



Owner-Operator Independent Drivers Association

National Headquarters: 1 NW OOIDA Drive, Grain Valley, MO 64029  
Tel: (816) 229-5791 Fax: (816) 427-4468

Washington Office: 1100 New Jersey Ave. SE, Washington, DC 20003  
Tel: (202) 347-2007 Fax: (202) 347-2008

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Mr. Jim Mullen  
Acting Administrator  
Federal Motor Carrier Safety Administration  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, D.C. 20590

**Re: Docket # FMCSA-2019-0277 “Request for Information: Large Truck Crash Causal Factors Study”**

Dear Acting Administrator Mullen:

The Owner-Operator Independent Drivers Association (OOIDA) is the largest trade association representing the views of small-business truckers and professional truck drivers. OOIDA has more than 160,000 members located in all fifty states that collectively own and operate more than 240,000 individual heavy-duty trucks. OOIDA’s mission is to promote and protect the interests of its members on any issues that might impact their economic well-being, working conditions, and the safe operation of commercial motor vehicles (CMVs) on our nation’s highways.

As the Federal Motor Carrier Safety Administration (FMCSA) undertakes a new Large Truck Crash Causal Factors Study (LTCCFS), the agency must drastically improve upon the failed structure and methodologies of the initial Large Truck Crash Causation Study (LTCCS) conducted in 2001-2003. Various industry stakeholders, such as OOIDA and the Transportation Research Board (TRB), repeatedly voiced concerns regarding significant shortcomings in the LTCCS approach, organization, and presentation of results.

As a practical measure, FMCSA should change the name of this project to the Large Truck Crash *Contributing* Factors Study. Further, if the LTCCFS will be used to enact or repeal future or current regulations and rulemakings, then FMCSA must formulate precise statements of research objectives. The objectives should be stated in terms of critical policy issues and hypotheses about contributing factors and other risks that are common to crashes. Then, researchers should design data collection methods to answer the questions of interest. The LTCCFS should pursue a nationally representative sampling approach that accounts for the different types of roadways, weather conditions, and other various settings that drivers encounter on a daily basis across the country. The study must present consistent data collection processes incorporating the Model

Minimum Uniform Crash Criteria (MMUCC). As part of the effort, FMCSA should also rely on an expert panel of academics that can provide independent review from the outset of the planning stages. Additionally, FMCSA should conduct a pilot program study that is large enough to clearly indicate whether the planned data collection and analysis methods could meet the declared objectives of the study. The LTCCFS must be completed in a meticulous manner in order to ensure a statistically valid analysis that can evaluate crashes involving large trucks, identify common factors that can lead to crashes, and best develop effective safety improvement policies and programs.

FMCSA should amend the name of the project to the, “Large Truck Crash *Contributing* Factors Study.” Unfortunately, the Large Truck Crash Causation Study implied that the study would show actual “causes” of large truck crashes. However, it only showed categories of factors influencing crash risk, something quite different than the “cause.” For instance, under the LTCCS, if a truck legally made a left-hand turn and was struck by an oncoming vehicle that ignored a stop light, the truck (not the car) was assigned as having taken the action (the legal turn) that increased the risk of the crash. There is inherent difficulty in defining or proving “cause” because there is rarely a single “cause,” but typically multiple or many factors that contribute to a crash. Naming the task as a *Contributing* Factors study, rather than a *Causal* Factors study would be more practical, help achieve the study’s intended outcomes, and reduce the probability of regulators and others misusing the findings.

After changing the project’s title, FMCSA must begin any future study by articulating precise statements of research objectives. If the LTCCFS is to support safety programs, then objectives should be stated in terms of critical policy issues and hypotheses about those factors that pose the greatest risk that follow from those issues. Researchers should design data collection methods to answer these specific questions of interest. These questions must embrace clear definitions of basic study items such as large trucks and other factors and variables that are common in crashes. For example, we believe the term “large truck” should only include class 7 and class 8 heavy trucks. FMCSA should avoid vague and misunderstood terms such as “critical events” and “critical reason” in favor of a weighted analysis of the various risk factors that are more likely to lead to a crash. There certainly should not be any “associated factors” that are based on investigators’ opinions which would make the study scientifically invalid. Establishing sound definitions and clear research objectives will result in a much more productive LTCCFS.

LTCCFS should pursue a nationally representative sampling approach that can review and analyze the various driver, vehicle, and environmental factors that contribute to crashes. Operational and roadway conditions will differ greatly from region-to-region and even state-to-state throughout the country. Certain roadway features are more hazardous for large trucks, such as exit ramps and construction zones. Some states exclude CMVs from specified roads or lanes in an attempt to reduce interactions with other vehicles. Many multi-lane roads prohibit large trucks from the fastest lane and some roads prohibit trucks over a certain size or weight. Meanwhile, some jurisdictions establish lower speed limits for trucks, either throughout a roadway, on steep downgrades, or at certain times of day. Previous research and data suggests

that these policies contribute to crashes. These are just a few of the considerations that could be better studied with a nationally representative approach.

