One example is distraction. On May 28, 2013, a truck that did not stop at a grade crossing in Rosedale, Maryland, was struck by a train, causing a derailment and a post-crash fire. The truck driver was seriously injured, and three others sustained minor injuries. Among the probable causes was the driver's distraction due to a hands-free cell phone conversation.

Another persistent issue is substance impairment. On September 26, 2014, near Davis, Oklahoma, a truck crossed a median and collided with a bus that was transporting a college softball team from Texas, resulting in four fatalities, including the truck driver. The probable cause was the truck driver's incapacitation that was likely due to synthetic drugs.

On June 7, 2014, a truck encountered nearly stopped traffic in a work zone near Cranbury, New Jersey—this is the accident that Ranking Member Booker was referring to—and struck a limo van due to the truck driver's fatigue and excessive speed, causing a multi-vehicle crash that resulted in one death. That truck driver had been awake, he was in compliance with the rest and duty time rules, but he had been awake 28 hours prior to that crash.

This crash reinforced the importance of fatigue management programs, not just rest and duty time rules, but fatigue management programs, as well as collision avoidance systems and the need for carriers to collect and analyze data that are available to onboard critical event recording systems. These and other crashes could have been prevented by the use of available safety technologies and by improved oversight of the performance of commercial drivers and the condition of commercial vehicles by the Federal Motor Carrier Safety Administration, FMCSA.

Many of our investigations identified shortcomings in FMCSA oversight of commercial truck operations. We found instances in which deficiencies in the compliance review program allowed companies with serious safety programs to continue operating.

The NTSB acknowledges FMCSA's efforts to improve oversight, but the task is enormous and the resources are very limited. Therefore, it is critical that FMCSA employ a data-driven, risk-based approach to oversight responsibilities and address the highest risk carriers as well as the highest risk drivers and vehicles in order to remove unsafe operators from our roadways.

The FMCSA's Compliance, Safety, and Accountability Program that was referred to, CSA Program, must be completed with a risk-based intervention approach for safety fitness determinations.

We understand the desire to ensure that inspection and violation data represent the full picture of safety, but prolonged deferral of a safety fitness determination final rule will continue to allow unsafe, high-risk carriers to operate without intervention, posing significant risk to the motoring public and to those who live or work along commercial trucking routes.

Carriers must move beyond regulatory compliance and proactively identify operational hazards and potential solutions. Many such solutions are widely available in the form of lifesaving technologies.

For decades, NTSB has been recommending technologies on all commercial trucks that, if used, would save lives and prevent crashes. These include forward-collision avoidance systems, speed-limiting devices, electronic logging devices, and event data recorders, as you heard in the Chairman's comments. These technologies are among many that can improve safety, and we believe carriers should voluntarily adopt them to enhance the safety of their operations and the safety of the traveling public.

Improving the safety of commercial truck operations will save lives and improve public confidence in this vital and visible industry. This is a multifaceted issue involving vehicles, companies, drivers, regulatory agencies, and Congress. Any effort to strengthen commercial trucking safety must be collaborative in order to be successful, and the Chairman mentioned several examples of that collaboration.

So I appreciate your interest in these issues. Thank you for the opportunity to testify. I would be happy to take any questions you might have. Thank you.

[The prepared statement of Mr. Hart follows:]

PREPARED STATEMENT HON. CHRISTOPHER A. HART, CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD

Good afternoon Chairman Fischer, Ranking Member Booker, and the Members of the Subcommittee. Thank you for inviting the National Transportation Safety Board (NTSB) to testify before you today.

The NTSB is an independent Federal agency charged by Congress with investigating every civil aviation accident and significant incidents in the United States and significant accidents and incidents in other modes of transportation—highway, rail, marine, and pipeline. The NTSB determines the probable cause of accidents and other transportation events and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the Federal government and other organizations assisting victims and their family members impacted by major transportation disasters.

Since its inception, the NTSB has investigated more than 1,400 highway accidents, including accidents that involved commercial trucks. On call 24 hours a day, 365 days a year, NTSB highway investigators travel throughout the country to investigate significant accidents and develop factual records and safety recommendations with one aim—to ensure that such accidents never happen again.

To date, we have issued more than 2,400 safety recommendations as a result of highway accident investigations, with approximately 80 percent adopted or implemented. Because we have no authority to regulate the transportation industries, our effectiveness depends on our reputation for conducting thorough, accurate, and independent investigations and for producing timely, well-considered recommendations to enhance transportation safety.

On November 14, 2016, the NTSB announced its Most Wanted List of transportation safety improvements for 2017–2018.[1] This list identifies our top 10 areas for transportation safety improvements. We develop our Most Wanted List based on safety issues we identify as a result of our accident investigations. While we removed "Strengthen Commercial Trucking Safety" from our 2016 Most Wanted List, our 2017–2018 priority areas include seven items that affect the safety of commercial trucking operations:

- Increase Implementation of Collision Avoidance Technologies
- Expand Recorder Use to Enhance Safety
- End Alcohol and Other Drug Impairment in Transportation
- Require Medical Fitness
- Strengthen Occupant Protection
- Reduce Fatigue Related Accidents
- Eliminate Distractions

Each of these Most Wanted List issues emphasizes the need for critical actions by the U.S. Department of Transportation (DOT), the Federal Motor Carrier Safety Administration (FMCSA), the National Highway Traffic Safety Administration (NHTSA), states, manufacturers, operators, associations, and others. Commercial trucking is integral to our economy, yet crashes, injuries, and deaths involving commercial trucks have been increasing over the past several years. In 2015 alone, more than 4,000 people were killed in crashes involving large trucks, 4.1 percent more fatalities than in 2014, and the highest since 2008.[2] Our 2017–2018 Most Wanted List demonstrates that more needs to be done to ensure the safety of commercial truck operations.

Commercial trucking safety gained national media attention on June 7, 2014 when comedian Tracy Morgan was critically injured and another passenger died in a crash in Cranbury, New Jersey.[3] The limousine bus in which they were traveling was struck by a truck-tractor and semitrailer combination vehicle, due to the truck driver's fatigue and excessive speed. While it was the uncommon involvement of a celebrity that focused national attention on this crash, crashes involving commercial trucks are all too common.

Other NTSB investigations completed in the past four years involving commercial trucks include:

- On June 25, 2015, a truck-tractor in combination with a semitrailer collided with the rear of several cars on Interstate 75 in a work-zone, near Chattanooga, Tennessee. Of the 18 vehicle occupants, six died and four were injured. Our investigation determined the probable cause of the crash to be the truck driver's fatigue, drug use, and excessive speed.[4]
- On September 26, 2014, a truck-tractor in combination with a semitrailer crossed a median and collided with a 32-passenger-size bus—transporting 15 members of a college softball team—near Davis, Oklahoma, resulting in four fatalities. We determined that the probable cause of this accident was the truck driver's incapacitation likely due to his use of synthetic drugs.[5]
- On April 10, 2014, a tractor-trailer crossed a median and collided with a motorcoach in Orland, California, that took 10 lives and injured 40 others. Our investigation into the probable cause of this accident was impeded by the lack of an event data recorder.[6]

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[1] National Transportation Safety Board, *2017–2018 Most Wanted List* (Washington, D.C.: National Transportation Safety Board, 2016).

[2] National Center for Statistics and Analysis, *2015 Motor Vehicle Crashes: Overview,* Report No. DOT HS 812 318 (Washington, D.C.: National Highway Traffic Safety Administration, 2016).

[3] National Transportation Safety Board, *Multivehicle Work Zone Crash on Interstate 95 in Cranbury, New Jersey on June 7, 2014,* Rpt. No. HAR–15/02 (Washington, D.C.: National Transportation Safety Board, 2015).

[4] National Transportation Safety Board, *Multivehicle Work Zone Crash on Interstate 75 in Chattanooga, Tennessee on June 25, 2015,* Rpt. No. HAR–16/01 (Washington, D.C.: National Transportation Safety Board, 2016).

[5] National Transportation Safety Board, *Truck-Tractor Semitrailer Median Crossover Collision with Medium-Size Bus on Interstate 35 in Davis, Oklahoma on September 26, 2014,* Rpt. No. HAR–15/03 (Washington, D.C.: National Transportation Safety Board, 2015).

[6] National Transportation Safety Board, *Truck-Tractor Double Trailer Median Crossover Collision with Motorcoach and Postcrash Fire on Interstate 5 in Orland, California on April 10, 2014,* Rpt. No. HAR–15/01 (Washington, D.C.: National Transportation Safety Board, 2015).

- On May 28, 2013, a three-axle roll-off straight truck did not stop at a highway-railroad grade crossing in Rosedale, Maryland and was struck by a freight train, causing a derailment. A postcrash fire resulted in an explosion that shattered windows and damaged property as far as approximately one-half mile from the site. The truck driver was seriously injured in the collision, and three others received minor injuries as a result of the explosion. Among the probable causes of the accident were the truck driver's distraction due to a hands-free cell phone conversation and inadequate oversight of the carrier by the FMCSA.[7]
- On March 3, 2013, truck-tractor in combination with a semitrailer struck the rear of an SUV and pushed it into another passenger vehicle on Interstate 65, near Elizabethtown, Kentucky. A postcrash fire ensued, killing six of the SUV's eight occupants. A review of the truck driver's logbook indicated that he had driven beyond the legal hours of service and was likely fatigued at the time of the crash.[8]

The NTSB has a long history of calling on the regulators, the FMCSA and NHTSA, to improve their oversight of operators, drivers, and vehicles. It starts with improving the system for determining a trucking company's safety compliance, including both driver and vehicle factors. Stronger oversight is needed to ensure that carriers address any safety deficiencies in a timely manner and are swiftly placed out of service if they fail to improve. To address vehicle factors, regulators must promote proper fleet maintenance and proven life-saving technology. Vehicle inspections should be required during compliance reviews, and vehicle safety equipment and technology, such as collision avoidance systems, should be mandated across the entire industry.

Oversight of Commercial Truck Operations

Many of our investigations have identified shortcomings in the FMCSA's oversight of commercial truck operations. We have found instances in which deficiencies in the FMCSA compliance review program allowed companies with serious safety problems to continue operations. The NTSB readily acknowledges the FMCSA's efforts to make improvements to its oversight of commercial truck operations. Yet, the crashes that the NTSB investigates attest to the fact that more oversight improvements and additional resources are needed to prevent future crashes involving commercial trucks.

The two most important areas related to safe motor carrier operations are the performance of drivers and the condition of vehicles. The NTSB believes that the FMCSA should emphasize both of these critical elements in its compliance reviews and disqualify an operator that receives an unsatisfactory rating in either vehicle or driver areas. The current compliance review process is inadequate and limits the FMCSA's ability to remove unsafe carriers from our highways before they are involved in catastrophic crashes.

In 2013, the NTSB investigated four commercial motor vehicle crashes, which together resulted in 25 deaths and 83 injuries. Data collected for each motor carrier presented "red flags" that should have led to strong intervention by the FMCSA. In each case, FMCSA safety investigators had visited the company prior to the crash and given it a clean bill of health. Immediately following each crash—and after an NTSB investigation—the FMCSA found significant safety deficiencies. In three of the four cases, declared the company an imminent hazard, and placed it out of service. As a result of these NTSB investigations, we made two recommendations to the DOT in November 2013 to conduct an internal audit of the FMCSA's compliance review processes.[9]

On February 3, 2014, the DOT convened an independent review team (IRT) comprised of members of the DOT's Safety Council to conduct a review of the FMCSA's compliance review process. NTSB leaders met with IRT members on several occasions to assist them in their review. The final report was released on July 15, 2014.[10] Among its recommendations to the FMCSA, the IRT urged that it make changes to the Compliance, Safety, Accountability Program (CSA), improve the Safety Measurement System (SMS), and move beyond a compliance-centric enforcement model. The IRT report provided actionable information in response to our rec-

[7] National Transportation Safety Board, Highway-Railroad Grade Crossing Collision in Rosedale, Maryland on May 28, 2013, Rpt. No. HAR–14/02 (Washington, D.C.: National Transportation Safety Board, 2014).

[8] NTSB public docket (HWY13FH008).

[9] H–13–039 and –040, November 5, 2013.

[10] Independent Review Team Appointed by the Secretary of Transportation, *Blueprint for Safety Leadership: Aligning Enforcement and Risk* (Washington, D.C.: U.S. Department of Transportation, 2014).

ommendations, but it also provided insights and perspectives on other ways the FMCSA can improve motor carrier safety.

The IRT report confirmed that the FMCSA needs to better align compliance and enforcement processes with the safety risks that cause crashes. We recognize that the CSA program is designed to do that, but it has been only partially implemented. In some instances, compliance reviews focus on issues quite different from those that may have triggered the need for greater scrutiny. This disconnect affects the FMCSA's everyday operations.

The FMCSA's safety fitness determination (SFD) rulemaking is intended to remedy this disconnect. On January 21, 2016, the FMCSA published a Notice of Proposed Rulemaking (NPRM), "Carrier Safety Fitness Determination," proposing to amend the Federal Motor Carrier Safety Regulations (FMCSRs) to revise the current methodology for issuing SFDs for motor carriers and rely more on roadside inspection and violation data in the SMS rather than on-site compliance reviews.[11] The proposed new methodologies would result in an SFD based on the carrier's SMS data in five of the seven Behavior Analysis and Safety Improvement Categories (BASIC) (unsafe driving, crash indicator, hours of service compliance, vehicle maintenance, controlled substances/alcohol, hazardous materials compliance, and driver fitness), an investigation, or a combination of on-road safety data and investigative information. In addition, the NPRM proposed to eliminate the current three-tier rating system (*i.e.,* satisfactory-conditional-unsatisfactory) for determining safety fitness in favor of a single determination of "fit" or "unfit." SMS data for commercial truck operations are an important risk-management tool, and, if made publicly available, could provide the public with much-needed information about the commercial truck operators that fail to meet safety requirements, much like the FMCSA's "SaferBus" mobile application for bus operators.

The NTSB has long supported a risk-based intervention approach, such as the proposed SFD rule, to identify those carriers that pose the greatest risk to the motoring public. In 1999, we recommended that the safety fitness rating methodology be changed so that adverse vehicle and driver performance-based data alone are sufficient to result in an overall unsatisfactory rating for the carrier.[12] In 2012, following the NTSB's investigation of a 15-fatality motorcoach crash in New York City,[13] we recommended that, as part of CSA, the FMCSA include SMS rating scores in the methodology used to determine a carrier's fitness to operate.[14] The NTSB is very concerned that implementing the SFD proposed rule could be delayed.

More than 17 years have passed since we first called attention to problems with the FMCSA's compliance review process in 1999, and the oversight program remains dysfunctional. The task facing the FMCSA is enormous and its resources are limited; therefore, it is critical that the FMCSA employ a data-driven approach to address the highest risk motor carriers, drivers, and vehicles. Prolonged deferral of a SFD final rule will allow many unsafe, high-risk carriers to operate on our highways without intervention, posing a significant risk to the motoring public.

Moving Beyond Compliance: Leveraging Technology

The NTSB believes that it is vitally important for the FMCSA to move beyond its focus on conducting compliance reviews and embrace a broader and more balanced portfolio of safety tools. Commercial trucking is a diverse segment of the economy, and trucking companies range from thousands of trucks to single-truck owner operators. The FMCSA and NHTSA regulations establish minimum requirements, not the gold standard. The NTSB has found that crashes happen even when an operator is doing everything "by the book." To manage their safety risks, trucking companies must go beyond securing regulatory compliance from all their employees, and proactively identify operational hazards and potential solutions.

As required by the 2015 Fixing America's Surface Transportation (FAST) Act,[15] the FMCSA published a request for comments on April 20, 2016 on a proposed "Beyond Compliance Program."[16] The Beyond Compliance Program would provide recognition, either through credit recognized by a new Beyond Compliance BASIC or an improved SMS percentile, for a motor carrier that: (1) installs advanced safety equipment; (2) uses enhanced driver fitness measures; (3) adopts fleet safety man-

[11] 81 *Federal Register* 3561.

[12] H–99–006, February 26, 1999.

[13] National Transportation Safety Board, *Motorcoach Run-Off-the-Road and Collision With Vertical Highway Signpost on Interstate 95 Southbound in New York City, New York on March 12, 2011,* Rpt. No. HAR–12/01 (Washington, D.C.: National Transportation Safety Board, 2012).

[14] H–12–017, July 12, 2012.

[15] Pub. L. 114–94, Section 5222.

[16] 81 *Federal Register* 23351.

agement tools, technologies, and programs; or (4) satisfies other standards determined appropriate by the FMCSA. The Beyond Compliance Program would incentivize a motor carrier to implement programs or safety interventions that exceed the scope of regulatory requirements and would improve the safety of commercial motor vehicles and drivers operating on the Nation's highways.

The NTSB commends the FMCSA for considering the development of a program that looks beyond regulatory mandates to promote highway safety and aims to speed the adoption of lifesaving technologies and safety programs. Currently, many carriers voluntarily implement programs and technologies to enhance the safety of their drivers and the traveling public. A Beyond Compliance Program will reward such companies and encourage others to adopt safer operating practices.

For decades, the NTSB has been investigating highway crashes and making recommendations for technologies that, if implemented, would save lives and prevent future crashes. These technologies include forward collision avoidance systems, speed limiting devices, electronic logging devices (ELDs), and event data recorders (EDRs). We believe that forward collision avoidance systems and speed limiting devices should be standard on all commercial trucks and have recommended that NHTSA change the Federal Motor Vehicle Safety Standards (FMVSS) to require them. In addition, we have called on the FMCSA to require motor carriers to install ELDs and EDRs. These technologies are among many that can improve commercial truck safety, and including them in a Beyond Compliance Program would be a positive measure. However, the NTSB expects that NHTSA and the FMCSA will continue their efforts to mandate safety technologies so that ultimately those companies that are unwilling to invest in safety voluntarily will be required to use these proven technologies. While working toward requiring these technologies, the FMCSA should also encourage their use through its Beyond Compliance Program.

Forward Collision Avoidance Systems

"Increase Implementation of Collision Avoidance Technologies" is one of the safety improvement issues on our 2017–2018 Most Wanted List, and was carried over from 2016.[17] Broad deployment of forward collision avoidance systems in commercial trucks is necessary to reduce the severity of rear-end crashes. These technologies act as a fail-safe, helping to compensate for driver error, inattention, fatigue or just bad decision making. Forward collision avoidance systems typically consist of (1) collision warning that alerts a driver of the impending crash, and (2) autonomous emergency braking (AEB) that automatically applies brakes. Collision avoidance technologies can reduce fatalities and injuries over the long term. In 2012, NHTSA predicted that AEB (meeting certain requirements) could prevent 13,000 to 28,000 minor injuries and 500 to 700 serious injuries from rear-end crashes, and could save as many as 65 lives each year.[18]

The NTSB has long encouraged technological countermeasures to prevent or mitigate crashes. We made our first recommendation pertaining to collision avoidance technologies in 1995 and asked the DOT to begin testing collision warning systems within commercial motor carrier fleets.[19] Due to a lack of progress in addressing this issue, this recommendation was classified "Closed—Unacceptable Action" in 1999. In 2001, we released a special investigative report (SIR) that focused on how collision avoidance technologies could mitigate or prevent passenger and commercial vehicle rear-end crashes.[20] As a result of the SIR's findings, we issued 10 recommendations pertaining to collision avoidance technologies, including a recommendation that NHTSA require that all new commercial vehicles be equipped with a collision warning system after promulgating performance standards for collision warning systems for commercial vehicles.[21]

We updated the SIR in 2015 due to a lack of progress in the implementation of NTSB recommendations intended to mitigate or prevent rear-end crashes, the recent technological advancements in collision avoidance technologies, and the continued prevalence of rear-end crashes.[22] The 2015 report found that currently available

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[17] National Transportation Safety Board, *Increase Implementation of Collision Avoidance Technologies* (Washington, D.C.: National Transportation Safety Board, 2016).

[18] National Highway Traffic Safety Administration, *Forward-Looking Advanced Braking Technologies Research Report* (Washington, D.C.: U.S. Department of Transportation, 2014).

[19] H–95–044, December 13, 1995.

[20] National Transportation Safety Board, *Vehicle-and Infrastructure-based Technology for the Prevention of Rear-End Collisions,* Rpt. No. SIR–01/01 (Washington, D.C.: National Transportation Safety Board, 2001).

[21] H–01–007, May 25, 2001.

[22] National Transportation Safety Board, *The Use of Forward Collision Avoidance Systems to Prevent and Mitigate Rear-End Crashes,* Rpt. No. SIR–15/01 (Washington, D.C.: National Transportation Safety Board, 2015).

forward collision avoidance technologies for passenger and commercial vehicles show clear benefits that could reduce rear-end crash fatalities. However, more must be done to speed up deployment of these technologies in all vehicle types. As a result of these findings, the NTSB made six new recommendations, including calling upon NHTSA to expand or develop protocols for the assessment of forward collision avoidance systems in passenger and commercial vehicles, and calling upon manufacturers to install forward collision avoidance systems as standard features on all newly manufactured passenger and commercial motor vehicles.[23] The NTSB also issued a companion Safety Alert for consumers and commercial fleet owners urging them to consider purchasing vehicles with collision warning and autonomous emergency braking functions.[24]

Commercial truck manufacturers and operators should not wait to be required by regulators to equip and utilize heavy trucks with forward collision avoidance systems. Rather, a Beyond Compliance Program could provide incentive for operators to use such technologies in their fleet.

