



INCIDENT HIGHLIGHTS



DATE: July 1, 2019



VICTIM: 44-year old commercial truck driver

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INDUSTRY/NAICS CODE: 484121

EMPLOYER: Interstate Commercial Carrier



SAFETY & TRAINING: No driver focused training

SCENE: Public highway: Interstate



Kentucky

LOCATION:



EVENT TYPE: Motor Vehicle Collision



REPORT#: 19KY033

REPORT DATE: 10-4-2019

Commercial Truck Driver Dies on Kentucky Interstate in Single Vehicle Collision

SUMMARY

On Monday, July 1, 2019, a 44-year-old male commercial vehicle driver (the victim) was transporting scrap metal on a major, fourlane interstate en route to an out-of-state destination. The driver, while operating the vehicle, fell asleep. As a result, the semi-truck and trailer entered the median, overturned in the opposing lanes of travel and struck a W-beam guardrail.

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CONTRIBUTING FACTORS

Key contributing factors identified in this investigation include:

- Driving while fatigued
- Lack of driver safety training
- Lack of median barrier

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RECOMMENDATIONS

Kentucky FACE investigator concluded that, to help prevent similar occurrences, employers should:

- Employers should be aware of work schedules that are at high risk of contributing to fatigue.
- Employers should educate commercial drivers on the dangers of driving while fatigued.
- Employers should require commercial drivers to be tested for sleep apnea.
- Employers should install electronic logging devices in all commercial vehicles.
- Install cable median barriers.
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Fatality Assessment and Control Evaluation (FACE) Program

This case report was developed to draw the attention of employers and employees to a serious safety hazard and is based on preliminary data only. This publication does not represent final determinations regarding the nature of the incident, cause of the injury, or fault of employer, employee, or any party involved.

This Case report was developed by the Kentucky Fatality Assessment and Control Evaluation (FACE) Program. Kentucky FACE is a NIOSH-funded occupational fatality surveillance program with the goal of preventing fatal work injuries by studying the worker, the work environment, and the role of management, engineering, and behavioral changes in preventing future injuries. The FACE program is located in the Kentucky Injury Prevention and Research Center (KIPRC). KIPRC is a bona fide agent for the Kentucky Department for Public Health.

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INTRODUCTION

On Monday, July 1, 2019, a commercial vehicle driver was involved in a fatal single-vehicle collision while traveling northbound on a major, four-lane interstate. On August 6, 2019, the Kentucky Labor Cabinet informed the Kentucky Fatality Assessment and Control Evaluation Program of the incident. On August 14, 2019, the Kentucky FACE investigator conducted a site visit at which time photographs of the scene were taken.

EMPLOYER

The employer is an interstate motor carrier founded in 2010. According to the Federal Motor Carriers Safety Administration (FMCSA), they employ four commercial drivers and travel less than 500,000 miles annually¹. The company owns four commercial vehicles and six semi-trailers.

WRITTEN SAFETY PROGRAMS and TRAINING

The company has no driver training program. During an interview with the company, a representative stated they hire drivers with three to five years of commercial driving experience in lieu of a formalized training program, but expect drivers to be familiar with and adhere to laws and regulations associated with operating a commercial motor vehicle.

WORKER INFORMATION

The victim was a 44-year old male who had been employed with the company for 12 months. He was never married and had less than a high school education. Prior to working for the company, the victim had driven commercially for other companies for five years.

INCIDENT SCENE

The incident initially began in the northbound lanes of a major, four-lane interstate. North- and south-bound traffic is separated by a grassy median that measures 31 feet across; no barrier was present in the median. The involved vehicle crossed the median, traveled across the southbound lanes, and struck a W-beam highway guardrail which was installed on the northbound right shoulder of the highway; the truck penetrated the guardrail, and came to final rest positioned partially off of the shoulder in a grassy area. The posted speed limit for this area is 70 miles per hour.







Photo 1. Path the semi-truck and trailer traveled as it crossed the median, overturned, and struck the W-beam guardrail. Photo property of KY FACE.



Photo 2. Photo representing the point in which the truck and semi-trailer crossed the median. Photo by and property of KY FACE.







