

UPCOMING TRAININGS & CONFERENCES

A full list of NDAA's virtual learning sessions is available at

➤ ndaa.org/training-courses/.

**NDAA's Mastering Masking Digital Course/
On Demand Training (CLE Available)**

➤ ndaa.org/training/mastering-masking-2/

**NDAA's Human Trafficking and the Impact on
Commercial Driver's Licenses/On Demand Training**

➤ ndaa.org/training/human-trafficking-and-the-impact-on-commercial-drivers-licenses/

**NDAA's Prosecuting DUI Cases Online Course/
On Demand Training (CLE Available)**

➤ ndaa.org/training/prosecuting-dui-cases/

**NDAA's Investigation and Prosecution of Drug-Impaired
Driving Cases Online Course/On Demand Training
(CLE Available)**

➤ ndaa.org/training/on-demand-learning-investigation-and-prosecution-of-drug-impaired-driving-cases/

NDAA's Summer Summit

July 14–15, 2025, Kansas City, MO

NDAA's 2025 Forensic Evidence Conference

August 5–7, 2025, Memphis, TN

RESOURCES

Impaired Driving Resources

➤ ndaa.org/programs/ntlc/

CDL-Related Resources

➤ ndaa.org/programs/ntlc/commercial-drivers-license/

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Why Enforcement Matters

The Direct Link Between Truck Violations and Crashes

*By Eric Teoh, Director of Statistical Service,
Insurance Institute for Highway Safety*

The commercial motor vehicles (CMV) industry is a key component of America's economy, transporting over \$700.4 billion worth of goods each year.¹ While the safe operation of CMVs clearly has economic benefits, perhaps more important is that those CMV drivers are also entrusted with the lives of those they transport and those they encounter on our nation's roads. Due to the size and weight of many CMVs, there is an inherent risk involved in their operation. As such, it is important for all stakeholders to take actions that improve CMV safety. Of note, data collection is crucial in enhancing the safety of the commercial motor vehicle industry by enabling monitoring of driver behavior, vehicle maintenance, and compliance with safety regulations.

¹ "When Trucks Stop, America Stops" by American Trucking Associations, 2019, When Trucks Stop, America Stops (trucking.org).

Why Enforcement Matters: The Direct Link Between Truck Violations and Crashes

A key reason for accurate and comprehensive record-keeping is to hold drivers who operate these large vehicles accountable for bad driving behaviors. Our justice system plays a critical role in ensuring that the drivers and companies operating these large vehicles obey the rules of the road and the rules of their commercial operation. Enforcing these rules translates into real-world reductions in crash risk, as shown in a study, Crash risk factors for interstate large trucks in North Carolina,² my colleagues and I completed several years ago and is still relevant today.

For this study, we partnered with the University of North Carolina's Highway Safety Research Center and with the North Carolina Highway Patrol. Additional data were obtained from a brief questionnaire form for truck drivers and from the Federal Motor Carrier Safety Administration, which regulates trucking companies engaged in interstate commerce.

This study identified factors that increase large trucks' crash risk by assessing large trucks involved in crashes and comparing them to control trucks. Trucks involved in crashes were eligible to be in the study if 1) the crash involved a fatality or injury with medical transport, and 2) if a Commercial Vehicle Safety Alliance Level 1 post-crash inspection was conducted.

For each crash-involved truck in our sample, we selected a control truck of the same type at approximately the same location as the crash and about the same time of day and part of the week (weekend vs. weekday). Each control truck selected also was subjected to a Level 1 inspection. This is known as a matched case-control study design. To ensure consistency in vehicles and in the rules they are subject to, we restricted the sample to trucks with gross vehicle weight ratings over 26,000 pounds and operated by interstate trucking companies.

This type of study in which the goal is to identify factors that increase large trucks' crash risk is different than a crash causation study. For example, consider a situation where a car passes a truck, enters its lane, and slows rapidly. Arguably, the car's maneuver is the main causal factor, but the presence or absence of truck brake defects could be the difference between a crash and an avoidance maneuver. So, if we are able to compare trucks with brake defects and those without, then we may be able to identify this as a risk factor. Using this theory, we employed a more statistically efficient way to do this by comparing crash-involved trucks with a control sample to look for differences in brake defects and other types of violations.

A common theme of the study's findings was that violating rules was associated with increased crash risk. For instance, having inspection violations for vehicle defects (e.g., out-of-adjustment brakes, defective tires, inoperable lights) tripled the risk of crashing. For vehicle defect violations severe enough to put the truck out-of-service, crash risk more than quadrupled. These results align with a similar study we published in 1989.³

We found it was not just the truck's history that mattered; the record of the driver and the company mattered as well. Drivers with one or more moving violations per year, on average, had a 30% higher crash risk than drivers with fewer moving violations. Drivers with out-of-service logbook violations had 50% higher crash risk. Drivers working for companies with histories of violations and crashes also had elevated crash risk. For instance, drivers for companies in which at least 10% of their roadside inspections resulted in trucks being placed out-of-service had 31% higher crash risk, and those driving for companies with over 100 crashes per 1,000 power units in the past two years had 71% higher crash risk.

A key reason for accurate and comprehensive record-keeping is to hold drivers who operate these large vehicles accountable for bad driving behaviors.

² Teoh ER, Carter DL, Smith S, McCartt AT. 2017. Crash risk factors for interstate large trucks in North Carolina. *Journal of Safety Research* 62:13–21., available at www.iihs.org/topics/bibliography/ref/2128.

