

Examination of publically available data from FMCSA on CSA Scores

The OOIDA Foundation (OOFI), which is the research and educational arm of OOIDA, conducted an analysis of publically available information on FMCSA's Compliance, Safety, and Accountability (CSA) Safety Measurement System (SMS) website¹ in December 2016 in order to present data that represented the real-world safety outcomes of electronic logging devices (ELDs) and speed limiters (SLs).

As part of the analysis, the OOFI examined the CSA SMS scores of large carriers that had both ELDs and SLs installed, as well as those carriers that did not have these devices installed, which OOFI separated into two cohorts (asset carriers and non-asset carriers). OOFI reviewed the following data in order to identify the correlation between ELD and SL equipped fleets with improved safety in HOS compliance, in speeding violations, and in crashes when compared to non-ELD equipped and non-speed limited fleets. The examined data included:

- Percentages of Crashes per 100 power units (PU)
- Percentage of Crashes per 100 drivers
- Percentage of Crashes per 100 million vehicle miles travelled (VMT)

In order to select carriers to examine the safety outcomes of ELDs and SLs, OOFI first selected large motor carriers that had been active in pursuing a mandate for the installation of ELDs and SLs. These large carriers are classified as asset carriers. Secondly, OOFI focused on carriers that did not have ELDs and SLs installed, which were classified as non-asset carriers. These carriers predominately utilized owner-operators. Only the largest non-asset carriers were selected in order for the two cohorts to be comparable.²

Speeding Violations

The premise of SLs is that by reducing the highest possible speed a CMV may travel, speeding violations, along with crashes and the severity of crashes, would be reduced. Therefore, by utilizing this premise held by safety groups, large carriers, it would be reasonable to assume that carriers equipped with speed limiting devices would have fewer speeding violations. However, OOFI discovered that regardless of the CSA SMS score, which showed that the average non-asset carrier had a worse performance measure in the Unsafe Driving BASIC, speed limited carriers often had a similar rate of speeding violations in construction zones.

In order to assess the data, OOFI focused on the rate of speeding violations in construction zones per 100 PUs and MVMT for each of the motor carriers in CY 2015. For the asset and non-asset carriers, the average violation rate per 100 PU was 0.17 and 0.22, respectively, while the average violation rate per MVMT was 0.02 and 0.03.

Hours-of-Service Compliance

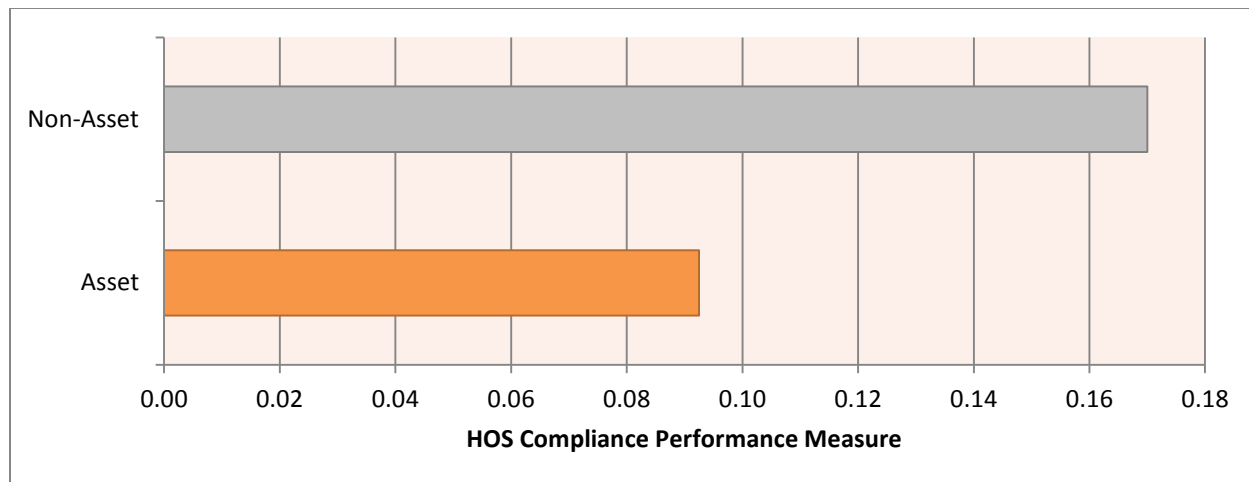
OOFI utilized the CSA SMS scores in order to evaluate HOS compliance amongst the asset and non-asset carriers. The HOS BASIC indicated that the asset carriers had a better safety record. The HOS BASIC indicated that the asset carriers had a better safety record. The average percentile score for the asset carriers was 0.09, while non-asset

¹ <https://csa.fmcsa.dot.gov/>

² Dart uses or is beginning to use EOBRs for a majority of their owner-operated trucks. Dart has stated that they do not demand these from their owner-operators unless they show a pattern of non-compliance on their logs which would be reflected in their CSA scores.

carriers had an average score of 0.17, thus demonstrating that asset carriers are more compliant with the HOS regulations. However, according to the premise behind FMCSA's study, this should have resulted in a better safety performance in terms of reduced crashes.