Photo 3. Photo of the area in which the truck struck the W-beam guardrail (final rest), the guardrail pictured above is the replacement section that was previously damaged in the crash. Photo property of KY FACE.







WEATHER

The temperature was approximately 68°F at the time of the incident. The humidity was 100% with a northwest wind at 5 mph². There was no precipitation and the roadway was dry. The weather was not considered to be a contributing factor in the accident.

INVESTIGATION

On Monday, July 1, 2019, a commercial driver was transporting scrap metal southbound on a major four-lane Kentucky interstate en route to an out-of-state destination. The total weight of the truck, trailer, and commodity was estimated to be 79,000 pounds. At 4:43 AM, approximately 90 minutes after his departure, the driver fell asleep while operating his 2012 International truck and semi-trailer. As a result, the vehicle began gradually exiting the travel portion of the highway to the left and entered into the grassy median that separates the north and southbound lanes of traffic. Due to the absence of a median barrier, the vehicle continued across the median and into the northbound traffic lanes. At this point, the weight of the load shifted, resulting in the truck and semi-trailer overturning onto the driver's side. The truck and trailer slid approximately 33 feet on its side before striking a W-beam guardrail located on the right shoulder of the northbound lanes. The impact of the rollover in conjunction with the force associated with striking the W-beam guardrail severely damaged the driver's portion of the cab. First responders arrived on the scene of the crash at 4:57 AM. Upon approaching the vehicle, it was determined that the driver had succumbed to the injuries sustained in the crash, and he was pronounced dead at the scene.







CAUSE OF DEATH

According to the death certificate, the cause of death was multiple blunt force trauma sustained in a motor vehicle collision.

CONTRIBUTING FACTORS

Occupational injuries and fatalities are often the result of one or more contributing factors or key events in a larger sequence of events that ultimately result in the injury or fatality. NIOSH investigators identified the following unrecognized hazards as key contributing factors in this incident:

- Driving while fatigued
- Lack of training
- Lack of barrier in median

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should be aware of work schedules that are at high risk of contributing to fatigue.

According to FMCSA, fatigue is the result of physical or mental exertion that impairs performance. Driver fatigue may be due to a lack of adequate sleep, extended work hours, strenuous work or non-work activities, or a combination of other factors. The Large Truck Crash Causation Study (LTCCS) reported that 13 percent of commercial motor vehicle (CMV) drivers were considered to have been fatigued at the time of their crash. The FMCSA further states that If possible, a commercial driver should not drive while the body is naturally drowsy, between the hours of 12 a.m. to 6 a.m. and 2 p.m. to 4 p.m. Driver drowsiness may impair a driver's response time to potential hazards, increasing the chances of being in a crash³. Companies should be aware of, and avoid, scheduling commercial drivers to work during these high-risk time periods when fatigue is most likely.

Recommendation #2: Employers should educate commercial drivers on the dangers of driving while fatigued.

Discussion: According to a study by the Centers for Disease Control and Prevention (CDC), 1 in 25 adults report they have fallen asleep while driving within the last 30 days. Additionally, the CDC states commercial drivers who operate tow trucks, tractor-trailers, and buses are most likely to fall asleep while driving⁴. In 2014, the National Highway Traffic Safety Administration (NHTSA), stated there were 846 fatality collisions due to drivers falling asleep behind the wheel, equating to 2.6% of all fatality collisions during that year. In addition to the fatality collisions, falling asleep while driving was determined to be the contributing factor that led to an additional 37,000 injury collisions and 45,000 property damage collisions⁵. Much of what commercial drivers do is repetitive in nature, which can lead to less awareness of even the most obvious warning signs of fatigue.

Based on the accident reconstruction investigation, the investigating officer determined that the driver fell asleep at the wheel. There were no skids marks on the roadway or evidence of crash evasion maneuvers.





As a best practice, companies who operate commercial vehicles should conduct frequent awareness training focused on the dangers associated with driving while fatigued. Drivers should be educated on the warning signs of fatigue, how to recognize them, and provided strategies to combat fatigue.

Recommendation #3: Employers should require commercial drivers to be tested for sleep apnea.

