



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research



Ironworker Foreman Dies After Falling 24 Feet From A Forklift–Tennessee

FACE 9501

SUMMARY

A 50-year-old male ironworker foreman (the victim) died after falling from the forks of a loadall vehicle (commonly referred to as a forklift) and striking his head and chest on the ground. The victim was supervising six workers, two of whom were moving corrugated metal flooring over floor joists on the skeleton steel at the second-story level of a newly constructed warehouse. The victim had moved a forklift under the area where the flooring was being moved and instructed a third worker (who was on the ground and was an untrained forklift operator) to operate the forklift and raise him to the work area. The victim stood on one of the two forks and held onto the mast while the forklift operator raised him to a height of about 24 feet. The forklift operator then shut off and dismantled the forklift, and observed the victim try to step from one fork to the opposite fork. When the victim's foot contacted the opposite fork, his remaining foot slipped off the first fork, and he fell to the ground. The worker on the ground immediately ran to find the other foreman on the job to report the incident. The second foreman called 911 for assistance then ran to the victim. He found him unconscious and not breathing. The foreman started cardiopulmonary resuscitation, which he continued until the arrival of the ambulance and coroner. The ambulance and coroner arrived about the same time and the coroner pronounced the victim dead at the scene. NIOSH investigators concluded that, to prevent similar occurrences, employers should:

- **adhere to the general safety practices for elevating personnel and operator qualifications and training per the ANSI/ASME safety standards for low lift and high lift trucks**
- **review and revise, where applicable, the existing written safety program**
- **routinely conduct scheduled and unscheduled workplace safety inspections**
- **encourage workers to actively participate in workplace safety.**

INTRODUCTION

On October 24, 1994, a 50-year-old male ironworker foreman (the victim) died from injuries received in a 24-foot fall from the forks of a forklift. On October 31, 1994, officials of the Tennessee Occupational Safety and Health Administration (TOSHA) notified the Division of Safety Research (DSR) of this fatality, and requested technical assistance. On November 15, 1994, a DSR safety specialist conducted an investigation of this incident. The incident was reviewed with the employer, county coroner, and TOSHA compliance officer assigned to the case. The coroner's report and photographs of the incident site and equipment were obtained during the investigation.

The employer was a steel erection contractor that had been in business for 5 years and employed 40 workers, three of whom were ironworker foremen. The employer had a written general safety program but no specific rules regarding the use of forklift equipment. Foremen conducted weekly tool box safety meetings. The victim was hired through the local union hall and had been employed for 8 months prior to the incident. The victim had previously worked for this employer for about 6 months, some 5 years prior to the incident, and had over 20 years experience as an ironworker. This was the first fatality experienced by the employer.

INVESTIGATION

The employer had been contracted to erect the skeleton steel and lay the corrugated metal sub-flooring for a warehouse which was under construction. The warehouse was a multi-story, metal and concrete-sided structure that was approximately 45% completed. Work had been in progress for about 2 months prior to the incident.

On the day of the incident, the victim and six workers arrived at the jobsite about 7 a.m., and continued work on the warehouse flooring. Two workers were moving corrugated metal flooring into place over the floor joists at the second-story level of the warehouse, while a third worker performed welding tasks on the ground. The three remaining workers performed various tasks at other areas in the warehouse.

At 3 p.m. the victim noticed that work on the metal flooring had not progressed to the point where he felt it should have. In an attempt to discover and correct the problem, the victim moved a rubber-tired, 1989 model 530 telescopic loadall (forklift), into position under the area where the flooring work was being performed (Figure). The forklift had a 35-foot reach, and the two forks were 4-foot long and could be adjusted to a maximum of 5 feet in width. The victim climbed down from the forklift and positioned himself on one of the forks. He directed the worker on the ground to raise the forks to the level where the other workers were located. The worker, who was an untrained forklift operator, mounted the forklift and raised the forks up to about 24 feet above ground, stopped the forklift and dismounted.

