



OOIDA Foundation
RESEARCH • SAFETY • ECONOMICS

WHITE PAPER

Review of FMCSA Studies

1/26/2015



Contents

Introduction 2

 Large Truck Crash Causation Study 2

 Field Study on the Efficacy of the New Restart Provision for Hours of Service: 2

 Financial Responsibility Requirements Report: 4

 SafeStat Effectiveness Study Update (March 2004): 4

 CSMS Effectiveness Test (ET) by BASICS: 6

 Safety Impacts of Speed Limiter Device Installations Phase II:..... 6

 2010 Hours of Service of Drivers Notice of Proposed Rulemaking (NPRM) 7

 Evaluating the Potential Safety Benefits of Electronic Hours-of-Service Recorders Final Report:..... 8

 2010 Electronic On-Board Recorders and Hours of Service Supporting Documents NPRM 9

 Attitudes of Truck Drivers and Carriers on the Use of ELDs and Driver Harassment: 11

 Wireless Roadside Inspection Phase II – Final Report 14

 Potential Reduction in Large Truck and Bus Traffic Fatalities and Injuries using Lytx’s DriveCam Program:..... 15

 Onboard Safety Systems Effectiveness Evaluation Final Report 16

 Cross-Border Trucking Pilot Program..... 16

Conclusion..... 18

Introduction

The primary mission of the Federal Motor Carrier Safety Administration (FMCSA) is to reduce crashes, injuries and fatalities involving large trucks and buses. In pursuit of its mission, the Agency has conducted numerous studies to support their proposed rulemakings. However, the OOIDA Foundation, while examining and analyzing FMCSA's research, has discovered a pattern of manipulation and falsification of data. The following paper includes a few examples, along with a brief synopsis of each study.

Large Truck Crash Causation Study

The LTCCS is frequently utilized by the FMCSA to justify regulatory actions. However, for being a foundational study for the Agency, it is subject to significant methodological errors that result in flawed conclusions:

- The name Large Truck Crash *Causation* implies that the study shows actual causes of large truck crashes. However, it only shows categories of factors influencing crash risk, something quite different the “cause” of an accident. For instance, under the LTCCS, if a truck legally makes a left-hand turn and is struck by an oncoming vehicle that ignores a stop light, the truck (not the car) is assigned as having taken the action (the legal turn) that increased the risk of the accident.
- The study's definition of large trucks (all vehicles over 10,000 lbs.) includes large pick-ups, vans, dump trucks, vocational trucks and traditional heavy-duty trucks and tractor trailers in the same category. In conjunction with this problem is the small sample size even when including the various “large trucks” mentioned. **The 1,127 cases included in the LTCCS is a large file for investigation but it is a small sample for statistical analysis, especially one tied to a study with significant policy implications.**
- The Transportation Research Board reviewed the LTCCS and found significant shortcomings in the study's methodology, conclusions, and presentation of results.¹ FMCSA took little action to address these concerns.

Field Study on the Efficacy of the New Restart Provision for Hours of Service:

“One of the largest naturalistic field studies to measure fatigue...” “Findings included...constitute evidence in support of the efficacy of the new restart rule.”

- MAP-21 required that the field study be “representative of the drivers and motor carriers regulated by the hours of service regulations” but the study looked at only 12-day's worth of data for 106 drivers out of approximately 1.6 million.
 - The selection of drivers was supposed to represent the trucking industry, especially those segments that would be most impacted by the provision. Of the 106 participating drivers, 103 were company drivers while the remaining 3 were owner-operators. Again, within the 106 drivers, there were 48 intermodal drivers, 32 dedicated drivers, 13 flatbed drivers, 7 refrigerated drivers, and only 3 van truckload drivers. The 34-hour

¹ http://onlinepubs.trb.org/onlinepubs/reports/tccs_sept_2003.pdf

restart provision is most likely to affect long haul truckload carriers and drivers, which primarily haul dry van trailers, yet they represented less than 3% of the drivers in the study.

