

Semi-Truck Driver Fatally Struck by Falling Flatbed Cage Door

CASE SUMMARY

On Monday, January 5, 2015, an equipment rental company driver drove to a construction jobsite to deliver elevator equipment. He climbed a ladder to unfasten the ratchet straps from the elevator equipment so that the crane operator could unload the equipment. He was standing to the right side of the flatbed rolling up the straps when the crane operator noticed the cage door shifting; he yelled a warning to the victim and ran towards him. The 1000 lb cage door fell off the flatbed and struck the semi-driver in the head. The crane operator, another employee, and a bystander removed the cage door from the victim. Emergency medical services was immediately called and arrived within four minutes. The employees helped load the victim into the ambulance for transport to the nearest local hospital. The victim was pronounced dead upon arrival at the hospital.



Figure 1. The cage door that fell from the flatbed trailer onto the victim.

Recommendations for prevention:

- Employers should implement a safety policy where employees should not place themselves in a possible fall shadow zone while flatbeds are being loaded, or unloaded.
- Employers should establish work place safety guidelines for securing loads while loading and unloading.
- Employers should implement a comprehensive safety and health program and provide training which includes hazard recognition and avoidance of unsafe conditions, such as the hazards associated with loading and unloading equipment worksites.

EMPLOYER

The employer was a small family owned, out-of-state equipment rental business with 5 employees. The business was established in November of 2013. The employer delivered and erected equipment, such as construction elevators, to construction sites.

SAFETY AND TRAINING PROGRAMS

The employer had a very limited safety program. Training was provided on-the-job, hands-on, and learn-as-you-go.

VICTIM

The victim was 67-year-old high school graduate, retired coal miner, and semi-retired truck driver. He was a U.S. Navy Vietnam War veteran and a member of the United Mine Workers of America. He had been employed with the company since their opening in 2013.

INCIDENT SCENE



Figure 2. Parking lot where the incident occurred. The building in the background can be used as a reference point between the two photos as to where the flatbed trailer was positioned.

The incident scene was a concrete parking lot where a building was under construction. The employees were located on the north wall of the building. The victim had backed the flatbed truck into the parking lot and parked, with the end of the flatbed resting on the grass adjacent to the parking lot and the front of the truck at the entryway of the parking lot (see figure 2). The truck was parked on a slight incline.

EQUIPMENT

A Manitex crane model 20102 was used to remove the equipment from the Kenworth Mack semi-truck's flatbed trailer.

WEATHER

January 5, 2015, was a clear day with temperatures ranging from 19 to 26 degrees Fahrenheit. Weather was not considered to be a factor in this fatality.

INVESTIGATION

The Kentucky Labor Cabinet notified the Kentucky Fatality Assessment and Control Evaluation (FACE) Program of a fatality that occurred on January 5, 2015. An investigation was conducted.

On Monday, January 5, 2015, an equipment rental company driver drove a Kenworth Mack semi-truck trailer loaded with elevator equipment to a construction site to deliver the rented elevator equipment to the contractor. The equipment included eight tower sections located at the rear of the trailer, an elevator case and an elevator cage door in the middle, and smaller tower sections in the front of the trailer. The elevator door was behind the case, and secured with two straps hooked to the left side of the trailer over the case/door and down the right side of the trailer.

During the time of the incident, an employee at the construction site was operating a Manitex crane, model 20102, offloading the base tower section from the rear of the trailer. The employee stated that when he was swinging the crane back to remove additional sections, he noticed the victim had just removed the straps, descended the ladder, and was rolling up a strap on the right side of the trailer that had been used to secure the cage door. The crane operator then noticed the cage door shifting and he exited the crane, running towards the victim to warn him. When the crane operator was approximately 8 feet from the victim, the cage door fell off the trailer striking the victim (see figure 3). The employee called for assistance. The crane operator, a third employee and a bystander who witnessed the incident removed the door and called 911.



Figure 3. The cage door that fell on the victim and its original storing location.

The employee checked the victim for breathing; the victim was still breathing but his eyes were rapidly moving. Emergency Medical Services arrived quickly and the employees helped load the victim onto the gurney for transport. The employee stated the EMS assisted the victim a few

minutes before departing for the local hospital. The victim was pronounced dead on arrival at the hospital.

CAUSE OF DEATH

The cause of death was head and internal trauma as a consequence of crushing by a heavy object.