Speed Limiting Devices

On September 7, 2016, NHTSA and the FMCSA published a joint NPRM, which proposed a new FMVSS requiring that each new multipurpose passenger vehicle, truck, bus, or school bus with a gross vehicle weight rating of more than 26,000 pounds be equipped with a speed limiting device.[25] The proposed FMVSS would also require each vehicle, as manufactured and sold, to have its device set to a speed not greater than a specified speed and to be equipped with means of reading the vehicle's current speed setting and the two previous settings through its On-Board Diagnostic connection. In addition, the FMCSA is proposing a complementary FMCSR to require devices meeting the requirements of the proposed FMVSS. Motor carriers operating such vehicles in interstate commerce would be required to maintain the speed limiting devices for the service life of the vehicle.

Crashes, fatalities, and injuries involving heavy commercial vehicles operating at high speed, are the leading driver-related factor in large truck crashes. Between 2012 and 2014, speeding was identified as a factor in 21 to 24 percent of fatal truck crashes in which a driver-related factor was recorded.[26] The NPRM estimates that requiring heavy vehicles to be equipped with a speed limiting device set at 65 mph, would save 63 to 214 lives annually.

Beyond affecting crash severity, excessive speed can influence driver performance. As vehicle speed increases, so does the distance traveled while the driver's brain is processing roadway information. Consequently, the rate at which a driver must process information about the highway and its environment increases directly with increasing travel speed. Once the information processing demands exceed the processing capabilities of the driver, a crash is likely to occur. Additionally, at higher speeds, large trucks and buses become more difficult to maneuver—especially on corners, curves, or where evasive action is required. Compared to passenger vehicles, commercial trucks and buses have reduced maneuverability; greater propensity to roll, due to higher centers of mass; and reduced braking efficiency. The NTSB has investigated numerous large truck and bus crashes in which the initiating event was a mechanical deficiency (for example, tire or brake failure). In such cases, drivers are less likely to regain control of a heavy vehicle after experiencing a mechanical failure when operating at higher speeds.

Managing the top speed of heavy vehicles is also necessary to ensure compatibility with the roadway environment and infrastructure. In several investigations, the NTSB has found that roadside barriers, such as median barriers, were unable to retain or redirect heavy vehicles involved in run-off-road crashes. For example, in 2010, a truck-tractor in combination with a 53-foot-long van semitrailer was traveling south on Interstate 65 near Munfordville, Kentucky, when it departed the left lane, traveled across the median, struck and overrode the median barrier, and entered the northbound travel lanes. The truck collided with a 15-passenger van, kill-

[23] H–15–005, H–15–008 and –009, June 8, 2015.

[24] National Transportation Safety Board, *Forward Collision Avoidance Systems Can Save Lives,* No. SA–046 (Washington, D.C.: National Transportation Safety Board, 2015).

[25] Federal Motor Vehicle Safety Standards; Federal Motor Carrier Safety Regulations; Parts and Accessories Necessary for Safe Operation; Speed Limiting Devices, 81 *Federal Register* 61942.

[26] Federal Motor Carrier Safety Administration, *Large Truck and Bus Crash Facts 2014,* No. FMCSA–RRA–16–001 (Washington, D.C.: Federal Motor Carrier Safety Administration, 2016).

ing the truck driver, the van driver, and nine van passengers.[27] We found that the median barrier's inability to retain the truck contributed to the severity of the accident.

Although electronic engine control unit (ECU)-based speed limiters prevent vehicles from exceeding a set maximum speed, they do not (1) prevent speeding in locations where the speed limit is lower than the governed speed, or (2) stop vehicles from exceeding the governed speed when traveling downhill. Furthermore, because the majority of speeding-related heavy vehicle crashes involve heavy vehicles traveling at unsafe speeds for the conditions, such as speed-restricted areas, traffic-congested areas, or poor weather conditions, rather high rates of speed above 65 mph, the NTSB preference would be for NHTSA to develop a rulemaking requiring that all newly manufactured heavy vehicles be equipped with advanced speed limiting technology, such as variable speed limiters and intelligent speed adaption devices. The current NPRM clearly describes how the severity of a heavy vehicle crash increases with travel speed and outlines the safety benefits of ECU-based speed limiters.

The NTSB is pleased that NHTSA and the FMCSA are working together to develop regulations to limit the speed of heavy vehicles as a means of reducing the severity of crashes and the resulting fatalities and injuries. The NTSB supports the proposed rulemaking as an interim step toward an eventual requirement that all newly manufactured heavy vehicles be equipped with advanced speed limiting technology.

Electronic Logging Devices

For more than 45 years, our investigations have identified fatigue as a cause, contributing factor, or finding in crashes across all transportation modes. Fatigue-related accidents can be avoided with a combination of science-based regulations, comprehensive fatigue risk management programs, and individual responsibility. For commercial carriers, the NTSB has advocated the use of logging devices to allow better monitoring of hours-of-service (HOS) and driver fatigue for over 25 years. Most recently, in 2007, the NTSB recommended that the FMCSA require all interstate commercial vehicle carriers to use electronic on-board devices that collect and maintain data concerning driver HOS and, as an interim measure, prevent log tampering and submission of false paper logs.[28] Properly designed, used, and maintained ELDs enable drivers, motor carriers, and authorized safety officials to track on-duty driving hours more effectively and accurately, thus preventing both inadvertent and deliberate HOS violations. Compliance with the HOS regulations helps ensure that drivers have time to obtain restorative rest, enabling them to operate their commercial motor vehicles more safely.

On December 16, 2015, the FMCSA published its final rule, "Electronic Logging Devices and Hours of Service Supporting Documents."[29] Although this rule is not the universal mandate that we recommended, we recognize that it represents significant progress toward improving HOS compliance and safety by mandating ELDs for most motor carrier operations. By extending the population of affected drivers, establishing technical specifications for reliable ELD performance and tamper-resistance, clarifying the supporting documents requirement and making it applicable to all drivers currently required to prepare HOS records of duty status, and adopting anti-harassment provisions to protect drivers, this rule constitutes an acceptable alternate method of satisfying the recommended actions. Accordingly, we classified our Safety Recommendations H–07–41 and –42 "Closed—Acceptable Alternate Action." As we continue to link the cause of fatigue-related crashes to HOS violations, we encourage the FMCSA to consider further expansion of the mandate in the future to include the remaining driver population that is currently exempt from the new ELD requirements, and until then, to include ELD in a Beyond Compliance Program.

Event Data Recorders

Recorders—data, audio/voice, and video—capture and store critical information that can help investigators determine the cause of a crash and help companies and operators take proactive steps toward prevention. Yet, most trucks and buses are still not equipped with these critical technologies, even though recorders are readily available, easily installed, and largely affordable. For this reason, "Expand Recorder

[27] National Transportation Safety Board, *Truck-Tractor Semitrailer Median Crossover Collision with 15-Passenger Van in Munfordville, Kentucky on March 26, 2010,* Rpt. No. HAR–11/02 (Washington, D.C.: National Transportation Safety Board, 2011).

[28] H–07–041 and –042, December 17, 2007.

[29] 80 *Federal Register* 78292.

Use to Increase Safety" is one of the safety improvement issue areas on our 2017–2018 Most Wanted List; it was also carried over from our 2016 Most Wanted List.[30]

Various types of recorders can be useful. EDRs capture critical vehicle information about the vehicle and occupants for a brief period of time (seconds, not minutes) before, during, and after a crash. EDRs may record a wide range of data elements, such as whether the brakes were applied, vehicle speed at the time of impact, steering angle, and whether seat belts were being used at the time of the crash. Image/video event recorders—both inward- and forward-facing—show the driver and environment immediately before, during, and after an event.

We routinely use recorder data after an accident to determine what went wrong, how the vehicle occupants died or were injured, and the safety devices and systems employed. We have seen many cases, however, in which a lack of data hampered us from understanding the true cause of the crash. The 2014 Orland, California crash involving a truck-tractor in combination with two trailers, a motorcoach, and a passenger motor vehicle is an example where inward-facing video and vehicle information, such a brake and throttle input, could have given us the information we needed; however, we were ultimately forced to conclude that the crash occurred for reasons that could not be established from available information.

Recorders not only help investigators determine the cause of a crash, but, perhaps more importantly, they help companies and operators establish effective safety management strategies. Data from recorders can be used to adjust procedures and enhance crew training to prevent crashes from happening in the first place. Although some operators have implemented or are in the process of implementing recorder programs and systems, many are slow to do so without regulatory requirements.

The NTSB has a long history of advocating technology to record crash data in highway transportation, dating back to 1990. To date, NHTSA has failed to develop standards or require the use of EDRs for heavy vehicles, including truck-tractor units, despite NTSB safety recommendations to do so.[31] We firmly believe that, due to a lack of standards and requirements for heavy vehicle EDRs, crash data essential to better understanding collisions continue to go unrecorded, thus impeding improvements in highway safety. The NTSB will continue to recommend that NHTSA take action in this important area.

The NTSB has also called on the FMCSA to require motor carriers to install video event recorders (VERs).[32] Additionally, the FMCSA should require all heavy commercial trucks to be equipped with VERs that capture data in connection with the driver and the outside environment, including the roadway, in the event of a crash or sudden deceleration event. The device should create recordings that are easily accessible for review when conducting efficiency testing and system-wide performance monitoring programs. Motor carriers should be required to review and use VER information in conjunction with other performance data to verify that driver actions are in accordance with company and regulatory safety rules and procedures.

The NTSB believes video event recorders are often the best way to determine what happened in a crash. For example, on March 3, 2015, the NTSB released a safety report, "Commercial Vehicle Onboard Video Systems," that discussed two recent crashes where continuous video systems were installed on commercial vehicles and proved to be extremely useful in evaluating the circumstances leading to a crash and providing critical vehicle dynamics and occupant kinematics data for assessing crash survivability.[33] The FMCSA should encourage the use of VER technology in a Beyond Compliance Program.

Conclusion

We rely on commercial trucks to deliver food and goods to our local grocery stores, medical supplies to our pharmacies and hospitals, and packages to our loved ones. Trucks and truckers are integral to our economy. But because of their sheer size, weight and physical properties, commercial trucks introduce a disproportionate hazard to passenger vehicle occupants in a crash. Improving the safety of commercial truck operations will not only save lives, but improve the public's confidence in this vital and visible industry. Commercial truck safety is a multifaceted issue involving the vehicles, the companies that operate them, the drivers, the oversight agencies, and Congress. Any successful effort to strengthen commercial trucking safety must be a collaborative effort.

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[30] National Transportation Safety Board, *Expand Recorder Use to Increase Safety* (Washington, D.C.: National Transportation Safety Board, 2016).

[31] H–99–054, November 2, 2999; H–10–007, July 8, 2010; H–10–014 and H–10–015, October 21, 2010.

[32] H–10–010 and –011, October 21, 2010.

[33] National Transportation Safety Board, *Commercial Vehicle Onboard Video Systems,* Rpt. No. SR–15/01 (Washington, D.C.: National Transportation Safety Board, 2015).

The FMCSA has demonstrated enthusiasm to implement positive change. Even while the IRT review was underway, the FMCSA proactively made program changes based on the feedback it was receiving from the IRT. The FMCSA has already fulfilled several IRT recommendations, including enhancing training for its investigators and improving the use of data to better assess motor carrier risk factors. The FMCSA is to be commended for its responsiveness and willingness to learn from tragedy to avoid future tragic accidents. But, much work remains to be accomplished.

Thank you for the opportunity to testify before you today. I look forward to responding to your questions.

The CHAIRMAN. Thank you, Chairman Hart.

Next we have Captain Chris Turner. He is the Commander of Troop I of the Kansas Highway Patrol and Vice President of the Commercial Vehicle Safety Alliance. In his current role, he oversees the inspection of commercial vehicles and drivers as well as overseeing inspection resources, such as weigh station personnel and mobile units.

Welcome, sir.

STATEMENT OF CHRIS TURNER, CAPTAIN, KANSAS CITY HIGHWAY PATROL, AND VICE PRESIDENT, COMMERCIAL VEHICLE SAFETY ALLIANCE

Captain TURNER. Good afternoon, Chairman Fischer, Ranking Member Booker, and members of the Subcommittee. Thank you for inviting me to participate in today's hearing.

My name is Chris Turner, and I am in charge of the Kansas Highway Patrol's Commercial Motor Vehicle Enforcement, and I serve as the Vice President of the Commercial Vehicle Safety Alliance, representing state and provincial agencies who enforce commercial motor carrier safety regulations in the U.S., Canada, and Mexico.

Today's topic is particularly meaningful to us, charged with keeping the Nation's roadways safe. We take that mission seriously, and I appreciate the opportunity to share our thoughts on how to continue to improve CMV safety.

I want to stress that the vast majority of motor carriers and operators are safe and they're responsible. However, in order to keep unsafe vehicles and drivers off the roads, we have to focus on how best to combat the efforts of the less safety-minded entities.

In order to do that, states need stable, long-term, reliable funding that is commensurate with the responsibilities the states are tasked with under the Motor Carrier Safety Assistance Program. We rely on Federal funds authorized in the highway bill and appropriated each year to help implement our states' CMV safety programs, and these programs include educational outreach to adults and teen drivers, enforcement on CMVs and individuals driving unsafely around CMVs, vehicle and driver inspections, compliance reviews, and safety audits.

And, unfortunately, we are dealing with an issue directly related to the current Continuing Resolution. Because of a technical error in the CR, states stand to lose a total of $112 million in MCSAP funding this fiscal year, which is a third of the program's funding. If the funding issue is left unresolved, many states will be forced to severely scale back critical CMV education, enforcement, and inspection activities.

We urge Members of this Committee to reach out to your colleagues on Appropriations in support of a full appropriations bill at FAST Act levels. If a Continuing Resolution is necessary, it is imperative that the MCSAP section be corrected. And my written statement provides additional details on this issue.

We must find a way to provide states with reliable, long-term funding; otherwise, state governments might decide that their manpower and resources are better spent elsewhere and not begin reducing—or, excuse me—and begin reducing or even shutting down CMV units. With fatalities on the Nation's highways on the rise, we need more education programs and enforcement, not less.

We are also concerned about the growing number of legislative exemptions. Generally, CVSA opposes exemptions in legislation, as they complicate enforcement and have the potential to undermine safety efforts. And we understand that these exemptions are intended to provide relief to the industry, and that industry understandably wants that relief as soon as possible, but if the exemption cannot be enforced correctly and consistently, then both industry and enforcement suffer.

CVSA asks that members receive exemption requests from constituents to consider whether that exemption is truly necessary and ensure that there will be no negative impact to safety. When an exemption is included in legislation, CVSA asks that members include an implementation window that allows the Federal agencies enough time to provide guidance and the states enough time to adopt the exemption and train inspectors and enforcement personnel.

And, finally, there remains work to be done on the issue of motor carrier safety. While inspectors can stop a truck carrying freight at any time, they are not permitted to stop and inspect a loaded motorcoach unless they observe a visible hazard or a violation of state law. Think about that. So drivers, vehicles, and motor carriers that move people are subject to less scrutiny than those that transport goods.

While the majority of the industry is committed to safety, enforcement needs the authority to stop and inspect all commercial motor vehicles on the roadways, particularly those that move people.

To conclude, we ask that Congress give FMCSA and the states robust and stable funding; clear, enforceable regulations; and the authority to inspect and interact with all sectors of the commercial motor vehicle community. And given those tools, I am confident that we will succeed in reducing fatalities, injuries, and crashes involving commercial motor vehicles.

Again, thank you for the opportunity to be here. I appreciate it.

[The prepared statement of Captain Turner follows:]

PREPARED STATEMENT OF CHRIS TURNER, CAPTAIN, KANSAS HIGHWAY PATROL, AND VICE PRESIDENT, COMMERCIAL VEHICLE SAFETY ALLIANCE

Introduction

Chairman Fischer, Ranking Member Booker and Members of the Subcommittee, thank you for holding this important hearing and for inviting me here today to discuss the future of safety on our Nation's highways.

My name is Chris Turner, I am a Captain with the Kansas Highway Patrol, and I currently serve as Vice President of the Commercial Vehicle Safety Alliance

(CVSA). CVSA is a nonprofit association comprised of local, state, provincial, territorial and Federal commercial motor vehicle safety officials and industry representatives. We represent the state agencies tasked with the responsibility for the administration and enforcement of commercial motor carrier safety regulations in the United States (U.S.), Canada and Mexico. We work to improve commercial motor vehicle (CMV) safety and uniformity by bringing truck and bus regulatory, safety and enforcement agencies together with industry representatives to solve highway transportation safety problems. Every state in the U.S., all Canadian provinces and territories, the country of Mexico, and all U.S. territories and possessions are CVSA members.

The topic of today's hearing, "Continuing to Improve Safety on our Nation's Highways." is a critical one. I would like to thank the subcommittee for holding this hearing to discuss the future of safety on our roadways. As the commander of commercial motor vehicle inspectors in Kansas, my testimony will focus on how to improve safety related to commercial motor vehicles.

As we work to implement the Fixing America's Surface Transportation (FAST) Act of 2015 and begin to consider the next round of improvements for CMV safety, it is critical that Congress and the administration provide states with the resources necessary to effectively take unsafe drivers and vehicles off the roads, shut down motor carriers that do not comply with the safety requirements, and continue our education and outreach programs. This testimony will focus on the challenges facing the CMV enforcement community and our recommended solutions. Simply put, CVSA is asking Congress to provide the states with the tools we need to effectively run our programs and save lives. We need reliable funding that is commensurate with the work load; clear, enforceable regulations; and access to all sectors of the motor carrier industry.

Stable, Long-Term Funding

The Federal government entrusts the states with the responsibility of enforcing the Federal Motor Carrier Safety Regulations (FMCSRs) and the Hazardous Materials Regulations (HMRs). To meet that responsibility, Congress provides funding to the states, through the Motor Carrier Safety Assistance Program (MCSAP). The states use these funds to conduct inspection and enforcement activities, train enforcement personnel, purchase necessary equipment, update software and other technology, and conduct outreach and education campaigns to raise awareness and improve CMV safety issues. The funds are used, in part, to pay the salaries of more than 12,000 full and part time CMV safety professionals. These people conduct more than 3.4 million CMV roadside inspections, 34,000 new entrant safety audits and 6,000 compliance reviews each year.

The good news is the program works. Effective enforcement of the FMCSRs and HMRs helps save lives every day, keeping dangerous vehicles, and unqualified and unsafe drivers off the Nation's roads. The benefits of MCSAP are well documented, and every dollar invested in the state programs yields a big return for taxpayers. According to research and figures from the Federal Motor Carrier Safety Administration (FMCSA), CVSA estimates that MCSAP has an estimated benefit to cost ratio of 20:1. Every roadside inspection conducted yields an estimated $3,281 in safety benefits.

Unfortunately, the program now faces a lack of reliable, long-term funding, which could force states to scale back or even end their CMV enforcement programs entirely. In the FAST Act, states were tasked with a number of new safety initiatives under MCSAP. New and expanded responsibilities mean improvements in safety, but only to the extent the states have the resources to effectively implement those policies. In recognition of this fact, the bill also included higher funding levels for the MCSAP grants, ensuring that funding levels kept pace with the growing workload. States, in turn, relied on that commitment of more Federal funding to maintain current enforcement activities, programs, staffing levels and purchase equipment necessary for the performance of their CMV safety responsibilities. However, because Congress is operating under a series of Continuing Resolutions for fiscal 2017, states are receiving less in Federal funds to do more work. This is not a sustainable model for the states.

The issue is further complicated because the current continuing resolution was drafted using the pre-FAST Act funding model. The FAST Act consolidated nine grant programs into four. This new grant structure went into effect in 2017. Because the December continuing resolution was not updated to reflect the new grant structure, it inadvertently funds several grants that no longer exist while failing to fully fund the MCSAP formula grant and the revamped High Priority grant programs. This means, although Congress has already allocated the money, if this issue is left unresolved FMCSA will not be able to disburse nearly $112 million in fiscal

2017 funds to the states for critical safety, enforcement activities and educational outreach. As a result, not only are states *not* receiving the full funding level authorized in the FAST Act for fiscal 2017, but they could, in fact, receive less in fiscal 2017 than they did in fiscal 2016, severely curtailing critical CMV enforcement and inspection activities funded by MCSAP and potentially putting the future of some state programs at risk. The table below shows the various funding scenarios for the MCSAP formula and High Priority grants.

Fiscal 2017 Funding Level Scenarios—MCSAP Formula and High Priority		
FAST Act 2017	Current Continuing Resolution WITH Anomaly	Current Continuing Resolution WITHOUT Anomaly
$334 million	$285 million	$171 million

In addition, certain CMV enforcement and inspection activities critical to national security are also impacted. For example, because the Border Enforcement Grants Program (BEG) was incorporated into the new MCSAP grant structure in the FAST Act reorganization, the current misalignment in the Fiscal 2017 Continuing Resolution means that despite Congress having allocated the money for BEG, FMCSA will not be able to disburse the funds to the states, severely limiting resources used to ensure that foreign carriers coming into the United States are compliant with the U.S. safety regulations.

When States realize a reduction in their MCSAP funding, their programs are reduced and fewer inspections, compliance reviews, safety audits and education programs are conducted, reducing the safety benefits discussed above and undermining years of improvement in CMV safety. Reductions in funding also mean lost jobs. According to a report completed for FMCSA in 2007, the average "cost" (including wages and benefits) of a state safety inspector was estimated at $66,052.51.[1] This means that for every $1 million invested in the MCSAP, 15 jobs are created or maintained. Conversely, every $1 million reduction in MCSAP funding results in lost jobs or positions eliminated at the state level. And once those positions are eliminated, it can be very difficult to bring them back.

