



Workers Killed While Unloading Cargo from Flatbed Trailers

Kentucky Fatality Assessment and Control Evaluation Program

Loading zones have safety hazards that may result in serious injury or death. Nine workers were killed between 2010 and 2015 in Kentucky during truck loading and unloading procedures. Six of these incidents involved truck drivers. They were all preventable.

The following incidents occurred in Kentucky:



On January 5, 2015, an equipment rental company truck driver was delivering elevator assemblage to a construction site. After parking on an uneven surface, he finished removing the ratchet straps that secured a 1,000 pound elevator door and turned his back to roll up the straps. The elevator door shifted and fell on the driver, resulting in fatal crushing injuries.



On October 26, 2015, a driver was delivering a steel coil to a steel and aluminum metal parts production plant. He was unloading the 15,242 pound steel coil when it shifted and fell onto him, pinning him to the bed of the trailer. The coil struck the middle thoracic area on his left side and crushed his lower body, resulting in his death.



On May 14, 2015, a company owner and a forklift operator were unloading granite slabs from a flatbed delivery truck. As the forklift operator clamped one of the granite slabs, the company owner stood adjacent to where the slab would be stored. Once the granite slab was on the ground, the forklift clamp automatically released the slab. The slab was unstable, shifted, and crushed the owner who was directly in the fall shadow zone.

Recommendations to prevent loading and unloading injuries:

- **Perform a job hazard analysis prior to loading and unloading procedures**
- **Periodically inspect load securement during transport and correct any deficiencies**
- **Maintain a clear line of communication with all loading personnel**
- **Stand clear of the 'fall shadow zone' when loading and unloading**
- **Establish an exclusion zone for when forklifts, cranes, and other machines are in use**
- **Never turn your back to cargo while in the loading zone**

Perform a job hazard analysis prior to loading and unloading procedures

During the job hazard analysis, be sure to ask:

- What could go wrong?
- What are the consequences?
- How could injuries result?
- What is the likelihood of an injury occurring?
- What can be done to prevent injuries?
- What are possible contributing factors?

To make this analysis useful, it is important to document answers in a consistent manner.

Periodically inspect load securement during transport and correct any deficiencies

FMCSA (title 49 section 392.9) requires that the load and securement devices be examined and adjusted during the first 50 miles.

Reexamine the cargo when the driver changes duty status, the vehicle has been driven for 3 hours, or the vehicle has been driven for 150 miles, whichever occurs first.

Maintain a clear line of communication with all loading personnel

Clear communication should be established early to raise awareness of hazards in the loading zone. Verbal agreement on a cargo loading and unloading strategy should be established prior to entering the loading zone.

Stand clear of the 'fall shadow zone' during loading and unloading



Employees should stand clear of the area surrounding cargo in which it is reasonably foreseeable that a tip over would result in crushing/struck-by injuries. Workers are especially vulnerable to this zone when the cargo is being moved.

Establish an exclusion zone for when forklifts, cranes, and other machines are in use

The driver and other personnel should establish an 'exclusion zone' during loading and unloading processes. An exclusion zone is an area that prohibits personnel from being present during load zone machinery operation. All personnel should remain clear of these zones until the machinery has ceased all movement and is turned off.

Never turn your back to cargo while in the loading zone

All personnel should maintain awareness of the position of the cargo and never turn their back to it during loading and unloading processes. Even a small shift can compromise stability and result in crushing injuries. Split second reactions may save you from serious injury or death.



Loading Safety Tips for Employers

1. Review company accident history to determine what incidents are occurring; focus safety training on these specific issues.
 2. Ensure all personnel receive proper load safety training and refresher safety training.
 3. Establish and enforce standard operating procedures for moving cargo.
 4. Conduct regular safety meetings, toolbox talks, and safety trainings to address hazards.
 5. Only permit workers trained in proper load handling to load and unload trucks.
 6. Ensure availability of necessary equipment and that it remains in safe operating condition.
 7. Require reporting of and document all near misses and other safety incidents.
 8. Train employees on 'fall shadow' and 'exclusion' zone safety.
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Employees: Before loading or unloading, ask yourself:

- Are the brakes applied, wheels chocked, and all stabilizers in place?
- Did I perform a job hazard analysis?
- Is the trailer parked on level pavement that can support the weight?
- Is the trailer overloaded?
- Does the freight appear to have shifted during transportation?
- Do the top loaded items appear to be stable?
- Do I have a clear and active line of communication with the other workers ?
- Do the storage containers and pallets look stable?
- Could any of the cargo move, or become unstable while removing the restraint?