CONTRIBUTING FACTORS

Occupational injuries and fatalities are often the result of one or more contributing factors that ultimately result in injury or death. The investigation identified the following factors that may have contributed to the fatality:

- Employee was in the fall shadow zone as equipment was being unloaded
- There was no one spotting the unloading of equipment to ensure safety

RECOMMENDATIONS AND DISCUSSIONS

Recommendation No.1: Employers should implement a safety policy where employees should not place themselves in a possible fall shadow zone while flatbeds are being loaded, or unloaded.¹

OSHA defines the fall shadow zone as the area on both sides of the trailer where the equipment could fall. The higher the equipment is lifted from the ground, the larger the fall zone. Standing outside of the fall shadow at either side of the trailer is the best practice to prevent being crushed or stuck by falling loads.



Recommendation No. 2: Employers should establish workplace safety guidelines for securing loads while loading and unloading.

Loading and unloading semi-trucks can be a dangerous job. Falling loads, being struck by falling loads or even being struck by another vehicle are some of the risks involved in offloading cargo. Employers should only have one section at a time unsecured and only after a crane has been rigged to the load or a forklift is under the load. The person un-securing the load should move

out of the fall zone before releasing the load. A spotter to ensure employees are out of the fall zone is safe practice.

Recommendation No. 3: Employers should implement a comprehensive safety and health program and provide training which includes hazard recognition and avoidance of unsafe conditions, such as the hazards associated with loading and unloading equipment worksites.²

Safety training on loading and unloading can be provided by written instruction, personal demonstration or hands-on. Training employees before their first day of work is crucial to ensure all workers are safe on worksites. It is also advised to periodically repeat the training as a refresher course. Training should include safety practices for stabilizing loads, as well as emphasizing guidelines for proper loading/unloading practices including but not restricted to the following:

- Use storage frames for items stored vertically.
- Store vertical items that could topple away from the edge and toward the center of the trailer.
- Assess the fall shadow zone around the load/unload area and restrict entry to that zone.
- Determine if the truck is parked on level ground, free of incline.
- Prohibit the removal of safety straps until equipment is secured to a crane hook.

Please take the time to [complete our brief survey](https://uky.az1.qualtrics.com/jfe/form/SV_4NSjMaoTqSlvB53) regarding this report:

(https://uky.az1.qualtrics.com/jfe/form/SV_4NSjMaoTqSlvB53)

Electronic access to this full report can be found [here](http://www.mc.uky.edu/kiprc/programs/face/files/15KY001.pdf):

(<http://www.mc.uky.edu/kiprc/programs/face/files/15KY001.pdf>)

KEYWORDS

Falling objects
Unloading equipment
Truck driver
Flatbed
NAICS 484220

ADDITIONAL RESOURCES

[KY FACE Fatality Report: Granite Installation Company Owner Struck by Falling Granite Slab](http://www.mc.uky.edu/kiprc/programs/face/files/15KY020.pdf)

(<http://www.mc.uky.edu/kiprc/programs/face/files/15KY020.pdf>)

REFERENCES

¹Chapter IV: *Safe Slab Handling*. Safety in the Stone Business, Revised Edition. The Marble Institute. Print. Page 7. 2012.

²*Loading and Unloading*. Industry Hazards. OSHA. Web
[https://www.osha.gov/SLTC/trucking_industry/loading_unloading.html]

PHOTO CREDIT

Photos used were courtesy of KY OSH and Google Maps.

ACKNOWLEDGEMENTS

The Kentucky FACE program would like to thank KYOSH and KTA for their assistance with this report.

PROGRAM FUNDING

The Kentucky Fatality Assessment & Control Evaluation Program (FACE) is funded by grant 2U60OH008483-11 from the Centers for Disease Control and Prevention and the National Institute for Occupational Safety and Health.

FACE on Social Media:



https://www.facebook.com/Kentucky-FACE-Program-134135740092906/?view_public_for=134135740092906



<http://www.twitter.com/KYFACEProgram>

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 a 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 within the [Kentucky Injury Prevention and Research Center \(KIPRC\)](#), part of the University of Kentucky's College of Public Health.

**Email: kyfaceprogram@uky.edu | Telephone: 859-257-5839
333 Waller Avenue Suite 242, Lexington, KY 40504**