- The 34-hour restart provision was not designed for local drivers, but the largest population of drivers selected for the study were local drivers, which represented over 41% of the drivers, thus skewing the results.
- ATRI researchers reviewed the FMCSA 2014 field study report and identified a variety of technical issues related to the following: 1) research design flaws; 2) validity of measurement techniques and interpretations; and 3) data conflicts within and across the study.²
 - Participants were assigned to two main duty cycle groups. One group had a minimum of one 34-hour restart with one 1 to 5 A.M. overnight period, while the second group had no upper limits on rest duration. In other words, it could have been several hours or several days of rest.
 - The stated outcome of lapses of attention as measured by the Psychomotor Vigilance Test (PVT), was that there were significant differences in the two groups. This is a test of response time and accuracy. Participants used a cell phone application to respond. However, there was no consideration as to the experience with cell phones or the test. Hence, there was no baseline established for each driver to indicate if one group already had a quicker response time than the other group for comparison purposes. The test was given 3 times per day for 3 minutes.
 - The findings showed that one group, the one that had two nighttime periods with two periods including the 1-5 a.m. period, had quicker response times than the other group with a mean difference of 355 milliseconds or 0.355 of a second. There was no attempt in the study to equate this time difference with safety.
 - While the PVT has been validated as a legitimate tool for testing response time when done over 10 minutes, there are serious concerns if the same validity occurs over 3 minute intervals.
 - The study stated that those drivers utilizing just one nighttime restart of 1-5 a.m. had a greater lane deviation than the other group. While most of the data was determined to be unusable, the results showed a deviation between the two groups of 1/10th of a centimeter.
 - The study concluded that a restart that required 2 nighttime rest periods including the 1-5 a.m. time period allowed for more recuperative sleep. However, the difference between the two groups was 6 minutes per 24 hour period. The difference of an extra 6 minutes of sleep certainly does not warrant a conclusion that the added time (6 minutes) allows for more recuperative sleep.

² "Technical Memorandum: Assessment of the FMCSA Naturalistic Field Study on Hours-of-Service Restart Provisions," ATRI (April 2014)

- VTTI was the Prime Contractor but subcontracted the work to the Sleep and Performance Research center, Washington State University, Spokane, WA and Pulsar Informatics Inc., Philadelphia, PA. Dr. Martin Walker was the Contracting Officer for FMCSA.
 - In any valid research it is advisable to use authors that will be unbiased and unencumbered of personal gain from results. This is not the case as both a sleep research center and Pulsar Informatics, the developer and marketer for the PVT Psychomotor Vigilance test, have potential conflict of interest in performing this research. This introduces potential confirmation bias in the research findings and methodology.

Financial Responsibility Requirements Report:

“FMCSA has determined that the current financial responsibility minimums are due for re-evaluation...Overall, the study’s findings provided preliminary support for increasing the current levels of financial responsibility.”

- FMCSA’s own study states, “It was estimated that catastrophic crashes, resulting in injury, death, and/or property damages that exceed the current minimum levels of financial responsibility, comprised less than one percent of all CMV crashes.”
- FMCSA’s study utilized three reports from the following organizations to support its conclusions: Pacific Institute for Research and Evaluation (PIRE), the Trucking Alliance, and the American Trucking Association.
 - PIRE’s report did not include any safety outcomes or crash data to formulate their conclusion, but instead looked at tort litigation, US commercial airline insurance, and value of statistical life.
 - The Trucking Alliance’s study, conducted by BWR&B, states, “In our opinion, this report does not constitute a Prescribed Statement of Actuarial Opinion as defined by the American Academy of Actuaries. It is an informal analysis and report intended only for the use of Trucking Alliance and its membership. The data sets were accepted as provided without audit or modification. Any formal actuarial analysis of these settlements would require additional review and possible augmentation of the database. The calculations shown here should not be construed to constitute a formal actuarial analysis.”
 - ATA’s study is actually four PowerPoint slides stating that the average cost of a claim is \$11,229. Further, it states that there is only a 1.4% chance a claim will exceed \$500,000, and 0.73% chance it will exceed \$1 million.

SafeStat Effectiveness Study Update (March 2004):³

“The Volpe evaluation found that the carriers initially identified as at-risk by SafeStat, when taken as a group, experienced a 112 percent higher crash rate in the follow-up period, than the carriers not

³ http://ai.fmcsa.dot.gov/CarrierResearchResults/TextFiles/Final_SS_Effectiveness_03_18_04.txt

identified as “at-risk” by SafeStat (52.0 versus 24.6 crashes per power unit). In February 2004, the U.S. Department of Transportation Office of the Inspector General (OIG) issued an audit of SafeStat.”

