



## The National Institute for Occupational Safety and Health (NIOSH)



# Laborer Run Over By Dump Truck While Paving Parking Lot

Minnesota FACE Investigation 99MN032

DATE: January 10, 2000

## SUMMARY

A 19-year-old laborer (victim) died after being run over by a dump truck filled with asphalt. The victim worked for a paving company that was contracted to pave the parking lot of a small office complex. At the time of the incident, the victim was leveling and smoothing freshly laid asphalt with a tool known as a lute. He was in the "danger zone" area between the dump truck and the paver smoothing a section of asphalt near the edge of a previously laid strip of asphalt. The dump truck driver did not see the victim as he backed the truck toward the paver with a load of asphalt. Although the truck's back-up alarm was sounding, the victim did not move as the truck approached and was he run over. Coworkers immediately placed a call to emergency medical personnel who arrived at the scene shortly after being called. The victim was transported to a local hospital where he was pronounced dead.

MN FACE investigators concluded that, in order to reduce the likelihood of similar occurrences, the following guidelines should be followed:

- employers should designate a single on-site worker who has responsibility for authorizing and directing the movement of certain vehicles, such as trucks traveling in reverse;
- mobile equipment should be equipped with sensing units to detect pedestrian workers in the blind spots of the equipment operator; and
- employers should design, develop, and implement a comprehensive safety program.

## INTRODUCTION

On August 16, 1999 MN FACE investigators were notified of a work-related fatality that occurred on August 12, 1999. The city police department was contacted and a releasable copy of their report of the incident was obtained. A site investigation was conducted by a MN FACE investigator on November 23, 1999. During MN FACE investigations, incident information is obtained from a variety of sources such as law enforcement agencies, county coroners and medical examiners, employers, coworkers and family members.

The company the victim was employed by had been in business for 45 years and had no previous fatalities. The number of workers the company employed varied by season. During spring, summer and fall they employed between 30 and 55 workers, whereas during the winter months they employed as few as three workers. They had a comprehensive safety program and a foreman in charge of safety responsibilities was working on site at the time of the incident. The victim had

worked for the company as an unskilled laborer for 2 months and 6 days. He had received training that specifically addressed the hazards associated with the fatality and he had been warned twice about not entering the “danger zone”, the area between the front of the paver and a loaded dump truck backing toward the paver.

## INVESTIGATION

On the day of the incident, the victim and his coworkers were paving a small office complex parking lot (See Figure 1) that measured approximately 5000 square yards. The job was expected to take about 3 hours. There were fourteen workers at the job site including, 10 workers who worked for the same contractor as the victim and four independent dump truck drivers.

The paving project was completed in strips or “passes”. The paver operator would lay a strip of asphalt that measured between 8 and 12 feet in width and ran the length of the lot. Upon completion of a strip, he would make another pass parallel and adjacent to the previous pass until the lot was completed. The dump trucks emptied loads of asphalt into the paver after backing to the front of the paver.

At the time of the incident, the victim was leveling and smoothing the freshly laid asphalt with a tool known as a lute. A lute is a 36 inch wide rake type tool with a serrated edge that is specifically used for small hand work and for repairing irregularities in the surface of the asphalt. He entered the “danger zone” area between the dump truck and the paver in order to smooth a section of asphalt near the edge of the previously laid pass. The dump truck driver did not see the victim as he backed toward the paver. Although the truck’s back-up alarm was sounding, the victim did not move as the truck approached and was run over. The truck driver noticed a nearby bobcat operator as well as the paver operator signaling him to stop. He stopped the truck and then drove forward over the victim again with the truck’s rear passenger side dual wheels. Coworkers immediately placed a call to emergency medical personnel who arrived at the scene shortly after being called. The victim was transported to a local hospital where he was pronounced dead.

## RECOMMENDATIONS/DISCUSSION

**Recommendation #1: Employers should designate a single on-site worker who has responsibility for authorizing and directing the movement of certain vehicles, such as trucks traveling in reverse.**

Discussion: Construction work zone crews are exposed to an increased risk of injury whenever motorized vehicles, especially trucks, are moving in reverse in congested or limited space work sites. Trucks and other motorized equipment are required to have audible alarms that sound whenever a vehicle is moving in reverse, however workers are at risk of being injured due to blind zones where equipment operators cannot see workers and because workers become desensitized to the alarms of backing vehicles. At work sites such as the one associated with this incident, a “designated workers”, such as the site foreman or a lead worker should be given responsibility for authorizing and directing the movement of vehicles such as trucks, traveling in reverse. This worker should be identifiable to truck drivers and all other workers by the wearing of a vest, hard hat, or other article of safety equipment or clothing of a unique and highly visible color that is different than that worn by other workers. In conjunction with this designation of responsibility, all truck drivers need to be informed that upon arrival at a work site, that they may only proceed in a forward direction to a designated waiting area. All drivers should remain in the waiting area until the “designated worker” has given them permission to operate their vehicle in reverse. While a truck is moving in reverse, the “designated worker” should devote complete attention to the vehicle moving in reverse and ensure that all workers stay out of its path. After the vehicle has finished moving in reverse, the foreman or lead worker should return to performing other assigned tasks at the site. However, as soon as it became necessary for another truck to move in reverse at the site, the designated worker would again devote complete attention to the safe movement of that vehicle. This recommendation may be most appropriate for and more easily implemented at work sites with low vehicle traffic levels. At work sites with a high volume of vehicle traffic it may be necessary to identify a “designated worker” who’s full-time responsibility is authorizing and directing the movement of vehicles such as trucks traveling in reverse at the site.

**Recommendation #2: Mobile equipment should be equipped with sensing units to detect pedestrian workers in the blind spots of the equipment operator.**

Discussion : The truck involved in this incident was equipped with a functioning back-up alarm that was intended to warn pedestrian workers when it was moving in reverse. While this type of warning device can prevent injury by notifying workers to move out of the way, it is unable to alert equipment operators of the presence of pedestrian workers. In addition, pedestrian workers may become desensitized to audible back-up alarms because they sound whenever the equipment is moving in reverse. Mobile equipment should be equipped with sensing units to detect the presence of pedestrian workers in the blind spots of equipment and warn both the operator and the pedestrian which would provide an additional margin of safety.

**Recommendation #3: Employers should design, develop, and implement a comprehensive safety program.**

Discussion : Employers should ensure that all employees are trained to recognize and avoid hazardous work conditions. A comprehensive safety program should address all aspects of safety relate to specific tasks that employees are required to perform. OSHA Standard 1926.21 (b) (2) requires employers to “instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his/her work environment to control or eliminate any hazards or other exposure to illness or injury.” Safety rules, regulations, and procedures should include the recognition and elimination of hazards associated with tasks performed by employees.

## REFERENCES

1. Office of the Federal Register: code of Federal Regulations, Labor, 29 CFR Part 1910.303(b), U.S. Department of Labor, Occupational Safety and Health Administration, Washington, D.C., July 1, 1994.

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