

Kentucky Injury Prevention and Research Center  
Bona fide agent for Kentucky Department for Public Health  
333 Waller Avenue, Suite 242 • Lexington, KY 40504 • 859-257-5839

**REPORT#: 19KY045**

**REPORT DATE: 12-11-19**

## INCIDENT HIGHLIGHTS



**DATE:**

August 20, 2019



**TIME:**

12:40 AM



**VICTIM:**

63-year old commercial  
truck driver



**INDUSTRY/NAICS CODE:**

484121



**EMPLOYER:**

Intrastate Commercial  
Carrier



**SAFETY & TRAINING:**

No driver focused training



**SCENE:**

Public highway: Interstate



**LOCATION:**

Kentucky



**EVENT TYPE:**

Motor Vehicle Collision



## Dump Truck Driver Dies on Kentucky Interstate in Single Vehicle Collision

### SUMMARY

On Tuesday, August 20, 2019, a 63-year-old male dump truck driver (the victim) was traveling from an out-of-state location on a major, four-lane interstate to his Kentucky based business. While en route, the drivers-side (front) steer tire failed and disintegrated. As a result, the driver lost control of the vehicle, entered the median, crossed the opposing lanes of travel, and crashed into an earth embankment.

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### CONTRIBUTING FACTORS

Key contributing factors identified in this investigation include:

- Equipment failure
- Failure to wear seat belt
- Lack of median barrier

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### RECOMMENDATIONS

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

- Commercial motor vehicle (CMV) operators should utilize seat belts when driving commercial vehicles.
- CMV operators should complete driver vehicle inspection reports on all equipment prior to operating commercial vehicles.
- CMV operators should participate in a defensive driving course.
- The Kentucky Transportation Cabinet should install cable median barriers on interstates.

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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 Tuesday, August 20, 2019, a commercial truck driver was involved in a fatal single-vehicle collision while traveling eastbound on a major, four-lane interstate. On August 21, 2019, the Kentucky Labor Cabinet informed the Kentucky Fatality Assessment and Control Evaluation Program of the incident. On October 28, 2019, the Kentucky FACE investigator conducted a site visit at which time photographs of the scene were taken.

## EMPLOYER

The employee was the owner of an intrastate motor carrier founded in 2003. According to the Federal Motor Carriers Safety Administration (FMCSA), the victim was the sole employee on the business, which sold and transported automobiles and farm-related equipment<sup>1</sup>.

## WRITTEN SAFETY PROGRAMS and TRAINING

The company has no driver training program.

## WORKER INFORMATION

The victim was a 63-year old married man with no children. Because the victim was self-employed, and his wife chose not to speak with FACE investigators, little is known about the victim's background or education.

## INCIDENT SCENE

The incident initially began in the eastbound lanes of a major, four-lane interstate with a posted speed limit of 70 miles per hour. East and west-bound traffic is separated by a grassy median that measures 35 feet across; no barrier was present in the median. The involved vehicle, a 1981 Chevrolet, C-70 dump truck crossed the median, traveled across the westbound lanes, and struck an earth embankment head on, on the westbound right shoulder of the highway. The truck came to final rest positioned partially off of the shoulder with the front of the truck impacting the embankment.

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Photo 1. Photo depicting the path traveled as the dump truck crossed the median and struck the earth embankment. Yaw marks were produced by the passengers' side front steer axle tire which resulted from the driver taking evasive action. Photo property of KY FACE.



Photo 2. Photo representing the path the dump truck traveled as it left the roadway and crossed the median. Photo by and property of KY FACE.



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Photo 3. Photo representing the point in which the dump truck struck the earth embankment and came to final rest. Photo by and property of KY FACE.