- SafeStat was developed by the Volpe National Transportation Systems Center in the mid-1990’s to measure the relative safety fitness of commercial motor vehicle operators and to guide the deployment of resources to focus on carriers posing the greatest safety risk. SafeStat combined information on crashes, roadside inspections, traffic violations and compliance reviews from the previous 30 months of data in order to produce an overall SafeStat score for carriers with sufficient safety data.⁴ Volpe updated their evaluation in 1998 and confirmed that the SafeStat system successfully identified high-risk carriers.
- Nonetheless, the Oak Ridge National Laboratory (ORNL) study, using the same data, showed that 90% of the carriers identified as “at-risk” by the Volpe SafeStat algorithm **did not** have a high crash risk in the follow up period.⁵
- ORNL made the following comment on Volpe’s methodology, “Statistical models can be used to select coefficients (weights) for various measures based on the relationship to collision risk in the historical data. This approach would **replace expert judgment** with objective statistical methods (**Emphasis added**).”⁶
- The Oak Ridge study found the following problems with the Volpe’s SafeStat evaluation:
 - 90% of the carriers identified as “at-risk” by the Volpe SafeStat algorithm did not have a high crash risk in the follow-up period.
 - The SafeStat algorithm is about twice as effective as random selection in identifying high-risk carriers.
 - The Volpe SafeStat algorithm does not adequately address the inherent variability in the scores when identifying high risk carriers.
 - Small carriers are statistically more variable and thus have a tendency to have both higher and lower crash rates merely because of random variation.
 - Large carriers represent greater potential for reducing crash frequency.
- ORNL stated, “[h]owever, as a result of weaknesses in the data reported by states, SafeStat rankings are geographically biased against carriers operating in states that provide more complete data, while weaknesses in the data provided by carriers can produce errors in SafeStat calculations and cause high-risk carriers to be missed.”
- In addition, “[be]cause carrier safety data and the model’s rankings are publicly disclosed, a higher standard of quality must be met to ensure fairness to motor carriers who may lose business or be placed at a competitive disadvantage by inaccurate SafeStat results. FMCSA will need to demonstrate timely improvements if it is to continue to publicly disclose carrier results across all SafeStat categories.”⁷

⁴ Ken Campbell et al., *Review of the Motor Carrier Safety Status Measurement System (SafeStat)*, Center for Transportation Analysis Oak Ridge National Laboratory (Oct 2004).

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

- Instead of making improvements to SafeStat, FMCSA unveiled CSA 2010, which has the same reoccurring problems, and instead of learning from the mistakes of SafeStat, the Agency encouraged shippers and brokers to look at faulty data in making choices on carriers.

CSMS Effectiveness Test (ET) by BASICS:

“In conclusion, these three analyses provide solid evidence that the CSMS as a tool is effectively supporting FMCSA in its mission. These results also show that CSMS is identifying carriers with higher future crash rates across the spectrum of the carrier sizes and over varying amounts of carrier safety data.”

- It should be noted that the Volpe National Transportation Center, which is the very same organization that operates FMCSA’s CSMS and Compliance, Safety, and Accountability (CSA) program, conducted the ET.
- The study’s criteria eliminated a large portion of smaller carriers from the analysis, while it also improperly measured for exposure by primarily looking at crash rates per 100 power units instead of by vehicle miles traveled despite its limitations.
- The peer review of the study noted, “in restricting their (Volpe) analysis to only a few elements of this data set (without considering other variables in the data set or other data sets that contain information on the characteristics of carriers), the nature of their analysis is limited and does not necessarily serve the purpose of determining the effectiveness of the CSMS.”
- The peer review also stated:
 - “There are clearly BASIC elements that have little/no predictive power.”
 - “The conclusions are incredibly limited (one paragraph of the entire report). The authors assert that the analyses “provide evidence that the CSMS is effectively supporting FMCSA in its mission...” I do not see that in this study. There is no measure of whether interventions have actually decreased crash rates...The number of carriers identified as “high risk” contains a very small portion of the total crashes.”
- FMCSA’s own data showed that the carriers that did not have a CSA safety score accounted for over half of the total crashes.

Safety Impacts of Speed Limiter Device Installations Phase II:

“The findings showed strong positive benefits speed limiters (SLs).”

- This study was published in 2012 as a “second” final draft; the first final draft was released in 2010. It is important to note that there was no new data collected, nor was there any new research conducted in the intervening time span.
- In the first final draft the study stated, “The analysis found that the cohort without SLs had a significantly higher crash rate. However, because of data limitations and data quality, the research team could not definitely attribute the effect to the presence of an active SL.”
- The second final draft changed their statement to, “The findings showed strong positive benefits for SLs.” The other primary omission between final drafts was a list of confounding factors and limitations of the study that were excluded from the second final draft.

