

SUBJECT: A secretary/treasurer at a stone cutting company was killed when she was crushed by a forklift that was being jump-started.

SUMMARY

A 37-year old secretary/treasurer at a stone cutting company died on March 25, 2003 from crushing injuries she received when she was pinned between a forklift and a pickup truck that was being used to jump-start the forklift. She was apparently assisting with repairs to the forklift and was standing between the rear end of the forklift and the pickup truck. The reverse pedal on the forklift was engaged and the emergency brake was not set. When the forklift started up, it lunged backward abruptly, pinning the victim between the forklift and the pickup truck.

Oklahoma Fatality Assessment and Control Evaluation (OKFACE) investigators concluded that to prevent similar occurrences, employers should:

- Ensure that all forklifts are inspected daily and those not in safe operating condition are taken out of service until competent maintenance work can be performed.
- Ensure that the parking brake is engaged and the wheels are blocked/chocked before maintenance is conducted on a forklift.
- Ensure that all company employees are trained on forklift pedestrian safety.
- Ensure that all forklift operators receive documented formal training on the Occupational Safety and Health Administration's Powered Industrial Truck Standard.
- Develop and implement a written program that includes policies and procedures on forklift operation.

INTRODUCTION

A 37-year old stone cutting company worker died on March 25, 2003 from injuries she received when she was crushed by a forklift that was being jump-started due to a dead battery (Figure 1). OKFACE investigators reviewed the Occupational Safety and Health Administration report, the Medical Examiner's report, and newspaper articles concerning the incident. OKFACE investigators also interviewed the investigating County Deputy Sheriff. Company officials declined to be interviewed and declined any interviews with employees.



Figure1. Forklift



The company had been in business six or seven years and conducted surface mining for limestone. After the stone was mined, it was loaded into a commercial truck and transported to the company's yard to be cut. The victim had worked for the stone cutting company for four years, since her husband took over ownership of the company. The decedent worked as the secretary/treasurer. She was not a trained forklift operator, and did not operate forklifts; however, she had apparently assisted in servicing forklifts in the past. The company did not have a formal safety program or a written powered industrial truck program. A total of six employees worked for the company.

INVESTIGATION

The weather was clear and dry with excellent visibility at the time of the incident. Because the forklift that was normally used for company operations had broken down earlier on the day of the incident, a different model forklift was being used by the operator for a stone moving operation. Apparently, it was known that the alternate forklift was also in need of maintenance, due to a faulty injector system. As the employee was using the alternate forklift, it stopped running, and the employee, thinking it had run out of diesel, used a service truck to fill the fuel tank. After fueling, the forklift would not start, and he attempted to bleed-off the injectors. The victim was apparently assisting with the process. When the battery on the service truck started to run down, the owner moved a pickup truck into position behind the forklift and connected jumper cables in another attempt to jump-start the forklift. During the jump-starting process, the decedent was positioned between the back of the forklift and the front of the pickup truck. The forklift operator was sitting in the forklift trying to start it, and the owner was standing to the side monitoring the jumper cables.

When the forklift started up, the operator released the pedals to put the forklift in neutral. The reverse pedal apparently stayed down and the parking brake had not been applied. The forklift lunged backwards into the pickup truck, pinning the victim between the front of the pickup and the back of the forklift. Upon realizing he had hit the truck and victim, the forklift operator pulled the forklift forward to release the victim from the pinned position. The incident occurred at approximately 2:30 p.m.

The incident was reported to 911 immediately. The owner of the company began driving the victim to the local hospital, and an ambulance met the vehicle en route and took over transportation of the victim. The victim was then taken by medical flight to a trauma center. She died at 10:50 p.m. that same day.

The employee operating the forklift had been with the company for 6 or 7 years and had a total of 15 years of on-the-job training on forklift operations, but had no formal forklift training and no performance evaluation. He reported that he had jump-started forklifts thousands of times. The company had no training records to verify that any training had been completed. The manual on the forklift was not available to refer to for maintenance and battery charging/recharging procedures.

