The Implication of the Hours of Service Differential In Serious and Fatal Commercial Vehicle Crashes: Florida's Experience

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Abstract

Operators of commercial motor vehicles are subjected to limitations concerning the hours they may drive and be on duty. Currently there is disparity between the number of hours that a driver can lawfully be on duty and drive under Federal regulations as opposed to the number of hours a driver may be on duty and drive under Florida Statutes. As a result of this disparity, Florida is deprived of grant funding of approximately $3 million per year as a sanction for failing to conform to the Federal regulations. A provision found in 49 CFR Part 350.345 allows for an exemption if it can be established that Florida's regulations do not have a negative impact on safety. This study establishes the fact that Florida's expanded hours of service statutes do not have a negative impact of safety.

Problem Statement

Virtually all the products we purchase, use, and consume are transported to market by commercial vehicles. These vehicles travel the same streets and highways as passenger vehicles and are involved in approximately numerous traffic crashes each year. Due to the size of these vehicles, these crashes often result in death or injury, as well as creating significant traffic problems.

Both Florida Statutes and the Code of Federal Regulations restrict the number of hours a driver can be on duty. Due to the variance in the hours permitted by Florida Statutes and the Code of Federal regulations, Florida is deprived of over $3 million dollars in grant money per year. These funds deprive the Florida Department of Transportation's Motor Carrier Compliance Office (MCCO) and Sheriff's Offices of the additional funding that could enhance traffic safety programs,

Based on the premise that fatigue is a leading cause of commercial vehicle fatalities, and the assumption that fatigue is related to the number of hours the driver was on duty, enforcement efforts have been largely focused on hours of service violations.

There is a lack of data to substantiate the premise that hours of service are the traffic safety problem it is purported to be. This study will analyze serious and fatal crash data, as well as related literature reviews, to establish if the cause and effect exists as perceived.

Hypothesis and Null Hypothesis

Hypothesis: Commercial vehicle drivers who are in compliance with the interstate hours of service are less likely to cause a serious or fatal traffic crash than those who operate under Florida's intrastate hours of service.

Null Hypothesis: Commercial vehicle drivers who are in compliance with the interstate hours of service are **not** less likely to cause a serious or fatal traffic crash than those who operate under Florida's intrastate hours of service.

Literature Review

A literature review was conducted to ascertain if the findings of the MCCO study were consistent with other similar studies. To avoid the problem of external error, two Florida based studies were reviewed.

The studies selected were: *Are Late-night Truck Drivers More Dangerous? Not at one Company…* by Roger J. Drissel and Walter D. Spiegel published in *Transportation Quarterly, Vol 57, No.2, Spring 2003 (39-46)* and *Evaluation of Traffic Crash Fatality Causes and Effects: A Study of Fatal Traffic Crashes in Florida from 1998-2000 Focusing on Heavy Truck Crashes* conducted by the Florida A & M University – Florida State University (FAMU-FSU) Department of Civil Engineering authored by Lisa Spainhour, PhD et al.

Drissel and Spiegel state that "Many researchers have speculated about the impact of the circadian rhythm on safety performance of truck drivers, especially those in the hours of midnight through 5:00 AM. The weight of opinion is that truck operations in these hours are less safe than average" (39) This study found that the time between midnight and 5:00 AM was actually one of the safest times of travel for trucks. The crash rate during this period was .9 per 10,000 miles traveled versus the average of 1.4 per 10,000. This finding is contrary to the common perception that this is the time that those driving fatigued would be involved in traffic crashes. In fact, during this study, of the five one hour periods between midnight and 5:00 AM, three of those one hour periods have a crash rate which was less than 2/3rds the average crash rate and all periods have a crash rate less than the average.

According to Drissel and Spiegel, the highest crash rates were found to be between 4:00 – 5:00 PM and 2:00 – 3:00 PM with the highest number of crashes being between 9:00 – 11:00 AM.

