

TRB Truck and Bus Safety Carrier Safety Management Subcommittee, ACS60(1) Meeting Minutes

1) Welcome and Introductions

- a. 20 attendees provided a brief introduction (name and affiliation) and provided a fun fact about themselves.
- b. Subcommittee chair conducted a headcount for number of attendees.
- c. Sign-in for the subcommittee meeting was done through the provided QR code, as encouraged by the subcommittee chair.

2) Updates/reminders on NAS, event policies, and subcommittee importance.

- a. Provided updated/reminder on NAS Policy on Harassment and Bullying.
- b. Provided information on Emergency Procedures for Marriott Marquis.
- c. Encouraged subcommittee attendees to sign-in via the provided QR codes (located on the screen and in the room).
- d. Subcommittee chair prompted attendees to consider the importance of the subcommittee through the presentations and discussions. The attendees were also prompted to consider if the subcommittee could be combined with another subcommittee.

3) Subcommittee Presentations

a. *Commercial Motor Vehicle Crash and Safety Data Overview*

- Jessica Powell, Statistician, FMCSA (jessica.powell@dot.gov)
- Provided update on 2022 fatality trends.
- Jessica indicated that in 2022 there was the largest number of crashes since the inception of FMCSA, but when accounting for exposure (crash rate), this is not the case.
- It was emphasized that fatality rates are based on total VMT, not just truck VMT.
- Pedestrian fatalities as a result of truck-pedestrian crashes decreased in 2022.
- Truck occupancy fatalities increased in 2022.
- Jessica presented driver-related factors and emphasized that driver-related factors are vastly underreported. Specifically, about 2/3 of the data did not have driver-related factors information.
- Jessica and her colleague presented a walk-through of the FMCSA A&I system.

b. *Unsafe Driving Behavior, Item Response Models, and Motor Carrier Crash Incidence*

- Walter Ryley, Associate Teaching Professor, Bowling Green State University (wryley@bgsu.edu)
- Walter presented a study that addressed specific needs from a 2017 FMCSA study; specifically: (1) FMCSA needs to better understand the statistical features of existing data sufficiency conditions, intervention thresholds, and percentile ranking systems, and (2) Explore the applicability of item response theory (IRT) to measure motor carrier safety.
- The study generated unsafe driving IRT scores and percentile rankings for all intrastate carriers.
- Walter explained the need to control for state-level effects, which was based on data availability through MCMIS.
- Roadside inspection reports were used to develop unsafe driving safety metrics.
- Walter explained that additional data sources were used, including census data, crash data, and intrastate summary reports.
- The additional data was used to analyze the relationship between developed safety metrics and the number of crashes experienced by motor carriers.
- The presented study focused on carrier that experienced at least three inspections in the past two years that resulted in at least one unsafe driving violation each, and at least of those must have occurred within the last 12 months. Carriers were then ranked and the top 35% of unsafe driving scores were the target for interventions.
- Walter found that meeting the current intervention threshold via the official unsafe driving score is associated with 96% more crashes (BASIC). On the other hand, meeting the current intervention threshold via the unsafe driving IRT score is associated with 78% more crashes.
- The study found that the official unsafe driving score percentile rankings arranged carriers in descending order of crash risk.
- The study also found that FMCSA's existing unsafe driving metrics and percentile rankings are more effective than IRT scores, where the baseline IRT did not perform well. It was recommended to not consider IRT scores moving forward.

c. *On the Road Safety: Best Practices for Trucking Success*

- Tim Kordula, Safety and Training Development Director, Veriha Trucking, Inc.
- Tim gave a presentation as if the audience were new drivers in training.
- The presentation emphasized the importance of establishing a safety culture and changing driver behavior.
- Tim discussed hiring practices, and how interview methods/questions and quizzes for new drivers on current regulations can be helpful.
- Tim presented on the importance of behavioral observations and safety audits, where conducted regular safety audits of all drivers allows carriers to track behaviors and practices (e.g., speed compliance, seat belt usage).