CAUSE OF DEATH

The Medical Examiner listed the immediate cause of death as blunt force abdominal trauma.

RECOMMENDATIONS

Recommendation # 1: Employers should ensure that all forklifts are inspected daily and those not in safe operating condition are taken out of service until competent maintenance work can be performed.

Discussion: The forklift operator should inspect the forklift at the start of each shift or day for any defects that could affect safe operation of the truck. This inspection should be documented and kept on file with the company. Any vehicles that are not in proper operating condition should be taken out of service. In this incident, the injector system was known to be faulty. In addition, the reverse pedal apparently stayed down when the operator removed his feet from the pedals. According to OSHA CFR 1910.178(q)(1), any powered industrial truck not in safe operating condition, shall be removed from service. All repairs shall be made by authorized personnel. This work can be performed by either a trained forklift mechanic, or a contract forklift maintenance company. Any forklift in need of repair should be tagged out-of-service and placed in a restricted area. In this incident, repairs were being conducted in the company yard in an area that was not barricaded off.

Recommendation #2: Employers should ensure that the parking brake is engaged and the wheels are blocked/chocked before maintenance is conducted on a forklift.

Discussion: Before conducting maintenance on a forklift, the parking brake should be engaged and the wheels should be blocked/chocked. Blocks/chocks that are used should be of sufficient size and configuration. In this incident, the parking brake was not set and the wheels were not blocked/choked. If these precautions had been taken, the fatality may have been prevented.

Recommendation # 3: Employers should ensure that all company employees are trained on forklift pedestrian safety.

Discussion: Employees who do not operate forklifts but work around forklifts should be trained on the characteristics and limitations of the vehicles. This should include the visual limitations of the vehicle, rear-swing radius, stopping capabilities, safe pedestrian positioning around or near forklifts, and any other company-specific work environment characteristics. Forklift operators should also monitor pedestrian positioning around the forklift.

Recommendation # 4: Employers should ensure that all forklift operators receive documented formal training on the Occupational Safety and Health Administration's Powered Industrial Truck Standard.

Discussion: Employers should ensure that all employees who operate a forklift are trained on the required topics listed in the OSHA Standard CFR 1910.178(l)(1-4), including truck-related topics, workplace-related topics, refresher training, and performance evaluation. The training and evaluation of each operator must be completed before the employee is allowed to operate the vehicle. An evaluation must be completed on each type of forklift the employee operates. Documentation of the formal instruction and the evaluation must be kept on file with the company.



Recommendation # 5: Employers should develop and implement a written program that includes policies and procedures on forklift operation.

Discussion: Employers should develop written policies and procedures for forklift use. These should take into account the Occupational Safety and Health Administration standards, including required topics such as safe operation of the forklift, site-specific procedures, and refresher training requirements. The manufacturer’s recommendations for the safe operation of the vehicle should be included in all written programs and procedures as well.

REFERENCES

1. 29 CFR 1910.178, Occupational Safety and Health Standards, Powered Industrial Trucks
2. Publication No. 2001-109 U.S. Department of Health and Human Services, National Institute of Occupational Safety and Health: *Preventing Injuries and Deaths of Workers Who Operate or Work Near Forklifts, 1999*
3. *Lift Truck Safety*: National Safety Council
4. *Coaching the Lift Truck Operator*: FLI Learning Systems, 1999
5. *Forklift Operator Manual*

The Oklahoma Fatality Assessment and Control Evaluation (OKFACE) is an occupational fatality surveillance project to determine the epidemiology of all fatal work-related injuries and identify and recommend prevention strategies. FACE is a research program of the National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research.

These fatality investigations serve to prevent fatal work-related injuries in the future by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in injury, and the role of management in controlling how these factors interact.

For more information on fatal work-related injuries, please contact:

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