Additional Resources

FORKLIFT OPERATION SAFETY



- [OSHA Safety and Health Topics: Forklift Loading and Unloading](https://www.osha.gov/SLTC/poweredinustrialtrucks/loading_unloading.html) (https://www.osha.gov/SLTC/poweredinustrialtrucks/loading_unloading.html)
 - [KY Haz Alert: “Workers Killed While Working With Forklifts”](http://www.mc.uky.edu/kiprc/projects/KOSHS/face/pdf/forklift_3_10.pdf) (http://www.mc.uky.edu/kiprc/projects/KOSHS/face/pdf/forklift_3_10.pdf)
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LOGGING TRUCK LOADING/UNLOADING SAFETY



- [KY Haz Alert: “Fatal Injuries Due to Logs Rolling Off Trucks at Sawmills”](http://www.mc.uky.edu/kiprc/projects/KOSHS/face/alerts/rollinglogs.pdf) (http://www.mc.uky.edu/kiprc/projects/KOSHS/face/alerts/rollinglogs.pdf)
 - [Sawmills eTool: Log Receiving and Storing](https://www.osha.gov/SLTC/etools/sawmills/receive.html#Log%20Unloading%20Methods) — OSHA (https://www.osha.gov/SLTC/etools/sawmills/receive.html#Log Unloading Methods)
 - [Log Truck Driver Dies When Struck by Logs Being Loaded Onto Trailer](http://www.ini.wa.gov/safety/research/face/files/52332015logtruckdriverstruckbylogs.pdf) — Washington FACE (http://www.ini.wa.gov/safety/research/face/files/52332015logtruckdriverstruckbylogs.pdf)
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RISK ASSESSMENT RESOURCES AND EXAMPLES



- [Job Hazard Analysis \(JHA\) \(Introduction, Examples\)](https://www.osha.gov/Publications/osh3071.pdf) — OSHA (https://www.osha.gov/Publications/osh3071.pdf)
- [FREE Job Hazard Analysis Training Workbook](http://www.oshatrain.org/courses/studyguides/706studyguide.pdf)—OshaTrain.org (http://www.oshatrain.org/courses/studyguides/706studyguide.pdf)
- [Fact sheet for creating JHA and Blank JHA template](http://www.ehs.berkeley.edu/how-do-i-write-and-update-job-safety-analysis-jsa)—Berkley Office of Environment, Health, and Safety (http://www.ehs.berkeley.edu/how-do-i-write-and-update-job-safety-analysis-jsa)

Additional Resources (Cont'd)



Photos courtesy of *OSHA.gov*



GRANITE, MARBLE, AND STONE SLAB TRANSPORT

Many heavy, flat surfaces are transported upright on flatbed trailers, such as granite, marble, and stone slab. This type of transport and loading/unloading provides unique challenges, such as hazards associated with standing in the 'fall shadow'. Please refer to:

- [Hazards of Transporting, Unloading, Storing, and Handling Granite, Marble, and Stone Slabs](https://www.osha.gov/dts/shib/shib081208.html)— OSHA (https://www.osha.gov/dts/shib/shib081208.html)
- [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)

This Haz Alert 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 to prevent fatal work injuries by studying the worker, the work environment, and the role of management, engineering, and behavioral changes. The FACE Program is located in the [Kentucky Injury Prevention and Research Center \(KIPRC\)](#) at the University of Kentucky.

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For more information on the Kentucky FACE Program and to access this report and more like it, please visit us at:

<http://www.mc.uky.edu/kiprc/programs/face.html>

Please take our brief survey regarding this Haz Alert here:

<https://www.surveymonkey.com/r/J8CTBHS>