It is imperative that states be able to rely on long-term funding at levels that match their efforts. The consequences of not addressing this funding issue are grave and extend well beyond this single fiscal year. In the short-term, state agencies may be forced to drastically cut programs and downsize their workforce in order to absorb the funding reductions. However, uncertainly for states could also lead to enforcement personnel being transferred out of CMV enforcement units, endangering drivers and the general welfare of the motoring public when important traffic enforcement activities are reduced or eliminated altogether due to a lack of reliable resources and manpower. Even if funding in fiscal 2018 returns to authorized FAST Act levels, it will be difficult for states to rebuild these critical safety programs, as it requires significantly more time to re-hire and re-train enforcement and inspection personnel, and state governments may be unwilling to recommit funds and manpower to a program with unreliable long-term funding. Once those state resources are redirected to other activities within the state, it will be incredibly difficult to bring them back to CMV safety-focused activities. This means a reduction in enforcement on the motor carrier industry while all reports indicate that the number of trucks and buses on our nations roadways will only continue to grow and recent crash and fatality numbers show an alarming trend upwards.

To address this issue, CVSA encourages Congress pass a full appropriations bill realizing the FAST Act's promise of increased funding levels for MCSAP. If Congress is unable to pass a transportation appropriations bill and instead must pass a continuing resolution through the end of the year, it is imperative that the continuing resolution include an anomaly requested by the U.S. Department of Transportation's FMCSA to correct the misalignment of funds in the current continuing resolution, which expires April 28.

However, this is only a short-term patch. The larger issue of relying on the appropriations cycle to determine funding levels on a year-to-year basis does not allow the states to plan long-term. State agencies will be reluctant to fill positions, continue enforcement programs or engage in bold new initiatives if they cannot be confident that Federal funds will come in a timely manner, at the approved levels. Recognizing that future funding for the MCSAP is directly tied to the long-term solvency of the Highway Trust Fund, CVSA supports ongoing efforts to identify sustainable, long-term revenue sources to address the Highway Trust Fund solvency,

[1] Roadside Inspection Costs. Federal Motor Carrier Safety Administration. October 2007. *http://www.fmcsa.dot.gov/facts-research/research-technology/report/Roadside-Inspection-Costs-Oct2007.pdf*

in order to ensure stability for MCSAP. In addition, we look forward to working with the Members of this Committee to find a way to provide states with steady, reliable funding at the authorized levels.

Exemptions

Another challenge facing the enforcement community is inconsistency in the regulations. The Federal safety regulations help reduce or prevent truck and bus crashes, fatalities, and injuries by establishing minimum credentialing and vehicle mechanical fitness requirements to ensure interstate motor carriers and drivers operate safely. The regulations are developed in consultation with enforcement, industry, and subject matter experts, and are intended to establish a clear set of rules by which all motor carriers must abide.

The states, in partnership with FMCSA, work to enforce those regulations consistently and correctly. In order to become a CMV inspector, an individual must go through rigorous training. Once certified, an inspector must conduct a minimum level of inspections each year to maintain their certification. Inspectors must also attend annual refresher training and are trained after every regulatory update or change. This is all geared towards ensuring that inspectors and roadside enforcement officials fully understand and effectively communicate the regulations they are enforcing.

Clarity, consistency, uniformity and enforceability are the cornerstones of an effective regulatory framework. Confusion and inconsistencies create more work for the enforcement community and industry. Inconsistencies and exceptions within the regulations require more training and create more opportunities for mistakes, which in turn require additional resources to correct. These inconsistencies also have a direct impact on data quality. Senator Fischer, Ranking Member Booker and the Members of this Committee recognized these facts by including provisions in the FAST Act to improve the regulatory process, for which the enforcement community is grateful.

Unfortunately, however, the FAST Act also included a number of legislative exemptions from the safety regulations. CVSA is generally opposed to the inclusion of exemptions in legislation. We recognize that there may be instances when exemptions are appropriate and do not compromise safety; however, overall, CVSA believes that exemptions have the potential to undermine safety and complicate enforcement. Every new exemption is an opportunity for confusion and inconsistency in enforcement, diverting scarce resources from other activities and undermining the program's effectiveness. While CVSA has no specific opposition to many of the exemptions on an individual basis, complications have already surfaced regarding their implementation.

Problems begin with the adoption of exemptions. While the exemptions were made effective at the Federal level upon enactment of the bill, that is not necessarily the case at the state level. The states cannot enforce Federal laws and regulations, and instead adopt Federal regulatory policy into their own state law and code. Some states adopt Federal rules by reference, allowing them to automatically adopt Federal changes immediately. However, many states do not adopt by reference and must go through either a legislative or regulatory process to make the Federal regulatory changes effective at the state level. This process takes time, especially in states where the legislature does not meet annually.

Even in states where adoption is automatic by reference, there is still a delay in the practical implementation of an exemption. Jurisdictions must be made aware of the change and its impacts. In many cases, interpretations and guidance from the Federal agency on the parameters and definitions of the exemption are necessary. For example, a number of the exemptions to CMV size and weight limits included in the FAST Act required guidance from the Federal Highway Administration (FHWA). FHWA worked quickly to provide the guidance to the states, but even so, the document was not circulated until February of 2016, which left industry and the enforcement community wondering how the exemptions would work in the meantime and at times creating conflicts during roadside inspections.

Finally, once the exemption has been analyzed and guidance provided, state enforcement personnel must be trained on the new exemptions. Inspectors must be taken away from important enforcement and education efforts and brought into the classroom to be trained on the changes. Practically speaking, this takes time. This guidance and the subsequent training is critical to ensuring the exemption is interpreted and enforced uniformly.

Recognizing these challenges, FMCSA has a policy in place that allows states three years to adopt changes to the FMCSRs. While states work hard to adopt the changes as quickly as possible, the three-year window allows enough time for the states to go through their process and for inspectors to be properly trained. Moving

forward, CVSA encourages Congress to consider including an implementation window or some other mechanism that allows other Federal agencies enough time to provide any necessary guidance on the exemption and the states enough time to adopt the changes and train inspectors and enforcement personnel. We understand the exemptions are intended to relieve industry of a certain burden, but if the exemption cannot be enforced correctly and consistently, industry and the enforcement community both suffer. CVSA looks forward to working with Congress and our partners in the motor carrier industry to identify a solution to this issue that meets the industry's needs while also allowing for clear, uniform application and enforcement of the regulations.

Motorcoach Safety

Motorcoach safety is another issue the enforcement community sees challenges with going forward. The issue of bus and motorcoach safety has been thrust into the spotlight over the past several years due to a series of high profile, fatal crashes. According to FMCSA data and findings by the National Transportation Safety Board (NTSB), from 2005 to 2010, 262 people died in motorcoach crashes, and another 9,062 were injured. Meanwhile, travel by bus or motorcoach is growing. Since 2005, annual growth rates for intercity motorcoach service ranged from 5.1 to 9.8 percent between 2006 and 2010.[2]

The passenger carrier industry is relatively small, with approximately 12,000 companies, in comparison to approximately 525,000 property-carrying motor carriers in the United States. And, nationally, there are fewer CVSA-certified North American Standard Passenger Vehicle inspectors than there are CVSA-certified truck inspectors. Yet, approximately 750 million passengers board a bus or motorcoach each year. Enforcement agencies conducted nearly 122,000 inspections of passenger-carrying CMVs in 2015; that's compared with 3.2 million inspections of property-carrying CMVs in the same year.[3] Part of this is attributable to the fact that there simply are more trucks on the road than buses. However, passenger vehicle certified inspectors are currently restricted on when and where they can examine a passenger-carrying CMV, which also contributes to the vastly lower inspection numbers. Inspectors are only permitted to stop a loaded bus when they observe a traffic law violation, such as speeding or unsafe driving, or if the inspector can see a visible vehicle violation that creates an imminent hazard.

While the vast majority of motor carriers and drivers are committed to safety, this restriction allows those seeking to avoid scrutiny and circumvent safety requirements to plan around inspections. Furthermore, because of the current restrictions, there is an entire segment of the industry, known as curbside carriers that are largely out of the reach of inspectors. These are generally intercity carriers operating under a business model where they pick up and drop off at a curbside location, rather than at a set facility. This model allows flexibility to meet the changing needs of customers, but opens the opportunity for carriers to choose to avoid the scheduled origin/destination inspections that carriers using the conventional fixed facility service receive. While curbside operations represent a smaller segment of the overall passenger-carrying industry, according to the NTSB report, curbside carriers have higher fatal accident and death rates and higher serious driver violations rates than conventional carriers.[4]

The ability to inspect a passenger-carrying CMV en route is an extremely important tool for effective enforcement. Much like random drug testing, the possibility of an unscheduled inspection en route helps ensure that carriers and drivers comply with safety regulations. Under the current restrictions, inspectors do not have authority to pull over a passenger-carrying CMV for an inspection unless the there is a visible imminent hazard. But what if the imminent hazard present is one associated with the driver that is not visible? Research shows that most crashes are caused by driver-related factors. A driver could be operating their passenger-carrying vehicle without being medically qualified, without the proper class of license, without the proper license endorsement(s), driving despite a suspended or revoked license, and/or exceeding his or her allowable hours of service. However, unless the unlicensed, fatigued or otherwise seriously impaired driver is observed making an imminently hazardous traffic infraction, the first indication to inspectors of an im-

[2] Report on Curbside Motorcoach Safety. Special Report NTSB/SR–11/01. National Transportation Safety Board. 2011. *http://www.ntsb.gov/doclib/safetystudies/SR1101.pdf*

[3] Motor Carrier Safety Progress Report (as of 9/30/16). Federal Motor Carrier Safety Administration. 2017. *https://www.fmcsa.dot.gov/content/motor-carrier-safety-progress-report-september-30-2016*

[4] Report on Curbside Motorcoach Safety. Special Report NTSB/SR–11/01. National Transportation Safety Board. 2011. *http://www.ntsb.gov/doclib/safetystudies/SR1101.pdf*

minent hazard may be when the driver falls asleep and crashes. As long as there is no visible problem, that hazardous driver will not be detected.

Proponents of the restriction will argue that it was put in place for the safety of the passengers, so they do not end up stranded on the side of a busy highway. However, traffic enforcement officers (who may or may not be passenger vehicle certified) may already stop a bus or motorcoach for traffic violations—such as speeding or other dangerous behavior. So, the potential for being delayed due to enforcement does exist. However, this unnecessary restriction makes traffic enforcement stops, sometimes on the roadway shoulder, the only viable option to stop and check passenger-carrying vehicles and their drivers. But waiting for unlawful behavior by the driver does not prevent the risk to passengers, which is the purpose of the passenger-carrying CMV inspection in the first place. Certified inspectors are trained to make inspection stops in safe locations—preferably escorting the vehicle to an exit and a safe inspection site. Once subject to inspection, the inspector is responsible for the safety and security of the passengers, including the driver.

Proponents of the restriction will also argue that the restriction is necessary, so that carriers can maintain their tight schedules and meet pick-up and drop-off commitments to their customers. However, the trucking industry, which operates on the same tight timetables and under similar conditions on the roadways, has been able to incorporate roadside inspections into their business model effectively.

CVSA respects that the motorcoach industry operates on a tight time schedule and that a stop en route has the potential to delay schedules, inconveniencing passengers; and, certainly, the comfort of passengers is a necessary consideration. We also recognize that the majority of carriers and drivers operate safely. However, it is important that the enforcement community be able to reach the entire industry to ensure all motor carriers are operating in compliance with the Federal requirements set by Congress. CVSA supports striking the en route prohibition from the regulations entirely.

In addition, while the CMV size and weight discussion often focuses on property-carrying CMVs, it is important to understand that all CMVs, including passenger-carrying CMVs, are subject to the same weight laws and regulations. As the bus and motorcoach industry has evolved, new requirements have been issued mandating additional equipment—for example, handicapped passenger accessories to satisfy Americans with Disabilities Act requirements or diesel emissions equipment to satisfy Environmental Protection Agency requirements—that have added to the empty/tare weight of the vehicle, effectively reducing the passenger weight capacity margin. In addition, the average weight of a passenger today is likely higher than the decades-old design assumption of 150 lbs per passenger.[5] Heavier passengers, the advent of high seating capacity double decker buses and the weight of required additional equipment result in the higher likelihood that a bus will be loaded above its allowable weight. Safe carrying capacity of a bus or motorcoach is determined by the manufacturer's design, in which all component specifications play a part—frame/body, axles, steering components, bearings, and wheels—and particularly brakes and tires. Overloading a vehicle or any of its components increases the risk to passengers and those operating around the vehicle. According to FMCSA, an overloaded tire is more likely to overheat and fail, which could result in a blowout and crash.[6]

To help ensure that passenger-carrying vehicles and components are not being overloaded, inspectors need to be able to weigh the vehicle, and have the capability to inspect the condition of the components, as necessary. Enforcement personnel who have identified passenger-carrying CMVs exceeding manufacturers' designs will take the necessary steps to minimize the impact on the passengers and their trip. This could include the states coordinating with the motorcoach industry to establish uniform procedures providing for passenger needs, including identifying alternative transportation options, ensuring that at the end of the day everyone who travels on our highways arrives home without incident. CVSA supports giving states the authority to require that passenger carrying CMVs report to an open weigh station while en route, specifically for weight enforcement purposes. Standard procedures will need to be put into place to provide for passenger needs when an overloaded vehicle is identified. We look forward to working with Congress and our industry partners to identify a solution to this issue.

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[5] § 567.4—Requirements for manufacturers of motor vehicles. Federal Motor Vehicle Safety Standards. *http://cfr.regstoday.com/49cfr567.aspx#49_CFR_567p4*

[6] Motorcoach Safety Advisory Bulletin: Exceeding Tire Load Ratings. Federal Motor Carrier Safety Administration. *http://www.fmcsa.dot.gov/documents/alerts/Motorcoach_Safety_Advisory_Bulletin_Exceeding_Tire_Load_Ratings.pdf*

Conclusion

The FAST Act includes a number of changes that will have a positive impact on the Nation's roadway safety, but those positive results will only be realized if the states are given the funding necessary to implement comprehensive, robust safety programs, as envisioned in the bill. And there remains work to be done. While the bill included a number of provisions that will result in more clear, enforceable regulations, the practice of including exemptions from the safety regulations will continue to hamper enforcement and potentially impact safety. In addition, the bill made little progress in the area of motorcoach safety and enforcement. As the state agencies responsible for CMV enforcement, we look forward to working with the Members of this Committee, FMCSA, our industry partners and other stakeholders to continue working towards our shared goal of preventing deaths, injuries and crashes on the Nation's roadways. We are committed to meeting our mission and ask only that we be given the tools we need to do it effectively.

The CHAIRMAN. Thank you very much, Captain.

Next we have Dr. Paul Jovanis. Is it "Jo-VAN-is" or "Jo-VANE-is"?

Dr. JOVANIS. "Jo-VAN-is."

The CHAIRMAN. "Jo-VAN-is." Dr. Jovanis is Professor Emeritus at Pennsylvania State University and Chair of the Transportation Research Board's Strengthening the FMCSA Research and Technology Committee. He has done extensive work testing road safety and traffic engineering programs. His recent work has focused on the analysis of crash data in relation to road safety management.

Welcome, sir.

STATEMENT OF PAUL P. JOVANIS, PH.D., PROFESSOR EMERITUS, PENNSYLVANIA STATE UNIVERSITY, AND CHAIR, TRANSPORTATION RESEARCH BOARD MOTOR CARRIER SAFETY RESEARCH ANALYSIS COMMITTEE

Dr. JOVANIS. Chairman Fischer, Ranking Member Booker, and Subcommittee members, I'm honored to be here to testify about this important topic.

This testimony summarizes the report of the first meeting of the National Academy of Sciences, Engineering, and Medicine Motor Carrier Safety Research Analysis Committee. The committee's primary charges are to assist the Federal Motor Carrier Safety Administration to strengthen the research and technology program to better meet the needs of the agency's safety mission as well as to inform stakeholders. The committee has expertise in truck safety, program management, technology, labor, statistics, sleep research, and human factors. A committee membership appears in my written testimony.

Initiated at the request of FMCSA to encourage independent program review, the Committee expects to meet semiannually to better understand the opportunities and constraints of the research and technology program. I would like to emphasize that our committee is clearly focused on the research and technology program of FMCSA and the safety implications of that program.

During the open sessions of the meetings, two points were made that focused our committee's thinking in the preparation of this report. First, the committee was asked to consider whether FMCSA is doing the right things in the right areas. Second, we were asked to consider the recommendations concerning data set forth in a prior 2016 National Academy report on motor carrier operator fatigue and health. Our committee developed consensus recommenda-

tions intended to initiate a dialogue with FMCSA staff on suggestions for actions taken consistent with our committee charge.

In responding to the question concerning whether FMCSA is, "doing the right things," the committee identified at least two FMCSA safety goals. The first is to strengthen their R&T program with respect to the agency's policies and regulatory authorities, such as improving hours of service regulation and increasing the effectiveness of vehicle inspection policies. The second is to conduct research to more generally reduce the frequency and severity of large truck and bus crashes consistent with FMCSA's primary mission.

The bulk of FMCSA's R&T program appears to address the first goal. The second is broader and was the subject of substantial committee discussion. The first two recommendations in our report directly relate to data analysis activities within the Research and Technology program.

The committee's five recommendations can be summarized as follows.

One, the committee suggests the strategic assessment of FMCSA's R&T program. In addition to addressing the needs of internal customers and responding to congressional mandates for specific projects, the agency should consider committee recommendations to develop over time a broader program to reduce large truck and bus crash frequency and associated fatalities and injuries. The committee report contains several detailed suggestions in this regard.

Two, the committee recommends that FMCSA consider a program concerning the effect on large truck and bus crashes of environment, traffic, vehicle technologies, and road design, in design to their current recognized factors. The program should include a sustainable, annually produced, national dataset of large truck and bus crashes for safety analysis. The committee believes much of these data can be derived from existing sources. The benefits of such a program are described in our report.

Three, the Committee notes that FMCSA has made substantial use of naturalistic driving study, NDS technique. This method uses trucks instrumented with cameras, global positioning systems, and vehicle sensing hardware. Our suggestion is that we undertake a workshop, jointly if possible, with FHWA, NHTSA, and TRB, that are possible partners, as part of this endeavor. This is a specific technical recommendation, but one the Committee felt would benefit FMCSA and possibly other DOT agencies.

Our Committee supports methodologies to evaluate the effectiveness of programs designed to reduce crashes.

And, finally, the Committee discussed the influence of driver compensation on driver behavior. The committee realizes the complexity and contentiousness of this topic, desiring to develop a deeper understanding of the issue before offering additional advice.

Finally, I want to thank the Committee and express our appreciation to the FMCSA staff, who gave generously of their time during our meetings. They're to be commended for engaging the Academies in this effort. Thank you.

[The prepared statement of Dr. Jovanis follows:]

PREPARED STATEMENT OF PAUL P. JOVANIS, PH.D., PROFESSOR EMERITUS, PENNSYLVANIA STATE UNIVERSITY, AND CHAIR, TRANSPORTATION RESEARCH BOARD MOTOR CARRIER SAFETY RESEARCH ANALYSIS COMMITTEE

Initial Review of Research and Technology Program of the Federal Motor Carrier Safety Administration

Chairwoman Fischer, Ranking Member Booker and committee members, I am honored to be asked to testify about this important topic.

Background

This testimony summarizes the report of the first meeting of the Motor Carrier Safety Research Analysis Committee (NASEM, 2017), held on December 15–16, 2016, at the National Academy of Sciences building in Washington, D.C. The committee's primary charges are to "assist the Federal Motor Carrier Safety Administration (FMCSA) to strengthen FMCSA's research and technology (R&T) program to better meet the needs of the Agency's safety mission as well as to inform commercial motor vehicle carrier enforcement, the research community, safety advocates, and industry of active and planned projects" and "(*a*) assist FMCSA in refining its research methodologies; (*b*) assist in identifying and utilizing current research in the transportation and related communities; and (*c*) promote transparency of the FMCSA R&T activities."

The committee is a group of individuals free of conflicts with regard to FMCSA's R&T program and with expertise in truck safety (both researchers and motor carrier operators), truck safety program management, technology, labor, statistics, sleep, and human factors (see attached committee membership). Initiated at the request of FMCSA to encourage independent program review, the committee expects to meet semi-annually as we seek to better understand the opportunities and constraints of the R&T program.

During the open sessions of our meeting, two points were made that focused the committee's thinking in the preparation of this report. First, the committee was asked to consider whether FMCSA is doing the right things in the right areas. Second, we were asked to consider the recommendations concerning data set forth in the 2016 report of the National Academies of Sciences, Engineering, and Medicine on motor carrier operator fatigue and health (NASEM 2016). Discussion of these two questions was the organizing principle for our letter report. The committee developed consensus recommendations intended to initiate a dialogue with FMCSA staff on suggestions for actions to be taken consistent with our committee statement of task.