Chart 1: HOS Compliance Score between Asset and Non-Asset Carriers



In order to examine the Agency's theory, OOFI compared the crash rate per 100 PUs and per MVMT between the asset and non-asset carriers for CY 2015. OOFI discovered that the asset carriers frequently had a higher crash rate. Overall, the average crash rate per 100 PUs was 5.2 for asset carriers and 3.5 for non-asset carriers, whereas the crash rate per MVMT was 0.55 and 0.43, respectively. Although the asset carriers had a better HOS Compliance performance measure, their crash rate was 33% higher in terms of PUs and 22% higher in terms of miles traveled, which invalidates the Agency's premise behind the mandating of ELDs.

Crashes

In 2014, FMCSA updated the CSA SMS webpage so that the BASICS appear from left to right based upon their correlation to crash risk. The first four categories are Unsafe Driving, Crash Indicator, HOS Compliance, and Vehicle Maintenance. The Crash Indicator BASIC is not made public.

Upon examining the data from the CSA SMS webpage, the Unsafe Driving BASIC unveiled that non-asset carriers have a better safety performance, which is also confirmed by the actual crash rate. Conversely, the HOS Compliance and the Vehicle Maintenance BASICS both indicated that asset carriers have a higher safety rating, but yet as demonstrated previously, asset carriers have a higher crash rate. The data highlights serious concerns about the accuracy of the CSA SMS scores.

Furthermore, the research certainly brings into question the safety outcomes of ELDs and SLs and their usefulness as a safety technology. Instead, the analysis opens the possibility that the utilization of ELDs and SLs impose a safety hazard rather than a safety benefit, especially when considering in conjunction the most common compensation method, cents per mile. This may increase the attitude that drivers are operating against a clock.

The following charts show the CSA SMS percentile score for each carrier compared to the actual crash rate per 100 PUs. For the charts, OOFI focused on three of the first four BASICS, Unsafe Driving, HOS Compliance, and Vehicle Maintenance. The Crash Indicator BASIC was not examined because, as previously mentioned, its score is not made public. The asset carriers are highlighted in gray, while the non-asset carriers are highlighted in orange.