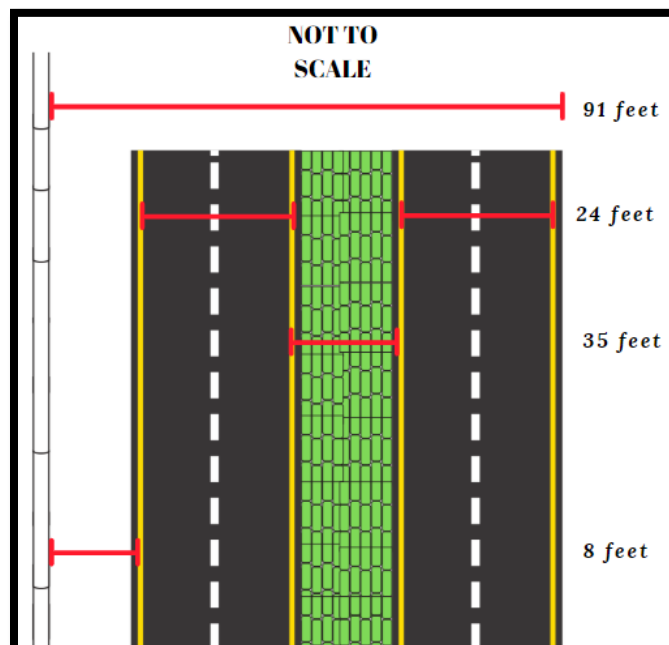


Diagram 1. Animation showing relevant measurements at the scene of the crash. Photo by and property of KY FACE.

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## WEATHER

The temperature was approximately 77°F at the time of the incident. The humidity was 76% with a southwest wind at 5 mph<sup>2</sup>. There was no precipitation and the roadway was dry. The weather was not considered to be a contributing factor in the accident.

## INVESTIGATION

On Tuesday, August 20, 2019, a dump truck driver was operating a 1981 Chevrolet, C-70 dump truck eastbound on a major four-lane Kentucky interstate en route to the driver's place of business. The victim had just purchased the dump truck he was operating earlier that evening at an out-of-state auction. At 12:40 AM, the driver's side steer axle tire failed and disintegrated while the vehicle was traveling at an estimated speed of 70 mph. Yaw marks present on the right shoulder of the eastbound lanes suggest the driver attempted to oversteer to compensate for the blown tire, but was unable to maintain proper control of the vehicle. The dump truck exited the travel portion of the highway to the left and entered into the grassy median that separates the east and westbound lanes of traffic. Due to the absence of a barrier, the vehicle continued across the median and into the westbound traffic lanes. The truck traveled across the westbound traffic lanes and struck an earth embankment located on the right shoulder of the westbound lanes. The force associated with striking the earth embankment severely damaged the driver's portion of the cab. First responders arrived on the scene of the crash within ten minutes of the incident. 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. Accident investigators determined the victim was not wearing a seat belt.

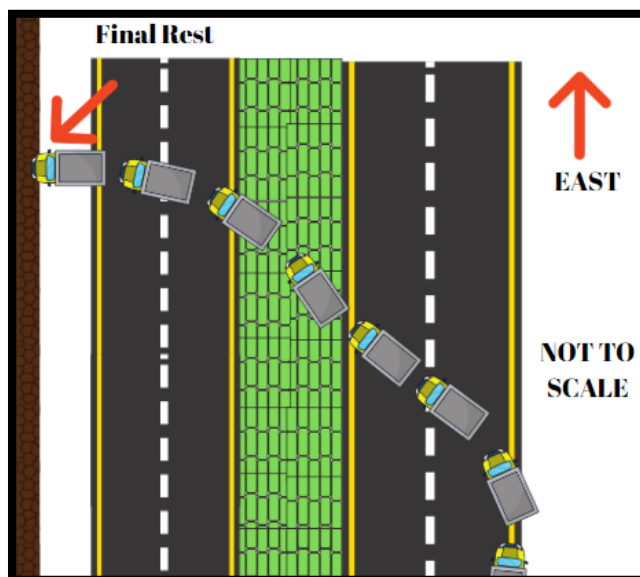


Diagram 2. Animation showing the path the dump truck traveled as it crossed the median and struck the earth embankment. Photo created by KY FACE.

