Owner-Operator Independent Drivers Association

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Larry Minor
Associate Administrator for Policy
Federal Motor Carrier Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Re: Docket # FMCSA-2022-0003, "Safety Fitness Determinations: Notice of data availability"

Dear Associate Administrator Minor:

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 approximately 150,000 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.

The Federal Motor Carrier Safety Administration's (FMCSA) safety fitness determination (SFD) process has a direct effect on motor carriers' ability to stay in business. Historically, the SFD structure has not been proven as a reliable methodology to properly determine a motor carrier's fitness to operate. Most of SFD's shortcomings relate to the inaccuracy and inconsistency of the data that is collected and analyzed during a safety investigation. These factors contribute to an unreliable system that does not produce uniform or objective safety fitness determinations.

As FMCSA pursues the development of a new methodology to determine when a motor carrier is unfit to operate, the agency must avoid relying on the Compliance, Safety, Accountability (CSA) and Safety Measurement System (SMS) programs. Since their inception in 2010, CSA/SMS have completely failed in their objective to reduce injuries, fatalities, and crashes. This will not change until CSA/SMS incentivizes actual safety performance instead of regulatory compliance.

The August 2023 Safety Fitness Determinations Advance Notice of Proposed Rulemaking sought feedback to determine when a motor carrier is not fit to operate CMVs, such as incorporating driver behavior data, motor carriers' adoption and use of safety technologies in a carrier's rating, and adding more weight to unsafe driving conditions.

SFD should not consider motor carriers' adoption and use of safety technologies in a carrier's rating. The mere adoption and use of safety technologies does not ensure better safety performance. We believe rewarding carriers that simply adopt safety technologies without improving actual safety performance would only benefit motor carriers who can afford costly new technologies. If these motor carriers are rewarded with better safety ratings, then smaller carriers would likely see their safety rating downgraded without any actual change in their safety performance. Driver training, experience, and safety performance must still be valued over the mere installation of safety technologies.

The material information presented in the reports and studies should not be relied upon by the agency in developing a proposed or final rule. We believe the studies contain various flaws that limit their findings. These reports should not be used as a basis to incorporate the adoption and use of safety technologies into the SFD methodology.

- **Bell, Jennifer L., et al. (2017). "Evaluation of an in-vehicle monitoring system (IVMS) to reduce risky driving behaviors in commercial drivers: Comparison of in-cab warning lights and supervisory coaching with videos of driving behavior." Journal of Safety Research. 60: 125–136, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5427714/.**

  The study results showed that all groups experienced a reduction in risky behavior, but that the coaching + instant driver feedback generated the greatest reduction in risky driving. Risky driving was defined by the IVMS vendor. However, it was not well described in the research, neither was it correlated with actual crashes. The study team listed broad parameters in which a driving event would trigger the IVMS to capture a 30-second video (15 seconds before and 15 seconds after the event). During the course of the study, 73,099 video events were captured, however 18% were omitted due to obstructed camera view or had missing values. This left 59,718 fully visible video events. Of these, 55% didn't actually show any risky driving behavior, while the remaining 45% showed some level of driving behavior the vendor considered a safety concern.

  The study presents some interesting findings, but the researchers did not have any demographic information, nor should such a small sampling of two carriers be generalized to the entire trucking industry.

- **Cai, Maio, et al. (2021). "The association between crashes and safety-critical events: Synthesized evidence from crash reports and naturalistic driving data among commercial truck drivers." Transportation Research Part C: Emerging Technologies. 126: 103016, https://doi.org/10.1016/j.trc.2021.103016.**

  The primary objective of this paper was to investigate the association between crashes and safety-critical events (SCEs) among CMV drivers. Naturalistic driving studies (NDS) which have become increasingly more prevalent over the past decade, use SCEs as a surrogate for crashes and thereby, safety, since crashes are very rare events. Dr. Ron Knipling, who has conducted extensive work concerning SCE's, has routinely highlighted the flawed

methodology in NDS, namely that researchers have never validated SCEs and that most SCE rates are driven by traffic interactions and high alertness.[1]

One of the primary flaws in NDS is their small sample size. *Cai et al.*, used a very large data set from a single carrier over the course of a year in an attempt to overcome this problem. The data in the study includes 31,828 truck drivers, 2.3 billion miles driven across the U.S, and 18,740,142 trips. These truck drivers were involved in 34,884 crashes, 239 injuries, and 22 fatalities. The number of crashes seems quite high for a single year. For instance, a large motor carrier with multiple types of operations had 916 crashes in a 24-month period as compared to the 34,884. However, it is important to note that the researchers never explained how they defined a crash.