A nationally representative LTCCFS would also help increase the overall sample size. The 1,070 cases contained in the LTCCS were not nearly enough for a statistically significant analysis, especially one tied to a study with sweeping policy implications. In reviewing the initial LTCCS, a Rutgers University statistics professor noted, “...the planned study will not produce definitive data, because the sample size of examples of truck crashes is much too small to produce statistically accurate results since the number of possible causations grossly exceeds the number of accident examples to be obtained.” A nationally focused data set will help FMCSA reach a statistically significant number of cases that will result in a more comprehensive and conclusive LTCCFS.

The LTCCFS must employ a consistent method of data collection. OOIDA recommends implementing the MMUCC as the centerpiece for gathering necessary information. The improvement of highway safety can only be achieved as the states provide basic vehicle traffic crash data necessary to inform and direct highway safety efforts. However, state crash data can be hindered due to the lack of uniformity between and within them. With expected testing locations in a number of states that do not have the same data requirements, the MMUCC should provide a basis for a consistent review of all the crashes included in the study. Furthermore, two kinds of analysis, namely “investigative analysis” and “statistical analysis,” should be practiced. Investigative analysis is the most successful approach in identifying the immediate and direct contributors to crashes, while statistical analysis is successful in identifying underlying contributors. In the statistical approach, cause may be defined on the basis of statistical relationship; that is, one can say that a given factor was a causative factor to the extent that the presence of the factor affects the odds of occurrence of a crash.

Given the deficiencies of the original LTCCS, any new study results should not be used in comparison with the previous findings. However, the LTCCS can be used as a roadmap to improve upon its shortcomings. The study’s basic design, the choices of data elements, the sample size, and difficulties in obtaining accurate information combined to limit the ability to identify which factors were related to crash risk. These factors consisted of driver fatigue, driver inattention, driver collision avoidance actions, speed, roadway conditions, driver characteristics, and driver pay and work organization. In short, the limitations of the LTCCS led to misplaced priorities. FMCSA should find opportunities to fill in these data gaps, specifically focusing on the relationship between driver pay, driver turnover, driver training, driver experience, and motor carrier size to crash risk. OOIDA recommends that analyzing connections between driver compensation, training, turnover rates, and experience be clearly stated within the LTCCFS research objectives. In its 2017 Congressionally-mandated review of the Compliance, Safety, and Accountability (CSA) program, the National Academy of Sciences (NAS) recommended that, “FMCSA should investigate ways of collecting data that will likely benefit the recommended methodology for safety assessment. This includes data on carrier characteristics—including information on driver turnover rate, type of cargo, method and level of compensation, and better

information on exposure.”<sup>1</sup> The agency should implement this recommendation into the LTCCFS data collection methodology.

FMCSA must ensure that the LTCCFS is a statistically significant and valid review. The agency should establish protocols and parameters throughout the study process to accomplish this. FMCSA should convene an expert panel that can provide comment on how best to conduct and execute the LTCCFS throughout its duration. The advisory panel should be comprised of academic professionals that have experience in transportation analytics. The NAS panel that performed the CSA review would serve as a valuable model for potential participants. In conjunction with the advisory group, FMCSA should incorporate a true pilot program study that is large enough to clearly indicate whether planned data collection and analysis methods could meet the declared objectives of the study. The pilot study should produce a published report and any recommendations for revisions of the proposed methodology. Additionally, major stages of the LTCCFS should undergo peer review before publication or release.

As the agency commences an updated LTCCFS, they should utilize key resources that can make it as effective and accurate as possible. FMCSA should reflect on previous correspondence from TRB pointing out the flaws of the LTCCS and the improvements that need to be made in any future study. Other suggestions beyond those already mentioned would be instrumented vehicle data collection and developing a variety of supplementary data collection methods by awarding competitively based contracts. OOIDA also believes that using the LTCCFS to determine what crash avoidance capabilities may need to be incorporated in Automated Driving Systems (ADS) that may be provided on CMV platforms in the future is a misguided and premature approach given all the uncertainty surrounding autonomous trucks. This study could be better served by directing focus away from ADS and better analyzing driver training, driver compensation, and driver turnover.

Moving forward, FMCSA must drastically correct the failed structure and methodologies of the initial LTCCS. First and foremost, the agency should rename the project to the Large Truck Crash *Contributing* Factors Study. The rest of the process must be painstakingly thorough which will take a considerable amount of time, but that is essential to producing a statistically valid analysis that can fairly evaluate crashes, identify contributing factors, and help determine effective safety improvement policies and programs.

Thank you,



Todd Spencer  
President & CEO  
Owner-Operator Independent Drivers Association, Inc.

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<sup>1</sup> The National Academies of Sciences, Engineering, and Medicine. 2017. *Improving Motor Carrier Safety Measurement*. Washington, DC: The National Academies Press. doi: <https://doi.org/10.17226/24818>.