ADVOCATES FOR HIGHWAY & AUTO SAFETY

Large Trucks

The Issue:

On average, approximately 5,100 people die in crashes involving a large truck each year, accounting for 13 percent of fatalities on our roadways.[1] The number of people injured in crashes with large trucks is 148,000, every year on average.[2] The cost to society from crashes involving commercial motor vehicles (CMVs) was estimated to be $163 billion in 2019, the latest year for which data is available,[3] which is estimated to be $182 when adjusted for inflation.[4]

The Impact:

- In 2021, 5,601 people were killed in crashes involving large trucks, a 13 percent increase from 2020.[5] Fatalities involving large truck crashes have increased 66 percent since 2009 when such fatalities were at their lowest reported level.[6]
- Additionally, 146,930 people were injured in crashes involving a large truck in 2020, the most recent year for which data is available.[7]
- 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.[8]
- Truck driving is identified as one of the most dangerous occupations in the U.S. by the Bureau of Labor Statistics (BLS).[9]

The Facts:

Bigger, Heavier Trucks:

- Longer trucks come with operational difficulties such as requiring more time to pass, having larger blind spots, crossing into adjacent lanes, swinging into opposing lanes on curves and turns, and taking a longer distance to adequately brake. In fact, double trailer trucks have an 11 percent higher fatal crash rate than single trailer trucks.[10]
- Tractor-trailers moving at 60 mph are required to stop in 310 feet – the length of a football field – once the brakes are applied.[11] Actual stopping distances are often much longer due to driver response time before braking and the common problem that truck brakes are often not in top working condition.
  - In 2021 violations related to tires and/or brakes accounted for 9 of the top 20 most common vehicle out-of-service (OOS) violations.[12]
- More than one in every five trucks that are inspected is placed out of service for vehicle deficiencies that prevent it from continuing to operate.[13] According to a North Carolina study by the Insurance Institute for Highway Safety (IIHS), crash risk increased by 362 percent for trucks with vehicle out-of-service violations.[14]
- Research and experience show that allowing bigger, heavier trucks will not result in fewer trucks:
  - Since 1982, when Congress last increased the gross vehicle weight limit, truck registrations have more than doubled.[15]
  - Increases in truck size and weights over more than 35 years have never resulted in fewer heavier trucks on the roads.[16]
  - The 2015 U.S. Department of Transportation (DOT) Comprehensive Truck Size and Weight Study addressed this meritless assertion and found that any potential mileage efficiencies from the use of heavier trucks would be offset in just one year.[17]
- Overweight trucks disproportionately damage our badly deteriorated roads and bridges. An 18,000-pound truck axle does over 3,000 times more damage to pavement than a typical passenger vehicle axle.[18]
- According to the 2021 Infrastructure Report Card from the American Society of Civil Engineers (ASCE), America's roads receive a grade of "D" and our bridges were given a "C". The roads section of the report

noted that 20 percent of the nation's roads had poor pavement conditions.[19] Approximately one in 13 of the nation's more than 617,000 bridges are considered structurally deficient.[20]