The study claims to provide statistically robust evidence that SCEs are positively associated with crashes and injuries among CMV drivers, but it had a few major limitations. First, the exact time of the crashes were not recorded, thus the researchers were unable to find which and how many SCEs directly cause crashes, which is a crucial question in this research. Second, the number of injuries and fatalities were not large enough for stratified analysis. Third, the data does not include traffic or weather variables, which are important predictors of crashes. Fourth, the study never explains how it defined a crash. Fifth, it is unknown whether the researchers examined the prevalence of non-preventable crashes or crashes where the trucker was not at fault, as these types of crashes would likely skew the results since they have nothing to do with SCEs. In fact, it is likely that a driver will employ aggressive driving in order to avoid a crash.

Furthermore, the use of NDS is in itself questionable as it has no actual relationship to crashes based on empirical evidence. NDS are based on an outdated, 20th century theory postulated by H.W. Heinrich, an industrial safety engineer who never studied crashes. SCEs are events that do not end in crashes, but are overwhelmingly, harmless kinematic events.

Moreover, the researchers did not control for well-known confounding factors, such as time-of-day, traffic density, roadway type (e.g., Interstates vs. undivided arterials and other local roads), or time awake. Previous research, including major FMCSA sponsored NDS studies, has demonstrated the importance of these confounding factors. No one has shown an analytic link, or provided other evidence, that SCEs represent serious truck crashes. This scientific deficiency has been noted in research needs statements of two different Transportation Research Board (TRB) committees - the Truck and Bus Safety (ACS60) committee and the Safety Data, Analysis, and Evaluation (ANB20) committee.

The National Academies of Sciences (NAS), in its critical review of FMCSA's fatigue research methodologies, specifically rejected the indiscriminate use of all SCEs as surrogates, stating, "Some of these kinematic events, such as hard-braking and swerving to avoid collisions, may be necessary to avoid a collision that was the fault of other drivers and may be due to a driver 's alertness rather than to his or her fatigue (or distraction). Therefore, these events are not necessarily appropriate surrogate outcomes for studies on fatigued

[1]Safety for the Long Haul Inc., Public Comment Letter on Federal Motor Carrier Safety Administration Advance Notice of Proposed Rulemaking Hours of Service of Drivers
(Sept. 2017), https://www.regulations.gov/comment/FMCSA-2018-0248-1753.

driving."[2] In addition, NAS stated that "SCEs include incidents that are and are not fatigue related. For some research purposes, then, only a subset of SCEs is relevant, so methods for identifying the most relevant subset of SCEs for research on CMV driver fatigue need to be determined."[3]

• **Chen, Guang Xiang (2008). "Impact of federal compliance reviews of trucking companies in reducing highway truck crashes." Accident Analysis & Prevention. 40: 238–245, https://doi.org/10.1016/j.aap.2007.06.002.**

The objectives for this study were to assess (1) whether compliance reviews (CRs) were associated with a reduction in number of crashes in reviewed trucking companies, (2) whether the reduction occurred in every sub-group of reviewed trucking companies, and (3) whether the reduction in crashes was sustained over time following CRs. The study concluded that, "FMCSA CR program has an instant and long-lasting positive impact on reviewed trucking companies in reducing truck crashes. The positive impact can be observed in reviewed companies of all kinds, large or small, for-hire or private, unsatisfactory or satisfactory in safety rating." The study team noted five important limitations:

1. The companies selected for CRs may not be a representative sample of the general trucking population and could possibly have a higher risk of crashes than the general population. This observation study could not separate the effects of CRs from the effect of regression to the mean. In other words, extreme outliers tend to regress the mean regardless of any intervention or not.
2. The number of trucks in a trucking company was not available prior to 2003. Thus, crash rates could not be evaluated prior to 2003. The study team therefore assumed that the number of trucks in each group was the same during the study time period, or if there was a change, the direction of change was the same for all groups. In other words, if one group increased its number of trucks over the years, the other groups might also have had an increase in their number of trucks.
3. The year when a carrier was added to the MCMIS census did not always match the year the carrier was established. It might be the year of re-activation, re-organization, or merging in some cases.
4. CRs do not collect data on individual trucks or drivers. Crash risk could not be evaluated at the level of individual driver or trucks, although they are the ones that have crashes.
5. MCMIS crash files are intended to be a census of commercial trucks and buses involved in fatality, injury, or tow-away crashes. However, some states did not report all eligible crashes.