Strategic Planning for FMCSA's R&T Program

In responding to the question concerning whether FMCSA is "doing the right things," the committee identified at least two safety goals, each with different implications concerning priorities for research and data analysis. The first is to strengthen FMCSA's R&T with regard to the agency's policies and regulatory authorities, such as by addressing fatigue through improved hours of service (HOS) regulation or reducing crashes through increased effectiveness of vehicle inspection policies. The second is to conduct research and assist in technology development to reduce the frequency and severity of large truck and bus crashes, consistent with FMCSA's primary mission.[1]

Although these goals are clearly related, the second is broader, and was the subject of additional committee discussion. The bulk of FMCSA's R&T appears to address the first goal. As explained in the paragraphs that follow, the committee raised a question concerning whether the agency is missing an opportunity to ascertain more broadly the factors contributing to large truck and bus crashes and to identify, evaluate, and implement suitable countermeasures.

The committee learned from staff presentations that the R&T program has focused over the past decade or so on serving internal FMCSA R&T customers such as program managers in rulemaking and enforcement and responding to congressional mandates for specific projects. This implies that the R&T program is addressing the first safety goal identified above. The resulting projects include important safety concerns but appear to give less attention to the second goal. The committee appreciates the need for FMCSA to study specific areas related to driver behavior and fatigue, as recommended in the National Academies' driver fatigue and health

[1] *https://www.fmcsa.dot.gov/mission*

report.[2] However, addressing such priorities should not preclude modest investments in data gathering and analysis to understand risks of large truck and bus crashes more broadly (*i.e.,* goal 2).

Studies based on available data can yield important insights into risk and where safety agencies should target their efforts and can thereby inform strategic planning for future research. For example, an analysis by Medina-Flintsch *et al.,* (2012), which was discussed during the meeting, indicates that most fatal truck crashes in two states occurred on state roads and highways rather than on Interstate highways, where most truck inspection enforcement activity is focused. Furthermore, the non-Interstate fatal crash rate per truck mile traveled is roughly two and one-half times that of the Interstate crash rate. If this experience is typical of national trends, a targeted effort to identify and enforce appropriate countermeasures is needed to reduce fatal truck crashes off the Interstate system. Even off the Interstates, a substantial portion of truck-involved fatal crashes involve interstate carriers, which implies that a substantial share of this safety problem is within FMCSA's responsibility.

The committee appreciates that the authorities and policies available to FMCSA are limited to drivers, vehicle maintenance, and carrier safety performance, which understandably causes the agency to focus its efforts in these areas. Nonetheless, the committee recommends that FMCSA consider a program of study that includes consideration of the effect of environmental factors, traffic levels, vehicle technologies, and roadway design on large truck and bus crashes in addition to their current set of contributing factors. Although these additional areas are primarily the responsibility of other entities,[3] follow-up research on the Medina-Flintsch *et al.,* study mentioned above could also have implications for FMCSA's inspection and enforcement programs. The committee was pleased to learn in this regard that FMCSA, NHTSA, and FHWA have a history of collaboration on motor carrier safety issues.

The committee encourages FMCSA to consider (*a*) setting priorities through strategic analysis to identify possible problem areas, then (*b*) analyzing data to refine problem descriptions and explore possible countermeasures, and finally (*c*) carrying out pilot tests of countermeasures with evaluations of effectiveness. FMCSA's R&T program has used elements of this process in investigations of driver fatigue and distraction. The committee encourages the agency to broaden its view to consider risk more holistically rather than to focus on aspects of drivers, vehicle maintenance, and carrier performance to identify the highest areas of risk or the most cost-effective countermeasures. To the extent that a cost-effective countermeasure is the responsibility of other modal administrations, FMCSA could cooperate with the appropriate agency. The next section addresses how risk might be considered more broadly through the provision of enhanced data for analysis.

Enhanced Crash Data

FMCSA countermeasures focus on drivers, vehicles, and carriers. FMCSA R&T appears to do so as well, but this focus leaves out the interacting effects of the environment and the roadway. In view of FMCSA's limited R&T budget for data (about $3 million annually), the committee is suggesting not the collection of new data but the assembly of relevant information concerning motorcoach and truck crashes from existing data sets.

The concept is to continue to seek opportunities to develop and provide researchers with access to a sustainable data set that can be used to conduct a range of safety analyses requiring multiple variables. A similar recommendation is contained in the National Academies' driver health and fatigue report.[4] In this regard, FMCSA's plan to create a database repository for data collected by FMCSA[5] is appropriate and should be conducted in a manner consistent with Federal data standards and protocols established through the *data.gov* program.[6]

In addition, the committee recommends that FMCSA consider the assembly of a sustainable database of large truck and bus crashes and their attributes. The data set should include as many crash location, severity of outcome, contributing crash factors, and crash (number of vehicles, time of day, weather), vehicle, roadway, driver, and carrier attributes as can be obtained by full integration of available data

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[2] See Recommendation 12.

[3] NHTSA (for crash avoidance technologies), Federal Highway Administration (FHWA) (for highway safety countermeasures), and localities and states (for highway design, enforcement, traffic control, and emergency response).

[4] See pages 189–190.

[5] *https://www.fmcsa.dot.gov/safety/research-and-analysis/data-repository-naturalistic-driving-and-other-datasets.*

[6] *https://www.data.gov/safety.*

sources. Several data sets can serve as starting points for such a sustainable data set; the details can be developed through the conduct of the research. The point is to use such a data set to support the conduct of motor carrier safety research throughout the United States.

As a secondary benefit to FMCSA, expansion and availability of data sets over time could enlarge the community of researchers interested in and knowledgeable about truck safety. These researchers would not necessarily be under contract to FMCSA. For example, they might be academic researchers, including doctoral students preparing dissertations, whose work is made possible by the availability of data. At present, the number of researchers knowledgeable about motor carrier safety is limited, which restricts FMCSA's options when it seeks contractors to compete for research proposals or for assistance in peer review.

Safety Research Methods

The committee appreciates FMCSA's methodological challenges in studying driver and vehicle safety issues. For example, for studies in the area of fatigue, FMCSA relied on data provided by cooperating carriers, which may involve biases because they tend to be the largest, most safety-conscious carriers.

Alternatively, FMCSA has relied on naturalistic driving studies (NDS) to examine driver behavior. This method uses trucks instrumented with cameras, global positioning systems and vehicle sensing hardware to observe driver behavior and vehicle response continuously in real time. While providing useful information about the actions of the driver of the instrumented commercial vehicle, the method is costly and results difficult to generalize because they are not random samples (and often again rely on data from the most safety-conscious carriers) and typically lack crashes or even large numbers of near crashes. The committee will have more comments in this area in subsequent letter reports as it learns more about FMCSA's safety priorities, data constraints, and emerging concerns.

The committee report provides additional discussion of methodological opportunities available to the agency including naturalistic driving study methods already in use by the agency, epidemiological methods, and other techniques. One specific suggestion is to convene a workshop, which would bring together top safety methodologists across several fields (*e.g.,* statistics, epidemiology, road safety, human factors) to provide focused advice on the use of naturalistic driving methodologies. There is an emerging literature that forms a foundation for discussion on this topic (*e.g.,* Jonasson and Rootzén 2014; Wu and Jovanis 2012; Tarko 2012; Guo *et al.,* 2010; Bärgman *et al.,* 2015). Further details about methodological opportunities are contained in the committee report.

Driver Behavior

Prior convictions for moving traffic violations are a good predictor of subsequent crash risk [Lueck and Murray (2011), IIHS (1990)]. A long-term effort to collect data on moving violations could build on the recently completed FMCSA R&T report concerning the underreporting of commercial motor vehicle driver convictions by courts and states.[7] States receive incomplete reporting from their court systems, and some judges are reluctant to penalize motor carrier drivers through convictions that could take away their means of earning a living. In addition, first-time offenders sometimes receive a referral to training rather than a conviction, despite evidence that this practice poses a risk to other drivers (Gebers 2007). However, all states record convictions for moving violations on driver records, so collection of data on moving violation convictions is feasible.

Advanced Technology

Committee discussions concerning advanced technology systems for motor carriers included studies of Wireless Roadside Inspection (WRI), automation and collision avoidance systems. The committee was pleased to learn about FMCSA's large-scale research project addressing wireless roadside inspections.[8] If most fatal truck crashes occur off the Interstates, as indicated by the Medina-Flintsch *et al.,* (2012) results described above, WRI capability would allow inspections to be conducted where risks appear to be highest. In view of the potential safety gains and issues associated with connected and autonomous vehicle technologies, the committee is interested in knowing more about (*a*) FMCSA and NHTSA efforts to track market penetration of

[7] *https://www.fmcsa.dot.gov/research-and-analysis/research/assessment-commercial-driver%E2%80%99s-license-cdl-holders%E2%80%99-traffic.*

[8] This multiyear, nearly $5 million effort is described at *https://www.fmcsa.dot.gov/research-and-analysis/technology/wireless-roadside-inspection-wri-research-project.*

different technologies and (*b*) early evaluations of the safety efficacy of these technologies.

Summary

The committee's 5 recommendations may be summarized as:

1. The committee suggests a strategic assessment of FMCSA's R&T program. In addition to addressing the needs of internal customers and responding to congressional mandates for specific projects, the agency should consider committee recommendations to develop, over time, a broader program to reduce large truck and bus crash frequency and the associated fatalities and injuries.
2. The committee recommends that FMCSA consider a program concerning the effect on large truck and bus crashes of environment, traffic, vehicle technologies, and road design in addition to the currently recognized factors. The program should include a sustainable, annually produced national data set of large truck and bus crashes for safety analysis.
3. The committee notes that FMCSA has made substantial use of the naturalistic driving study (NDS) technique. The committee suggests that FMCSA convene a workshop of safety experts, epidemiologists, and statisticians to suggest improvements to NDS analysis to improve their use as a safety methodology (especially the use of proxy measures and crash surrogates). The interest of FHWA, NHTSA, and TRB technical committees indicates possible partners in such an endeavor.
4. The National Academies' driver fatigue and health report recommended that evaluation of the effectiveness of a program designed to reduce crashes can be more feasible and relevant than an attempt to quantify the multiple causes of crashes.
5. The committee discussed the influence of driver compensation on driver behavior. The committee realizes the complexity and contentiousness of this topic, desiring to develop a deeper understanding of the issue before offering advice.

Finally, on behalf of the entire committee, I express my appreciation to the FMCSA staff, which gave generously of their time during our meetings. They are to be commended for engaging the National Academies for this purpose.

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Committee Members

*Committee Members in Attendance**

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Bishop, Richard, Bishop Consulting
Byrd, LaMont, International Brotherhood of Teamsters
Campbell, John, Battelle Memorial Institute
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McCartt, Anne, Insurance Institute for Highway Safety (retired)
Collin Mooney, Commercial Vehicle Safety Alliance**
Stern, Hal, University of California, Irvine
Thiese, Matthew, University of Utah
Van Dongen, Hans, Washington State University
Woodruff, Greer, J.B. Hunt Transport Services, Inc.

The CHAIRMAN. Thank you, Doctor.

Next I would like to welcome Dr. Jerry Moyes, retired as Chairman and CEO and President of Swift Transportation in 2016. He has extensive ties to the trucking industry, serving as Vice President of ATA, President of the Arizona Trucking Association, and as a board member of the Truckload Carriers Association.

Welcome, sir.

STATEMENT OF JERRY MOYES, CHAIRMAN EMERITUS, SWIFT TRANSPORTATION COMPANY

Mr. MOYES. Thank you, Chairman Fischer, Ranking Member Booker, and other distinguished members of this subcommittee. I want to thank you for inviting me to testify here this morning—or this afternoon.

My name is Jerry Moyes. I am the Founder of Swift Transportation. I started the company over 50 years ago with one beat-up old truck. I grew it into the largest truckload carrier in the United States and probably the world today. It was very difficult early on with regulations, the Interstate Commerce Commission, and a few things we don't have to deal with today, but a lot of financial challenges early on.

But in 1990, we took the company public, and that was kind of the shot in the arm, and we told the Street that we felt that we could grow the company 10, 15, 20 percent a year through internal growth and through acquisitions. And over the next 15 years, we made—we grew it 25 percent both top line and bottom line per year, a very successful operation.

But part of our growth was through acquisitions, and we made 12 acquisitions, but we probably looked at another 40 or 50. And as we looked at these companies, we looked at, "How do we improve them? What are we going to do differently to improve them?" And one of the main lines that we always looked at was their insurance and claims, their safety. And in numerous of these 12 acquisitions that we made, almost all of them we felt that that was

**Unable to attend: Dan Blower, University of Michigan Transportation Institute, and Linda Boyle, University of Washington

** Mr. Mooney resigned from the committee in January 2017.

an area that we could come in and improve on that company. And that was one of the vital statistics that made us go into these acquisitions.

So they were very successful. From 1966 to 1990, we grew about $150 million in revenue. From 1990 to 2005, the next 15 years, we grew it to about $3.5 billion in revenue.

And I can tell you from day one to today, safety has always been the number one criteria at this company, and it's largely the number one reason for the success that we have had. It's everyone's job at Swift to be very safety-minded, and that is always number one.

Why is safety number one? We feel that we have an obligation to the driving community out there, to our drivers, and to our fellow employees to put not only the safest driver out there, but the safest equipment. Teach the driver the modern—how to be as safe as we can, but give him the best tools that we can do to do that.

And at Swift, we have always been a pioneer in safety, and we're proud that we're always ahead of a lot of our competition, that it allowed us to grow the way we did. But just some of things that even back in 1980, we brought in what's called a trip recorder where we were starting to record the drivers and their activity and everything. And I was a driver back in them days, and the guys would give me a bad time about, "What are we doing this for?" and they would lose their little cassettes and all that stuff, but we started back then.

We developed safety lanes to where we can—when we fuel a truck, we bring it in, we put a mechanic underneath to look at, what can be wrong underneath that system that we don't identify from a walk-around? So we put a creeper—or put a mechanic under every one of them. We feel that's very important. We've done that for a long time.

Back in 1990, before that, we were about 50 doubles, pulling the 28-foot doubles, a truckload carrier, but when they went to the 53-foot trailers, we were able to switch to the 53, were permitted, as they become in all 48 states. And we learned very rapidly that the 53 was a much safer trailer than the doubles that we had been pulling.

We had done a number of things, risk analysis, the lane, the stabilizing controls, but in 2010, 2010, we started electronic logs. And this was 7 years before they were mandated. So we've always tried to be ahead of the game.

In 2013, we were very proud that we started with what's called a "smart truck," the collision avoidance system, the lane departure systems. We went to the automatic transmission where the drivers could pay more attention to driving the truck, and it made it become a much safer truck. Today, we have almost 50 percent of our trucks that have that equipment on them. And I can tell you, over the next 2 years, we'll be at 100 percent, with we call it the smart truck.

In 2015, we went to the dash cameras, where it's picturing, in the case of a critical event, both the outside forward as well as looking at the driver. And we have seen tremendous success in that.

So we've made a lot of improvements to safety, not because we're required by the government, but it is good business, and both from

an obligation to the motoring public, but to our shareholders. It works both ways.

So I'm very proud with our safe and our courteous drivers. And I really want to thank you for inviting me to this hearing.

[The prepared statement of Mr. Moyes follows:]

PREPARED STATEMENT OF JERRY MOYES, CHAIRMAN EMERITUS, SWIFT TRANSPORTATION COMPANY

Chairman Fischer, Ranking Member Booker and distinguished members of the subcommittee, thank you for the opportunity to testify about "Continuing to Improve Safety on our Nation's Highways." My name is Jerry Moyes and I am the founder of Swift Transportation. Today I serve on its board of directors and as Chairman Emeritus.

I started Swift 50 years ago driving a single truck. From the beginning safety has been critical to our success and growth. Just one accident is one too many. Today we are the largest truckload carrier in North America. This achievement was possible because of our culture of Safety First. Headquartered in Phoenix, Arizona, Swift operates in 48 states, Mexico and Canada. Safety is the key to our success and a top priority in our operations.

We operate about 18,000 trucks and generate over $4 billion in annual revenue. The fore-hire and private carriage truckload sector accounts for approximately 75 percent of all U.S. freight, measured by revenue. The next largest share is rail at about 8.5 percent followed by the less than truckload, or LTL, share at about 6.3 percent.[1] Truckload carriers are by far the most common trucks you see on the road. We mostly operate tractors pulling single 53-foot-trailers.

At Swift we believe safety is the responsibility of every level of management, from the Chief Executive Officer to every driver who gets behind the wheel. It is the responsibility of all managers to maintain high standards in employee selection and to provide a safe working environment, including continuous safety training, adhering to Company safety policies and procedures, and complying with federal, state, and local safety, health and environmental laws and regulations.

Safety at Swift is no accident. Simply put, safety makes good business sense. We don't wait for the government to pass laws requiring safety improvements. Swift has a long track record of going above and beyond to provide our drivers with the safest equipment available. Here are just a few examples of how we have pioneered safety practices:

- In the late 1980s we installed trip recorders to monitor speed compliance at 57 mph.
- We established in-house safety lanes where complete safety inspections are performed while a truck is fueled. Think of it like a NASCAR pit stop.
- We shortened our stopping distances by improving our brakes and using ABS braking systems.
- We stopped using double 28-foot-trailers, which were less safe than singles, once single 53-foot-trailers were permitted nationwide. Once again, our experience is double 28s are less safe than single 53 foot trailers which is consistent with national data.[2]
- We put reflective markings on our trailers long before they were required.
- In the 1990s the advent of electronic engines gave us the ability to govern the speed of our trucks at 62 mph.
- We pioneered using satellite communications in our trucks to improve safety and efficiency.
- In 2006 we developed a driver risk analysis system that identifies safe drivers.
- At the same time we deployed driver simulators to improve driving skills and reinforce safe behavior.
- In 2007 we added vehicle stability control to all of our new trucks. We coupled this technology with our Qualcomm on board communication system, which allows us to receive critical event messages in real time. This allows us to quickly

[1] American Trucking Associations, U.S. Freight Forecast to 2027, Published 2016

[2] The 2000 U.S. DOT Comprehensive Truck Size and Weight Study found that multi-trailer trucks, primarily double trailer trucks, experienced an 11 percent higher overall fatal crash rate than single trailer combinations (vol. 3, pg. VIII –5).

review with drivers the behaviors that trigger critical events. Once again, we led the industry in this safety practice.

- We deployed electronic logs in 2010, a full 7 years ahead of the government mandate.
- In 2013 we began ordering all new trucks—known as Smart Trucks—with sophisticated collision avoidance and lane departure systems.
- Less than two years ago we installed windshield-mounted cameras that activate and record when a critical event occurs.

I will repeat, we made these changes to improve safety for our drivers and the public because it made business sense and it was the right thing to do, not because we were required by the government.

The trucking industry, led by groups like the Truckload Carriers Association and the American Trucking Associations, is committed to continually improving safety. For the record, the trucking industry annually invests at least $9.5 billion in safety. These investments include technologies, training, driver safety incentives, and compliance with safety regulations.[3] Success in trucking is the ability to deliver freight from point A to point B and to do so safely.

There is no place for drug or alcohol use in trucking. Swift supports the use of hair follicle testing, which is the most effective test for identifying a broad spectrum of drugs. The industry's alcohol use violation rate for 2014 was just .08 percent (*i.e.,* eight-hundredth of one percent).[4] The rate for drugs in 2014 was 0.9 percent (*i.e.,* less than 1 percent).[5] In 2015 only 2 percent of large-truck drivers involved in fatal crashes had a blood alcohol concentration (BAC) of .08 grams per deciliter (g/dl).[6] These results are attributable to the industry's commitment to put safety first, with no tolerance for drugs or alcohol in the cabs of our trucks. Results such as these have placed Swift and like-minded carriers at the forefront of the industry.

Several weeks ago Chris Lofgren from Schneider National appeared before this subcommittee. He did an excellent job describing key safety initiatives and successful results. Swift supports their testimony 100 percent. While preparing for this meeting I reviewed the Insurance Institute for Highway Safety's website and discovered that Swift is perfectly aligned with their safety initiatives. In fact, some of our fleet of 60,000 trailers are testing bumpers for rear under ride guards that meet the standards specified by the IIHS's Tough Guard Award.

Friends, motorists and public officials often compliment me on our drivers' behavior. Swift trucks stand out because our drivers stay in the slow lane, observe speed limits and are courteous.

At Swift we are always looking for ways to improve highway safety for our drivers and the public. The last thing we want to do is make our operation less safe. I have heard Double 33 foot trailers described as the key to improved productivity, but we are not willing to trade safety for productivity. Based on our experience we have learned that single trailers are safer than doubles. I'm all for improving productivity and, if the committee is interested, I am happy to share my ideas on ways our industry can be more productive without compromising safety or causing further damage to the highway infrastructure.

Chairman Fischer, Ranking Member Booker and other distinguished members of the subcommittee, thank you again for the opportunity to testify and provide Swift Transportation's perspective on increasing safety.

The CHAIRMAN. Thank you, sir.

Next we have Dr. Adrian Lund. Dr. Lund is President of the Insurance Institute for Highway Safety and the Highway Loss Data Institute. Trained as a psychologist, Dr. Lund has been involved in health-related research since 1974. He has studied youth drivers, substance abuse among drivers, and occupant restraints.

Welcome, sir.