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## 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

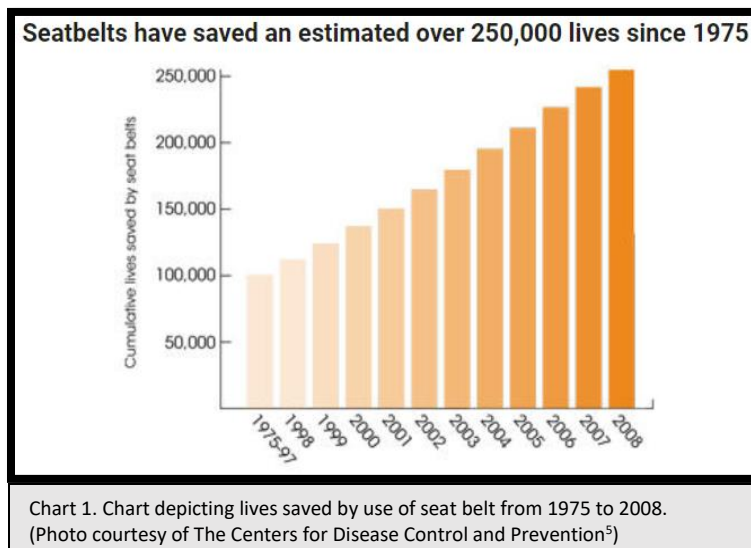
Occupational injuries and fatalities are often the result of one or more contributing factors or key events in a larger sequence of events that ultimately result in the injury or fatality. Kentucky FACE investigator identified the following unrecognized hazards as key contributing factors in this incident:

- Equipment failure
- Failure to wear seat belt
- Lack of barrier in median

## RECOMMENDATIONS/DISCUSSION

**Recommendation #1: Commercial motor vehicle (CMV) operators should utilize seat belts when driving commercial vehicles.**

Discussion: The victim was not wearing a seat belt at the time of the collision. Wearing a seat belt can greatly reduce the severity of injuries sustained in a crash. The Centers for Disease Control and Prevention estimates seat belts have saved nearly 250,000 lives from 1975 to 2008<sup>3</sup>. All U.S. states - with the exception of New Hampshire - now mandate the use of seat belts for at least the driver. Commercial vehicle drivers must adhere to federal regulations which require the use of seat belts in all states. A 2013 study released by the Federal Motor Carrier Safety Administration (FMCSA) reported that dump truck drivers have the lowest seat belt usage rate (70%) of all commercial motor vehicle body types<sup>4</sup>. In combination with low seat belt usage rates, incidents involving dump trucks resulted in the fourth highest number of fatal crashes among all large commercial vehicles. CMV operators should use seat belts when driving commercial vehicles.



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***Recommendation #2: CMV Operators should complete driver vehicle inspection reports on all equipment prior to operating commercial vehicles.***

Discussion: Collision investigators determined that the front driver's side steer axle tire failed and disintegrated which resulted in the driver losing control of the vehicle and crashing. In 2017, there were 738 tire-related vehicle fatalities in the United States<sup>6</sup>. Examining not only your tires, but also all vehicle components is a critical step in ensuring the safe operation of a commercial vehicle. The driver, who was also the owner of the company, had just purchased the dump truck earlier that day. The operator had no previous knowledge of the vehicle, it's mechanical road worthiness or how it had been maintained historically. FMCSR 396.13 states that before driving a commercial motor vehicle, the driver shall be satisfied that the motor vehicle is in safe operating condition. Although this regulation applies to all commercial vehicles each time a driver operates a CMV, it is particularly important when the driver is operating a CMV that he or she is unfamiliar with. FMCSR 396.11 states that at a minimum, drivers must check the following item:

- Service brakes including trailer brake connections;
- Parking brake;
- Steering mechanism;
- Lighting devices and reflectors;
- Tires;
- Horn;
- Windshield wipers;
- Rear vision mirrors;
- Coupling devices;
- Wheels and rims;
- Emergency equipment<sup>7</sup>.