- Steven L. Johnson, a professor at the University of Arkansas and one of the co-authors of the original final draft, wrote a white paper demonstrating a number of limitations of the report’s findings, including:
 - four fundamental methodological issues that affected the validity of the study,
 - an exclusion of exposure (trip length) between the two cohorts,
 - the stability and bias of the data,
 - problems with the statistical model, and
 - an exclusion of data that had a very large impact on the results and conclusions.
- Johnson’s white paper concluded that the data utilized in FMCSA’s study did not find a statistical significance in the reduction of crashes due to speed limiters.
 - It is important to note that in response to Dr. Johnson expressing a desire to write a dissent for the Speed Limiter Study, FMCSA sent a warning letter advising him that he should not do so.

2010 Hours of Service of Drivers Notice of Proposed Rulemaking (NPRM)

“FMCSA *believes* that the HOS regulations proposed today, coupled with the Agency’s many other safety initiatives and assisted by the actions of an increasingly safety-conscious motor carrier industry, would result in a significant improvement in safety (*emphasis added*).”

- Unfortunately, the practice of “we believe” science has been evident in a number of FMCSA studies and research. Edgeworth Economics published a report on the Regulatory Impact Analysis (RIA) that the Agency utilized to support the HOS rule entitled *Review of FMCSA’s Regulatory Impact Analysis for the 2010-2011 Hours of Service Rule*. The report revealed data manipulation conducted by the Agency and stated that, “many of FMCSA’s new approaches rely on miscalculation of available data, use of outdated information, or lack empirical evidence support entirely. FMCSA also makes a number of errors in its calculations which serve to further overstate its findings.⁸”
- In the RIA, FMCSA relied largely upon studies and data that were collected before the then current 2004 HOS rules took effect. Therefore, the Agency misplaced reliance on outdated statistics, and that coupled with erroneous assumptions about the industry resulted in a significant overstatement of economic benefits from the proposed rule.
- The Agency’s NPRM included many key changes to the HOS regulations, such as a restriction of daily on-duty time to a maximum of 13 hours, a reduction of daily driving time to a maximum of 10 hours, and a requirement that the “restart” period include two consecutive off-duty periods from 12 am to 6 am. FMCSA estimated the proposal would generate net benefits of \$380 million annually. However, the Edgeworth research found that FMCSA overstated the net benefits of the proposed rule by approximately \$700 million annually. The report determined that proposal would not generate a net benefit, but a net cost of \$320 million annually.⁹

⁸ Edgeworth Economics, *Review of FMCSA’s Regulatory Impact Analysis For the 2010-2011 Hours of Service Rule*, American Trucking Associations (Feb 2011), pg. 2.

⁹ *Ibid*, pg. 1-3.

Evaluating the Potential Safety Benefits of Electronic Hours-of-Service Recorders Final Report:

“The results show a clear safety benefit, in terms of crash and HOS violation reductions, for trucks equipped with EHSRs.

- The final data utilized for the study included eleven carriers, which according to the study, represented “small, medium, and large carriers.” However, the study did provide a caveat that the research was “skewed toward large, for-hire carriers and may not represent the overall U.S. trucking population.” Upon further review of the eleven participating carriers, nine possessed over 1,000 trucks while the remaining two operated between 100 and 500 trucks. Noticeably, in no way do the eleven carriers represent small or even medium sized motor carriers, as 97% of all fleets are twenty trucks or less, and 90% of all fleets are six trucks or less.
- Instead of simply utilizing DOT-reportable crashes, the research team added three other categories, which the team developed by taking datasets directly from carriers instead of only relying on FMCSA data. According to the study, there were a couple of limitations associated with the carrier provided data.
 - First, the study admitted, “one issue the research team experienced was that the criteria for recording crashes varied considerably among carriers. Some carriers recorded minor crashes (e.g., scratching the truck body in a parking lot) that were often omitted by other carriers.”
 - Furthermore, the research team admitted that the crash files obtained from the participating motor carriers might have contained errors that could have influenced the evaluation, as there was no way to determine the veracity of the crash files.
- The research team originally collected all the data (i.e., data on CMV crashes, vehicles, HOS violations, and carrier demographics) from twelve large motor carriers, but the study stated that one carrier systematically, though inadvertently, targeted new drivers with ELDs, therefore that carrier was excluded from the analyses. Nevertheless, the study does not adequately address why this should be a serious issue. The purpose of the study is to evaluate the potential safety benefits of ELDs, which would include all types of drivers, new or experienced. The carrier should not have been excluded from the analysis, as thousands of new CMV drivers enter in to the trucking industry every year.
 - Originally, the data collected from all twelve carriers included 253,227 truck years, 180,023 crashes, and 1,889 HOS violations before it was filtered. After the twelfth carrier was excluded the remaining data for the eleven carriers included a total of 224,034 truck-years, 15.6 billion miles traveled, 83,943 crashes, and 970 HOS violations. In particular, almost a hundred thousand crashes were removed with the exclusion of one carrier.
- The study did not find any safety benefit between EHSR and non-EHSR carriers for US DOT-recordable and fatigue-related crashes as the reduction in crash rates was so small that it was not significant. The study’s premise behind the safety of EHSR use is to increase HOS compliance, which in turn reduces driver fatigue, resulting in increased on-road safety.

