

## **Road Construction Laborer Dies After Falling Underneath the Wheel of a Front End Loader**

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April 19, 1994

### **SUMMARY**

On September 22, 1993 a 39 year-old male road construction laborer was killed after falling beneath the wheel of a moving front end loader. The incident occurred while the victim was riding on the side of the loader as it was moving to a worksite. According to the driver of the loader, the victim moved a control lever which caused the machine to shift into reverse and jarred the victim off the loader and under the front wheel. NJDOH FACE investigators concluded that, in order to prevent similar incidents in the future, these safety guidelines should be followed:

- **Employers should develop, implement, and enforce a comprehensive safety program with the assistance of a joint labor/management safety committee.**
- **Employers should conduct periodic job safety meetings and refresher training.**

In addition, to prevent possible incidents during the operation of heavy equipment;

- **The manufacturers of construction equipment should consider installing an interlock system that prevents heavy equipment from suddenly reversing direction.**

### **INTRODUCTION**

On October 8, 1993, the NJDOH FACE Project received a county medical examiner's investigation report of a fatal work-related incident. After contacting the employer, FACE investigators interviewed a company representative on October 29, 1993 for details of the incident. FACE investigators also visited the incident site and interviewed a neighbor who witnessed the events leading to the incident. The driver of the loader was not available to be interviewed. Further information was obtained from the OSHA investigation file, written witness statements, and the police and medical examiner's reports.

The employer was a road paving construction contractor who also does trenching and pipe work. The company has been in business since 1959 and employs a total of about 200 employees. The company does not have a written safety program, but does employ a manager who devotes part of his time to health and safety. The victim was a union road construction laborer who had worked for the company for six years.

## **INVESTIGATION**

The incident occurred in a large housing development in a suburban area. The company had been contracted to pave the roads within the development, a project that was anticipated to take four days. The incident occurred on the third day of the project. The victim was in one of three crews working in different parts of the development and supervised by a foreman who moved from crew to crew. The victim had been assigned to a "prep crew", that was responsible for chipping and filling in the asphalt around the manhole covers to prepare them for paving.

The day of the incident was a clear Wednesday afternoon. Two workers were assigned to the prep crew, the victim and the driver of the front end loader. At about 12:15 p.m, the crew was working on a manhole near a T-intersection of two roads. When the manhole was completed, the driver started moving the front end loader to the next manhole which was located about 50 yards away. Hitching a ride, the victim jumped onto the loader's battery box which was part of a side step leading up to the driver. The site foreman (who was working nearby) and a neighbor saw the loader moving slowly up the road and turn onto the next street. As the loader climbed a slight incline, the driver stated that the victim (was was apparently horsing around) grabbed at the forward/reverse control lever on the loader. The driver told him to stop, but he again grabbed at the lever and moved it. This caused the machine to go into reverse, jarring the victim off the loader. He fell three feet to the ground, and the front wheel of the loader ran onto his chest.

The driver immediately stopped the machine and went for the supervisor. The neighbor came out to see if they needed help and called for an ambulance. The police and EMS arrived and transported the victim to the local trauma center where he underwent emergency surgery. He died of his injuries seven hours after the incident.

## **CAUSE OF DEATH**

The county medical examiner attributed the cause of death to hemorrhagic shock due to multiple devastating injuries.

## **RECOMMENDATIONS/DISCUSSIONS**

**Recommendation #1: Employers should develop, implement, and enforce a comprehensive safety program with the assistance of a joint labor/management safety committee.**

Discussion: The employee was in violation of stated company policy that prohibited passengers from riding on the equipment. However, this policy was not in writing and it was not known if the employee had been instructed on it. We recommend that employers emphasize worker safety by developing, implementing, and enforcing a comprehensive safety program to reduce or eliminate hazardous situations. This program, as developed with the assistance of a joint labor/management safety committee, should include developing written safety policies and training the workers in these polices.

**Recommendation #2: Employers should conduct periodic job safety meetings and refresher training.**

Discussion: Prior to this incident the employer conducted occasional toolbox safety meetings and is now requiring these meetings each week. Toolbox and other safety meetings are an effective way of refreshing employees in safety policies and allows safety to be included in the weekly planning of a job. Toolbox meetings should also include conducting a job hazard analysis, where the jobsite is examined for fall, electrical, chemical, or other hazards the workers may encounter. After identifying the hazards, the employees should be instructed on how to correct or avoid them.

In addition, to prevent possible incidents from the operation of heavy equipment;

**Recommendation #3: The manufacturers of construction equipment should consider installing an interlock system that prevents heavy equipment from suddenly reversing direction.**

Discussion: In this case, the victim was able to reverse the direction of the moving front end loader by simply pushing a lever. According to a service technician, the equipment was designed to easily shift directions while in operation as a time saving feature. Although this is a common design element in heavy equipment, the sudden changing of direction of a piece of equipment may cause the operator to be jarred or create a hazardous traffic situation. To prevent this, we recommend that heavy equipment manufacturers consider designing an safety interlock system. Such a system may include a locking mechanism on the lever to prevent inadvertently moving it, or a more sophisticated system that would prevent the lever from being activated unless the equipment was stopped.

**REFERENCES/ATTACHMENTS**

Information Bulletin: Joint Labor/Management Safety & Health Committees. NJ Department of Health, Public Employees Occupational Safety and Health Program, Trenton NJ.

Job Hazard Analysis. OSHA 3071, US Department of Labor, Occupational Safety and Health Administration, Washington DC. 1988.

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