³ Jones, Ian S., Stein, Howard S., Accident Analysis & Prevention (AAP), 1989, "Defective equipment and tractor-trailer crash involvement," available by request at www.iihs.org/research-areas/bibliography/ref/343 (accessed June 16, 2025).

Why Enforcement Matters: The Direct Link Between Truck Violations and Crashes

Research studies like this and the development of appropriate interventions are only possible with accurate and robust recordkeeping. Moreover, for these efforts to be successful, records must accurately represent driver and motor carrier behavior. Charges that are adjudicated in such a manner that do not allow the behaviors to be accurately reflected on the driver and motor carrier records preclude studies from accurately measuring the association between specific violations and crash risk. Holding CDL holders and motor carriers accountable for their dangerous behaviors is just one step, albeit a vital one, in preventing large truck crashes.

Recognizing that enforcement alone cannot prevent crashes and their tragic outcomes, the Department of Transportation has adopted the Safe System Approach to address and mitigate risks in our transportation system. Acknowledging that humans make mistakes, the Safe System Approach addresses this by building and reinforcing multiple layers of protection to both prevent crashes and minimizing harm when crashes occur.⁴ Beyond rules and enforcement, other aspects of a Safe System for trucking would include addressing speed with technologies such as speed limiters and intelligent speed assistance and by setting and enforcing reasonable speed limits, equipping large trucks with strong rear and side underride guards, equipping trucks with crash avoidance technology, equipping other vehicles with crash avoidance technology that appropriately detects trucks, and establishing policies at every level that prioritize safety.

Holding CDL holders and motor carriers accountable for their dangerous behaviors is just one step in preventing large truck crashes.

None of these are new ideas, but they are essential if we are to address the more than 4,000 lives lost each year due to large truck crashes—and the more than 40,000 people killed in all motor vehicle crashes. Road safety is a shared responsibility, and to that end, IIHS recently put forward a vision called 30x30 to reduce traffic fatalities 30% by 2030.⁵ This goal is ambitious but achievable and would put us closer to the ultimate goal of eliminating traffic fatalities. It involves doing the things we know are effective and doing them broadly. No single organization can achieve 30x30 alone. Please join us in working toward this vision and help ensure that more people arrive safely at their destinations.

Study Citation:

Teoh ER, Carter DL, Smith S, McCartt AT. 2017. Crash risk factors for interstate large trucks in North Carolina. *Journal of Safety Research* 62:13–21.

For More Information:

Request a copy of the study: www.iihs.org/topics/bibliography/ref/2128

IIHS large trucks topic page: www.iihs.org/topics/large-trucks

Fatality facts on large trucks: www.iihs.org/topics/fatality-statistics/detail/large-trucks

30x30 vision: www.iihs.org/30x30

About the Author

Eric Teoh is the director of statistical services at the Insurance Institute for Highway Safety. Since joining the Institute in 2006, Mr. Teoh has conducted numerous studies quantifying the state of highway safety and identifying ways to improve it. His research has focused on motorcycles, young drivers, large trucks and passenger vehicle safety.

Mr. Teoh holds a master's degree in mathematics from the University of Alabama at Birmingham, where he also earned his bachelor's degree.



⁴ Department of Transportation, “What Is a Safe System Approach?” | US Department of Transportation (accessed June 16, 2025).

⁵ See www.iihs.org/30x30.



Navigating the Waters of a BUI Prosecution: A Joint Training for Prosecutors and Law Enforcement

Date: July 16, 2025

**Time: 10 AM–3 PM EST
with 1 hour for lunch “on your own”**

Attire: Business casual

Cost: Free

Location: Online and in person at

NASBLA Headquarters

1020 Monarch Street, Suite 200

Lexington, KY 40513

Register (for either online or in person):

Email Courtney Livingston at

courtney.livingston@nasbla.org

CLE Credits available by request

**REGISTER
NOW!**



This course, brought to you by NASBLA and the NDAA's National Traffic Law Center, is designed to equip prosecutors and law enforcement officers with the tools and training necessary to effectively prepare and litigate boating under the influence (BUI) cases. Participants will explore the challenges associated with prosecuting BUI offenses, including overcoming social acceptance and biases that can impact juror perception.

In addition to trial preparation strategies, attendees will gain a foundational understanding of BUI investigations, including an in-depth tutorial on the seated Standardized Field Sobriety Tests (SFSTs). Through a collaborative approach, this course emphasizes the importance of working closely with officers and witnesses to build a compelling case, strengthen trial preparation, and achieve better outcomes in BUI prosecutions.

CLE: If you would like CLE credits, please email Hannah Garbee at hgarbee@ndaajustice.org with your name, state, and bar number after completing the course.

Lodging: NASBLA rate 118.00 USD per night. Please call to book and mention NASBLA. Both hotels are within walking distance of the NASBLA building and are located next door to each other.

- **Home2Suites by Hilton**, Lexington—Keeneland/Airport, 960 Midnight Pass, Lexington, KY 40513
Phone 859.309.9600 (Contact: Ritchie Calvert, Mon–Fri)
- **TownePlace Suites**, Lexington—Keeneland/Airport, 980 Midnight Pass, Lexington, KY 40513
Phone 859.368.9491 (Contact: Madi Cornish, Mon–Fri)

**MASTERING MASKING:
Legal and Ethical
Consequences of Plea
Negotiations
Involving Commercial
Driver's Licenses**

July 17, 2025

***Charlottesville, VA
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