However, if the results of the study detected no safety benefit for DOT-recordable crashes and fatigue-related crashes, then the research team's premise was false and was not valid.

- The research team collected HOS violation data from each of the participating carriers. However, the research team discovered that some carriers collected internal HOS data, whereas others did not, similar to the manner in which carriers collected crash data. Nonetheless, instead of attempting to unify the HOS data as the research team did with the crash data, they instead turned to FMCSA's Safety Management System (SMS) online web page. This is a perfect example of how FMCSA's research can be hypocritical in its approach.
- The study claimed that final datasets included 970 HOS violations over a 5-year period, which appears incredibly low considering a single carrier such as Swift Transportation (US DOT 54283) had 841 HOS violations in only a two-year period. The following definitions were utilized in the study to determine non-driving-related HOS violations; notice that there is no inclusion of on-board recording device related violations, such as 395.15(c) Onboard recording device improper form and manner.
 - Driver's RODS not current,
 - Log violation (general/form and manner),
 - Driver failing to retain previous 7 days of logs,
 - False report of driver's RODS,
 - No driver's RODS, and
 - No log book.
- Other Limitations include:
 - A factor that was not included in the retrospective cohort study was driver characteristics, which might have affected the crash rate. (FMCSA routinely quotes research showing that driver error is the single leading cause for over 80% of all crashes, yet the study does not take in to consideration driver characteristics.)
 - No information on the functionality of the EHSRs. (The research team never actually checked to see if the EHSRs were functioning properly.)
 - It is possible that carriers systematically targeted problem drivers/operations with EHSR installation.
 - During analysis it was determined that a large percentage of VINs did not match the VINs in the dataset, thus admitting it may have affected the HOS violation results. (The research team could not match a large percentage of trucks to the crashes or HOS violations yet they still made their projections.)

2010 Electronic On-Board Recorders and Hours of Service Supporting Documents NPRM

"FMCSA recognizes that the *potential* safety risks associated with HOS violations are such that mandatory EOBR use for a broader population *might* be appropriate (*emphasis added*)."

- In the NPRM, FMCSA utilized outdated information from before the 2004 HOS regulation to influence the rulemaking. It is difficult to validate the conclusions of any study with such obsolete data, yet the Agency has done so in their pursuit of an EOBR mandate.

- FMCSA altered data on fatigue to better suit their agenda. For example, the Agency stated that fatigue is a factor in 13 percent of CMV crashes. However, it is important to note that the Agency revised the actual percentage of crashes that are fatigue related “the 7% limited the attainable safety benefits from any changes in the HOS rules or improved enforcement of those rules.” In other words, the fact that 7 percent of crashes were fatigued related did not meet FMCSA’s criteria, so they raised the percentage of fatigue to 13 percent. The Agency attempted to justify the alteration by saying it was based on data from the LTCCS and public comments, but the LTCCS showed that only 2 percent of large truck drivers were judged to be fatigued at the time of the crash.
- Studies conducted by Cambridge Systematics, Inc. at the request of FMCSA concluded:
 - There has been no documented improvements in compliance or safety in carriers that use EOBRs.
 - “Even the most effective on-board technology will not enable regulators to determine how drivers have conducted themselves while they are off duty and/or on duty, not driving. Most on-board devices were not developed to provide this functionality; however, this is critical because research suggests that the amount and/or quality of sleep that drivers get while they are off duty is a key safety factor.”
- To determine the effectiveness of the NPRM, FMCSA chose to utilize data taken from carriers who had been required to use EOBRs because of their continual HOS violations, thereby creating a bias that skewed the true effectiveness of the technology.
- FMCSA affected the results and conclusions of the NPRM by adjusting for “form and manner” violations. The NPRM stated, “The Agency is uncertain about the degree to which “form and manner” violations are the result of simple negligence or mask other time limit violations, **but believes** the latter reason is prevalent enough to justify its adjusting the estimate of EOBR effectiveness upward slightly (*emphasis added*).” Therefore, the Agency changed the overall effectiveness of EOBRs from 34 percent to 40 percent when “form and manner” violations were added. It is important to note that an uptick of 6 percent is not considered slight in terms of scientific research.
- FMCSA sourced Police Accident Reports (PARs) for a portion of their data in the NPRM. However, the Agency also “believed” that the PARs were underestimating rather than overestimating fatigue involvement in large truck crashes, therefore, the Agency added to the number by assigning part of driver inattention crashes as fatigue-related.
- It should be noted that FMCSA, in response to the Seventh Circuit, conducted a survey to study EOBR Harassment. The study was entitled, “Survey Research **to Support** Revisions to the Agency’s Electronic Onboard Recorder (EOBR) Rule (*emphasis added*).”
 - Looking from the viewpoint of a research-consulting firm that relies upon funding from agencies like FMCSA, it is evident to see that such a company is incentivized to find data to support FMCSA’s predetermined conclusion.