Discussion: Sleep apnea is a potentially serious sleep disorder in which breathing repeatedly stops and starts during sleep. These pauses in breathing last for more than 10 seconds and can occur up to 400 times per night. Sleep apnea is a potentially life-threatening condition that often goes unrecognized and undiagnosed. According to a study conducted by the University of Pennsylvania, which was sponsored by the FMCSA, 28% of all commercial drivers suffer from mild to severe sleep apnea⁶. It is unknown if the driver in this incident had diagnosed sleep apnea. Currently, the FMCSA does not require a commercial carrier to test their drivers for sleep apnea; however, they do state that a commercial driver must be medically qualified and free of any clinically diagnosed condition that is likely to interfere with a driver's ability to safely operate a commercial motor vehicle. Sleep apnea can be a contributing factor to severe fatigue, which can lead to inattention and falling asleep while driving.

Sleep apnea frequently goes undiagnosed unless testing is specifically requested. Commercial drivers are federally mandated to undergo a medical examination every two years. Companies employing commercial drivers should consider testing drivers for sleep apnea during both the pre-employment medical examination and at each two-year renewal period. If a driver is diagnosed with sleep apnea, with proper treatment, he or she may still obtain medical clearance to operate a commercial motor vehicle. If untested, drivers may be more susceptible to driving while fatigue and falling asleep at the wheel.

Recommendation #4: Employers should install Electronic Logging Devices in all commercial vehicles.

Discussion: The FMCSA has established laws regulating the hours a driver may work each day, as well as periods of rest that are required for commercial drivers. These laws are commonly referred to as "HOS" or Hours of Service regulations. In the past, commercial drivers were required to maintain a paper log which depicted their working, driving, and off duty hours to ensure compliance with the HOS regulations. The FMCSA has now established a law stating that by December 16, 2019, commercial companies must install electronic logging devices (ELD) in all of their commercial motor vehicles. The advantage of ELD over the traditional paper record of duty status documents (RODS) is the validity of the information. Current paper RODS can easily be adapted to fit the needs of the driver. The pay structure in the commercial transportation industry is often calculated by miles, with each mile driven equating to a pre-determined, fixed amount of compensation that the driver will receive. Drivers can manipulate their paper to work longer hours and travel more miles to receive increased pay. ELDs help eliminate a driver's ability to manipulate the system and give the company true visibility of a driver's actions. The new ELD law does have associated exemptions; for example, vehicles manufactured before the year 2000 are exempt and not required to install ELDs. In this case, the company had a short-haul exemption, allowing drivers who operate within a 100 air-mile radius of their normal work reporting location to be exempt from the regulations requiring them to maintain RODS and install ELDs.





Exempted companies such as this one should consider installing electronic logging devices in all commercial vehicles to verify proper periods of rest and regulatory compliance with all HOS regulations. By implementing ELDs, the company can take proactive steps to prevent drivers from operating commercial vehicles while fatigued. In addition, ELDs can alert company supervisory personnel of driving behaviors that may be related to driving while fatigued such as hard application of the brakes and quick turns that affect the stability of the vehicle. These alerts would allow company personnel to contact the driver to investigate further and possibly prevent a collision from occurring.



Recommendation #5: Install Median Cable Barriers

Discussion: No type of median barrier was present at the scene; statistics prove that median cable barriers are an effective countermeasure in reducing the severity of collisions. According to a study conducted by the Michigan Department of Transportation (MDOT) in 2008, the installation of median cable barriers reduced cross-median collision by 87%. Furthermore, both severe injury and fatality collisions were decreased by 33% and rollover collisions reduced by 50% after the installation of median cable barriers⁸.

The Kentucky Transportation Cabinet should consider installing cable median barriers on all limited access highways and interstates to prevent median crossover collisions.







Photo 7. Photo depicting standard installation of median cable barriers on an interstate highway⁹.







DISCLAIMER

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PROGRAM FUNDING

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INVESTIGATOR INFORMATION

This investigation was conducted by Beau Mosley, Fatality Investigator, Fatality Assessment and Control Evaluation, Kentucky Injury Prevention and Research Center, University of Kentucky, College of Public Health.

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SURVEY

<u>Please click here</u> to take a brief, anonymous survey concerning this report. Your feedback and opinions are appreciated.