- Deteriorating surface transportation infrastructure has severe effects on America's economy. The ASCE estimates that failure to address the infrastructure investment gap will result in a loss of more than $10.3 trillion in gross domestic product (GDP) and 3 million jobs by 2039. The expected impact on each American household is $3,300 in disposable income per year through 2039.[21]
- The Federal Highway Administration (FHWA) estimates that $135.7 billion in capital investment would be needed on an annual basis over a 20 year period to significantly improve conditions and performance.[22]
- Increasing the weight of a heavy truck by only 10 percent increases bridge damage by 33 percent.[23] The FHWA estimated that the investment backlog for bridges, to address all cost-beneficial bridge needs, is $125.4 billion. The U.S. would need to increase annual funding for bridges by 29 percent over current spending levels to eliminate the bridge backlog by 2034.[24]
- The U.S. DOT Comprehensive Truck Size and Weight Study found that introducing double 33-foot trailer trucks, known as "Double 33s," would be projected to result in 2,478 bridges requiring strengthening or replacement at an estimated one-time cost of $1.1 billion.[25]
- The U.S. taxpayer unfairly subsidizes bigger, heavier trucks:
  - According to the FHWA, a truck weighing over 80,000 pounds only pays between 40 and 50 percent of its cost responsibility.[26]
  - The 2007 Transportation for Tomorrow report, mandated by Congress, confirmed that heavy trucks were underpaying their fair share for highway use, that user fee fairness could be achieved through weight-distance taxes, that heavy trucks should pay an infrastructure damage fee, and that the Heavy Vehicle Use Tax, which only contributes one billion dollars annually to the Highway Trust Fund, had not been changed since the early 1980s.[27]
- Heavy trucks and buses accounted for 19 percent of our nation's transportation energy use in 2019.[28]
- Trucks with heavier gross weights require larger engines that decrease fuel economy on a miles-per-gallon basis.[29]
- Increasing truck size and weight will exacerbate safety and infrastructure problems, negate potential benefits from investments in roads and bridges, and divert rail traffic from privately owned freight railroads to our already overburdened public highways.[30]
- Public Opinion Strongly Opposed to Bigger, Heavier Trucks:
  - There is overwhelming opposition to any increases in truck size and weight limits. The public, local government officials, safety, consumer and public health groups, law enforcement, first responders, truck drivers and labor representatives, families of truck crash victims and survivors, and Congress on a bipartisan level have all rejected attempts to increase truck size and weight limits.
    - A January 2018 public opinion poll conducted by Harper Polling found that seven out of 10 respondents oppose longer and heavier trucks.[31]
    - A 2015 poll conducted by ORC International, commissioned by Advocates for Highway and Auto Safety, found that 77 percent of respondents oppose oversized double trailer trucks on our nation's roads and highways.[32] Moreover, 79 percent of respondents are very or somewhat convinced that heavier and longer trucks will lead to more braking problems and longer stopping distances, causing an increase in the number of crashes involving trucks.[33]
    - A May 2013 public opinion poll by Lake Research Partners found that 68 percent of Americans oppose heavier trucks and 88 percent of Americans do not want to pay higher taxes for the damage caused by heavier trucks.[34]

Truck Driver Fatigue:

- Driver fatigue is a well-known CMV safety problem. Studies show that driver fatigue is a factor in up to as many as 13% of truck crashes.[35]
- The National Transportation Safety Board (NTSB) has repeatedly cited fatigue as a major contributor to truck crashes.[36]

- Currently, truck drivers are permitted to drive 11 hours after 10 consecutive hours off duty. In addition, drivers may not drive beyond the 14th consecutive hour after coming on duty.[37] These grueling hours can lead to cumulative fatigue and devastating safety consequences.
- In a 2006 driver survey prepared for FMCSA, "65 percent [of drivers] reported that they often or sometimes felt drowsy while driving" and almost half (47.6 percent) of drivers said they had fallen asleep while driving in the previous year.[38]

"Teen Truckers":

- Fatal crash rates for truck drivers increase as the age of the driver decreases.[39]
- Research has demonstrated that 19-20 year old truck drivers have higher crash rates than drivers who are 21 years of age and older.[40]
- Truck drivers under the age of 21 are anywhere from 4 to 6 times more likely to be in a fatal crash according to studies of intrastate truck drivers.[41]
- The BLS has examined the question of a driver shortage and found "the labor market for truck drivers works about as well as the labor markets for other blue-collar occupations" and "a deeper look [at the truck industry labor market] does not find evidence of a secular shortage."[42]
- Attempts to lower the age requirement have been consistently rejected by government regulatory agencies, industry, drivers, law enforcement, safety groups and others because of substantial safety concerns associated with young drivers operating CMVs across state lines.
- A 2015 public opinion poll commissioned by Advocates showed that 73 percent of the public opposed allowing teen truck and bus drivers to operate a CMV in interstate commerce.[43]

The Solutions: Technology, Data and Roadway Safety Infrastructure

Vehicle Safety Technologies as Standard Equipment

Proven and available safety technology should be required in CMVs to prevent and mitigate common crash causes. Minimum performance standards ensure that the technology offers a basic level of safety regardless of manufacturer. When a safety feature is mass produced, costs for the systems are reduced. Moreover, additional safety improvements should be made to further protect truck drivers and all road users.