- Drivers should immediately report incidents, then consider the “why, why, why, why, and why” root cause analysis. Should an event occur, as much data as possible should be collected (e.g., video data, maintenance data, physical evidence).
- Tim talked about the usefulness of on-board cameras and inside cameras. It was mentioned that drivers were at first hesitant, but situations in which the cameras helped exonerate drivers in incidents have helped other drivers to adopt this technology. Tim strongly emphasized that this technology is only used in the case of an event and is not being used to continuously watch the driver.
- Tim discussed the importance of remedial training and follow-up in the context of driver retention and training new drivers.
- The importance of driving simulators was stated and the role they play not just in remedial training, but for new truck drivers before they even get into a truck. It was acknowledged that the cost of simulators can be equivalent to the cost of a new truck, which may be difficult to sell to carriers. Therefore, showing carriers what the return-on-investment can be with simulators in carrier companies that do not have CDL schools can be strong tool show the importance of simulators.
- Tim concluded by emphasizing the importance of driver training and education, and not just for truck drivers, but for the public at-large.

4) Open Discussion, Research Needs, and Next Steps

a. FMCSA Presentation:

- The need for additional truck-pedestrian research that focuses on location typologies, crash-specific characteristics, and pre-crash behavior/vehicle movement.
- Discussion about data consistency and data checklists due to different states collecting different data. This lead to a discussion on potential research to identify methods and/or practices to “standardize” crash data (to the extent possible).
- Discussion on what data is used for MCMIS and how often that data is updated. FMCSA indicated data from states is used and that the update schedule depends on the type of data.

b. Walter Ryley Presentation:

- Discussion regarding unsafe driving behaviors being a good metric for rating the safety of motor carriers, as these are occurring on the roadway while drivers are operating. Research that can collect this data and apply safety methodologies can better understand forecast crash behavior. It was also emphasized further during this discussion to not move forward with IRT, but would similar work that included different characteristics confirm this finding?

- There was a discussion on what additional metrics can be considered moving forward? Would the addition of these metrics improve the IRT results, or would results remain fairly consistent?
- Walt was asked about modeling approaches and stated that the application of more complex models with more complex interactions and with more data could provide additional insights.
- Walt, then the subcommittee as a whole, discussed the importance of using hours-of-service data in this type of analysis. Can researchers partner with FMCSA and third-party telematics companies that have hours-of-service to answer this question?

c. Tim Kordula Presentation:

- Discussion on what the current perspectives are of ADAS systems from motor carriers. Can there be research to answer this question? This discussion led to the impact these systems have on insurance rates for motor carriers, and what type of research can be conducted to answer this question.
- Research to assess best practices of motor carrier culture and safety behavior. What are practices that can widely implemented and what are some practices that can be improved? This discussion led to specific driver-related factors, such as following too close and speeding, and conducting research to better understand how these factors may be related to motor carrier safety culture and behavior. This discussion concluded by noting that research to determine how this would impact or be implemented by smaller carriers should be conducted.
- A notable takeaway from the presentation was the use of in-board cameras, which led to a discussion on carrier and driver perceptions of such technology. What is the current state of perception, and can research help answer this question? Additionally, “success” stories have helped drivers buy into the idea of in-board cameras—can research leverage these stories to change negative perceptions of this technology?
- A discussion on changing behavior of passenger vehicles was had, where it was noted that research investigating young driver education, outreach, and registration requirements can be conducted to provide insight. It was also mentioned that research regarding the behavior of passenger vehicles around freight vehicles can lead to information that can be leveraged by motor carriers, as well as agencies to target unsafe driving behavior of those driving around a truck.
- The final discussion consisted of the application of video telematics, and that there is currently a gap between research, practice, and FMCSA. Is there an opportunity for a collaborative research effort that can help bridge this gap?

d. Importance of Subcommittee

- After prompting attendees to think of this through the duration of the subcommittee meeting, there were some key points made regarding the importance of this subcommittee.

- Attendees indicated that there is a key distinction between the Carrier Management Safety subcommittee and other subcommittees, specifically that it focuses on the motor carriers.
- Attendees also indicated that the Carrier Management Safety subcommittee holds a specific niche that the other subcommittees do not.
- In addition to the importance of this subcommittee, there was discussion on reviving certain committees based on the material presented. The most notable was to revive the Driver Training subcommittee, and potential integrate with a Driver Behavior subcommittee. This received strong interest from several attendees.
- The final point made was related to potential collaboration with the Trucking Industry Research Committee.