Attitudes of Truck Drivers and Carriers on the Use of ELDs and Driver Harassment:

“The evidence in this survey research does not support concluding that harassment occurs due to being in a situation where HOS are logged using electronic logging devices (ELDs).”

- Although FMCSA’s original 2010 NPRM mandating the use of ELDs was vacated by the Seventh Circuit because the Agency failed to address the issue of driver harassment and the 2014 SNPRM included a requirement to address concerns about harassment resulting from the mandatory use of ELDs, the Agency did not publish a study on driver harassment until seven months after the SNPRM was released.
- The evidence presented in the Agency’s study runs contrary to the study’s conclusions.
- “The research uncovers *rare instances* of harassment (as reported by the drivers) but does not reveal a pattern where drivers who use ELDs are subject to *greater* harassment than those who use paper (*emphasis added*)¹⁰. The research team claimed in its interpretation of the data, that instances of harassment were rare. Nevertheless, the data from the study demonstrated that the instances of harassment were far from rare.
- The research team asked both the 628 drivers and the 865 carriers that participated in the study to detail their experiences with harassment. In order to accomplish this task, the research team posed fourteen different interactions to the drivers and the carriers. However, the participants indicated that seven of the interactions did not constitute harassment.
- The SNPRM called for the mandatory utilization of ELDs for all CMV drivers, which equates to 2.3 million drivers that would be affected by the proposed regulation. Thus, to further clarify the results, only the data of those drivers that were harassed by ELDs have been included in the following table, as this would possibly be the overall effect of the SNPRM if the rule is promulgated. In addition, the seven interactions that were not considered to be harassment have been removed.

Table 1: Frequency that drivers experienced specific interactions with management

Specific Interactions That Drivers Experience on a Monthly Basis	2+ Times Per Month Among Those Who Use ELDs	Number of Drivers Affected by Harassment	1+ Times Per Month Among Those Who Use ELDs	Number of Drivers that would be Affected by Harassment
Paid and Unpaid Time				
Require you to wait between loads for more than 2 hours without pay.	25%	575,000	41%	943,000

¹⁰ Frank Lynch et al., *Attitudes of Truck Drivers and Carriers on the Use of Electronic Logging Devices and Driver Harassment*, FMCSA (Nov 2014), pg. 3.

Require you to wait for customer delays for more than 2 hours without pay.	20%	460,000	39%	897,000
Fatigue				
Ask you to operate when you judged you were fatigued.	6%	138,000	12%	276,000
Logging and Breaks				
Ask you to log your hours inaccurately to get more work time or delay a break.	3%	69,000	9%	207,000
Change your log record after it was made to give you more work time or delay a break.	4%	92,000	10%	230,000
Communications				
Interrupt your off-duty time with a message at an inappropriate time.	22%	506,000	37%	851,000
Schedules				
Ask you to meet a customer load schedule you viewed as unrealistic	16%	368,000	40%	920,000

Table 2: Other events experienced by drivers at their current employer

Other Events That Surveyed Drivers Experienced While Employed at Their Current Company	Among Those Who Use ELDs	Number of Drivers that would be Effected by Harassment
Any in list (net)	39%	897,000
Contacted by your carrier, to find out why your truck wasn't moving	23%	206,310

Told to record your loading/unloading hours as off duty	12%	107,640
Told to log your duty status as fixed number of minutes on duty, and the rest of the time as off duty while loading or unloading	11%	98,670
Your carrier changed your duty status in your logs	11%	98,670