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[3] ATA's Safety Investment Study 2016, *http://www.trucking.org/*

[4] Results from the 2014 Drug and Alcohol Testing Survey, Federal Motor Carrier Safety Administration, October 2016, *https://ntl.bts.gov/lib/60000/60300/60335/16-005_b_-Drug_and_Alcohol_Survey_2014-FINAL-508C.pdf*

[5] *Ibid.*

[6] Quick Facts 2015, National Highway Traffic Safety Administration, December 2016, *https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812348.*

STATEMENT OF ADRIAN K. LUND, PH.D., PRESIDENT, INSURANCE INSTITUTE FOR HIGHWAY SAFETY

Dr. LUND. Good afternoon, Chairman Fischer, Ranking Member Booker, and distinguished members of the Subcommittee. On behalf of the Insurance Institute for Highway Safety, I would like to thank you for this opportunity to talk about large truck safety.

The Insurance Institute is a nonprofit research and communications organization dedicated to reducing the deaths, the injuries, and the property damage from motor vehicle crashes. We were established in 1959 and are wholly supported by auto insurers to provide objective information to help guide safe choices in transportation.

IIHS has been studying large truck crashes for decades, and the results of that research can be seen on our website. But today my comments focus on our most recent truck research and some of the ways we might make trucks safer. These comments are detailed in my written testimony, but I'll try to summarize them briefly.

First, as Ranking Member Booker pointed out, after several years of much lower death rates on our highways due to the recession, we are now seeing deaths increase in 2015 and 2016 as the economy picks up steam. This is well known. The less well known is that this increase began in 2010 for fatal crashes of large trucks. In fact, since the depths of the recession in 2009, fatalities in large truck crashes have increased 22 percent versus only 4 percent for fatalities and all kinds of crashes. And it's important to remember that most of these deaths are occupants of passenger vehicles, whose smaller size and weight put them at a huge disadvantage in truck crashes.

But this size and weight disadvantage does not mean that crashes and deaths are inevitable. Our recent research from North Carolina shows that the risk of large truck crashes varies greatly. Among the factors increasing crash risk were defective equipment, such as faulty brakes and lighting systems. Also, drivers who reported driving more than 12 hours since an extended sleep were almost twice as likely to crash as those awake for less than 8. Carriers with higher crash rates also were more likely to be involved in crashes.

Our study also showed that there were factors that can reduce crash risk. Anti-lock braking systems, which have been required on new trucks since the 1990s, reduce the risk of crashing by 65 percent. Benefits were found for stability control systems, electronic logging devices, and speed limiters. These findings show the promise of technology in preventing truck crashes.

Although not prevalent enough to be analyzed in this study, IIHS research has also noted that advanced driver assistance technologies, like forward-collision warning and automatic emergency braking, blind spot detection, and lane departure prevention could mitigate as much as 28 percent of all crashes involving large trucks.

One of the things we could not study in the North Carolina research was the effect of speed. However, physics dictates that faster speeds result in more crashes and more severe ones no matter what the size of the vehicle, but for trucks, their greater weight compounds this issue. Even a lightly loaded 40,000-pound truck

has 13 times the kinetic energy of a 3,000 pound car traveling at the same speed. And this proposal for speed limiters on large truck speeds is a welcomed attempt to mitigate this problem.

Another key aspect of large truck crashes is that occupants of other smaller vehicles are often injured when they underride the truck. IIHS has shown that improved guards can prevent these underrides from the rear. We welcome NHTSA's proposal to strengthen the rear underride guard standard, but we also note that the proposed requirements already fall short of what trailer manufacturers can and are providing on new trailers.

Chairman Fischer and other members of the Subcommittee, this concludes my oral remarks. And I would be happy to answer any questions the Committee might have.

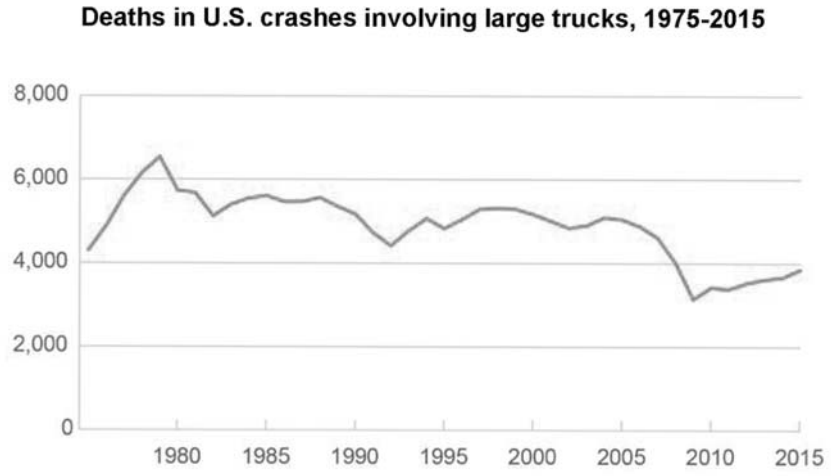
[The prepared statement of Dr. Lund follows:]

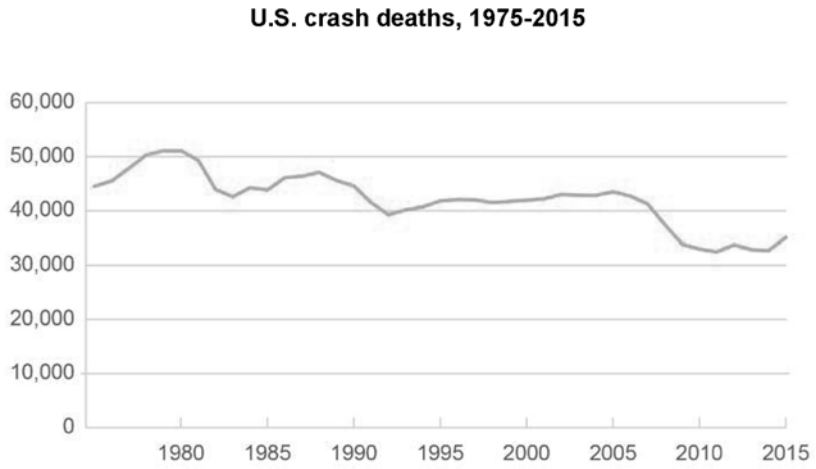
PREPARED STATEMENT OF ADRIAN K. LUND, PH.D., PRESIDENT, INSURANCE INSTITUTE FOR HIGHWAY SAFETY

WHAT CAN BE DONE TO IMPROVE LARGE TRUCK SAFETY?

The Insurance Institute for Highway Safety (IIHS) is a nonprofit research and communications organization that identifies ways to reduce deaths, injuries, and property damage on our highways. We are supported by auto insurers. Thank you for the opportunity to testify on the safety of large trucks in the United States.

Motor vehicle crash deaths have increased in recent years to the highest level since 2008, with 35,092 deaths in 2015.[1] Of these, a total of 3,852 deaths involved crashes with large trucks. As the U.S. economy rebounded from recession, deaths in large truck crashes started to climb in 2009. What is especially concerning is that truck-related crash deaths are increasing faster than overall motor vehicle crash deaths. The number of people who died in large truck crashes was 22 percent higher in 2015 than in 2009, while crash deaths overall rose less than 4 percent. The vast majority of people who die in crashes between large trucks and passenger vehicles are people in passenger vehicles. Preliminary data for 2016 indicate that the highway death toll is still on the rise, and we expect that trucks are contributing to this disturbing trend. A variety of countermeasures, both old and new, could address the problem.





Recent IIHS research—large truck crash factors

IIHS has been studying serious crashes involving large trucks for decades, and, although some aspects have improved, unsafe trucks and tired truckers persist. A recent IIHS study examined the risk factors for large truck crashes, such as defective equipment, safety technology, and carriers' crash history.[2]

Researchers compared large trucks involved in serious crashes in North Carolina during 2010–12 with a sample of similar trucks that weren't involved in crashes to estimate the relative prevalence of various factors and determine which ones are associated with increased crash risk.

Nearly three-quarters of the crash-involved trucks had vehicle defects identified during a post-crash inspection. Trucks with violations for any type of defect were more than 3 times as likely to be in a crash as trucks without such violations. Violations for brake, tire, and lighting system defects also were associated with increased crash risk. Risk was greater for violations severe enough to place the truck out-of-service.

Carriers with higher past crash rates were associated with an elevated current crash risk. Companies with at least 100 reported crashes per 1,000 power units (tractors or single-unit trucks) within the preceding 24 months had a 72 percent higher risk of crashing than carriers with fewer than 100 reported crashes per 1,000 power units.

Looking at driver-specific factors, researchers found that truckers age 60 and older had a higher crash risk than drivers ages 30–59, who made up 72 percent of the crash-involved drivers in the study. Truckers who reported driving after at least 12 hours since an extended sleep period were 86 percent more likely to crash than drivers who had been awake for less than eight hours. Truckers who reported driving more than five hours without stopping were more than twice as likely to crash as those who drove 1–5 hours.

Several safety features showed promise in reducing crash risk among the large trucks in the study. Antilock braking systems, which have been required since the late 1990s, reduced the risk of crashing by 65 percent. Benefits were also found for electronic stability control (ESC) and roll-stability control, electronic logging devices and speed limiters.

Vehicle stability control systems are designed to intervene when a truck's motion becomes unstable, possibly resulting in rollover, jackknife or other loss of control. ESC and roll-stability control are among the crash avoidance technologies that have been developed for large trucks. Others include forward collision warning/mitigation, blind spot detection, and lane departure warning/prevention. Based on an analysis of crashes during 2004–08, IIHS estimates that a combination of all four technologies could prevent or mitigate as many as 107,000 police-reported crashes each year, representing 28 percent of all crashes involving large trucks.[3] The technology could prevent or mitigate as many as 12,000 nonfatal injury large truck crashes and 835 fatal large truck crashes each year.

Speed

Few things carry more potential risk than a semitrailer barreling down the highway at 80 mph. Extreme speeds have become commonplace as states have set higher and higher limits. These higher speeds are even more dangerous for heavier vehicles. Large trucks have longer stopping distances than other vehicles, making it more difficult for them to avoid a crash. When a crash does occur, it is likely to be more severe. Even a lightly loaded 40,000-pound truck has 13 times the kinetic energy of a 3,000-pound car traveling the same speed, and this energy increases with the square of the vehicle speed.

Despite the deadly consequences of extreme speeds, the idea of lowering limits for all vehicles hasn't gained traction in state legislatures. Given this reality, we welcome the proposal by the Federal Motor Carrier Safety Administration (FMCSA) and the National Highway Traffic Safety Administration (NHTSA) to at least put a cap on the speeds of the biggest vehicles. Some critics of the proposed rule have raised concerns about different vehicles on the same road traveling at different speeds. But most trucks already travel at lower speeds on average than passenger vehicles. That is in part because many companies voluntarily use speed limiters to improve safety and fuel economy. In addition, seven states have lower maximum speed limits for trucks than for passenger vehicles.[4]

However, a small number of trucks do travel at very high speeds, putting their drivers and the people in vehicles around them at grave risk. We recently studied the effect of raising speed limits from 75 to 80 mph for all vehicles on certain road segments in Utah. We found that the proportion of large trucks exceeding 80 mph rose from 0.1 percent to 2.3 percent.[5] While still a small number, every truck traveling that fast represents a big risk because it has 50 percent more energy to manage in an emergency than if it were traveling at 65 mph. Speed limiters that physically prevent trucks from traveling that fast are one way to make roads safer for everyone.

Underride guards

Rear underride guards are important truck safety gear that is long overdue for an upgrade. An underride guard is the metal bumper that hangs from the back of a semitrailer. The idea is to stop a smaller vehicle from sliding beneath a high-riding trailer in a rear-impact crash. All underride guards must meet Federal safety standards, but IIHS research and crash tests have shown that many underride guards can buckle or break off in a crash. When guards fail, the resulting underride crashes often result in death or serious injury to people in passenger vehicles.

In 2015, 427 of the 2,646 passenger vehicle occupants killed in large truck crashes died when the fronts of their vehicles struck the back of trucks.[6] Gaps in Federal crash data make it difficult to pinpoint exactly how many of these crashes involve underride. An IIHS analysis of a smaller sample of fatal crashes involving the rear of a trailer equipped with an underride guard found that 94 percent produced underride.[7]

NHTSA has proposed a rule that would upgrade the rear underride guard regulations for tractor-trailers, but the proposal does not go far enough to ensure the guards withstand vehicle impacts, especially in offset crashes.[8] The proposal would align U.S. regulations with stricter ones in place in Canada since 2007. NHTSA estimates that 93 percent of new semitrailers sold in the U.S. already comply with the Canadian rules, based on information from the Truck Trailer Manufacturers Association. The agency estimates the rule would save one life and prevent three serious injuries a year. Ahead of an updated U.S. standard, IIHS has been evaluating underride guard designs. Our crash tests show that compliance with the Canadian standard does not mean the guards will prevent underride when cars run into the outer ends of a trailer, where the underride guards are weakest.

Trailer manufacturers have paid attention to our tests and have made significant improvements. To recognize their efforts, we created a new award for rear guards that successfully prevent underride in three progressively tougher test modes.[9] We presented the IIHS *TOUGH*GUARD award in March to five North American semitrailer manufacturers. All the changes these manufacturers have made to improve performance in our tests exceed current rules in place in the U.S. and Canada, as well as NHTSA's proposed new requirements. Highway safety would be better served by regulations that require underride guards to withstand even the most extreme offset crashes, which NHTSA's proposal does not address.

Summary and conclusions

Highway deaths have been on the rise as the economy has improved, but truck-related crash deaths are increasing faster than overall motor vehicle crash deaths. Vehicle defects, tired truckers and high travel speeds are factors that can influence

the incidence and outcome of large truck crashes. Making sure that equipment is in good working order, drivers are properly rested, and truck speeds are reduced are important steps that would improve the safety of all road users. Strong rear underride guards are another lifesaving measure that should not be overlooked.

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Safety defects, long hours at wheel are underlying factors in large truck crashes

Understanding why large trucks crash is key to developing countermeasures to reduce those crashes. New IIHS-sponsored research shows that serious vehicle defects triple the risk of being involved in a crash. For drivers, long hours behind the wheel and use of the short-haul exemption under federal hours-of-service rules also are important contributors to crashes.

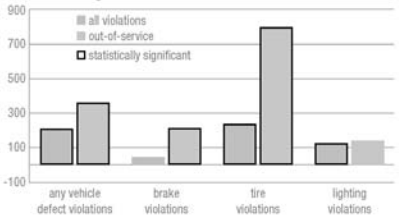
In 2015, 3,852 people died in crashes involving large trucks. Sixteen percent of these deaths were truck occupants, 69 percent were passenger vehicle occupants and 15 percent were pedestrians, bicyclists or motorcyclists.

IIHS has been studying serious crashes involving large trucks for decades, and, although the outlook has improved, IIHS research shows unsafe trucks and tired truckers persist. During the 1980s, the Institute studied large truck crashes in Washington and found that tractor-trailers with defective equipment were twice as likely to crash as trucks without defects (see *Status Report*, Sept. 19, 1987, at iihs.org).

The latest study updates that research and for the first time looks at the short-haul exemption's effect on crash risk. Drivers who work for an interstate carrier and operate within a 100-mile radius of their work base can apply for the exemption if they work fewer than 12 hours a day and don't make overnight trips.

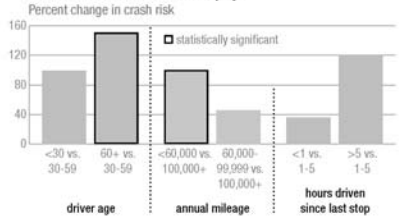
Vehicle safety violations predict crash risk...

Percent change in crash risk



...as driver factors also come into play

Percent change in crash risk



IIHS researchers partnered with the University of North Carolina Highway Safety Research Center and the North Carolina State Highway Patrol to investigate factors that affect crash risk for large trucks operated by interstate carriers. Researchers compared large trucks involved in serious crashes in North Carolina with injuries or deaths during 2010-12 with a sample of similar trucks that weren't involved in crashes. The matched case-control design allowed researchers to compare the relative prevalence of various factors to determine which ones are associated with increased crash risk.

Researchers collected data on a total of 197 crash and control pairs. More than a third of crashes were fatal and 17 percent involved an incapacitating injury. Crashes were more likely to occur during the daytime and to involve another vehicle besides the tractor-trailer.

Vehicle violations raise crash risk

Nearly three-quarters of the crash-involved trucks had vehicle defects identified during a post-crash inspection. Trucks with out-of-service violations for any type of defect were more than 4 times as likely to be in a crash as trucks without such violations. The crash risk for a truck with any out-of-service vehicle defect deemed as the striking vehicle in a multiple-vehicle crash was 10 times as high as the risk for comparable trucks without vehicle defects.

A commercial motor vehicle inspector can issue an out-of-service order for a mechanical or loading problem that makes the truck a serious hazard on the road and would likely cause a crash or breakdown. Examples include faulty brakes, fraying sidewalls on tires and burned out headlights, taillights or brake lights.

Having vehicle defects of any type raised crash risk. Trucks cited for brake violations were 50 percent more likely to crash than the comparison trucks, and out-of-service brake violations tripled crash risk. Tire and lighting system violations were generally associated with bigger increases in crash risk, but researchers caution this may be the case in part because some of the violations inspectors flagged resulted from crash damage.

"Highway patrol officers and roadside inspectors serve as the front line of defense when it comes to spotting unsafe trucks, and these efforts should continue," says Eric Teoh, a senior statistician with the Institute and the study's main author. "Defects on 40-ton vehicles are a serious threat to highway safety."

Carriers with higher past crash rates were associated with an elevated current crash risk. Firms with at least 100 reported crashes per 1,000 power units (tractors or single-unit trucks) within the preceding 24 months had a 72 percent higher risk of crashing than carriers with fewer than 100 reported crashes per 1,000 power units.

"Some trucking groups have suggested that carriers shouldn't be penalized for crashes that weren't the fault of the driver or were unpreventable, but these results show counting all crashes is

Electronic stability control and roll stability control are two crash avoidance features for large trucks that are proven to reduce crashes. The tractor-trailer in this North Carolina crash didn't have either technology.

Courtesy North Carolina State Highway Patrol

meaningful. We don't always know who was at fault in crashes, and if something about a carrier's operation puts them at high risk for not-at-fault crashes, that's important to know too," Teoh says.

Tired truckers and short-haul exemption are factors

Looking at driver-specific factors, researchers found that truckers age 60 and older had a higher crash risk than drivers ages 30-59, who made up 72 percent of the crash-involved drivers in the study.

Truckers who reported driving after at least 12 hours since an extended sleep period were 86 percent more likely to crash than drivers who had been awake for less than eight hours. Truckers who reported driving more than five hours without stopping were more than twice as likely to crash as those who drove 1-5 hours.

Hours-of-service regulations govern how much time truck drivers can be on the road and when and for how long they need to rest. The current regulations allow up to 11 hours a shift and up to 77 hours over seven days (see *Status Report*, April 26, 2011, and Jan. 24, 2012). Driver fatigue is a significant contributor to crashes involving large trucks.

The new mandate for electronic logging devices (ELDs) set to take effect in late 2017 should help reduce the problem by making it harder for drivers to fudge the time they really spend on the highway without sufficient rest (see *Status Report*, Feb. 26, 2016).

Although short-haul drivers must comply with federal rules on work and rest times, they don't have to record their service hours.

Researchers found that the crash-involved trucks whose drivers operated under a short-haul exemption were less likely to operate on interstates and more likely to involve owner-operators and single-unit trucks. These trucks logged fewer miles per year than other trucks. Researchers found that drivers using a short-haul exemption had a crash risk nearly 5 times as high as those who weren't. What is more, short-haul trucks were more likely to have inspection violations than other crash-involved trucks.

Teoh says he was surprised that the data showed a higher crash risk for trucks operating under the short-haul exemption.

"Short-haul trucks are used differently and may be more at risk if they have vehicle defects," Teoh says. "The short-haul exemption merits a more in-depth look to understand what's really going on."

Safety technologies can lower crash risk

Several safety features showed promise in reducing crash risk among the large trucks in the study. Antilock braking systems for large trucks reduced the risk of crashing by 65 percent. Antilock brakes, which keep wheels from locking during hard braking, improve driver control of large trucks during emergency stops and reduce the likelihood of a tractor-trailer jackknifing. Antilocks have been required on new tractors since 1997 and on new trailers, single-unit trucks and buses since 1998.

"We also found benefits for electronic and roll-stability control, speed governors and electronic logging devices," Teoh adds.

Antilock brakes on trucks reduced the risk of a crash by 65 percent, while having electronic or roll stability control was associated with a 19 percent lower crash risk.

ESC will be required on tractor-trailers and buses as of August 2017 (see *Status Report*, July 30, 2015). A mandate for speed limiters also is under consideration, along with a requirement that trucks with a gross vehicle weight rating of 10,000 pounds or more have a forward collision warning system with automatic braking (see *Status Report*, Feb. 26, 2016).

For a copy of "Crash risk factors for interstate large trucks in North Carolina" by E.R. Teoh et al., email publications@iihs.org. ■

IIHS Insurance Institute for Highway Safety
News Release

March 1, 2017

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IIHS recognizes semitrailer manufacturers with new underride guard safety award

ARLINGTON, Va. — Five North American semitrailer manufacturers earn the Insurance Institute for Highway Safety's new **TOUGH**GUARD award recognizing rear underride guards that are designed to prevent a range of deadly underride crashes. Semitrailers from Great Dane, Manac Inc., Stoughton Trailers LLC, Vanguard National Trailer Corp. and Wabash National Corp. earn the accolade.