Chart 2: Unsafe Driving BASIC compared to crash rate per 100 PUs

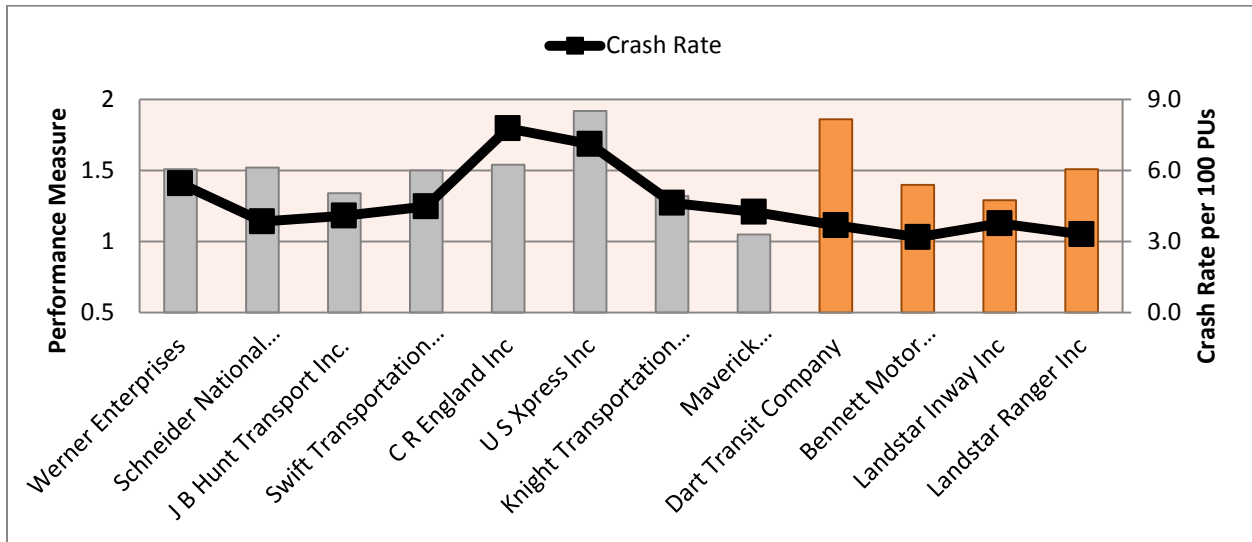


Chart 3: HOS Compliance BASIC compared to crash rate per 100 PUs

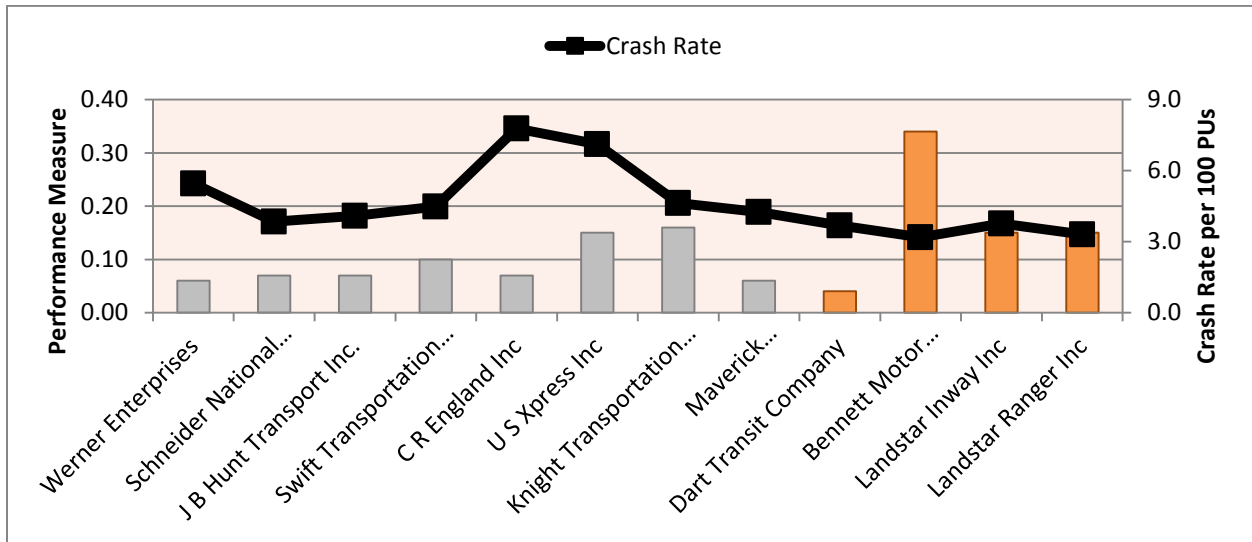
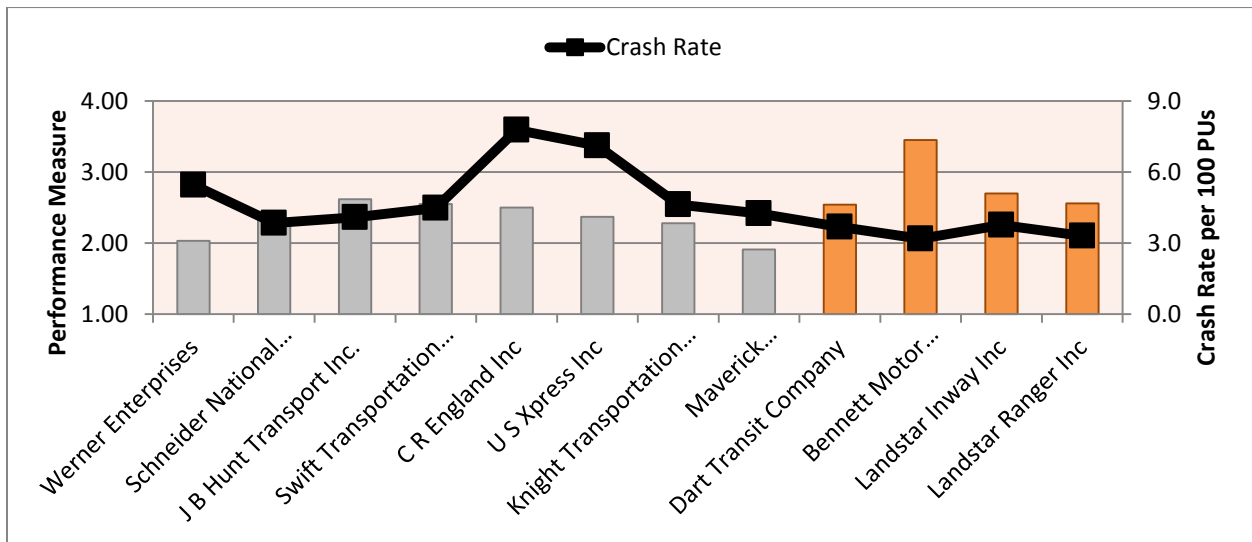


Chart 4: Vehicle Maintenance BASIC compared to crash rate per 100 PUs



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