- *Advanced Driver Assistance Systems (ADAS):* According to the National Highway Traffic Safety Administration (NHTSA), from 2003 through 2008, large trucks were the striking vehicle in approximately 32,000 rear-end crashes resulting in 300 fatalities and injuring over 15,000 people annually.[44]
  - Available proven collision avoidance systems have the capability to prevent and mitigate crashes caused by numerous behavioral issues such as distraction, impairment, fatigue, speeding and reckless driving. The technology includes automatic emergency braking (AEB), lane departure warning (LDW), blind spot detection (BSD) and forward collision warning (FCW).
  - A study by IIHS found that:
    - Equipping large trucks with FCW and AEB reduced the rate of rear-end crashes by 44 and 41 percent, respectively.
    - Large trucks equipped with FCW had a 22 percent lower rate of crashes while trucks with AEB had a 12 percent lower rate of crashes than those without either of these vital safeguards.
    - FCW and AEB were found to reduce speed at the moment of impact by more than half, which reduces the severity of crashes and improves survivability.[45]
  - The NTSB has recommended the adoption of collision avoidance systems on all new highway vehicles,[46] and AEB is required in large trucks in the European Union.[47]
  - In 2015, Advocates for Highway and Auto Safety, along with the Center for Auto Safety, the Truck Safety Coalition (TSC) and Road Safe America, filed a petition with NHTSA seeking the issuance of a rule to require forward collision avoidance and mitigation braking systems (F-CAM), now more commonly known as AEB, on CMVs with a gross vehicle weight rating (GVWR) of 10,000 pounds or more.[48] The NHTSA estimates that fleetwide adoption of advanced AEB systems could save 166 lives and prevent 8,361 injuries per year.[49] The agency granted Advocates' petition in October 2015.[50] The

U.S. DOT 2022 Spring Regulatory Agenda indicates the agency will issue an Advanced Notice of Proposed Rulemaking in January 2023.[51]
    - The Infrastructure Investment and Jobs Act (IIJA, Pub. L. 117-58) includes a directive for a final rule on AEB for large trucks and research on equipping medium sized trucks within two years of enactment of the legislation. However, there is no compliance date required by the IIJA for the AEB regulation for large trucks, and the directive omits Class 3 to 6 trucks.
- *Speed Limiting Devices:* Speeding exacerbates CMV safety problems. According to the Federal Motor Carrier Safety Administration (FMCSA), 10,440 people were killed from 2004 to 2013 in crashes where the speed of the CMV likely contributed to the severity of the crash.[52] On average, that is over 1,000 lives lost annually to speeding CMVs.
    - In September 2016, NHTSA and FMCSA issued a joint Notice of Proposed Rulemaking (NPRM) to require vehicles with a GVWR of more than 26,000 pounds to be equipped with a speed limiting device.[53] Subsequently, in May 2022, FMCSA issued an Advanced Notice of Supplemental Proposed Rulemaking.[54]
    - The 2016 NPRM estimated that setting the device at 60 MPH has the potential to save almost 500 lives and prevent nearly 11,000 injuries annually.[55] Setting the speed at 65 MPH could save as many as 214 lives and prevent approximately 4,500 injuries each year.[56]
    - The NTSB has recommended that CMVs be equipped with the technology.[57]
    - Research shows that the technology is currently being used by 77 percent of trucks on the road in the United States.[58]
    - A 2007 survey of truck drivers by IIHS found 64 percent of drivers were in favor of a truck speed governor requirement.[59]
- *Underride Guards:* Technology is currently available that can significantly increase the chances that an individual can survive violent crashes during which a motor vehicle travels underneath the rear or side of a truck trailer. The IIJA directs an update to the rear guard standard to meet the IIHS crash protocols and research on side guards within one year of enactment.
    - The NTSB has recommended improving comprehensive underride protection.[60]
    - In 2022, NHTSA issued a final rule to update the standards for rear impact guards that are installed on the rear of trailers.[61] However, the rule only upgrades the federal standard to meet the Canadian standard which was issued over a decade ago and is substandard given guards currently available in the marketplace have shown to have superior performance capabilities. In addition, in 2015, the agency failed to require that single-unit trucks (SUTs) be equipped with underride guards, instead requiring retroreflective tape on the side and rear. While requiring retroreflective tape is long overdue, it alone is not a sufficient countermeasure.[62]
    - The IIHS has established the TOUGHGUARD award for good rear underride protection, which has been awarded to nine North American trailer manufacturers, including the eight largest, on some or all of their trailers. IIHS has also conducted two tests of a side underride guard. The AngelWing guard, made by Airflow Deflector Inc., succeeded in preventing a midsize car traveling 35 miles-per-hour (MPH) from going underneath the side of the trailer. A subsequent test showed it also prevented underride at 40 MPH.[63]