An underride guard is the metal bumper that hangs from the back of a semitrailer. The idea is to stop a smaller vehicle from sliding beneath a high-riding trailer in a rear-impact crash to preserve survival space for the people inside the lower-riding vehicle. All underride guards must meet federal safety standards, but IIHS research and crash tests have shown that many underride guards can buckle or break off in a crash. When guards fail, the resulting underride crashes often result in death or serious injury to people in passenger vehicles.

The IIHS **TOUGH**GUARD winners have rear guards that prevent underride of a midsize car in three test modes – full-width, 50 percent overlap and 30 percent overlap. In each configuration, a midsize car travels at 35 mph toward a parked semitrailer. In the full-width test, which is the easiest to pass, the car strikes the center of guard head on. In the 50 percent overlap, half of the car's front end strikes the guard. In the toughest test, 30 percent of the front of the car strikes the trailer at its outermost corner. Underride guards are weakest at the outer edges of a trailer.

The **TOUGH**GUARD award is the culmination of six years of IIHS research and testing. The Institute began its underride crash test program in 2011 and has since evaluated multiple trailers from eight of the largest trailer manufacturers in North America.

"Our research told us that too many people die in crashes with large trucks because underride guards are too weak," says David Zuby, the Institute's executive vice president and chief research officer. "So we designed crash tests to replicate scenarios where guards have failed in real-world crashes. At first, only one of the semitrailers we evaluated passed all three tests — the Manac. Now five trailers do. Manufacturers really took our findings to heart and voluntarily improved their guard designs."

In the initial round of evaluations, the guards on all of the semitrailers prevented underride in the full-width test. In the 50 percent overlap, 7 of 8 guards prevented underride. In the 30 percent overlap, only Manac's guard stopped the car from underriding the trailer. Great Dane, Stoughton, Vanguard and Wabash subsequently reworked their designs and asked for retests.

The manufacturers used different countermeasures to toughen their guards. Stoughton, Vanguard and Wabash added vertical supports to the outboard edges, while Great Dane added larger fasteners to existing vertical supports to reduce the chances that the supports would be torn from the trailer. Great Dane also increased the size of the lower horizontal member of the bumper, which made it stronger. The new Great Dane design is the latest to be tested.

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Great Dane made improvements to its rear underride guard to successfully prevent underride in the IIHS 30 percent overlap test.

All of the changes manufacturers have made exceed current rules in place in the U.S. and Canada, as well as proposed new requirements from the National Highway Traffic Safety Administration that would essentially align U.S. underride regulations with Canadian ones.

Semitrailers from Hyundai Translead, Strick Trailers LLC and Utility Trailer Manufacturing Co. have passed the full-width and 50 percent overlap tests but not the 30 percent overlap evaluation. These three manufacturers are working on improvements, and IIHS will evaluate the new designs when they are available for testing.

"IIHS isn't a regulatory agency, and other than safety, there was no incentive for semitrailer manufacturers to make improvements," Zuby notes. "When we started testing, we weren't sure how they would respond. These companies deserve a lot of recognition for their commitment to addressing the problem of underride crashes."

In 2015, 427 of the 2,646 passenger vehicle occupants killed in large truck crashes died when the fronts of their vehicles struck the back of trucks. That is up 39 percent from 2011 when 260 of the 2,241 passenger vehicle occupants killed in large truck crashes died in impacts with the rear of a large truck. Gaps in federal crash data make it difficult to pinpoint exactly how many of these crashes involve underride.

In a 2012 IIHS study of fatal crashes between large trucks and passenger vehicles, an estimated 15 percent involved the rear of the truck. An IIHS analyses of a smaller sample of fatal crashes found that 82 percent involving the rear of the truck produced underride.

Passenger vehicle occupant deaths in crashes with large trucks

Year	Passenger vehicle rear-ends large truck	All crashes with large trucks
2015	427	2,646
2014	371	2,485
2013	354	2,410
2012	342	2,352
2011	260	2,241

See next page for full ratings.

For more information, go to iihs.org

The Insurance Institute for Highway Safety is an independent, nonprofit scientific and educational organization dedicated to reducing the losses — deaths, injuries and property damage — from crashes on the nation's roads. The Institute is wholly supported by auto insurers.

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LARGE TRUCK REAR UNDERRIDE GUARD RATINGS

		Full-width test	50% overlap	30% overlap
IIHS TOUGHGUARD	**Great Dane** Applies to units equipped with the RIG30 rear impact guard system.	✔	✔	✔
IIHS TOUGHGUARD	**Manac** Applies to all 90,000 series dry van, refrigerator and open top units built after June 2011.	✔	✔	✔
IIHS TOUGHGUARD	**Stoughton** Applies to all dry van units built after October 2016.	✔	✔	✔
IIHS TOUGHGUARD	**Vanguard** Applies to all dry van units built after December 2015 and all refrigerator units built after September 2016.	✔	✔	✔
IIHS TOUGHGUARD	**Wabash** Applies to dry van units with the RIG-16 option built after February 2016. Applies to refrigerated units with the RIG-16 option built after December 2016.	✔	✔	✔
	Hyundai Translead Applies to all standard dry van and refrigerated units built after April 2011.	✔	✔	✖
	Strick Tested model: 2013 dry van	✔	✔	✖
	Utility Applies to trailers built after December 2012.	✔	✔	✖

The CHAIRMAN. Thank you, Doctor.

Before we begin our questions, I would ask unanimous consent to insert a couple letters for the record from various industry and safety stakeholders. One is from Advocates for Highway and Auto Safety, and the other is Property Casualty Insurers Association of America.

Without objection, so ordered.

[The information referred to follows:]

ADVOCATES FOR HIGHWAY AND AUTO SAFETY
March 13, 2017

Hon. DEB FISCHER, Chair,
Hon. CORY BOOKER, Ranking Member,
Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security,
Committee on Commerce, Science, and Transportation,
Washington, DC.

Dear Chairwoman Fischer and Ranking Member Booker:

Advocates for Highway and Auto Safety (Advocates) commends the Subcommittee for convening tomorrow's hearing, "Continuing to Improve Truck Safety on our Nation's Highways." We respectfully request that this letter be included in the hearing record.

Current trends show that truck crashes are too frequent and too often are fatal and that there is an urgent need for overdue and important motor carrier safety improvements. In 2015, 4,067 people were killed in crashes involving large trucks. According to U.S. Department of Transportation (U.S. DOT) data, this is an increase of more than 4 percent from the previous year and a 20 percent increase from 2009. Furthermore, this is the highest fatality number, and the first time truck crash deaths have exceeded 4,000, since 2008. Truck crash injuries are also rising significantly. In 2015, 116,000 people were injured in crashes involving large trucks. This is the highest number of injuries since 2004, and over the past five years (since 2009) there has been a 57 percent increase in the number of people injured in large truck crashes. Additionally, truck crashes have severe economic consequences. The cost to society from crashes involving commercial motor vehicles has been estimated to be $112 billion in 2014.

The U.S. Department of Labor has consistently ranked driving a truck as one of the most dangerous jobs in America. However, the safety of large trucks affects all Americans, not just those who work in the industry. In fatal two-vehicle crashes between a large truck and a passenger motor vehicle, 97 percent of the fatalities were occupants of the passenger vehicle.

Needed Commercial Motor Vehicle Safety Improvements

Prevent Further Rollbacks, Repeals and Raids of Existing Motor Carrier Safety Laws, Programs & Regulations: As part of the Fixing America's Surface Transportation Act (FAST Act, Pub. Law 114–94), safety scores in the Compliance, Safety, Accountability (CSA) program for trucks were removed from public view. Real-time safety data on trucking companies should be made available to consumers and not hidden from the public. Secrecy only serves to protect unsafe carriers and will perpetuate unsafe practices.

Bigger trucks are bigger safety problems on our streets and roads. Advocates strongly opposes special interest exemptions to Federal truck size and weight limits. For this reason, we strongly oppose any exemptions for specific state roads or industries that further erode Federal limits. Overweight and oversized trucks are extremely dangerous to motorists and cause excessive damage to our badly deteriorated roads and bridges. According to the 2017 Infrastructure Report Card just released by the American Society of Civil Engineers, one out of every five miles of highway pavement is in poor condition and 23 percent of our bridges are structurally deficient or functionally obsolete.

Furthermore, Advocates objects to any Federal mandate that allows for double 33 foot trailer trucks in every state. A "Double 33" is a truck pulling two trailers with a total length of at least 84 feet—the height of an 8-story building. A Federal mandate will preempt laws in states that currently do not want Double 33s. In countless public opinion polls, there is consistent and substantial opposition to bigger, heavier and longer trucks no matter the state, political affiliation, age or race of poll respondents.

Additionally, truck driver fatigue has been a well-known, well-studied and well-documented safety problem for decades. In a 2006 driver survey prepared for the Federal Motor Carrier Safety Administration (FMCSA), 65 percent of drivers reported that they often or sometimes felt drowsy while driving and almost half said they had fallen asleep while driving in the previous year. The recent FMCSA study on the HOS safety reforms instituted by the Obama Administration was fatally flawed from the start. Special trucking interests opposed to this commonsense proposal to give truck drivers two nights off after exceedingly long weekly working and driving hours stacked the deck with requirements for unreasonable, unrealistic and unattainable parameters. Moreover, the U.S. DOT Inspector General made no conclusions whatsoever regarding the safety benefits of the Obama HOS reforms but merely rubberstamped the process that produced the defective study. Suspension of the Obama HOS safety reforms will perpetuate driver fatigue and will lead to more deaths on our Nation's roads. Advocates opposes all exemptions to critical aspects of HOS rules which prevent driver fatigue.

Direct NHTSA to Issue Standards for Automatic Emergency Breaking (AEB), Lane Departure Warnings Systems and Other Crash Avoidance Technologies for Commercial Motor Vehicles (CMVs): Equipping commercial motor vehicles (CMVs) with crash avoidance technologies such as Automatic Emergency Breaking (AEB) will undoubtedly save lives and prevent crashes. Based on NHTSA data from 2003 through 2008, large trucks are the striking vehicles in approximately 32,000 rear-end crashes resulting in 300 fatalities and injuring over 15,000 people annually. NHTSA estimates that, in the future, more advanced AEB systems could save 166 lives per year, a reduction of 57 percent from current annual fatalities, and prevent 8,361 injuries per year, a reduction of 56 percent, in certain types of crashes. In 2015, NHTSA granted a petition for rulemaking filed by Advocates and other safety organizations, but the agency has not yet initiated rulemaking. NHTSA should issue a safety standard requiring AEB technology on CMVs. In addition, research has also shown that lane departure warning systems have the potential to substantially reduce crashes. These systems, along with other crash avoidance technologies that are proven to improve safety, should be standard equipment in all CMVs.

Require Speed Limiting Devices on All Large CMVs: Currently, speed limiting technology is already installed on many large CMVs that limit the speed the truck or bus can travel. Speed limiting devices have been required to be installed on trucks throughout the world. The European Union, Australia, and Japan all require speed limiters on large trucks. A 2012 study commissioned by FMCSA showed "strong positive benefits for speed-limited trucks." In fact, the study found that trucks not equipped with a speed limiting device had a speed-limited-relevant crash rate that was nearly two times higher than those trucks equipped with the device. However, FMCSA and NHTSA have proposed a weak regulation to require only new CMVs with a gross vehicle weight rating (GVWR) of more than 26,000 pounds to be equipped with a speed limiting device. The proposed rule is needlessly narrow and should apply to all large CMVs on the road and not just new trucks.

Upgrade the Rear Underride Guard Standard and Require Side Guards for Large Trucks: According to NHTSA, annually there are 72 light vehicle occupant fatalities in crashes into the rear of trailers with rear impact guards with passenger compartment intrusion. NHTSA has proposed to update the current standard for underride guards that went into effect 20 years ago to match the Canadian standard that went into effect in 2007. However, test results show that rear underride guards that exceed the Canadian standard are already available and currently in use. It doesn't make safety sense for the agency to require an inadequate and ineffective rear underride guard. Also, NHTSA has yet to issue a rule requiring side underride guards although they are used by industry and in other countries throughout Europe.

Oppose Teen Truck Drivers: We strongly object to any expansion of the pilot program established by the FAST Act that permits veterans of the armed forces or members of reserve units who are ages 18–20 and are trained in a Military Occupational Specialty to operate a CMV or similar vehicle in interstate commerce. FMCSA should be directed to conduct a study of the safety performance of CMV drivers age 18–20 that currently operate in intrastate commerce. The minimum age for obtaining a commercial driver license (CDL) should not be reduced without a thorough study and evaluation of the safety performance of intrastate truck drivers under the age of 21.

Address Persistent Backlog of Overdue Motorcoach Safety Rules Required by Congress: During the early morning hours of March 2, 2007, on Interstate 75 in Atlanta, Georgia, a motorcoach carrying members of the Bluffton University baseball team crashed killing five players and two other occupants. This horrific event, as well as other similar tragedies, spurred Congress to finally act to improve motorcoach safe-

ty. The safety deficiencies of motorcoaches identified in countless recommendations and crash investigations by the National Transportation Safety Board (NTSB) languished for years, even decades, until deadlines for agency action were enacted in the Moving Ahead for Progress in the 21st Century Act (MAP–21, Pub. Law 112–141). Yet, as evidenced by the recent motorcoach crash in Biloxi, Mississippi, which killed 4 individuals and injured dozens more, riding a bus is still too dangerous and it is unacceptable to continue to put motorcoach occupants at risk. Although the ten year anniversary of the Bluffton University recently passed, NHTSA has yet to complete several of the lifesaving rulemakings required by MAP–21 despite a Congressional deadline of October 2014. The agency must finish these actions without further delay.

Conclusion

Before today is over at least 10 people will needlessly die in a truck crash. Annual truck crash fatalities are equivalent to a major airplane crash every other week of the year. There are cost-effective solutions at hand to improve the dismal truck safety record but congressional leadership is needed to stop special interest attacks on safety rules, to monitor the agency's programs and priorities as well as to mandate overdue and critical regulatory advances.

Sincerely,

JACQUELINE S. GILLAN
President

JOAN CLAYBROOK
Consumer Co-Chair
Former Administrator, NHTSA

cc: Members of the Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security

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PROPERTY CASUALTY INSURERS
Washington, DC, March 13, 2017

Hon. DEB FISCHER,
Chairman,
Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security,
Senate,
Washington, DC.

Hon. CORY BOOKER,
Ranking Member,
Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security,
Senate,
Washington, DC.

Dear Chairman Fischer and Ranking Member Booker:

The Surface Transportation Subcommittee has scheduled a hearing on truck safety advancements resulting from the Fixing America's Surface Transportation (FAST) Act and potential reforms moving forward. As insurers of both the trucks that move everything Americans buy and the cars that share our roads with them, the Property Casualty Insurers Association of America thanks the Committee for holding this hearing and offers some thoughts on improving highway safety.

Over the last few years, both the frequency and economic severity of highway accidents have increased. Several trends appear to be combining and magnifying their individual impacts. Among the most disturbing is the increasing frequency of distracted driving, especially related to smart phone use. Drivers must realize that no text is worth risking lives to answer while driving, yet the problem continues to worsen.

Other trends with compounding safety impacts include increased road congestion as more vehicles share limited and deteriorating highway infrastructure. Decriminalization of marijuana has led to more incidents of driving under the influence of that drug. Even distracted walking has become significant, with people literally walking into moving vehicles because they are so engaged in their smart devices.

At the same time, several trends are increasing the cost severity of highway accidents. Medical inflation increases the cost of treating accident injuries just as it increases the cost of treating diseases. New safety systems help save lives but make cars and trucks much more expensive to repair following accidents. Lawsuits target truck owners, even though most car-truck accidents are caused by car drivers, putting upward pressure on the cost of running these businesses, which pushes up the consumer cost of the goods these trucks carry.

One action the Committee can take immediately is to follow up on the FAST Act provisions to improve the Compliance, Safety Accountability (GSA) Program and make sure that all phases of the study, report and improvements are completed as soon as possible. Those improvements should include increased access to GSA infor-

mation for insurers to accurately evaluate the safety of motor carriers and their drivers.

PCI supports highway safety improvements, many of which are simply commonsense. All vehicle occupants should wear safety belts to let the vehicle's safety technology protect them. Another example, that also highlights the power of the free market, is the Insurance Institute for Highway Safety's work with trailer manufacturers to improve trailer underride guards, to prevent cars from sliding under trailers during rear-end collisions. A third example would be creating the same kind of stigma against texting while driving that exists against drunk driving.

These and other safety improvements can do a lot to improve safety on our Nation's roads. This hearing will provide important support for those safety efforts.

Sincerely,

NATHANIEL WIENECKE,
Senior Vice President,
Federal Government Relations.

ALLIANCE FOR DRIVER SAFETY & SECURITY (TRUCKING ALLIANCE)
Washington, DC, March 14, 2017

Hon. DEB FISCHER, Chair,
Hon. CORY BOOKER, Ranking Member,
Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security,
Committee on Commerce, Science, and Transportation,
Washington, DC.

Dear Chairwoman Fischer and Ranking Member Booker:

You and your fellow committee members are to be commended for convening today's hearing, entitled "Continuing to Improve Truck Safety on our Nation's Highways." Many Senators attended the hearing and we are particularly proud of the testimony given by Mr. Jerry Moyes, Chairman Emeritus of Swift Transportation, as his company recently became a member of the Trucking Alliance. We respectfully request that this letter be included in the hearing record.

About the Trucking Alliance: The Alliance for Driver Safety & Security, also known as The Trucking Alliance, is a leading proponent of safety reforms in the freight transportation industry, which supports policies to:

- Increase the safety and security of commercial truck drivers,
- Reduce both the number and severity of large truck accidents, and
- Improve highway safety for the general public, who share the road with the freight transportation industry.

To achieve these objectives, all Trucking Alliance companies adopt core principles of operation within their businesses, all of which *exceed* minimum Federal requirements to operate as a motor carrier.

These Trucking Alliance core principles are:

1. *Electronic Logging Devices (ELDs)*—Have certified ELDs installed in all interstate trucks to verify hour-of-service compliance.
2. *Truck Speed Limiters*—Regulate trucks with speed limiters at a maximum speed of no more than 65 mph.
3. *Hair Testing*—Recognize hair testing as an alternative to a urine exam, in conforming to federal commercial driver pre-employment drug testing processes.
4. *Public Liability Insurance*—Support for increased insurance levels for motor carriers, in order to adequately cover the medical expenses incurred by victims of large truck accidents, while also supporting reasonable state-based tort reform measures.
5. *Onboard Truck Safety Technologies*—Install collision mitigation systems on all new interstate trucks purchased.
6. *Driver Hiring and Training Programs*—Utilize extensive pre-employment screening and conduct continuing driver training that exceed Federal standards.

Trucking Alliance companies collectively employ 68,000 professional drivers, management and logistics personnel in 49 states, who utilize 52,000 trucks and 175,000 semitrailers and containers, to safely and efficiently deliver products throughout North America.

Importance of Continuing Truck Safety Reforms: The Federal Motor Carrier Safety Administration (FMCSA) regulates the commercial trucking industry. The FMCSA's primary mission is to reduce crashes, injuries and fatalities involving large trucks and buses.

The FMCSA's mission is critical to public safety and Congress must support the agency's efforts to continue achieving its mission. Consider that the commercial trucking industry delivers more than 13 billion tons of freight across America's highways each year. Yet, as essential as the industry is to the standard of living we enjoy, large trucks are involved in too many accidents, injuries and fatalities.

For example, in 2015, according to U.S. Department of Transportation (USDOT) data, there were 414,598 large truck accidents on U.S. roadways, in which 116,000 people were injured and 4,067 people lost their lives. Of these fatalities, 594 were commercial truck drivers. Our industry cannot tolerate such tragic numbers each year.

That's why the Trucking Alliance urges Congress to support the following FMCSA proposed rules and regulations, all of which can help reduce large truck crashes:

Implement the Electronic Logging Device Mandate: In 2012, Congress mandated that all commercial trucks install electronic logging devices (ELDs) to verify a commercial driver's hours-of-service rules. The FMCSA has promulgated regulations to implement this congressional mandate by December 17, 2017. Truck driver fatigue is a major factor in large truck accidents and ELDs will help ensure that drivers comply with the law and don't exceed their hours behind the wheel. Congress must make sure that any effort by industry groups to stop, reverse, or delay the ELD mandate are denied.

Grant a "Petition for Exemption" to Recognize Hair Tests for Pre-Employment Commercial Driver Drug Test Requirements: Section 5402 of the "Fixing America's Surface Transportation Act," (FAST Act) contained a provision that directed the Department of Health and Human Services (HHS) to issue scientific and technical guidelines for hair testing, as a method to detect controlled substance abuse. After these HHS guidelines are adopted, FMCSA should initiate a rulemaking to permit hair testing as an acceptable alternative to urine testing for commercial driver drug testing requirements.

But before FMCSA completes this rulemaking, the FMCSA Administrator should grant a Petition for Exemption recently filed by several carriers that currently utilize hair testing for pre-employment purposes. Hair testing is a more reliable (albeit twice as expensive) method for identifying lifestyle drug users, rather than the less expensive and less reliable urine exam. If granted, these petitioners may use a hair analysis, rather than spending unnecessarily on a second urine exam, to meet Federal drug test requirements for commercial driver job applicants, while FMCSA completes its rulemaking.