- The incidents of harassment demonstrated in the tables above do not constitute rare events.
- In another hypocritical practice, as the research team conducted the interview process for drivers, they discovered that a small percentage of the drivers were required by their carriers to record their HOS on both paper logs and ELDs for the purpose of redundancy. For the analysis, the research team grouped all those drivers who used both methods into the ELD group.¹¹ Nevertheless, when the team discovered the same issue with the carriers they decided to create a third category which affected the results.
- According to FMCSA’s Preliminary Regulatory Impact Analysis, “FMCSA **believes** that increasing the use of ELDs would improve compliance with the HOS rules and improve safety by **decreasing the risk of fatigue-related** crashes attributable to violations of the applicable HOS regulations (**emphasis added**).¹²”
 - However, more than perhaps anything, MaineWay’s study has demonstrated that thousands of drivers are experiencing harassment that might contribute to fatigue, and a part of that harassment is instituted by carriers that utilize ELDs. Thus, the research has validated that ELDs do not increase HOS compliance, and in fact, contribute to the overall problem of fatigue. Furthermore, the study also validated that ELDs can be cheated, and do not always record HOS as accurately as the Agency has suggested.
- Two-thirds, or 67 percent, of the carriers that request their drivers to exceed the HOS limits stated that their drivers sometimes reject those requests. In response, 5 percent of the carriers admitted to threatening the drivers afterwards.

Table 3: Carrier history with extended hours requests

Responses from Carrier Representatives	Total	Log with Paper	Number of Carriers that Practice Harassment	Log with ELDs	Number of Carriers that Practice Harassment
--	-------	----------------	---	---------------	---

¹¹ Ibid, pg. 7.

¹² Preliminary Regulatory Evaluation of Electronic Logging Devices and Hours of Service Supporting Documents Supplemental Notice of Proposed Rulemaking: Regulatory Impact Analysis, FMCSA (2014), pg. i.

Company ever asked a driver to work more hours than the regulations allowed:	13%	12%	62,160	18%	93,240
Carrier asked once in the past year:	15%	14%	8,702	18%	16,783
Carrier asked twice in the past year:	10%	11%	6,838	7%	6,527
Carrier asked three to five times in the past year:	35%	35%	21,756	36%	33,566
Carrier asked 6–10 times in the past year:	19%	16%	9,946	22%	20,513
Carrier asked more than 10 times in the past year.	21%	25%	15,540	9%	8,392
Following Requests to Work More Than the Regulations Allow	Total	Log with Paper	Number of Carriers that Practice Harassment	Log with ELDs	Number of Carriers that Practice Harassment
Drivers sometimes reject those requests	67%	69%	42,890	62%	57,809
Company has threatened drivers rejecting requests	5%	6%	2,573	3%	1,734
Company has not threatened drivers rejecting requests	62%	61%	26,163	59%	34,107
Drivers do not reject those requests:	33%	31%	19,270	38%	35,431

- The study's own research validated that not only is harassment possible by using an ELD, but that it is also instituted by carriers that utilize ELDs, and that ELDs can in fact be cheated. Therefore, it is evident that ELDs do not increase HOS compliance, but can contribute to the overall problem of fatigue. Hence, FMCSA's premise for the mandatory use of ELDs for all CMV drivers is not supported by their own research.

Wireless Roadside Inspection Phase II – Final Report

“The Wireless Roadside Inspection (WRI) Program is demonstrating the feasibility and value of electronically assessing truck and motorcoach driver and vehicle safety.” “Though there were *many* technical, operational, and implementation challenges, the lessons learned from the tests demonstrated that these challenges could be overcome, and they set the stage for the next phase of development and implementation...(emphasis added)”

- The pilot test evaluated three platforms, all in imperfect test environments based in Tennessee, Kentucky, and New York. The study listed the following:
 - The CMRS (TN) platform produced the most data, but also encountered data delivery challenges and relatively long latency times.
 - The Universal ID (KY) platform produced some desirable results, but included manual steps that proved untenable, and the automated license plate recognition (ALPR) system was unsuitable in poor weather situations.
 - DSRC (NY) produced very limited results and did not connect with the GOS. Moreover, the data were not formatted in a way that could be accepted by the GOS. Nonetheless, the limited performance was promising and worthy of further investigation. Finally, the GOS's strict data validation requirements presented many challenges with accepting and processing data from all platforms. Even in the context of a pilot test with active partners, the data formatting was complicated and it proved difficult to provide successful inspections. An expanded test that includes less-engaged partners would require much more simplified data formatting and processing requirements.
- The study stated, "This phase of the effort has identified broad policy, technical, and legal/statutory issues that face FMCSA in moving forward with WRI." "Due to the high cost of the 5.9 GHz transmitters needed for each CMV and the accompanying receivers required by enforcement personnel, DSRC (dedicated short-range communication) **does not exhibit positive net benefits even with the best possible safety outcome.**"
- In other words, Phase II was a failure, but FMCSA have announced that they are going to continue on to Phase III anyway.