He observed the victim move his right foot from one fork to the opposite fork while holding onto the mast. As the victim's right foot contacted the fork, which was adjusted to about 5 feet wide, his left foot slipped off the other fork. He fell between the forks and landed on the ground, striking his head and chest. The forklift operator immediately ran to find the other foreman on the job to report the incident. The second foreman called 911 for assistance, then ran to the victim. He found him unconscious and not breathing. He started cardiopulmonary resuscitation, which he continued until the arrival of the ambulance and coroner. The ambulance and coroner arrived about the same time and the coroner pronounced the victim dead at the scene.

CAUSE OF DEATH

The coroner's report listed the cause of death as blunt force trauma to the head and chest.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should adhere to the general safety practices for elevating personnel and operator qualifications and training per the ANSI/ASME safety standards for low-lift and high-lift trucks.

Discussion: The victim stood on one fork of a forklift and was raised about 24 feet into the air by an untrained forklift operator. ANSI/ASME B56.1c-1987, 4.17, 4.18, and 4.19 states that, 1) whenever a truck is used to elevate personnel a platform shall be secured to the lifting carriage or forks; 2) only trained and authorized operators shall be permitted to operate a powered industrial truck, and 3) that safe operation of the truck is the operator's responsibility.

Recommendation #2: Employers should review and revise, where applicable, the existing written safety program.

Discussion: Although the employer had a written safety program, the program did not address forklift safety. The implementation and enforcement of a written comprehensive safety program should reduce and/or eliminate worker exposures to hazardous situations. The safety program should include, but not be limited to, the recognition and avoidance of fall hazards, the use of appropriate safety equipment such as work platforms, restraining means such as rails or chains or safety belts and lanyards while on the platform, and the use of qualified persons to operate forklifts.

Recommendation #3: Employers should routinely conduct scheduled and unscheduled workplace safety inspections.

Discussion: Employers should be cognizant of the hazardous conditions at jobsites and take an active role to eliminate them. Additionally, scheduled and unscheduled safety inspections should be conducted by a competent person to ensure that jobsites are free of hazardous conditions. Even though these inspections do not guarantee the elimination of occupational injury, they do demonstrate the employer's commitment to the enforcement of the safety program and to the prevention of occupational injury.

Recommendation #4: Employers should encourage workers to actively participate in workplace safety.

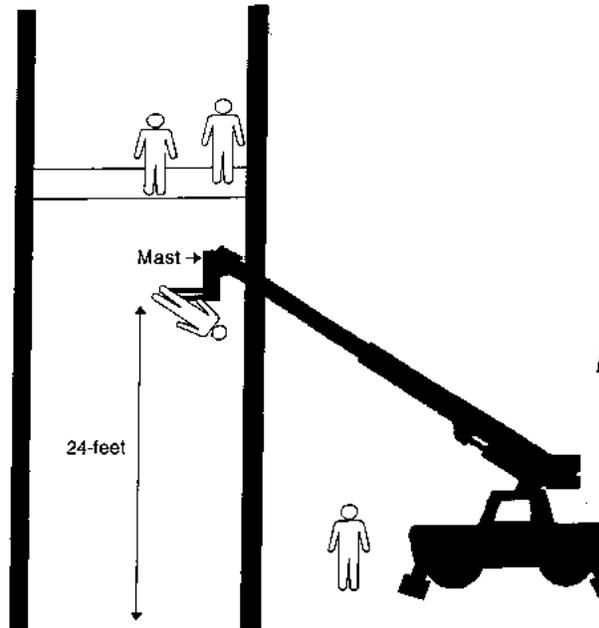
Discussion: Employers should encourage all workers to actively participate in workplace safety and ensure that all workers understand the role they play in the prevention of occupational injury. In this instance, the victim was riding on the forks of a forklift 24 feet from the ground without the use of a platform or any other guarding. Workers and co-workers should look out for one another's safety and remind each other of the proper way to perform their tasks. Employers must instruct workers of their responsibility to participate in making the workplace safer. Increased worker participation will aid in the prevention of occupational injury.

REFERENCES

ANSI/ASME B56.1c-1987-Safety Standard for Low Lift and High Lift Trucks, 4.17, 4.18 and 4.19, P.6. The American Society of Mechanical Engineers, United Engineering Center, New York, N.Y.

Figure. Telescopic Loadall (Forklift)

FACE 95-01
Side View



not to scale

Figure.

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Partly

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