Require Speed Limiters on Commercial Trucks: FMCSA has proposed that large commercial trucks be equipped with a speed limiting device. The Trucking Alliance supports a Federal regulation to require that all commercial trucks of the specifications proposed, whether engaged in interstate or intrastate commerce and whether new or old, be equipped with a truck speed limiter device. Further, the Trucking Alliance supports a truck speed limiter rule in which the maximum speed setting is no more than 65 mph.

Reduce the Price of the Federal Pre-Employment Screening Program (PSP): The FMCSA created the PSP to help carriers make more informed hiring decisions, by providing secure, electronic access to the FMCSA's commercial driver's five-year crash and three-year inspection history.

However, less than 1 percent of the industry utilizes these reports. This is because the third party contractor that implements the program charges $10 per report, a fee that is cost-prohibitive to many motor carriers and more than twice the price that the contractor originally promised, once its start-up costs were recovered. The FMCSA should renegotiate the PSP fee to encourage more industry participation and help carriers make more informed hiring decisions.

Increase Minimum Financial Requirements for Motor Carriers: In 2012, the "Moving Ahead for Progress in the 21st Century Act" or MAP–21, authorized the Secretary of Transportation to evaluate whether the minimum financial requirements for motor carriers, set at $750,000 in 1980, should be increased. Further, Section 32104 of MAP–21, also directed the Secretary to issue a report on the appropriateness of these requirements, every 4 years, starting April 1, 2013, meaning that the Secretary should issue an updated report this year.

The Trucking Alliance maintains that a motor carrier should be sufficiently insured to compensate the victims of truck accidents, as Congress set forth when it set the minimum insurance requirements more than 35 years ago. These minimum

insurance limits have not been increased since, and are inadequate to meet the purposes for which Congress intended. These minimum insurance requirements should be increased.

In Conclusion: The Trucking Alliance carriers embrace the *"Road to Zero"* national initiative. Sponsored by the National Highway Traffic Safety Administration, FMCSA, and the National Safety Council, this campaign will utilize private and public sectors to design plans to fully eliminate all highway accident fatalities, including large truck crashes.

More safety reforms should be adopted, not only to ensure the greater safety and security of commercial drivers but the general public. The commercial trucking industry has a moral and ethical responsibility to fully eliminate fatalities and injuries caused by large truck crashes and to achieve a safety performance record equal to the commercial airline industry.

Madame Chairperson and Ranking Member Booker, your committee has a critically important role to help this industry achieve that worthy goal.

Sincerely,

LANE CHANDLER KIDD,
Managing Director,
Alliance for Driver Safety & Security (The Trucking Alliance).

The CHAIRMAN. Thank you. And with that, I will turn to our first questions.

Dr. Jovanis, yesterday, the TRB released a report of the Motor Carriers Safety Research Analysis Committee, and the TRB recommended that FMCSA aggregate and integrate enhanced crash data, such as time of day or crash location. Can you please explain the benefits of enhanced data to how FMCSA allocates its resources and targets its safety initiatives, please?

Dr. JOVANIS. Well, speaking in general, the location in which crashes occur have historically been an important contributing factor in the event occurring at all. So not having detailed information about the characteristics of the site in which crashes occur allows us to only get a partial view of what factors may be contributing, and that biases us in terms of considering potentially effective countermeasures to improve safety at those locations. So location and time of day are really kind of essential building blocks for any road safety study.

The CHAIRMAN. Is that used now?

Dr. JOVANIS. It's used on the highway side extensively, but inconsistently in the datasets that are provided from a variety of sources that FMCSA uses. And I would say we probably had four or five committee members from different perspectives and different technical backgrounds all strongly support the idea of developing this annualized consistent provision of a database that would provide useful information about heavy vehicle truck and bus crashes.

And we understand the difficulties of doing it, but we have some very specific recommendations in the report that kind of provide some leading indicators to areas where we might begin the discussion. And we look forward to meeting with FMCSA and talking in more detail about how this could be eventuated.

But the idea of FMCSA does not currently have an annual inventory of data available on large truck and bus crashes in detail that can be used by outside agencies, researchers from universities, and other kinds of organizations. And our committee feels pretty strongly that that would be a benefit.

The CHAIRMAN. Thank you.

And, Captain Turner, in your written testimony, you discuss the importance of fully funding the streamlined Motor Carrier Safety

Assistance Program grants at the FAST Act levels. Can you provide an example for the Subcommittee on the challenges that local law enforcement officers will face if the matter is not corrected if it's not funded?

Captain TURNER. And I'll speak on behalf of the Kansas Highway Patrol in answering your question. We had one division, our Breath Alcohol Unit, in part moved out from underneath our command because it was no longer tenable to be able to support that group with the funding, and that was about eight positions.

Additionally, we had another three positions that we've been unable to fill. So, number one, to answer your question, we experienced some jobs lost and the inability to refill those positions. And I can tell you that it's not a one year issue. It's not if the money comes back next year that we'll immediately be able to fill those positions.

Traditionally, state agencies will reallocate those resources to other enforcement endeavors, and it takes years to build that program back up and make sure those state agencies have the confidence that that money will be there and that we'll have the stability to be able to fund those positions and put people in those positions and either provide that education and outreach or the enforcement.

So we'll lose two things, one is jobs lost, and then ultimately we're also going to lose the program outcomes, whether it's educational programs or the enforcement. And in speaking to my colleagues throughout the Nation, they're experiencing those same difficulties and challenges.

We formulate our budgets a year in advance, and we already have the outcomes that are expected of us, and now we have the outcomes expected without the resources to be able to complete those outcomes.

The CHAIRMAN. So in your outcomes that you expect and that you've published, how does that jive with what's happened? You've lost jobs, you've seen limits in the education services that you can provide. So have you reached your outcomes? Do you have the data for that right now?

Captain TURNER. Not yet. We haven't been able to complete the year yet, but I can tell you that we've had to divert resources. And just as an example, the jobs lost is obviously one of the most striking things for us because those are difficult to refill, but some of the very first programs you lose are your educational programs. So what we lose is the positive interaction with drivers and the trucking industry, whether it's through our associations or through their truck driving championships and those things where we bring them together in a positive environment, and you end up with just an inspection-related situation where there's always tension.

I mean, obviously, it tries to go well, but you have a driver and carrier trying to get somewhere and affecting their bottom line, and you have an inspector or enforcement officer trying to determine whether or not there are any violations. And that, even in the best case scenario, is still tenuous. So we lose that positive outcome as well.

The CHAIRMAN. Thank you.

And, Mr. Moyes, can you discuss how Swift is investing in new and advanced technologies to advance safety? And in particular, can you tell us more about the smart trucks that you mentioned in your testimony and the advanced technology equipped on those trucks?

Mr. MOYES. Well, as I stated, Chairman, in 2013, as I stated, in 2013, we started bringing these new trucks in. We're on a 4-year trade cycle, so it's kind of hard to replace 18,000 trucks any sooner than that. And we're seeing tremendous improvement in our safety.

And also they're improving on their technology. The collision avoidance systems, the first 2 years would not detect anything but metal, a deer or something like that it wouldn't detect. Well, the new ones do. So not only are we trying to keep up on technology, they're helping us with better technology.

In 2015, we went to the dash camera, and we've seen great improvement on that, but here we are just 2 years later, and we're already—we've got better technology. We're behind the system on just something we just got a year ago. So we agreed to keep it on the edge of technology because it's good for the public and it's good for our shareholders.

The CHAIRMAN. Thank you, sir.

Senator Booker.

Senator BOOKER. Chairman Fischer, if it's OK with you, I would like to yield my time to Senator Blumenthal, and I'll jump to the end of the line.

The CHAIRMAN. Senator Blumenthal.

STATEMENT OF HON. RICHARD BLUMENTHAL, U.S. SENATOR FROM CONNECTICUT

Senator BLUMENTHAL. Thank you very much, Madam Chairwoman.

I want to begin by thanking you for being here today and thank my colleague, Senator Wicker, for his work in trying to protect our roads and drivers and passengers from double 33s, which pose a clear danger to not only safety, but the well-being of our infrastructure. At a time when we are debating how to safeguard and enhance our infrastructure, these double 33s in fact would exact a toll of $1.1 billion, according to the United States Department of Transportation in a 2015 study.

Let me ask you, Mr. Moyes, you have stated that your priority is safety and that's why your company no longer drives doubles, even double 28s. Are you concerned about the deadly toll that double 33s would take if they were instituted?

Mr. MOYES. Yes. In my testimony, I state that approximately 78 percent of the trucks on the road today are what we call the truckload industry, and almost all of them are pulling the 53-foot trailer. If the 33 was allowed, that would make it 66. So as we compare a 53 to a 66, it would force our industry to go at least 50 percent to the 33-foot trailers. Number one, we've very concerned about the safety, the work comp, the work comp was considerable higher. The drivers don't like to pull them. So there are a lot of disadvantages to it.

But also the capital investment in this thing. If we had to change—you know, we run 60,000 trailers, and if we had to change

half the fleet to the twin3s, we would have a huge capital change, and that's money that we couldn't be using in other sources of improving technology also. So thank you. I hope that answered.

Senator BLUMENTHAL. Exactly. A number of you have talked about driver fatigue as a potential safety threat. Any of us who have been on this committee have heard that kind of remark again and again and again, and yet what we have found across the country, and including Connecticut, where a lot of our rest stops are along our interstates, is that there is pressure, in fact, to reduce the size and sometimes eliminate those rest stops.

Mr. Moyes, let me ask you, and then perhaps others on the panel, has lack of available safe truck parking, particularly overnight parking, impacted Swift's drivers? And during your years as a driver, did you ever experience a situation where you had to park somewhere that you felt was unsafe simply to be properly rested to safely drive?

Mr. MOYES. Well, back when I used to drive I don't think we had rest areas, but that's a different story.

[Laughter.]

Mr. MOYES. So, yes, the need for rest areas is considerable out there today. A lot of states, when they went through the slow economy, have shut down rest areas, and it is extremely critical that they become more—we get more of them out there. A lot of this has fallen to the truck stops now. They have expanded. You can call and get reserved places for parking, but that's kind of a Band-aid to the problem, but there is certainly a huge need for additional rest areas.

Senator BLUMENTHAL. The availability of those rest areas is critical to the safety of the driver, but even more so, the motoring public because if they are unrested, they pose a threat to everybody.

Mr. MOYES. Not only that, they park in areas that might not be the most safest area, you know, along the roadsides, at exits, and stuff, that might not be the safest place to be parking.

Senator BLUMENTHAL. So you would urge states to make them more available, would you not?

Mr. MOYES. Correct.

Senator BLUMENTHAL. Any other members of the panel have comments on this issue?

[No response.]

Senator BLUMENTHAL. Thank you, Madam Chairwoman.

The CHAIRMAN. Thank you, Senator.

Senator Wicker.

STATEMENT OF HON. ROGER F. WICKER, U.S. SENATOR FROM MISSISSIPPI

Senator WICKER. Thank you. And thank you to members of the panel. Let me follow up then on Senator Blumenthal's question with regard to the twin3 trailers. For those who weren't able to follow the debate we had 2 years ago in the Senate, a twin3, it is a truck tractor pulling two 33-foot trailers, for a total truck trailer combination length of at least 84 feet and the height of an 8-story building.

Now, there are some people who have proposed a Federal mandate for double 33s as opposed to the current system we have,

where states get to choose. A Federal mandate would preempt laws of states that do not want them on the road, overriding state legislative decisions to protect public safety.

What we do know is this, double-trailer trucks have an 11 percent higher fatal crash rate than single-trailer trucks. We also know, from information provided to us by the Committee, that recent data show that in 2015, the number of large trucks involved in fatal crashes increased by 8 percent, large trucks. And then we learned from testimony today from Dr. Lund that the number of people who have died in large truck crashes was 22 percent higher in 2015. So this has been a helpful hearing in that respect.

Now, Mr. Moyes, it's not just your company—and remind us again about the size of your company and the number of trucks that Swift employs.

Mr. MOYES. We run about 18,000 trucks driving five to six million miles every day.

Senator WICKER. And you started off driving your own truck and built it to that.

Mr. MOYES. Yes.

Senator WICKER. It's not just you, though, it's 14 other trucking firms that have submitted a letter to the Senate opposing the use of double 33s and citing issues of safety and damage to infrastructure. Is that correct?

Mr. MOYES. Yes.

Senator WICKER. Now, I think you've adequately explained the industry concerns. And let me make sure I understand, your personal history in terms of your company, you were driving the twin 28s in your company, and you decided to go to the 53-foot single trailers. Is that correct?

Mr. MOYES. Yes, that is correct.

Senator WICKER. And, of course, that involved quite an investment no doubt. But you also concluded that it was safer, that these 53-foot trailer, tractor trailer rigs were safer. Is that correct?

Mr. MOYES. Yes, that was the number one issue.

Senator WICKER. And can you talk about the operation of the doubles in traffic with merging and passing and intersections and dealing with other traffic?

Mr. MOYES. Well, it is considerably more at risk or complicated, especially, you know, if you're trying to pass a trailer that, you know, that's 84-foot long, or longer than a 53 with a tractor, you know, it's just considerable more risk in the passing. The intersections would be, you know, kind of the same situation.

Senator WICKER. And your testimony is that if the Federal Government goes in and tells states they can't make their own decisions here, that people like your company will be forced economically to massively go to these twin 33s, and so there would be a massive amount of new twin 33s on American roads. Is that your testimony?

Mr. MOYES. Yes, that is correct. These are my numbers, but there would be 50 percent of the truckload industry probably would have to go to them, and they're 70, 78 percent.

Senator WICKER. Let me ask Dr. Lund this question. Could you define for the Committee what an out-of-service vehicle violation is?

Dr. LUND. Yes. An out-of-service vehicle violation is one that's serious enough that the truck is taken off the road. So if the brakes are out of adjustment enough or there are steering problems or lighting problems, that the truck is unsafe on the road, it's put out of service.

Senator WICKER. And there is an Insurance Institute for Highway Safety study that concluded that a truck with an out-of-service violation is 362 percent more likely to be involved in a crash. Would you support that figure?

Dr. LUND. That is correct. Those are the data from our most recent research in North Carolina.

Senator WICKER. And one of the key findings of the U.S. Department of Transportation in a recent truck size and weight study was that double-trailer trucks had the highest percentage of out-of-service violations of any other truck—of any of all of the truck configurations used on our highways. Would you say that is accurate also?

Dr. LUND. I don't know that study, but that would be a problem. I trust the statistics from the Federal Government. And the higher rate of out-of-service would indicate a higher risk of crashing on the highway.

Senator WICKER. Thank you very much.

And thank you, Madam Chair.

The CHAIRMAN. Thank you, Senator Wicker.

Senator Hassan.

STATEMENT OF HON. MAGGIE HASSAN, U.S. SENATOR FROM NEW HAMPSHIRE

Senator HASSAN. Thank you, Madam Chair and Ranking Member Booker. And thank you to all of the panelists for being here today.

The trucking industry plays a critical role in our national economy, clearly, and also in my home state of New Hampshire. As technology evolves, we will need to make important decisions, as we're all talking about right now, that will impact the safety and well-being of this industry and our home state communities.

At the end of the Obama administration, the Department of Transportation announced a multistakeholder working group on automation that consisted of various public and private sector stakeholders as well as innovators, labor, and academia.

As Governor of New Hampshire, I saw firsthand the value in bringing people together to face challenges head-on and have the kind of discussions that can lead to really meaningful solutions.

So the question for all of you is really, do you believe this kind of voluntary working group can be an effective tool to shed light on how we can go about modernizing our freight systems and exploring autonomous technology? And do you hope to see the working group continued under the current administration?

Any one of you can start. Any takers?

Mr. HART. I would like to answer that question, a very good question. Automation is very challenging. The good news is there is more automation; the bad news is there is more automation. Because of the complexity of it, I think it's going to be essential to have a collaborative solution, and I encourage the collaboration of all of the players who have a dog in the fight, and that's quite a

few players. So, yes, it can't be done without extensive collaboration, so I certainly encourage that.

Senator HASSAN. Thank you. Anyone else want to chime in?

Dr. LUND. If I may.

Senator HASSAN. Yes.

Dr. LUND. Certainly, automation offers great potential for reducing crashes, making everybody safer. We saw that in our research in North Carolina with less advanced technology. The new technology coming has great potential. But we do need to work together to get that on the road in ways that people will trust it, especially automated vehicles. If we're going to have trust in it, then people have to talk to one another and understand what it is that we're putting on the highway.

Senator HASSAN. Thank you.

Mr. MOYES. I would just like to add to that that one of the biggest problems is the infrastructure, and it has a direct relation with safety.

Senator HASSAN. Yes.

Mr. MOYES. So we can have all the technology and keep up with technology, but, you know, the administration is looking at huge numbers for infrastructure that is deeply needed out there, and it does have a direct effect on safety.

Senator HASSAN. Well, thank you. And actually I was going to get to infrastructure in my next question, so I think you've answered it nicely and clearly. You know, it's something that I think every member of the panel agrees and all the Governors I talk to agree we really need, and it's critical for our economy and for our safety.

The rest of my questions really had to do with questions that Senators Blumenthal and Wicker have already addressed. I'll just add my name to the list of people who think that the double 33s are a really bad idea. You know, in New Hampshire, we've got a variety of kinds of roads, we've got mountainous terrain, and I would be very, very concerned about the impact of double 33s on our roads. And I also share the concerns that some of you indicated about the economic pressures of having to go to double 33s.

So I thank you all for being here. And if anybody would like to make any other comments on either stakeholder process or double 33s or infrastructure, we have a little time left, but I'm really done with my questions. Thank you.

Dr. JOVANIS. On the question of automation, I think some of the studies that I've seen show that the real impact of automated vehicles and potentially automated trucks is going to be out in the future. And in the interim, you have to deal with a mixed vehicle fleet of not automated or not autonomous and driver-driven vehicles. So while there is no question that they offer tremendous potential payoff, they're a ways down the road.

And I just would like to come back to Chairwoman Fischer's comment about data and analysis. Sometimes I think in the field, the whiz-bang and the technology gets all the press, but the hard work is digging around in the data to try to figure out what the problems are today.

Senator HASSAN. Yes.

Dr. JOVANIS. And so I guess I would feel like I wasn't doing my job if I didn't try to remind people of that point and emphasize the importance of improvements in data, improvements in data analysis, and particularly in crash data on heavy trucks.

Senator HASSAN. Thank you very much.

The CHAIRMAN. Senator Klobuchar.

STATEMENT OF HON. AMY KLOBUCHAR, U.S. SENATOR FROM MINNESOTA

Senator KLOBUCHAR. Thank you very much, Chair Fischer and Ranking Member Booker for holding this important hearing today. I think we all know the trucking industry plays a critical role in getting goods to market, and trucks carry approximately 75 percent of domestic cargo by value, and there are over 539,000 interstate motor carriers and intrastate hazardous materials motor carriers operating in our country.

I appreciated that Senator Fischer raised the issue of the state commercial motor vehicle safety program and some of the loss of funds and what we should be doing to change that.

I wanted to focus on a specific issue with you, Mr. Moyes, and that is the human trafficking. Last year, the FAA Extension Act included a provision that I championed with Senator Warner for training flight attendants on spotting human trafficking. It actually came from the flight attendants, was supported by the airlines.

Like flight attendants, truck drivers are on the front lines. I know that human trafficking prevention is also a priority at Swift Transportation. Could you talk a little bit about your efforts as we work with the Truckers Against Trafficking group? Thank you.

Mr. MOYES. Thank you. And we are involved with the Truckers Against Trafficking, we're very involved with that. We have a program that we run all our drivers through of what they can do and what they can be recognized out there in the system. We are very supportive of the other organization that Demi Moore is involved in, I can't tell you what it is, but——

Senator KLOBUCHAR. Right.

Mr. MOYES. But we're very involved and recognize it's a huge problem, and we're trying to do what we can, you know, from our company and our industry also. Our industry is very involved in it.

Senator KLOBUCHAR. OK. Very good. Thank you. You're also an industry leader in terms of safety. Could you give me some ideas about how you can increase productivity without compromising safety? I think that's always the tradeoff we face.

Mr. MOYES. Well, it's not a tradeoff because safety is always number one and you've got to recognize that. There are a lot of things that we can do to increase our productivity. Our drivers, even though they're allowed to work 10, 11 hours a day, we're not utilizing that much. So there are a lot of things we've got to do as an industry, work with our shippers and our consignees to better utilize the equipment and the drivers that we have today, and that's an area that we need to work on.

As I stated earlier, we lose a lot of productivity because of the infrastructure, and I think that could be an improvement. But I just want to come back, you can never debate safety versus productivity. I mean, safety is always number one.

Senator KLOBUCHAR. OK. Thank you.

Mr. Hart, I included a provision in the FAST Act on distracted driving with Senator Hoeven to make it easier to get the grants. The NTSB recently found that the percentage of drivers who admitted to surfing the Web while driving rose from 13 percent in 2009 to 30 percent in 2015. Data from 2015 showed that 116,000 people were injured in crashes involving trucks, which was a 57 percent increase.

Mr. Hart, eliminating distractions was included in the NTSB's Most Wanted List of transportation safety improvements this year. What more can be done to reduce distracted driving?

Mr. HART. Thank you for the question. This is going to be quite a complicated endeavor. I analogize it to drinking and driving.

Senator KLOBUCHAR. Right.

Mr. HART. Back when I was a kid, I remember it used to be funny to see someone who was drunk, and they had TV shows where they had comedy, you know, comedians, who were drunk, and you laughed at that, and that was funny. Now it's not funny, it's not cool to be drunk. That was a whole change of culture that MADD started and that was a grassroots change in culture.