Moreover, it's important to note that this was an observational study, which is prone to bias and provides a lower standard of evidence compared to other types of research. In fact, even the researcher recognized the need for a randomized prospective longitudinal study to overcome these limitations. Chen fails to mention that perhaps some of the results are simply due to the fact that an unsatisfactory rating would be the death knell for small carriers, and that smaller carriers might be more prone to these types of ratings due to a lack of knowledge

[2] https://www.ncbi.nlm.nih.gov/books/NBK384968/
[3] Ibid.

of the regulations compared to larger carriers. These smaller carriers could have showed an increase in their safety performance after understanding the regulation through the CR.

It's also critical to understand that the data contained within this study was collected more than twenty years ago. Not only have collection methods changed since then, but also the accuracy and completion of the state reported data. The data collection for this research started in 1996, when the Federal Highway Administration was the governing agency over CMV enforcement. The change in federal agency jurisdiction alone makes this study and its findings irrelevant as it would be difficult to compare with the system in place today under FMCSA. Finally, it cannot be ignored that the study self-selected the 2003 group as a reference because it yielded a greater reduction in the number of crashes than using the never-reviewed group as a reference.

- **Cicchino, Jessica B. (2017). "Effectiveness of forward collision warning and autonomous emergency braking systems in reducing front-to-rear crash rates." Accident Analysis & 99 (Pt A): 142–152, https://dx.doi.org/10.1016/j.aap.2016.11.009.**

The study focused on the effectiveness of forward collision warning (FCW) and autonomous emergency braking (AEB) systems. While it may present potential insights for lightweight, passenger vehicles, its relevance to CMVs is negligible at best. The primary limitation lies in the selection of study vehicles, which predominantly comprises smaller, non-commercial luxury vehicles weighing 3,200 to 5,200 lbs. The limited sample size of passenger vehicles, specifically medium-sized family cars, fails to capture the operational characteristics and challenges associated with commercial trucking. CMVs are larger and heavier, possess different braking capabilities, and face varied challenges related to stopping distances and maneuverability.

Two critical limitations in the study further cast doubt on its applicability to real-world scenarios. First, the lack of information regarding the status of front crash prevention systems in the study vehicles at the time of the crash poses a substantial constraint. The inability to ascertain whether drivers had engaged or disengaged these systems is a pivotal factor, as the purported effectiveness of FCW and AEB relies on this detail. The absence of data on the system's operational status undermines the study's ability to draw concrete conclusions about the actual influence of these technologies in preventing crashes.

Secondly, the exposure metrics used in the study lack essential contextual factors, such as actual miles driven, traffic conditions, weather, time of year, and time of day. Failure to account for these variables diminishes the study's ability to provide a comprehensive understanding of how FCW and AEB systems perform under diverse and dynamic driving conditions. Exposure metrics solely based on insured vehicle days fall short in capturing the nuanced factors that influence crash rates, making it challenging to generalize the study's findings to real-world driving scenarios characterized by varying environmental and traffic conditions.

• Lotan, Tsippy and Toledo, Tomer (2006). "In-vehicle data recorder for evaluation of driving behavior and safety." Transportation Research Record: Journal of the Transportation Research Board. 1953: 112–119, https://journals.sagepub.com/doi/pdf/10.1177/0361198106195300113.

The paper presents a study on the DriveDiagnostics In-Vehicle Data Recorder (IVDR) system, but several limitations need consideration. First, the sample size of 33 drivers raises concerns about the generalizability of the findings, potentially limiting the robustness of the conclusions. Moreover, the focus on drivers of medium family-sized vehicles is not directly applicable to the trucking industry, highlighting a potential mismatch in vehicle types. The study's temporal scope is also a limitation as it only examines a 5-month period, which may not capture long-term impacts or variations in driving behavior adequately. Additionally, the reliance on safety model data without the inclusion of actual accidents or injuries limits the comprehensive assessment of the system's effectiveness in real-world safety outcomes. Other shortcomings include:

- The researchers do not explain how they arrived at their classification system of cautious, moderate, and aggressive and how this actually relates to crash risk.

- The researchers did not explain how the drivers were selected, who the two companies were that were involved in the study, nor did they provide any demographic information.

- The researchers did not provide information regarding exposure (i.e., how many miles they drove, how many trips they took, or where these trips took place).

- The study was meant to validate a specific product (DriveDiagnostics), nothing more. This begs the question, who paid for this study? Did the developers of DriveDiagnostics have anything to do with the research?

Collectively, the flaws of these studies underscore their limitations. FMCSA should not rely upon this research in developing further regulatory action related to Safety Fitness Determinations.

Thank you,

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