Often times, tire defects can be visually observed during a driver vehicle inspection. The FMCSA recommends that tires be examined specifically for the following defects:

- Irregular tread wear
- Cracking
- Bulges
- Cuts
- Tread separation
- Foreign objects
- Inadequate tread depth
- Other damage

In addition to the above visual inspection item, the FMCSA suggest checking tires for proper inflation, verify rim and tire combinations are compatible and to never exceed weight or speed rating for tires<sup>8</sup>. Identifying such defects prior to the operation of the vehicle can prevent deadly tire issues from occurring. CMV



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operators should complete driver vehicle inspection reports on all equipment prior to operating commercial vehicles.

***Recommendation #3: CMV Operators should participate in a defensive driving course.***

Discussion: Great West Casualty Company (GWCC), one the largest commercial vehicle insurers in the United States has categorized collisions into four critical crash categories:

- #1: Rear-end crashes
- #2: Loss-of-control crashes
- #3: Lane change collisions
- #4: Run-under crashes

GWCC has developed defensive driver training to address and prevent each type of critical collision from occurring. GWCC addresses steer-tire blow outs in critical crash type #2, loss-of-control crashes. GWCC says when a steer-tire blowout happens, a driver's instinct may be to step on the brakes to slow down. Since the unit will naturally pull to the side of the flat tire, applying the brakes could increase the chances of the unit sliding sideways and the driver losing control. The proper reaction should be to accelerate and maintain forward momentum. Gripping the steering wheel firmly, the driver should gently counter steer to offset the side force created by the blowout until control of the unit is regained. At this point, ease off the accelerator until the vehicle is safely stopped<sup>9</sup>. Defensive driving techniques such as these can be critical to a driver's success. Most defensive driving courses offer instruction on steer-tire blow outs and how to handle them appropriately along with many more important defensive driving techniques. CMV operators should participate in a defensive driving course to better prepare themselves for the hazards associated with driving a commercial motor vehicle.

***Recommendation #4: 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 barriers<sup>10</sup>.

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

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Photo 7. Photo depicting standard installation of median cable barriers on an interstate highway<sup>11</sup>.

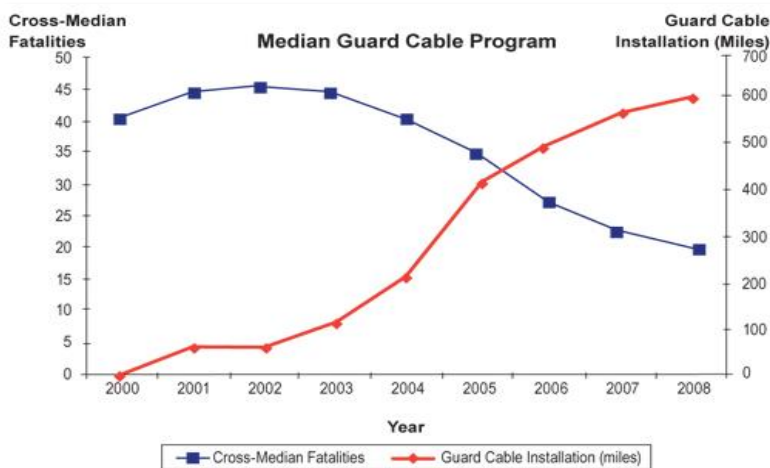


Photo 8. Graph comparing cross-median fatalities with installation of median cable barriers<sup>12</sup>.



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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.

## ACKNOWLEDGEMENTS

The Kentucky FACE Program would like to thank the county coroner, the sheriff's department and the company for their assistance with completion of this report.

## PROGRAM FUNDING

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