The FAMU-FSU study focused on heavy truck crashes in Duval, Baker, Clay, Nassau and St. John's counties. This area is home to 1.12 million residents and includes the highly urbanized Jacksonville metropolitan area along with the rural surrounding areas. This area is comprised on two major interstates, Interstate 10 and Interstate 95, a major seaport and an international airport.

The findings of this study substantiate the Drissel and Spiegel study concerning the times that trucks are involved in crashes. In the FAMU-FSU study, truck crashes were overrepresented at 2:00 PM, 5:00 PM, and Midnight and were substantially underrepresented (.678) between 9:00 PM and 3:00 AM.

The FAMU-FSU study also found that trucks are vastly underrepresented in run off the road type crashes. This type of crash is what is normally associated with fatigue.

Methodology

MCCO adopted the Federal Motor Carrier Safety Administration's (FMCSA) post crash inspection program in which MCCO officers are trained in the inspection of commercial motor vehicles, which have been involved in traffic crashes. As part of the post crash inspection, officers review logbooks and time records to ascertain the numbers of hours the driver was in service. This information is documented, along with causation factors, in the post-crash report.

Upon the initiation of FMCSA's post crash inspection program MCCO entered into a Memorandum of Understanding (MOU) with the Florida Highway Patrol (FHP). The MOU allows FHP Traffic Homicide Investigators to call MCCO post crash officers for assistance at fatal crash scenes where a CMV was involved. Local law enforcement agencies also contact MCCO for a post crash inspection on an ad hoc basis.

MCCO post crash reports capture causation and hours of service information so that an analysis of factors of at fault CMV fatalities could be conducted.

An analysis of CMV related crashes, which occurred during the period of October 1, 2002 through September 30, 2003, was conducted. Specifically, crashes in which the investigating agency indicated the CMV driver was at fault in the crash were analyzed to ascertain:

a. If the carrier was an interstate or intrastate carrier
b. If the hours the driver was in service exceeded those allowed for interstate operations, regardless of whether or not the driver was associated with an interstate or intrastate carrier.

During this period, MCCO conducted 293 post crash inspections. Of the 293 post crash inspections, 214 involved fatalities. Of those crashes reviewed, 90 (31%) indicated the CMV driver was at fault. An analysis of the 90 post crash inspection reports involving the at fault CMV's was conducted to ascertain if any of the at fault vehicles were operated by drivers who had driven in excess of the number of hours permitted for **interstate** drivers regardless of whether or not they were engage in interstate or intrastate operations at the time of the crash.

Findings

According to the Florida Department of Highway Safety and Motor Vehicles (DHSMV) records, there were 225 fatal CMV crashes reported from October 1, 2002 through September 30, 2003. During the same period, MCCO conducted 293 post crash inspections, of which 214 involved fatalities. This represents 95% of the fatal CMV related crashes reported by DHSMV.

Of all 293 post-crash inspections conducted, regardless of injury type, 90 listed the CMV as being the cause of the crash (31%). Of those which involved fatalities, 54 indicated the CMV as the cause of the crash (25%)

Of the 90 at fault CMV crashes, only one violated the federal hours of service. That driver was an interstate carrier who violated the 10-hour rule. As such, Florida's 15-hour rule was not a factor in his operation.

None of the reports indicated driver fatigue as a causation factor.

Conclusion

The data compiled by MCCO is statistically significant in that 95% of the fatal crashes involving CMV's were analyzed when comparing MCCO records to those of DHSMV. A review of the at fault crashes in which a post crash inspection was conducted revealed only one case in which there was an hours of service violation detected. This violation was an interstate carrier who was in violation of the federal 10 hour rule.

Neither this study nor the two studies referenced in the literature review indicate that Florida's intrastate hours of service are a negative influence in commercial vehicle safety.

Therefore we accept the null hypothesis.

David Binder has been in law enforcement since 1983. He worked for the Florida Highway Patrol for 16 years and is currently a Lieutenant Colonel with the Florida Department of Transportation, Motor Carrier Compliance Office. David has a Bachelor's degree in Public Administration from Barry University. He is currently pursuing his Master's degree in Public Administration from Florida State University.