I think we're going to have to have a similar grassroots change in culture because so many people—we have now fatal accidents in every mode of transportation due to distraction, mostly personal electronic devices. So a lot of people say they're so good at it, "I can do this." NHTSA statistics show that you are 23 times more likely to have a crash if you're texting, not 23 percent, but 23 times. It's a huge—and it's going to take a cultural change for people to stop thinking, "Yes, I can multitask."

Senator KLOBUCHAR. What ideas do you have on how we get there?

Mr. HART. Well, that's the challenge, is, how can we—it's going to take more—again, grassroots campaign, people who lose loved ones because somebody is texting, and they're going to start going after it like MADD did because of the same kind of reasons. It's going to take a very intensive effort at all levels, but it's going to have to be a grassroots campaign.

Senator KLOBUCHAR. And some of it state by state I think as far as what we can do.

Mr. HART. Right.

Senator KLOBUCHAR. Any other comments on this? Dr. Lund?

Dr. LUND. Yes. I would like to use that to jump off to the fact that distracted driving is more than the electronic devices that are coming into our vehicles. Drivers get distracted by lots of things. And what's important is the new technology that's coming. I want to give that a plug. The front crash prevention systems, forward-collision warning, autonomous emergency braking, things like that, which can take action, bring drivers' attention back to the road when it's needed, or potentially mitigate the crash on its own.

So I think one of the things we need to keep in mind about distracted driving is it's more than the electronic devices. We need to help prevent these crashes no matter why people are distracted.

Senator KLOBUCHAR. Well, there is also technology that we've been—the University of Minnesota has been studying to try to—with kids especially, if you can shut off the devices when they're

driving, not the devices you're talking about, of course, but the personal devices, and other things you could be doing to use technology to warn them not to use them. So, OK, thank you.

The CHAIRMAN. Thank you.

Senator Booker.

Senator BOOKER. Mr. Moyes, I just love your story, and what a great American story of starting a company, building it out, creating jobs, economic activity. You should be obviously very proud of what you've accomplished, and I appreciate you taking the time to be here.

I'm curious. I want to really pin what my friend Roger, Senator Wicker, was pushing at, which is this idea for you to stay competitive, you're basically testifying that if the twin 33s come about and other companies are using them, you will feel, just to be competitive, and other companies like you, will be forced to try to compete to take up the same kind of more dangerous vehicles.

Mr. MOYES. Yes, that is correct. We would be forced to change up to 50 percent of our fleet to the twin 33s if that was the case just to stay competitive, yes.

Senator BOOKER. So you favor the Federal Government not allowing these vehicles to be on the road.

Mr. MOYES. That is correct. Yes, sir.

Senator BOOKER. So in some cases, and help me understand this, because I've seen industry, for lots of different industries, come to us asking to roll back regulations, and some industries come in and ask for regulations, in other words, to create a Federal standard, so you don't have a patchwork in different states.

And you're a person, clearly your company has made a tremendous investment above your competitors, in other elements of safety in your vehicles. Would you say that's correct?

Mr. MOYES. Yes.

Senator BOOKER. Does that give someone who is trying to cut costs and compete with you on cost, an unfair advantage, you're putting all this safety and reducing risks, but some of these other safety measures that are not being mandated that you're doing voluntarily and making the roads more safe, does your competitor who is not making these investments have sort of an unfair advantage even though they're rolling at a greater risk to the overall public?

Mr. MOYES. I hope I'm answering your question. These investments in safety have to have a payoff. I mean, it's not only the safety to the motoring public, but it's to our shareholders. And we have an extremely high self-insurance premium. So by bringing on more and more of this technology, reducing our accidents, yes, number one, it's for the motoring community, but, number two, it's for our shareholders. And so we have to watch that very closely. I mean, but that has never interfered with us in technology today. We've always looked at the safety first.

Senator BOOKER. And I just want to ask Dr. Lund, because he sort of gave this amen chorus, he was shaking his head and smiling. Sir, do you agree with what he was saying? In other words, that he is making a good business decision here by making investments in other companies or not?

Dr. LUND. Absolutely. One of the things that can put trucks out of service is getting into a crash and the damage.

Senator BOOKER. Yes.

Dr. LUND. So that's lost productivity when that happens. So there is an economic benefit as well as the safety benefit.

Senator BOOKER. Maybe I can ask the two of you then, because a lot of the crashes that we have, a trucking company isn't necessarily covering the full cost of that crash. A lot of it falls on the taxpayers. So if you put in safety equipment and you reduce the number of crashes, clearly, I trust Mr. Moyes, he's built a great American company, that he's doing a cost-benefit analysis, it's better to be safer.

But what is happening in a free market right now is that taxpayers, they're externalizing the cost of crashes because according to the data that I have in front of me, a multi-vehicle truck accident can cost over $20 million to compensate families and pay for the impact on our infrastructure. However, the requirement to carry at least $750,000 of minimum insurance has not been increased for 30 years, even to account for inflation, which has led to taxpayers having to foot the bill in the aftermath of these truck accidents.

That to me, I'm actually a really big free market guy, but I don't like it when corporations sort of foist their cost, externalize their expenses, and I see that in all kind of industries. I mean, the Passaic River in New Jersey is a testimony to companies in the past externalizing their costs onto future generations who now can't fish or swim or recreate in that river.

So is this a case—I ask Mr. Moyes and Dr. Lund both together, a business person and an independent sort of watchdog group, is that truly a problem? Because I know in my state when these trucks, I mean, explosive impact for—they might not have the safety provisions there. My taxpayers in New Jersey end up picking up the costs of that damage.

Mr. MOYES. Yes. We would certainly support an increase in the minimum on truck liability insurance. I think the number is $750,000 today is the minimum. Our company carries I think it's almost $250 million. And that's an expense, but, I mean, you know, we have to——

Senator BOOKER. So you insure your trucks for above the minimum $750,000.

Mr. MOYES. Dramatically, yes. I think it's $250 million we insure for. But, you know, you have an accident, and, you know, $750,000 don't go very far today, you know, if you've got some multiple injuries and a horrible example of some deaths.

Senator BOOKER. OK. I'm over my time, so I'll wait.

The CHAIRMAN. Thank you, Senator Booker.

Senator Capito.

STATEMENT OF HON. SHELLEY MOORE CAPITO, U.S. SENATOR FROM WEST VIRGINIA

Senator CAPITO. Thank you, Madam Chair. And thank you all for being here. So I wasn't here for the testimony, but we've been listening down in our office, and this is an issue I think of great importance to many, many people.

I would like to talk about an issue that I've gotten involved in, and that's removing drivers from the roads who are under the in-

fluence of drugs or alcohol because of how key it is to reducing highway fatalities and crashes. In last year's THUD bill, I supported language that brings greater attention to this issue. And I've worked with Senator Udall on legislation authorizing Federal research critical to eliminating drunk driving, and in the FAST Act, a number of safety provisions were included to enable states to eliminate some of those—to implement some of those.

But as we know, driving under the influence is a preventable crime, and we must do everything we can to eliminate this. And I was wondering what kind of initiatives you've seen either at the State level or within your companies or at the NTSB that has worked successfully and where you think the next level we need to go to try to get a better handle on this issue. Anybody have a—I'm not asking specifically. Does anybody want to jump into that?

Mr. HART. Thank you for question. It's a multifaceted issue, and we've been pushing it on several facets. So, for example, there's the technology, there's the DADSS, that would not let you drive if you're——

Senator CAPITO. Right.

Mr. HART. There is education. There is enforcement. We're also pushing—we've got our—we made ourselves very unpopular with a lot of people by pushing to move the BAC limit from .08 to .05, and now it appears that Utah may be the first state in the country to do that. So it's a multifaceted issue, and we're pursuing all of those facets.

Senator CAPITO. Anybody else? Comment? Dr. Lund?

Dr. LUND. Yes. I think one of the things the research has shown clearly is that if you want to reduce this kind of behavior, you've got to increase the certainty that people get caught and that they are convicted if they are caught. So that would be one of the first things, is to look at states. They're not always popular, but sobriety checkpoints we know increase the likelihood that people are detected for driving under the influence, and once they're detected, then they can come into the system. The truck driver—trucking companies can know that their drivers have the problem. So the first thing is to increase the certainty.

Other things that we can do for drivers who have been caught, first offender alcohol interlock laws are being shown to be effective, and that gets people into the system. So again you know about them. I think that's good.

I support all the things that Chairman Hart said as well, but I would just add those.

Senator CAPITO. Anybody else have a comment? Yes, Mr. Moyes.

Mr. MOYES. I've just got some statistics, that .08 percent of our industry that had accidents were involved in alcohol, and .09 percent was involved with drugs, which is that's too many, but it's a very, very small number. But one of the things that hasn't come up here is testing for hair follicles, and I think that's something you'll be hearing furthermore on, and we strongly support that. We're——

Senator CAPITO. Do you random test at your company? I'm sure you do.

Mr. MOYES. Say again?

Senator CAPITO. Do you random test, drug test, at your——

Mr. MOYES. Oh, yes.

Senator CAPITO. Yes.

Mr. MOYES. But the hair follicle is much more accurate——

Senator CAPITO. Accurate?

Mr. MOYES.—than the other testing methods.

Senator CAPITO. Captain Turner?

Captain TURNER. Yes, ma'am. One of the most critical and important things any traffic enforcement or law enforcement agency does is traffic enforcement on drug or alcohol-impaired drivers. And this issue, specifically coming back to us, requires a couple things. It requires a well-trained officer and it requires an officer looking for the driving cues that are published by NHTSA, and the ability to be able to enforce in that manner.

So for us, and this goes back to the funding issue that we talked about earlier, now we're losing the ability to effectively train our officers because we don't have enough funds coming in to be able to sponsor those programs. And, again, the anomaly where those are used for high-priority programs where we have our officers have the ability to go out and target the vehicles committing violations around large trucks, whether that's another truck or it's a passenger car, that typically those violations are moving hazardous violations. And now your violations are moving hazardous violations, are an indicator of someone who is impaired and/or distracted or any other issue that may cause that crash. So for us, that funding issue is very critical to be able to support those programs and the specific question that you asked.

Senator CAPITO. All right. Thank you. I think that does it for me because I'm down to 8 seconds. Thank you so much.

The CHAIRMAN. Thank you, Senator. We've been joined by the Chair of the Committee, Chairman Thune.

STATEMENT OF HON. JOHN THUNE,
U.S. SENATOR FROM SOUTH DAKOTA

Senator THUNE. Thank you, Senator Fischer. Thanks to you and Senator Booker for holding this important hearing. These transportation safety issues have been and will continue to be a major focus of this committee, and after more than 30 short-term extensions, this committee and others provided much needed certainty with the passage of the FAST Act in 2015, and the Commerce Committee's work accounted for almost half of the 500 or so pages in that final bill and really did, I think, help improve safety not just for motor carriers, but across the various modes of transportation while promoting the efficiency of our transportation network and helping with project delivery.

Many of the Members of this Committee worked across the aisle to contribute to the improvements achieved in the FAST Act. Senator Fischer was key to the reforms in the Federal Motor Carrier Safety Administration, Senators Wicker and Booker formed a team to reauthorize rail safety programs, and many more made contributions to ensure greater safety throughout our transportation system. I even think Senator Inhofe, who is now on our Committee, may have helped there when he was over as Chairman of the Environment and Public Works Committee. But despite that progress,

there is always more that we can do, and recent trends suggest that casualties on our Nation's highways are growing.

Trucking is a vital part of our economy. It's a Federal responsibility to ensure the safety of the citizens and goods that move across our highways, and in the FAST Act, our safety improvements included boosting funding for truck safety enforcement, providing reforms to help states make a significant impact with their infrastructure enforcement funds, and ensuring more stringent drug testing for truck drivers.

Although the FAST Act was a step in the right direction, this committee will continue to look for opportunities for potential reforms and improvements to truck safety, and today is a part of that process, providing a good occasion to hear from a range of witnesses with various approaches and ideas on how we can best improve safety as it relates to motor carriers.

So I want to thank all of our witnesses for being here today.

And, Mr. Moyes, nice to see you again. It was great visiting your facility out in Arizona a few months back. And I appreciate your contributions to this hearing. And thanks to the entire panel.

I do want to ask Captain Turner, you mentioned in your testimony the important reforms and funding allocations achieved in the FAST Act particularly as it relates to the Motor Carrier Safety Assistance Program, or MCSAP. Unfortunately, those changes have yet to be realized as we operate under Continuing Resolution. So could you speak in more detail to how the lack of certainty at the Federal funding level is impacting states like yours and others?

Captain TURNER. Directly to Kansas, the number one issue for us is going to be jobs lost. And Chairman Fischer asked that question earlier, or a similar question, and that is without question the number one problem that we are going to face.

So as we lose people through attrition and directly related, I have had three people retire as an example. And I have their positions allocated, but now I don't have the funds to fill those positions. And I have to hold off filling those positions and the job and then the outcome and the work product that they would normally perform, because I don't have any certainty on whether or not those funds are going to be there.

We build our grants, we submit our grants and our budgets, which are expected outcomes, and the money we expect to receive based on any highway funding authorization, and when we submit those, we expect that those funds will be there and plan both our activities and the jobs that we'll have over the course of the next year, and then when they're not there, we have to play catch-up.

So when we lose people, we have to endure that shrinkage until such time as the money is there, but often even if the money comes in the next year, we have already lost the people. And trying to get a new FTE through a state or bring a person back into that problem to be able to fulfill that takes years. It's not just a one-year fix, it takes years to get that position back, if ever, and it takes years to get that productivity back, if ever.

Senator THUNE. And just very quickly, if I could, just have each of the members of the panel, as this committee looks at transportation issues in the 115th Congress and where we can make safety improvements, maybe could you each provide your top suggestion

of where we can best direct time and resources to increase truck safety? We'll start on the left. Mr. Hart.

Mr. HART. We have what's called a Most Wanted List that has several areas that would affect trucking safety. The three I talked about already were fatigue, distraction, and impairment. We're also looking at collision avoidance systems. We're looking at medical fitness for duty. There are a number of issues that we are looking at. I'm not sure we're in a position to prioritize them because there are quite a few that we suggested on our Most Wanted List.

Captain TURNER. CVSA would need reliable and consistent funding. We need consistent regulations that allow us to have enforcement be consistent throughout the Nation. And then we need the ability to inspect en-route motorcoaches to keep the public safe.

Dr. JOVANIS. I'll speak personally as a researcher in the field for the last 35 years. I think the most important aspect is to develop high-quality data on truck crashes and their occurrence and their characteristics and to provide follow-up capability to analyze those data to get a much better picture nationally of where truck crashes are occurring and the causes and contributing factors of those crashes.

Mr. MOYES. Senator, I think, as mentioned earlier, the infrastructure is probably the biggest area that we feel that could really help the safety and help the productivity of our industry. It just costs us a tremendous amount of money from the equipment and maintenance side as well as productivity.

One of the other areas that has not been brought up—and I talked to Dr. Lund here before—is rear-end crashes, where we are rear-ended. We have seen a huge increase. I don't have the statistic, but we have like one or one and a half a day of vehicles running into the rear end of us. And we're doing some things with better rear end equipment to help that, but it's just texting and driving on the phone, and it's a huge issue. And even though we're not at fault, our vehicle is down for a day or two, and it creates huge problems.

Dr. LUND. Thank you. And I want to thank Dr. Moyes for that reference to rear underride guards. I certainly support that. We've recently come up with our own tests and are identifying trailers that meet what we call a *TOUGH*GUARD standard. And thanks to companies like this, more trailer manufacturers are doing a good job there.

But you asked for what would be the number one thing we could do. Probably the first thing that we could do that would make a big difference is to reduce the speeds on our highways. We have states where the speed limit is 80 miles an hour, and that's the speed limit for trucks. So we would think—you know, trucks weigh a lot, and that plus the speed means their kinetic energy is huge, and that's what has to be managed within crashes. So that would be the number one thing.

But I would like to put in again a plug for the new technology that's out there that can help us all: forward-collision warning, automatic emergency braking, lane departure prevention, things like that.

The CHAIRMAN. Senator Duckworth.

STATEMENT OF HON. TAMMY DUCKWORTH, U.S. SENATOR FROM ILLINOIS

Senator DUCKWORTH. I want to thank the Chair and Ranking Member for convening this important hearing on improving highway safety. In Illinois and across the Nation—you know, when I travel across Illinois, I hear a call for Congress to finally come together and work to modernize our country's infrastructure, including fixing our highways and bridges.

A critical component of this effort must be enhancing transportation safety systems across all modes of transit. Three years ago, we were tragically reminded of consequences of lax safety systems when a truck driver who had slept less than 5 hours in the 37 previous hours leading up to the crash plowed into emergency vehicles on Interstate 88 near Naperville in Illinois. This driver, who was operating his truck in violation of safety regulations, killed Mr. Vincent Petrella, an Illinois tollway employee, and severely injured Illinois State Trooper Douglas Balder, who then spent 6 weeks in a medically-induced coma.

After the deadly accident, we learned that the truck driver was employed by a company that was classified by regulators as high risk due to a lengthy record of failing to follow the rules. In fact, even after this crash, this high-risk company was able to reverse an effort by the Federal Motor Carrier Safety Administration to shut it down, and it shut down as a company only after the firm's private insurance company canceled coverage, that the carrier was finally forced to shut its operations. Clearly, significant work remains to be done when it comes to improving trucking safety in my state and throughout the country.

Chairman Hart, I would like to examine an important issue your testimony raised, modernizing our safety system to move beyond static compliance to active prevention. If I understand your testimony correctly, studies by NTSB and National Highway Traffic Safety Administration have found that universal adoption of existing collision avoidance technologies, such as autonomous emergency braking, reduced the number of crashes and saved lives. Is this correct?

Mr. HART. Yes, we have quite a bit, quite extensive, and solid evidence that there is lifesaving promise in new technologies.

Senator DUCKWORTH. Thank you. As we look to promote adoption of a beyond compliance program that emphasizes achieving real-world safety improvements, what would be your top three recommendations for Congress, whether it's through oversight or legislation, to achieve this important national goal?

Mr. HART. We know that improving safety by improving regulations is slow and cumbersome. We are trying to—we're encouraging voluntary use of things like forward-collision warning systems, forward-collision avoidance systems, so that we can do things that—because even the best driver, even the driver who is not impaired, who's not incapacitated, who's not distracted, even on their best day, they may can still make mistakes and still have accidents. So that's why we're looking for new technologies that would help prevent collisions.

Senator DUCKWORTH. What is it that we in Congress can do to help move that forward though?

Mr. HART. Incentivize the voluntary use of new technologies.

Senator DUCKWORTH. Through grant programs? Through what?

Mr. HART. Well, it's hard for us to be that prescriptive because that's not really our bailiwick, but we would just say in general anything that can help incentivize the voluntary improvement of safety technologies would be a plus.

Senator DUCKWORTH. OK. Thank you.

I did want to talk to one other thing. This is a priority of mine and families across the Nation, making sure that every child uses lap and shoulder safety belts when traveling to school, whether by car or by bus.

I recently had a large commercial motor carrier manufacturer visit my office, and I was very pleased to hear that industry is making progress in implementing safety upgrades that recent Congresses have mandated over the past few years. It appears that American companies are proud to put our constituents back to work, creating an even better product that is more reliable and far safer.

So, Chairman Hart, my question is pretty straightforward. What makes a large school bus so different from a commercial truck or a motor carrier? In my home state, we are home to IC Bus, a school bus manufacturer that proudly features a three-point safety belt system on new models.

So, clearly, new technology exists to make lap belts and shoulder belts a reality on all new school buses rolling off assembly lines. The question is, do we have the will? From your perspective, as Chairman, what should Congress be aware of as we consider this question? How do we make usage of seat belts in school buses universal?

Mr. HART. We have spent extensive energy on that issue. One of the areas of resistance is the fact that school bus transportation is by far the safest means of transportation to and from school, safer than driving with your parents, safer than walking, safer than any other way to get to and from school. That's part of the reason for the resistance to the additional expenditures for belts.

Our accident investigation experience has shown that belts are important in two instances where we're seeing serious problems: one is rollovers and two is side-impact crashes. The compartmentalization that's put into the buses today deals with longitudinal crashes. The belts are needed for side impact and rollover. So lap belts are great; lap and shoulder belts are far, far better.

We encourage any jurisdiction that's going to look at any belts at all to look not only at lap belts, but to look at lap and shoulder belts to be able to handle not only the longitudinal ones, which are already taken care of largely by compartmentalization, but also to handle side-impact and rollover crashes.

Senator DUCKWORTH. Thank you. And I'm out of time. Thank you.

The CHAIRMAN. Thank you, Senator Duckworth.

I would like to thank all of our panelists today. This has been a very interesting and informative committee hearing.

Senator WICKER. Can I ask one follow-up question?

The CHAIRMAN. Can you submit it for the record, please?

Senator WICKER. OK.

The CHAIRMAN. OK. Thank you.

[Laughter.]

Senator WICKER. Dr. Lund and Dr. Jovanis stay after class.

[Laughter.]

The CHAIRMAN. Mr. Wicker would like to visit with you privately.

The hearing record will remain open for 2 weeks, and during this time Senators are asked to submit any questions for the record. Upon receipt, the witnesses are requested to submit their written answers to the Committee as soon as possible.

Once again, I thank you all for being here. We are adjourned.

[Whereupon, at 4 p.m., the hearing was adjourned.]

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