Safety Data

FMCSA's Compliance, Safety, Accountability (CSA) program evaluates the safety and compliance of motor carriers and is designed to identify high risk operations for intervention and improvement. Involvement in previous truck crashes in and of themselves and regardless of "fault" has been found by industry, academia and the government to be an accurate predictor of involvement in future truck crashes. The goal of CSA is to implement more effective and efficient ways for FMCSA, its state partners and the trucking industry to prevent CMV crashes, fatalities, and injuries.

- Essential CSA data was removed from public view by the Fixing America's Surface Transportation (FAST) Act (Pub. L. 114-94, Sec. 5223, 2015).
- The FAST Act also required the National Academies of Sciences, Engineering and Medicine (NASEM) to

study the CSA program method for evaluating the safety of motor carriers and commercial vehicle drivers. In 2017, the NASEM study concluded that the method was sound and made several recommendations to improve the CSA program including that FMCSA should continue to collaborate with states and other agencies to improve the collection of data on vehicle miles traveled and on crashes as well as certain characteristics of carriers such as turnover rates.[64] To date, it is unclear if the FMCSA has made meaningful progress to address the recommendations from this report.

- In 2016, the FMCSA issued a NPRM to revise the carrier safety ratings procedures in light of adoption of the CSA program. This rulemaking was intended to allow the agency to better evaluate the safety records of carriers. Advocates supported the agency's action to upgrade the safety fitness determination (SFD) process, which informs the CSA program, by using on-road safety data to evaluate carriers in addition to an agency investigation. This update to the SFD program would have significantly enhanced the FMCSA's ability to identify unsafe carriers because it would have enabled the agency to use data from the carrier's on-road operations; however, the agency withdrew the rulemaking in March 2017.

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[1] Based on five year average 2017-2021, NHTSA data.
[2] Based on five year average 2016-2020, NHTSA data; no 2021 injury data in crashes involving large trucks available at time of writing, injury data before 2016 should be combined with more recent data with caution due to changes in data collection design.
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[5] Traffic Safety Facts: Early Estimates of Motor Vehicle Traffic Fatalities and Fatality Rate by Sub-Categories in 2021, NHTSA, May 2022, DOT HS 813 298, available at: https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813298
[6] Traffic Safety Facts: Crash Stats: Early Estimates of Motor Vehicle Traffic Fatalities and Fatality Rate by Sub-Categories in 2021, NHTSA, May 2022, DOT HS 813 298, available at https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813298; and Large Truck and Bus Crash Facts 2019, FMCSA, Oct. 2021, FMCSA-RRA-20-055. Note, the 66 percent figure represents the overall change in the number of fatalities in large truck involved crashes from 2009 to 2021. However, between 2015 and 2016 there was a change in data collection at U.S. DOT that could affect this calculation. From 2009 to 2015 the number of fatalities in truck involved crashes increased by 21 percent and between 2016 to 2021, it increased by 20 percent.
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