The National Institute for Occupational Safety and Health (NIOSH)

Feed Truck Driver Dies After Falling From Ladder

Minnesota FACE Investigation 94MN07301

SUMMARY

The victim was working alone at the time that the unwitnessed incident occurred. As a result, this report is based upon information obtained during the site investigation interviews and an inspection of the incident site.

A 57-year-old male feed truck driver (victim) died of injuries sustained after falling from a wooden ladder. On the day of the incident, the victim delivered hog feed to a local farmer. He arrived at the farm and parked the feed truck approximately 25 feet away from two feed storage bins. An auger on the truck transferred the feed into the bins through an opening in the roof of each bin. The roof openings were fitted with covers that were accessed from ladders secured to the outside of the bins. The victim climbed a wooden ladder and while standing on it, removed the cover from the round bin. He climbed down, positioned the auger over the opening in the bin roof and started the truck unloading auger. At some time while the bin was being filled, the victim apparently fell from the ladder. He may have climbed the ladder to determine if the bin was nearly full.

Because of the fall, he apparently struck his head on the frozen ground and sustained fatal skull fractures. Approximately 90 minutes after the victim arrived at the farm, he was found by the farm owner. The victim was found lying face down on the ground near the base of the wooden ladder. The farmer immediately placed a call to local emergency medical personnel. They arrived approximately 15 minutes later and pronounced the victim dead at the scene. MN FACE investigators concluded that to reduce the likelihood of similar occurrences, the following guidelines should be followed:

- **feed bin manufacturers should design and develop a system that would enable workers to remove roof opening covers from ground level; and**
- **employers should ensure that all employees are provided periodic safety training reviews of established safety programs.**

INTRODUCTION

On December 20, 1994, MN FACE investigators were notified of a work-related fatality that occurred on December 19, 1994. The county sheriff's department was contacted and releasable information obtained. Information obtained included a copy of their report of the incident. A site investigation was conducted by MN FACE investigators on January 3, 1995. During the site investigation, information concerning the incident was provided by the employer's safety officer and by the owners of the farm where the incident occurred.

The victim had more than 30 years experience as a grain elevator employee. He did many typical grain elevator jobs and tasks including the driving of the feed delivery trucks. His current employer recently completed the purchase of the elevator company that employed the victim for many years. Because of this purchase, the victim was employed for approximately four months by his current employer.

INVESTIGATION

The victim was working alone at the time that the unwitnessed incident occurred. As a result, this report is based upon information obtained during the site investigation interviews and an inspection of the incident site.

On the day of the incident, the victim delivered hog feed to a local farmer. Similar deliveries were made to the farm approximately twice per week for the past several years. During the four months immediately preceding the incident, the victim made many feed deliveries to this farm. He was familiar with the location of the feed bins and also with the tasks associated with transferring the feed into the storage bins.

Two feed storage bins were located along one side of the hog confinement building. One of the bins was approximately 6 feet by 6 feet square and the other was round with a diameter of approximately 6 feet. The square and the round bins were approximately 12 and 14 feet high respectively. An auger on the truck transferred the feed into the bins through an opening in the roof of each bin. The roof openings were fitted with covers that were accessed by exterior bin ladders. A wooden ladder was positioned against the round bin and secured at the edge of the bin roof. A short ladder was fastened to the roof of the round bin and extended a few inches beyond the edge of the roof. It was not necessary to climb onto the roof ladder to remove the bin cover.

The top end of the wooden ladder was pushed through an opening created by the bottom rung of the roof ladder, the side rails of the roof ladder and the edge of the bin roof (see Figure 1). The wooden ladder was not damaged or defective in any manner that would have warranted its removal from use. A steel ladder was permanently fastened to the back side of the square bin. The ladders were dry and free of ice and snow at the time of the incident.

The victim arrived at the farm and parked the feed truck approximately 25 feet away from the two storage bins. He climbed the wooden ladder and while standing on it, removed the cover from the round bin. He climbed down, positioned the auger over the opening in the roof of the round bin, and started the truck unloading auger. At some point in time, he walked to the back of the square bin, climbed the steel ladder, and slid the bin cover to an open position. He probably climbed the wooden ladder again, this time to determine if the round bin was nearly full. This would have required him to climb to a height where he would have stood with his feet on a ladder rung that was 10 feet above the ground. Apparently, while he either climbed the wooden ladder, descended the ladder, or stood on it and observed if the bin was nearly full, he fell from the ladder. Approximately 90 minutes after the victim arrived at the farm, he was found by the farm owner. He was found lying face down on the frozen snow covered ground with his head approximately 4 feet from the base of the ladder. As a result of the fall, he struck his head and sustained fatal skull fractures.

The farmer immediately called emergency medical personnel. They arrived approximately 15 minutes later and pronounced the victim dead at the scene.

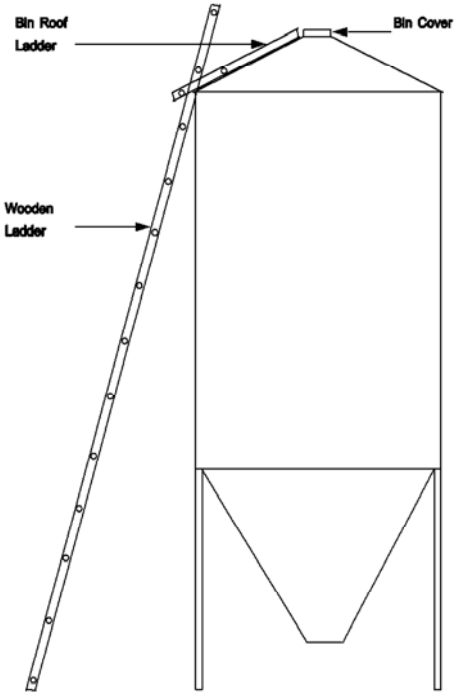

Figure 1. Feed Bin and Ladder – Not to Scale

CAUSE OF DEATH

The cause of death listed on the death certificate was a fractured skull.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Feed bin manufacturers should design and develop a system that would enable workers to remove roof opening covers from ground level.

Discussion: Most existing feed and grain storage bins have roof openings that are fitted with metal or fiberglass covers. Removal of the covers for filling of the bins usually requires that an individual climb an exterior bin ladder to access the cover. Whenever workers climb any ladder, they are exposed to the risk of being seriously injured as the result of a fall. The development of a system to remove and replace roof covers from the ground would reduce the amount of climbing required to access roof covers. Any reduction in the amount of climbing by employees to perform required work tasks would reduce the total exposure time of workers to situations where the risk of a fall exists.

Recommendation #2: Employers should ensure that all employees are provided periodic safety training reviews of established safety programs.

Discussion: Employers should ensure that all employees maintain an understanding of current company safety programs and procedures. Employers should provide periodic reviews in the recognition, control, and avoidance of unsafe conditions to which employees might be exposed while performing assigned work tasks. These reviews should also ensure that employees are provided review training in the proper use of all tools and equipment required to perform assigned tasks. This should include a review of the proper use of personal protective equipment. They should also include reviews of the safe usage of routinely used equipment such as ladders as well as infrequently used tools and equipment. Periodic safety review sessions for all employees would be helpful in reducing the future occurrence of occupational fatalities.

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