Potential Reduction in Large Truck and Bus Traffic Fatalities and Injuries using Lytx's DriveCam Program:

In May 2014, the Virginia Tech Transportation Institute released a study sponsored by FMCSA that stated that "Trucks and buses equipped with the DriveCam Program had the *potential* to reduce an average of 727 fatal truck and bus crashes and save 801 lives each year. Similar results were found for the analysis of injury crashes. Specifically, trucks and buses equipped with the DriveCam Program had the *potential* to reduce an average of 25,007 truck and bus injury crashes and save 39,066 injuries each year."

- The study based part of its research on a study conducted in 1979, which determined that 90.3% of crashes are caused by human error. However, the study did not include truck drivers, but instead passenger vehicle drivers.
- Introduction makes an inaccurate statement that the Large Truck Crash Causation Study assessed the causes of crashes involving commercial motor vehicles. The study continued to say that 87.3% of the critical reasons assigned to the large truck driver were driver error. However, a critical reason is not the same as the cause. A quote from the FMCSA on the LTCCS, "The LTCCS is essentially a collision-avoidance or crash prevention study," not a causation study and in fact cause was never assigned.

- VTTI interchanged crashes with the term risky driving events. Nowhere in the study does it show that trucks equipped with DriveCam actually experienced fewer crashes. That would be the only way to actually show that the drive cam was effective.
- VTTI specifically stated that they used the GES database to gather information on heavy truck and bus crashes, and that they eliminated all crashes that were considered non-fault to the truck/bus driver, or those that were not contributed fault at all. However, after they “filtered” those crashes from the GES database with those that could not be prevented with the DashCam, they extended the crashes to include the national crash counts from FMCSA’s Commercial Motor Vehicle Facts, which does not attribute fault, thus skewing the numbers. In addition, the Commercial Motor Vehicle Facts only had years 2009-2011, so they multiplied the GES 2012 data by the 2011 counts found in the Commercial Motor Vehicle Facts.
- To generate the number of prevented injury crashes, the research team multiplied the number of GES injury crashes that could be prevented by .755 because an FMCSA study in 2009 stated that the DriveCam Program reduced **severe safety-related events** by 75.5 percent. However, to calculate the number of injuries that could be reduced, VTTI stated that, “A 0.755 reduction in **crashes (not safety-related events)** that could be prevented would result, on average, in a 0.755 reduction in injuries.”
- Contradictory to the conclusions, the study stated, “Although these results are impressive, to date no published study has shown the potential reduction in fatal and injury crashes using Lytx’s DriveCam Program.”

Onboard Safety Systems Effectiveness Evaluation Final Report

“The results across analyses indicated a strong, positive safety benefit for LDW and RSC. The benefit-cost analyses clearly showed the estimated benefits of LDW and RSC systems deployed at participating fleets outweighed the estimated costs.” While FMCSA highlights these conclusions, the agency ignores limitations in the research, including those identified by study authors:

- “The dataset in the current study was skewed toward larger, for-hire carriers and may not fully represent the overall U.S. trucking population.”
- “The research team had no information on the functionality of each OBSS installed on a truck [i.e., the research team could not verify if the OBSS was malfunctioning, tampered with, or engaged when applicable].”

Cross-Border Trucking Pilot Program

“FMCSA concludes that the Pilot Program successfully demonstrated that Mexican motor carriers can and do operate throughout the United States at a safety level equivalent to U.S and Canada domiciled motor carriers and consistent with the high safety standards that FMCSA imposes on all motor carriers authorized to operate in the United States.”

- DOT Inspector General’s Report found that “**FMCSA lacked an adequate number of Mexico-domiciled pilot program carriers to yield statistically valid findings for the pilot program.**”

- Further, “because the pilot program lacked an adequate number of participants, we could not determine with confidence whether the 15 carriers are representative. Without being able to determine the representativeness of the 15 carriers, one cannot project the safety performance for the population of Mexico-domiciled carriers that may qualify for long-haul operating authority in the future.”

Conclusion

To address these concerns, and to improve the quality of the motor carrier safety policy research, the Owner-Operator Independent Drivers Association (OOIDA) proposes a number of improvements to the statutory rules covering FMCSA's regulatory development process. These improvements will ensure that regulatory-focused research, whether involving drivers or motor carriers, is representative of the motor carrier industry, especially small businesses, and that the FMCSA's research is reviewed by independent experts in motor carrier safety and statistical science. Further, these improvements will ensure that outreach to the industry, including small businesses and drivers, is a focus of the FMCSA's rulemaking process, and that the agency prioritize regulatory options that maximize safety impact while limiting undue burden on small business carriers.