TO: Director, National Institute for Occupational Safety and Health

FROM: California Fatality Assessment and Control Evaluation (CA/FACE) Program

SUBJECT: Truck Driver Dies When He Falls Off the Top of a Tank Trailer

SUMMARY
California FACE Report #08CA002

A truck driver died after he fell off the top of a tank trailer while attempting to close the tank lid. The victim had gained access to the top of the tank trailer by a catwalk and weighted gangway with a fixed guardrail that extended over the top of the trailer. The victim fell through a gap between the guardrail and the top of the tank trailer. The victim was not wearing any fall protection. The CA/FACE investigator determined that, in order to prevent future occurrences, employers, as part of their Injury and Illness Prevention Program (IIPP) should:

- Ensure that fall protection is used by drivers and other employees who use the catwalk and gangway to gain access to the top of tankers.
- Use a catwalk, gangway, and guardrail system that eliminates the gap between the tankers and the guardrail of the gangway.

INTRODUCTION

On January 21, 2008, a 57-year-old male truck driver died when he fell off a tanker trailer while closing the lid. The CA/FACE investigator was notified of the incident on January 31, 2008, by the Bureau of Investigations of the Division of Occupational Safety and Health (Cal/OSHA). On February 5, 2008, the CA/FACE investigator traveled to the incident site and interviewed the safety coordinator for the facility where the incident occurred. The investigator inspected the site and took pictures of the catwalk involved in the incident. The CA/FACE investigator also interviewed the safety director of the company that employed the victim and the security guard on duty the day of the incident.

The employer of the victim was a nationwide trucking company. The employer had been in business for 41 years and had approximately 2,200 employees nationwide. The California branch had approximately 500 employees. The victim had been employed with the company for three years. The victim was born in Malaysia and had been in the United States for 12 years. According to his employer he spoke, read, wrote, and understood English. The victim had a high school education and a valid California driver's license with the necessary certifications required to operate a multi-wheeled truck.

The employer of the victim had a safety program and a written IIPP. There were written task specific safe work procedures for truck drivers to follow when closing the lid on top of tank trailers using the catwalk. The written safety procedures did not require the use of fall protection while using the catwalk. Safety meetings were held monthly and were documented. The trucking company had a formal annual training program for the truck drivers. All drivers were required to pass written and practical tests upon hire, and annually thereafter, if they wanted continue to drive for the company. The practical test included procedures for opening and closing the tanker lids.

INVESTIGATION

The site of the incident was a catwalk and gangway station at a cement plant. The station was designed to allow truck drivers to gain access to the top of their tank trailers to open or close the lid on top. After loading or unloading materials from their tank trailer, the drivers would park their trucks parallel to the catwalk in order to close the top lids. The catwalk was designed with gangways that were weighted on one end and extended in a perpendicular direction from the catwalk out toward the tank trailer (see exhibit 1). The gangway was designed to lower to the top of the tank trailer with the weight of an individual. A fixed guard rail extended out from the catwalk at each gangway (see exhibits 2 & 3).

Depending on the tank trailer design and distance from the catwalk, with the gangway fully lowered to the top of the tank trailer there was a gap of approximately 24 to 36 inches from the bottom of the guardrail to the top of the tank trailer. On the day of the incident, the victim drove his tank trailer to the catwalk area in order to close the top lids. The victim parked his rig alongside the catwalk and under the weighted gangway. According to the victim's employer, the tanker was correctly parked next to the catwalk. The victim climbed the catwalk and walked out on the gangway to close the tank trailer lid. The victim fell approximately 12 feet from the gangway to the ground below. The victim may have slipped off the gangway while attempting to close the lid of the tank trailer.

A nearby security guard noticed the tanker parked near the catwalk for an unusual length of time. The security guard approached the tank trailer and noticed the victim on the ground, immobile and bleeding from the head. He notified plant officials who then called 911. The victim was transported to a local hospital where he was pronounced dead from his injuries.

CAUSE OF DEATH

The cause of death, according to the death certificate, was blunt head trauma.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Ensure that fall protection is used by drivers and other employees who use the catwalk and gangway to gain access to the top of tankers.

Discussion: The design of a catwalk and gangway system to gain access to the top of tank trailers is one method of preventing falls from heights over 10 feet. In this case, the catwalk and gangway system, even when appropriately used, left a 24 to 36 inch gap between the tanker and the guardrail of the gangway. The use of personal fall protection provides an additional safety measure that can protect the driver when using catwalk and gangway systems that are not properly designed for their trucks. The use of fall protection would include the following:

- An approved safety harness with life line.
- One end of the life line attached to a fixed overhead anchorage or similar arrangement.
- The life line adjusted that the employee cannot fall more than a specified distance.
- Safety harnesses and life lines that are resistant to any deteriorating effects of the dusts, fumes, mists, vapors, or gases arising from the contents of the tank.

Had the victim been using fall protection (see exhibit 5), this would have prevented him from falling to the ground after slipping off the gangway.

Recommendation #2: **Use a catwalk, gangway, and guardrail system that eliminates the gap between the tankers and the guardrail of the gangway.**

Discussion: Several manufacturers provide engineered systems for facilities that need to routinely provide access to the top of tanker trucks. In this incident, a system was used that did not adjust to the truck height and minimize the gap between the guardrail and the truck top. A guardrail system that can adjust to the height of the different tank trailers might have prevented this incident by minimizing or eliminating this gap. One such system has been installed by the facility where this incident occurred (see exhibit 6).

References:

California Code of Regulations, Vol. 9, Title 8, Subchapter 4. Construction Safety Orders Article 24. Fall Protection §1670. Personal Fall Arrest Systems, Personal Fall Restraint Systems and Positioning Devices.

EXHIBITS:

Exhibit 1. The catwalk used by truck drivers to gain access to the top of their tank trailers.

Exhibit 2. The stairs used to gain access to the catwalk and the weighted gangway.

Exhibit 3. The weighted gangway and safety guardrail that extends over the top of tank trailers parked below.

Exhibit 4. An employee using the catwalk and gangway to gain access to the top of a tanker trailer to close the lid.

Exhibit 5. An employee utilizing fall protection and the guardrail as he closes the lid on top of the tanker trailer.

Exhibit 6. A picture of the new catwalk and guardrail system.

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Public Health, in cooperation with the Public Health Institute and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations of work-related fatalities. The goal of the CA/FACE program is to prevent fatal work injuries. CA/FACE aims to achieve this goal by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact. NIOSH-funded, State-based FACE programs include: California, Iowa, Kentucky, Massachusetts, Michigan, New Jersey, New York, Oregon, and Washington.

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Additional information regarding the CA/FACE program is available from:

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